



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

APR 15 2010

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:** Environmental Assessment on the Effects of the Issuance of a Protected Species Cooperative Conservation Grant to the New York Department of Conservation (Award No. NA10NMF4720039) to Conduct Research on Atlantic Sturgeon Aggregations.

**LOCATION:** Research would take place in waters of Delaware, New York, New Jersey, Connecticut, and Maine.

**SUMMARY:** The current EA analyzed the effects of the proposed Atlantic sturgeon research, which will be conducted in nearshore areas in Delaware, New York, New Jersey, Connecticut, and Maine. Specifically, the funded work would be used to: delineate timing of movements, residence periods of Atlantic sturgeon within aggregations, and exchange from multiple known aggregation areas; identify fine-scale spatial and temporal movement patterns within aggregation areas; estimate the relative contributions of different Atlantic sturgeon breeding areas to these aggregations; and assess and evaluate management alternatives by estimating population proportions that would be protected under a number of spatial and temporal closure scenarios.

The proposed action analyzed in the EA would not have significant environmental effects on the target or non-target species; public health and safety would not be affected; no unique geographic area would be affected; and the effects of this study would not be highly uncertain, nor would they involve unique or unknown risks. Issuance of this award would not set a precedent for future actions with significant effects, nor would it represent a decision in principle about a future consideration. There would not be individually insignificant but cumulatively significant impacts associated with the proposed action, and there would not be adverse effects on historic resources. The award would contain mitigating measures to avoid unnecessary stress to the subject animals.

**RESPONSIBLE  
OFFICIAL:**

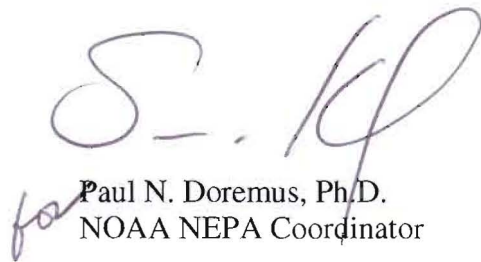
James H. Lecky  
Director, Office of Protected Resources  
National Marine Fisheries Service  
1315 East-West Highway  
Silver Spring, MD 20910  
(301) 713-2332



The environmental review process led us to conclude this action will not have a significant effect on the human environment. Therefore, an environmental impact statement will not be prepared. A copy of the finding of no significant impact (FONSI) including the supporting EA is enclosed for your information.

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

Sincerely,

A handwritten signature in purple ink, appearing to read "P. N. Doremus", is written over the typed name. The signature is stylized with a large initial "P" and a long horizontal stroke.

Paul N. Doremus, Ph.D.  
NOAA NEPA Coordinator

Enclosure

**Environmental Assessment**  
**Issuance of a Protected Species Conservation and Recovery Grant to the New York**  
**Department of Conservation (Award File 4720039) to Conduct Research on Atlantic**  
**Sturgeon Aggregations in the Mid-Atlantic Bight**

**Lead Agency:** USDC National Oceanic and Atmospheric Administration  
National Marine Fisheries Service, Office of Protected  
Resources

**Responsible Official:** James H. Lecky, 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) 713-2332

**Location:** Delaware, New Jersey, New York, Connecticut, and Maine

# CHAPTER 1 PURPOSE OF AND NEED FOR ACTION

## ***1.1 DESCRIPTION OF PROPOSED ACTION***

The National Marine Fisheries Service, Office of Protected Resources (NMFS PR) proposes to provide financial assistance in the form of a grant to the New York State Department of Environmental Conservation (NYDEC) (Kim McKown, P.I.). This award would be issued through the Protected Species Conservation and Recovery Grant Program (CFDA no. 11.472, Unallied Science Programs) authorized under section 6 of the Endangered Species Act (ESA) of 1973 as amended (16 U.S.C. 1535). ). The New Jersey Division of Fish and Wildlife, Connecticut Department of Environmental Protection, the Maine Department of Marine Resources, and the School of Marine and Atmospheric Sciences at Stony Brook University would partner with this project. In accordance with section 6(d)(2) of the ESA, the Federal Government would provide 90 percent of the cost of the project, and the state would provide the remaining 10 percent. This financial assistance award is planned to extend for three years (three annual payments) and is subject to semi-annual review by NMFS. The grant would support monitoring activities for Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), a candidate for listing under the ESA. This project would occur in the waters of Delaware, New Jersey, New York, Connecticut, and Maine.

### *Purpose and Need*

Under section 6 of the ESA, NMFS is authorized to cooperate with states to the maximum extent practicable in carrying out programs for the conservation of threatened and endangered species, and monitoring of candidate species. Scientific research is an important means of gathering valuable information about protected species to inform conservation and management measures to recovery listed species, and avoid the listing of candidate species. The purpose of this proposed action is to provide financial assistance to support research that helps determine the connectivity among and fine-scale habitat use within Atlantic sturgeon aggregation areas in the Mid-Atlantic Bight. This information would help inform the implementation of gear restricted management areas to reduce bycatch. Specifically, the funded work would be used to 1) delineate timing of movements, residence periods of Atlantic sturgeon within aggregations, and exchange from multiple known aggregation areas; 2) identify fine-scale spatial and temporal movement patterns within aggregation areas; 3) estimate the relative contributions of different Atlantic sturgeon breeding areas to these aggregations; 4) assess and evaluate management alternatives by estimating population proportions that would be protected under a number of spatial and temporal closure scenarios. Section 6(d) of the ESA allows NMFS to provide financial assistance to any State, through its respective State agency that has entered into a section 6 agreement with NMFS, to support conservation activities for threatened and endangered species, or to monitor the status of candidate species and recently de-listed species.

## ***1.2 PROPOSED AREA AND METHODS***

The proposed research under Award File 4720039 to NYDEC would take place in the waters of Maine, Connecticut, New York, New Jersey, and Delaware including the Atlantic Ocean and Long Island Sound. Otter trawl sampling would occur along the coasts of New York, New Jersey, and Delaware in 2010, and 2011 between the months of September-June. In 2012, otter trawls would be conducted in areas with the most abundant sturgeon populations in Rockaway (NY) and Sandy Hook (NJ) in September-June. Additional tagging of sturgeon would be conducted through state partner trawling programs including the New Jersey Department of Environmental Protection finfish survey and the Maine-New Hampshire inshore bottom trawl survey. There would be 193 acoustic receivers placed in Long Island Sound (NY/CT), Rockaway (NY), Shinnecock Inlet (NY), Fire Island Inlet (NY), Sandy Hook (NJ), Barnegat Inlet (NJ), Great Egg Inlet (NJ) at the mouth of the Delaware Bay (DE and NJ) in addition to the 21 existing receivers, which would continue to be monitored.

