UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
PROGRAM PLANNING AND INTEGRATION
Silver Spring, Maryland 20910

MAR 2 1 2013

To All Interested Government Agencies and Public Groups:

Under the National Environmental Policy Act (NEPA), an environmental review has been performed on the following action.

TITLE: Supplemental Environmental Assessment on the Effects of Issuing a Permit Modification for Scientific Research on Endangered Atlantic Sturgeon in the Chesapeake Bay (File 16547-01)

LOCATION: Under the proposed modification, the action area would remain the same as authorized in Permit No. 16547. Sampling of Atlantic sturgeon would continue to occur throughout the Chesapeake Bay including all watersheds draining into the Chesapeake Bay, extending from its mouth (Bay Mile 0) to the fall line of each tributary.

SUMMARY: In response to the receipt of an application for a modification from the USFWS [File No. 16547-01], NMFS PR proposes to issue a modification to scientific research Permit No. 16547 to include changes in the "takes" of Atlantic sturgeon. The referenced document supplements the 2012 EA entitled "Environmental Assessment for the Issuance of 12 Scientific Research Permits for Research on Atlantic Sturgeon, April 2012."

Permit No. 16547 currently authorizes the permit holder to: evaluate the abundance of Atlantic sturgeon within the Chesapeake Bay distinct population segment (DPS), including its tributaries of the Chesapeake Bay. In waters below 22 parts per thousand (ppt), up to 200 Atlantic sturgeon adults and sub-adults (> 500 mm total length TL) are authorized to be captured, measured, weighed, photographed/ videoed, tissue sampled, Passive Integrated Transponder (PIT) tagged, T-bar tagged and either externally telemetry tagged or else anesthetized and internally telemetry tagged. In major tributaries having salinity levels below 22 ppt, up to 225 adults and sub-adults are authorized to be captured, measured, weighed, videoed photographed, tissue sampled, PIT tagged and T-bar tagged. A sub-set of 75 of these are authorized to be externally telemetry tagged. Additionally, up to 175 juvenile Atlantic sturgeon (< 500 mm TL) are permitted to be captured in waters less than 22 ppt, and then measured, weighed, photographed, tissue sampled, PIT tagged and T-bar tagged. A sub-set of 25 of these are authorized for external telemetry tagging.

The incidental mortality of up to 3 Atlantic sturgeon (one adult over the life of the permit), as well as the incidental, non-lethal take of up to 2 listed sea turtles and 4 shortnose sturgeon is authorized annually. Finally, the annual directed lethal take of up to 25 ELS, collected with egg mats in the spawning areas of suspected rivers, is permitted.

The permit holder now requests several changes in the existing permit. The applicant now wishes to be able to telemetry tag all appropriate life stages of Atlantic sturgeon without respect to salinity level. The total numbers of adult and sub-adult Atlantic sturgeon (>500 mm) requested, however, would be reduced from 425 to 350, with a sub-set of animals either internally or externally telemetry tagged reduced from 200 to 150 per year. The numbers of juvenile (< 500 mm) Atlantic sturgeon takes would be reduced from 175 to 125 annually; however, the sub-set of these juvenile animals receiving telemetry tagged would be increased from 25 to 50 and also include the option for internal tagging animals between 300 and 500 mm TL after anesthetization. Additionally, the number of ELS taken is proposed to be increased from 25 to 50 annually to increase efforts documenting spawning activity. All other would continue as currently permitted.

RESPONSIBLE OFFICIAL:

Helen M. Golde
Acting Director, Office of Protected Resources
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
1315 East-West Highway, Room 13821
Silver Spring, MD 20910
(301) 713-2332

The environmental review process led us to conclude that the preferred alternative is not expected to have more than short-term effects on Atlantic sturgeon or non-targeted species, and will not significantly impact the quality of the human environment. Therefore, an environmental impact statement will not be prepared. A copy of the signed finding of no significant impact (FONSI), including the supporting supplemental environmental assessment (SEA), is enclosed for your information.

Although NOAA is not soliciting comments on this completed SEA/FONSI we will consider any comments submitted assisting us in preparing future NEPA documents. Please submit any written comments to the responsible official named above.

Sincerely,

Patricia A. Montanio
NOAA NEPA Coordinator

Enclosure

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910
MAR 1 8 2013

Supplemental Environmental Assessment (SEA)
On the Issuance of a Modification to Scientific Research Permit No. 16547 to the United States Fish and Wildlife Service (USFWS) to Conduct Research on Atlantic Sturgeon in the Chesapeake Bay and Coastal Waters [March 2013]

A supplement to the April 2012 EA entitled "*Environmental Assessment for the Issuance of 12 Scientific Research Permits for Research on Atlantic Sturgeon*"

Lead Agency:	USDC National Oceanic and Atmospheric Administration National Marine Fisheries Service, Office of Protected Resources
Responsible Official	Helen M. Golde, Acting Director, Office of Protected Resources
For Further Information Contact:	Office of Protected Resources National Marine Fisheries Service 1315 East West Highway Silver Spring, MD 20910 (301) 427-8401

Abstract: NMFS proposes to issue a modification to scientific research permit No. 16547 to the United States Fish and Wildlife Service (USFWS), 11110 Kimages Road; Charles City, Virginia 23030 [Albert Spells: Responsible Party], authorizing scientific research on endangered Atlantic sturgeon pursuant to the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C. 1531 et seq.) and the regulations governing the taking, importing, and exporting of endangered and threatened species (50 CFR 222-226). The modification would be valid through April 5, 2017.

Permit No. 16547 currently permits the permit holder to: evaluate abundance of Atlantic sturgeon within the Chesapeake Bay Distinct Population Segment (DPS), including the entirety of the Chesapeake Bay and its tributaries above and below 22 parts per thousand (ppt) salinity. Researchers are authorized to capture adult, juvenile and early life stages (ELS) of Atlantic sturgeon using gill nets, trawls, fyke nets, trammel nets, pound nets and egg mats; and to measure, weigh, tissue sample, PIT and Floy tag appropriately sized animals. Dependent on the life stage and the salinity level, a subset may be telemetry tagged internally or externally.

The permit holder now requests to: telemetry tag adult sub-adult or juvenile Atlantic sturgeon with either internal or external telemetry tags without respect to salinity level within the same action area. However, the numbers of adult and sub-adult Atlantic sturgeon requested would be reduced from 425 to 350 per year; the numbers of juveniles would be reduced from 175 to 125 annually, and the sub-set of juveniles requested to be telemetry tagged is increased to 50 from 25, including the option for internal telemetry tagging. Finally, the number of ELS proposed would increase from 25 to 50 annually to document spawning in other rivers. All other aspects of the currently permitted activity—the action area, capture methods, incidental takes, impacts to other listed species, types of research activities, and objectives—would remain the same.

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CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

1.1 DESCRIPTION OF ACTION

NMFS proposes to issue a modification to scientific research permit No. 16547 to the United States Fish and Wildlife Service (USFWS), 11110 Kimages Road; Charles City, Virginia 23030 [Albert Spells: Responsible Party], authorizing scientific research on endangered Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) pursuant to the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C. 1531 et seq.) and the regulations governing the taking, importing, and exporting of endangered and threatened species (50 CFR 222-226). The modification would be valid through April 5, 2017.

1.1.1 BACKGROUND:

In response to the receipt of an application for a modification from the USFWS [File No. 16547-01], NMFS PR proposes to issue a modification to scientific research Permit No. 16547 to include changes in the "takes"[1] of Atlantic sturgeon pursuant to the statute and regulations listed above. This document supplements the 2012 EA entitled "*Environmental Assessment for the Issuance of 12 Scientific Research Permits for Research on Atlantic Sturgeon, April 2012*" (NMFS 2012a).

