



To All Interested Government Agencies and Public Groups:

JAN 11 2012

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

TITLE: Environmental Assessment Issuance of a Permit for Sea Turtle Research for Bycatch Reduction in Commercial Fisheries [File No. 16253]

LOCATION: Atlantic Ocean, Gulf of Mexico, and Caribbean Sea

SUMMARY: The National Marine Fisheries Service (NMFS) proposes to issue Permit No. 16253 to NMFS Southeast Fisheries Science Center. The purpose of the research is to evaluate modifications to commercial fishing gear to mitigate sea turtle interactions in trawl and longline fisheries. Some sea turtle captures would be authorized by the proposed permit during trawl research in state fisheries; other sea turtles would be legally captured incidental to Federally-managed fisheries. Sea turtles would be handled, measured, weighed, photographed, flipper and passive integrated transponder tagged, skin biopsied, and released. A minimal number of lethal takes associated with trawling would be authorized. Beyond mortality, effects to live sea turtles would be short-term and minimal. The research would also provide data to improve stock assessments, assess the impact of anthropogenic activities, and better manage and recover sea turtle species.

**RESPONSIBLE
OFFICIAL:**

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The environmental review process led us to conclude that 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 environmental assessment (EA) is enclosed for your information.

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

Sincerely,



Patricia A. Montanio
NOAA NEPA Coordinator

Enclosure





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

Environmental Assessment
Issuance of a Permit for Sea Turtle Research for Bycatch Reduction in
Commercial Fisheries [File No. 16253]

January 2012

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

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Location: Atlantic Ocean, Gulf of Mexico, Caribbean Sea and their
coastal and estuarine environments

Abstract: The National Marine Fisheries Service (NMFS) proposes to issue scientific research permit No. 16253 to NMFS Southeast Fisheries Science Center (Responsible Party: Bonnie Ponwith, Ph.D.). The purpose of this research is to evaluate modifications to commercial fishing gear to mitigate sea turtle interactions in Atlantic and Gulf of Mexico Trawl Fisheries and Longline Fisheries. The evaluations and subsequent gear modifications could help reduce incidental sea turtle bycatch. The research would also provide data to improve stock assessments, assess the impact of anthropogenic activities, and better manage and recover sea turtle species. Some sea turtle captures would be authorized by the proposed permit during trawl research in state fisheries; other sea turtles would be legally captured incidental to Federally-managed fisheries. Turtles would be handled, measured, weighed, photographed, flipper tagged, passive integrated transponder tagged, skin biopsied, and released. Under NOAA Administrative Order 216-6, NMFS' issuance of scientific research permits is generally categorically excluded from the National Environmental Policy Act of 1969 requirements to prepare an environmental assessment (EA) or environmental impact statement. However, for this permit NMFS prepared an EA to facilitate a more thorough assessment of potential impacts on endangered and threatened sea turtles. This EA evaluates the potential impacts to the human environment from issuance of the proposed permit.



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CHAPTER 1 PURPOSE OF AND NEED FOR ACTION

1.1 DESCRIPTION OF ACTION

NMFS proposes to issue a scientific research permit (File No. 16253) that authorizes “takes”¹ under the Endangered Species Act of 1973 (ESA; 16 U.S.C. 1531 *et seq.*), and the regulations governing the taking, importing, and exporting of endangered and threatened species (50 CFR Parts 222-226) to NMFS Southeast Fisheries Science Center (SEFSC; Responsible Party: Bonnie Ponwith, Ph.D.).

1.1.1 Purpose and Need

The primary purpose of the permit is to provide an exemption from the take prohibitions under the ESA to allow “takes”. The need for issuance of the permit is related to NMFS’ mandates under the ESA. NMFS has a responsibility to implement the ESA to protect, conserve, and recover threatened and endangered species under its jurisdiction. The ESA prohibits takes of threatened and endangered species, with only a few specific exceptions, including for scientific research and enhancement purposes. Permit issuance criteria require that research activities are consistent with the purposes and policies of the ESA and will not have a significant adverse impact on the species.

1.1.2 Research Objectives

The purpose of this research is to evaluate modifications to commercial fishing gear to mitigate sea turtle interactions and capture under two projects: Project A (Turtle Excluder Device (TED) Evaluations in Atlantic and Gulf of Mexico Trawl Fisheries) and Project B (Modifications to Longline Fisheries Gear). These evaluations and subsequent gear modifications could help reduce incidental turtle bycatch. The research also would provide new data to improve stock assessments, assess the impact of anthropogenic activities, and better manage and recover these species.

1.2 OTHER EA/EIS THAT INFLUENCE SCOPE OF THIS EA

An Environmental Assessment (EA) was completed in 2006 for the applicant’s recent permit (No. 1570; expired December 31, 2011) to conduct this research resulting in a Finding of No Significant Impact (FONSI). Research was conducted in the same manner and same area as in the proposed action.

1.3 SCOPING SUMMARY

The purpose of scoping is to:

- identify the issues to be addressed,
- identify the significant issues related to the proposed action,
- identify and eliminate from detailed study the non-significant issues,
- identify and eliminate issues covered by prior environmental review, and

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

- identify the concerns of the affected public and Federal agencies, states, and Indian tribes.

The Council on Environmental Quality's (CEQ) regulations implementing the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) do not require a public scoping process for an EA.

Comments on Application

Neither CEQ regulations implementing NEPA nor NAO 216-6 require that a draft EA be made available for public comment; however NOAA published a Notice of Receipt of the application was published in the *Federal Register*, announcing the availability of File No. 16253 for public comment for 30 days. No public comments were received.

CHAPTER 2 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 **ALTERNATIVE 1 – NO ACTION**

Under the No Action alternative, no permit would be issued and the applicant would not receive an exemption from the ESA prohibitions against take.

2.2 **ALTERNATIVE 2 – PROPOSED ACTION (ISSUANCE OF PERMIT WITH STANDARD CONDITIONS)**

Under the Proposed Action, a permit would be issued to exempt the applicant from ESA take prohibitions during conduct of research that is consistent with the purposes and policies of the ESA and applicable permit issuance criteria. The purpose of the proposed research is to evaluate modifications to commercial fishing gear to mitigate sea turtle interactions and capture in trawl and longline fisheries.

The permit would be valid for five years and would contain terms and conditions standard to such permits as issued by NMFS.

For Project A, sea turtles subject to research activities would be:

- Incidentally captured in Federally managed trawl fisheries, including the shrimp fishery in state waters covered by Federal shrimp fishery regulations. Incidental capture of these animals would be authorized by the Incidental Take Statement (ITS) of the Biological Opinion for the fishery.
- Captured in state waters during fishery-independent trawling. Capture of these animals would be authorized by the proposed permit.

For Project B, sea turtles subject to research activities would be:

- Incidentally captured in Federally-managed longline fisheries. Incidental capture of these animals would be authorized by the ITS of the Biological Opinion for the fishery.

The applicant would capture by trawl, handle, sample, measure, photograph, weigh, flipper tag, PIT tag, biopsy, and release turtles in state waters and would handle, sample, measure,

photograph, weigh, flipper tag, PIT tag, biopsy, and release turtles that are incidentally captured by longline or trawl in Federal fisheries. See Appendix A for species and take numbers.

Action area

Activities of Project A would occur on normal fishing grounds along the U.S. Atlantic coast and the Gulf of Mexico. Activities would not occur in right whale critical habitat, Essential Fish Habitat, or sanctuaries. Trawling would be conducted in inshore bays and estuaries, nearshore waters and offshore waters of the EEZ from Cape Canaveral, Florida to the New York/Connecticut border. In Gulf of Mexico fisheries, project operations would be conducted in inshore bays and estuaries, nearshore waters and offshore waters (> 10 fm) from Key West, Florida to Brownsville, Texas. All efforts would be made to trawl in sandy areas away from live bottom and seagrass.

Activities of Project B would occur in the coastal and offshore waters of the Western Atlantic Ocean, Gulf of Mexico, and Caribbean Sea. Benthic habitat would not be affected.

For Project A all trawl fisheries might be evaluated, but research would focus on the following fisheries:

Mid-Atlantic Region

Flynet Fishery & High Opening Bottom Trawl

The flynet fishery is a multispecies fishery composed of offshore and nearshore elements that operate along the East Coast of the U.S. The nearshore fishery operates from October through April within 60 meters of the coast from North Carolina to New Jersey and targets Atlantic croaker, weakfish, butterfish, harvestfish, bluefish, menhaden, striped bass, and kingfishes. The offshore fishery operates from November through April outside 60 meters from the Hudson Canyon off New York, south to Hatteras Canyon off North Carolina. Target species for the offshore fishery include bluefish, Atlantic mackerel, squid, black sea bass, and scup; squid are also targeted offshore (130-365 meters) during summer months from May through September. Development of a TED for the nearshore flynet fishery has been ongoing since 2001 under ESA permits 1260 (expired) and 1570 (current). A flexible "cable TED" has been developed and tested for target fish retention. Additional testing needs to be conducted to test the feasibility of new designs or design modifications. Proposed research would test TED prototype designs aboard vessels fishing in nearshore areas. Additional TED feasibility research may include those fisheries employing other high opening bottom trawl designs which target scup, black sea bass and inshore aggregations of loligo squid.

