NATIONAL MARINE FISHERIES SERVICE
APPLICATION INSTRUCTIONS FOR PERMITS FOR THE INCIDENTAL TAKE OF ENDANGERED OR THREATENED SPECIES UNDER THE ENDANGERED SPECIES ACT
In coordination with, but not substituting for 50 CFR 222.307
OMB control number (0648-0230) Expiration date for clearance: 10/31/2024

Information Required in the Application

The Assistant Administrator may issue permits to take endangered or threatened marine species incidentally to an otherwise lawful activity under section 10(a)(1)(B) of the Endangered Species Act of 1973 (ESA). The information collection associated with the following application instructions is required for the purpose of obtaining such a permit. The information provided will be used to process the incidental take permit in accordance with the ESA, including the solicitation of public comments on the justification of the take of ESA-listed species incidental to proposed activities. The information provided by an applicant in accordance with these instructions is not confidential and is subject to public exposure for comments. Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the Paperwork Reduction Act, unless that collection of information displays a currently valid OMB Control Number. Public reporting burden for this collection of information is estimated to average 80 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the address below.

Privacy Act Statement

Authority: The collection of this information is authorized under the Endangered Species Act, 16 U.S.C. 1531 et seq. **Purpose**: In order to manage protected resources, NOAA Fisheries requires the use of permits by participants in the United States. Information on permit applications includes permittee contact information. **Routine Uses**: The Department will use this information to determine permit eligibility. Disclosure of this information is permitted under the Privacy Act of 1974 (5 U.S.C. Section 552a), to be shared within the NOAA Fisheries, in order to coordinate monitoring and management of protected resources. Disclosure of this information is also subject to all of the published routine uses as identified in the Privacy Act System of Records Notice COMMERCE/NOAA-12, Marine Mammals, Endangered and Threatened Species, Permits and Authorizations Applicants. **Disclosure**: Furnishing this information is voluntary; however, failure to provide complete and accurate information will prevent the determination of eligibility for a permit.

An application for a permit should provide all of the following information. The information needed in the application should be presented in the same structure and format shown below to increase processing efficiency. When a question does not apply, do not overlook the category, but indicate Not Applicable (N.A.). In some cases, a brief explanation as to why the category is not applicable may expedite processing. Please note that for the title and closing statement of the application, specific wording is required.

If the applicant represents an individual or a single entity, such as a corporation, the application should be for an individual incidental take permit. If the applicant represents a group or organization whose members conduct the same or a similar activity in the same geographical area with similar impacts on endangered or threatened marine species, the application should be for a general incidental take permit. To be covered by a general incidental take permit, each individual conducting the activity must have a certificate of inclusion issued under paragraph (f) of 50 CFR 222.307. NMFS estimates a public reporting burden of .5 hour for each certificate of inclusion. The sufficiency of applications will be determined by the Assistant Administrator in accordance with the requirements of 50 CFR 222.307.

I. One of the titles below as appropriate:

A. Application for an Individual Incidental Take Permit under the Endangered Species Act of 1973.

Ted Will **or**	**Doug Haymans**
Director, Wildlife Resources Division	**Director, Coastal Resources Division**
Georgia Department of Natural Resources	**Georgia Department of Natural Resources**
2067 U.S. Hwy 278 SE	**One Conservation Way**
Social Circle, GA 30025	**Brunswick, GA 31520**

B. Application for a General Incidental Take Permit under the Endangered Species Act of 1973.

II. Date of the application.

December 2, 2022

III. The name, address, telephone, and fax number of the applicant. If the applicant is a partnership, corporate entity or is representing a group or organization, include applicable details.

Ted Will (706-557-3333) and/or Doug Haymans (912-264-7218)
See above for respective addresses

IV. A description of the endangered or threatened species, by common and scientific name, and a description of the status, distribution, seasonal distribution, habitat needs, feeding habits and other biological requirements of the affected species.

There are two species of sturgeon known to inhabit waters in Georgia where commercial shad harvest may occur. These include the Atlantic sturgeon (*Acipenser oxyrinchus*) and shortnose sturgeon (*Acipenser brevirostrum*). While both are considered endangered and federally protected, there are many similarities and some distinct differences between the 2 species.

