FISHERY MANAGEMENT PLAN UPDATE
AMERICAN EEL
AUGUST 2026

STATUS OF THE FISHERY MANAGEMENT PLAN

Fishery Management Plan History

FMP Documentation:	ASMFC FMP	November 1999
	Addendum I	February 2006
	Addendum II	October 2008
	Addendum III	August 2013
	Addendum IV	October 2014
	Addendum V	August 2018
	Addendum VI	May 2024
	Addendum VII	May 2024
Comprehensive Review:	2023	

American Eel is managed under the Atlantic States Marine Fisheries Commission (ASMFC) Interstate Fishery Management Plan (FMP) for American Eel. The FMP was approved in 1999 (ASMFC 2000) and implements management measures to protect the American Eel resource to ensure ecological stability while providing for sustainable fisheries. The FMP required all states and jurisdictions to implement an annual young-of-year (YOY) abundance survey to monitor annual recruitment of each year's cohort. In addition, the FMP required a minimum recreational size, a possession limit and a state license for recreational fishermen 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.

Addendum I, approved in November 2006, required states to establish a mandatory trip-level catch and effort monitoring program, including documentation of the amount of gear fished and soak time (ASMFC 2006). Addendum II, approved in October 2008, placed increased emphasis on improving the upstream and downstream passage of American Eel (ASMFC 2008). No new management measures were implemented by Addendum II.

Addendum III was approved for management use in August 2013, with the goal of reducing mortality on all life stages of American Eel. The Addendum was initiated in response to results of the 2012 Benchmark Stock Assessment, which found the American Eel stock along the US East Coast was depleted. This addendum predominately focused on commercial yellow eel and recreational fishery management measures (ASMFC 2013). Addendum III implemented new size and possession limits as well as new pot mesh size requirements and seasonal gear closures.

Following approval of Addendum III, the ASMFC American Eel Management Board (Board) initiated development of Addendum IV, which was approved in October 2014 (ASMFC 2014). As the second phase of management in response to the 2012 stock assessment, the goal of Addendum IV is to continue to reduce overall mortality and increase overall conservation of American Eel stocks. The addendum addresses concerns and issues in the commercial glass and silver eel fisheries, and domestic eel aquaculture. Addendum IV established a coastwide catch cap and a mechanism for implementation of a state-by-state commercial yellow eel quota if the catch cap is exceeded. Under Addendum IV, the coast wide catch cap was set at 907,671 lb (1998–2010 harvest level, ASMFC 2014). Addendum IV established two management triggers:

- The coastwide catch cap is exceeded by more than 10% in a given year (998,438 lb)
- The coastwide catch cap is exceeded for two consecutive years, regardless of the percent overage.

If either trigger is exceeded, a state-by-state commercial yellow eel quota would be implemented with North Carolina receiving an 11.8% allocation (107,054 lb).

The aquaculture provision in Addendum IV allows states to submit an Aquaculture Plan to allow for limited harvest of glass eels for use in domestic aquaculture facilities. Specifically, states are allowed to request a harvest of up to 200 lb of glass eels provided the state can objectively show the harvest will occur from a watershed that minimally contributes to the spawning stock of American Eel.

In 2017, the 2012 stock assessment was updated with data from 2010–2016, however, neither reference points nor stock status could be determined. The trend analysis and stable low commercial landings support the conclusion that the American Eel population in the assessment range remains depleted (ASMFC 2017).

Addendum V was initiated in response to results of the 2017 stock assessment update and concerns that current management triggers do not account for annual fluctuations in landings. If a management trigger is exceeded, immediate implementation of state-by-state quotas would pose significant administrative challenges (ASMFC 2019). Adopted in January 2019, Addendum V increases the yellow eel coastwide catch cap beginning in 2019 to 916,473 lb due to a correction in the historical harvest; adjusts the method (management trigger) to reduce total landings to the coastwide catch cap when the cap has been exceeded; and removes the implementation of state-by-state allocations if the management trigger is met. The addendum maintains Maine's glass eel quota of 9,688 lb.

Under Addendum V, management action is initiated if the yellow eel coastwide catch cap is exceeded by 10% or more in two consecutive years (10% of the coastwide catch cap = 91,647 lb; coastwide catch cap + 10% = 1,008,120 lb). If management is triggered, only those states accounting for more than 1% of the total yellow eel landings are responsible for adjusting their management measures.