Permit No. 16547 currently authorizes the permit holder to: evaluate the abundance of Atlantic sturgeon within the Chesapeake Bay DPS, including its tributaries of the Chesapeake Bay. Research areas of the Bay, extending from its mouth (mile marker 0) to the fall lines of each tributary are segmented by salinity. In waters below 22 parts per thousand (ppt), up to 200 Atlantic sturgeon adults and sub-adults ($\geq$ 500 mm total length TL) are authorized to be captured, measured, weighed, photographed/ videoed, tissue sampled, Passive Integrated Transponder (PIT) tagged, T-bar tagged and either externally telemetry tagged or else anesthetized and internally telemetry tagged. In major tributaries having salinity levels below 22 ppt, up to 225 adults and sub-adults are authorized to be captured, measured, weighed, video/photographed, tissue sampled, PIT tagged and T-bar tagged. A sub-set of 75 of these are authorized to be externally telemetry tagged. Additionally, up to 175 juvenile Atlantic sturgeon (< 500 mm TL) are authorized to be captured in waters less than 22 ppt, and then measured, weighed, photographed, tissue sampled, PIT tagged and T-bar tagged. A sub-set of 25 of these are authorized for external telemetry tagging. The incidental mortality of up to 3 Atlantic sturgeon (one adult over the life of the permit), as well as the incidental, non-lethal take of up to 2 listed sea turtles and 4 shortnose sturgeon is authorized annually. Finally, the annual directed lethal take of up to 25 ELS, collected with egg mats in the spawning areas of suspected rivers, is permitted.

The permit holder now requests several changes in the existing permit. The applicant now wishes to be able to telemetry tag all appropriate life stages of Atlantic sturgeon without respect to salinity level. The total numbers of adult and sub-adult Atlantic sturgeon ($\geq$500 mm) requested, however, would be reduced from 425 to 350, with a sub-set of animals either

1 The ESA defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The term "harm" is further defined by regulations (50 CFR §222.102) as "an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns including breeding, spawning, rearing, migrating, feeding, or sheltering."

internally or externally telemetry tagged reduced from 200 to 150 per year. The numbers of juvenile (< 500 mm) Atlantic sturgeon takes would be reduced from 175 to 125 annually; however, the sub-set of these juvenile animals receiving telemetry tagged would be increased from 25 to 50 and also include the option for internal tagging animals between 300 and 500 mm TL after anesthetization. Additionally, the number of ELS taken is proposed to be increased from 25 to 50 annually to increase efforts documenting spawning activity. All other activities authorized in Permit No. 16547 would continue as currently permitted.

1.1.2 PURPOSE AND NEED:

The primary purpose of the permit is to provide an exemption from the ESA prohibitions to allow "takes" of endangered species for bona fide scientific research. The need for issuance of the permit is related to NMFS's mandates under the ESA, specifically, the responsibility to protect, conserve, and recover threatened and endangered species under its jurisdiction. The ESA prohibits takes of threatened and endangered species with only a few very specific exceptions, including for scientific research and enhancement purposes. Permit issuance criteria require research activities are consistent with the purposes and policies of this federal law and will not have a significant adverse impact on the species. NMFS reviewed the proposed action to ensure all the proposed activities fulfill these permit issuance criteria.

1.1.3 OBJECTIVES OF THE RESEARCH:

The principal objectives of the proposed modification are identical to that of the original permit: collecting data on the biology, distribution and abundance of the endangered Atlantic sturgeon in the Chesapeake Bay DPS to facilitate recovery of the species. However, as described above, the applicant requests changes in the numbers and types of telemetry tags for tracking sturgeon, and numbers of ELS for documenting spawning activity.

1.2 OTHER EAs/EISs INFLUENCING THE SCOPE OF THIS SEA

An EA (NMFS 2012a) was prepared for issuance of the original Permit No. 16547 in April of 2012. NMFS determined that issuance of the permit and the associated research would not result in significant impacts to any portion of the human environment.

Because the proposed action would not change the nature or location of the research activities, the effects on the physical, social, and economic environment are not re-examined in this SEA. The modification would authorize changes in the takes of individual Atlantic sturgeon; therefore, the scope of this SEA is limited to the potential impacts to individual Atlantic sturgeon.

1.3 SCOPING SUMMARY

The purpose of scoping is to identify the issues to be addressed and the significant issues related to the proposed permit modification, as well as identify and eliminate from detailed study the issues not significant or those having been covered by prior environmental review. An additional purpose of the scoping process is to identify the concerns of the affected public and Federal agencies, states, and Indian tribes. CEQ regulations implementing the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq*.) do not require draft SEAs be made available for public comment as part of the scoping process.

A Notice of Receipt of the supplemental application was also published in the Federal Register on December 7, 2012 announcing the availability of the permit modification and related documents for public comment (File No. 16547-01; 77 FR 73024). No comments were received from the public regarding this application. Comments solicited from NMFS Northeast Regional Office and Northeast Fisheries Science Center were addressed in the decision memos.

1.4 APPLICABLE LAWS AND NECESSARY FEDERAL PERMITS, LICENSES, AND ENTITLEMENTS

This section has not changed from that described in the 2012 EA (NMFS 2012a). Applicable laws include the NEPA and ESA.

CHAPTER 2: ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 ALTERNATIVE 1 – NO ACTION

Under the No Action alternative, a modification to scientific research Permit No. 16547 to add Atlantic sturgeon take would not be issued at this time. The existing permit would remain in effect through expiration on April 5, 2017, allowing research to continue as originally authorized.

2.2 ALTERNATIVE 2 – PROPOSED ACTION

Under the Proposed Action alternative, a permit modification would be issued for research activities having terms and conditions standard to such permits as issued by NMFS. The proposed changes to the permit, as summarized in Section 1.1.1 of this SEA, would be authorized and would remain in effect until expiration.

2.3 DESCRIPTION OF THE PROPOSED ACTION

2.3.1 *BOUNDARIES OF ACTION AREA:*

The action area is defined in 50 CFR 402.02 as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The description of the action area therefore includes the areas affected by sampling activities as well as the area transited by project vessels.

Under the proposed modification, the action area would remain the same as authorized in Permit No. 16547. Sampling of Atlantic sturgeon would continue to occur throughout the Chesapeake Bay including all watersheds draining into the Chesapeake Bay, extending from its mouth (Bay Mile 0) to the fall line of each tributary.

2.3.2 *REQUESTED MODIFICATION:*

2.3.2.1. Proposed Take of ESA Target Species: Atlantic Sturgeon:

The proposed modification would continue targeting Atlantic sturgeon in the same action area using gill nets, trawls, fyke nets, trammel nets, pound nets and egg mats. Adult, sub-adult, juvenile Atlantic sturgeon, would be captured, measured, weighed, photographed, tissue sampled, PIT tagged, and T-bar tagged. A subset of adult, sub-adult and juvenile animals would either be externally telemetry tagged or else anesthetized and internally telemetry tagged, and ELS would be sampled on spawning grounds. (See Appendix 1 for take current authorized in Permit No. 16547.)