Atlantic sturgeon are native to the rivers and coastal waters of the eastern U.S., ranging from Canada to Florida (NOAA 2023). Born in the freshwater of rivers, Atlantic sturgeon are anadromous, spend portions of their life in freshwater and in the ocean before returning to their natal waters to spawn as adults (NOAA 2023). In Georgia, both natal and migrant juvenile sturgeon have been found to exhibit seasonal movements, migrating upstream in freshwater rivers during the summer before moving downstream into lower rivers and estuarine waters in the winter (Fox et. Al, 2018). As an opportunistic bottom feeder, they feed on a variety of invertebrates, including worms, crustaceans, and mollusks, along with bottom-dwelling fish (NOAA 2023). They can attain sizes upwards of 16 feet long and can weigh up to 800 pounds (NOAA 2023). Within the northern regions of their range, they can live up to 60 years, though fish in the Southeast, including Georgia, are likely to not exceed 25-30 years in age. Southern populations of Atlantic sturgeon have exhibited faster growth and earlier sexual maturation than those populations in the north. Proper habitat, particularly hard bottom substrates, is critical for the successful spawning of Atlantic sturgeon, thus any degradation (e.g. groundwater pumping, dredging, etc.) or physical impediment (e.g. locks and dams) can result in disrupted, degraded, or lost preferred spawning habitat and threaten spawning success. Additional threats to the species include poor water quality, bycatch in some commercial fisheries, and vessel strikes (NOAA 2023).

Like Atlantic sturgeon, shortnose sturgeon are found in the rivers and marine waters of the eastern U.S., ranging from Canada to Florida. Shortnose sturgeon, unlike Atlantic sturgeon, don't spend much time in the ocean (NOAA 2023). They are considered amphidromous, being born in freshwater, residing primarily in their natal river, occasionally making short migrations into marine waters before returning to freshwater to feed and escape predation (NOAA 2023). Adults migrate far upstream in the spring to spawn (NOAA 2023). Unlike Atlantic sturgeon, shortnose sturgeon exhibit slow growth and late maturation, and physically are much smaller than Atlantic sturgeon, only reaching sizes of 4.5 feet in length. Additional physical characteristics that make them easily distinguishable from Atlantic sturgeon include having a larger mouth, smaller snout shape, and different tail scute pattern (NOAA 2023). Using their barbels to search along the river bottom, shortnose sturgeon prey upon a variety of invertebrates, including insects, crustaceans, mollusks, and worms (NOAA 2023). Similar to the Atlantic sturgeon, proper upstream habitat is critical for the spawning success of shortnose, and habitat degradation (e.g. dredging, groundwater pumping, etc.) and physical impediments (e.g. locks and dams) can be detrimental to spawning success (NOAA 2023). Additional threats to the species include poor water quality and unintended capture as bycatch in some commercial fisheries (NOAA 2023).

Lit Cited:

Fox, A.G., I.I. Wirgin, D.L. Peterson. 2018. Occurrence of Atlantic Sturgeon in the St. Marys River, Georgia. ***Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science*** **10:606-618. https://doi.org/10.1002/mcf2.10056**

NOAA 2023. www.fisheries.noaa.gov/species/atlantic-sturgeon and www.fisheries.noaa.gov/species/shortnose-sturgeon

V. A detailed description of the proposed activity:

OVERVIEW:

The harvest of American shad dates back centuries. An important food source for native Americans and early American settlers, the historical relevance of the fish has well been documented, including reports that the fish was utilized by George Washington and may have aided starving soldiers at Valley Forge during the Revolutionary period (VADMR 2023). Throughout the 1800s, shad grew to become a species of extreme importance along the entire eastern coast of the U.S., with large commercial fisheries for them developing in the process. By 1897, annual commercial harvest of shad in the U.S. was 50 million pounds (Richkus and DiNardo, 1983). However, fishery declines soon followed, and by the 1940s annual harvest in the U.S. had declined to 11 million pounds (Richkus and DiNardo 1983). Such declines were also seen in Georgia, where an estimated 85% reduction in shad harvest occurred in the state between 1908–1981 (Michaels 1993). Commercial shad harvest continues to occur in Georgia, where the fishery is managed by the Georgia Department of Natural Resources (GADNR). Historically, shad fishing in Georgia has occurred primarily in 5 rivers: Altamaha, Ocmulgee, Oconee, Satilla, Savannah, and St. Mary's. However, the majority of shad harvested in the state have come from two of these rivers, the Altamaha River and Savannah River, which are the only rivers where commercial shad fishing is still allowed today.

