

**Recommendations of the American Eel Technical Committee  
to the  
American Eel Management Board  
March 9, 2004**

The American Eel Technical Committee met on March 2-3, 2004 to discuss the recent status of the American Eel population. Dr. John Casselman presented findings of a continued decline in both abundance of eel, as measured from the commercial landings, and recruitment of eels ascending the eel ladder at the Moses-Saunders hydroelectric dam, which spans the St. Lawrence River. Dr. Casselman utilized both Canadian and US landings of eel, collected from 1945 to the present, to demonstrate the extent of the decline in 2003 commercial landings to the lowest levels recorded, indicating a localized stock collapse in the Lake Ontario/St. Lawrence River system. Dr. Casselman showed that the mean number of eels ascending the Moses-Saunders eel ladder per day was not found to differ significantly from zero, indicating a localized recruitment failure. Other sources of information, including fishery dependent research, support the conclusion of localized stock collapse/recruitment failure.

Bob Lange of the Great Lakes Fishery Commission (GLFC) also spoke to the Technical Committee regarding the GLFC concern over the apparent collapse of the Lake Ontario/St. Lawrence River American eel population. Mr. Lange expressed the GLFC's eagerness to participate in a dialogue with the ASMFC concerning the fate of American eel under the authority of the GLFC, as charged in Article IV(A) of the International Convention on Great Lakes Fisheries. Both Dr. Casselman and Mr. Lange reported that Canada is in the process of seeking protection of American eel under the Species At Risk Act (SARA), the Canadian equivalent to the US Endangered Species Act (ESA).

The Technical Committee crafted the following recommendations for consideration by the American Eel Management Board based on the continued decline in American eel from the Lake Ontario/St. Lawrence River and the potential effect that these and other localized declines will have on US Atlantic coast American eel.

## **Recommendations:**

1. The Technical Committee recommends that American eel in the St. Lawrence River geographical area be designated as a candidate for listing as a Distinct Population Segment (DPS) under the Endangered Species Act. The DPS would include eels found in the Lake Ontario/St. Lawrence River system. If it is deemed necessary, those eels found in Lake Champlain and Richelieu River bordering the States of Vermont and New York may be included under a DPS listing, as dramatic declines have been observed for the Richelieu watershed as well. Supporting such a designation would not immediately require a change to the American eel management program.

A declaration of concern was one of the results of the International Eel Symposium, held in 2003 at the AFS Annual Meeting in Quebec City. The symposium resulted in a universal call to action regarding the worldwide decline of eel resources. The declaration

notes that recruitment has declined significantly for all species, including the American eel, and that recruitment of the American eel to Lake Ontario has virtually ceased.

The Great Lakes Fishery Commission released an Emergency Declaration on American Eels in Lake Ontario and the St. Lawrence River. In their declaration, the GLFC notes that the American eel once constituted an important part of the Lake's biodiversity and are now faced with imminent extirpation from the Lake Ontario and St. Lawrence River system.

These two declarations highlight the disappearance of American eels in Lake Ontario and the St. Lawrence River. The population of eels in this system has traditionally consisted of large, mature, fecund females, which make up an unknown but potentially high portion of the overall spawning stock. The single, coastwide stock of American eels could potentially be heavily impacted by the loss of this segment of the population.

The ESA defines species as "any species of fish or wildlife or plants, and any distinct population segment (DPS) of any species of vertebrate fish or wildlife that interbreeds when mature." 16 U.S.C. 1532(15). This definition allows for the recognition of DPS's at levels below taxonomically recognized species or subspecies.

The Services have published a policy (61 FR 4722, February 7, 1996) to clarify the phrase "distinct population segment" for the purposes of listing, delisting, and reclassifying species under the ESA. This DPS policy identifies three elements to be considered in a decision regarding the status of a possible DPS as endangered or threatened under the ESA: (1) The *discreteness* of the population segment in relation to the remainder of the species or subspecies to which it belongs; (2) the *significance* of the population segment to the species or subspecies to which it belongs; and (3) the *conservation status* of the population segment in relation to the ESA listing standards.