As shown in Table 1 below, changes to the permit would include: (1) **targeting locations of Atlantic sturgeon in the Chesapeake Bay and tributaries without respect to the salinity level where the fish would be sampled.** Adult and sub-adult sturgeon takes (≥ 500 mm TL) would be reduced from 425 to **350.** A sub-set of these fish (reduced from 200 to **150** per year) is requested to either be externally or internally telemetry tagged. Also, a reduction of juvenile (< 500 mm) Atlantic sturgeon takes (175 to **125** per year) is requested, and (2) a sub-set of these juveniles (increased from 25 to **50) to be sedated with the option to use EN and internal telemetry tags.** Finally, the modification includes a request to (3) **increase the number of ELS annually lethally sampled with egg mats from 25 to 50.**

Table 1: Annual Take Requested for Permit Modification No. 16547-01

Species	Life Stage	Proposed Annual Take	Observe/ Collect Method	Proposed Take Activities	Location
Atlantic Sturgeon	Adult or[a] Sub-adult	**200**[c]	Gillnet, trawl, trammel net, fyke, trap nets, and pound nets	Measure; Weigh; Photo/Video; PIT & T-bar tag, Fin clip	**Chesapeake Bay and Tributaries, MD & VA Chesapeake Bay DPS**
Atlantic Sturgeon	Adult or[a] Sub-adult	**150**	Gillnet, trawl, trammel net, fyke, trap nets, and pound nets	Measure; Weigh; Photo/Video; PIT & T-bar tag, Fin clip External sonic/radio tag; or Anesthetize & Internal sonic/radio	**Chesapeake Bay and Tributaries, MD & VA Chesapeake Bay DPS**
Atlantic Sturgeon	Juvenile[b]	**75**	Gillnet, trawl, trammel net, fyke, trap nets, and pound nets	Measure; Weigh; Photo/Video; PIT & T-bar tag; Fin clip	**Chesapeake Bay and Tributaries, MD & VA Chesapeake Bay DPS**
Atlantic Sturgeon	Juvenile[b]	**50 (Up to 125 tagged over Permit)**	Gillnet, trawl, trammel net, fyke, trap nets, and pound nets	Measure; Weigh; Photo/Video; PIT & T-bar tag, Fin clip, External sonic/radio tag; or **Anesthetize & Internal sonic/radio**	**Chesapeake Bay and Tributaries, MD & VA Chesapeake Bay DPS**
Atlantic Sturgeon	Eggs or Larvae (ELS)	**50**	Egg mat	Intentional (directed) mortality; photo/video	Chesapeake Bay tributaries Chesapeake Bay DPS
Atlantic Sturgeon	Juvenile Sub-adult Adult	2 1[d]	Gillnet, trawl, trammel net, fyke, trap nets, and pound nets	Unintentional Mortality	**Chesapeake Bay and Tributaries, MD & VA Chesapeake Bay DPS**

a. Includes no more than 150 adults captured in any one river per year. Adult/sub-adult fish refers to all fish no longer river-resident juveniles, approximately 500mm. An adult sturgeon is considered ≥ 1,300 mm.
b. Juvenile are river-resident fish <500mm; no more than 125 juveniles may be telemetry tagged over five years.
c. Includes no more than 150 adults captured in any one river per year.
d. Mortality of 1 adult Atlantic sturgeon over the life of the permit.

2.3.2.2 Anticipated Take of Non-Target ESA and Protected Species:

The Biological Opinion for this action (NMFS 2013) adopted the same potential for incidental take in Table 2 below for other non-target ESA species in the action area, including shortnose sturgeon and sea turtles, as authorized in Permit 16547. Further, the same protective measures discussed in the 2012 EA (NMFS 2012a) for listed and protected marine mammals would be

incorporated in the permit for the current modification. Thus, the effects of this anticipated take on the listed and protected species identified are not considered further in this SEA.

Table 2. Annual Incidental Take Statement Resulting in Short-term Harassment and or Minimal Injury of Sea Turtles and Shortnose Sturgeon Written by the NMFS Biological Opinion for issuance of Permit Modification No. 16547-01.

Species	**Life Stage**	**Sex**	**Number of Takes**	**Take Action***	**Location**	**Dates/ Time Period**
Loggerhead sea turtle (*Caretta caretta*) Green sea turtle (*Chelonia mydas*) Leatherback sea turtle (*Dermochelys coriacea* Hawksbill sea turtle (*Eretmochelys imbricata*) Kemp's ridley sea turtle (*Lepidochelys kempii*)	Juvenile sub-adult or adult	M/F	2**	Incidental Non-lethal Take	Chesapeake Bay and Tributaries	Year-round
Shortnose sturgeon (*Acipenser brevirostrum*)	Juvenile or Adult	M/F	4***	Incidental Non-lethal Take	Chesapeake Bay & Tributaries	Year-round

***=** Sea turtles must be removed from nets immediately and released alive. In addition, capture gear shall not be placed in the water, or will be removed, if any of these animals are known to be present in the immediate area.

***=** Includes responses ranging from very mild short-term stress to short term minimal injury from net gear capture. Up to 2 total takes annually, including: 2 loggerheads, or 1 loggerhead PLUS 1 green, OR 1 leatherback, OR 1 hawksbill, OR 1 Kemp's ridley, over the course of the permit. Takes do not include mortality.

***= The applicant would be authorized to capture unharmed up to4 shortnose sturgeon incidentally from the Chesapeake Bay and river systems, but may not conduct further research activity prior to releasing it from the net alive.

2.3.3: *DESCRIPTION OF REQUESTED MODIFICATIONS OF ATLANTIC STURGEON TAKE:*

2.3.3.1 Request for Targeting Atlantic Sturgeon in the Chesapeake Bay and Tributaries without Respect to the Salinity Level Where Fish are Sampled:

The applicant is requesting sampling all waters for Atlantic sturgeon without segregating sampling in areas above and below 22 ppt salinity, stating that establishing boundaries based on salinity is now seen unnecessary because juvenile sturgeon will remain river resident in freshwater tributaries until age 2 (or ~ 500 mm TL). After leaving the freshwater system, sub-adult and adults typically remain in salt water except for foraging and spawning activities. Because the majority of larger Atlantic sturgeon are captured in the fall as they stage in saltwater prior to moving into freshwater for spawning runs, the applicant requests to capture and tag these fish in either salt or freshwater. Sampling on this fish would remain as currently authorized. Removing the salinity restriction would add more flexibility for managers for learning the most about migratory movements of these fish, and would also allow for a reduction in the overall take numbers since take would no longer be partitioned by salinity.

2.3.3.2 Request for Anesthetizing and Internally Telemetry Tagging a Sub-set of Juvenile Atlantic sturgeon (300 - 500 mm TL), and Increasing the Number Tagged from 25 to 50:

Whereas the current permit only authorizes external tagging of juvenile Atlantic sturgeon, the applicant is now requesting adding an option for internally tagging river resident juveniles (300 to 500 mm TL) using appropriately sized V-9 Vemco telemetry devices and surgical techniques under sedation (by electronarcosis or MS-222). The identical surgical methods used for implanting the smaller Vemco internal tags (Table 3) would be used in the modified permit and are discussed in the 2012 EA for File 16547 (NMFS 2012a).

Table 3: Proposed Vemco acoustic tag implanted internally: Model and Specifications

Tag Model	Length	Diameter	Weight (H_20)	Weight (O_2)
V9-6L	21.0 mm	9 mm	1.6 g	2.9 g

The applicant is requesting internal tagging for juveniles to ensure better tag retention and provide important early life movement information. External tagging techniques typically allow for telemetry tags to be attached for approximately one to two years on larger fish with good retention reported, depending on the rate of decay of the tethered wires securing them to the fish. However, due to their narrower girth, juvenile sturgeon are less suited for external tags; on smaller fish, the tag extends off the side of the body and has a tendency to catch on substrate and debris, causing poor tag retention.