SHAD GEAR:

In Georgia, shad are typically harvested commercially via two types of gillnets: drift-nets and set-nets. Each of these gillnet types are similar in their structure, possessing a float line with corks spread 4 – 8 feet apart; a lead-line along the bottom of the net; and monofilament webbing that must be at least 4 ½ inches stretched (O.C.G.A. 391-2-4-.02). Both gill-net types are designed to extend throughout most if not all of the entire vertical water column. Additional regulations include the following:

> **i) Set nets must be placed at least 600 ft apart and are limited to 100 ft in length. All set nets must have one end secured to the river bank and be buoyed at the outer (streamward) end.**
>
> **ii) Set nets and drift nets must be situated so as to allow ½ of the river width to be open and free for the passage of fish.**
>
> **iii) Drift nets must be fished at least 300 ft apart and shall be limited to a maximum of 1000 ft in saltwaters.**

Though construction of the nets may be similar, the manner in which drift-nets and set-nets are fished are very dissimilar.

Drift-nets, as the name implies, are "drifted" with the river flow as they fish. Once on-site at the fishing location, shad fishermen will deploy the drift-net from the bow of a vessel, with the net attached to the boat on one end and extending out into the river. Fishermen then "drift" the net with the river flow for a short time (typically <30 minutes) before retrieving the net, removing all captured biota, and repeating the process. Upstream migrating biota swim into the net and are captured. Size of mesh used in drift-nets varies, but typically is between 4.5 – 5.25 inches stretched. This smaller webbing allows for the capture of targeted shad, and though sturgeon may be captured in it, such smaller webbing should not be as problematic for sturgeon as larger webbing.

Set-nets, as the name implies, are "set" or anchored and fish as a stationary net. Set nets are typically anchored to a tree along the riverbank and stretched out, either perpendicular to or parallel with the bank. They are anchored on the opposite end. Once "set", the net will remain in the water unattended for an extended period of time, typically a few hours up to 24 hours. Upon returning to retrieve the net, set-net fishermen will retrieve the net, remove its contents, and may deploy the net again to continue fishing or remove it from the water. Upstream migrating biota swim into the net and are captured. Size of mesh used in set-nets varies, but typically is between 4.5 – 5.25 inches stretched. This smaller webbing allows for the capture of targeted shad, and though sturgeon may be captured in it, such smaller webbing should not be as problematic for sturgeon as larger webbing.

While GADNR staff have observed sturgeon captured in both net types (set and drift) and a take may occur at any time while the gear is in the water, no sturgeon mortalities have been observed during the 10 years (2013 – 2022) of observation effort we have conducted (F. Buchanan, pers. communication). This can likely be attributed to the cooler water temperatures occurring during fishing activities, which aid in not causing additional oxygen issues for stressed fish like warm water temperatures would. Consequently, GADNR is not requesting any lethal takes with this application.

SHAD SEASONS AND AREAS:

The commercial shad season in Georgia opens January 1 and runs through March 31 each year, though the GADNR Commissioner may extend the season for up to 30 days after March 31 in accordance with current, sound principles of wildlife research and management (OCGA 391-2-4-.02). Currently, commercial shad fishing is only permissible in 2 rivers in Georgia: the Altamaha River and the Savannah River. Per OCGA 391-2-4-.02, the specific times each river is open to commercial shad harvest are as follows:

> ***Altamaha River*: The Altamaha River system downstream from the Seaboard Coastline Railroad bridge (at Altamaha Park) are open to commercial shad fishing Monday through Friday each week. Upstream of this point is open Tuesday through Saturday. The closures on Saturday (downstream); Sunday (everywhere); and Monday (upstream) provide protection for fish to have an opportunity to migrate upstream unimpeded.**
>
> ***Savannah River*: The Savannah River system downstream from the I-95 bridge will be open to commercial shad fishing Tuesday through Friday each week. Upstream of the I-95 bridge will be open Wednesday through Saturday each week.**