### ***Collection Methods***

Trawl surveys would be conducted using an 80' otter trawl aboard the R/V Seawolf ([http://www.somas.stonybrook.edu/facilities/research\\_vessels\\_seawolf.html](http://www.somas.stonybrook.edu/facilities/research_vessels_seawolf.html)). Trawling would only take place within the 10-15 m depth interval (NMFS inshore strata: 80-94) primarily in New York and New Jersey with some additional trawling in Connecticut and Delaware. Trawl nets are a three to one two-seam trawl (headrope 25 m, footrope 30.5 m) with 12 cm forward netting stretch mesh tapering down to the 8cm rear netting. Trawling would be conducted at intervals of 20 minutes or less at a speed of 3-3.5 knots. To lessen benthic disturbances, a GPS would be used to direct trawls so that nets would not be towed over the same exact location more than once in a 24-hour period. Further, trawling would be conducted primarily over sand substrates avoiding hard bottoms, vegetated areas, organic material, or woody debris. If a trawl became snagged on bottom substrate and debris, it would be untangled immediately to reduce stress on captured animals. The researchers would expect to acoustic tag 300 Atlantic sturgeon in the 3-year period. Because of the uncertainty regarding the population size in these areas, the exact number of sturgeon that would be encountered during trawl surveys is unknown.

All trawling would avoid marine mammal and sea turtle interactions and areas having dissolved oxygen (D.O.) concentrations of less than 5 mg/L. Trawling would be done in open ocean habitats and low D.O. concentrations would not be a concern. However, physical characteristics would be monitored.

### ***Fish Sampling and Handling***

All sampling and handling of Atlantic sturgeon would be conducted following the guidelines (as applicable) established in "A Protocol for the Use of Shortnose and Atlantic Sturgeon" (Moser *et al.* 2000). Captured sturgeon would be placed in a 200 gallon (2 tanks) flowing seawater well. Sturgeon would be weighed on a platform scale in a large bin. Total length of each sturgeon would be measured using a standard measuring board. Parasites size/stage, prevalence, and location would be noted, removed, and stored in formalin. A 1 cm<sup>2</sup> dorsal fin clip would be taken (for genetics) and a pectoral fin spine selected for aging. Sturgeon would be externally tagged with a USFW Carlin tag and implanted with a 134.2 kHz PIT tag. For the Carlin tags,

two tiny holes would be made with a fine needle within the flesh on the dorsal fin. The tag wires would be inserted through the holes made with the needle and tied together fastening the tag to the dorsal fin. PIT tagging would occur to the left of the spine, anterior to the dorsal fin, and posterior to the first dorsal scute. To minimize handling stress, each fish would be moved and handled by researchers using latex gloves. The time required to complete the standard sampling (i.e., measuring, weighing, tagging) would be less than 5 minutes per fish.

A total of 300 juvenile sturgeon (70-110 cm fork length) would be equipped with VEMCO V16-6H ultrasonic transmitters. Surgical implantation of internal transmitters would only be conducted on sturgeon in excellent condition. Captured sturgeon would be placed ventral side up in an inclined sling placed in a large open trough or would be secured with a hood that provides a reservoir of water to keep the gills submerged. The following 3-5 minute transmitter implantation surgery under surgical anesthesia (Coyle *et al.* 2004) would be used. Each sturgeon would be anaesthetized using a solution of 100 mg/L of tricaine methane sulfonate (MS-222) buffered to neutral pH with sodium bicarbonate. A low volume pump would deliver the anesthetic over the gills through a tube placed within the sturgeon's mouth until a state of anesthesia is reached (i.e., loss of equilibrium, little reaction to touch stimuli, cessation of movement, except for opercula movement). Just prior to the surgical procedure, the tube supplying the anesthetic would be removed and the sturgeon placed on a moist surgery rack. Respiration would be maintained by directing fresh ambient water pumped across the gills with tube inserted in the animals' mouth. Opercular activity of each sturgeon would be monitored during the surgery, and the hood re-filled with aerated water as needed. A small (2-3 cm) incision would be made immediately to the right of the ventral mid-line, starting anterior to the base of the pelvic fins. Four to six interrupted cross stitches, using a double-edged cutting needle, would be used to close the incision. After processing, sturgeon would be placed in a flowing 200 gallon seaward well from which their recovery would be monitored before release back into the ocean (approximately 30 minutes). The acoustic transmitter and other tags would not exceed 2% of the fishes total body weight. The time required for anesthetizing and telemetry tagging would vary, but would average less than 15 minutes per fish. Following processing, and recovery period all fish would be released close to the point of capture.

#### *Acoustic Transmitters*

Signals from the acoustic transmitters would be detected by an array of VEMCO VR2W units. While many VR2 units have already been deployed, new VR2W units would be attached to stationary structures or anchoring systems, and deployed so that coverage would occur at several freshwater, estuarine, and marine sites. The units would be deployed in Long Island Sound (NY/CT), Rockaway (NY), Shinnecock Inlet (NY), Fire Island Inlet (NY), Sandy Hook (NJ), Barnegat Inlet (NJ), Great Egg Inlet (NJ) at the mouth of the Delaware Bay (DE and NJ) and inspected and downloaded 3-6 times a year until the array is removed in 2013. Detection efficiencies would be tested using drones prior to the release of tagged fish. This system includes VR3 Vemco receivers that would be anchored 1.5 m off the ocean floor. Development of spatial models using remote sensing data and management of the database would take place within a laboratory or office setting and do not involve the taking or handling of fish or samples.

Data from the VR2W units would be a date/time stamped sequence of detections of individually identified Atlantic sturgeon.

### ***1.3 APPLICABLE LAWS AND NECESSARY FEDERAL PERMITS, LICENSES, AND ENTITLEMENTS***

This section summarizes federal, state, and local permits, licenses, approvals, and consultation requirements necessary to implement the proposed action, as well as who is responsible for obtaining them. Even when it is the recipient's responsibility to obtain such permissions, NMFS is obligated under NEPA to ascertain whether the applicant is seeking other federal, state, or local approvals for their action.

#### *National Environmental Policy Act*

The National Environmental Policy Act (NEPA) was enacted in 1969 and its Environmental Impact Statement requirement is applicable to all "major" federal actions significantly affecting the quality of the human environment. A major federal action is an activity that is fully or partially funded, regulated, conducted, or approved by a federal agency. The procedural provisions outlining federal agency responsibilities under NEPA are provided in the Council on Environmental Quality's implementing regulations (40 CFR Parts 1500-1508).