The aquaculture provision in Addendum V allows states to harvest a maximum of 200 lb of glass eels annually for use in domestic aquaculture facilities under an approved Aquaculture Plan. The provision from Addendum IV requiring states to demonstrate harvest would occur in watersheds that minimally contribute to the spawning stock was dropped in Addendum V and replaced with considerations that preferred harvest sites; have established or proposed glass eel monitoring programs, are favorable to law enforcement, and are in watersheds that are prone to relatively high mortality rates.

In December 2015, the DMF submitted an American Eel Aquaculture Plan to the ASMFC requesting approval to harvest up to 200 lb of glass eels from coastal fishing waters which was approved in February 2016 (1 year). A second plan was submitted by DMF in 2016 and approved by ASMFC that allowed for harvest in 2017 (1 year). The third plan submitted by the DMF in 2017 and approved by the ASMFC covered a 2-year period that allowed for harvest in 2018 and 2019. In May 2019, the DMF submitted another 2-year plan but was only approved by ASMFC for one harvest season (November 2019 through March 2020). The DMF has not submitted an American Eel Aquaculture Plan to the ASMFC since 2020.

For an approved aquaculture operation to legally harvest eels less than 9 in, the facility needs to have a Declaratory Ruling from the NC Marine Fisheries Commission (MFC) exempting them from the 9-in minimum size limit to possess, sell or take American Eels. The approved aquaculture operation received Declaratory Rulings (2) that allowed for legally harvested American Eels less than 9 in in length to be cultivated or reared in a facility from: 1) outside of North Carolina and imported into the State, and 2) from Coastal Fishing Waters in the State of North Carolina.

In support of American Eel aquaculture in North Carolina, several legal actions were taken by North Carolina legislatures. Senate Bill 513 (North Carolina Farm Act of 2015; Section 22.(a)) directed the DMF and the North Carolina Wildlife Resources Commission (WRC) to jointly develop a pilot American Eel Aquaculture Plan for the harvest and aquaculture of American Eels. Senate Bill 410 (Marine Aquaculture Development Act; Section 3.1.(c)) allows American Eels to be imported from Virginia or South Carolina for aquaculture purposes, and House Bill 374 (Section 17) allows American Eels to be imported from Maryland for aquaculture purposes. The use of American Eels imported from Maryland, Virginia, or South

Carolina in an aquaculture operation are exempt from the permitting requirements of the Importation of Marine and Estuarine Organisms Rule (15A NCAC 03I .0104).

The ASMFC began work on a benchmark stock assessment in 2020 which was peer-reviewed in late 2022. The stock assessment and peer review report were presented to the Board in February 2023 and accepted for management use in August 2023. The assessment indicated the stock is at lower levels than the previous assessment and near historically low levels due to a combination of historical overfishing, habitat loss, food web alterations, predation, turbine mortality, environmental changes, toxins, contaminants, and disease (ASMFC 2023). The assessment and peer review report recommended reducing fishing mortality on the yellow eel life stage. Similar to previous assessments, a statistical model could not be developed to determine stock status or give management advice. However, the assessment explored several index-based methods and recommended a new tool called I_{TARGET} to provide advice on the coastwide catch cap. I_{TARGET} is an index-based method that needs only catch and abundance index data to provide management advice on coastwide landings. In August 2023, the Board initiated addendum VI to address Maine's commercial glass eel quota and Addendum VII to consider using I_{TARGET} to recommend various yellow eel coastwide catch caps.

In May 2024, the Board adopted Addendum VI which set Maine's annual commercial glass eel fishery quota, starting in the 2025, at 9,688 lb (ASMFC 2024a) and Addendum VII which reduced the coastwide commercial landings cap for yellow eel to 518,281 lb. Addendum VII keeps the coastwide catch cap for yellow eel of 518,281 lb in place for 3 years (2025−2027). After 3 years, prior to the 2028 fishing year, the Board may update the coastwide catch cap with additional years of catch and abundance data, or maintain the same coastwide cap. Under Addendum VII, management action is initiated if the yellow eel coastwide catch cap is exceeded by 10% or more in two consecutive years (10% of the coastwide catch cap = 51,828 lb; coastwide catch cap + 10% = 570,109 lb) (ASMFC 2024b). If management is triggered, only those states accounting for more than 1% of the total yellow eel landings are responsible for adjusting their management measures. In addition to reducing harvest, Addendum VII modified biological sampling requirements of the annual YOY abundance survey by removing the requirement to collect individual lengths and pigment stage of the YOY catch during the surveys.