The applicant also requests increasing the numbers of juveniles authorized for internal telemetry tagging in any one year to 50 from 25, but not exceeding the previous total authorized of 125 externally tagged over the five year permit in Permit 16547. Currently, the applicant may attach external tags to up to 125 juvenile sturgeon over the five years of the permit (25 annually). As requested, the applicant will no longer telemetry tag juvenile sturgeon externally. Under this modification, the applicant would be permitted to implant up to 50 juveniles with internal telemetry tags annually, but would not exceed 125 takes over the remainder of the permit.

The increased emphasis on tracking juvenile life stages is due to the applicant's recent observations of reproduction of Atlantic sturgeon documented in the York River (and suspected spawning in the James River) in Virginia. Thus, understanding the movement of the juvenile life stage in Chesapeake Bay rivers is important for measuring and fostering recruitment for this life stage, as well as defining the critical habitat for the species in the Chesapeake Bay system.

2.3.3.3 Request for Increasing the Number of ELS Sampled from 25 to 50:

The applicant is currently authorized to deploy egg mats in spawning areas, collecting up to 25 ELS annually. Now the applicant requests to collect up to 50 ELS annually in all rivers currently authorized, with an emphasis in the James River and in other tributaries where increased effort would take place in the future. Researchers have documented evidence of fall spawning of Atlantic sturgeon in the James River (Balazik et al. 2012) represented by: (1) the seasonal capture and physiological stage of maturity of fish captured between 2009-2012 with mature spermiating males and ovulating females; (2) ultrasonic tagging and tracking data of mature adults migrating upriver to suspected spawning areas; and (3) the increased frequency of reported vessel strikes on mature fish in the fall. The applicant's plans for additional work in the York River and other tributaries of the Chesapeake Bay, is supported by recent evidence of

reproduction found in the York River where age-0 (13-15 cm FL) juvenile Atlantic sturgeon were captured (Balasik et al. 2012).

2.3.3.4 Anticipated Interaction with Atlantic Sturgeon Originating from Other Listed DPSs:

Because Atlantic sturgeon are known to occupy marine areas outside of their natal rivers (Waldman, et. al. 2012), there is potential for Atlantic sturgeon captured in the Chesapeake Bay and its river systems to have originated from outside of the Chesapeake Bay DPS where the research is proposed. As informed by the 2012 Biological Opinion for the original action (NMFS 2012b), based on the most current genetic information available indicating an overlap of animals within the marine range of the five documented DPSs through coast-wide migrations of Atlantic sturgeon, NMFS estimated to what extent it was likely that researchers, sampling in either brackish or freshwater areas of the Chesapeake Bay system, would capture animals originating from an aggregation of each of the DPSs.

To the extent that changes are proposed in the new permit application based on numbers and life stages of Atlantic sturgeon, and where they are taken in the Chesapeake Bay, NMFS, through the section 7 process of the ESA is required to make a new determination whether the changes in the proposed research would be likely to jeopardize the continued existence of any of the other Atlantic sturgeon DPS potentially affected by the action. The assumptions and the estimates of interaction with other DPS's in this determination appear in Section 4 of this SEA.

CHAPTER 3: AFFECTED ENVIRONMENT

3.1 PHYSICAL ENVIRONMENT

The action area for the research under the proposed permit modification is identical to that considered in the 2012 EA (NMFS 2012a). NMFS PR has determined that the 2012 EA considers all of the measurable impacts on the physical environment, and consequently. Thus, the modifications proposed in this SEA are not expected to impact the physical environment in ways not previously analyzed. The original EA is incorporated by reference (NMFS 2012a).

3.2 BIOLOGICAL ENVIRONMENT

The biological environment for the proposed research modification has changed from that evaluated in the 2012 EA to the extent the modification would authorize additional annual takes of Atlantic sturgeon; therefore, this discussion is limited to the potential impacts of these additional takes to individual Atlantic sturgeon.

Biodiversity and Ecosystem Function

The proposed action is directed at the target Atlantic sturgeon and does not interfere with benthic productivity, predator-prey interactions or other biodiversity or ecosystem functions. With the exception of a limited increase in the number of ELS directed mortality, and incidental mortality or harm of 3 individual Atlantic sturgeon, the effects already considered in the 2012 EA (NMFS 2012a), Atlantic sturgeon will not be removed from the ecosystem or displaced from habitat, nor will the permitted research affect their diet or foraging patterns. (See Chapter 4 for a more detailed discussion on the effects of ELS removal from the system). Further, the proposed action does not involve activities known or likely to result in the introduction or spread of aquatic

nuisance species, such as ballast water exchange. Thus, effects on biodiversity and ecosystem function will not be considered further.

Ocean and Coastal Habitats

The proposed action is directed at the target Atlantic sturgeon and would not affect habitat. As noted in the 2012 EA for the applicant's previous actions, the gill nets, trammel nets, trawls, fyke nets, trap nets and pound nets, and egg mats would have little to no impact to the sediment, critical habitat, or other bottom habitat (NMFS 2012a). Further, research vessels would avoid sensitive habitat areas and researcher would take precautions to avoid trawling over the same area in a 24 hour period. Based on the proposed research methods and mitigating conditions of the permits, the proposed action does not involve substantive alteration of substrate, movement of water or air masses, or other interactions with physical features of ocean and coastal habitat. Thus, effects on habitat will not be considered further.

Unique Areas

If authorized, the research would not take place at any sanctuaries, reserves or conservation areas. No park lands, prime farmlands, wetlands, or wild and scenic rivers are found within the action area. The proposed action is directed at Atlantic sturgeon and would not alter or affect habitat, unique areas, including any components of essential fish habitat. As noted in the 2012 EA for the applicant's previous action, protected areas, critical habitat, and EFH around the Chesapeake Bay and tributaries are not likely to be significantly impacted by the proposed action Thus, effects on such unique areas will not be considered further.

Historic Places, Scientific, Cultural, and Historical Resources

There are no districts, sites, highways or structures listed in or eligible for listing in the National Register of Historic Places in the action area. The proposed action represents the non-consumptive use of Atlantic sturgeon for scientific research purposes and does not preclude their availability for other scientific, cultural, or historic uses. Thus, effects on such resources will not be considered further.

Social and Economic Resources

The proposed action does not affect distribution of environmental burdens, access to natural or depletable resources or other social or economic concerns. It does not affect traffic and transportation patterns, risk of exposure to hazardous materials or wastes, risk of contracting disease, risk of damages from natural disasters, food safety, or other aspects of public health and safety. Thus, effects on such resources will not be considered further.

CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

This chapter represents the scientific and analytical basis for comparison of the direct, indirect, and cumulative effects of the alternatives. Regulations for implementing the provisions of NEPA require consideration of both the context and intensity of a proposed action (40 CFR Parts 1500-1508).

4.1 EFFECTS OF ALTERNATIVE 1 – NO ACTION

Under the No Action alternative, the take activities would continue as currently authorized under the existing permit. Based on the analyses in the 2012 Biological Opinion (NMFS 2012b) determined issuance of the permit and conduct of the associated research would not likely jeopardize the continued existence of Atlantic sturgeon or any other non-target species. Additionally, the activities conducted under the permit were not expected to significantly affect any other portions of the environment.