NMFS has, through NOAA Administrative Order (NAO) 216-6, established agency procedures for complying with NEPA and the implementing regulations issued by the Council on Environmental Quality. When a proposed action that would otherwise be categorically excluded is the subject of public controversy based on potential environmental consequences, has uncertain environmental impacts or unknown risks, establishes a precedent or decision in principle about future proposals, may result in cumulatively significant impacts, or may have an adverse effect upon endangered or threatened species or their habitats, preparation of an EA or EIS is required.

NMFS is preparing an EA for this action primarily to provide a more detailed analysis of effects to ESA-listed species. This draft Environmental Assessment is prepared in accordance with NEPA, its implementing regulations, and NOAA 216-6.

#### *Endangered Species Act*

Section 7 of the ESA requires consultation with the appropriate federal agency (either NMFS or the U.S. Fish and Wildlife Service) for federal actions that "may affect" a listed species or adversely modify critical habitat. NMFS issuance of an award affecting ESA-listed species or designated critical habitat, directly or indirectly, is a federal action subject to these Section 7 consultation requirements. Section 7 requires federal agencies to use their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of endangered and threatened species. NMFS is further required to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any threatened or endangered species or result in destruction or adverse modification of habitat for

such species. Regulations specify the procedural requirements for these consultations (50 Part CFR 402).

Section 6 of the ESA provides that states and territories maintaining an adequate and active program for the conservation of endangered and threatened species may receive federal funds for the purpose of conserving those species. To remain eligible for this funding, States must enter into a section 6 agreement with NMFS and undergo annual reviews of their program to reconfirm the finding that the state's program is adequate and active in accordance with section 6(c) of the ESA. Activities supported through this financial assistance are authorized by regulation (50 CFR 17.21) and have been determined to comply with the requirements therein.

*Marine Mammal Protection Act:* The MMPA prohibits takes of all marine mammals in the U.S. (including territorial seas) with a few exceptions. The act defines "take" to mean "to hunt, harass, capture, or kill" any marine mammal or attempt to do so.

#### *National Marine Sanctuaries Act*

The NMSA (32 U.S.C. 1431 *et seq.*) authorizes the Secretary of Commerce to designate and manage areas of the marine environment with special national significance. The National Marine Sanctuary Program, operating under the NMSA and administered by NOAA's National Ocean Service (NOS) has the authority to issue special use permits for research activities that would occur within a National Marine Sanctuary. Obtaining special use permits is the responsibility of individual researchers. However, as a courtesy, the Office of Protected Resources consults with NOS when proposed research would occur in or near a National Marine Sanctuary. The actions supported by Award File 4720039 would not occur in a National Marine Sanctuary nor impact any National Marine Sanctuaries, so no consultation with the National Ocean Service (NOS) is required.

*Magnuson-Stevens Fishery Conservation and Management Act:* Under the MSFCMA Congress defined Essential Fish Habitat (EFH) as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802(10)). The EFH provisions of the MSFCMA offer resource managers means to accomplish the goal of giving heightened consideration to fish habitat in resource management. NMFS Office of Protected Resources is required to consult with NMFS Office of Habitat Conservation for any action it authorizes, funds, or undertakes, or proposes to authorize, fund, or undertake that may adversely affect EFH. This includes renewals, reviews or substantial revisions of actions.

## **CHAPTER 2    ALTERNATIVES INCLUDING THE PROPOSED ACTION**

### **2.1**

Under the No Action alternative, Award File No NA10NMF4720039 would not be approved. This alternative would not fund research that helps determine the connectivity among and fine-scale habitat use within Atlantic sturgeon aggregation areas in the Mid-Atlantic Bight.



## 2.2

Under the Proposed Action alternative, Award File No NA10NMF4720039 would be approved. This approval would allow financial assistance to be transferred to the NYDEC to conduct research on juvenile/sub-adult Atlantic sturgeon in the Mid-Atlantic Bight. The grant would support research activities for Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), a candidate for listing under the ESA as described in pages 2-5. Best practice sturgeon sampling and handling protocols, limited trawl length, avoidance of listed species and marine mammals, and live release of bycatch would help minimize any adverse impacts on the environment.

## CHAPTER 3 AFFECTED ENVIRONMENT

### 3.1 SOCIAL AND ECONOMIC ENVIRONMENT

Although economic and social factors are listed in the definition of effects in the CEQ regulations and NAO 216-6, the definition of human environment states that “economic and social effects are not intended by themselves to require preparation of an EIS.” However, an EIS or EA must include a discussion of a proposed action’s economic and social effects when these effects are interrelated with effects on the natural or physical environment. The social and economic environment is not described in detail because there is no potential for social and economic effects. There are no significant social or economic impacts of the proposed action interrelated with significant natural or physical environmental effects.

### 3.2 BIOLOGICAL AND PHYSICAL ENVIRONMENT

#### *Atlantic Sturgeon-Background*

While intensely studied since the 1970s, many important aspects of Atlantic sturgeon life history are still unknown (Murawski and Pacheco 1977, Van den Avyle 1983, Smith and Dingley 1984, Smith and Clugston 1997, Bain 1997, Bemis and Kynard 1997, Kynard and Horgan 2002). Although specifics vary latitudinally, the general life history pattern of Atlantic sturgeon is that of a long lived, late maturing, estuarine dependent, anadromous species. The species’ historic range included major estuarine and riverine systems that spanned from Hamilton Inlet on the coast of Labrador to the Saint Johns River in Florida (Reviewed in Murawski and Pacheco 1977, Smith and Clugston 1997). Atlantic sturgeon spawn in freshwater, but spend most of their adult life in the marine environment. Spawning adults generally migrate upriver in the summer.

It is clear that Atlantic sturgeon underwent significant range-wide declines from historical abundance levels due to overfishing (reviewed in Smith and Clugston, 1997). Although Atlantic sturgeon had been previously exploited in commercial fisheries (Scott and Crossman 1973, Dadswell 2006, SRT 2007), records from the 1700’s and 1800’s document large numbers of sturgeon in many rivers along the Atlantic coast (Kennebec River Resource Management Plan, 1993; Armstrong and Hightower, 2002). However, in 1870, a significant fishery for the species developed when a caviar market was established. Record landings were reported in 1890, when over 3350 metric tons (mt) of Atlantic sturgeon were landed from coastal rivers along the Atlantic Coast (reviewed in Smith and Clugston 1997, Secor and Waldman 1999). The fishery

collapsed in 1901, ten years after peak landings, when less than 10% (295 mt) of its 1890 peak landings were reported. During the 1950s, the remaining fishery switched to targeting sturgeon for flesh, rather than caviar. Commercial fisheries were active in many rivers during all or some of the period from 1962 to 1997 albeit at much lower levels than in the late 1800's to early 1900's (Smith and Clugston 1997). Nevertheless, many of these contemporary fisheries also resulted in overfishing, which prompted the ASMFC to impose the 1998 coastwide moratorium for fisheries targeting Atlantic sturgeon and NMFS to close the EEZ to Atlantic sturgeon retention in 1999.