To ensure compliance with interstate requirements, North Carolina also manages this species under the North Carolina Fishery Management Plan for Interjurisdictional Fisheries (IJ FMP). There are two main goals of the IJ FMP; first is to adopt fishery management plans, consistent with N.C. law, approved by the Mid-Atlantic Fishery Management Council, South Atlantic Fishery Management Council, or the ASMFC by reference. Second, to implement corresponding fishery regulations in North Carolina to provide compliance or compatibility with approved fishery management plans and amendments, now and in the future. The goals of these plans, established under the Magnuson-Stevens Fishery Conservation and Management Act (federal council) and the Atlantic Coastal Fisheries Cooperative Management Act (ASMFC), are similar to the goals of the N.C. Fisheries Reform Act of 1997 to "ensure long-term viability" of these fisheries (NCDMF 2015).

Management Unit

American Eel is managed as a coastwide stock, from Maine through Florida, under the ASMFC Interstate FMP for American Eel (ASMFC 2000). The American Eel's range extends beyond U.S. borders and more specifically ASMFC member states' territorial waters. However, the management unit is limited to ASMFC member states' territorial waters.

Goal and Objectives

The goals of the ASMFC American Eel FMP are to 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 with the aim to provide sustainable commercial, subsistence, and

recreational fisheries by preventing over-harvest of any eel life stage. The following objectives will be used to achieve this goal:

- 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 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 eels at the various life stages necessary to provide adequate forage for natural predators to support ecosystem health and food chain structure.

DESCRIPTION OF THE STOCK

Biological Profile

The American Eel (*Anguilla rostrata*) is a catadromous species meaning they are born in saltwater, then migrate into freshwater as juveniles where they grow into adults before migrating back to the ocean to spawn. All American Eel comprise one panmictic population meaning they are a single breeding population that exhibits random mating. For example, an American Eel from the northern portion of the range could mate with an American Eel from the southern portion of the range, and their offspring could inhabit any portion of the range. As a result, recruits to a particular system are likely not the offspring of the adults that migrated out of that system (ASMFC 2000).

American Eels require multiple habitats including the ocean, estuaries, freshwater streams, rivers and lakes. While American Eels spend most their life in brackish and freshwater systems from South America to Canada, spawning occurs in the Sargasso Sea (a large portion of the western Atlantic Ocean south of Bermuda and east of the Bahamas; Facey and Van den Avyle 1987). Larvae develop at sea and change from glass eels (transparent post-larval stage) into elvers (pigmented young eels) in nearshore ocean waters and estuaries (ASMFC 2000). Elvers either remain in the estuary or migrate upstream. At approximately 2 years of age, they change to the yellow eel stage and resemble the adult form (Ogden 1970). Individuals can remain in the yellow phase for 5 to 20 years. In the yellow phase, American Eels are nocturnal, feeding at night on a variety of invertebrates and smaller fish, but will also eat dead animal matter.

American Eels live in a variety of habitats but prefer areas where they can hide with soft bottom and vegetation. Females can grow to 5 ft in length, and males usually reach about 3 ft (ASMFC 2000). The mature silver eel life stage occurs at the time of downstream migration when individuals leave the estuaries to spawn and die in the Sargasso Sea (Facey and Van den Avyle 1987). This spawning migration occurs annually in the late summer and fall. Information about abundance and status at all life stages, as well as habitat requirements, is very limited. The life history of the species, such as late age of maturity and a tendency for certain life stages to aggregate, can make this species particularly vulnerable to overharvest.

Stock Status

The 2023 benchmark stock assessment found the American Eel population remains depleted in U.S. waters (ASMFC 2023). No overfishing status determination can be made based on the analyses performed.

Stock Assessment

Since completion of the first American Eel stock assessment in 2005, available data have not allowed overfishing or overfished determinations to be made. In 2020, a benchmark stock assessment began for

American Eel and was completed in 2023. All potential data sources were reviewed, and the terminal year of the assessment was 2019 for fishery-independent surveys and 2020 for commercial datasets. The 2023 assessment explored additional approaches for assessing American Eel that were suggested in past stock assessments including a delay-difference model, traffic light analysis and surplus production models, and developing an egg-per-recruit model, but overfished and overfishing determinations still could not be made due to data limitations. However, many of the analyses explored in this benchmark assessment indicate decreasing yellow eel population trends. Unlike previous assessments, the 2023 assessment and peer review identified an index-based tool (I_{TARGET}) to provide management advice without requiring an assessment model. An update to the 2023 stock assessment is scheduled for 2027.