4.2 EFFECTS OF ALTERNATIVE 2 – PROPOSED ACTION

Any impacts of the Proposed Action alternative would be limited primarily to the individual Atlantic sturgeon, the target species, and it thus is unlikely to affect the physical or socioeconomic environment or pose a risk to public health and safety in any way not already analyzed in the 2012 EA (NMFS 2012a) previously prepared for this permit. The following discussion assesses the effects of additional directed take on Atlantic sturgeon.

4.2.1 *EFFECTS OF PROPOSED ATLANTIC STURGEON TAKES*:

4.2.1.1 Effects of Targeting Atlantic sturgeon in the Chesapeake Bay and Tributaries without Respect to the Salinity Level in Areas where Fish are Sampled:

The applicant is currently authorized in Permit No. 16547, to take Atlantic sturgeon segregated by salinity above and below 22 ppt and by life stage. However, the new application requests redefining the level of take of life stages without respect to salinity because his current authorization necessitates an increase in the numbers of each life stage without an added benefit to the researcher. Thus, by pooling the take of Atlantic sturgeon life stages, NMFS would expect a decreased risk to the species, or to other listed species, because fewer animals of some life stages are requested in the modification to accomplish the same research goals.

4.2.1.2 Effects of Internally Telemetry Tagging a Sub-set of Juvenile Atlantic Sturgeon (300 - 500 mm TL), and Increasing the Number of Juveniles Tagged from 25 to 50:

It was previously concluded in the Biological Opinion for File 16547 (NMFS 2012b) that surgically implanting internal transmitter tags under anesthesia using standard methods described in Kahn and Mohead (2010), would not jeopardize Atlantic sturgeon. The same non-lethal methods are proposed in the new application to implant appropriately sized V-9 Vemco internal tags in juvenile sturgeon, assuring a safe maximum tag to body weight ratio of 2% in juvenile sturgeon. Disinfection would be practiced in the field, including cleaning surgical instruments with alcohol and using new scalpels and needles between each surgery. When possible, electronarcosis (EN) is proposed to be used to anesthetize juvenile sturgeon for the surgical implanting of tags. However, if EN could not be used because the boat were not equipped with an EN unit, or because EN were less effective in brackish water, then MS-222 will be used in accordance with the recommendations in Kahn and Mohead (2010). The applicant also requests increasing the numbers of juveniles authorized for internal telemetry tagging in any one year to 50 from 25, but not exceeding the previous total authorized number of 125 juveniles externally tagged over the five year permit in Permit 16547.

In the 2013 Biological Opinion supporting issuance of this permit modification (NMFS 2013), it was concluded that the added surgical procedure of internal tagging as proposed in up to 50 juvenile Atlantic sturgeon, would potentially increase adverse effects to individual sturgeon, but should not result in serious injury or lead to mortality beyond that which was analyzed in Permit No. 16547.

4.2.1.3 Effects of Increasing the Number of ELS Sampled from 25 to 50:

The applicant is currently authorized to deploy egg mats to document spawning in all rivers of the Chesapeake Bay DPS, and collecting up to 25 ELS annually. In the permit modification, the applicant requests collecting up to 50 ELS annually in all tributaries, and although, there would potentially be increased effort if ELS were discovered in new rivers, the activity would new represent no new impacts to the physical environment and the substrate than previously considered in the 2012 EA (NMFS 2012a).

As reasoned in the 2012 EA, the fecundity of Atlantic sturgeon has been correlated with age and body size (ranging from 400,000 to 8 million eggs (Smith et al. 1982, Van Eenennaam and Doroshov 1998, Dadswell 2006). However, Atlantic sturgeon likely do not spawn every year, as evidenced by multiple studies showing spawning intervals ranges from 1-5 years for males (Smith 1985, Collins et al. 2000b, and Caron et al. 2002) and 2-5 years for females (Vladykov and Greeley 1963, Van Eenennaam et al. 1996, Stevenson and Secor 1999). The populations (if any) and sex ratio of Atlantic sturgeon in spawning rivers within the action area of the Chesapeake Bay DPS is largely unknown; however, Balazik et al. (2012) captured 106 mature adult Atlantic sturgeon on apparent spawning runs in the fall over a three-year period (2009 to 2011). Because it is important to be conservative when analyzing the impacts of removing eggs and larvae from a river system, the following assumptions are made. If only 1 female sturgeon were to reproduce in the action area each year, producing a minimal number of eggs (400,000), the proposed removal of the additional 25 eggs requested in the modification, would approximate 0.025% of the eggs produced over the next four years remaining in the permit. As such, by lethally collecting an additional 25 Atlantic sturgeon ELS for purposes of documenting spawning activity, NMFS considers the impact on the reproductive success and recruitment of Atlantic sturgeon to be to be minimal.

4.2.1.4 Effects on Atlantic Sturgeon Originating from Other Listed DPSs:

As previously stated, there is potential for Atlantic sturgeon captured in the Chesapeake Bay and river systems to have originated from outside of the Chesapeake Bay DPS where the research is proposed. Having no knowledge at the time of capture of genetic origins of captured animals, and limited resources and technology to conduct immediate genetic tests necessary for determining DPS origins, the numbers of animals captured from separate DPSs would not be known for some time afterwards. Thus, the Biological Opinion produced for this action (NMFS 2013) used assumptions for estimating the prior extent to which individual DPSs of Atlantic sturgeon in mixed aggregations would be taken in the proposed action based on the work by Wirgin et al. (2007) and Bartron et al. (2007) and the biased targeting of larger adults during spawning season in the upper freshwater locations. These assumptions are summarized for the current action as follows:

- Based on the work of Wirgin et al (2007), we anticipate the life stages of ELS, juveniles (less than 500 mm TL) and adults (over 1300 mm TL) captured in freshwater sections of spawning rivers, to originate from the spawning river of origin.

- Based on the researcher's purposed targeting of larger adults with larger mesh gear from freshwater locations such as the James River of the Chesapeake Bay DPS rivers, we anticipate that at least 50% of all animals authorized (175) would be adults originating from the Chesapeake Bay DPS.

- Based on the work of Barton et al (2007), we anticipate the remainder of the authorized take of Atlantic sturgeon (175) measuring above 500 mm (TL) throughout all of the Chesapeake Bay DPS, would be a mixed stock of animals originating from throughout the range of Atlantic sturgeon DPSs in the following proportions: James River (45.5%, Table 2); Hudson River (38.8%); Kennebec River (2.6%); Savannah River (9.4%);, and also the St. John, Ogeechee, and Altamaha River populations (2%).

Therefore, based on the above assumptions, Table 4 below characterizes the anticipated numbers of animals taken by life stage in the proposed action originating from all DPSs.

Table 4. Estimated allocation by DPS of Atlantic sturgeon authorized captured annually in Permit No. 16547-01.

Atlantic sturgeon Anticipated in Permit		Chesapeake Bay DPS	NY Bight DPS	GOM DPS	Carolina DPS	South Atlantic DPS
ELS	50	100% or 50	0%	0%	0%	0%
Juvenile[1]	125	100% or 125	0%	0%	0%	0%
Adults & Sub-adults[2]	175	45.5% or 80	38.8% or 68	2.6% or 5	0%	9.4% or 16
Adults [3]	175	100% or 175	0%	0%	0%	0%

1. Juveniles defined as river resident animals less than 500 mm TL.
2. Adults and sub-adults targeted in all locations of the Chesapeake Bay DPS
3. Adults targeted in riverine freshwater areas of suspected spawning rivers with large mesh gear.

Summary: The expected ratios of animals captured by researchers included in Table 4 forms the basis of the expected origins of Atlantic sturgeon captured from other DPSs and those natal to the local DPSs. Researchers would be required to report on the genetic origins of their takes within annual reports; however, in order to process the workload for genetic analyses to understand what DPSs animals originated from, researchers would be required to submit the samples within six months of capture to the NOS Tissue Archive to determine genetic origins.

