



To All Interested Government Agencies and Public Groups:

DEC 30 2010

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

**TITLE:** Issuance of a Scientific Research Permit for Sea Turtle Research in the Northwest Atlantic Ocean [File No. 15112]

**LOCATION:** Northwest Atlantic Ocean, from North Carolina to Maine

**SUMMARY:** The National Marine Fisheries Service (NMFS) proposed to issue scientific research permit No. 15112 to NMFS Northeast Fisheries Science Center. The purpose of the research is to determine the size and composition of sea turtle populations found in the commercial fishing areas of the Northwest Atlantic Ocean and to establish individual identities of turtles which would permit subsequent determination of growth rates, possible stock origins, and movement patterns. The research would contribute to the understanding of the pelagic ecology of these species, permit more complete models of their population dynamics, and allow more reliable assessments of commercial fishery impacts. The effects to sea turtles would be short-term and temporary and would allow the collection of valuable information that could help NMFS' efforts to recover sea turtles and better manage human activities.

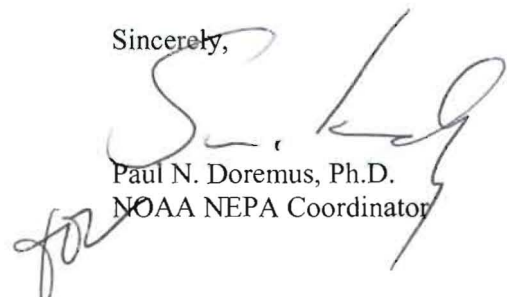
**RESPONSIBLE  
OFFICIAL:**

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Director, Office of Protected Resources  
National Marine Fisheries Service  
National Oceanic and Atmospheric Administration  
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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,

  
Paul N. Doremus, Ph.D.  
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 Scientific Research Permit for Sea Turtle Research in the Northwest Atlantic Ocean [File No. 15112]**

December 2010

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

**Responsible Official:** James H. Lecky, Director, Office of Protected Resources

**For Further Information Contact:** Office of Protected Resources  
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**Location:** Northwest Atlantic Ocean, from North Carolina to Maine

**Abstract:** The National Marine Fisheries Service (NMFS) proposes to issue a scientific research permit, File No. 15112, to NMFS Northeast Fisheries Science Center (Responsible Party: Nancy Thompson). The purpose of the research is to determine the size and composition of sea turtle populations found in the commercial fishing areas of the Northwest Atlantic Ocean and to establish individual identities of turtles which would permit subsequent determination of growth rates, possible stock origins, and movement patterns. The research would contribute to the understanding of the pelagic ecology of these species, permit more complete models of their population dynamics, and allow more reliable assessments of commercial fishery impacts. Under NOAA Administrative Order 216-6, NMFS' issuance of scientific research permits is generally categorically excluded from the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) requirements to prepare an environmental assessment (EA) or environmental impact statement (EIS). 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.



# CONTENTS

<b>CHAPTER 1</b>	<b>PURPOSE OF AND NEED FOR ACTION.....</b>	<b>3</b>
1.1	DESCRIPTION OF ACTION .....	3
1.1.1	<i>Purpose and Need.....</i>	3
1.1.2	<i>Research Objectives.....</i>	3
1.2	OTHER EA/EIS THAT INFLUENCE SCOPE OF THIS EA .....	3
1.3	SCOPING SUMMARY .....	3
1.3.1	<i>Comments on application .....</i>	4
1.4	APPLICABLE LAWS AND NECESSARY FEDERAL PERMITS, LICENSES, AND ENTITLEMENTS ..4	
1.4.1	<i>National Environmental Policy Act .....</i>	4
1.4.2	<i>Endangered Species Act.....</i>	4
2.1	ALTERNATIVE 1 – NO ACTION .....	6
2.2	ALTERNATIVE 2 – PROPOSED ACTION (ISSUANCE OF PERMIT WITH STANDARD CONDITIONS)	6
		6
<b>CHAPTER 3</b>	<b>AFFECTED ENVIRONMENT .....</b>	<b>9</b>
3.1	SOCIAL AND ECONOMIC ENVIRONMENT .....	10
3.2	PHYSICAL ENVIRONMENT .....	10
3.3	BIOLOGICAL ENVIRONMENT.....	10
3.3.1	<i>ESA Target Species Under NMFS Jurisdiction.....</i>	10
3.3.2	<i>Non-Target Species.....</i>	14
<b>CHAPTER 4</b>	<b>ENVIRONMENTAL CONSEQUENCES .....</b>	<b>15</b>
4.1	EFFECTS OF ALTERNATIVE 1: NO ACTION .....	15
4.2	EFFECTS OF ALTERNATIVE 2: ISSUE PERMIT WITH STANDARD CONDITIONS.....	15
4.2.1	<i>Effects on Biological Environment.....</i>	15
4.3	SUMMARY OF COMPLIANCE WITH APPLICABLE LAWS, NECESSARY FEDERAL PERMITS, LICENSES, AND ENTITLEMENTS.....	16
4.3.1	<i>Endangered Species Act.....</i>	16
4.4	COMPARISON OF ALTERNATIVES .....	16
4.5	MITIGATION MEASURES .....	17
4.6	UNAVOIDABLE ADVERSE EFFECTS .....	17
4.7	CUMULATIVE EFFECTS .....	17
4.7.1	<i>Commercial fisheries .....</i>	17
4.7.2	<i>Research permits .....</i>	19
4.7.3	<i>Other human activities.....</i>	20
4.7.4	<i>Summary of cumulative effects.....</i>	20
<b>LITERATURE CITED .....</b>		<b>21</b>
<b>APPENDIX A. AUTHORIZED TAKES OF MALE AND FEMALE SEA TURTLES (EXCEPT HATCHLINGS) INCIDENTALLY CAUGHT DURING COMMERCIAL FISHING OPERATIONS IN THE ATLANTIC OCEAN (EEZ FROM NC TO ME). .....</b>		<b>26</b>
<b>APPENDIX B. EXAMPLES OF HANDOUTS PROVIDED TO OBSERVERS (FROM PERMIT NO. 1448).</b>		<b>27</b>
<b>APPENDIX C. ACTIVE PERMITS IN THE ACTION AREA .....</b>		<b>35</b>

## **CHAPTER 1 PURPOSE OF AND NEED FOR ACTION**

### **1.1 DESCRIPTION OF ACTION**

NMFS proposes to issue a scientific research permit (File No. 15112) that authorizes “takes”<sup>1</sup> 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 Northeast Fisheries Science Center, Woods Hole, Massachusetts (Responsible Party: Nancy Thompson).