Currently, Atlantic sturgeon presence is documented in 36 rivers in the United States and Canada combined (SRT 2007). At least 20 rivers are believed to support spawning based on available evidence (i.e., presence of young-of-year or gravid Atlantic sturgeon documented within the past 15 years) (SRT 2007). These rivers are: Saint Lawrence, QB; Annapolis, NS; Saint John, NB; Kennebec, ME; Hudson, NY; Delaware, NJ/DE/PA; James, VA; Roanoke, NC; Tar-Pamlico, NC; Cape Fear, NC; Waccamaw, SC; Great PeeDee, SC; Santee, SC; Cooper, SC; Combahee, SC; Edisto, SC; Savannah, SC/GA; Ogeechee, GA; Altamaha, GA; and, the Satilla, GA (SRT 2007). Rivers with possible, but unconfirmed, spawning include: St Croix, NB/ME; Penobscot, Androscoggin, and Sheepscot, ME; York, VA; and, Neuse, NC (SRT 2007).

Comprehensive information on current abundance of Atlantic sturgeon is lacking for any of the spawning rivers (SRT 2007). In the United States, an estimate of 870 spawning adults/year is available for the Hudson River (Kahnle *et al.* 2007). However, the estimate is based on data collected from 1985-1995 and may underestimate current conditions (Kahnle *et al.* 2007). An estimate of 343 spawning adults/year is available for the Altamaha River, GA, based on data collected in 2004-2005 (Schueller and Peterson 2006). Data collected from the Hudson River and Altamaha River studies cannot be used to estimate the total number of adults in either population since mature Atlantic sturgeon may not spawn every year (Vladykov and Greeley 1963, Smith 1985, Van Eenennaam *et al.* 1996, Stevenson and Secor 1999, Caron *et al.* 2002), and it is unclear to what extent mature fish in a non-spawning condition occur on the spawning grounds. Nevertheless, since the Hudson and Altamaha rivers are presumed to have the healthiest Atlantic sturgeon populations within the U.S.; other U.S. populations are predicted to have fewer spawning adults than either the Hudson or the Altamaha (SRT 2007). In Canada, an estimate of spawning population size is available for the Saint Lawrence River for which tagging work suggests a total spawning population of over 500 adults (Caron *et al.* 2002, Dadswell 2006).

#### *Non-Target ESA Listed Species- Biological Environment*

Shortnose sturgeon (*Acipenser brevirostrum*), hawksbill sea turtle (*Eretmochelys imbricata*), Kemp's ridley sea turtle (*Lepidochelys kempi*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), green sea turtles (*Chelonia mydas*), finback whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaeangliae*), and right whale (*Balaena glacialis*).

There are no other USFWS ESA listed species located within the action area; therefore, consultation with the United States Fish and Wildlife Service was not initiated.

### *Potential Sea Turtle Interactions*

Four species of sea turtle have been reliably documented within the action area. Loggerhead sea turtles are the most commonly encountered followed by juvenile Kemp's ridley and more rarely, juvenile green turtles. The hawksbill is considered extremely rare in the Mid-Atlantic, but a few have been documented as far north as New England, carried by storm events from tropical waters. Further, only one leatherback sea turtle has been documented stranded off New Jersey coastal waters, and is also considered very rare.

Previous trawl surveys conducted by Stony Brook University off of Long Island NY using the same vessel and gear had no interactions with or sightings of sea turtles in 512 bottom trawls conducted. In addition the New Jersey Department of Environmental Protection has conducted a yearly ocean trawl survey since 1988 with similar (and same) vessel, gear type, and tow duration which has resulted in nine sea turtles (8 loggerhead and 1 leatherback) captured in 21 years (approximately 3,612 bottom trawls).

### *Potential Marine Mammal Interactions*

ESA listed Right and humpback whales do occur seasonally in parts of the action area. Other potential marine mammals protected under the MMPA that have some potential to enter the proposed research area are the Harbor seal, Harp seal, Hooded seal, Gray seal, Harbor porpoise, and Bottlenose dolphin

Bottlenose dolphin, harbor seal, and harbor porpoise are the most abundant marine mammal species potentially affected by the proposed research. Previous trawl surveys conducted by Stony Brook University off of Long Island NY (512 bottom trawls) and the New Jersey Department of Environmental Protection (3,612 bottom trawls) using the same vessel and gear had no interactions with marine mammals.

### *Non-Target Non-Listed Species*

Due to the nature of netting, researchers would expect some other non-target species to become trapped during the trawls. Typical abundant finfish species include but are not limited to bay anchovies, butterfish, scup, little skate, winter skate, round herring, silver hake, bluefish, striped anchovy, windowpane, weakfish, summer flounder, striped searobin, winter flounder, striped bass, northern searobin, red hake, spotted hake, Atlantic menhaden, clearnose skate, Atlantic moonfish, and Northern kingfish. Typical abundant invertebrate species that may be encountered include longfin squid, spider crab, cancer crab, lady crabs, moonsnails, and sand dollars.

### *Essential Fish Habitat (EFH)*

Congress defined essential fish habitat for federally managed fish species as "those waters and substrate necessary for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802(10)). As such, EFH varies by species, geographic location, life stage, etc. A description of specific designated EFH for species within the action area can be found at:

<http://www.nmfs.noaa.gov/habitat/habitatprotection/profile/htm>.

## **CHAPTER 4 ENVIRONMENTAL CONSEQUENCES**

### ***4.1 EFFECTS OF ALTERNATIVE 1: No Action***

An alternative to the proposed action is no action, i.e., denial of the grant. This alternative would eliminate any potential risk to the environment from the proposed research activities. However, the no action alternative would not allow research to be conducted and would deny the opportunity to conduct the research that would provide information needed to manage and recover this species.

### ***4.2 EFFECTS OF ALTERNATIVE 2: Issue grant with standard conditions***

Any impacts of the proposed action would be limited to the biological and physical environment. The impacts of affixing acoustic telemetry receivers (primarily to buoys) would have a negligible impact on the physical environment. Sample collections and fish handling would be conducted by trained personnel according to standard scientific protocols. The type of actions proposed in this grant application would be unlikely to adversely affect the socioeconomic or physical environment or pose a risk to individual and/or public health or safety. There are no significant social or economic impacts of the proposed action interrelated with significant natural or physical environmental effects.