The Biological Opinion for this Proposed Action (NMFS 2013) acknowledges that there are temporal components for assigning take allocations that are not considered adequately including when animals are captured for which the genetic analyses is relied upon to define interactions with other DPSs. Although, at this point, we do not have sufficient information to incorporate a temporal component into how we analyze mixed stock allocations for Atlantic sturgeon, NMFS anticipates in the future our exposure analyses would be better developed as more genetic information is analyzed and incorporated into the analyses forming a wider array of sampling locations.

Annually, after all takes are tallied from each of the DPSs for all research performed coast-wide, NMFS will compare allocated take with actual take by incorporating the genetic assignments determined for each animal to measure and limit the impacts of research on individual subpopulations that researchers may interact with.

Beyond this effort, however, NMFS would immediately begin obtaining more complete information on the potential cumulative impacts of the research activities on individual DPSs for use in future analyses and when issuing future permits. Researchers' permits would be conditioned to take genetic tissue samples from all Atlantic sturgeon captured and forwarding samples to the genetics archive within six months of capture. After expedited genetic testing is conducted, NMFS would be further informed on the potential for cumulative impacts on Atlantic sturgeon by documenting temporal and spatial coast-wide movements of Atlantic sturgeon originating from each of the DPSs.

4.2.1.5 Summary of Impacts to Atlantic sturgeon:

The issue most relevant to this analysis is the potential for negative impacts on the target species. It is important to recognize that an adverse effect on a single individual or a small group of animals does not translate into an adverse effect on the population or species unless it results in reduced reproduction or survival of the individual(s) causing an appreciable reduction in the likelihood of survival or recovery for the species. In order for the Proposed Action to have an adverse effect on a species, the exposure of individual animals to the research activities would first have to result in:

- direct mortality,
- serious injury that would lead to mortality, or
- disruption of essential behaviors such as feeding, mating, or nursing, to a degree that the individual's likelihood of successful reproduction or survival was substantially reduced.

That mortality or reduction in the individual's likelihood of successful reproduction or survival would then have to result in a net reduction in the number of individuals of the species. In other words, the loss of the individual or its future offspring would not be offset by the addition, through birth or emigration, of other individuals into the population. That net loss to the species would have to be reasonably expected, directly or indirectly, to appreciably reduce the likelihood of both the survival and recovery of the listed species in the wild.

The proposed takes of the permit modification in File 16547-01 are considered more conservative for each life stage previously authorized in the original permit, with exception of increased telemetry tagging and directed mortality of ELS from 25 to 50 annually. And although, the proposed surgery for implanting internal telemetry tags under sedation would be considered a more invasive procedure than external attachment of sonic tags, the applicant does not anticipate or request added authorization for lethal effects or serious harm from this activity. Hence, the incidental mortality or serious harm experienced caused by all research activities in the modification, would not change from that previously authorized.

In the future, because the total number of animals captured and suite of activities performed would decrease as a result of the Proposed Action, with exceptions described above, NMFS does not expect the activities would result in further serious injury, mortality or reduced reproductive success of the target species than previously considered. For the same reasons, NMFS does not

anticipate the modifications to the permit would change the impacts on other DPSs potentially encountered by the research. The conclusion of the Biological Opinion (NMFS 2013) produced for this action supports this determination, stating that the Proposed Action is not expected to significantly further impact individual Atlantic sturgeon, their populations or sub-populations of the species.

4.3 SUMMARY OF COMPLIANCE WITH APPLICABLE LAWS, NECESSARY FEDERAL PERMITS, LICENSES, AND ENTITLEMENTS

As summarized below, NMFS has determined the proposed research is consistent with the purposes, policies, and applicable requirements of the ESA and NMFS regulations. NMFS issuance of the modification would be consistent with the ESA. However, issuance of this modified permit would not relieve the Permit Holder of the responsibility to obtain any other permits, or comply with any other Federal, State, local, or international laws or regulations.

4.3.1 *COMPLIANCE WITH THE ENDANGERED SPECIES ACT*

The consultation process under section 7 of the ESA was initiated after close of the comment period ensuring that no relevant issues or information were overlooked during the initial scoping process summarized in Chapter 1. For the purpose of the consultation, the draft SEA represented NMFS' assessment of the potential biological impacts.

After reviewing the current status of endangered Atlantic sturgeon, the environmental baseline for the action area, the effects of the proposed research program, and the cumulative effects, NMFS's Biological Opinion (NMFS 2013) determined that issuance of this permit modification would not likely jeopardize the continued existence of the Atlantic sturgeon within any of its designated DPSs. Critical habitat has not been listed for Atlantic sturgeon currently; consequently its impact was not considered in the Biological Opinion. However, upon issuance of the modification, should critical habitat be established for any listed species prior to the expiration of this permit, the consultation process under section 7 of the ESA would be re-initiated.

4.4 COMPARISON OF ALTERNATIVES

The No Action alternative would not allow any aspects of the requested modification to be authorized. The research would continue as currently authorized. This alternative would not result in any significant adverse impacts to the social, economic, biological, or physical environment; however, the opportunity to gather additional information that would aid in the conservation and management of endangered Atlantic sturgeon would be lost.

The Proposed Action alternative would authorize new takes of Atlantic sturgeon. Although this alternative would result in impacts to the target Atlantic sturgeon, no other aspects of the environment are expected to be significantly adversely affected than was previously analyzed in documents authorizing Permit No. 16547. The appropriate mitigation measures proposed in the original permit would be used to guard against any adverse effects to the species and population, whereby the information gained would outweigh any potential for negative impacts to the target species.

4.5 MITIGATION MEASURES

The mitigation measures contained in Permit No. 16547 would remain in place and would be intended to minimize the potential for adverse effects on Atlantic sturgeon. While the more conservative measures resulting from removing the environmental constraints of salinity would be incorporated into the new permit, no additional mitigation measures are proposed.

4.6 UNAVOIDABLE ADVERSE EFFECTS

Because the research involves wild animals not accustomed to being captured, the research activities would unavoidably result in some harassment. The research activities would cause disturbance and stress to Atlantic sturgeon already captured. However, the research activities are not expected to have more than minimal effect on individuals and no effect on populations with animals recovering within the day of the procedures. Thus, while individual animals could experience short-term stress and discomfort in response to the activities, the impact to individual animals is not expected to be significant. The minimization measures imposed by permit conditions are intended to reduce to the maximum extent practical the potential for adverse effects of the research on these species. Since the proposed action would only occur on Atlantic sturgeon already captured, no other portion of the human environment would be affected in a manner not already considered in the 2012 EA (NMFS 2012a).

4.7 CUMULATIVE EFFECTS

The baseline for this document, discussed in the original 2012 EA, includes the past and present impacts of state, Federal or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone consultations under Section 7 of the ESA, and the impact of contemporaneous state or private actions.

There is one other ESA research permit authorizing similar sturgeon research in Chesapeake Bay having an action area overlapping part of the proposed action area. This permit authorizes scientific research on shortnose sturgeon in the Potomac River in Maryland and Virginia waters (File No. 14176; NMFS 2010). However, all of the research actions would be expected to have no more than short-term effects on any individual endangered Atlantic sturgeon potentially encountered and no impacts on other aspects of the environment. Moreover, researchers working under NMFS permits are required to notify the appropriate NMFS Regional Office in advance of field work. The Northeast Regional Office is tasked with coordinating activities under multiple permits for the action area to ensure there is not unnecessary duplication of research. For a complete description of previously analyzed cumulative effects, please refer to the 2012 EA (NMFS 2012a).