In addition to a defined season and times allowed for fishing, Georgia also has defined specific areas where shad may be commercially harvested. Per OCGA 391-2-4-.02, these include the following:

> ***Altamaha River*: Waters of the Altamaha River system open to commercial shad fishing are the Ohoopee River upstream to the US Hwy 1 bridge and the Altamaha River downstream of the US Hwy 1 bridge (including several designated creeks and oxbows) to the estuarine waters of the sound/beach boundary. Though they historically were open prior to 2011, ALL WATERS UPSTREAM OF THE US HWY 1 BRIDGE ARE NOW CLOSED TO COMMERCIAL SHAD FISHING. These upstream waters include a significant portion of the preferred spawning area and habitat utilized by sturgeon, hence their closure and protection by the GADNR.**
>
> ***Savannah River*: Waters of the Savannah River system open to commercial shad fishing are the Savannah River downstream of the US Hwy 301 bridge (including several designated creeks and oxbows) to the estuarine waters of the sound/beach boundary. The waters upstream of the US Hwy 301 bridge are considered to include a significant portion of the preferred spawning area and habitat utilized by sturgeon, hence their closure and protection by the GADNR.**

Lit Cited:

Michaels, R.A. 1993. Population dynamics of American shad in the Altamaha River: interim report for the years 1987–1992. 43pp.

Richkus, W.A. and G. DiNardo. 1983. Current status and biological characteristics of the anadromous alosid stocks of eastern United States: American shad, hickory shad, alewife, and blueback herring. Martin Marietta Environmental Center. 211pp.

Virginia Department of Marine Resources (VADMR). 2023. https://dwr.virginia.gov/shad-cam/history-of-american-shad-in-virginia/

PICTURES OF SHAD FISHING AND MAP OF COMMERCIAL SHAD FISHING WATERS

Deploying Net off Bow – Drift Net

Net Retrieval – Drift Net

Checking a Set Net

Checking a Set Net

Map of the 2 river systems (Altamaha & Savannah) currently open to commercial shad fishing - in red

VI. The application must include a conservation plan based on the best scientific and commercial data, which specifies:

A. The anticipated impact of the proposed activity on the listed species:

As with many other commercial fisheries in Georgia and the Southeast, the commercial shad fishery in Georgia has changed in recent years. While commercial shad fishing in Georgia continues to be a viable fishery, the number of participants has certainly dwindled in recent years. This attrition, albeit the result of decreased numbers of dealers buying product; lack of recruiting young shad fishermen into the fishery; declining marketability of shad; or a combination of these and other factors, has certainly resulted in less fishing effort. Such declining effort has resulted in less nets in the water, thus theoretically decreasing the potential interactions of shad nets with sturgeon. Nonetheless, the GADNR remains

committed to balancing the impacts of the fishery with protection of sturgeon. We have subsequently engaged in several activities to increase our knowledge and sustainment of sturgeon and collect data on interactions within the shad fishery.

Though the GADNR has not conducted an assessment to estimate the population of sturgeon in Georgia, the University of Georgia (UGA) has made efforts to do so. Previous studies published by UGA estimated the total number of shortnose sturgeon incidentally captured by shad set-net fishermen in the Altamaha River to range from 53-498 fish during the 2007-2009 seasons (Bahn et. al, 2013). This same study also estimated the Altamaha River population at approximately 6,300 fish. However, more recent studies suggest the population estimate of shortnose sturgeon in the Altamaha River to be 2,218 (Ingram et. al, 2020).

Since 2013, the GADNR has conducted fishery-dependent efforts to observe a minimum of 10% of the commercial shad trips occurring annually in both the Altamaha and Savannah rivers. In these efforts, GADNR staff observe active fishing efforts and record information on captured sturgeon. Information collected on captured sturgeon include species identification; lengths (total and fork); and condition of the fish. Additionally, staff scan the fish for the presence of a PIT tag, and if one is not found, staff insert a PIT tag into the fish. Staff also collect a fin-clip from captured sturgeon to provide to the USGS for genetic study. Additionally, commercial shad fishermen are required to report any captures of sturgeon encountered during fishing activities on their trip tickets that they submit to the GADNR each month. These self-reports provide the date of capture, species captured, and number of each species captured.

