

# Conservation and Management of the American Eel (*Anguilla rostrata*) by the United States Atlantic Coastal States

Atlantic Marine Fisheries Commission (ASMFC)

## I. High Level Overview of the Commission's<sup>1</sup> and State Management

### A. Legal Framework and Authorities

1. American eel is managed by the Commission through its American Eel Management Board. This Board is made up of each state and jurisdiction on the Atlantic Coast as well as the two federal partners (the [National Oceanic and Atmospheric Administration-Fisheries](#) and the [US Fish and Wildlife Service](#)). Each state and jurisdiction along the Atlantic coast is required to implement all the measures in the American Eel Fishery Management Plan (FMP).



Photo © Brian Gratwicke

2. The goal of the FMP is to conserve and protect the American eel resource to ensure its continued role in the ecosystems while providing the opportunity for its commercial, recreational, scientific, and educational use.

The Atlantic Coastal Fisheries Cooperative Management Act is the authorizing statute that guides the Commission's fisheries management process. It specifies all states included in an FMP must implement the required provisions of the FMP to ensure the conservation of the species, as well as sharing in the resource's management responsibilities. If a state fails to implement the required provisions of the FMP, the Act establishes a "non-compliance process" whereby the Commission has the ability to forward a noncompliance finding to the Secretaries of Commerce and the Interior for action. If the Secretaries concur with the Commission's finding, the Secretaries are authorized to implement a moratorium for the state's fishery in both state and federal waters, meaning no harvest.

Outside of the Atlantic Coast of the United States it is not common to find American eel, therefore there is minimal harvest of American eel (occasional recreational harvest of yellow eel).

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<sup>1</sup> Reference to the "Commission" or "ASMFC" is the Atlantic States Marine Fisheries Commission.

## B. Biological and Management Specialists/Competency

### 1. States biologists, ASMFC stock assessment scientists

- a) Stock assessments and technical committees are staffed by state, federal and academic scientists. These individuals are experts in eel biology/science stock assessment methods (often hold masters and PhD level degrees). These individuals are independent from the fishery. Stock assessments committees conduct the stock assessment and technical committees develop management options in response to the status of the eel resource for the management board to consider. Commission stock assessments are peer reviewed by independent scientists. The peer review provides independent and expert judgment on the value and appropriateness of the science and methods that produced the assessment; provides recommendations for future research and improvements of future assessments; evaluates all input parameters and biological characteristics incorporated into the stock assessment model; evaluates stock assessment methods; and evaluates the status of a stock relative to current fishery management plan goals.



Photo © Kari Fenske, University of Maryland

- b) Stock assessments for eel generally occur every 5 years.

## C. Policy-level Reviews and Approval

1. Each year states submit compliance reports which are reviewed by a committee to ensure state compliance with the measures in the FMP including catch and biological monitoring, as well as management measures. Any inconsistencies with the FMP requirements are presented to the management board to resolve the inconsistency in a timely manner. If inconsistencies cannot be resolved, the non-compliance process described above (section I.A.) can resolve them. The most recent review can be found [here](#).

2. Any changes to the management of the fishery are made via the American Eel Management Board. Changes to management are typically in response to a species resource issue, and go through a vigorous scientific, enforcement and stakeholder review. For example, if the stock assessment results suggest a need to reduce harvest to improve the resource health the Eel Board can initiate a change in the FMP to reduce the coastwide quota.

#### **D. Collaboration in Management, Monitoring, and Research (State, Federal, ASMFC, Canada)**

1. The Eel FMP contains descriptions of the Management Board and committees for American eel: <http://www.asmfc.org/uploads/file/amEelFMP.pdf> (pgs 57-58)
2. Assessments are developed using a broad suite of fishery-independent surveys and fishery-dependent monitoring, as well as research products developed by a vast network of fisheries scientists at state, federal, and academic institutions along the Atlantic coast.
3. State and federal law enforcement agencies regularly work closely to enforce U.S. eel regulations to ensure compliance. While violations are uncommon due to strict enforcement and significant penalties, [multi-agency operations](#) have successfully caught and sentenced individuals violating U.S. regulations.