Crab Trawl Fishery

The crab trawl fishery primarily operates in inshore waters of North Carolina from October through November and March through June. The fishery is not subject to TED requirements. Work under this project may investigate the feasibility of TED use in these gear types. Qualitative and quantitative assessments may be conducted aboard commercial vessels to assess the effect of TEDs on the CPUE of crabs.

Shrimp Trawl Fishery

While the shrimp trawl fishery in the Atlantic is subject to the TED requirement, future work under this project may require evaluations of modifications to TEDs which may improve turtle exclusion and/or shrimp retention. Such research may require comparison tows between modified and unmodified TEDs to assess differences in shrimp CPUE. Assessments of TEDs which have been modified to improve sea turtle exclusion may require qualitative work using cameras installed in and around the TED to observe turtle exclusion efficiency.

Skimmer trawls

Skimmer trawls are not currently subject to the TED requirement. Work under this project may investigate the feasibility of TED use in these gear types. Qualitative and quantitative assessments may be conducted aboard commercial vessels to assess the effect of TEDs on the CPUE of shrimp.

Gulf of Mexico

Shrimp Trawl Fishery

While the shrimp trawl fishery in the Gulf of Mexico is subject to the TED requirement, future work under this project may require evaluations of modifications to TEDs which may improve turtle exclusion and or shrimp retention. Such research may require comparison tows between modified and unmodified TEDs to assess differences in shrimp CPUE. Assessments of TEDs which have been modified to improve sea turtle exclusion may require qualitative work using cameras installed in and around the TED to observe turtle exclusion efficiency.

Skimmer trawls and Butterfly nets

Skimmer trawls and butterfly nets are not currently subject to the TED requirement. Work under this project may investigate the feasibility of TED use in these gear types. Qualitative and quantitative assessments may be conducted aboard commercial vessels to assess the effect of TEDs on the CPUE of shrimp.

Groundfish Fishery

The Gulf of Mexico groundfish fishery is limited in effort at the present time; however, this fishery is currently exempt from TEDs. Future work under this project may require an investigation of the feasibility of TED use in this fishery. Qualitative and quantitative assessments may be conducted aboard commercial vessels to assess the effect of TEDs on the CPUE of targeted groundfish species.

For Project B activities would occur in the pelagic and bottom longline fisheries along the U.S. Atlantic coast and the Gulf of Mexico during seasons when turtles are likely to be present.

Proposed Activities

All turtles would be handled, weighed, and photographed and subject to temporary carapace marking, flipper tagging, PIT tagging, standard measurements, and skin biopsy in accordance with the methods in NMFS-SEFSC-TM-579, the SEFSC Sea Turtle Research Techniques Manual (SEFSC 2008a), http://www.sefsc.noaa.gov/turtles/TM_579_SEFSC_STRTM.pdf. A

small number of unintentional mortalities would be authorized over the life of the proposed permit. See Appendix A for species and take numbers.

Handling, Measuring, Photographing, and Weighing

After capture sea turtles would be assessed to determine their general state of health and suitability for research procedures. If possible, entangling gear would be removed. An attempt would be made to resuscitate all comatose turtles when necessary. Efforts would be made to prevent overheating or hypothermia. Turtles would be isolated and immobilized on a cushioned surface such as a foam pad or automobile tire. Calipers would be used to measure straight carapace measurements and a flexible tape would be used for curved carapace measurements. Weighing would involve a scale, sling, or platform depending on what type of scale is available. Turtles would be restrained to prevent injury while being weighed. Measurements of the jaw and internal oral cavity anatomy may be taken to investigate oral cavity dimensions, particularly as they relate to a turtle's ability to swallow hooks of various sizes. Measurements would be taken using spring and/or dial calipers when the mouth is held open with a canine mouth gag. Researchers would follow a protocol designed to minimize risk of either introducing a new pathogen into a population or amplifying the rate of transmission of an endemic pathogen from animal to animal. This would include disinfecting and cleaning holding containers or surfaces. Researchers would wash their hands after contact with a turtle.

Extra care would be used when handling, sampling, and releasing leatherback turtles. Very large leatherbacks would typically not be boarded. They would be sampled alongside the vessel and then released at the water's surface. Only in the rare case when a vessel is equipped with a large turtle hoist apparatus to retrieve the turtle from the water would a large leatherback be brought on deck. In longline surveys, smaller leatherbacks and other sea turtle species would be brought onboard when a dipnet is available.

Flipper and Passive Integrated Transponder (PIT) Tagging

Inconel flipper tags would be attached to the trailing edge of right and left rear or front flippers. Flipper tags would be cleaned with hot, soapy water and wiped with or soaked in alcohol prior to use. All turtles would be scanned for PIT tags. If none are found, a PIT tag would be inserted into the shoulder region of the left front flipper. Flipper tags, applicator tips, and PIT tag injectors would be swabbed with 10% povidone-iodine. Prior to and after tagging, the area would be swabbed with 10% povidone-iodine to minimize infection risk. If bleeding occurs at the injection site for a PIT tag, the area would be swabbed with 10% povidone-iodine and pressure applied to stop the bleeding.

Skin Biopsy

Biopsies would be sampled from the posterior edge of a rear flipper in soft tissue, not a scale. This procedure would be conducted using a new, sterile biopsy punch (which takes out a 6 mm plug of skin) for each turtle. The sampling area would be thoroughly disinfected prior to and after the procedure with 10% povidone iodine. The punch process would be repeated using the same punch to obtain two biopsy plugs from one turtle. Researchers would wear disposable gloves and samples would be stored in dimethyl sulfoxide (DMSO), a non-toxic solution contained within sealed vials.

For turtles that are not boated, a corer attached to a biopsy pole would be used to obtain the sample alongside the vessel. Gear would consist of a 12' anodized aluminum breakdown biopsy pole or similar biopsy harpoon. Corers would be stored in ethanol-cleaned vials. The threaded stud on the biopsy pole would be cleaned with an alcohol swab before attaching the corer. For leatherbacks, a ribbon of tissue would be scraped off the carapace with the corer, leaving a gray superficial scar that would heal well over time. If a scrape cannot be obtained, a forceful jab perpendicular to the flipper or at an oblique angle would be employed. Nerve bundles high on the shoulders near the carapace as well as the "armpit" area would be avoided. The corer with the tissue would be stored in a vial of NaCl saturated 20% DMSO buffer.

To minimize effects to target animals:

- Turtles would be protected from temperature extremes and kept moist.
- All equipment that comes into contact with body fluids, cuts or lesions would be disinfected between turtles.
- A separate set of sampling equipment would be maintained for turtles displaying fibropapilloma tumors. These animals would not be sampled if equipment is not available.
- Biopsy and tagging sites would be disinfected using isopropyl alcohol and 10% povidone-iodine.
- No compromised animals would be biopsied if it would further compromise their health.
- In the event of a gear interaction, turtles would be handled according to gear removal protocols in NMFS-SEFSC-TM-580, Careful Release Protocols for Sea Turtle Release with Minimal Injury (SEFSC 2008b), http://www.sefsc.noaa.gov/turtles/TM_NMFS_SEFSC_580_2010.pdf.
- Resuscitation guidelines would be followed if a turtle is recovered unresponsive.

Capture during trawling

Fishery independent trawling conducted in state waters as part of Project A would involve the use of a NOAA research vessel or a chartered commercial trawler to investigate candidate TED efficiency in excluding sea turtles from bottom or midwater trawling gear set for fish or shellfish. This work would be conducted by mounting underwater cameras on a trawl in and around the candidate TED to obtain video of wild turtle escapement. This work would be conducted from October through April in a limited number of locations which are known to have high sea turtle abundance during certain times of the year, including the Cape Canaveral, Florida shipping channel and offshore waters of Georgia and South Carolina.

Trawl types would include:

Flynets and other High Opening Bottom Trawls

Flynets and other high opening bottom trawls vary in mesh size and headrope length depending on the targeted catch. Flynets are typically two-seam fish trawls constructed of graduated mesh sizes beginning with large mesh (16", 32", or 64" stretched mesh) in the wings of the trawl following a slow 3:1 taper to smaller mesh sizes in the body, extension, and mesh sizes as small as 3-inch in the codend or bag section. The trawls are bottom tending with net sizes ranging

from 80 to 100 feet (headrope length). Vertical height of these trawls when fished may be as much as 30 feet. Flynet vessels are single-rigged (towing one trawl) using a net reel for storage. Tow speeds are often between three and four knots with tow durations ranging from 10 minutes to several hours. High opening bottom trawls which are used to target scup and black sea bass may have headrope lengths as long as 150 ft. and mesh sizes up to 40 ft. Similar in general design, but of much smaller headrope size (40-75 ft.) are trawls used to target inshore Loligo squid.