During the last permit period (2013 – 2022), the GADNR exceeded the 10% observation threshold every year. In the Altamaha River, the percentage of observed trips based on commercial fishermen reported trips has ranged from 10.95% (GADNR 2013 Annual Incidental Take Report) - 26.03% (GADNR 2022 Annual Incidental Take Report). During that entire 2013 – 2022 period, the GADNR observed 15.24% of the trips reported by commercial shad fishermen in the Altamaha River. Catch rates of shortnose sturgeon reported by Altamaha commercial shad fishermen via trip tickets between the 2013 – 2023 seasons ranged from 5 – 55 fish/yr (GADNR Annual Incidental Take Reports). Fishing effort in recent years has declined dramatically from the 274 trips reported on the Altamaha River in 2013 to a low of 37 trips reported in 2023. However, this high variability in fishing effort and subsequent shortnose sturgeon bycatch rates may continue to fluctuate as market conditions and other variables change. Consequently, GADNR once again proposes utilizing 3-year running averages to monitor shortnose sturgeon bycatch. Considering the variability in effort over the last 10 years, GADNR estimates that 3-year averages of incidental shortnose sturgeon bycatch will not likely exceed 60 fish/yr in the Altamaha River. This is a reduction from the 140 fish/yr approved in the last permit.

Though no current estimates of Atlantic sturgeon populations for the Altamaha River are available, Bahn et. al (2013) observed extremely low catch rates of Atlantic sturgeon in the commercial shad fishery during their 2007-2009 study, with only 6 Atlantic sturgeon being captured over the entire 3-year study. Due to the low catch rates an accurate estimate of total Atlantic sturgeon incidental capture could not be produced from the 2007-2009 study (personal comm). Similar to

shortnose, commercial shad fishermen report captured Atlantic sturgeon monthly to the GADNR via trip tickets, and GADNR staff also record observations of Atlantic sturgeon encountered during fishery-dependent observation efforts. Catch rates of Atlantic sturgeon reported by Altamaha commercial shad fishermen via trip tickets between the 2013 – 2023 seasons ranged from 7 – 36 fish/yr. As stated above, fishing effort in recent years has declined dramatically from the 274 trips reported on the Altamaha River in 2013 to a low of 37 trips reported in 2023. As with shortnose above, this high variability in fishing effort and subsequent Atlantic sturgeon bycatch rates may continue to fluctuate as market conditions and other variables change. Consequently, GADNR once again proposes utilizing 3-year running averages to monitor Atlantic sturgeon bycatch. Based on these data, GADNR estimates that 3-year averages of incidental Atlantic sturgeon bycatch will not likely exceed 40 fish/yr in the Altamaha River. This is a reduction from the 140 fish/yr approved in the last permit.

While the Altamaha River has historically seen the largest commercial shad fishing effort for any of GA's rivers, a smaller effort does occur on the Savannah River. Effort on the Savannah River has dramatically declined during the last permit period (2013 – 2022) from a high of 73 reported trips in 2015 to <20 trips each of the last 5 years (2019 – 2023). This reduction in effort is due to a variety of factors, including reductions in available fish markets; attrition in the fishing community; and other contributing factors. Catch rates of shortnose sturgeon reported by Savannah commercial shad fishermen via trip tickets between the 2013 – 2023 seasons ranged from 0 – 10 fish/yr. However, the captures of 7-10 fish have been reported three times in the last 5 years, even with historically low levels of reported fishing effort. As such, it is estimated that 3-year averages of shortnose sturgeon incidental bycatch by GA shad fishermen will not exceed 15 fish/yr in the Savannah River, even if fishing effort returns to levels seen prior to these last 5 years. This is a reduction from the 70 fish/yr approved in the last permit.