NMFS believes that the proposed modification as discussed above, and in the original EA, would not have significant cumulative effects on either the human or marine environment. The proposed action is directed at specific Atlantic sturgeon, and, as modified, would also not have a significant cumulative impact on non-target species encountered or on the physical environment of the proposed action area. Further, as informed by the Biological Opinion for this action (NMFS 2013), issuance of this modification is not likely to jeopardize the continued existence of endangered Atlantic sturgeon, its critical habitat, or of other listed species.

CHAPTER 5 LIST OF PREPARERS AND AGENCIES CONSULTED

Preparers:
Office of Protected Resources
National Marine Fisheries Service
Permits and Conservation Division
Office of Protected Resources
Silver Spring, MD 20910

Agencies and Personnel Consulted:

Office of Protected Resources Section 7 National Marine Fisheries Service Endangered Species Division, Silver Spring, MD 20910	Formal Consultations on the Effects on ESA Target Species (Atlantic sturgeon)

LITERATURE CITED

Balazik, M.T., Garman, G.C., Van Eenennaam, J.P., Mohler, J, and Woods, L.C. 2012. Empirical Evidence of Fall Spawning by Atlantic Sturgeon in the James River, Virginia. *Transactions of the American Fisheries Society* 141:1465–1471, 2012.

Bartron, M., Julian, S and Kalie J. 2007. Genetic assessment of Atlantic sturgeon from the Chesapeake Bay: Temporal comparison of juveniles captured in the Bay. USFWS Northeast Fishery Center, Conservation Genetics Lab.

Kahn, J. A. and M.C. Mohead. 2010. A Protocol for Use of Shortnose, Atlantic, Gulf, and Green Sturgeons. U.S. Dep. Commerce, NOAA Tech. Memo. NMFS-OPR-45, 62 p.

NMFS 2010. Environmental assessment on the effects of the issuance of a scientific research permits (File No. 14176) to conduct research on shortnose sturgeon in the Potomac River, Maryland and Virginia. September 2010. NMFS, Office of Protected Resources. Silver Spring, MD.

NMFS 2012a. Environmental assessment for the issuance of 12 scientific research permits for research on Atlantic sturgeon. April 2011. NMFS Office of Protected Resources. Silver Spring, MD.

NMFS 2012b. Biological opinion on the issuance of multiple permits to conduct scientific research on all Atlantic sturgeon DPSs along the Atlantic coast pursuant to section 10 (a)(1) of the Endangered Species Act of 1973. NMFS, Office of Protected Resources. Silver Spring, MD.

NMFS 2013. Biological opinion on the issuance of a modification to the Atlantic sturgeon research permit No. 16547 in Chesapeake Bay waters pursuant to section 10 (a)(1)(a) of the Endangered Species Act of 1973. NMFS, Office of Protected Resources. Silver Spring, MD.

Waldman, J.R., King T., Savoy, T., Maceda, L., Grunwald, C. and Wirgin, I. 2012. Stock origins of subadult and adult Atlantic sturgeon, *Acipenser oxyrinchus*, in a non-natal estuary, Long Island Sound. Estuaries and Coasts November 2012. DOI 10.1007/s12237-012-9573-0.

Wirgin, I., C. Grunwald, J. Stabile, and J. Waldman. 2007. Genetic evidence for relict Atlantic sturgeon stocks along the mid-Atlantic coast of the USA. North American Journal of Fisheries Management 27: 1214-1229.

Appendix 1:

Table 1. Annual Take authorized in Permit No. 16547
Atlantic sturgeon research in the Chesapeake Bay

Species	Life Stage	Proposed Annual Take	Observe/ Collect Method	Proposed Take Activities	Location
Atlantic Sturgeon	Adult/ Juvenile	100	Gillnet, trawl, trammel net, fyke, trap nets, and pound nets	Anesthetize[1]; internal sonic tag; PIT tag; Measure; Photograph or Video; fin clip; Weigh	Chesapeake Bay, MD & VA (All saline portions of Chesapeake Bay including coastal areas measuring above 22ppt salinity) **Chesapeake Bay Bight**
Atlantic Sturgeon	Adult/ Juvenile	100	Gillnet, trawl, trammel net, fyke, trap nets, and pound nets	External sonic tag; PIT tag; Measure; Photograph or Video; fin clip; Weigh	Chesapeake Bay, MD & VA (All saline portions of Chesapeake Bay including coastal areas measuring above 22ppt salinity) **Chesapeake Bay Bight**
Atlantic Sturgeon	Adult/ Juvenile	75	Gillnet, trawl, trammel net, fyke, trap nets, and pound nets	External sonic tag, Floy T-bar; PIT tag; Measure; Weigh; Photograph-Video; Fin clip	Chesapeake Bay & tributaries (James, York, Rappahannock Potomac Patapsco Patuxent, Chester, Choptank, Nanticoke Susquehanna & Pocomoke). **Chesapeake Bay Bight**
Atlantic Sturgeon	Juvenile	25	Gillnet, trawl, trammel net, fyke, trap nets, and pound nets	External sonic tag; Floy T-bar; PIT tag; Fin clip Measure; Weigh, Photograph Video	Chesapeake Bay & tributaries (James, York, Rappahannock Potomac Patapsco Patuxent, Chester, Choptank, Nanticoke Susquehanna & Pocomoke). **Chesapeake Bay Bight**
Atlantic Sturgeon	Juvenile	150	Gillnet, trawl, trammel net, fyke, trap nets, and pound nets	Mark, Floy T-bar; Mark, PIT tag; Measure; Photograph Video; Sample, fin clip; Weigh	Chesapeake Bay & tributaries (James, York, Rappahannock Potomac Patapsco Patuxent, Chester, Choptank, Nanticoke Susquehanna & Pocomoke). **Chesapeake Bay Bight**
Atlantic Sturgeon	Adult/ Juvenile	150	Gillnet, trawl, trammel net, fyke, trap nets, and pound nets	Mark, Floy T-bar; Mark, PIT tag; Measure; Photograph Video; Sample, fin clip; Weigh	Chesapeake Bay & tributaries (James, York, Rappahannock Potomac Patapsco Patuxent, Chester, Choptank, Nanticoke Susquehanna & Pocomoke). **Chesapeake Bay Bight**
Atlantic Sturgeon	Eggs or Larvae	25	Egg mat	Intentional (directed) mortality	Chesapeake Bay & tributaries (James, York, Rappahannock Potomac Patapsco Patuxent, Chester, Choptank, Nanticoke Susquehanna & Pocomoke Rivers). **Chesapeake Bay Bight**
Atlantic Sturgeon	Adult/ Juvenile	2 Juvenile 1 Adult[2]	Gillnet, trawl, trammel net, fyke, trap nets, and pound nets	Unintentional Mortality	Chesapeake Bay & tributaries, including all fresh and saline riverine and coastal areas. **Chesapeake Bay Bight**

1. Anesthesia performed using MS-222 or electronarcosis
2. Mortality of 1 Atlantic sturgeon adult over the life of the permit.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

Finding of No Significant Impact
Issuance of Scientific Research Permit No. 16547-01

Background

In October 2012, the National Marine Fisheries Service (NMFS) received an application for a permit modification (File No. 16547-01) from the U.S. Fish and Wildlife Service (Albert Spells, Responsible Party) to conduct research on Atlantic sturgeon in the Chesapeake Bay. In accordance with the National Environmental Policy Act, NMFS has prepared a Supplemental Environmental Assessment (SEA) analyzing the impacts on the human environment associated with permit issuance (*Supplemental Environmental Assessment (SEA) On the Issuance of a Modification to Scientific Research Permit No. 16547 to the United States Fish and Wildlife Service (USFWS) to Conduct Research on Atlantic Sturgeon in the Chesapeake Bay and Coastal Waters [2013]*). In addition, a Biological Opinion was issued under the Endangered Species Act (February 2013) summarizing the results of an intra-agency consultation. The analyses in the SEA, as informed by the Biological Opinion, support the below findings and determination.

