

## INTERSTATE FISHERIES MANAGEMENT PROGRAM OVERVIEW

# *American Eel*

### Management Unit

Coastwide (Maine through Florida)

### Stock Status

The 2023 Benchmark Stock Assessment concluded that the stock is depleted, meaning it is at or near historically low levels due to a combination of historical overfishing, habitat loss, food web alterations, predation, turbine mortality, environmental changes, toxins and contaminants, and disease. Based on trend analyses, the stock was also considered depleted in the 2012 and 2017 assessments. The 2023 stock assessment found that the yellow eel population was at lower levels than the previous assessment, and yellow eel harvest should be decreased. No overfishing determination can be made at this time due to the lack of a statistical model or method to estimate biomass, fishing mortality, and biologically-based indicators or reference values.



Despite the landings data and large number of surveys available for use in this assessment, the American eel stock is still considered data-poor. The stock assessment tried several new approaches for American eel that were suggested in past stock assessments including a delay-difference model, traffic light analysis and surplus production models, and an egg-per-recruit model. Numerous trend analysis approaches or tests were included in the report such as a multivariate auto-regressive state-space model, regime shift analysis, power analysis, Mann-Kendall test, and index-based methods. The SAS concluded that until sufficient data are available at an appropriate scale that encompasses the range inhabited by American eels to support more complex model-based assessments, abundance indices and index-based methods are the best tool for guiding management decisions.

In 2019, Canada engaged into two assessment processes; a benchmark research assessment for the Maritimes region and a stock-wide assessment using the same trend analysis applied in the ASMFC 2012 benchmark assessment and 2017 update. The assessment of the Maritimes region was unable to determine stock status due to data deficiencies, while trend analysis of abundance indices in the stock-wide assessment exhibited no significant increasing or decreasing trends, suggesting stable or decreasing populations of American eel.

### Involved States and Jurisdictions

ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, DC, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS

### **Active Boards/Committees**

American Eel Management Board, Plan Review Team, Plan Development Team, Technical Committee, Stock Assessment Subcommittee, Advisory Panel

### **Chairs**

Board, Chair – Phil Edwards (10/2021); Vice-Chair – Kris Kuhn  
Technical Committee, Chair – Dani Carty (8/2023); Vice-Chair – Vacant  
Advisory Panel, Chair – Mary Beth-Delucia (5/2016); Vice-Chair – Vacant  
Stock Assessment Subcommittee, Chair – Sheila Eyler

### **Staff Leads**

Caitlin Starks, [cstarks@asmfc.org](mailto:cstarks@asmfc.org)

### **Management Plan History**

#### **[American Eel Interstate Fishery Management Plan \(November 1999\)](#)**

The abundance of American eel declined from the historic levels, but remained relatively stable until the 1970s. More recently, fishermen, resource managers, and scientists postulated a further decline in abundance from harvest and assessment data. This resulted in the development of an FMP for American eel in order to protect and restore the species. The goal of the FMP is to conserve and protect the American eel resource to ensure its continued role in its ecosystems while providing the opportunity for its commercial, recreational, scientific, and educational use. The primary objectives of the FMP include: (1) improve knowledge of eel harvest at all life stages; (2) increase understanding of factors affecting eel population dynamics and life history; (3) protect and enhance American eel abundance in all watersheds where eel now occur; (4) restore American eel to those waters where they had historical abundance and allow adequate escapement to the ocean for pre-spawning adult eel; and (5) investigate the abundance level of eel as necessary to provide adequate forage for natural predators and support ecosystem health and food chain structure.

#### **[Addendum I \(February 2006\)](#)**

Addendum I requires that states implement a license or permit with licensing and permitting requirements including the reporting of harvest and effort data. State implementation plans were due to ASMFC by May 1, 2006 with an implementation deadline of January 1, 2007. The American Eel Technical Committee reviewed the implementation plans and provided feedback to the Management Board.

#### **[Addendum II \(October 2008\)](#)**

The Commission recognizes that many factors influence the American eel population, including harvest, barriers to migration, habitat loss, and natural climatic variation. The Commission's authority, through its member states, is limited to controlling commercial and recreational fishing activity; however, to further promote the rebuilding of the American eel population, the Commission strongly encourages in Addendum II that member states and jurisdictions, as well as the U.S. Fish and Wildlife Service, consider and mitigate, if possible, other factors that limit

eel survival. Specifically, the Commission requests that member states and jurisdictions request special consideration for American eel in the Federal Energy Regulatory Commission (FERC) relicensing process. This consideration should include, but not be limited to, improving upstream passage and downstream passage, and collecting data on both means of passage. Additionally, states should strive to remove obstructions, where feasible, on those dams not licensed by the federal government. If removal is not feasible, then upstream and downstream passage should be improved to provide access to inland waters for glass eel, elvers, and yellow eel and adequate escapement to the ocean for pre-spawning adult eel consistent with the goal of the FMP.

#### [Addendum III \(August 2013\)](#)

Developed in response to the findings of the 2012 stock assessment, Addendum III's goal is to reduce mortality and increase conservation of American eel stocks across all life stages. The Addendum establishes new management measures for both the commercial (glass, yellow, and silver) and recreational eel fisheries, as well as implements fishery independent and fishery dependent monitoring requirements. Given the wide range of public input received during the development of Addendum III, some of the proposed management options originally considered in the public comment draft of Addendum III were transferred to Draft Addendum IV for further development.