DESCRIPTION OF THE FISHERY

Current Regulations

Management measures for yellow eels went into effect on January 1, 2014, under North Carolina Marine Fisheries Commission (MFC) Rule 15A NCAC 03M .0510. These measures included a 9-in total length (TL) minimum size limit for both the commercial and recreational fisheries, a 25 eels per person per day bag limit for the recreational fishery, and crew members involved in for-hire employment are allowed to maintain the current 50 eels per day bag limit for bait purposes. The rule also made the possession of American Eels illegal from September 1 through December 31 except when taken by baited pots. NCMFC Rule 15A NCAC 03J .0301 established a ½-by-½-in minimum mesh size requirement for the commercial eel pot fishery. Eel pots with an escape panel consisting of a 1-by-½-in mesh are allowed until January 1, 2017. In June 2021, the NCWRC modified Rule 15A NCAC 10C .0401 to allow eels greater than 9 in in length and with a minimum body depth greater than ½ in to be cut for use as bait in Inland Fishing Waters.

Commercial Fishery

Average commercial landings over a 10-year period from 2015 through 2024 was 16,564 lb and in 2025, commercial landings were 1,072 lb (Table 1). Commercial landings have fluctuated since 1974 with a peak in 1980 followed by significant declines beginning in the late 1980s (Figure 1). In 1979 and 1980, over 900,000 lb were landed, however, since the late 1980s landings have averaged less than 100,000 lb and in 2025 landings were the lowest recorded in the time-series.

Table 1. Commercial landings of American Eel in North Carolina, 1974–2025.

Year	Weight Landed (lb)	Year	Weight Landed (lb)
1974	451,956	2000	127,099
1975	237,684	2001	107,070
1976	510,083	2002	59,940
1977	258,296	2003	172,065
1978	695,605	2004	128,875
1979	954,534	2005	49,278
1980	960,196	2006	33,581
1981	436,007	2007	37,937
1982	475,524	2008	23,833
1983	404,157	2009	65,481
1984	706,298	2010	122,104
1985	224,263	2011	61,960
1986	338,377	2012	64,110
1987	127,964	2013	33,980
1988	57,369	2014	60,755
1989	152,565	2015	57,791
1990	56,494	2016	39,911
1991	12,082	2017	24,753
1992	17,739	2018	18,058
1993	32,711	2019	9,139
1994	95,991	2020	3,291
1995	173,698	2021	5,505
1996	141,592	2022	3,602
1997	128,668	2023	1,109
1998	91,084	2024	2,477
1999	99,939	2025	1,072
		Mean	176,070

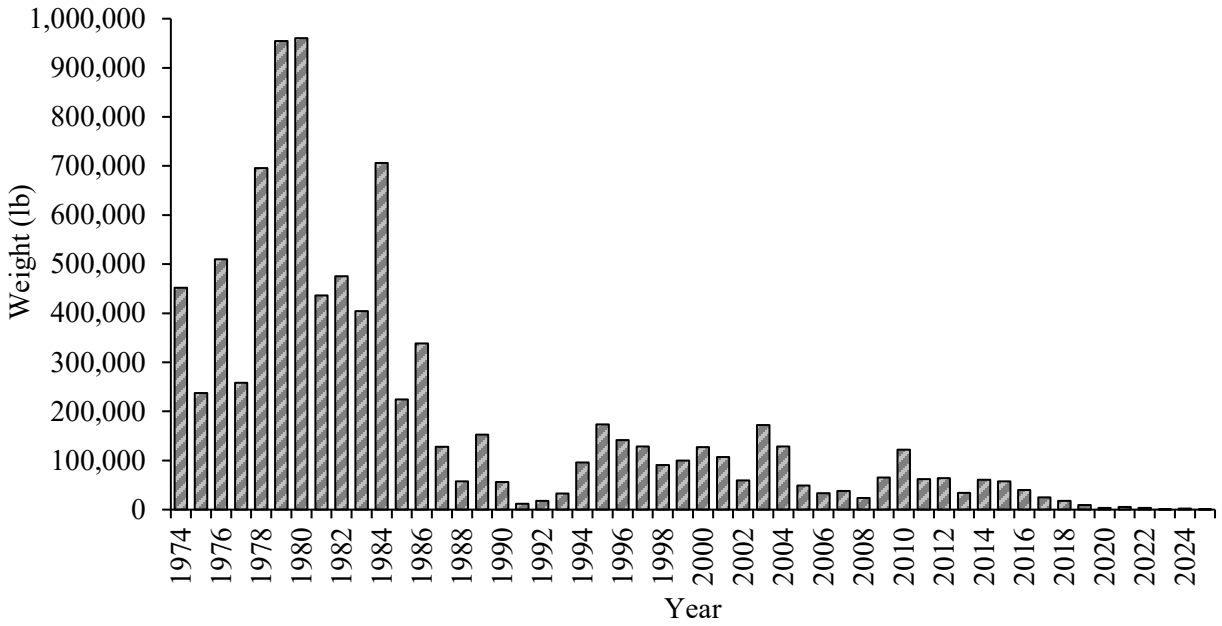

Figure 1. American Eel commercial landings reported through the North Carolina Trip Ticket Program, 1974–2025.