#### *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 the research is to determine the size and composition of sea turtle populations found in the commercial fishing areas of the Northwest Atlantic Ocean and to establish individual identities of turtles which would permit subsequent determination of growth rates, possible stock origins, and movement patterns. The research would contribute to the understanding of the pelagic ecology of these species, permit more complete models of their population dynamics, and allow more reliable assessments of commercial fishery impacts.

### **1.2 OTHER EA/EIS THAT INFLUENCE SCOPE OF THIS EA**

- An Environmental Assessment (EA) was completed in 2004 for the previous permit (No. 1448) to conduct this research. The EA determined that the proposed research activities could result in a low level of short-term physiological effects on sea turtles and resulted in a Finding of No Significant Impact (FONSI).

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

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<sup>1</sup> 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.”

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 that a draft EA be made available for public comment as part of the scoping process.

### *1.3.1 Comments on application*

A Notice of Receipt of the application was published in the *Federal Register*, announcing the availability of File No. 15112 (75 FR 16428, April 1, 2010) for public comment. No substantive comments were received.

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

This section summarizes Federal, state, and local permits, licenses, approvals, and consultation required to implement the proposed action. When it is the applicant's responsibility to obtain such permissions, NMFS is still obligated under NEPA to ascertain whether the applicant is seeking other Federal, state, or local approvals for their action.

### *1.4.1 National Environmental Policy Act*

NEPA was enacted in 1969 and is applicable to "major" Federal actions significantly affecting the quality of the human environment. A Federal action is considered "major" if a Federal agency fully or partially funds, regulates, conducts, or approves this action. NMFS issuance of research permits is considered a major Federal action. NEPA requires consideration of environmental issues in Federal agency planning and decision making. CEQ's implementing regulations (40 CFR Parts 1500-1508) outline Federal agency responsibilities under NEPA.

Through NOAA Administrative Order (NAO) 216-6, NOAA established agency procedures for complying with NEPA and the implementing regulations issued by CEQ. NAO 216-6 specifies that issuance of scientific research permits under the MMPA and ESA are categorically excluded from further environmental review, except under extraordinary circumstances.

NMFS must prepare an EA or EIS when a proposed action:

- is the subject of public controversy based on potential environmental consequences,
- has uncertain environmental impacts or unknown risks,
- establishes a precedent or decision in principle about future proposals,
- may result in cumulatively significant impacts, or
- may have an adverse effect upon endangered or threatened species or their habitats.

While issuance of scientific research permits is typically subject to a categorical exclusion, as described in NAO 216-6, NMFS is preparing an EA for this action to provide a more detailed analysis of effects to ESA-listed species. This EA is prepared in accordance with NEPA, its implementing regulations, and NAO 216-6.

### *1.4.2 Endangered Species Act*

Section 9 of the ESA, as amended, and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, without special exemption. Permits to take

ESA-listed species for scientific purposes, or for the purpose of enhancing the propagation or survival of the species, may be granted pursuant to section 10(a)(1)(A) of the ESA.

NMFS has promulgated regulations to implement the permit provisions of the ESA (50 CFR Part 222) and has produced OMB-approved permit application instructions. All applicants must comply with these regulations and application instructions in addition to the provisions of the ESA.

Section 10(d) of the ESA stipulates that, for NMFS to issue permits the Agency must find that the permit: was applied for in good faith; if granted and exercised will not operate to the disadvantage of the species; and will be consistent with the purposes and policy set forth in section 2 of the ESA.

Section 2 of the ESA sets forth the purposes and policy of the Act. The purposes of the ESA are to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in section 2(a) of the ESA. It is the policy of the ESA that Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of the ESA. In consideration of the ESA's definition of conserve, which indicates an ultimate goal of recovering a species so that listing is no longer necessary, exemption permits issued pursuant to section 10 of the ESA are for activities that are likely to further the conservation of the affected species.

Section 7 of the ESA requires consultation with the appropriate Federal agency (either NMFS or the U.S. Fish and Wildlife Service) for Federal actions that "may affect" a listed species or adversely modify critical habitat. NMFS issuance of a permit affecting ESA-listed species or designated critical habitat, directly or indirectly, is a Federal action subject to these section 7 consultation requirements. Section 7 requires Federal agencies to use their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of endangered and threatened species. NMFS is further required to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any threatened or endangered species or result in destruction or adverse modification of habitat for such species. Regulations specify the procedural requirements for these consultations (50 Part CFR 402).

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

This chapter describes the range of potential alternatives determined reasonable with respect to achieving the stated objective. This chapter also summarizes the expected outputs and any related mitigation of each alternative. One alternative is the "no action" alternative where the proposed permit would not be issued. The "no action" alternative is the baseline for the rest of the analyses. The proposed action alternative represents the research proposed in the submitted application for a permit, with standard permit terms and conditions specified by NMFS.

## **2.1 ALTERNATIVE 1 – NO ACTION**

An alternative to the proposed action is no action, i.e., denial of the permit request. This alternative would eliminate any potential risk to the environment from the proposed research activities. However, it would not allow the research to be conducted, and the opportunity would be lost to collect information that would contribute to better understanding sea turtle populations and provide basic information that is necessary for NMFS to make important management decisions concerning these species and their habitat.

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

Under the proposed action, a permit would be issued for activities as proposed by the applicant, with the permit terms and conditions standard to such permits as issued by NMFS. The permit would be valid for five years from the date of issuance.

