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PETITION TO XX

ATLANTIC STURGEON (ACIPENSER OXYRINCHUS OXYRINCHUS)

As XXX

UNDER THE U.S. ENDANGERED SPECIES LIST

Date

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NOTICE OF PETITION

Hon. Gary Locke, Secretary
U.S. Department of Commerce
1401 Constitution Ave. NW Washington, DC 20230

Jane Lubchenco, Administrator
Office of the Administrator National Oceanic and Atmospheric Administration
1401 Constitution Avenue, NW Washington, DC 20230

Samuel Rauch
Acting Asst. Administrator for Fisheries National Oceanic and Atmospheric
Administration
1315 East-West Highway
Silver Spring, MD 20910

PETITIONER

Atlantic States Marine Fisheries Commission
1050 North Highland Street Suite 200A-N
Arlington, VA 22201

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Signature

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I. Introduction

The Petitioner Atlantic States Marine Fisheries Commission (“ASMFC” or “Petitioner”) hereby formally petitions the Secretary of the United States Department of Commerce (“Secretary”), pursuant to 5 U.S.C. § 553(e) and 50 C.F.R. § 424.14, to declare the status of the five distinct population segments (DPS), under the Endangered Species Act, 16 U.S.C. §§ 1531, *et seq.* as follows:

1. Gulf of Maine DPS - XX
2. New York Bight DPS - XX
3. Chesapeake Bay DPS - XX
4. Carolina DPS - XX
5. South Atlantic DPS - XX

II. Petitioner

The ASMFC was formed by the 15 Atlantic coast states in 1942 in recognition that fish do not adhere to political boundaries. The Commission serves as a deliberative body, coordinating the conservation and management of the states shared near shore fishery resources for sustainable use. Member states are Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, and Florida. The Commission does not promote a particular state or stakeholder sector.

III. Background

Atlantic sturgeon can be found along the entire Atlantic coast from Labrador, Canada to St. Johns River, Florida. They have been recorded to live up to 60 years, grow to lengths of 14 feet and weights in excess of 800 pounds. Atlantic sturgeon are known to undergo extensive coastal migrations, which take them from the ocean into coastal estuaries and rivers in the spring to spawn once every one to five years.

Typically Atlantic sturgeon in the southern part of the species range mature faster and grow larger than those in the northern part of the range. Females reach sexual maturity between the ages of seven and 30, and males between the ages of five and 24. The number of eggs that a female produces increases with age and size, which means that older and larger females are more valuable to the population because they produce more eggs (up to 2.6 million eggs per spawning event (Van Eenennaam et al. 1996)) than younger, smaller females (estimated 400,000 eggs per spawning event). Additionally, there is also an increase in egg size with larger females, and larger eggs may survive better.

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Most juveniles remain in their natal river from one to six years before migrating back out to the ocean. Little is known about the movements of Atlantic sturgeon when they are at sea. As juveniles, Atlantic sturgeon feed on flies, worms, shrimp, and small mollusks and crustaceans. As adults, they are opportunistic, benthic feeders and prey mainly on mollusks, snails, worms, shrimps and benthic fish. Very little is known about their natural predators.

An Atlantic sturgeon Fisheries Management Plan (FMP) was developed by the ASMFC in 1990 to improve management along the Atlantic coast and to coordinate management and research. The passage of the Atlantic Coastal Fisheries Cooperative Management Act in 1993 set new standards which gave the ASMFC authority to enforce FMP recommendations at the state level. As such, the FMP was amended in 1998 in order to implement mandatory conservation measures that would be sufficient to protect the portion of the Atlantic sturgeon population and individual spawning remaining at that time. A moratorium was put in place and will remain until there are 20 age classes of females in the spawning population that have been protected for their entire life. At the same time the National Marine Fisheries Service (“Service”) also imposed a moratorium on harvest of Atlantic sturgeon in the federal Exclusive Economic Zone (EEZ).

Implementation of Amendment 1 was designed to result in stock recovery, with consequent ecological and economic benefits to coastal ecosystems and fishermen. The goal of recovery was to re-establish Atlantic sturgeon as a unique component of east coast rivers, estuaries and the Atlantic Ocean. Specifically, management of a fully restored and recovered population of Atlantic sturgeon would establish and maintain fishing mortality targets and a fishery monitoring program that should: allow managed exploitation; increase market stability; stabilize commercial, and possibly recreational, landings (within the limits of environmental variability in recruitment) and reduce the risk of recruitment failure.