Crab Trawl Fishery

Crab trawls are typically heavily chained 2 seam nets with headrope lengths from 25 to 50 ft depending on vessel size. Mesh sizes are required to be 3 in. to 4 in. stretched mesh. The vertical opening of the trawl is approximately 3 ft and towing speed range from 2 to 4 knots depending on the horsepower of the vessel.

Shrimp trawls

Shrimp trawls are typically 4-seam or 2-seam in construction with headrope lengths from 12-ft to 100 ft. depending on vessel size and location fished (inshore vs. offshore). Mesh sizes are fairly uniform throughout the Atlantic and Gulf of Mexico, ranging from 1.25 in. to 2 in. The vertical opening of a shrimp trawl is dependent on the target species of shrimp. The vertical opening of a shrimp trawl may range from 3 ft (brown and pink shrimp) to 16 ft. (white shrimp). Towing speeds vary from 2 to 3 knots depending on size and horsepower of the towing vessel and personal preference of the fisher.

Skimmer trawls

Skimmer trawls are used exclusively in inshore waters in all states where the gear is allowed (Louisiana, Mississippi, Alabama and North Carolina). Originally designed to catch white shrimp by fishing the entire water column, today skimmers may also be rigged with low opening nets and are used to target brown shrimp. The trawl is held open by a metal framework and is fished on the bottom. Skimmer trawls are "pushed" along the side of the vessel, rather than towed as conventional trawl gear. This allows the vessel operator to maneuver the nets in confined areas such as bayous and sloughs or along the edge of channels. Because skimmers are typically rigged to fish higher in the water column, the potential for turtle capture may be greater than a lower opening otter trawl. The catch may be picked up and dumped without interruption of the towing process as the codends may be lifted to the deck of the boat without raising the entire net out of the water. The size of a skimmer trawl is regulated by States and can vary from 15 to 30 ft. in horizontal opening.

Butterfly Nets

Butterfly nets, sometimes called "wing nets", consist of a square metal frame that forms the mouth of the net. Webbing is attached to the frame and tapers back to a codend. The nets can be fished from a stationary platform or a pair of nets can be attached to either side of a vessel. The vessel is then anchored in a tidal current to capture emigrating shrimp, or the nets are pushed through the water by the vessel. As with skimmer trawls, the catch may be picked up and dumped without raising the entire net out of the water.

During trawl sets to evaluate experimental TED installation, capture of a sea turtle is highly unlikely. The experimental TED would incorporate the minimum required opening dimensions for offshore waters, which are large enough to exclude leatherbacks. During trawl sets in which a TED is not installed (i.e., tows to assess target catch rates without a TED), one of two methods would be employed to prevent lethal turtle interactions and minimize stress to turtles:

1. Tow time limitations. Gear without TEDs will be towed for no longer than 30 minutes unless specific fisheries regulations exist requiring tow time limits in lieu of TEDs. In these cases, tow time limits would match those set by regulations such as the skimmer trawl fishery, which has a 55 min tow time limit.
2. Use of a real time video monitoring system that would allow the researchers to know when a turtle enters the codend section of the trawl.

In addition, if a comatose or unresponsive turtle is encountered during the course of this work, resuscitation and release of the animal would be conducted in accordance with guidelines set forth in NOAA Technical Memorandum NMFS-SEFSC-579, "Sea Turtle Research Techniques Manual". The turtle would be kept moist and in a shaded area on its plastron with the hindquarters elevated approximately 15-30 degrees to permit the lungs to drain off water for a period of up to 24 hours. When successfully resuscitated, the turtle would be released over the stern of the vessel when gear is not in use and the engine is in neutral. The turtle would be released in an area where it is unlikely to be recaptured or injured by vessels.

In video monitored trawls, if a listed sturgeon is incidentally captured and seen on video, researchers would begin haul back of the trawl in the same manner as if a sea turtle was observed to minimize impacts and the chance of mortality.

Fishery independent trawling would not be initiated when marine mammals (except dolphins or porpoises) are observed in the vicinity, and researchers would make every effort to prevent interactions with marine mammals.

Salvage of Carcasses, Tissues and Parts

Wild sea turtles incidentally captured and killed as a result of interaction with fishing gear (independent of the research or as a result of capture in state waters authorized by the proposed permit) while NMFS-permitted researchers are aboard would be salvaged, stored on ice or frozen, and returned to U.S. shore for scientific studies in cases where this is possible. Wild turtles incidentally captured alive as a result of interaction with fishing gear during NMFS-permitted directed research would have biopsy tissue samples taken for genetic analysis and scientific study. Any carcasses retrieved would be bagged and shipped on ice in coolers. Once landed at a U.S. port, biopsy samples and carcasses would be shipped to NMFS facilities along the U.S. east and Gulf Coast for necropsy by staff holding current NMFS and/or USFWS permits under the authority of the Sea Turtle Stranding and Salvage Network.

Import where necessary for these parts would be covered by the applicant's ESA/CITES permit #10US045532/10 to import salvaged sea turtle carcasses and parts and tissue samples from live animals from the high seas and foreign ports. All carcasses salvaged and biopsy samples obtained from animals taken during commercial fishing operations and NMFS research

activities, generally on the high seas of the Atlantic Ocean, will be landed in U.S. ports in almost all cases. Carcasses or biopsy samples would not be shipped back to the United States from foreign ports of landing except in rare cases, where proper CITES procedures will be followed.

CHAPTER 3 AFFECTED ENVIRONMENT

This chapter presents baseline information necessary for consideration of the alternatives, and describes the resources that would be affected by the alternatives, as well as environmental components that would affect the alternatives if they were to be implemented. The effects of the alternatives on the environment are discussed in Chapter 4.

3.1 SOCIAL AND ECONOMIC ENVIRONMENT

A variety of human activities may occur in the action area such as commercial fishing, shipping, military activities, recreational uses (such as fishing and boating), and ecotourism. The social and economic effects of the proposed action mainly involve the effects on the people involved in the research, as well as any industries that support the research, such as charter vessels and suppliers of equipment needed to accomplish the research. Permitting the proposed research could result in a low level of economic benefit to local economies in the action area. However, such impacts would be negligible on a national or regional (state) level. There are no social or economic impacts of the proposed action interrelated with natural or physical environmental effects. Thus, the EA does not include any further analysis of social or economic effects of the Proposed Action.

3.2 PHYSICAL ENVIRONMENT

Activities proposed under File No. 16253 would occur in fishing grounds along the U.S. Atlantic coast, the Gulf of Mexico, and Caribbean Sea and their coastal and estuarine environments. Activities would not occur in right whale critical habitat, smalltooth sawfish critical habitat, or sanctuaries.

Although essential fish habitat (EFH) is found in the action area, it is not expected to be significantly impacted. PR contacted the NMFS Office of Habitat Conservation Regional Offices for potential impacts to EFH. The Southeast Regional Office did not comment on the request. Upon completing an EFH assessment questionnaire, the Northeast Regional Office determined that impacts to EFH would be minimal and temporary and therefore no consultation was required. In addition, as a precautionary measure, conditions would be included in the permit to prevent impacts to sensitive habitat: research would not be conducted over, on, or immediately adjacent to Johnson's sea grass or in Johnson's sea grass critical habitat, non-listed sea grass species, live or hard bottom, or coral habitat.

3.3 BIOLOGICAL ENVIRONMENT

3.3.1 ESA Target Species

ESA Endangered

Green sea turtle

*Chelonia mydas**

Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>
Hawksbill sea turtle	<i>Eretmochelys imbricata</i>
Leatherback sea turtle	<i>Dermochelys coriacea</i>
Olive ridley sea turtle	<i>L. olivacea</i>
Loggerhead sea turtle	<i>Caretta caretta</i> **

**Green turtles in U.S. waters are listed as threatened except for the Florida breeding population which is listed as endangered. ** Some populations of loggerhead sea turtles are listed as threatened. Due to the inability to distinguish between these species' populations away from the nesting beach, these species are considered endangered wherever they occur in U.S. waters.*

Green sea turtle

Green sea turtles are distributed around the world, mainly in waters between the northern and southern 20° C isotherms (Hirth 1971). The complete nesting range of the green sea turtle within the southeastern U.S. includes sandy beaches of mainland shores, barrier islands, coral islands, and volcanic islands between Texas and North Carolina and at the U.S. Virgin Islands (USVI) and Puerto Rico (NMFS and USFWS 1991). Principal U.S. nesting areas for green turtles are in eastern Florida, predominantly Brevard through Broward counties. Regular green sea turtle nesting also occurs on the USVI and Puerto Rico.

Green sea turtle mating occurs in the waters off the nesting beaches. Each female deposits 1-7 clutches (usually 2-3) during the breeding season at 12 to 14 day intervals. Mean clutch size is highly variable among populations, but averages 110-115 eggs. After hatching, green sea turtles go through a post-hatchling pelagic stage where they are associated with drift lines of algae and other debris.