Recreational Fishery

There are no recreational landings data available for American Eels, which are not typically a recreationally targeted species. Since American Eels are caught incidentally in the estuarine environment by recreational fishermen using hook and line, the Marine Recreational Information Program (MRIP) does not provide reliable harvest data. Also, the MRIP survey design does not provide information on the recreational harvest of American Eel in inland waters. American Eels are popular bait for many important recreational fisheries such as Striped Bass and Cobia.

MONITORING PROGRAM DATA

Fishery-Dependent Monitoring

To comply with Addendum I to the American Eel Fisheries Management Plan, the DMF initiated (January 2007) mandatory reporting of harvest and effort information for American Eels harvested by commercial eel pots, including eel pot soak time and number of eel pots fished. Commercial fishermen are required to participate in a monthly logbook program designed to monitor the harvest of American Eels by eel pots. Soak time and number of eel pots fished are not reported on trip tickets.

Fishery-Independent Monitoring

The National Oceanic and Atmospheric Administration (NOAA) conducts the Beaufort Bridgenet Ichthyoplankton Sampling Program (BBISP), an ichthyoplankton survey at Beaufort Inlet, which is used to develop a North Carolina young-of-year relative abundance index for American Eel. The BBISP samples once-weekly at night during floodtide from a fixed platform on Pivers Island Bridge, Beaufort, NC during October–May. Larvae are collected using a 2-m^2 plankton net fitted with a flow meter. Four replicate sets (tows) are made, with each filtering about 100 m^3. Between 1987 and 2023, relative abundance of American Eel (glass eel) has fluctuated from a low in 1991 to a high in 2005, with a 35-year time series average of 0.012 eels per cubic meter (Figure 2). In 2023, American Eel relative abundance (0.007 eels per cubic meter) remained below the time-series average for the third year. BBISP sampling continues to occur; however, currently there is 1 year backlog since the 2024 samples have not been processed.

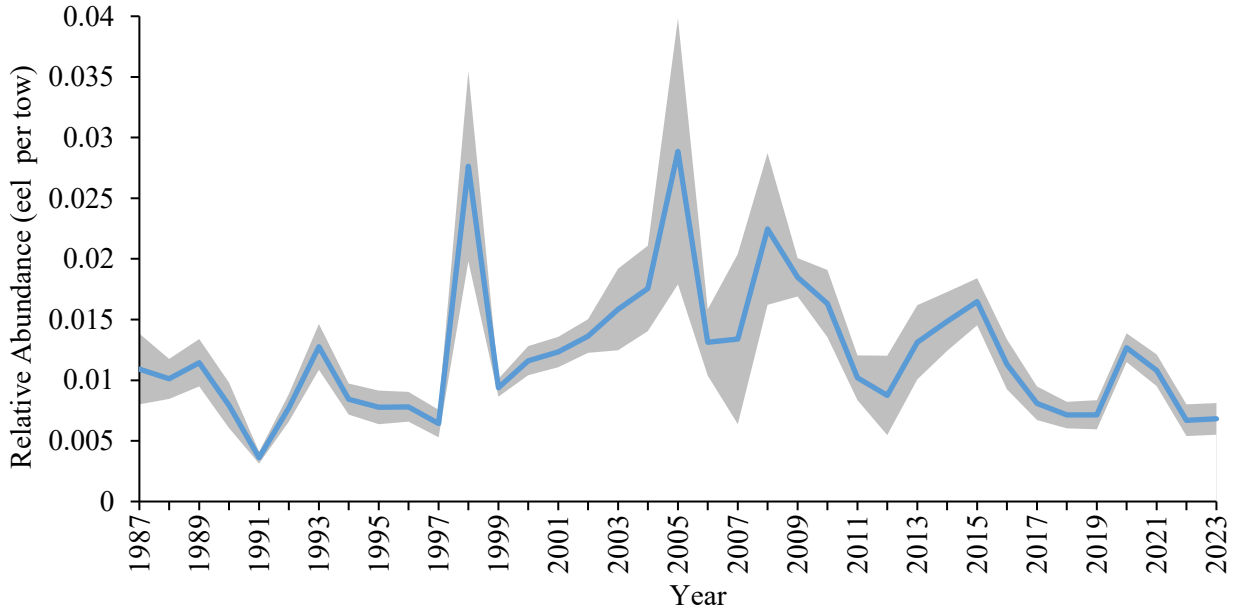

Figure 2. Relative abundance index (larval fish) of American Eel collected from the BBISP, 1987–2023. Error bars represent ±1 SE.