## **II. High Level Overview of American Eel Fishery**

### **A. Recreational Fishery**

1. Recreational harvest has been on the decline since its peak in 1985 at 160,000 eels. Harvest was last estimated to be around 6,000 eels in 2009 (the last year the Marine Recreational Information Program collected recreational data on American eel).
2. The Commission requires a maximum recreational possession limit of 25 eel/person/day, with the option to allow an exception of 50 eel/person/day for party/charter employees for bait purposes.
3. The recreational minimum size limit for eel is 9 inches.

### **B. Commercial Fishery**

1. Glass Eel
  - a) Harvest of the glass eel and elver life stage along the Atlantic coast is prohibited in all states except Maine and South Carolina.
  - b) The Maine glass eel fishery is restricted to a quota of 9,688 pounds. The state has never exceeded its quota since it was put in place in 2016.
  - c) More information on the Maine fishery is found in Addendum VI: [http://www.asmfc.org/uploads/file/66858845AmEelAddVI\\_GlassEelQuota\\_May2024.pdf](http://www.asmfc.org/uploads/file/66858845AmEelAddVI_GlassEelQuota_May2024.pdf)

- d) The South Carolina fishery is small; annual landings do not exceed 750 pounds.

## 2. Yellow Eel

- a) The commercial yellow eel fishery is managed with a coastwide harvest cap to control fishing mortality. Starting in 2025 the cap was reduced to 518,281 pounds.
- b) Yellow eel fisheries exist in all Atlantic coast states and jurisdictions with the exception of Pennsylvania and the District of Columbia.



Photo © Chris Bowser, NYSDEC

- c) American eels at this stage are harvested mostly for domestic bait, but also food and export markets.
- d) The FMP requires a commercial minimum size limit of 9 inches, and a ½-by-½ minimum mesh size in commercial yellow eel pots.
- e) Coastwide landings since 2020 have remained below 330,000 pounds.
- f) State-by-state descriptions of yellow eel fisheries are found in Addendum VII to the American Eel FMP:  
[http://www.asmfc.org/uploads/file/6644c67bAmEelAddendumVII\\_May2024.pdf](http://www.asmfc.org/uploads/file/6644c67bAmEelAddendumVII_May2024.pdf)

### III. Sustainability

#### A. Methods of Monitoring Catch

- 1. Licensing and reporting
  - a) States are required to institute licensing and reporting mechanisms to ensure that annual effort (including total units of gear deployed) and landings information by life stage (glass eel/elver, yellow eel, and silver eel) are provided by harvesters and/or dealers.
  - b) Permits are to be issued with a requirement to report eel catch and effort on a trip-level basis. Completion of reporting is a condition of permit renewal. Reports must include soak time (how long the pot is in the water), number of units of gear fished, and pounds landed by life stage.

- c) Maine's glass eel fishery is managed under a total allowable catch, which is spread amongst state license holders through individual quotas. Catch is closely monitored using a transaction tracking system to ensure quotas are not exceeded. This system electronically tracks every transaction of eels (harvester to dealer, dealer to dealer, and exports) using an Near Field



Communication (NFC) token or Quick Response (QR) code.

Photo © ME DMR

Dealers are required to submit transaction reports daily, including negative reports.

## 2. Enforcement

- a) States are responsible for implementing and enforcing the requirements of the FMP. States have fines or penalties for violations including poaching, illegal possession of eel smaller than the minimum size, and illegal gear.
- b) Maine's transaction tracking system allows for close monitoring of the fishery. This system tracks every dealer purchase of elvers from a harvester, and sale from a dealer to another dealer. Dealers must be able to fully account for the amount of glass eels in their possession at a given location using the transaction system. Harvesters, dealers, and aquaculture facilities may have random inspection conducted of the facility and places of harvest to ensure all rules and regulations under conditions of permit(s) are being adhered to.
- c) Maine implemented a system to monitor glass eel exports (any transport of eel out of the state) in 2019. Under this program, an elver export license holder must notify the Maine Marine Patrol of their intention to prepare a shipment of elvers for export 48 hours in advance. The elver export license holder must make arrangements for Maine Marine Patrol to be present when they are preparing the elvers for shipment, including the weighing and packing of the elvers for export. Upon completion of the packaging, Maine Marine Patrol seal the shipment of elvers and mark the package of elvers with the weight of elvers contained. The absence of a seal, a broken seal, or the absence of the weight marked on the package are prima facie evidence that the elvers are illegal and subject to seizure. Maine Marine Patrol are required to provide their NFC token to complete an export transaction.