The green sea turtle was listed as threatened in 1978, except for the Florida and Pacific coast of Mexico breeding populations that were listed as endangered. Critical habitat for the green sea turtle has been designated for the waters surrounding Isla Culebra, Puerto Rico and its associated keys from the mean high water line seaward to 3 nautical miles (5.6 km). These waters include Culebra's outlying Keys including Cayo Norte, Cayo Ballena, Cayos Geniqui, Isla Culebrita, Arrecife Culebrita, Cayo de Luis Pena, Las Hermanas, El Mono, Cayo Lobo, Cayo Lobito, Cayo Botijuela, Alcarraza, Los Gemelos, and Piedra Steven. Key physical or biological features essential for the conservation of the green sea turtle found in this designated critical habitat include important food resources and developmental habitat, water quality, and shelter.

Kemp's ridley sea turtle

Of the seven extant species of sea turtles of the world, the Kemp's ridley has declined to the lowest population level. This species has a very restricted range relative to other sea turtle species. Kemp's ridleys nest in daytime aggregations known as arribadas, primarily at Rancho Nuevo, a stretch of beach in Mexico. Most of the population of adult females nests in this single locality (Pritchard 1969). When nesting aggregations at Rancho Nuevo were discovered in 1947, adult female populations were estimated to be in excess of 40,000 individuals (Hildebrand 1963). By the early 1970s, the world population estimate of mature female Kemp's ridleys had been reduced to 2,500-5,000 individuals. The population declined further through the mid-1980s. Recent observations of increased nesting suggest that the decline in the ridley population has stopped and there is cautious optimism that the population is now increasing (Turtle Expert

Working Group (TEWG) 1998). The number of nests has grown from a low of approximately 702 nests in 1985, to greater than 1,940 nests in 1995, to approximately 5,800 nests in 2000, to approximately 8,300 nests in 2003, to approximately 10,300 nests in 2005. USFWS recorded approximately 12,000 nests in 2006 suggesting that the adult nesting female population is about 7,400 individuals.

It appears that adult Kemp's ridley sea turtles are restricted somewhat to the Gulf of Mexico in shallow near shore waters, although adult-sized individuals sometimes are found on the eastern seaboard of the United States. Juvenile/subadult Kemp's ridleys have been found along the eastern seaboard of the United States and in the Gulf of Mexico. Atlantic juveniles/subadults travel northward with vernal warming to feed in the productive, coastal waters of Georgia through New England, returning southward with the onset of winter to escape the cold (Lutcavage and Musick 1985; Henwood and Ogren 1987; Ogren 1989). In the Gulf, juvenile/subadult ridleys occupy shallow, coastal regions. The near shore waters of the Gulf of Mexico are believed to provide important developmental habitat for juvenile Kemp's ridley sea turtles. Ogren (1988) suggests that the Gulf coast, from Port Aransas, Texas, through Cedar Key, Florida, represents the primary habitat for subadult ridleys in the northern Gulf of Mexico. Ogren (1989) suggested that in the northern Gulf this species moves offshore to deeper, warmer water during winter. Studies suggest that subadult Kemp's ridleys stay in shallow, warm, nearshore waters in the northern Gulf of Mexico until cooling waters force them offshore or south along the Florida coast (Renaud 1995). Little is known of the movements of the post-hatching, planktonic stage within the Gulf. Studies have shown the post-hatchling pelagic stage varies from 1-4 or more years, and the benthic immature stage lasts 7-9 years (Schmid and Witzell 1997).

The Kemp's ridley was listed as endangered on December 2, 1970. There is no designated critical habitat for the Kemp's ridley sea turtle.

Hawksbill sea turtle

The hawksbill sea turtle occurs in tropical and subtropical seas of the Atlantic, Pacific, and Indian Oceans. The species is widely distributed in the Caribbean Sea and western Atlantic Ocean, with representatives of at least some life history stages regularly occurring in southern Florida and the northern Gulf of Mexico (especially Texas); in the Greater and Lesser Antilles; and along the Central American mainland south to Brazil.

Within the United States, hawksbills are most common in Puerto Rico and its associated islands, and in the USVI. In the continental United States, hawksbill sea turtles have been recorded from all the Gulf States and from along the eastern seaboard as far north as Massachusetts, with the exception of Connecticut, but sightings north of Florida are rare (Meylan and Donnelly 1999). They are closely associated with coral reefs and other hard-bottom habitats, but they are also found in other habitats including inlets, bays, and coastal lagoons. At least some life history stages regularly occur in southern Florida and the northern Gulf of Mexico (especially Texas); in the Greater and Lesser Antilles; and along the Central American mainland south to Brazil.

In Florida, hawksbills are observed with some regularity on the reefs off Palm Beach County, where the warm Gulf Stream current passes close to shore, and in the Florida Keys. Texas is the

only other state where hawksbills are sighted with any regularity. Most sightings involve post-hatchlings and juveniles.

The life history of hawksbills consists of a pelagic stage that lasts from the time they leave the nesting beach as hatchlings until they are approximately 22-25 cm in straight carapace length (Meylan 1988), followed by residency in developmental habitats (foraging areas where immature turtles reside and grow) in coastal waters. Adult foraging habitat, which may or may not overlap with developmental habitat, is typically coral reefs, although other hard-bottom communities and occasionally mangrove-fringed bays may be occupied. Hawksbills show fidelity to their foraging areas over periods of time as great as several years (van Dam and Diez 1998).

In the Western Atlantic, the largest hawksbill nesting population occurs in the Yucatán Peninsula of Mexico, where several thousand nests are recorded annually in the states of Campeche, Yucatán, and Quintana Roo (Garduño-Andrade et al. 1999). Important but significantly smaller nesting aggregations are documented elsewhere in the region in Puerto Rico, the USVI, Antigua, Barbados, Costa Rica, Cuba, and Jamaica (Meylan 1999). Estimates of the annual number of nests for each of these areas are of the order of hundreds to a few thousand. Nesting within the southeastern United States and U.S. Caribbean is restricted to Puerto Rico (>650 nests/yr), the USVI (~400 nests/yr), and, rarely, Florida (0-4 nests/yr) (Meylan 1999; Florida Statewide Nesting Beach Survey database). At the two principal nesting beaches in the U.S. Caribbean where long-term monitoring has been carried out, populations appear to be increasing (Mona Island, Puerto Rico) or stable (Buck Island Reef National Monument, St. Croix, USVI) (Meylan 1999).

The hawksbill sea turtle was listed as endangered under the ESA in 1970, and is considered Critically Endangered by the International Union for the Conservation of Nature (IUCN) based on global population declines of over 80 percent during the last three generations (105 years) (Meylan and Donnelly 1999). Critical habitat for the hawksbill sea turtle is designated under 50 CFR 226.209. It includes the waters surrounding the islands of Mona and Monito, Puerto Rico from the mean high water line seaward to 3 nautical miles (5.6 km).

Critical habitat for the hawksbill sea turtle includes the waters surrounding the islands of Mona and Monito, Puerto Rico from the mean high water line seaward to 3 nautical miles (5.6 km).

Loggerhead sea turtle

Loggerheads occur throughout the temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans and inhabit continental shelves and estuarine environments. Developmental habitat for small juveniles includes the pelagic waters of the North Atlantic Ocean and the Mediterranean Sea.

Adults have been reported throughout the range of this species in the United States and throughout the Caribbean Sea. Non-nesting, adult female loggerheads are reported throughout the United States and Caribbean Sea; however, little is known about the distribution of adult males who are seasonally abundant near nesting beaches during the nesting season. Aerial surveys suggest that loggerheads (benthic immatures and adults) in U.S. waters are distributed in the following proportions: 54 percent in the southeast U.S. Atlantic, 29 percent in the northeast

U.S. Atlantic, 12 percent in the eastern Gulf of Mexico, and 5 percent in the western Gulf of Mexico (TEWG 1998).

The loggerhead was listed as a threatened species in 1978. Critical habitat has not been designated for the loggerhead. The recent loggerhead status review (Conant et al. 2009) concluded that there are nine loggerhead distinct population segments (DPSs). These include the North Pacific Ocean DPS; the South Pacific DPS; the North Indian Ocean DPS; the Southeast Indo-Pacific Ocean DPS; the Southwest Indian Ocean DPS; the Northwest Atlantic Ocean DPS; the Northeast Atlantic Ocean DPS; the Mediterranean Sea DPS; and the South Atlantic Ocean DPS. The information provided in the status review represents the most recent and available information relative to the status of this species. On September 16, 2011 NMFS formally designated the loggerhead with these nine DPS' worldwide. Of these DPS', five are listed as endangered: Northeast Atlantic Ocean DPS, Mediterranean Sea DPS, North Indian Ocean DPS, North Pacific Ocean DPS and South Pacific Ocean DPS.