IV. Current Status of Atlantic Sturgeon

Atlantic sturgeon still occur in major river systems and estuaries from Maine through Florida. Remnant spawning stocks are present or suspected throughout their historic range in the US. The last stock assessment for Atlantic sturgeon was conducted in 1998 (ASMFC 1998). The stock assessment reviewed the status of Atlantic sturgeon in more than 26 rivers or river complexes. The assessment found that abundance of all stocks was depressed.

Following the assessment, a 2003 workshop was cooperatively organized by the Services (National Marine Fisheries Service and the U.S. Fish and Wildlife Service) and ASMFC in order to review data and information on sturgeon abundance, bycatch, and habitat that had been collected since the coastwide moratorium went into effect. The workshop found that

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consistent improvements were not apparent in any systems and the overall population seemed to be exhibiting a downward trend when all factors are taken into account.

Additionally, a status review on Atlantic sturgeon was initiated by the Service in 2005 and finalized in 2007. The status review partitioned Atlantic sturgeon into five DPSs (ASSRT 2007). The status review concluded that three of the DPSs (New York Bight, Chesapeake Bay, and Carolina) should be listed as threatened and there was insufficient data to develop a recommendation for listing on the remaining two DPSs (Gulf of Maine and South Atlantic).

In 2009, the National Resources Defense Council petitioned the Service to list Atlantic sturgeon as endangered throughout their range or, in the alternative, to list three DPSs as endangered (New York Bight, Chesapeake Bay, and Carolina) and two DPSs as threatened (Gulf of Maine and South Atlantic). In February 2012 the Service published a final rule listing Atlantic sturgeon on the Endangered Species List. Four distinct population segments (DPS) were listed as endangered and one DPS was listed as threatened. The rule became effective April 6, 2012.

V. Justification for the recommended measures

From the U.S. Fish and Wildlife Service's "*Information to Consider When Submitting a Petition under the Endangered Species Act*":

The following information is relevant to a determination as to whether a petition provides substantial information that indicates the petitioned action may be warranted:

- Information on estimates of current population status, trends, sizes, and distributions, both in captivity and the wild, if available;
- Biological information on the species (including life-history traits) that is relevant to determining whether a species may be endangered or threatened;
- Identification and description of the Act's section 4(a)(1) factors that the petitioner believes are affecting the species, including where these factors are acting upon the species, the magnitude and imminence of these factors, and whether, either singly or acting in combination, these factors may cause the species to be an endangered or threatened species (i.e., place the species at risk of extinction now or in the foreseeable future)

Under Section 4(f)(1) the Secretary shall develop and implement plans (hereinafter in this subsection referred to as "recovery plans") for the conservation and survival of endangered species and threatened species listed under the ESA. Priority in the development and implementation of a recovery plan is given to those endangered species or threatened species that are most likely to benefit from such plans, particularly those species that are, or

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may be, in conflict with construction or other development projects or other forms of economic activity. Due to the wide ranging distribution and migratory nature of Atlantic sturgeon, this species comes into contact with many forms of vital economic activity, including state and federal fishing fleets, dredging operations, in-river construction, dam operations, and power generation. As such priority should be given to Atlantic sturgeon in the development of a recovery plan.

The development of the Recovery Plan is completed by the Recovery Team, which may include appropriate public and private agencies and institutions, and other qualified persons. As specified in Section 4(f)(a)(B) the recovery plan must include:

- (i) A description of such site-specific management actions as may be necessary to achieve the plan's goal for the conservation and survival of the species;
- (ii) Objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of this section, that the species be removed from the list; and
- (iii) Estimates of the time required and the cost to carry out those measures needed to achieve the plan's goal and to achieve intermediate steps toward that goal.

Recent recovery plans developed for East Coast species have taken more than five years to publish (e.g. Atlantic salmon and smalltooth sawfish). To date, an Atlantic sturgeon Recovery Team has not yet been convened by the Service.

Additionally, for species listed as threatened or endangered on the ESA, the Service is required, per Section 4(c)(2) to conduct, at least once every five years, a review of the species status and determine if the species should:

- (i) be removed from the list,
- (ii) be changed in status from an endangered species to a threatened species, or
- (iii) be changed in status from a threatened species to an endangered species.

For species without a recovery plans, a 5-year review entails analyzing information available on the species relative to the definitions of endangered and threatened and in the context of the five listing factors. There is no specific statutory timeframe established for completing a 5-year review once it has been initiated although it cannot be unreasonably delayed in accordance with the Administrative Procedure Act (APA). The Secretary may also review the status of any species at any time (50 CFR 424.21).