3. Methods of monitoring and ensuring/enforcing sustainability
  - a) Catch and effort monitoring is required for all states. Reports must include soak time, number of units of gear fished, and pounds landed by life stage.
  - b) States/jurisdictions are required to conduct annual fishery-independent surveys for young-of-year American eel to assess variation in annual recruitment to the population.

- c) As a condition of the commercial glass eel fishery, Maine is required to perform a fishery-independent life cycle survey covering glass/elver, yellow, and silver eels within at least one river system.



Photo © ME DMR

- d) Each state/jurisdiction is required to submit an annual report to the Commission detailing that state's regulations, catch, harvest, bycatch, fishery dependent and independent surveys, and characterization of other losses for American eel. The Commission annually reviews state compliance reports to ensure all requirements of the FMP are met and monitor sustainability of the coastwide population.

#### **IV. Long-term Management**

##### **A. Commission Planning and Management Cycle**

1. The coastwide landings cap for yellow eel of 518,281 pounds remains in place for three years (2025-2027). After three years, prior to the 2028 fishing year, the Board may update the coastwide cap with additional years of catch and abundance data, or maintain the same coastwide cap.
2. The 9,688-pound quota for Maine's glass eel fishery is established for three years (2025-2027). If no change to Maine's quota is desired, the Board may extend the quota for up to three years at a time via Board action.
3. The Management Board annually reviews the Fishery Management Plan and determines if management changes are warranted.

## **B. Depth, Schedule, Scope of Ongoing Assessments**

1. Benchmark stock assessments are completed on an approximately 10-year cycle. Assessment updates, which add additional years of data into the peer-reviewed analyses from the benchmark assessment are completed every 5 years, between benchmark assessments.
2. A benchmark stock assessment for American eel was completed and underwent an independent external peer review in 2023. The Peer Review Panel endorsed the assessment as the best available science for evaluating the American eel stock on the Atlantic coast. More details can be found in the [full assessment document](#) or the brief [overview of the assessment](#).
3. A stock assessment update is scheduled for 2028.



# Understanding CITES

## *CITES Appendix II Supports Sustainable Use*

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) entered into force in 1975. It is the only global treaty to ensure that international trade in plants and animals does not threaten the survival of the species. It provides a framework for cooperation and collaboration among nations to prevent decline in wild populations of animals and plants. Currently 184 countries (called Parties), including the United States, implement CITES.

### The CITES Appendices

Cacti, iguanas, and parrots represent some of the 40,900 species protected by CITES. Species protected under CITES are listed in one of three appendices.

- Appendix I includes species threatened with extinction and provides the greatest level of protection, including restrictions on commercial trade. Examples include tigers, African grey parrots, gorillas, and sea turtles.
- Appendix II includes species that, although currently not threatened with extinction, may become so

without trade controls. It also includes species that resemble other listed species and need to be regulated in order to effectively control the trade in those other listed species. Most CITES species are listed in this appendix, including American ginseng, paddlefish, lions, many freshwater turtles, American alligators and mahogany.

- Appendix III includes species for which a range country has asked other Parties to help in controlling international trade. Examples include the walrus and hellbenders.

### CITES Appendix II is:

- **NOT** a list of species in which international trade is prohibited. CITES Appendix-II species may be traded internationally if accompanied by appropriate permits.
- **NOT** a list of endangered species. CITES helps support natural resource management programs in range countries to prevent endangerment.

**NOT** a ban or boycott of trade. CITES helps regulate and monitor trade for species vulnerable to overuse, and implements measures to attain sustainable harvest and legal trade.