A population segment may be considered discrete if it satisfies either one of the following two conditions: (1) It is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors; or (2) it is delimited by international boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of 4(a)(1)(D) of the ESA.

In conjunction with listing a species or a DPS under the ESA, an agreement through the Candidate Conservation Program may continue to allow for some mortality from sources such as hydropower facilities that cause entrainment/impingement of American eel at all life stages. A condition of a Candidate Conservation Agreement is that the property owner implements voluntary conservation measures in exchange for assurances that their property will not be subject to further regulations than the ones in place at the time of the agreement.

Complementary regulations in both jurisdictions are essential as the St. Lawrence River is shared by both jurisdictions, and a listing by only one side would essentially be ineffective. This option represents an opportunity for collaboration with the Great Lakes Fishery Commission.

The following information on candidate species is taken from the US Fish and Wildlife Service Website, [www.fws.gov](http://www.fws.gov).

Candidate species are plants and animals for which the Service has sufficient information on their biological status and threats to propose them as endangered or threatened under the Endangered Species Act, but for which development of a listing regulation is precluded by other higher priority listing activities.

The Candidate Conservation Program provides a means for conserving these species. Early conservation preserves management options, minimizes the cost of recovery, and reduces the potential for restrictive land use policies in the future. Effective candidate conservation may reverse the species' decline, ultimately eliminating the need for ESA protection.

Candidate Conservation Agreements are formal agreements between the [Fish and Wildlife] Service and one or more parties to address the conservation needs of proposed or candidate species, or species likely to become candidates, before they become listed as endangered or threatened. The participants voluntarily commit to implementing specific actions that will remove or reduce the threats to these species, thereby contributing to stabilizing or restoring the species so that listing is no longer necessary. Conservation of fish and wildlife resources on private lands is critical to maintaining our Nation's biodiversity. However, private property owners may face land use restrictions if species found on their lands are listed under the ESA in the future. The potential for future land use restrictions has led some property owners to manage their lands to prevent or discourage colonization of their property by these species. One incentive property owners need to voluntarily promote candidate conservation on their lands and waters is future regulatory certainty. Therefore, the Service and NMFS have finalized a policy to establish standards and procedures for developing Candidate Conservation Agreements with Assurances for private and other non-Federal property owners. This final policy and associated regulations were published in the *Federal Register* on June 17, 1999. This new approach to Candidate Conservation Agreements provides non-Federal property owners who voluntarily agree to manage their lands or waters to remove threats to candidate or proposed species assurances that their conservation efforts will not result in future regulatory obligations in excess of those they agree to at the time they enter into the Agreement. The Service would provide technical assistance in the development of these Agreements. Property owners may protect and enhance existing populations and habitats, restore degraded habitat, create new habitat, augment existing populations, restore historic populations, or undertake other activities on their lands to improve the status of candidate or proposed species. The management activities included in the Agreement must significantly contribute to elimination of the need to list the target species.

2. The Technical Committee noted that the portion of American eel harvest (commercial and recreational) used for bait in other fisheries is an increasing component of overall American eel fishing mortality. Since alternative bait sources other than American eel are available, the bait fishery was discussed as a possibility for an area of the fishery that can be subject to reductions in harvest and effort. The bait fishery as discussed both in terms of the commercial fishery, through which eels are sold for use as bait in other fisheries, as well as the recreational fishery, where anglers often harvest eels for personal use as bait in a targeted fishery for other species. The Technical Committee recommended two options under this category as the TC was not able to come to a consensus on one option for consideration by the American Eel Management Board. The options presented under this

recommendation may be added to the American eel management program through an addendum to the existing FMP.