Captures of Atlantic sturgeon also occur on the Savannah River. Catch rates of Atlantic sturgeon reported by Savannah commercial shad fishermen via trip tickets between the 2013 – 2023 seasons ranged from 0 – 23 fish/yr. However, similar to the aforementioned scenario observed with shortnose sturgeon, the high capture of 23 fish occurred recently, even with historically low levels of reported fishing effort. As such, it is estimated that 3-year averages of Atlantic sturgeon incidental bycatch by GA shad fishermen will not exceed 25 fish/yr in the Savannah River, even if fishing effort returns to levels seen prior to these last 5 years. This is a reduction from the 35 fish/yr approved in the last permit.

Regulations in Georgia require that all sturgeon incidentally captured must be immediately released. Because GADNR has not observed mortalities of sturgeon during our fishery-dependent efforts (2013-2023), it is anticipated that these takes will result in the temporary "harassment" of captured sturgeon but will not be detrimental to their collective long-term survival or sustainability as a population.

Additionally, the commercial shad regulations that were instituted January 1, 2011 included closing the upriver portions of the Altamaha River (above US Hwy 1) and the Savannah River (above US Hwy 301) have undoubtedly reduced incidental bycatch of sturgeon. On the Savannah River alone, these closures resulted in 35% less area open to commercial shad fishing than was previously open. Furthermore,

GADNR Law Enforcement (LE) continues to routinely and randomly patrol both the open and closed sections of both rivers. Since 2013, GADNR LE have issued 19 citations pertaining to shad (M. Carson, pers. communication). Of these, only one citation was issued for "fishing in closed waters", a violation which occurred in the permanently closed Ogeechee River (M. Carson, pers. communication). Collectively, the observed high survival rates of captured sturgeon; the upriver closure of a significant portion of preferred sturgeon spawning habitat; and continued policing of waters by GADNR LE personnel are undoubtedly aiding to the sustainment of sturgeon populations in Georgia.

B. The anticipated impact of the proposed activity on the habitat of the species and the likelihood of restoration of the affected habitat.

The use of commercial gill-nets (drift and set) in the shad fishery in Georgia should have extremely minor physical affects on aquatic habitat utilized by shortnose or Atlantic sturgeon. This low impact gear is designed to fish the majority or entire vertical water column with minimal contact on the river bottom. Furthermore, any potential minor impact to the river bottom would certainly be temporary, and the addition of the extensive spawning areas gained by the closure of upstream waters since 2011 (above US Hwy 1 on the Altamaha River; Above US Hwy 301 on the Savannah River) undoubtedly provides significant protection to confirmed and suspected spawning sites in Georgia's rivers.

C. The steps that will be taken to monitor, minimize, and mitigate such impacts:

STEPS TO MONITOR IMPACTS:

GA American Shad Fishery Sturgeon Bycatch Monitoring Plan

The GADNR will continue to utilize a combination of a trip ticket system and direct observations to monitor the bycatch of Atlantic and shortnose sturgeon in the commercial shad fishery. Georgia regulations currently require commercial fishermen to complete trip tickets to document species, sex, and pounds of shad harvested daily. In addition to the information on shad harvest, these tickets capture the fisherman's name and license number, name of dealer that purchases fish, river fished, gear type (set or drift net), length of net, total soak time, and number of net sets. Fishermen and/or dealers are required to return completed trip tickets to the GADNR by the 10th of each following month (i.e. January tickets would be due by February 10). Trip tickets have been modified to require fisherman to record information on sturgeon bycatch (total numbers of sturgeon intercepted and released, by species) and data will be utilized to monitor sturgeon interactions in the fishery.

Each year, a list of names and addresses of commercial shad fishermen will be compiled from prior trip tickets, the commercial fishing license database, those fishermen possessing a shad endorsement from the current and past fishing season, and a list of cooperators in shad tagging studies. After generating this list, GADNR staff will send each shad fishermen a set of trip tickets, self-addressed return envelopes, and information on how to obtain additional trip tickets. Informational packets will be sent to shad fishermen prior to the start of the season in an effort to educate them on the importance of both accurately recording sturgeon incidental

catches and returning the trip tickets by the 10th of each following month. These packets will provide guidance in sturgeon identification, proper handling (emphasizing the importance of fishermen frequently checking their nets and immediately releasing any sturgeon that are incidentally caught), and the importance of reporting incidental sturgeon catches. In addition to these direct handouts and mailings, additional trip tickets will be supplied to known shad dealers and GADNR Law Enforcement staff to be provided to shad fishermen that they may intercept.

