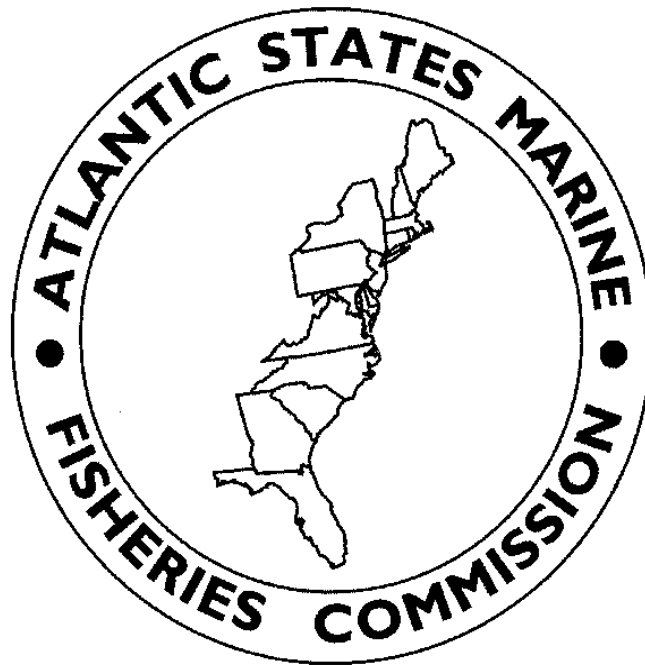


*ATLANTIC STATES MARINE FISHERIES COMMISSION*

**STANDARD PROCEDURES FOR AMERICAN EEL  
YOUNG OF THE YEAR SURVEY**

**SUBSTITUTING THE PROTOCOL OUTLINED IN THE  
INTERSTATE FISHERY MANAGEMENT PLAN FOR  
AMERICAN EEL**



Prepared by the American Eel Technical Committee

**Approved February 2000**

## **PURPOSE AND OBJECTIVE**

The purpose of the American Eel Young of the Year Survey is to characterize trends in annual recruitment of young of the year eel over time. The desired result or outcome will be a qualitative appraisal of the annual recruitment of American Eel to the U.S. Atlantic coast.

## **SAMPLING SITE LOCATION**

Optimal sites are those located at head of tide in small streams or estuaries, as close to the Atlantic Ocean as possible. As stated in the ASMFC Plan, biologists may need to alter the placement of the sampling gear in order to determine optimum location. Once established, the sampling site should remain fixed. All YOY eel caught for the purposes of this survey should be released upstream above barriers to migration.

The Eel FMP stated objective is to sample at two locations per State or Jurisdiction. After consultation with project leaders of ongoing eel surveys, and with consideration given to the amount of staff time and expense necessary to coordinate sampling at two locations, it is the opinion of the ASMFC American Eel Technical Committee that one sampling site per State or Jurisdiction will not compromise the purpose and objective of the survey.

## **SAMPLING GEAR**

Sampling gear suitable for the site location should be used. The ASMFC American Eel Technical Committee has identified the following passive gear as suitable for conducting the YOY survey; fyke nets, Sheldon traps, and Irish elver traps. Active gear, such as dip nets and trawls may be employed, however a stratified random sampling design should be used if active gear is selected so that all strata of time of day (and night), tide, and moon phase are equally sampled.

## **SAMPLING FREQUENCY**

The frequency goal is to sample daily throughout the six week survey period. If a daily check of the gear cannot be accommodated, the Eel Technical Committee recommends that a minimum of four days per work week be sampled. This allows the gear to be “set” on a Monday and checked on Tuesday (sample 1), Wednesday (sample 2), Thursday (sample 3), and Friday (sample 4).

## **TIMING**

As stated in the Eel FMP, the timing of the survey should coincide with the peak onshore migration of young of the year. At the beginning of a sampling season, biologists may need to conduct exploratory sampling to determine if YOY eel have arrived at their location along the Atlantic coast. After the arrival of YOY eel, survey gear should be deployed for the required six week minimum. Passive gear should be set so as to be operational throughout periods of rising or flood tides occurring over nighttime hours. Active gears may, for example, be employed in a

stratified random time block design consisting of fixed length time blocks.

## **DATA COLLECTION**

At a minimum, States and Jurisdictions are required to enumerate the catch of eel and to report catch per unit of effort (nearest 0.25 hours) by gear type for each day of sampling. In situations of excessive catch (i.e., too numerous to count), standard statistical techniques (sub-sampling/volumetric sampling) may be used to enumerate the total catch. Volumetric sampling may be accommodated by use of a calibrated graduated cylinder. Several calibration counts (6-9) may be necessary to establish the relationship between number of eels and volume. Care should be taken to reduce excess water from the measurements. Throughout the eel run, repeated calibration counts may be necessary to account for variation in size of eels.

Biological sampling for length, weight and pigmentation should be conducted, although it is not required. A sample size of 60 elvers, collected twice weekly, is recommended. Eels collected for biological sampling should be euthanized prior to measurement, and blotted between two absorbent paper towels to minimize excess water. Advice on methods of euthanization are available in "Guidelines for use of fishes in field research" available from ASMFC. Total length measured to the nearest 1 millimeter is identified as the minimum requirement. Total length measured to the nearest 0.1 mm using a digital caliper is optimal. Weight should be measured to the nearest 0.01 grams. Pigmentation stage to be assigned using scale provided in: Haro, A.J., and W.H. Krueger. 1988. Pigmentation, size and migration of elvers *Anguilla rostrata* (LeSeur) in a coastal stream. *Can.J. Zool.* Vol. 66.

Various ancillary data required include date, soak/set time, water temperature, moon phase and a qualitative judgement of the performance of the gear for the effort period (1-4; good, fair, poor, void). Also required are measurements of water level and discharge, as appropriate for the sampling site.