Lengths of American Eels captured in the BBISP from 2001 to 2023 (N = 702) ranged from 41 to 153 mm (1.6 to 6.0 in; Figure 3) and averaged 52 mm TL (2.0 in; note: the 60+ mm category includes pooled fish lengths of 62, 91, and 153 mm). The BBISP continued their long-term sampling program in 2020 (January to March); however, no samples were collected in April and May, or in November and December due to COVID-19 restrictions.

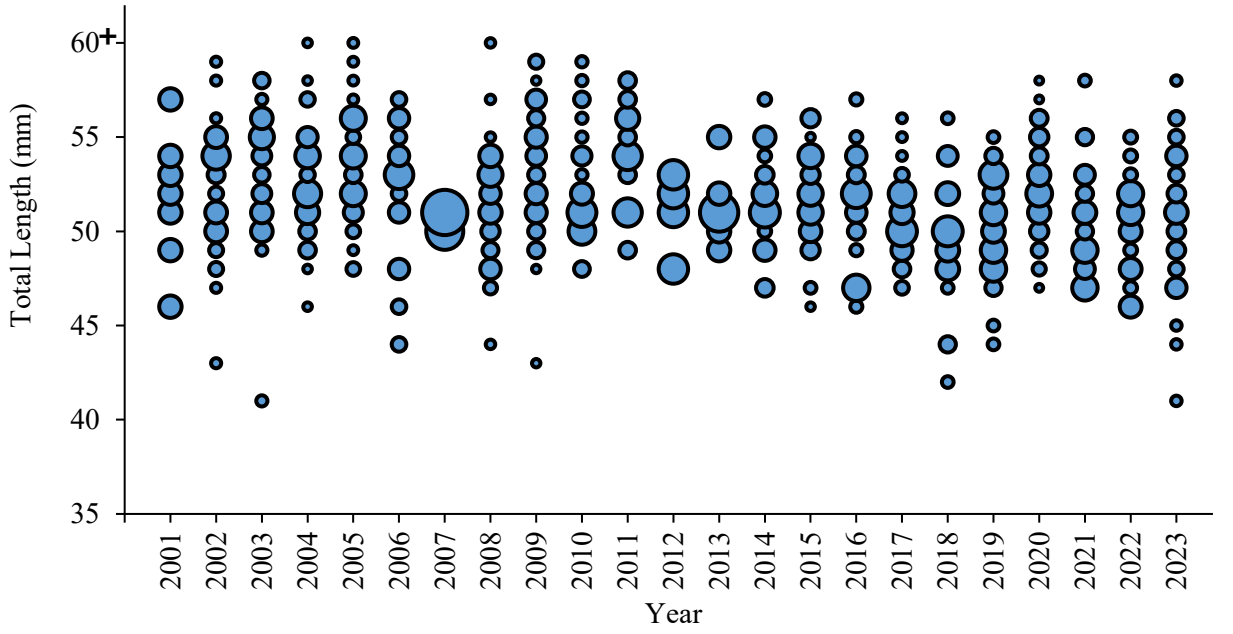

Figure 3. Length frequency of American Eel collected in the BBISP, 2001–2023. Bubbles represent fish at length and the bubble size is proportional to the number of fish at that length (Note: the 60+ category includes four fish; 61, 62, 91, and 153 mm).

The North Carolina Division of Marine Fisheries (DMF) has no fishery-independent monitoring programs specifically for American Eel; however, the North Carolina Estuarine Trawl Survey (Program 120) collects information on American Eels caught incidentally. American Eel catch data from Program 120 were used in the 2012 benchmark stock assessment; however, it was not included in the 2023 benchmark stock assessment. From 1973 to 2025, relative abundance has fluctuated from lows in 1973, 2000, 2020, and 2023 to a peak in 2011, and a 53-year average of 0.13 American Eels per tow (Figure 4). Due to COVID restrictions all 2020 sampling was conducted in June. In 2025, 0.08 eels per tow were captured in the survey (Figure 4).