### **Action area**

Activities would occur on commercial fishing vessels or associated vessels that legally take sea turtles the U.S. Exclusive Economic Zone (EEZ) of the Northwest Atlantic Ocean from Maine to North Carolina, including gillnet, trawl, scallop dredge, purse seine, bottom longline, beach seine, and pound net operations. The 2010 Annual Determination for Sea Turtle Observer Requirements (AD; 75 FR 27649) lists NMFS' determination of State and Federal commercial fisheries that will be required to take observers upon NMFS' request. Fisheries identified through this process will remain on the AD for five years.

The incidental capture and related impacts to sea turtles would be authorized by incidental take statements (ITS) in ESA section 7 biological opinions or ESA section 10(a)(1)(B) permits for each fishery. Specific fisheries that require observer coverage may change over the five-year permit, but those listed in the 2010 AD in which proposed activities would potentially occur through 2014 are:

### **Trawl Fisheries**

- Atlantic shellfish bottom trawl
- Mid-Atlantic bottom trawl
- Mid-Atlantic mid-water trawl (including pair trawl)
- Southeastern U.S. Atlantic, Gulf of Mexico shrimp trawl

### **Trap/pot Fisheries**

- Atlantic blue crab trap/pot
- Atlantic mixed species trap/pot
- Northeast/mid-Atlantic American lobster trap/pot

### **Gillnet Fisheries**

- Chesapeake Bay inshore gillnet
- Long Island inshore gillnet
- Mid-Atlantic gillnet
- North Carolina inshore gillnet
- Northeast sink gillnet

## **Pound Net/Weir/Seine Fisheries**

Mid-Atlantic haul/beach seine

Mid-Atlantic menhaden purse seine

U.S. mid-Atlantic mixed species stop seine/weir/pound net (except the NC roe mullet stop net)

Virginia pound net (authorized legal take by ESA regulation 50 CFR 223.206(d)(10))

The proposed number of sea turtles, by species, that would be taken annually, locations, and manner of take are listed in Appendix A.

## **Proposed Activities**

Researchers would not capture turtles. Activities would be conducted on turtles taken legally incidental to commercial fishing operations. Northeast Fisheries Observer Program (NEFOP) observers aboard commercial fishing vessels would handle, identify, photograph, measure, Passive Integrated Transponder (PIT) tag scan, biopsy, flipper tag, and resuscitate sea turtles, and would transport dead or injured turtles that are incidentally taken during commercial fishing operations to shore to be transferred to NMFS approved Sea Turtle Stranding and Salvage Network (STSSN) personnel.

Sea turtles would be handled and resuscitated according to procedures specified in 50 CFR 223.206(d)(1)(i). NEFOP certified observers would be provided and required to follow the Safe Sea Turtle Handling Guidelines and Handling and Resuscitation Requirements (Appendix B).

In addition to the handling and resuscitation requirements, the below protocols would be followed by all NEFOP certified observers:

- Observers must not intentionally kill or cause any sea turtle to be killed.
- Care must be taken when handling live turtles to minimize injury to turtles and the observer.
- Observers would request that all observed sea turtles captured during commercial fishing operations be lowered to the deck as carefully as possible.
- All sea turtles brought on board would be protected from any weather or fishing activity that may cause injury. The area surrounding the turtle would be free of any material that the turtle might ingest.
- Healthy, active turtles would not be kept on board longer than 30 minutes.
- Appropriate resuscitation techniques must be used on any comatose turtle prior to returning it to the water.
- During release, engines should be in neutral and turtles shall be released away from fishing gear and as close to the surface of the water as possible.
- The observer would observe the newly released animal and record the behavior on the Marine Mammal, Sea Turtle and Sea Bird Incidental Take Log.
- When possible, observers should coordinate with the STSSN to transfer stressed or injured animals to rehabilitation facilities ashore. The easiest and quickest way to do this might be through the Area Coordinator. “Stressed” turtles are those that have been subjected to forced submergence. In addition, any turtle with any injury will also be considered as “stressed”.



Several of these requirements are out of the observers' control. In those cases, the observer would work with the crew to meet these requirements. If the vessel operator is unable or unwilling to meet a request, then the observer would provide comments on the Marine Mammal, Sea Turtle and Sea Bird Incidental Take Log. Observers would be responsible for their actions only, not for those of the crew.

### ***Measure and photograph***

Morphometric data would be collected for each turtle captured using a flexible tape measure. This would include curvilinear Notch-to-Tip, Notch-to-Notch, and carapace width measurements to the nearest 0.1 cm (Appendix B). Turtles would be photographed and scanned for existing PIT tags.

### ***Flipper tag***

Inconel tags would be applied to each turtle larger than 26 cm Notch-to-Tip (Total Length) carapace length, after examining the turtle for existing external and/or PIT tags. Damaged or unreadable flipper tags would be removed using two sets of pliers (needle-nose are preferred). While one set firmly holds the Inconel tag, the other set bends back the cinched end. After wiping with alcohol wipes, one Inconel tag would be placed proximal to the first scale (closest to the body) of the trailing edge of each rear flipper for all turtles except leatherback. Leatherback turtles would be tagged along the posterior (trailing) edge of the rear flipper, approximately 5 cm (~2 in) from the base of the tail. If the recommended tagging site is damaged or is for some reason unsuitable for tag application, then an alternative site along the trailing edge of the front flipper would be used.

Turtles, except leatherbacks, would be turned onto the carapace with plastron (underside) facing upwards if assistance is available to the observer. If assistance is not available, the turtle would remain carapace up, with a damp cloth over its head.

Measures to minimize effects during flipper tagging of turtles would include:

- The tagging site would be swabbed thoroughly with betadine before tagging.
- Tags would not be cinched too tight against the flipper without room to move freely.
- Tags would not be positioned close to edge of the flipper where it can rip out or catch on fishing gear.
- Tag applicators (pliers) would be cleaned and disinfected with alcohol swabs between turtles to avoid cross contamination. Tag applicators would be washed in fresh water after use, the spring and pivot surface sprayed with WD40, and stored in a sealed plastic bag.
- A separate set of equipment would be used for turtles with Fibropapillomas (FP).