### Exporting CITES Appendix-II Species

CITES is implemented through an international permitting system. Each Party designates Management and Scientific Authorities to process permits, make legal and scientific findings, and

In the United States, the U.S. Fish and Wildlife Service is home to these two offices. Exporters must obtain a CITES permit from their national CITES Management Authority for each shipment that contains CITES-listed specimens. Export permits for Appendix-II specimens can be issued only when the following findings are made:



Frank Kohn/USFWS

*Barrel Cactus, CITES Appendix II*

A scientific finding of non-detriment: The Scientific Authority must be able to find that the export of an Appendix-II specimen is not detrimental to the survival of the species in the wild. The non-detriment finding is key to the long-term sustainability of the species. Depending on the species and activity, the Scientific Authority will either make a programmatic finding for a year or longer or a finding on a case-by-case basis. If the Scientific Authority is unable to make a positive finding, permits will not be issued for the export.

A finding that specimens were acquired legally: Evidence must be provided to show that specimens were not obtained in violation of any state, federal, or other jurisdictional law.

*Live animal and plant shipments.* All shipments of live animals and plants must be prepared to minimize risk of injury, damage to health, or cruel treatment.

*North American River Otter, CITES Appendix II*





In the case of air transport, animals must be shipped in accordance with International Air Transport Association (IATA) Live Animals Regulations.

*Look-alike species.* Sometimes species are listed in Appendix II to enable effective regulation of other listed species. Usually, this type of listing is necessary when species, or their parts or products, resemble other listed species and could cause identification difficulties. Look-alike species are monitored to ensure that they are not adversely affected by trade. Examples include the American black bear and river otter.

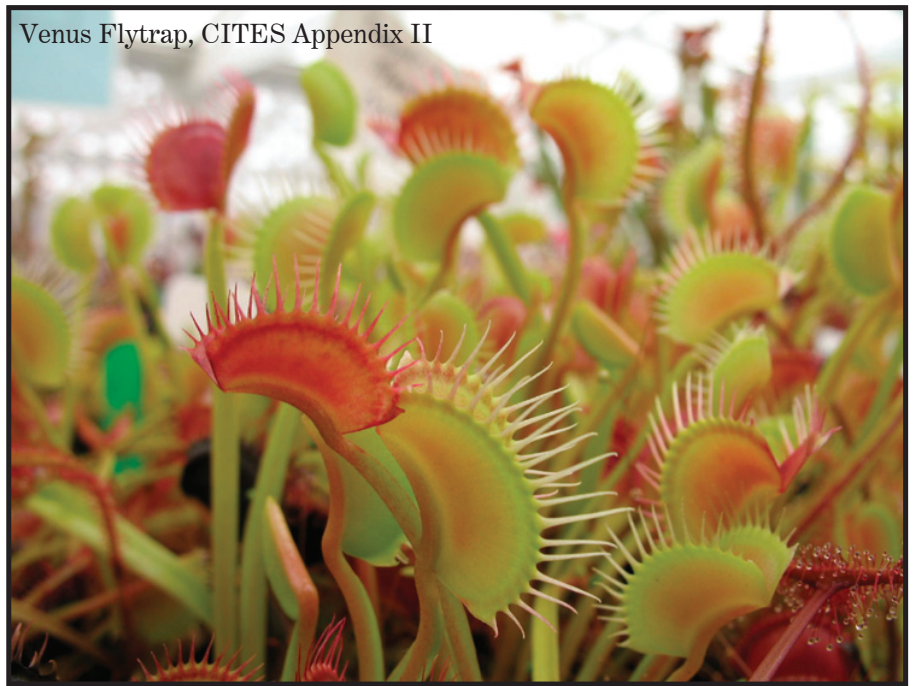
*Captive Breeding and Artificial Propagation.* CITES is concerned with the survival of species in the wild. Captive breeding of animals and artificial propagation of plants can affect the survival of the species in the wild. But, specimens produced in captivity or under controlled conditions are typically lower risk to the survival of the species than specimens collected from the wild. As such, it is usually easier for CITES authorities to make the necessary findings for animals produced in captivity and plants propagated under controlled conditions.

### **Potential Benefits of Appendix-II Export Controls to Commercial Interests:**

Longstanding international cooperation is the basis of CITES' effectiveness. The support of businesses, consumers, and the general public is vital to balancing conservation and trade needs within countries. Listing a species in Appendix II can produce the following benefits:

Venus Flytrap, CITES Appendix II

Orin Zebest CC BY 2.0



Validation (through CITES permits) that the specimen has come from legal and sustainable sources, and has met international standards;

Assurance that trade practices follow principles of sustainability;

Uniform responsibility to address illegal trade, since all countries must meet the same CITES permitting conditions and enforce CITES provisions;

Increased public awareness of the important role CITES plays to conserve animals and plants, and a broader body of information on which to base consumer decisions;

- Assurance of long-term species sustainability through control of trade, and consumer confidence that species are being used in ways that are not harmful to their role within the ecosystem.