#### [Addendum IV \(October 2014\)](#)

Addendum IV establishes a 907,671 pound coastwide quota for yellow eel fisheries, reduces Maine's glass eel quota to 9,688 pounds (2014 landings), where it has since remained (through 2018), and allows for the continuation of New York's silver eel weir fishery in the Delaware River.

For yellow eel fisheries, the coastwide quota was implemented for the 2015 fishing year but did not initially include state-specific allocations. Instead, the Addendum establishes two management triggers: (1) exceeding coastwide quota by more than 10% in a given year, or (2) exceeding the coastwide quota for two consecutive years regardless of the percent overage. If either one of the triggers are met then states would implement state-specific allocation based on average landings from 2011-2013.

Maine will continue to maintain daily trip level reporting and require a pound-for-pound payback in the event of quota overages in its glass eel fishery. Additionally, the state will implement a fishery-independent life cycle survey covering glass, yellow and silver eels within at least one river system. The Addendum specifies that these requirements would also be required for any jurisdiction with a commercial glass eel fishery harvesting more than 750 pounds.

Addendum IV provides states/jurisdictions the ability to request limited participation in the glass eel fishery based on conservation programs enacted after January 1, 2011, and given there is an overall benefit to American eel populations. Examples of conservation programs

include, but are not limited to, habitat restoration projects, fish passage improvements, or fish passage construction. The Addendum also provides opportunities for a limited glass eel harvest for domestic aquaculture purposes and allows the continuation of New York's Delaware River silver eel weir fishery under a transferable license cap, limited to nine permits annually.

#### Addendum V (August 2018)

Addendum V increased the yellow eel coastwide cap starting in 2019 to 916,473 pounds. This modest increase in the cap (less than 1%) reflects a correction in the historical harvest. Further, the Addendum adjusted the method (management trigger) to reduce total landings to the coastwide cap when the cap has been exceeded and removes the implementation of state-by-state allocations if the management trigger is met. If the management trigger is met, only those states accounting for more than 1% of the total yellow eel landings will be responsible for adjusting their measures. The Addendum was revised in October 2019 to include an appendix outlining the process for addressing overages of the coastwide cap. Lastly, the Addendum slightly modified the glass eel aquaculture provisions, maintaining the 200 pound limit for glass eel harvest but modifying the criteria for evaluating the proposed harvest area's contribution to the overall population.

#### **Pending Management Actions**

In August 2023, after accepting the Benchmark Stock Assessment and Peer Review for management use, the Board initiated an addendum to consider changes to the coastwide yellow eel harvest cap. Historically, the coastwide cap of 916,473 pounds was set based on the average landings from 1998 to 2010. The benchmark assessment proposes to use a new tool (*ITARGET*) for setting the coastwide cap based on abundance indices and catch. The addendum will consider using this tool to recommend a range of coastwide caps and management options.

The Board also initiated an addendum to address Maine's commercial glass eel quota. Maine's glass eel quota of 9,688 pounds was established under Addendum IV, and can only be extended through 2024. A new addendum is needed to establish a glass eel quota for Maine for 2025 and beyond.

#### ASMFC-GLFC MOU

From 2007 to 2009, representatives from the Commission and Great Lakes Fishery Commission (GLFC) discussed the potential of developing a single body for management for American Eel. This body would include representatives from GLFC, ASMFC, Canada DFO, Canadian provinces, USFWS and NMFS. John Dettmers is the contact at GLFC. A Memorandum of Understandings (MOU) was developed to seek a coordinated ecosystem approach to bi-national management of American eel throughout its North American range. Initial management activities listed in the MOU focus on reducing mortality, as well as improving access to suitable habitat. While ASMFC finalized and signed the MOU, Canada DFO did not. In 2014, ASMFC began efforts to work collaboratively with Canada DFO and GLFC on eel assessments, habitat and management.

## **Annual Events**

- Annual compliance reports are due September 1. The PRT reviews the compliance reports and prepares the FMP Review and PRT Report (via conference call and email). The Coordinator presents the annual reports to the Management Board at its next meeting.
- The TC meets in the June/July to review aquaculture proposals.
- The Coordinator conducts a conference call with AP members to obtain comment on proposed management changes. A meeting is scheduled for the AP, staff and SASC Chair when an assessment is complete. The Coordinator sends the AP an update after each Management Board meeting.

## **Other Items of Interest**

- A petition to list American Eel on the Endangered Species List was submitted by the Council for Endangered Species Act Reliability in April 2010. USFWS reviewed the petition and found that it contained enough information that a listing may be warranted, but found that listing was not warranted. The USFWS first considered the American eel for listing under the Endangered Species Act in 2007. It was determined that listing was not warranted at that time either. This was revisited in 2015, when it was determined that listing was not warranted once again.
- The Convention on International Trade in Endangered Species (CITES) held their Conference of the Parties (CoP) to CITES in Johannesburg, South Africa in late September through early October 2016. This was the 17<sup>th</sup> meeting of the CoP (known as CoP17). At CoP17, discussions were had focused on seeking to collect more biological data and data from the international markets to better conserve *Anguilla* species.
- ASMFC Publications:
  - Proceedings of the Workshop on Aging and Sexing American Eel (December 2001)
  - Young-of-the-Year Sampling Protocol (February 2000)
- ASMFC hosted a workshop on sampling of glass eel in 2006 and a Fish Passage Workshop in 2011.
- The Board extended Maine's Glass Eel Quota of 9,688 pounds for 2022-2024 in October 2021.