### ***Environmental Consequences to the Biological Environment- Atlantic Sturgeon***

#### ***Capture***

The applicant proposes to use otter trawl nets to tag up to 300 Atlantic sturgeon. Damage suffered in trawls could result in injury and mortality, reduced fecundity, and delayed or aborted spawning migrations of sturgeon (Collins *et al.* 2000, Moser *et al.* 2000). Historically, the majority of sturgeon mortality during scientific investigations using nets or trawls has been related to such factors as water temperature, low D.O. concentration, netting duration, meshes size, net composition, and netting experience of the researcher. Since 2005, Stony Brook University has tagged ~500 Atlantic sturgeon captured from trawls with 25 recaptures along the coast. Of the fish that were captured and tagged there have been no recorded mortalities. Given the short duration of trawling (20 minutes or less), Atlantic sturgeon have been captured in good condition and have shown no signs of injuries. After capture Atlantic sturgeon are immediately placed in flowing seawater tanks where they are quickly processed and then returned to the water. Because research has been conducted (and would be conducted) largely in the Atlantic Ocean it is unlikely that the applicant would encounter low D.O. concentrations or any severe water temperatures. A significant portion of the proposed work would also be conducted during the fall and spring to avoid extreme air temperatures.

#### ***Fish Sampling and Handling***

The handling, measuring, and weighing procedures are simple and not invasive and NMFS expects that individual sturgeon would normally experience no more than short-term stresses as a result of these activities. No injury is expected from these activities, and sturgeon would be worked up as quickly as possible to minimize stresses resulting from their capture. The applicant would also be required to follow procedures designed to minimize the risk of either introducing a new pathogen into a population or amplifying the rate of transmission from animal to animal of an endemic pathogen. These activities would not injure or compromise the animal and would not add appreciably to the stress the animal would experience during capture and other activities discussed here.

The applicant proposed to take small (1 cm<sup>2</sup> or less) non-deleterious samples fin samples, a common practice that does not impair sturgeon's ability to swim and is not thought to have any long-term impact (Moser *et al.* 2000).

The proposed PIT tagging (attachment and retention) is not known to have any other direct or indirect adverse effects on sturgeon. As such, the tagging of sturgeon with PIT tags is unlikely to have any significant impact on the reproduction, numbers, or distribution of Atlantic sturgeon in the proposed action areas. Also, the proposed external USFW Carlin tagging has no known impacts on survival or behavior of Atlantic sturgeon.

The applicant also requests the use of internally implanted transmitters which could cause pain and discomfort to the fish, as well as infection. To address these concerns, the researchers propose to use the best management practices as endorsed by NMFS in the sturgeon Protocol (Moser *et al.* 2000). Only fish in optimal conditions would be implanted. Fish would be anesthetized and held for a short period of time for recovery. The researcher proposes to use tricaine methane sulphonate (MS-222) to anesthetize sturgeon at concentrations up to 100 mg/L to prevent captured sturgeon from stress during surgery. Because MS-222 is acidic (resulting in a prolonged induction time), sodium bicarbonate (NaHCO<sub>3</sub>) would be used to buffer the water.

The anesthesia, MS-222, is rapidly absorbed through the gills and its mode of action is to prevent the generation and conduction of nerve impulses and has direct actions on the central nervous system, cardiovascular system, neuromuscular junctions, and ganglion synapses. Like all fish anesthetic agents, the effects of MS-222 depend on the dose. The lower doses tranquilize and sedate fish while higher doses fully anaesthetize them (used for example with surgical interventions) (Taylor and Roberts 1999). The sedative dissipates rapidly so the effects of the anesthesia would be short-term and only affect the target species.

An existing FDA 21 day withdrawal period for MS-222 applied to food fish would not be applicable to Atlantic sturgeon because of the existing moratorium on fishing. Thus there would not be a legitimate health risk by accidental consumption by humans. Moreover, MS-222 has been documented to be excreted from fish urine within 24 hours and tissue levels decline to near zero in the same amount of time (Coyle *et al.* 2004).

Invasive tools used would be sterilized with Nolvasan® between uses on each fish as well as the incision area swabbed with Nolvasan® prior to making the incision. A tissue adhesive would

also be used to help keep the wound closed and the sutures in place until healing can occur. After surgery a Vaseline betadyne mixture would be spread over the area to deter bacteria from entering the wound. Moreover, implanting transmitters would only be attempted when fish are in excellent condition and would not be attempted on pre-spawning fish in spring or fish on the spawning ground, nor if the water temperature exceeds 27° C to reduce handling stress, or is less than 7° C as incisions do not heal rapidly in lower water temperatures. To ensure normal mobility and swimming behavior of the juvenile sturgeon receiving internal transmitters, the total weight of all transmitters and tags would not exceed 2% of the weight of the fish.

Although more invasive surgical procedures are required for internal implantation, this tagging procedure provides greater retention rates than external attachment. In general, adverse effects of the proposed tagging procedure could include pain, handling discomfort, hemorrhage at the site of incision, risk of infection from surgery, affected swimming ability, and/or abandonment of spawning runs. However, using proper anesthesia, sterilized conditions, and the surgical techniques described above, would minimize or eliminate potential short-term adverse effects from tagging and greatly lower the risk of injury and mortality. NMFS expects the tagging would result in no more than short-term stress to the animal.

These practices would minimize or eliminate potential short-term adverse effects from tagging and greatly lower the risk of injury and mortality.

Many fish have sensitivity to sound energy from 200 Hz up to 800 Hz, some species are able to detect lower frequency sounds (Popper, 2005). The frequency of the acoustic tags used in the research (69kHz) is well above the hearing threshold and would be inaudible to most fish.

### ***Environmental Consequences to the Biological Environment-Other***

#### ***Bycatch Species Susceptible to Incidental Capture***

The nets would only be deployed for up to 20 minutes and all non-targeted captured animals would be immediately removed from the net. Most animals except for longfin squid, and small species such as bay anchovy would be released alive. Although close to 100% mortality is expected for the aforementioned species (as determined by previous work), this low level of mortality would have negligible population level impact.

#### ***Marine Mammal and Sea Turtle Interactions***

While interactions between trawling vessels and marine mammals and sea turtles in the sampled area is rare, the possibility exists that these animals could be struck by the boat, taken in the trawl, or stressed by the presence of the boat. As advised by the NMFS Regional Office of Protected Resources and as noted in the mitigation measures below, measures to minimize marine mammal and sea turtle interactions would be required. The applicant would monitor and report any take of marine mammals or ESA listed species to the NMFS Northeast Region Office of Protected Resources. Given previous experience sampling in these areas with similar protocols, no take of marine mammals or sea turtles is expected.