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Green Iguana, CITES Appendix II

**U.S. Fish & Wildlife Service  
International Affairs  
5275 Leesburg Pike - MS: IA  
Falls Church, VA 22041  
703/358-2104 or 800/358-2104  
e-mail: [managementauthority@fws.gov](mailto:managementauthority@fws.gov)  
<http://www.fws.gov/international>**

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# Understanding CITES

## *CITES Appendix III*

### What is CITES Appendix III?

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international treaty aimed at protecting species at risk of overexploitation from international trade. CITES includes 184 Party (183 countries and the European Union) members. Species are included in one of three CITES Appendices, which provide varying levels of protection.

Appendix III includes wildlife and plants that are protected in at least one country, which has sought the assistance of other CITES Parties, to regulate international trade of that species. CITES requires that any Appendix-III exports from the country that listed them have additional regulations and documentation, whereas restrictions on trade of Appendix-I and -II species apply to all CITES Parties.

### What does an Appendix-III listing accomplish?

Appendix III helps a Party gain international cooperation in controlling trade in certain native wildlife and plant species that are subject to regulation domestically and provides a means of gathering trade data to assist the listing country in determining the impact of international trade of the species.

Appendix-III listings may be annotated to cover only specific parts and derivatives. The Parties have agreed that any annotation that is part of a request to include a species in Appendix III include those specimens that first appear in international trade as exports from its territory and that dominate the trade and the demand for the wild resource and is, to the extent practicable, harmonized with relevant existing annotations. As with other CITES-listed species, Appendix-III species may be traded internationally with required CITES documents.

### How does Appendix III differ from Appendix II?

A Party may unilaterally include a native species in Appendix III, whereas species are included in Appendix II by a decision of the Conference of the Parties.

For the export of Appendix III specimens from the listing country, the Management Authority in that country must make a determination that the specimens to be exported were legally acquired (i.e. not obtained in contravention of that country's laws for the protection of animals and plants) and issue a CITES export permit.

Exports of Appendix-III specimens from non-listing countries must be accompanied by a CITES Certificate of origin. Re-exports of Appendix-III listed species require the issuance of CITES re-export certificates.

The export of Appendix-II specimens also requires an export permit, but its issuance depends both on the determination that the specimens were legally acquired and that their export will not be detrimental to the survival of the species.

### What do country annotations mean?

Each Appendix-III listing includes an annotation, in parentheses, indicating the country (in some cases more than one country) that listed the species.

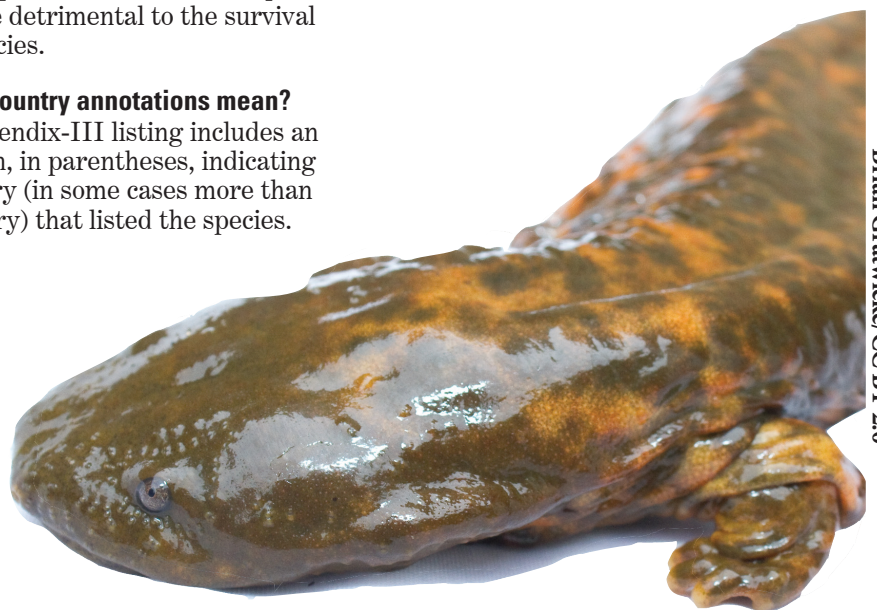
The annotation signifies that a CITES export permit must accompany a specimen exported from the country that listed that species. A CITES Certificate of origin is required from all other exporting countries unless the listing is restricted to specific populations.