GADNR will observe a minimum of 10% of the commercial shad fishing trips occurring annually on each river. To do this, GADNR staff will utilize the same aforementioned list of shad fishermen to establish contact information (i.e. phone numbers) for a subset of individuals that commercially fish for shad on the Altamaha and Savannah rivers. GADNR staff will contact fishermen to determine when they will be fishing and to establish a time and location to observe fishermen pulling their nets. During observed efforts, GADNR staff will record fishing location, effort information (e.g. soak times, etc.), and gear information (e.g. net length, mesh size, etc.). For any sturgeon captured, data collected will include fish species; length (total and fork); fish condition; presence or absence of PIT tag. In the event a captured sturgeon does not have a PIT tag, one will be inserted into the fish prior to its release. Finally, a small fin-clip will be taken and preserved for submission to the USGS in their efforts to study the genetics of various sturgeon populations.

If unusually high catch rates of sturgeon are being observed, GADNR will immediately increase law enforcement presence and educational efforts. Staff will also evaluate if possible modifications to the commercial shad fishing regulations for the next year are needed. Data collected from the trip tickets and direct observations will be summarized and provided in an annual report to the National Marine Fisheries Service no later than 30 days after the season ends.

STEPS TO MINIMIZE IMPACTS:

As previously discussed, the GADNR has taken several steps to minimize the impacts of the commercial shad fishery on the sturgeon population. Of highest importance has been the closure of upstream waters in the Altamaha and Savannah rivers. The closure of these areas has undoubtedly provided sturgeon with a significant boost to uninterruptedly access spawning grounds. Additionally, the small mesh (typically ≤ 5 inches) used by shad fishermen does not present the challenges to sturgeon that large-mesh webbing would. Furthermore, regulations closing waters in each river for 2 days each week provides additional protection to fish, including sturgeon. Finally, regulations restricting the length of nets used and the restriction preventing nets from extending more than ½ way across a river certainly provides protection to sturgeon and other fish moving within the river.

STEPS TO MITIGATE IMPACTS:

The GADNR employs multiple strategies to mitigate impacts. One of these is collecting and preserving fin-clips for submission to the USGS each year from all sturgeon encountered during fishery-dependent and fishery-independent efforts. Under this current collaborative effort, GADNR provides fin-clips and outside

funding sources (e.g. SERO, etc.) are used to process said fin-clips. Should outside funds not be available for processing, GADNR can provide fin-clips and fund the processing of up to 15 samples/year. These fin-clips aid in better studying and understanding the genetic diversity and conservation of sturgeon found within Georgia and other states. Additional mitigation efforts include the education and outreach efforts achieved annually through materials presented to commercial shad fishermen. These materials, including very detailed identification aids and specific instructions on properly handling captured sturgeon, undoubtedly provide needed information critical for helping fishermen better understand how they can help protect and sustain these endangered species.

<u>FUNDING FOR IMPLEMENTING MEASURES TO MONITOR, MINIMIZE, AND MITIGATE IMPACTS.</u>

The GADNR manages and monitors commercial fisheries utilizing state and federal funds. GADNR is mandated by ASMFC to annually monitor commercial shad fisheries and sturgeon populations. GADNR will utilize state appropriated funds, federal awards and existing staff to monitor the commercial shad fishery and incorporate sturgeon bycatch monitoring.

D. The alternative actions to such taking that were considered and the reasons why those alternatives are not being used.