### ***Environmental Consequences to the Physical Environment***

While the researcher's boats would pass through and over the water column of the area, this portion of the research activities would not likely impact the physical environment (including any portion that is considered EFH). The Office of Protected Resources (PR) also considered the potential impact of the researcher's proposed trawling activities. Data plotted using the USGS East-Coast sediment analysis: procedures, database, and georeferenced displays (U.S. Geological Survey Open-File Report 00-358) indicates that the habitats being trawled in New York, New Jersey, Connecticut and Delaware represent almost 100% sand. Since the impact of mobile fishing gear on the seabed is related to both fishing intensity and frequency (Watling and Norse 1998; Auster and Langton 1999), and both of these would be very low in the present study, there would be no likely long-term impacts to habitat.

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

***Compliance with Endangered Species Act:*** To comply with Section 7 of the ESA Regulations (50 CFR 402.14(c)), a Section 7 informal consultation was initiated by the NMFS PR, under the ESA. In accordance with Section 7 of the ESA of 1973, as amended (16 U.S.C. 1531 et seq.), a not likely to adverse affect memo was prepared for this proposed action. It is NMFS' finding that issuance of Award No. NA10NMF4720023, as proposed, is not likely to jeopardize the continued existence of any NMFS ESA-listed species and is not likely to destroy or adversely modify designated critical habitat.

Recently, the USFWS initiated an ESA Section 7 consultation with NMFS regarding funding a similar project to the one proposed here off the south shore of Long Island. That determination stated that any adverse effects would be insignificant or discountable and the proposed actions would not be likely to adversely affect any listed species under NMFS jurisdiction (file code: USFWS SUNY Stony Brook Atl Sturgeon Survey 2008).

***Compliance with Marine Mammal Protection Act:*** NMFS has determined that while the award creates the possibility of interactions with marine mammals, the possibility of incidental take through such interactions is considered remote. The awarding of the grant, therefore, should not require the recipient to obtain authorization for incidental take under the MMPA in order to conduct the research activities.

***Compliance with the Magnuson-Stevens Act:*** Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) requires NMFS to complete an EFH consultation for any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken by the agency that may adversely affect EFH. The issuance of the proposed award would not impact designated EFH. The Office of Habitat Conservation was contacted and concurred via email that the proposed action as it would be conditioned would have minimal impacts on EFH. Therefore, no further consultation was necessary.

***Coordination with the National Ocean Service:*** The actions in the applications for Award No. 4720039 would not occur in a National Marine Sanctuary. The research activities would not impact any National Marine Sanctuaries, so no consultation was conducted.

#### ***4.4 MITIGATION MEASURES***

The activities authorized under proposed Award NA10NMF4720039, if approved, would follow certain procedures in order to minimize and mitigate effects of the proposed action. If the grant is awarded, the following Special Award Conditions (SACs) would be placed on the award to ensure compliance with appropriate research protocols.

To minimize the potential adverse effects of the award activities, mitigating measures are included in the conditions of the grant award. Specifically, these conditions include:

##### ***Handling Conditions***

Fish would be handled with care and kept in water to the maximum extent possible during sampling and processing procedures. To reduce stress, all fish handled out-of-water would be transferred using a sanctuary net that holds water during transfer. If fish are anesthetized, they would be allowed to recover before release. Total handling time of any individual sturgeon would not exceed 15 minutes. For weight measurements, sturgeon would be supported using a sling or net and handling should be minimized throughout the procedure. Researchers would wear smooth rubber gloves to reduce abrasion of skin and removal of mucus.

##### ***Holding Conditions***

Total holding time of any one Atlantic sturgeon, after removal from the net, would not exceed two hours. When fish are onboard the research vessel, they would be placed in flow-through tanks that allow for total replacement of water volume every 15-20 minutes. Oxygenation of holding tanks is necessary during periods of high temperature and/or low dissolved oxygen to ensure that dissolved oxygen levels are at least 4.5 mg/L. Sturgeon are extremely sensitive to chlorine; therefore, holding tanks that have been sterilized with bleach would be thoroughly flushed with fresh water between sampling periods to ensure that sturgeon are not exposed to chlorine in the bleach.

##### ***Sampling Conditions***

Researchers would not insert PIT tags into juvenile sturgeon less than 330 mm in length unless they use PIT tags that are no larger than 11.5 mm x 2.1 mm. Prior to placement of tags - the entire dorsal surface of each fish would be scanned with a waterproof PIT tag reader and visually inspected to ensure detection of fish tagged in other studies. Previously PIT-tagged fish would not be retagged. Total weight of tags (external and internal) on any fish would not exceed 2% of the fish's total body weight. Extreme care would be used when collecting tissue samples (tissue/fin ray). Instruments would be cleaned between each fish sampled to avoid possible disease transmission. Surgical implantation of internal tags would not occur when water temperatures exceed 27° C or are less than 7° C, or be implanted in pre-spawning fish or fish on the spawning grounds. All sturgeon would be anesthetized with tricaine methane sulfonate (MS-222) for internal implantation of transmitters. Anesthetized fish would be observed for recovery before release.

##### ***Marine Mammals and Sea Turtles***

In all boating and research activities within the study area, a close watch will be made for marine



mammals and sea turtles to avoid interaction and harassment. Researchers will adhere to the marine mammal approach and viewing guidelines online at [http://www.nero.noaa.gov/prot\\_res/mmv/](http://www.nero.noaa.gov/prot_res/mmv/). All sampling and boating activities will also comply, as applicable, with the relevant portions of the Atlantic Large Whale, the Bottlenose Dolphin, and Harbor Porpoise Take Reduction Plans.

In the unlikely event a marine mammal or sea turtle is captured, the animal will be assessed and, if possible, and if safe for the researchers and animal, the animal must be supported to prevent it from drowning. The NOAA Northeast Region Marine Mammal and Sea Turtle Stranding and Entanglement Hotline must be immediately contacted as well as the appropriate local stranding partner <http://www.nmfs.noaa.gov/pr/health/networks.htm>.

In the unlikely event a captured marine mammal or sea turtle dies, or is severely injured, all activities will cease and researchers will contact the NOAA, NE Region Marine Mammal and Sea Turtle Stranding and Entanglement Hotline, as well as the Chief, Permits Division and/or the permit analyst.