Leatherback sea turtle

Leatherbacks utilize both coastal and pelagic waters. In the western Atlantic, adults routinely migrate between boreal, temperate and tropical waters, presumably to optimize both foraging and nesting opportunities (Bleakney 1965; Lazell 1980). Leatherbacks are deep divers, with recorded dives to depths in excess of 1000 m (Eckert et al. 1989), but they may come into shallow waters if there is an abundance of jellyfish near shore. TDR data recorded by Eckert et al. (1989) indicate that leatherbacks are night feeders.

The leatherback ranges farther than any other sea turtle species, exhibiting broad thermal tolerances (NMFS and USFWS 1995). Leatherbacks are widely distributed throughout the oceans of the world, and are found throughout waters of the Atlantic, Pacific, Caribbean, and the Gulf of Mexico. Adult leatherbacks forage in temperate and subpolar regions from 71° N to 47° S latitude in all oceans and undergo extensive migrations between 90° N and 20° S, to and from the tropical nesting beaches. In the Atlantic Ocean, leatherbacks have been recorded as far north as Newfoundland, Canada, and Norway, and as far south as Uruguay, Argentina, and South Africa (NMFS SEFSC 2001). Female leatherbacks nest from the southeastern United States to southern Brazil in the western Atlantic and from Mauritania to Angola in the eastern Atlantic. The most significant nesting beaches in the Atlantic, and perhaps in the world, are in French Guiana and Suriname (NMFS SEFSC 2001). Leatherbacks are predominantly pelagic, however they can be found in near shore waters.

The TEWG (2007) estimated the adult leatherback sea turtle population of the North Atlantic to be approximately 34,000-94,000 animals. The range of the estimate is large, reflecting the Working Group's uncertainty in nest numbers and their extrapolation to adults. The Working Group believes that as estimates improve the range would likely decrease. However, this is the most current estimate available. It is important to note that while the analysis provides an estimate of adult abundance for all populations in the greater North Atlantic, it does not provide estimates for the number or origin of leatherbacks in specific foraging areas, nor does it provide an estimate of subadult abundance. Trends in the adult population size estimate were not possible since trends in sex ratio and remigration rates were not available (TEWG 2007).

The leatherback was listed as endangered on June 2, 1970. Critical habitat for the leatherback includes the waters adjacent to Sandy Point, St. Croix, USVI, up to and inclusive of the waters from the hundred fathom curve shoreward to the level of the mean high tide with boundaries at 17° 42' 12" North and 65° 50' 00" West. Key physical or biological features essential for the conservation of the leatherback sea turtle found in this designated critical habitat include elements important for reproduction.

Olive ridley sea turtle

Olive ridley turtles occur throughout the world, primarily in tropical and sub-tropical waters. The species is divided into three main populations in the Pacific Ocean, Indian Ocean, and Atlantic Ocean. Preferred nesting areas occur along continental margins and, rarely, on oceanic islands. Nesting aggregations in the Pacific Ocean are found in the Marianas Islands, Australia, Indonesia, Malaysia, and Japan (western Pacific) and Mexico, Costa Rica, Guatemala, and South America (eastern Pacific). In the Indian Ocean, nesting aggregations have been documented in Sri Lanka, east Africa, Madagascar, and very large aggregations in India at Orissa. In the Atlantic Ocean, nesting aggregations occur from Senegal to Zaire, Brazil, French Guiana, Suriname, Guyana, Trinidad, and Venezuela. The largest nesting aggregation in the world occurs in the Indian Ocean along the northeast coast of India (Orissa); the second most important nesting area occurs in the eastern Pacific, along the west coast of Mexico and Central America (NMFS and USFWS 1998).

While olive ridleys generally have a tropical to subtropical range, individuals do occasionally venture north, some as far as the Gulf of Alaska. The post-nesting migration routes of olive ridleys, tracked via satellite from Costa Rica, traversed thousands of kilometers of deep oceanic waters ranging from Mexico to Peru and more than 3,000 kilometers out into the central Pacific (Plotkin *et al.* 1993). Concentrations at sea have been noted mainly in tropical neritic waters, usually adjacent to known nesting areas. Unpublished data assembled by the IATTC show that olive ridleys are present from 30° N to 15° S and are most often seen within 1,200 nautical miles from shore (although they are seen as far as 140° W, and it is not uncommon to find large groups hundreds of miles from the nearest coast).

Most olive ridley turtles lead a primarily pelagic existence (Plotkin *et al.* 1993). Olive ridleys feed on tunicates, salps, crustaceans, other invertebrates and small fish. Although they are generally thought to be surface feeders, olive ridleys have been caught in trawls at depths of 80-110 meters (NMFS and USFWS 1998), and a post-nesting female reportedly dove to a maximum depth of 290 meters.

Hatchlings leave the beach to begin what is presumed to be a pelagic phase, the so-called "lost year." No information is available on the movements or the kind of habitat these turtles use during their first year (or possibly years) of life. Information on the habitat of juvenile ridleys is almost nonexistent.

Since its listing in 1978, the species' abundance has declined. It has been recommended that the olive ridley for the western Atlantic be reclassified as endangered, based on continued direct and incidental take of olive ridleys, particularly in shrimp trawl nets. Since 1967, the western North Atlantic (Surinam and adjacent areas) nesting population has declined more than 80 percent. In

general, anthropogenic activities have negatively affected each life stage of the olive ridley turtle populations, resulting in the observed declines in abundance of some olive ridley turtle nesting aggregations. Other aggregations, however, have experienced significant increases in abundance in recent years, often as a result of decreased adult and egg harvest pressure, indicating populations in which the birth rates are now exceeding death rates.

Olive ridleys were listed under the ESA as endangered for the "Mexican nesting population" and threatened for all other populations in 1978. No critical habitat for the olive ridley has been designated.

3.3.2 Non-Target Species

Marine Mammals

North Atlantic right (*Eubalaena glacialis*), humpback (*Megaptera novaeangliae*), fin (*Balaenoptera physalus*), sei (*B. borealis*), blue (*B. musculus*), and sperm (*Physeter macrocephalus*) whales could be present in the action area. Trawling in state waters would not interact with these species. The permit would include right whale ship strike avoidance information and conditions that require monitoring for large whales and restrict trawling when marine mammals are observed. Based on this, NMFS believes that the chance of the proposed action affecting these whale species is minimal; therefore they are not considered further.

Dolphins and porpoises are generally known to interact with research and commercial fishing trawlers for foraging. In some cases, interaction with the dolphins or porpoises is unavoidable as they follow the trawler and pursue the fish that are caught in the net. However, in the SEFSC's history of the proposed gear testing, they have not captured or taken a marine mammal.

In addition, the proposed permit would contain conditions that prohibit trawling activities (or require stopping them) if:

- a small cetacean, with the exception of dolphins or porpoises, is sighted within 50 yards,
- a large whale is sighted within 100 yards, or
- a right whale is sighted within 500 yards.

Given the SEFSC's past history and the permit conditions, NMFS believes the likelihood of entangling a dolphin or porpoise during trawling is minimal and therefore impacts to marine mammals are not considered further.

Crew would be on watch for manatees (*Trichechus manatus*) at all times. If a manatee is sighted within 100 meters of the vessel, all activities would stop. In addition, the proposed permit would contain standard conditions provided by the USFWS to prevent adverse interactions. It is unlikely that researchers would entangle a manatee during trawling in state waters, therefore they are not considered further.

Fish

Shortnose and Gulf Sturgeon

Endangered shortnose sturgeon (*Acipenser brevirostrom*) are benthic fish that mainly occupy the deep channel sections of large rivers. They can be found in rivers along the western Atlantic coast from St. Johns River, Florida (possibly extirpated from this system), to the Saint John River in New Brunswick, Canada. The species is anadromous in the southern portion of its range (*i.e.*, south of Chesapeake Bay), while some northern populations are amphidromous. Since the experimental trawling would not occur in or near the rivers where concentrations of shortnose sturgeon are most likely found, it is highly unlikely that the proposed action will affect shortnose sturgeon.

Similarly, researchers would not conduct the trawling authorized by the proposed permit in areas where threatened gulf sturgeon (*A. oxyrinchus desotoi*) are likely to be present, therefore it is highly unlikely that the proposed action will affect gulf sturgeon. These species are not considered further.

Atlantic Sturgeon

Atlantic sturgeon (*A. oxyrinchus oxyrinchus*), with a variety of Distinct Population Segments proposed for listing as threatened or endangered under the ESA, are anadromous. They spawn in moderately flowing water (46-76 cm/s) in deep parts of large rivers. Juveniles usually reside in estuarine waters for months to years. Subadults and adults live in coastal waters and estuaries when not spawning, generally in shallow (10-50 m depth) nearshore areas dominated by gravel and sand substrates. Long distance migrations away from spawning rivers are common. The applicant indicated that they captured about 80 Atlantic sturgeon during flynet TED testing in 2008 and 2009 in the nearshore areas (<3 m) off Duck, NC. Approximately 75% of these were released alive. Sturgeon captured incidentally during research would be disentangled and released immediately. As a condition of the permit, researchers would be required to follow the NMFS sturgeon protocol for their safe handling and release (Kahn and Mohead 2010).