**Option 1:** Present a statement of concern regarding the American eel bait fishery as a source of fishing mortality that may be a good candidate for reduction by the ASMFC in light of the best available data on the status of the American eel stock. In addition, conduct an evaluation of the bait fishery for eel, as data are currently not available at the scale necessary for a full evaluation the impacts of this sector of the American eel fishery, nor are data available to determine the exact reduction that would be necessary to achieve significant benefits for the American eel stock. The majority of the American Eel Technical Committee supported this option.

**Option 2:** Prohibit the possession of American eels for use as bait. This recommendation applies to both the commercial sector of the fishery, where eels are harvested and then sold for use as bait in other fisheries, as well as the recreational fishery, where eels are harvested for personal use as bait in other fisheries. This recommendation was formulated based on the concern that species experiencing the decline documented for American eel should not be used for bait, especially in light of the fact that many alternative baits are available to fishermen who normally use American eels for bait. The minority of the Technical Committee supported this option.

3. Section 4.1 of the ASMFC Interstate Fishery Management Plan for American Eel states, “In order to minimize the chance of excessive recreational harvest, as well as circumvention of commercial eel regulations, the ASMFC member states/jurisdictions shall establish uniform possession limits for recreational fisheries of a six inch minimum size and a possession limit. Recreational anglers may possess no more than 50 eels per person, including crew members involved in party/charter (for-hire) employment, for bait purposes during fishing. Recreational fishermen will not be allowed to sell eel without a State license permitting such activity.” The Technical Committee recommends a reduction of the possession limit for the recreational fishery from 50 eels per person per day to 25 eels per person per day. This option can be implemented in conjunction with reductions in the commercial fishery to ensure equity between both sectors of the American eel fishery. The Technical Committee was not able to come to a consensus on this option, with one state maintaining that the present possession limit of 50 eels per person per day should remain unchanged. This recommendation may be added to the American eel management program through an addendum to the existing FMP.

4. The American Eel Technical Committee recommends a closure of all directed silver eel fisheries. While all eel fishing mortality on American eels is pre-spawning, silver eels are the mature adult outmigrating segment of the population, and thus merit protection as the segment of the population that is most likely to provide immediate spawning potential and subsequent recruitment to the stock. Implementation of this option is difficult to define, as silver eels are not necessarily easy to identify quickly by sight by fishermen. A size limit may be one way to determine which eels would be defined as “silver” and thus subject to the closure, but this methodology is not necessarily accurate for determining

that an eel is in fact at the silver life stage and the Technical Committee noted the difficulty of measuring a live adult eel. This recommendation may be added to the American eel management program through an amendment to the existing FMP.

5. The American Eel Technical Committee recommends a seasonal closure for fishing of all life stages of American eel. This closed season would be defined by states in a biologically defensible manner. The season would include a minimum closure of 90 days, to correspond to the traditional time period of the States' silver eel migrations. This time period, though variable along the coast and with environmental conditions, is generally during the fall months but can extend from August until the end of December or possibly into January, depending on location along the coast. This option would apply for all gear types that harvest eels during the state-specified time period. This option would have the effect of protecting the outmigrating silver eels, as well as all other life stages, during a period of peak effort for the eel fisheries. The reductions in effort and fishing mortality expected to result from this option are thought to be substantial based on historic patterns and timing of landings from the Atlantic coast as reported by the states and by the National Marine Fisheries Service. This recommendation may be added to the American eel management program through an amendment to the existing FMP.
6. The American Eel Technical Committee recommends that, at a minimum, states be required to provide accurate catch and effort data for use in the upcoming benchmark stock assessment as well as for future stock assessments. Many states have expressed continued difficulty in obtaining accurate data on catch and effort for eels. As a result, the Technical Committee recommends the implementation of a specific eel harvester permit/license for each state, with each license requiring reporting of catch and effort. The permit/license should be required for all eel harvesters, including those who harvest eels for use as bait. The Technical Committee also recommends a specific eel report and license/permit from dealers, including bait dealers. Harvester and/or dealer reports must differentiate between the amount of eels used/sold for food and the amount of eels used/sold for bait. The Technical Committee was not able to come to a consensus on this option, with one state in the minority. The minority opinion calls for a provision to exempt states that already have mandatory reporting for all fishermen and dealers, such as the North Carolina Trip Ticket Program. This recommendation may be added to the American eel management program through an addendum to the existing FMP.
7. The American Eel Technical Committee produced a statement of concern regarding the data requirements as listed in Section 3.4.1 of the ASMFC Interstate Fishery Management Plan for American Eel. The reporting requirements from the FMP are as follows:
  1. Commercial fishery
    - a. Synopsis of regulations in place
    - b. Estimates of directed harvest, by month, by region as defined by the states
      - i. Pounds landed by life stage and gear type (defined in advance by the ASMFC)
      - ii. Biological data taken from representative sub-samples to include sex ratio and age structure (for yellow/silver eels), length and weight if available.