With no recovery plan in place, the following sections detail recovery and delisting criteria for each of the DPS. These criteria were developed through the ASMFC Technical Committee, which is comprised of sturgeon experts from each Atlantic coast state. These

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biologists are most familiar with the on-the-ground status and conservation efforts pertaining to Atlantic sturgeon in their region.

Additionally the following sections also address each of the listing factors as described in Section 4(a)(1) of the ESA:

1. Present or threatened destruction, modification, or curtailment of its habitat or range
2. Overutilization for commercial, recreational, scientific or educational purposes
3. Disease or predation
4. Inadequate existing regulatory mechanisms
5. Other natural or anthropogenic factors affecting their continued existence

Gulf of Maine DPS

- Delisting criteria development and metrics
- Assessment of listing factor threats with updated data

New York Bight DPS

- Delisting criteria development and metrics
- Assessment of listing factor threats with updated data

Chesapeake Bay DPS

- Delisting criteria development and metrics
- Assessment of listing factor threats with updated data

Carolina DPS

- Delisting criteria development and metrics
- Assessment of listing factor threats with updated data

South Atlantic DPS

- Delisting criteria development and metrics
- Assessment of listing factor threats with updated data

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Recovery Plan and Delisting Criteria Examples

Shortnose Sturgeon Recovery Plan (from NMFS, 1998)

Each population segment may become a candidate for downlisting when it reaches a minimum population size that: 1) is large enough to prevent extinction, and 2) will make the loss of genetic diversity unlikely. This minimum population size for each population segment has not yet been determined. Therefore, establishing endangered and threatened population size thresholds is a priority 1 recovery task specified in the succeeding Recovery Narrative section.

Changes to the listing status of these segments may be warranted based on population characteristics or degree of threats facing individual populations. A shortnose sturgeon population segment will remain listed as long as there is: 1) present or threatened destruction, modification, or curtailment of its habitat or range; 2) overutilization for commercial, recreational, scientific or educational purposes; 3) disease or predation; 4) inadequate existing regulatory mechanisms; or 5) other natural or anthropogenic factors affecting their continued existence

A minimum population size below which a shortnose sturgeon population segment is in danger of going extinct should be determined (i.e., an endangered threshold). This population size should reflect the reproductive and genetic characteristics of a population segment. Therefore, the threshold should be sufficiently large enough to maintain genetic diversity and avoid extinction.

The loss of population heterogeneity may not pose an immediate threat to a population segment, but may limit its ability to cope with future environmental change. A measure of population size, for example, the number of spawning fish, could indicate that a population is below an established threshold and in jeopardy of extinction or genetic damage. Successive estimates of the population segment should be evaluated to determine if the population is above or below the threshold for an endangered population.

A minimum population size below which a shortnose sturgeon population segment is likely to become endangered (i.e., threatened threshold) should also be developed. This threshold should reflect sturgeon reproductive potential and represent a population of sufficient size that levels of natural mortality likely to be experienced by the population segment will not depress the population below the endangered threshold. Consistent with the theoretic grounds for determining this level, the threshold for a threatened population would be suitable for a delisted population with zero harvestable surplus. A formula should be developed to weigh successive estimates of the population to determine if a population is above or below the threshold for a threatened population.

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The demographics of a population segment should be examined to determine if the population size is stable or increasing, and if recruitment is sufficient to replace spawners. In the absence of time series fisheries data, it may be necessary to examine successive population estimates and/or single assessments of age structure to judge whether a population segment is stable or increasing.

In summary, the threshold for an endangered population would represent a level below which the population segment is in danger of going extinct, or of sustaining genetic damage that could lead to extinction. The threshold for a threatened population would represent a level where common perturbations would not be expected to send the population below the endangered threshold. Finally, population dynamics data must be considered together with population size estimates to determine whether a population segment is replacing itself or increasing in size.

Shortnose sturgeon productivity varies both spatially and temporally. Thus, population segment size thresholds should be: 1) adjusted according to local population characteristics; and 2) based on models that simulate the variability of shortnose sturgeon populations over time.

Determine maximum allowable mortality for shortnose sturgeon population segments

The mortality factors for each population segment should be evaluated. If mortality factors are expected to keep a population below the endangered or threatened population threshold, then the population should remain listed. If expected mortality factors are unlikely to reduce a population below a listing status threshold, then the population should be evaluated to determine whether it qualifies for downgrading to threatened or should be delisted. Conversely, de-listed or threatened population segments may require upgrading to endangered status if unforeseen mortality factors push these populations below either the threatened or endangered listing thresholds.