Smalltooth Sawfish

Smalltooth sawfish (*Pristis pectinata*) typically inhabit the shallow coastal waters of warm seas, rarely descending below ten meters. They are often found close to shore in muddy and sandy bottoms in sheltered bays, on shallow banks, and in estuaries or river mouths. According to the smalltooth sawfish recovery plan, historically, smalltooth sawfish were found as far north as New Jersey in the warm summer months (NMFS 2009); however, in recent decades the population size and range have severely declined due to fishing pressures and habitat alteration and degradation.

Due to a lack of data, the current population size cannot be estimated. It is known, however, that the current known populations are limited to the lower reaches of the Florida peninsula, primarily in the Everglades and Florida Keys (Seitz and Poulakis 2002). Given that the applicant would not be working in the Everglades and most of the Florida Keys are part of a National Marine Sanctuary where the applicant would not work, NMFS does not expect a high likelihood of researchers interacting with this species. The applicant has also noted that trawls would not be conducted in designated critical habitat for the species (for more information please see the final rule designating habitat at 74 CFR 45353). Therefore, NMFS recognizes that the species'

range may overlap with the action area and, though unlikely, an interaction could occur. As a condition of the permit, researchers would be required to follow NMFS guidelines for the safe disentanglement of any bycaught animals.

Other bycatch

For all trawl types, efforts would be made to return bycatch (Table 1) to the water as quickly as possible, maximizing the chances for survival. The potential mortality of bycatch species would be a fraction of what the state fisheries are already removing, and therefore are not considered further.

Table 1. Anticipated bycatch during TED testing, by fishery type, over the proposed five-year permit. Numbers estimated by the applicant, in thousands.

Fishery Type	Bycatch																		
	penaeids (shrimp)	scaenids (drums)	triglids (sea robins)	bothids (flounders)	charcharinids (sharks)	dasyatids (rays)	mylobatids (rays)	clupeids (shad)	engraulids (anchovies)	synodontids (lizardfish)	ariids (catfish)	lutjanids (snappers)	ephippids (spadefish)	carangids (jacks)	sculdids (mantis shrimps)	portunids (blue crabs)	ctenophoras (comb jellies)	pelagiids (sea nettles)	ulmarids (moon jellies)
commercial skimmer trawls in NC, MS, AL, LA	4,000*	1,600	200	400	20	20	20	1,200	200	20	400	20	40	80	40	20	800	400	400
NC inshore crab trawls	0	320	40	320	4	4	4	480	40	4	0	0	4	4	2	200*	160	80	0
commercial shrimp trawls	4,000*	1,600	200	400	20	20	20	1,200	200	20	400	20	40	80	40	20	800	400	400

* This species would be retained by the vessel for sale. The rest of the catch would be discarded.

CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

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

4.1 EFFECTS OF ALTERNATIVE 1: No Action

No action, i.e., denial of the permit request, would eliminate any potential risk to target species from the proposed research activities. This alternative would prohibit researchers from gathering information that could help endangered and protected sea turtles.

4.2 EFFECTS OF ALTERNATIVE 2: Issue permit with standard conditions

Based on prior analysis and experience from previous work performed under permit No. 1570, NMFS expects that the impacts of the Proposed Action would be limited to the biological environment, specifically the target sea turtles. The applicant would capture by trawl, handle, sample, measure, photograph, weigh, flipper tag, PIT tag, biopsy, and release turtles in state waters and handle, sample, measure, photograph, weigh, flipper tag, PIT tag, biopsy, and release turtles that are incidentally captured by longline or trawl in Federal fisheries. The incidental capture of sea turtles and its effects were analyzed in the biological opinion for the fishery. The type of action proposed in the permit request would be unlikely to affect the physical or socioeconomic environment or pose a risk to public health and safety.

The effects of the proposed activities were previously analyzed for Permit No. 1570 (NMFS 2006), which the proposed permit would replace. In that analysis, NMFS determined that:

- The short-term stresses (separately and cumulatively) to sea turtles resulting from the non-lethal research activities were expected to be minimal and dissipate within a day.
- Capture by trawl would subject animals to forced submergence, which can lead to metabolic changes that impair a sea turtle's ability to function. Based on permit conditions concerning animal handling and follow-up monitoring NMFS did not expect trawl capture to result in more than short-term effects on most of the individual animals.
- A limited number of accidental mortalities were authorized but not expected. These takes would kill the individual animal, but were not expected to have a detectable effect on the numbers or reproduction of the affected populations.
- Activities were not expected to have more than short-term effects on target populations, either separately or cumulatively.
- No whales or other marine mammals were expected to be adversely affected.
- The level of trawling and capture of bycatch species would represent a fraction (<1%) of what would already be authorized for the state fishery and would not be expected to have more than short-term effects on marine life species populations or other portions of the environment.

- The proposed action was not expected to adversely affect other portions of the environment, including the physical or socioeconomic environment, or result in any cumulatively significant effects on them.

SEFSC has reported that they captured and processed 17 sea turtles during trawling and processed one sea turtle incidentally captured by longline under Permit No. 1570 in reporting years 2006-2010. One turtle required resuscitation and was revived. All turtles were released alive. Therefore the actual impacts of the performed research activities were less intense than what was expected.

The effects of the Proposed Action to the target sea turtles are not expected to differ from those analyzed in the 2006 EA and observed during actions taken under Permit No. 1570. The number of target sea turtles, including unintentional mortalities, in the Proposed Action is the same as what was previously analyzed and authorized. In addition, some sturgeon may be incidentally caught during trawls. However, the majority of animals are expected to be released alive and unharmed given the mitigating measures of the permit for their safe handling and release. The Biological Opinion (BO, NMFS 2012) prepared for the Proposed Action concluded that the effects are not likely to jeopardize targeted sea turtle species.

The effects of the proposed activities would primarily be limited to short-term harassment of individual sea turtles, with a limited number of unintentional mortalities. Conditions in the proposed permit would be similar to those in Permit No. 1570, and were designed to minimize effects to individual sea turtles and non-target species.

Effects to Non-target Species

Atlantic sturgeon or smalltooth sawfish could be incidentally caught during the proposed trawl or longline surveys, respectively. However, the likelihood of capture is minimal and, for sawfish, likely to be a rare event, based on the SEFSC's reported data from past surveys conducted under Permit Nos. 1260 and 1570. Caught fish could have minor injury in the form of abrasions or piercing of the skin if caught on a longline. These injuries would heal over time and are not expected to be life threatening. NMFS does not expect capture to result in serious injury or mortality as discussed in the accompanying BO. In addition, researchers would be required as conditions of the permit to handle fish in a careful, safe manner; follow NMFS' guidelines for their safe handling; scan sturgeon for existing PIT tags, and return fish to the water as quickly as possible. The BO prepared for the Proposed Action contains an incidental take statement (ITS) for three sawfish to be incidentally captured over the life of the permit by longline and a provisional ITS for the incidental capture by trawl of four Atlantic sturgeon annually. The BO concluded that though a small number of each species could be incidentally captured, the effects were not likely to jeopardize Atlantic sturgeon or smalltooth sawfish or adversely affect sawfish designated habitat. Reasonable and prudent measures of the BO for each species have been incorporated into the permit as conditions.

4.3 COMPARISON OF ALTERNATIVES

While the No Action alternative would have no environmental effects, the opportunity would be lost to collect information that would contribute to better understanding sea turtles and that would provide information needed to implement NMFS' management activities to help conserve

and manage sea turtles, as required by the ESA and NMFS' implementing regulations. The Proposed Action would affect individual sea turtles and potentially, non-target species. However, the effects would be minimal and the alternative would allow the collection of valuable information that could help NMFS' efforts to recover sea turtles. Neither the No Action nor the Proposed Action alternatives are anticipated to have adverse population or stock-level effects on sea turtles or incidentally caught non-target species.

4.4 MITIGATION MEASURES

There are no additional mitigation measures beyond those that are part of the applicant's protocols (described in section 2.2) or conditions that would be required by permit. The applicant's protocols from the SEFSC's Sea Turtle Research Techniques Manual (NMFS SEFSC 2008a) and the SEFSC's Careful Release Protocols for Sea Turtle Release with Minimal Injury (NMFS SEFSC 2008b) are incorporated into the EA by reference. The BO's reasonable and prudent measures would be included as permit conditions to minimize impacts to bycaught sturgeon and sawfish.

In summary, the permit conditions limit the level of take, minimize the effects of sampling activities on target sea turtles, minimize the effects to bycatch, and require notification, coordination, monitoring, and reporting. In addition, permit conditions prohibit trawling activities (or require stopping them) if:

- a small cetacean, with the exception of dolphins or porpoises, is sighted within 50 yards,
- a large whale is sighted within 100 yards, or
- a right whale is sighted within 500 yards.