### ***Tissue sample***

Small skin biopsies would be collected for genetic studies from live and dead sea turtles. A 6 mm disposable biopsy punch would be used on turtles larger than 25 cm Notch-to-Tip (Total Length) carapace length. The biopsy punch consists of a plastic handle that supports a sharp circular blade. Tissue samples would be preserved in 5 ml vials filled with 20% saturated DMSO, a non-toxic preservative. A piece of Parafilm would be wrapped around the vial cap and the vial placed in a Whirl-pak. Samples would be taken from the trailing edge of each rear flipper just past (away from the body) the Inconel tag location.

Turtles, except leatherbacks, would be turned onto the carapace with plastron (underside) facing upwards if assistance is available to the observer. If assistance is not available, the turtle would remain carapace up, with a damp cloth over its head.

Measures to minimize effects during tissue sampling of turtles would include:

- Using latex gloves throughout the sampling process.
- Thoroughly cleaning sampling equipment with alcohol wipes prior to use.
- Cleaning the ventral and dorsal surfaces of the rear flipper with a Betadine wipe before and after sampling.
- Using a new biopsy punch for each turtle.

### ***Salvage of Dead Sea Turtles***

When possible, dead turtles taken incidental to commercial fishing operations would be transferred to the STSSN.

### ***Release***

Sea turtles would be released close to the original capture site after all sampling is complete. During release, engines would be in neutral and turtles released away from fishing gear and as close to the surface of the water as possible. Live, healthy sea turtles would be held for no more than 30 minutes.

### ***Chesapeake Bay Pound Net Monitoring***

Because no nets or gear are retrieved and brought on board the commercial fishing vessel (fixed gear) during normal operations of this fishery, an alternative platform (NEFOP vessel) would be used to observe the leader portion of this gear. The leader is where most turtle interactions occur. Pound net leaders would be visually inspected using the NEFOP vessel, a NEFOP vessel operator and a NEFOP observer. All personnel onboard the NEFOP vessel would have completed NEFOP turtle sampling training and follow all NEFOP protocols and ESA permit requirements.

When turtles are observed in pound net leaders they would be removed using a dip net. All turtles; live, injured, uninjured and dead, would be brought onboard and then delivered to Virginia Aquarium STSSN personnel. While onboard the vessel (usually less than an hour) all live turtles would be protected from the elements and confined to an area where further injury would not occur.

The permit would authorize activities to be conducted in all commercial fisheries in the U.S. EEZ of the Northwest Atlantic Ocean. At the time of the permit application, only the Chesapeake Bay pound net fishery was expected to use a platform other than traditional observer coverage. Based on fisheries listed in the AD, other fisheries might be observed using either traditional observer coverage or alternative platforms, provided that animals are legally taken.

## **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 and therefore are not considered significant. There are no significant social or economic impacts of the proposed action interrelated with significant 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. 15112 would occur during commercial fishery operations in the U.S. Exclusive Economic Zone of the Northwest Atlantic Ocean from Maine to North Carolina. Due to the nature of this permit, the physical environment would not be impacted because all actions would occur onboard a commercial fishing vessel or related platforms, therefore it is not considered further.

### **3.3 BIOLOGICAL ENVIRONMENT**

#### *3.3.1 ESA Target Species Under NMFS Jurisdiction*

#### *ESA Endangered*

Green sea turtle	<i>Chelonia mydas</i> *
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>
Hawksbill sea turtle	<i>Eretmochelys imbricata</i>
Leatherback sea turtle	<i>Dermochelys coriacea</i>

#### *ESA Threatened*

Loggerhead sea turtle	<i>Caretta caretta</i> **
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*\*Green turtles in U.S. waters are listed as threatened except for the Florida breeding population which is listed as endangered. Due to the inability to distinguish between these populations away from the nesting beach, green turtles are considered endangered wherever they occur in U.S. waters.*

*\*\* NMFS is currently considering changing the listing of the loggerhead sea turtle to endangered (75 FR 12598).*

## **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 United States 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 U.S. Virgin Islands 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-hatching 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 1999b). 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) (Eckert 1992; Meylan 1999a, 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 1999b).

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 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. While NMFS has not yet officially recognized these DPSs, the information provided in the status review represents the most recent and available information relative to the status of this species. On March 16, 2010 NMFS published a Notice of a Proposed Rule (75 FR 12598) to formally designate the loggerhead with

these nine DPS' worldwide. The notice also stated that NMFS plans to reclassify both DPS' within the United States as endangered (N. Pacific DPS and Northwest Atlantic Ocean DPS).

The loggerhead was listed as a threatened species in 1978. Critical habitat has not been designated for the loggerhead.

### **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. Tag 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 (Ernst and Barbour 1972). 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.

### **3.3.2 Non-Target Species**

No non-target species would be impacted because all permitted activities would occur onboard a commercial fishing vessel or related platforms.

## **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 under the proposed permit that could help endangered and protected sea turtles.

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

Impacts of the proposed action would be limited primarily to the biological environment, specifically the target sea turtles. 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.

#### *4.2.1 Effects on Biological Environment*

The effects of handling, dip-netting (during Chesapeake Bay Pound Net monitoring), tagging, measuring, scanning for PIT tags, biopsy sampling, and photographing sea turtles and salvage of parts in the same manner as the proposed action were previously analyzed for Permit No. 1448 (NMFS 2004), which the proposed permit would replace. In that analysis, NMFS determined that:

- The proposed activities could result in low-level, short term physiological effects to individual threatened and endangered sea turtles.
- Harassment of turtles during proposed activities could raise levels of stress hormones, but the effects are expected to dissipate within approximately one day.
- Turtles could experience discomfort and some level of pain during the application of tags, but this is usually short and highly variable between individuals. The small wound-site resulting from tagging should heal completely in a short period of time, similar to a human ear piercing.
- Collection of tissue samples was not expected to cause additional stress or discomfort beyond that experienced during the other research activities.
- The proposed activities were not expected to appreciably reduce the green, leatherback, loggerhead, hawksbill, or Kemp's ridley sea turtles' likelihood of survival and recovery in the wild by adversely affecting their birth rates, death rates, or recruitment rates.