- iii. Estimated percent of harvest going to food versus bait
  - c. Estimates of export by season (provided by dealers)
  - d. Harvest data provided as CPUE (by life stage and gear type)
  - e. Permitted catch for personal use, if available
- 2. Recreational fishery
  - a. Synopsis of regulations in place
  - b. Estimate of recreational harvest by season (if available)
    - i. Biological data taken from representative sub-samples to include sex ratio, age structure, length and weight (if available)

While states are including all but the biological sub-sampling data in their annual reports, there is some concern that these data may not be accurately describing the fishery. The Technical Committee recommends that the above data requirements remain mandatory and that states make an effort to improve the accuracy of these data. However, the Technical Committee does recommend that the requirement for biological sub-sampling (1.b.ii. and 2.b.i.) remain optional and highly encouraged, and that states continue to provide these data where available. This option would not require a change to the American eel fisheries management program.

8. The Technical Committee developed a statement of concern regarding the presence of non-native species such as the flat head catfish and the blue catfish. The Technical Committee noted the importance of research to determine the effects that these and other invasive species have on the American eel stock and requested the listing of an additional research need to address this issue. Supporting such a designation would not immediately require a change to the American eel management program.

The American Eel Technical Committee developed a statement of concern regarding sources of mortality other than fishing. The Technical Committee notes that sources of mortality such as turbines, water intakes, and other non-fishing mortality are likely leading sources of mortality for silver eels, and that these sources of mortality must be reduced. In accordance with this statement of concern, the Technical Committee has developed a set of recommendations regarding eel passage along the Atlantic coast. These recommendations can be included in the American eel management program through an addendum to the FMP.

### **Recommendations for Eel Passage:**

1. All States should make eel passage a prime consideration when licensing dams/hydropower facilities and when providing information to FERC through the dam relicensing process. This consideration should also apply during the permitting process for substantive modifications, reconstruction, or repair of dams. All States should also place a high priority on reducing eel mortality from industrial and governmental water intakes.

2. All States should include upstream and downstream passage for eels as a condition for relicensing of dams and hydropower facilities.
3. Upstream and downstream passage efforts should include effectiveness monitoring.
4. Downstream passage may include suspension of hydroelectric operation during the downstream migration season, as well as bypass facilities for downstream migrating eels.
5. Implementation of efforts to reduce fishing mortality from sources other than fishing presents an opportunity for cooperation with the Great Lakes Fisheries Commission.
6. The Technical Committee recommends that the Management Board consider co-sponsorship of an American eel passage workshop. Possible options for co-sponsoring organizations include the GLFC, USFWS, AFS, Conte Lab, EPRI, USFWS, and the NOAA Restoration Center. The Technical Committee would explore options for co-sponsorship, scope, time, and place of such a workshop. The objectives of this workshop would include raising awareness of the issue of non-fishing related mortality, would serve to enhance the exchange of information and technologies, and would encourage the implementation of new projects to reduce mortality of eels from sources other than fishing.