Therefore, when shortnose sturgeon populations are delisted, fishery managers must acknowledge the potential for sturgeon populations to experience seemingly rapid, precipitous declines in abundance. Further, delisting a shortnose sturgeon population segment should not constitute a mandate for harvest, particularly in cases where opening the fishery in one river could provide a market for fish harvested illegally in other rivers. While healthy sturgeon populations may sustain minimum levels of utilization, directed harvest of shortnose sturgeon should not occur without careful consideration of other sources of sturgeon mortality and characteristics of the species' life history.

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Gulf Sturgeon Recovery Criteria (from NMFS, 1995)

The short-term recovery objective will be considered achieved for a management unit when the catch-per-unit-effort (CPUE) during monitoring is not declining from the baseline level over a 3 to 5-year period. This objective will apply to all management units within the range of the subspecies. Management units will be defined using an ecosystem approach based on river drainages, but may also incorporate genetic affinities among population in different river drainages. Baselines will be determined by fishery independent CPUE levels.

The long-term recovery objective will be considered achieved for a management unit when the population is demonstrated to be self-sustaining and efforts are underway to restore lost or degraded habitat. A self-sustaining population is one in which the average rate of natural recruitment is at least equal to the average mortality rate in a 12-year period. While this objective will be sought for all management units, it is recognized that it may not be achievable for all management units. The long-term fishery management objective will be considered attained for a given management unit when sustainable yield can be achieved while maintaining a stable population through natural recruitment. Note that the objective is not necessarily the opening of a management unit to fishing, but rather the development of a population that can sustain a fishery. Opening a population to fishing will be at the discretion of state(s) within whose jurisdiction(s) the management unit occurs. As with the long-term recovery objective, this objective may not be achievable for all management units, but will be sought for all units.

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Recovery Criteria for Bull Trout in the Coastal-Puget Sound DPS (from NMFS, 2007)

Criteria for recovery include the following conditions:

1. Biological and ecological function of the 14 identified core areas (6 in the Olympic Peninsula Management Unit and 8 in the Puget Sound Management Unit). Components of fully functioning core areas include:

- Habitat that provides for the persistence of broadly distributed local populations supporting the migratory life history form within each area. Adult bull trout are sufficiently abundant to provide for persistence and viability. This level of abundance is estimated to be 16,500 adult bull trout across all core areas in the Coastal-Puget Sound DPS.

- Measures of bull trout abundance within all core areas show stable or increasing trends, based on 10 to 15 years of monitoring data (represents at least 2 bull trout generations). Habitat within and between core areas is connected sufficiently to provide for the full expression of migratory behavior, re-colonization of areas that were previously extirpated, and provide for potential genetic exchange between populations.

2. A monitoring plan has been developed and is ready for implementation, to ensure the ongoing recovery of the species and the continuing effectiveness of management actions. The plan must cover a minimum of 5 years post-delisting.

The Recovery Plan for the Coastal/Puget Sound bull trout DPS (USFWS, 2004) outlines the following recovery targets.

Distribution - Maintain or expand the current distribution of bull trout in identified core areas (within United States waters).

Puget Sound Management Unit: This unit contains 8 identified core areas with 57 identified local populations which will be used as a measure of broadly distributed spawning and rearing habitat within these core areas. The distribution within the five additional potential populations that have been identified should also be confirmed or restored.

Olympic Peninsula Management Unit: This unit contains 6 core areas with 10 currently identified local populations. These populations will be used as a measure of broadly distributed spawning and rearing habitat within these core areas. Spawning distribution in the two potential local populations that are essential to recovery should be restored or confirmed.

Abundance - Recovery targets are based on the abundance needed to reduce the likelihood of genetic drift and consideration of surveyed fish densities, habitats, and potential fish production after threats have been addressed.

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Puget Sound Management Unit: Achieve minimum estimated abundance of at least 10,800 adult bull trout spawners among all core areas in the Puget Sound Management Unit.

Olympic Peninsula Management Unit: Achieve minimum estimated abundance of at least 5,700 adult bull trout spawners, including at least 1,000 spawning adults in each of the Dungeness, Elwha, Hoh, Queets, and Quinault core areas and at least 700 spawning adults in the Skokomish core area.

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