Analysis

National Oceanic and Atmospheric Administration Administrative Order 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality (CEQ) regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

(1) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in Fishery Management Plans?

> The action area and the methods authorized in the original permit have not changed causing further impacts to EFH than were previously analyzed in consultation with the NMFS Office of Habitat Conservation. Therefore, there would be no change in the assessment of impacts caused to the mentioned resources.

(2) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

> No impact on biodiversity or ecosystem function within the affected area is expected as a result of permit modification (See Chapter 4 of SEA).

(3) Can the proposed action reasonably be expected to have a substantial adverse impact on public health or safety?

Issuance of the permit modification is not expected to have substantial adverse impacts on public health or safety. The proposed modification will not affect traffic and transportation patterns, risk of exposure to hazardous materials or wastes, risk of contracting disease, risk of damages from natural disasters, food safety, or other aspects of public health and safety.

(4) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, their critical habitat, marine mammals, or other non-target species?

The proposed modification may have adverse effects on individual endangered shortnose sturgeon, but the effects are not expected to be significant at the population or species level. Furthermore, we do not anticipate any increase in unintentional individual sturgeon mortality or serious injuries than previously analyzed in the Permit No. 16547. Permit No. 16547-01 however, does authorize a small increase in the number of intentional mortalities directed at Atlantic sturgeon eggs and larvae. In the Biological Opinion produced for this action, NMFS concluded issuance of the permit modification would not likely jeopardize the continued existence of the endangered Atlantic sturgeon. The permit contains standard NMFS mitigation protocols to minimize stress and harmful effects on the species as the original permit. Further, critical habitat has not yet been designated for Atlantic sturgeon; thus, it would not be affected. Should critical habitat be designated prior to the expiration of the permit, then consultation with section 7 would be re-initiated in order to determine the impact on the critical habitat of the species.

The Biological Opinion for this action adopted the same potential for incidental take as authorized in Permit No. 16547 for other non-target ESA species and other protected species in the action area, including shortnose sturgeon, sea turtles and marine mammals. Therefore, the effects of this anticipated take on the species identified are not changed for issuance of the modification.

(5) Are significant social or economic impacts interrelated with natural or physical environmental effects?

There are no known social or economic impacts associated with the proposed modification. Therefore, there would be no significant social or economic impacts interrelated with natural or physical environmental effects.

(6) Are the effects on the quality of the human environment likely to be highly controversial?

A *Federal Register* notice (77 FR 73024) was published on December 7, 2012, allowing other agencies and the public to comment on the action. All agency

comments were addressed and responses were included in the decision memos for the permit. None of the agency comments addressed the proposal's potential effects on the quality of the human environment. No comments from the public were received on this application. Given the proposed research methodologies are well known and are expected to have minimal effects, NMFS believes it is not likely to be controversial.

(7) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, essential fish habitat, or ecologically critical areas?

The action area or the methods authorized in the original permit have not changed. Therefore, there would be no change in the assessment of substantial to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, essential fish habitat, or ecologically critical areas.

(8) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

The effects of the proposed modification on the human environment are predictable based on evaluation of the effects of previously permitted research on the same species. The risks of the proposed action are known in that they are expected to be the same as those considered for issuance of the original Permit No. 16547 for takes of Atlantic sturgeon.

(9) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

Issuance of the permit modification is not interrelated with or interdependent on any other federal, state or local actions that could have environmental impacts. This permit modification is independent of other permits. While the results of the research may inform future management actions affecting the environment, the nature and timing of those actions is too speculative to consider and those actions would be subject to separate NEPA analysis.

(10) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

The action would not take place in any district, site, highway, structure, or object listed in or eligible for listing in the National Register of Historic Places, thus none would be impacted. The proposed action would also not occur in an area of significant scientific, cultural or historical resources and would not cause their loss or destruction.

(11) Can the proposed action reasonably be expected to result in the introduction or spread of a non-indigenous species?

The permit modification has not changed with respect to the methods analyzed in the original permit used to mitigate introduction or spread of a non-indigenous species.

(12) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

The decision to issue this permit modification would not be precedent setting and would not affect any future decisions. NMFS has issued numerous scientific research permits to study Atlantic sturgeon pursuant to section 10 of the Endangered Species Act, thus, this is not the first permit NMFS has issued for this type of research activity. Issuance of a permit or permit modification, to a specific individual or organization for a given research activity, does not in any way guarantee or imply NMFS would authorize other individuals or organizations to conduct the same research activity. Any future request received, including those by the applicant, would be evaluated upon its own merits relative to the criteria established in the ESA and NMFS' implementing regulations.

(13) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?

Issuance of the proposed permit modification is not expected to violate any Federal, State, or local laws for environmental protection. NMFS has sole jurisdiction for issuance of such permits for Atlantic sturgeon and has determined the research consistent with applicable provisions of the ESA. The modification contains language stating this permit does not relieve the Permit Holder of the responsibility to obtain other permits, or comply with other Federal, State, local, or international laws or regulations.

(14) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

NMFS concluded the proposed taking in the modification may have adverse effects on individual Atlantic sturgeon, with exception of lethal takes proposed for 50 early life stages annually. However, because Atlantic sturgeon are a robust species and respond well to the types of handling proposed, the cumulative effects on the population are not likely long-term or significant to the species.

Since shortnose sturgeon co-occurs with Atlantic sturgeon in parts of the Chesapeake Bay, NMFS considered the potential for cumulative effects on shortnose sturgeon. NMFS concluded, however, that since researchers would be monitoring the nets closely, if shortnose sturgeon were captured, the same measures protective of Atlantic sturgeon would be taken to ensure survival and limit the impact on shortnose sturgeon.

Because Atlantic sturgeon sub-populations are known to occupy marine areas outside of their natal rivers, there is potential for members of other sub-populations of Atlantic sturgeon originating from outside of the Chesapeake Bay DPS to be captured in activities of the proposed modification. To the extent that changes were proposed in the new permit application, based on numbers and life stages of Atlantic sturgeon authorized, as informed by the Biological Opinion for the proposed action, NMFS estimated to what extent it was likely that researchers would capture animals originating from each of the DPSs. This is required to make a new determination whether the changes in the proposed research would be likely to jeopardize the continued existence of any of the other Atlantic sturgeon DPS potentially affected by the action.

NMFS did not consider impacts on marine mammals or sea turtles in this SEA to be different than already considered in the original permit No. 16547; thus, NMFS adopted identical conditions in the permit modification as in the original permit; as well as the same level of incidental take for these species were authorized.

DETERMINATION

In view of the information presented in this document, and the analyses contained in the SEA and Biological Opinion prepared for issuance of Permit Modification No. 16547-01, it is hereby determined that the modification issuance will not significantly impact the quality of the human environment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an Environmental Impact Statement for this action is not necessary.

Helen M. Golde
Acting Director, Office of Protected Resources

MAR 1 8 2013
Date