The GADNR implemented new commercial shad regulations prior to the 2011 shad season. This action was taken in response to study findings that illustrated that potentially significant numbers of shortnose sturgeon could be incidentally captured in shad gill nets and the adoption of Amendment 3 to the Atlantic States Marine Fisheries Commission's (ASMFC) Interstate Fisheries Management Plan for Shad and River Herring. GADNR utilized the best available data and information when evaluating changes to the commercial shad regulations. In an attempt to reduce sturgeon bycatch in Georgia's commercial shad fishery and comply with Amendment 3 mandates, the following options were considered:

Option 1:

No change to existing commercial shad regulations. While this certainly would have been the easiest of all options, a status quo approach would not have provided any additional conservation measures for shortnose sturgeon nor satisfy mandates outlined in ASMFC's Amendment 3. Therefore, this option was not selected.

Option 2 (Current Chosen Option):

Establish new upper boundaries for commercial shad fishing on the Altamaha and Savannah rivers, while closing the Ogeechee, Satilla, and St. Mary's rivers to commercial shad fishing. It is believed that such actions would have provided adequate protection for shortnose sturgeon and satisfied Amendment 3 mandates. However, this option initially was not chosen due to the negative economic impacts that a total closure would have had on Ogeechee River commercial shad fishermen. After multiple years of no commercial shad fishing on the Ogeechee, the river was closed to commercial shad harvest and Option 2 has since become the chosen option. While we request to continue Option 2 in this

application, we also request that any additional areas we may opt to close would not require modification to the application, but rather we would simply notify NOAA of such changes and they would be incorporated into the process.

Option 3:

Establish new upper boundaries for commercial shad fishing on the Altamaha, Ogeechee, and Savannah rivers and close the Satilla and St. Mary's rivers to commercial shad fishing. In an effort to keep the Ogeechee open this option was initially chosen. However, multiple years of no fishing effort in the Ogeechee River resulted in the river being closed to commercial shad harvest.

For Options 2 and 3, the upper boundary for the Altamaha River was set at the U.S. Hwy 1 bridge crossing, effectively closing commercial shad fishing on approximately 75% of the free-flowing portions of the Altamaha River and its major tributaries (Ocmulgee and Oconee rivers). According to results reported by Bahn et. al (2013), this would decrease estimated sturgeon bycatch by up to 78% while only decreasing Altamaha River shad set-net landings by approximately 9%. The upper commercial shad fishery boundary on the Savannah River was set at the U.S. Hwy 301 bridge crossing and resulted in closure of approximately 47% of the free-flowing portion of the Savannah River. Collectively, the closure of these upstream waters undoubtedly benefits spawning sturgeon.

E. A list of all sources of data used in preparation of the plan, including reference reports, environmental assessments and impact statements, and personal communications with recognized experts on the species or activity who may have access to data not published in current literature.

- **Annual Incidental Take Reports from 2013 -2022 (provided to NMFS).**
- **Fishery-dependent and fishery-independent data collected by the GADNR.**
- **Bahn, R.A., J.E. Fleming, and D.L. Peterson. 2013. Bycatch of Shortnose Sturgeon in the Commercial Shad Fishery of the Altamaha River, Georgia. North Amer. Journal of Fish. Management 32:557-562.**
- **GADNR (personal comm.).**
- **Ingram, E.C., D.L. Peterson, and A.G. Fox. 2020. Abundance of endangered shortnose sturgeon (*Acipenser brevirostrum*) in the Altamaha River in Georgia. NOAA NMFS Fishery Bulletin 118:198-204.**
- **OCGA (Official Code of Georgia Annotated – 2022): Rules and Regulations**

Modifications to Permits

Requests for modifications to incidental take permits should address all applicable sections of these instructions, including a detailed description of the proposed changes. Appropriate changes should also be made to the Conservation Plan. Modification requests involving an increased number of animals, additional species, an increased risk to the animals, or a significant change in the location of incidental take are subject to the 30-day public review and are granted or denied at the discretion of the Assistant Administrator for Fisheries.

Where to Send the Application

The application may be submitted electronically, but one signed original of the complete application must be sent to one of the following addresses.

Send applications for incidental take of all species:

Email: PR.ESA.incidentaltakepermits@noaa.gov

Chief, Endangered Species Division
National Marine Fisheries Service, F/PR3/PR2
1315 East-West Highway
Silver Spring, Maryland 20910
Phone: 301-713-1401
Fax: 301-713-0376
Web Site: https://www.fisheries.noaa.gov/about/office-protected-resources