The effects of the proposed action to individual sea turtles would not be expected to differ from those analyzed in the 2004 EA. The number of target sea turtles differs slightly in the proposed action from what was previously analyzed (Table 1), although numbers analyzed and authorized by Permit No. 1448 were for the life of the five-year permit, and numbers proposed for this action are annual takes.



**Table 1.** Summary of differences in sea turtle take numbers in proposed action compared to previous permit.

Species	Proposed Action (Annual Takes/5-year Total)			Permit No. 1448 (5-year Total Takes)			Difference (Life of 5-year Permit)		
	Standard Sampling	Chesapeake Bay Pound Net (CBPN)	Total Turtles	Standard Sampling	Dip Net	Total Turtles	Standard	CBPN/ Dip	Total Turtles
<b>Loggerhead</b>	100/500	30/150	<b>130/650</b>	1,425	75	<b>1,500</b>	- 925	+ 75	<b>- 850</b>
<b>Kemp's Ridley</b>	50/250	20/100	<b>70/350</b>	30	20	<b>50</b>	+ 220	+ 80	<b>+ 300</b>
<b>Green</b>	50/250	10/50	<b>60/300</b>	50	0	<b>50</b>	+ 200	+ 50	<b>+ 250</b>
<b>Hawksbill</b>	10/50	0/0	<b>10/50</b>	50	0	<b>50</b>	No Change	No Change	<b>No Change</b>
<b>Leatherback</b>	50/250	10/50	<b>60/300</b>	250	0	<b>250</b>	No Change	+ 50	<b>+ 50</b>

Over the life of the proposed five-year permit, the proposed action would authorize the sampling of more individual Kemp's ridley, green, and leatherback turtles, and less loggerhead turtles than that analyzed in the 2004 EA, provided those sea turtles are legally captured incidental to a fishery covered by an Incidental Take Statement (ITS) of a biological opinion for the fishery or a section 10(a)(1)(B) incidental take permit.

The effects of the proposed activities would be limited to short-term harassment of individual sea turtles, as described above, therefore NMFS believes the increased numbers would not have additional species-level effects than what was analyzed in the 2004 EA, and impacts to loggerhead turtles would be expected to decrease with the lower number of turtles sampled. Conditions in the proposed permit would be similar to those in Permit No. 1448, and were designed to minimize effects to individual sea turtles.

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

As summarized below, NMFS has determined that the proposed research is consistent with the purposes, policies, and applicable requirements of the ESA and NMFS implementing regulations. NMFS' issuance of the permit would be consistent with the ESA.

##### **4.3.1 Endangered Species Act**

To comply with section 7 of the regulations (50 CFR 402.14(c)), a consultation was initiated by NMFS PR under the ESA. In accordance with section 7, a biological opinion was prepared for the proposed action and NMFS concluded that issuance of Permit No. 15112 is not likely to jeopardize the continued existence of loggerhead, green, hawksbill, leatherback, and Kemp's ridley sea turtles and is not likely to destroy or adversely modify designated critical habitat.

#### **4.4 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. Because the capture of these sea turtles would be authorized through the individual fisheries, and the observer coverage is a required NMFS program, NMFS believes this would be an opportunity to collect invaluable data on animals already legally captured. The proposed action would affect individual sea turtles. 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 and better manage human activities. Neither the no action nor the proposed action alternatives are anticipated to have adverse population or stock-level effects on sea turtles.

#### **4.5 MITIGATION MEASURES**

There are no additional mitigation measures beyond those identified by the applicant (described in section 2.2) and the conditions in the proposed permit, all of which are intended to minimize adverse effects of the various research activities. By statute, regulation, and permit conditions, NMFS has authority to modify the permit or suspend the research if information suggests it is having a greater than anticipated adverse impact on target species or the environment. Researchers would only be authorized to take turtles up to the amount authorized in the ITS or section 10(a)(1)(B) incidental take permit but may not exceed the upper totals of the proposed permit. If the a fishery's decreases, researchers would only be authorized to take the number authorized in the new ITS.

#### **4.6 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. No serious injury, mortality, or reduced fecundity would be expected.

#### **4.7 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 areas would recover between disturbances and following conclusion of the permitted research.

##### **4.7.1 Commercial fisheries**

The applicant has requested authorization to handle, photograph, measure, flipper tag, skin biopsy, and release turtles that already have been captured incidentally in one of several commercial fisheries and to salvage parts. Commercial fishery activities are not part of the proposed action and the incidental take of sea turtles is analyzed and authorized separately under the existing Incidental Take Statement for each program's respective biological opinion or by an incidental take permit. The research that would be authorized by the proposed action would only occur on animals for which the incidental capture has already been analyzed and authorized under another

authority. The effects of the research authorized under the proposed action would occur immediately after, and in addition to, the effects of the fishery. A summary of the effects of these fisheries and programs is provided here to provide a more comprehensive discussion related to cumulative effects.

### **General Fishery Impacts**

The effects of fishery operations on sea turtles are not limited to the fisheries described in the proposed action. The operation of a fishery vessel in waters where sea turtles may be encountered poses some threat to these species due to risk of collisions with moving vessels. Sea turtles also interact with longlines, hook and line, and bandit reel gear through hooking or entanglement in the fishing gear. Turtles that are hooked by this gear can be injured or killed by the hooking event, depending on whether they are hooked internally or externally and whether the hook sets deep in their tissue. Interaction with fishing gear can have long-term effects on a turtle's ability to swim, forage, migrate, and breed, although these effects are difficult to monitor or measure.