#### *Aquatic Nuisance Species*

To prevent potential spread of aquatic nuisance species identified in the watershed, all equipment assigned to the research will not be reassigned to other watersheds until the research is completed or is suspended. If the research has been completed or is suspended, all gear and equipment used will be bleached, washed and air dried before being redeployed to another location.

### **4.5 CUMULATIVE EFFECTS**

In addition to the direct and indirect effects assessed above, in accordance with NEPA, this EA considers the potential for cumulative effects. Cumulative effects are those that result from the incremental impacts of the proposed action when added to the impacts of other past, present, and reasonably foreseeable future threats or actions, regardless of which agency (federal or nonfederal) or person(s) undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions that take place over a period of time. For Atlantic sturgeon range-wide, these effects include: bycatch, poaching, dams, dredging, water quality, contaminants, boat strikes, and research.

These activities and threats are expected to continue into the future. Synthesis of the information about the status of the species, past and present activities affecting the species, possible future actions that might affect the species, and effects of the proposed action provide a basis for determining the additive effects of the activities supported by the proposed grant. Given the cumulative threats information and the known effects of the proposed action, NMFS concludes that the proposed action would not likely reduce the species' likelihood of survival and recovery in the wild by adversely affecting their birth rates, death rates, or recruitment rates. In particular, NMFS would not expect the proposed research activities to affect spawning success in a way that appreciably reduces the reproductive success of adult Atlantic sturgeon, the survival of larval sturgeon, or the number of juvenile sturgeon that annually recruit into spawning populations.

This EA considers the cumulative effect the research would have on live animals that are occupying estuarine and marine waters. The short-term stresses resulting from the research activities proposed are expected to be minimal. Taking into account the effects and impacts resulting from the handling and surgeries, NMFS expects that the additional short-term stress of the research activities would not significantly affect the sturgeon. The proposed activities would be completed as quickly as possible, typically taking less than 15 minutes per animal. The award would contain conditions (Mitigation Measures) to mitigate potential adverse impacts to Atlantic sturgeon. Overall, the proposed actions would be expected to have no more than short-term effects. The incremental impact of the action when added to other past, present, and reasonably foreseeable future actions discussed here would be minimal and not significant. The data generated by the research activities associated with the proposed action would help improve management and recovery efforts and further the conservation of this candidate species. The proposed action would not be expected to have any effects on any other marine species or other portions of the environment and would not result in any significant cumulative effects to either. The award would contain conditions (outlined above) to mitigate adverse impacts to animals from these activities.

The proposed action would not be expected to have any more than short-term effects any marine life species or other portions of the environment and would not result in any cumulatively significant effects.

## **CHAPTER 5                      LIST OF PREPARERS AND AGENCIES CONSULTED**

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National Marine Fisheries Service  
Endangered Species Division  
Silver Spring, MD 20910

### *Agencies Consulted:*

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Northeast Regional Office  
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**Finding of No Significant Impact for the  
Issuance of a Protected Species Conservation and Recovery Grant to the New York  
Department of Conservation (Award File 4720039) to Conduct Research on Atlantic  
Sturgeon Aggregations in the Mid-Atlantic Bight**

National Marine Fisheries Service

The National Marine Fisheries Service, Office of Protected Resources (NMFS PR) proposes to provide financial assistance in the form of a grant to the New York State Department of Environmental Conservation (NYDEC) (Kim McKown, P.I.) to support research that helps determine the connectivity among and fine-scale habitat use within Atlantic sturgeon aggregation areas in the Mid-Atlantic Bight. This award would be issued through the Protected Species Conservation and Recovery Grant Program (CFDA no. 11.472, Unallied Science Programs) authorized under section 6 of the Endangered Species Act (ESA) of 1973 as amended (16 U.S.C. 1535). ). The New Jersey Division of Fish and Wildlife, Connecticut Department of Environmental Protection, the Maine Department of Marine Resources and the School of Marine and Atmospheric Sciences at Stony Brook University would partner with this project. In accordance with section 6(d)(2) of the ESA, the Federal Government would provide 90 percent of the cost of the project, and the state would provide the remaining 10 percent. This financial assistance award is planned to extend for three years and is subject to semi-annual review by NMFS. The grant would support conservation activities for Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), a candidate for listing under the ESA. This project would occur in the waters of Delaware, New Jersey, New York, Connecticut, and Maine.

In accordance with the National Environmental Policy Act (NEPA), as implemented by the regulations published by the Council on Environmental Quality and NAO 216-6, NMFS prepared an Environmental Assessment (EA) analyzing the impacts on the human environment associated with award issuance (*Issuance of a Protected Species Conservation and Recovery Grant to the New York Department of Conservation (Award File 4720039) to Conduct Research on Atlantic Sturgeon Aggregations in the Mid-Atlantic Bight, March 2010*). The analyses in the EA support the following findings and determination. The EA is hereby incorporated by reference in its entirety.

The applicant is requesting funds to 1) delineate timing of movements, residence periods of Atlantic sturgeon within aggregations, and exchange from multiple known aggregation areas; 2) identify fine-scale spatial and temporal movement patterns within aggregation areas; 3) estimate the relative contributions of different Atlantic sturgeon breeding areas to these aggregations; 4)

assess and evaluate management alternatives by estimating population proportions that would be protected under a number of spatial and temporal closure scenarios.

The National Oceanic and Atmospheric Administration's 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) NEPA implementing 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 (EFH) as defined under the Magnuson - Stevens Act and identified in Fishery Management Plans?

Response: The project's proposed research activity, including trawling activities, would not take place in national marine sanctuaries. Also, no coral reef ecosystems occur in the action area and thus none would be affected. However, designated EFH would overlap the proposed area. The Office of Protected Resources (PR) considered the potential impact of the researcher's proposed trawling activities. Data plotted using the USGS East-Coast sediment analysis: procedures, database, and georeferenced displays (U.S. Geological Survey Open-File Report 00-358) indicates that the habitats being trawled in New York, New Jersey, Connecticut and Delaware represent almost 100% sand. Since the impact of mobile fishing gear on the seabed is related to both fishing intensity and frequency, and both of these would be very low in the present study, there would be no long-term impacts to habitat. While the researcher's boats would pass through and over the water column of the area, NMFS determined that this portion of the research activities would not adversely impact the physical environment (including any portion that is considered EFH).

NMFS PR requested concurrence on whether the proposed action as conditioned would have adverse impacts on designated EFH. The NMFS, Northeast Office of Habitat Conservation was contacted and agreed by email that the proposed trawling, boating, and netting activities would have no more than a minimal impact to EFH.

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.)?