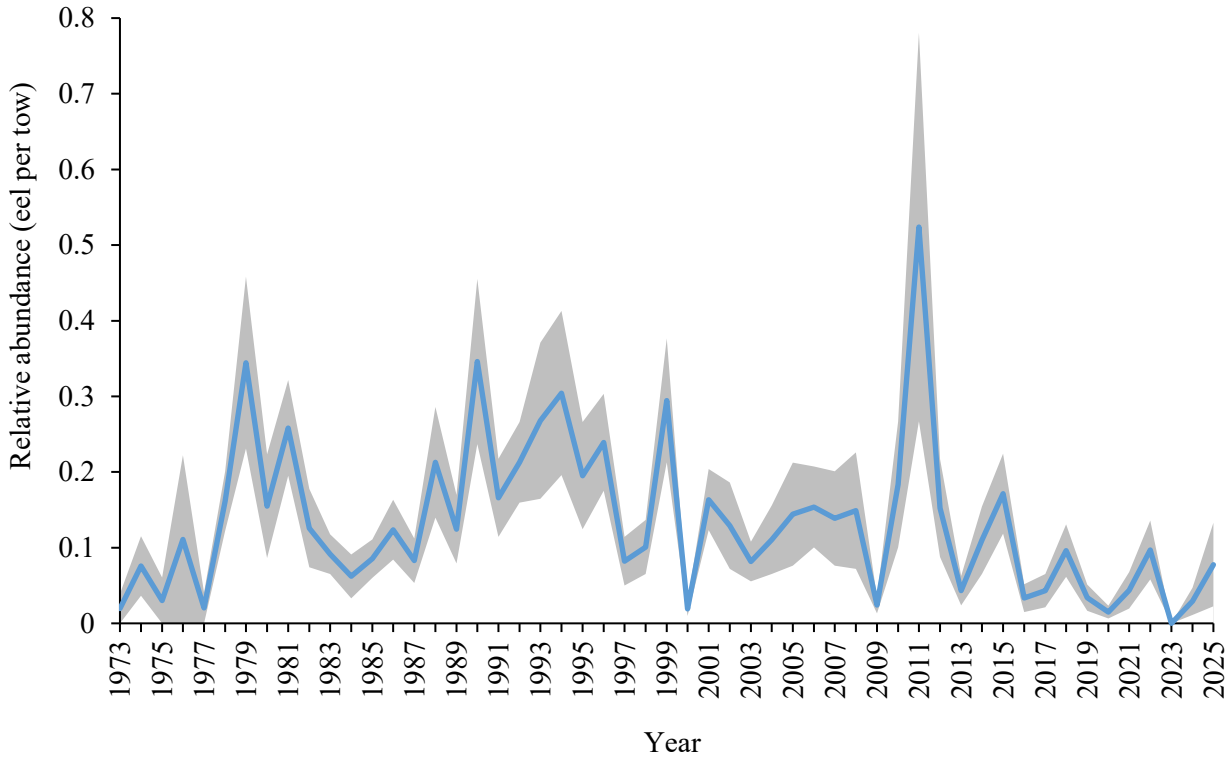

Figure 4. Relative abundance index of American Eel collected from the North Carolina Estuarine Trawl Survey (Program 120) from 1973–2025. Error bars represent ±1 SE.

RESEARCH NEEDS

Coastwide specific research recommendations have been identified through the ASMFC FMP and stock assessment process. Priority research recommendations are reported below, additional research recommendations from the 2023 benchmark stock assessment can be found online (ASMFC 2023 America Eel benchmark stock assessment) and are broken down into future research and data collection and assessment methodology. Research recommendations from ASMFC 2012 and ASMFC 2017 remain important, but the following list is specific to what the SAS thinks could improve the next stock assessment. The SAS recommends an update be considered in 5 years and a new benchmark be considered in 10 years.

Future Research and Data Collection

- Improve upstream and downstream passage for all life stages of American Eels.
- Continue to improve the accuracy of commercial catch and effort data through ACCSP and state partners.

- Characterize the length, weight, age, and sex structure of commercially harvested American Eels along the Atlantic Coast over time.
- Research coastwide prevalence of the swim bladder parasite *Anguillacolla crassus* and its effects on the American Eel's growth and maturation, migration to the Sargasso Sea, and spawning potential.
- Quantify recreational removals in marine and freshwater habitats and characterize length, weight, and sex structure.