Review of monitoring reports of previous permits for the same or similar research protocols indicate that these types of mitigation measures are effective at minimizing stress, pain, injury, and mortality associated with takes.

4.5 UNAVOIDABLE ADVERSE EFFECTS

The measures required by permit conditions are intended to reduce, to the maximum extent practical, the potential for adverse effects of the research. Individual sea turtles may experience short-term stress and discomfort in response to the activities of researchers, but the research is not expected to have more than a minimal effect on individuals, and no effect on populations. Small numbers of unintentional mortality would be authorized for sea turtles, but are not expected based on the applicant's lack of mortality during previous permits. While not expected, mortalities are authorized to provide the applicant coverage in the event an accident occurs during the research. While not expected, NMFS must assume the worst case scenario that mortalities could occur from forced submergence of sea turtles during trawling. A small number of non-target ESA fish species may be incidentally captured however, they would be released alive and in good condition.

4.6 CUMULATIVE EFFECTS

Cumulative effects are defined as those that result from incremental impacts of a proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (Federal or nonfederal) or person undertakes such actions.

Research under the Proposed Action is not expected to result in more than localized disturbance of animals in the action area. It is likely the effects of the disturbance would be short-term and that the affected individuals would recover between disturbances and following conclusion of the permitted research. A limited number of accidental mortalities due to the trawling would be authorized but are not expected. If they occur, these takes would kill the individual animal, but are not expected to have a detectable effect on the numbers of the affected populations.

4.6.1 Research Permits

As summarized in Appendix B, 26 active permits, including one that would be replaced by the Proposed Action, allow research on a combination of the target species in areas that could overlap with the proposed action area. The effects of many individual research activities (e.g., a survey, a field trip to capture animals) are short-term, lasting hours to days following the research event. Given the large proposed action area, it is unlikely that the exact location and timing of research under the various permits would overlap in time and space with the permitted research.

It is a standard condition of NMFS permits for research on sea turtles that researchers coordinate their activities with those of other Permit Holders to avoid unnecessary disturbance of animals. In an effort to mitigate the risk of negative cumulative effects the researchers would scan the turtles for PIT tags before tagging. Turtles that have existing, functional flipper tags would not be tagged again. Permitted researchers are also required to notify the appropriate NMFS Regional Office at least two weeks in advance of any planned field work so that the Regional Office can facilitate this coordination and take other steps appropriate to minimize disturbance from multiple Permit Holders.

4.6.2 Other Human Activities

Historically, one of the major contributors to declines in sea turtle populations was the commercial harvest of eggs and turtles. Today, target sea turtles may be adversely affected by human activities including commercial and recreational fishing (as bycatch via entrapment and entanglement in fishing gear), habitat degradation, and tourism and recreation (via harassment from human approach and presence) within the action area.

In addition, the 2010 Deepwater Horizon oil well blowout has impacted green, leatherback, Kemp's ridley, loggerhead, and hawksbill sea turtles in the Gulf of Mexico. The event has resulted in the live or dead stranding of more than 1,100 sea turtles². However, this is likely an underestimate of the number of sea turtles impacted by the spill because 1) it is unlikely that all oiled animals were documented and 2) additional sea turtles were observed within oiled waters but were unable to be captured during the response. The overall degree and extent to which the populations and species have been impacted is not known; however, researchers and managers are currently working to assess and quantify impacts.

The target species also benefit from human activities operated by Federal, state, and or local agencies and organizations including management, conservation, and recovery efforts, nest monitoring, education and outreach, and stranding response programs.

² www.nmfs.noaa.gov/pr/health/oilspill/turtles.htm

4.6.3 Summary of Cumulative Effects

It is likely that issuance of the proposed permit would have some cumulative adverse effects on target animals. These adverse effects would likely be additive to those resulting from disturbance under other permits, and to disturbances related to other human activities in the action area. Some animals may be acclimated to a certain level of human activity and may be able to tolerate disturbance associated with these activities with little adverse impacts on population or species vital rates. However, even animals acclimated to a certain level of disturbance may be adversely affected by additive effects that exceed their tolerance threshold. Based on the review of past, present and future actions that impact the target species, the incremental contribution of the short-lived impacts associated with the Proposed Action is not anticipated to result in significant cumulative impacts to the human environment.

Although a low number of mortalities could occur, the Proposed Action would not have more than minimal effects to the target species at the population or species level. Any increase in stress levels to individual turtles or non-target species resulting from capture or procedures would dissipate within approximately a day. Injuries caused by tagging and sampling would be expected to heal. NMFS does not expect the authorization of the proposed research activities to appreciably reduce the species' likelihood of survival and recovery in the wild because it would not likely adversely affect their birth rates, death rates, or recruitment rates. In particular, NMFS does not expect the proposed research activities to affect adult female turtles 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 populations of any of the target species. Likewise, NMFS does not expect significant impacts to non-target species as a result of the Proposed Action.

CHAPTER 5 LIST OF PREPARERS AND AGENCIES CONSULTED

This document was prepared by Kristy Beard and Amy Hapeman with the Permits, Conservation and Education Division of NMFS' Office of Protected Resources in Silver Spring, Maryland.

Agencies Consulted: U.S. Fish and Wildlife Service
Florida Fish and Wildlife Conservation Commission
NMFS Office of Habitat Conservation

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APPENDIX A. Proposed Annual Takes of Male and Female Sea Turtles Older than Hatchlings.

Table 1. Project A: Turtle Excluder Device (TED) Evaluations in the Atlantic Ocean, Gulf of Mexico, Caribbean Sea and their estuarine and coastal environments.

SPECIES	NO. TURTLES	TAKE ACTION	COLLECTION METHOD	PROCEDURES	DETAILS
Turtle, loggerhead sea	155	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	fisheries managed by Federal authority
Turtle, loggerhead sea	70	Capture/Handle/Release	Net, trawl	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	capture by trawling in waters managed by State authority
Turtle, Kemp's ridley sea	78	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	fisheries managed by Federal authority
Turtle, Kemp's ridley sea	20	Capture/Handle/Release	Net, trawl	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	capture by trawling in waters managed by State authority
Turtle, leatherback sea	64	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	fisheries managed by Federal authority
Turtle, leatherback sea	18	Capture/Handle/Release	Net, trawl	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	capture by trawling in waters managed by State authority

SPECIES	NO. TURTLES	TAKE ACTION	COLLECTION METHOD	PROCEDURES	DETAILS
Turtle, green sea	35	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	fisheries managed by Federal authority
Turtle, green sea	12	Capture/Handle/Release	Net, trawl	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	capture by trawling in waters managed by State authority
Turtle, hawksbill sea	23	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	fisheries managed by Federal authority
Turtle, hawksbill sea	10	Capture/Handle/Release	Net, trawl	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	capture by trawling in waters managed by State authority
Turtle, olive ridley sea	23	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	fisheries managed by Federal authority
Turtle, olive ridley sea	10	Capture/Handle/Release	Net, trawl	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	capture by trawling in waters managed by State authority
Turtle, unidentified sea	57	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	fisheries managed by Federal authority
Turtle, unidentified sea	28	Capture/Handle/Release	Net, trawl	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	capture by trawling in waters managed by State authority

SPECIES	NO. TURTLES	TAKE ACTION	COLLECTION METHOD	PROCEDURES	DETAILS
Turtle, loggerhead sea	3	Unintentional mortality	Net, trawl	Salvage (carcass, tissue, parts)	Unintentional mortalities by forcible submergence/drowning; total over 5-years
Turtle, Kemp's ridley sea	2	Unintentional mortality	Net, trawl	Salvage (carcass, tissue, parts)	Unintentional mortalities by forcible submergence/drowning; total over 5-years
Turtle, green sea	2	Unintentional mortality	Net, trawl	Salvage (carcass, tissue, parts)	Unintentional mortalities by forcible submergence/drowning; total over 5-years
Turtle, leatherback sea	1	Unintentional mortality	Net, trawl	Salvage (carcass, tissue, parts)	Unintentional mortalities by forcible submergence/drowning; total over 5-years
Turtle, hawksbill sea	1	Unintentional mortality	Net, trawl	Salvage (carcass, tissue, parts)	Unintentional mortalities by forcible submergence/drowning; total over 5-years
Turtle, olive ridley sea	1	Unintentional mortality	Net, trawl	Salvage (carcass, tissue, parts)	Unintentional mortalities by forcible submergence/drowning; total over 5-years

Table 2. Project B: Modifications to Longline Fisheries Gear in the Atlantic Ocean, Gulf of Mexico, Caribbean Sea and their estuarine and coastal environments.