Response: No substantial impact on biodiversity or ecosystem function within the affected area is expected. While short term localized impacts may occur from trawling activities, the low intensity and frequency of trawling effort would limit the scope and long term impacts on benthic habitats. The impact from the use of boat anchors is expected to be minimal.

Due to the nature of netting, researchers would expect to capture non-target finfish species including bay anchovies, butterfish, scup, little skate, winter skate, round herring, silver hake, bluefish, striped anchovy, windowpane, weakfish, summer flounder, striped searobin, winter

flounder, striped bass, northern searobin, red hake, spotted hake, Atlantic menhaden, clearence skate, Atlantic moonfish, and Northern kingfish. Invertebrate species that may be encountered include longfin squid, spider crab, cancer crab, lady crabs, moonsnails, and sand dollars. However, nets would typically be checked at short intervals and all invertebrate, except longfin squid, and vertebrate, except small species such as bay anchovy, would be released alive.

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

Response: Issuance of the award is not expected to have substantial adverse impacts on public health or safety that could reasonably be expected by the proposed research activities. This action would involve the use of 95% ethanol pre-measured in vials for preservation, storage, and transportation of tissue samples. MS-222 powder, used for anesthetizing Atlantic sturgeon during surgery, would also be transported in premeasured amounts and mixed onboard. The researchers would wear gloves and masks during mixing of the chemical; therefore, direct contact with the alcohol or MS-222 would be eliminated. Additionally, researchers would be advised in the award to dispose of the anesthetic safely following state approved measures.

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?

Response: The proposed research activities could potentially have adverse effects on individual Atlantic sturgeon, although these effects are not expected to be major at the individual or species level. Atlantic sturgeon are a candidate species for ESA listing but currently do not receive federal protections under the ESA. There is no critical habitat in the action area so none would be affected.

In the unlikely event marine mammals or sea turtles are encountered while trawling, researchers would be directed by award conditions to avoid contact with the animals. In the unlikely event researchers do come into contact with any marine mammals or sea turtles, either through boating or netting activities, the Northeast Regional Office suggested appropriate precautionary measures. Namely, netting would not be deployed when animals are observed within the vicinity of the research; and animals would be allowed to either leave or pass through the area safely before trawling is initiated. Also, in all boating activities (including travel to acoustic arrays outside of the trawling area), researchers will watch for marine mammals to avoid harassment or interaction and will adhere to the NMFS Northeast Region Marine Mammal Approach and Viewing Guidelines located online at [http://www.nero.noaa.gov/prot\\_res/mmv/](http://www.nero.noaa.gov/prot_res/mmv/).

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

Response: There would be no significant social or economic impacts interrelated with natural or physical environmental effects. Only researchers would be affected by this action.

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



Response: The effects on the quality of the human environment are not likely to be controversial. This project is similar to other existing projects that have negligible effects on the human environment and are not 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?

Response: The activities in this proposed award would not be expected to result significant impacts to any unique areas mentioned above. Similar research has been conducted in the proposed area that has not impacted unique areas.

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

Response: Potential risks by proposed research methods are not unique or unknown, nor is there significant uncertainty about impacts. Monitoring reports from other projects of a similar nature, and published scientific information of impacts on sturgeon, indicate the proposed activities would not result in significant adverse impacts to the human environment or the species. There is considerable scientific information available on the likely impacts for the proposed action.

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

Response: Overall, the proposed action would be expected to have no more than short-term effects on Atlantic sturgeon and few effects on other aspects of the environment. The incremental impact of the action when added to other past, present, and reasonably foreseeable future actions discussed in the environmental assessment would be minimal and not significant.

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?

Response: The action would not adversely affect any district, site, highway, structure, or object listed in or eligible for listing in the National Register of Historic Places. The proposed action would also not cause loss or destruction of significant scientific, cultural or historical resources. The proposed action will not occur in the aforementioned areas.

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

Response: The proposed action is not reasonably expected to result in the introduction or spread of a non-indigenous species. The research vessel (Seawolf) does not utilize ballast tanks and (<10 gal.) bilge is constantly discharged. Furthermore, the coastal sampling areas already experience substantial mixing due to normal tidal and wave driven currents.

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

Response: The decision to issue this award would not be precedent setting and would not affect any future decisions. NMFS and other agencies have issued numerous awards to study Atlantic sturgeon. Issuance of an award 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 MMPA, 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?

Response: Issuance of the proposed award is not expected to violate any Federal, State, or local laws for environmental protection. This award would not relieve the applicant of the responsibility to obtain other awards, 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?

Response: The proposed procedures would have potential adverse impacts on Atlantic sturgeon. However, because Atlantic sturgeon are a robust species and respond well to the types of handling and capture proposed, the cumulative effects on the population are not likely long-term or significant on the species. NMFS expects that the proposed research activities would not appreciably reduce Atlantic sturgeon likelihood of survival and recovery in the wild by adversely affecting their birth rates, death rates, or recruitment rates. In particular, NMFS expects the proposed research activities not to affect adult sturgeon in a way that appreciably reduces the reproductive success of adults, the survival of young, or the number of young that annually recruit into the breeding population.

While there may be some minor impacts to biota caught or disrupted by trawling, no substantial effects are expected. Most non-target species that may be captured would be released alive.

While there may be some minor impacts to benthic habitats by trawling, no substantial effects are expected. Trawling would be conducted primarily over sand substrates avoiding hard bottoms, vegetated areas, organic material, or woody debris which will likely minimize impacts. Since the impact of mobile fishing gear on the seabed is related to both fishing intensity and frequency, and both of these would be very low in the present study, there would be no long-term impacts to habitat.

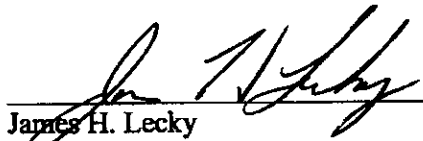
NMFS also considered impacts of possible sea turtle and marine mammal interactions during sturgeon research. Researchers are required to keep watch avoid interaction and harassment with marine mammals and sea turtles and in the unlikely event a captured marine mammal or

sea turtle dies, or is severely injured, all activities must cease. Given these conditions and the rarity of interactions based on previous work, it is unlikely that this action would have adverse or substantial effects on these animals.

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## **DETERMINATION**

In view of the information presented in this document and the analysis contained in the Environmental Assessment (EA) prepared for Issuance of Award No. NA10NMF4720039 it is hereby determined that the issuance of Award No. NA10NMF4720039 will not significantly impact the quality of the human environment as described above. 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 Environment Impact Statement for this action is not necessary.

  
\_\_\_\_\_  
James H. Lecky  
Director, Office of Protected Resources

APR 14 2010

\_\_\_\_\_  
Date