MANAGEMENT

The provisions of Addendum VII are effective January 1, 2025. Starting January 1, the yellow eel coastwide cap is 518,281 lb and the management trigger is two consecutive years exceeding the coastwide cap by 10% (570,109 lb). The management trigger has never been tripped. If the management trigger is exceeded, only those states accounting for more than 1% (5,182 lb) of the total yellow eel landings will be responsible for adjusting their measures. In 2025, the commercial landings in North Carolina were 1,072 lb (0.21 % of the coastwide cap), therefore if the coastwide management trigger was exceeded, North Carolina would not be required to work with other states to adjust harvest.

The ASMFC adopted Addendum IV in 2014 that contained a provision allowing states to submit an Aquaculture Plan allowing for the limited harvest of glass eels for use in domestic aquaculture facilities. Specifically, states are allowed to request harvest of up to 200 lb of glass eels under an Aquaculture Plan. The DMF submitted an American Eel Aquaculture Plan to ASMFC requesting approval to harvest up to 200 lb of glass eels from coastal fishing waters in 2015, 2016, 2017 and 2019. The DMF did not submit an American Eel Aquaculture Plan to the ASMFC in 2025 and does not have an active glass eel fishery.

LITERATURE CITED

ASMFC (Atlantic States Marine Fisheries Commission). 2000. Atlantic States Marine Fisheries Commission Interstate Fishery Management Plan for American Eel. Atlantic States Marine Fisheries Commission. Washington, DC. 93 pp.

ASMFC. 2006. Atlantic States Marine Fisheries Commission Addendum I to the Interstate Fishery Management Plan for American Eel. Atlantic States Marine Fisheries Commission. Washington, DC. 8 pp.

ASMFC. 2008. Atlantic States Marine Fisheries Commission Addendum II to the Interstate Fishery Management Plan for American Eel. Atlantic States Marine Fisheries Commission. Washington, DC. 8 pp.

ASMFC. 2012. Stock Assessment Report No. 12-01 of the Atlantic States Marine Fisheries Commission American Eel Benchmark Stock Assessment. Atlantic States Marine Fisheries Commission. Arlington, VA. 342 pp.

ASMFC. 2013. Atlantic States Marine Fisheries Commission Addendum III to the Interstate Fishery Management Plan for American Eel. Atlantic States Marine Fisheries Commission. Arlington, VA. 22 pp.

ASMFC. 2014. Atlantic States Marine Fisheries Commission Addendum IV to the Interstate Fishery Management Plan for American Eel. Atlantic States Marine Fisheries Commission. Arlington, VA. 26 pp.

ASMFC. 2017. Atlantic States Marine Fisheries Commission 2017 American Eel Stock Assessment Update. Atlantic States Marine Fisheries Commission. Arlington, VA. 123 pp.

ASMFC. 2019. Atlantic States Marine Fisheries Commission Addendum V to the Interstate Fishery Management Plan for American Eel. Commercial Yellow and Glass/Elver Eel Allocation and Management. Atlantic States Marine Fisheries Commission. Arlington, VA. 42 pp.

ASMFC. 2023. American Eel Benchmark Stock Assessment and Peer Review Report. ASMFC, Arlington, VA. 320 pp.

ASMFC. 2024a. Atlantic States Marine Fisheries Commission Addendum VI to the Interstate Fishery Management Plan for American Eel. Commercial Glass/Elver Eel Management. Atlantic States Marine Fisheries Commission. Arlington, VA. 12 pp.

ASMFC. 2024b. Atlantic States Marine Fisheries Commission Addendum VII to the Interstate Fishery Management Plan for American Eel. Commercial Yellow eel Management and Monitoring Requirements. Atlantic States Marine Fisheries Commission. Arlington, VA. 13 pp.

Facey, D.E., and M.J. Van den Avyle. 1987. Species profiles: Life histories and environmental requirements of coastal fishes and invertebrates (North Atlantic) – American Eel. U.S.

Fish and Wildlife Service Biological Report No. 82(11.74), and U.S. Army Corps of Engineers Report No. TR EL-82-4, Washington, DC.

NCDMF (North Carolina Division of Marine Fisheries). 2015. Fishery Management Plan for Interjurisdictional Fisheries: Information Update. North Carolina Department of Environmental Quality. North Carolina Division of Marine Fisheries. Morehead City, North Carolina. 85 pp.

NEFSC (Northeast Fisheries Science Center). 2020. Research Track Assessment for Index-Based Methods and Control Rules. Woods Hole, MA. 59 p.

Ogden, J. C. 1970. Relative abundance, food habits, and age of the American Eel, *Anguilla rostrata* (LeSueur), in certain New Jersey streams. Transactions of the American Fisheries Society 99(1):54–59.