SPECIES	NO. TURTLES	TAKE ACTION	COLLECTION METHOD	PROCEDURES	DETAILS
Turtle, loggerhead sea	28	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	Animals captured within fisheries managed by Federal authority
Turtle, Kemp's ridley sea	3	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	Animals captured within fisheries managed by Federal authority
Turtle, leatherback sea	30	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	Animals captured within fisheries managed by Federal authority
Turtle, green sea	4	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	Animals captured within fisheries managed by Federal authority
Turtle, hawksbill sea	4	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	Animals captured within fisheries managed by Federal authority
Turtle, olive ridley sea	3	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	Animals captured within fisheries managed by Federal authority
Turtle, unidentified sea	3	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue; Weigh	Animals captured within fisheries managed by Federal authority

APPENDIX B. ACTIVE PERMITS IN OR NEAR THE ACTION AREA

Table 1. Existing Permits Authorizing Takes for the Target Sea Turtle Species In or Near the Action Area. The Proposed Action would replace the permit in **bold**.

File Number	Permit Holder	Expiration Date
1576-01	NMFS NEFSC	October 31, 2012
1570	NMFS SEFSC	December 31, 2011
1571	NMFS SEFSC	December 31, 2011
1527	John Musick	April 1, 2012
13573	Mike Salmon	May 1, 2012
1557	Molly Lutcavage	June 30, 2012
15135	Blake Price	December 31, 2012
10022	Raymond Carthy	April 30, 2013
13306	Karen Holloway-Adkins	June 30, 2013
13307	Kristen Hart	June 30, 2013
1551-02	NMFS SEFSC	July 1, 2013
13543	South Carolina Department of Natural Resources	April 30, 2014
13544	Jeffrey Schmid	April 30, 2014
14272	Lawrence Wood	June 30, 2014
14249	Ronald Smolowitz	October 31, 2014
14655	Jane Provancha	June 1, 2015
14508	Inwater Research Group	June 1, 2015
14506	Llewellyn Ehrhart	September 15, 2015
14726	Blair Witherington	September 15, 2015
15112	NMFS NEFSC	January 1, 2016
14622	Allen Foley	February 28, 2016
15606	Andre Landry	March 30, 2016
14949	Carlos Diez	April 29, 2016
15566	South Carolina Department of Natural Resources	April 30, 2016
15552	NMFS SEFSC	July 25, 2016
16174	Mike Salmon	November 18, 2016

Table 2. Research activities authorized by active permits. Sex and age class of animals affected varies by permit, as does the time of year and frequency of activity. The Proposed Action appears in *italics* and will replace No. 1570.

File No.	Capture	Blood sampling	Fecal sampling/lavage	Laparoscopy	Tissue sampling	Attach instruments	Tags or marks	Mortality
15552					√		√	
1557	√	√			√	√	√	
1576-01	√				√		√	√
1570	√				√		√	√
1571					√		√	
1527		√				√	√	
13573	√						√	
15135	√						√	
10022	√				√	√	√	
13306	√	√			√	√	√	
13307	√	√	√		√	√	√	
1551	√	√	√	√	√	√	√	
13543							√	
13544	√		√		√	√	√	
14272	√	√			√	√	√	
14249	√	√			√	√	√	√
14655	√	√			√	√	√	
14508	√	√	√		√		√	
14506	√	√	√		√		√	
14726	√		√		√	√	√	
15122					√		√	
14622	√	√		√	√	√	√	
15606	√	√	√		√	√	√	√
14949	√	√	√		√	√	√	√
15566	√	√	√		√	√	√	√
16174	√		√			√	√	
<i>16253</i>	√				√		√	√



Finding of No Significant Impact Issuance of Scientific Research Permit No. 16253

Background

In January 2011, the National Marine Fisheries Service (NMFS) received an application for a permit (File No. 16253) from NMFS Southeast Fisheries Science Center (SEFSC) to conduct research on sea turtles to evaluate modifications to commercial fishing gear to mitigate sea turtle interactions and capture in trawl and longline fisheries. In accordance with the National Environmental Policy Act, NMFS has prepared an Environmental Assessment (EA) analyzing the impacts on the human environment associated with permit issuance (*Environmental Assessment Issuance of a Permit for Sea Turtle Research for Bycatch Reduction in Commercial Fisheries (File No. 16253)*; January 2012). In addition, a Biological Opinion (BO) was prepared under the Endangered Species Act (ESA) (January 2012) summarizing the results of an intra-agency consultation. The analysis in the EA, as informed by the BO, supports the below findings and determination.

Analysis

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

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

Response: Office of Habitat Conservation Regional staff were contacted to consider potential impacts to habitat due to proposed trawling activities. No comment was received from the Southeast Regional Office. Based upon completing an EFH assessment questionnaire, the Northeast Region determined that formal consultation was not warranted. In addition, as a precautionary measure, the permit would contain standard conditions to prevent impacts with sensitive habitat including live or hard bottom, coral, and seagrasses. Therefore no substantial impacts to the physical environment, including ocean and coastal habitats, and EFH would be expected from the proposed research.

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: See Response #1 regarding habitat. The effects of the action on ESA-listed species and their habitat, marine sanctuaries, and marine mammals were all considered. The research would not substantially affect predator-prey relationships, other species, or habitat. The research would cause short-term effects to sea turtles and to fish that are incidentally caught; however with the exception of the potential for a small number of sea turtle mortalities, animals would be returned to the water as soon as possible. The few mortalities that could occur is not likely to result in population or species level impacts. Therefore, no substantial impact on biodiversity and ecosystem function within the affected areas would be expected.

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

Response: The proposed action involves basic research (e.g., capture, measuring, and sampling) of sea turtles and does not involve hazardous methods, toxic agents or pathogens, or other materials that would have a substantial adverse impact on public health and safety. All staff would be properly trained according to SEFSC protocols.

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: As determined in the associated BO, the proposed action would adversely affect individual sea turtles and incidentally take Atlantic sturgeon and smalltooth sawfish during research. A minimal number of sea turtle mortalities could occur due to forced submergence during trawl surveys. Beyond this, the effects on live animals would be short-term in nature. No serious injury or mortality would be expected for incidentally caught sturgeon or sawfish. The BO concluded that the proposed action would not likely jeopardize the continued existence of ESA-listed species and would not likely destroy or adversely modify designated critical habitat. The action would not have an adverse impact on marine mammals or their critical habitat. In addition, Permit No. 16253 would contain mitigation measures to minimize the effects of the research on protected species.

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

Response: Under the Proposed Action, a permit would be issued to exempt the applicant from ESA take prohibitions during research designed to evaluate modifications to commercial fishing gear to mitigate sea turtle interactions and capture in trawl and longline fisheries. Based on the nature of this action, there would be no significant social or economic impacts interrelated with natural or physical environmental effects.

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

research has been conducted previously with no public controversy.

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: See Response #1 for EFH. The proposed action is not expected to substantially impact unique areas. Trawl gear would be operated over sandy bottom areas and not operated in areas of sensitive habitat or wetlands. No park land or farmlands are found in the action area. Therefore, the action would not significantly affect unique areas or any other portions of the physical environment.

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

Response: The proposed research activities are not new or unique. The same type of research has been conducted previously with no significant impacts to the environment. NMFS believes that the effects on the human environment would not be highly uncertain and the risks would be minimal and known.

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

Response: The proposed action is not related to other actions with individually insignificant, but cumulatively significant impacts. The short-term stresses (separately and cumulatively when added to other stresses the turtles face in the environment) resulting from the research activities would be expected to be minimal. The permit would contain conditions to mitigate adverse impacts to turtles from these activities.

Overall, the proposed action would be expected to have no more than short-term effects on endangered and threatened sea turtles. 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 take place in any of these areas nor affect them indirectly, thus none would be impacted.

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

Response: The action would not be removing nor introducing any species in the marine environment. Animals would be released as soon as possible after capture. Therefore, it

would not result in the introduction or spread of a non-indigenous species.

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

Response: The decision to issue this permit would not be precedent setting and would not affect any future decisions. Issuing a permit to a specific individual or organization for a given activity does not in any way guarantee or imply that NMFS will authorize other individuals or organizations to conduct the same or similar activity.

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?

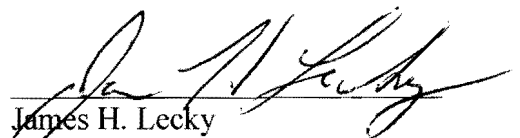
Response: The action would not result in any violation of Federal state or local laws for environmental protection. The applicant is required to obtain any state and local permits necessary to carry out the action.

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 action is not expected to result in any cumulative adverse effects to the species that are the subject of the proposed research. The proposed action would not be expected to have more than short-term effects on target sea turtles. No cumulative adverse effects on non-target species, regardless of ESA-listing status, are expected. No cumulative adverse effects that could have a substantial effect on any species would be expected.

DETERMINATION

In view of the information presented in this document, and the analyses contained in the EA and BO prepared for issuance of Permit No. 16253, it is hereby determined that permit issuance will not significantly impact the quality of the human environment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an Environmental Impact Statement for this action is not necessary.


James H. Lecky
Director, Office of Protected Resources

JAN 09 2012

Date