Pound nets, traps, pots, gillnet and trawl fisheries can entangle or entrap sea turtles. Sea turtles are particularly prone to entanglement as a result of their body configuration and behavior. Records of stranded or entangled sea turtles reveal that fishing debris can wrap around the neck, flipper, or body of a sea turtle and severely restrict swimming or feeding. Sea turtles may also experience constriction of appendages as a result of the entanglement. Constriction may cut off blood flow, causing deep gashes, some severe enough to remove an appendage. In the case of trawls, the gear is pulled across the bottom and would sweep over and capture the turtles as they rest, forage, or swim on or near the bottom. Video footage (NMFS Pascagoula Laboratory 2002) of wild loggerhead sea turtles encountering a turtle excluder device (TED) in a trawl reveals that the turtles are usually oriented forward, apparently trying to out-swim the advancing trawl. Because of the trawl's greater speed or the turtles' eventually tiring the turtles gradually fall back toward the rear of the net and into the cod end where they are caught. In most cases turtles would escape capture through the TEDs. Turtles that are taken would usually be in the try-net, with some in the main trawl that did not make it back to the TED area. The interaction of individual turtles with trawl gear during trawling activities can result in raised levels of stress hormones and turtle fatigue. Turtles captured or entangled in any fishing gear used in these fisheries may also suffer forced submergence.

Sea turtles are air-breathing reptiles, and when forcibly submerged they undergo respiratory and metabolic stress that can lead to severe disturbance of acid-base balance. Most voluntary dives by sea turtles appear to be aerobic, showing little if any increases in blood lactate and only minor changes in acid-base status (pH level of the blood). Sea turtles that are stressed as a result of being forcibly submerged rapidly consume oxygen stores, triggering an activation of anaerobic glycolysis and subsequently disturbing the acid-base balance. It is likely that the rapidity and extent of the physiological changes that occur during forced submergence are functions of the intensity of struggling as well as the length of submergence (Lutcavage and Lutz 1997). These physiological mechanisms explain the link between tow-time length and mortality and injury (comatose condition). Although sea turtles are able to conduct lengthy voluntary dives, if they are captured in a trawl and unable to surface within a certain period of time, they will eventually die. However, studies analyzing the shrimp fishery show that tows of short duration have little effect on mortality, intermediate tow times result in a rapid escalation to mortality, and eventually reach a

plateau of high mortality (Epperly et al. 2002). Epperly et al. (2002) did not attempt to estimate differing mortality rates based on the captured species, and the vast majority of animals in their data set were loggerheads. It is also probable that the different sea turtle species have different physiological responses to lengthy forced submergence due to differing average body sizes and corresponding oxygen capacities. In the absence of species-specific estimates, however, this work represents the best available scientific information available. Mortality is 2% in summer and 3% in winter for a 30 minute tow time run in the logistic equation developed for the shrimp fishery bycatch analysis (S. Epperly, pers. comm., NOAA Fisheries Southeast Fisheries Science Center 2003; C. Sasso, NOAA Fisheries Southeast Fisheries Science Center, pers. comm. 2003).

Other factors to consider in the effects of forced submergence include the size of the turtle, ambient water temperature, and multiple submergences. Larger sea turtles are capable of longer voluntary dives than small turtles, so juveniles may be more vulnerable to the stress due to entanglement. During the warmer months, routine metabolic rates are higher, so the impacts of the stress due to entanglement may be magnified. With each forced submergence lactate levels increase and require a long (even as much as 20 hours) time to recover to normal levels. Another issue to consider is a repeated capture of the same individual turtle, particularly within a short time period. Previous biological opinions on trawling and the shrimp fishery (NMFS 2002) have discussed the possible role of repeated captures of individual turtles in trawls. As mentioned above, sea turtles that are forcibly submerged in fishery gear undergo respiratory and metabolic stress that can lead to severe disturbance of acid-base balance. Sea turtles forcibly submerged for extended periods of time show marked, even severe, metabolic acidosis as a result of high blood lactate levels. With such increased lactate levels, lactate recovery times are long (even as much as 20 hours or more). This indicates that turtles are probably more susceptible to lethal metabolic acidosis if they experience multiple captures in a short period of time, because they would not have had time to process lactic acid loads (Lutcavage and Lutz 1997). It is unclear how many captured turtles will be animals that are being recaptured.

#### *4.7.2 Research permits*

As summarized in Appendix C, 12 active permits, including the applicant's current permit, allow research year-round on a combination of the five 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. There is not enough information about the exact location and timing of the research under the various permits to specifically identify the extent of overlap in time and space of all of the permitted research, or to identify the frequency with which any given local population may be disturbed. However, 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 sampling. Turtles that have existing, functional flipper tags would not be tagged again. Researchers would not be allowed to conduct activities on compromised animals if research would further compromise or harm the animal. 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.

#### *4.7.3 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 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. Of these activities, lethal takes of turtles and the disturbance that results in displacement of animals or abandonment of behaviors such as feeding or breeding by groups of animals are more likely to have cumulative effects on the species than the proposed research activities.

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.

#### *4.7.4 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, such as the fisheries in which they are incidentally captured. 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.

The proposed action would not be expected to have more than short-term effects on endangered and threatened sea turtle species. Any increase in stress levels resulting from the research would dissipate within approximately a day. Injuries caused by tagging and sampling would be expected to heal, and no serious injury or mortality would be expected to result from research activities. 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.

Based on this information, the incremental impact of the proposed action, when added to other past, present, and reasonably foreseeable future actions, would not be significant at a population or species level.

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

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

No outside agencies were consulted.