### What does specific populations mean?

Some Appendix-III listings are limited to specific national populations (indicated by an annotation that reads, "Population of XX country"). This means that the listing country in its request to the CITES Secretariat advised that the listing is restricted only to its national population of the species.

In such cases, the listing country must issue a CITES export permit and any subsequent re-exports must be accompanied by a CITES re-export certificate.

However, no other populations are included in Appendix III, and therefore, CITES Certificates of origin are not required for exports from other range countries.



Hellbender, Appendix III



Ringed map turtle, Appendix III

The Parties have agreed that restricting Appendix-III listings to specific national populations poses implementation challenges and generally should be avoided.

The United States agrees that restricting Appendix-III listings to specific national populations poses implementation challenges, and also does not align with the intent of an Appendix-III listing in regulating international trade in the species and obtaining robust trade data, and the United States will not limit any Appendix-III listings to the U.S. national population.

**May Appendix-III species be imported to the United States?**

Yes. To import Appendix-III species into the United States, you must present valid CITES documentation to the appropriate U.S. authorities when your shipment enters the United States.

If your specimens came directly from a country that has listed the species in Appendix III, you must present a CITES export permit issued by the Management Authority of that country.

If your specimens came directly from a country that has not listed the species in Appendix III, you must present a CITES certificate of origin issued by the Management Authority of that country.

If your specimens came from a country of re-export, you must present a CITES re-export certificate issued by the Management Authority of that country.

For Appendix-III listings limited to specific national populations, a CITES export permit is required from the listing country and re-export certificates are required for subsequent re-exports, but all other trade in the species is outside the scope of CITES and therefore, no CITES documents are required.

**May Appendix-III species be exported or re-exported from the United States?**

Yes. To export or e-export Appendix-III species from the United States, you must obtain CITES documents from the U.S. Management Authority to present to U.S. enforcement authorities at the point of export and to authorities of the importing country.

If the United States has included the species in Appendix III, you must obtain a CITES permit from us.

If another country has included the species in Appendix III, you must obtain a CITES certificate of origin from the U.S. Management Authority.

If you are re-exporting specimens, you must obtain a CITES re-export certificate from the U.S. Management Authority.

**How do I obtain the required documents for international trade in CITES-listed species?**

To apply for a U.S. CITES document, complete a standard application form and submit it with a processing fee. Visit the Service's permit website at [www.fws.gov/permits](http://www.fws.gov/permits) for more information.

To apply for a CITES document from another country, contact their Management Authority. You can obtain names and addresses of other countries' Management Authorities from the CITES website at [cites.org/eng/parties/country-profiles/national-authorities](http://cites.org/eng/parties/country-profiles/national-authorities).

**What kinds of species are included in CITES Appendix III?**

Approximately 400 animal species and nearly 150 plant species are currently included in Appendix III.

The United States has included the hellbender (*Cryptobranchus alleganiensis*) and the genus of map turtles (*Graptemys* spp.) in Appendix III. The walrus (*Odobenus rosmarus*), included in Appendix III by Canada, is another species native to the United States.

**How do I know if my wildlife or plant is included in any of the CITES Appendices?**

Visit the CITES website at <https://cites.org/eng/app/appendices.php> to view the CITES Appendices, or search for species in the Species+ Database at [speciesplus.net](http://speciesplus.net).

**U.S. Fish & Wildlife Service  
International Affairs  
5275 Leesburg Pike - MS:IA  
Falls Church, VA 22041  
703/358-2104 or 800/358-2104  
e-mail: [managementauthority@fws.gov](mailto:managementauthority@fws.gov)  
<http://www.fws.gov/international>**

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