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**APPENDIX A. Authorized Takes of Male and Female Sea Turtles (Except Hatchlings) Legally Caught Incidental to Commercial Fishing Operations in the Atlantic U.S. EEZ from NC to ME.**

<b>SPECIES</b>	<b>NUMBER OF ANIMALS PER YEAR*</b>	<b>PROCEDURES</b>	<b>DETAILS</b>
Turtle, loggerhead sea	100	Mark, flipper tag; Measure; Photograph/Video; Salvage (carcass, tissue, parts); Sample, tissue	
Turtle, Kemp's ridley sea	50	Mark, flipper tag; Measure; Photograph/Video; Salvage (carcass, tissue, parts); Sample, tissue	
Turtle, green sea	50	Mark, flipper tag; Measure; Photograph/Video; Salvage (carcass, tissue, parts); Sample, tissue	
Turtle, hawksbill sea	10	Mark, flipper tag; Measure; Photograph/Video; Salvage (carcass, tissue, parts); Sample, tissue	
Turtle, leatherback sea	50	Mark, flipper tag; Measure; Photograph/Video; Salvage (carcass, tissue, parts); Sample, tissue	
Turtle, loggerhead sea	30	Mark, flipper tag; Measure; Photograph/Video; Salvage (carcass, tissue, parts); Sample, tissue	Chesapeake Bay Pound Net Monitoring
Turtle, Kemp's ridley sea	20	Mark, flipper tag; Measure; Photograph/Video; Salvage (carcass, tissue, parts); Sample, tissue	Chesapeake Bay Pound Net Monitoring
Turtle, green sea	10	Mark, flipper tag; Measure; Photograph/Video; Salvage (carcass, tissue, parts); Sample, tissue	Chesapeake Bay Pound Net Monitoring
Turtle, leatherback sea	10	Mark, flipper tag; Measure; Photograph/Video; Salvage (carcass, tissue, parts); Sample, tissue	Chesapeake Bay Pound Net Monitoring

\* The number of takes authorized is contingent upon the ITS of fishery or a section 10(a)(1)(B) incidental take permit. Researchers may take turtles up to the amount authorized in the ITS or section 10(a)(1)(B) incidental take permit but may not exceed the upper totals of this permit. If the ITS decreases, researchers may take only the number authorized in the lower ITS.

## **Appendix B.** Examples of handouts provided to observers (from Permit No. 1448).

7/07

### **Conditions of ESA Sea Turtle Permit #1448**

The Endangered Species Act Permit authorizes NEFOP staff and observers to handle and conduct the following activities with protected sea turtles:

- Photograph
- Measure
- Biopsy
- Inconel Tag
- Scan for PIT Tags
- Release
- Resuscitate (when needed)
- Transport for rehabilitation (when needed)
- Bring dead turtles in for further investigation

These activities shall **only** be conducted following the established protocols here and in the Observer Program and Biological Sampling manuals.

#### **The following conditions also apply:**

- Observers must not intentionally kill or cause any sea turtle to be killed.
- Care must be taken when handling live turtles to minimize injury to turtles and the observer.
- Observers will request that all sea turtles captured by a fishery be lowered to the deck as carefully as possible.
- All sea turtles brought on board will be protected from any weather or fishing activity that may cause injury. The area surrounding the turtle will be free of any material that the turtle might ingest.
- Healthy, active turtles will not be kept on board longer than 30 minutes.
- Appropriate resuscitation techniques must be used on any comatose turtle prior to returning it to the water.
- During release, engines should be in neutral and turtles shall be released away from fishing gear and as close to the surface of the water as possible.
- The observer will observe the newly released animal and record the behavior on the Marine Mammal, Sea Turtle and Sea Bird Incidental Take Log.
- When possible, observers should coordinate with the Sea Turtle Stranding and Salvage Network (STSSN) to transfer stressed or injured animals to rehabilitation facilities ashore. The easiest and quickest way to do this might be through the Area Coordinator.

It is understood that several of these requirements are out of the observer's control. In those cases, it is incumbent upon the observer to work with the crew to meet these requirements. If the vessel operator is unable or unwilling to meet a request, then the observer should provide comments on the Marine Mammal, Sea Turtle and Sea Bird Incidental Take Log. Observers are responsible for their actions only, not for those of the crew.

7/07

## **Safe Sea Turtle Handling Guidelines**

- Sea turtles have powerful jaws. Always keep clear of the head and wear durable foot wear when working around them on deck.
- Sea turtles of all species, except leatherbacks, have claws on their flippers. Keep clear of flapping flippers, especially if the animal is on its back (carapace). Avoid straddling animals when you are working with them.
- Never pick up sea turtles by the flippers, head or tail. For all turtles except leatherbacks, pick them up by placing one hand at the front and one hand at the back of the carapace.
- Placing a clean, damp cloth over an agitated turtle's head can sometimes have a calming effect.
- Wear gloves when possible and clean and disinfect any cuts or abrasions incurred when handling sea turtles.
- Turtles brought on deck should be protected from adverse weather conditions as much as possible. If it is sunny and hot, turtles should be covered with a clean damp cloth/towel and kept in the shade. If it is cold, turtles should be insulated with available clean material and kept out of the weather.
- Extra care should be taken when handling leatherback turtles since they are covered with skin. Leatherback turtles should never be turned over on their carapace and should always be picked by their plastron, i.e., by supporting their underneath instead of just picking up by their carapace. Since leatherback turtles can be large, you will need assistance when moving them - do not try to drag or push them.

7/07

## **Handling and Resuscitation Requirements**

Any live sea turtle incidentally taken during the course of commercial fishing or scientific research activities must be handled with due care to prevent injury. Incidentally taken sea turtles should be observed for activity and then returned to the water according to the following procedures:

1. Sea turtles that are alive or dead must be released over the stern of the boat.<sup>1</sup> In addition, they must be released only when fishing gear is not in use, when the engine gears are in neutral position, and in areas where they are unlikely to be recaptured or injured by fishing gear or vessels.<sup>2</sup>
2. Resuscitation must be attempted on sea turtles that are comatose or inactive but not dead by placing the turtle right side up (on plastron) and elevating the hindquarter six inches for a period of 4 up to 24 hours. The amount of the elevation depends on the size of the turtle; greater elevations are needed for larger turtles. Periodically rock the turtle from side to side by holding

the outer edge of the carapace and lifting one side about 3 inches. Alternate lifting from one side to the other. This allows the lungs to drain off water. Sea turtles being resuscitated must be protected from the elements at all times. If it is sunny and warm then shade the turtle and keep it moist using clean sea water or clean damp towels. If it is cold then keep the turtle out of the weather and warm by insulating with clean rags or other suitable material. Gently touch the upper eyelid and pinch the tail (reflex test) periodically to see if there is a response. Those that revive and become active must be released over the stern of the boat only when fishing gear is not in use, when the engine gears are in neutral position, and in areas where they are unlikely to be recaptured or injured by fishing gear or vessels. Sea turtles that fail to respond to the reflex test or fail to move within several hours (up to 24, if possible) must be returned to the water in the same manner.

<sup>1</sup> Follow the above release guidelines for dead turtles only when it is not possible to salvage the dead animal and bring it in.

<sup>2</sup> Live and resuscitated animals should be released as close to the water surface as possible

**Important:** Do not assume that an inactive turtle is dead. The onset of rigor mortis or the rotting of flesh is often the only definitive indication that a turtle is dead. Otherwise the turtle is determined to be comatose or inactive and resuscitation attempts are necessary. There are three methods that may elicit a reflex response from an inactive animal:

1. Cloaca or tail reflex. Stimulate the tail with a light touch. This may cause a retraction or side movement of the tail.
2. Eye reflex. Lightly touch the upper eyelid. This may cause an inward pulling of the eyes, flinching or blinking response.
3. Nose reflex. Press the soft tissue around the nose which may cause a retraction of the head or neck region or an eye reflex response.

## 7/07                    **Genetic Sampling Protocols for Live, Comatose or Dead Turtles**

Genetic samples provide valuable information on stock structure. Small skin biopsies provide a simple method to obtain tissue samples for genetic studies from live and dead sea turtles. For turtles **larger than 25 cm Notch-to-Tip (Total Length) carapace length**, tissue samples large enough for genetic analysis can be obtained using a 6mm disposable biopsy punch.

This tool consists of a plastic handle that supports a sharp circular blade. Tissue samples are preserved in 5 ml vials filled with 20% saturated DMSO. This preservative is non-toxic, however it can soak into the skin rapidly and cause a garlic-like taste and breath odor. Given that, and the fact that DMSO can “pick up” any chemical already on your hands, use latex gloves throughout the sampling process.

1. The best way to biopsy a sea turtle is to gently place the turtle on its carapace with plastron facing up (except leatherbacks). This is best done with assistance from a crew member as turtles that are placed on their carapace tend to flap their flippers aggressively. Always exercise caution around the head and jaws.

If you are working alone then the best method might be to leave the turtle carapace up, with a damp cloth over its head.

2. Put on a pair of latex gloves and thoroughly wipe the ventral and dorsal surfaces of the rear flipper with a Betadine wipe. This area is along the posterior edge (trailing) of the flipper and is just past (away from the body) the Inconel tag location, which is the first scale closest to the body.
3. Use an alcohol swab to wipe the hard surface (plastic dive slate, biopsy vial cap or other available clean surface) that will be used under the flipper, and place this surface underneath the Betadine treated flipper.
4. Holding a new biopsy punch by the thumb and index finger, press the biopsy punch firmly into the flesh. The punch should actually be aligned a little past the flipper edge, creating a 3/4 crescent shaped biopsy. This technique promotes quicker healing. Rotate the punch one or two complete turns to make a cut all the way through the flipper. The biopsy tool has a sharp cutting edge so exercise caution at all times. Wipe the punched area with a Betadine swab.
5. Repeat the procedure to the other rear flipper using the same biopsy punch (if not too dull). You will now have two samples from this turtle in the same biopsy punch.
6. Remove the tissue plugs by using a pair of tweezers cleaned with alcohol wipes, a clean tooth pick or by tapping the punch on the edge of the vial. Place the plugs directly into a vial containing 20% saturated DMSO. It is important that tissue samples do not come into contact with any other surface or materials during collection.
7. Secure the vial cap. Using a fine point permanent marker (Sharpie) label the vial with the same consecutive identification number (PSID) used on your Sea Turtle Biological Sample Log and the trip number. Then cover the writing with a piece of clear tape to prevent smearing. Tightly wrap a piece of Parafilm around the vial cap and place it in a Whirl-pak. Label the Whirl-pak with trip number, collection date and species. Record all pertinent information on the Sea Turtle Biological Sample Log and the Marine Mammal, Sea Turtle and Sea Bird Incidental Take Log.
9. Be sure to indicate that a biopsy sample was taken on the Sea Turtle Biological Sample Log.
10. Dispose of the used biopsy punch. It is very important to use a new punch for each turtle.
11. Submit the vial with your data.

7/07

### **Protocols for Inconel Flipper Tagging Sea Turtles**

1. All turtles should be examined for existing external and/or PIT tags prior to applying new Inconel tags. All existing tags should be recorded accurately. PIT tags are recorded on the Sea Turtle Biological Sample Log. Inconel and other external tags are recorded on the Marine Mammal, Sea Turtle and Sea Bird Incidental Take Log. Any damaged or unreadable tags should

be removed. Prior to release, each turtle **larger than 26 cm** Notch-to-Tip (Total Length) carapace length should have two well attached and clearly legible external Inconel tags.

2. Inconel tags should be cleaned of the protective oil coat they are shipped with and stored in a sealed plastic bag.

Remove one at a time as needed. Inconel tags are expensive. Take care of them and don't pass on to other observers.

3. Due to tag loss, double tagging is standard procedure, with one Inconel tag placed proximal to the first scale (scale closest to the body) of the trailing edge of each rear flipper for all turtles except leatherback.

Leatherback turtles should be tagged along the posterior (trailing) edge of the rear flipper. The preferred site is approximately 5 cm (~ 2 inches) out from the base of the tail (leatherback turtles do not have flipper scales).

Only Inconel tag turtles that are **larger than 26 cm** Notch-to-Tip (Total Length) carapace length. If the recommended tagging site is damaged or is for some reason unsuitable for tag application, then an alternative site along the trailing edge of the front flipper may be used.

4. The best way to tag the rear flippers of a turtle, except leatherbacks, is to first turn the turtle over onto its carapace with plastron (underside) facing upwards. This is best done with assistance from a crew member, as turtles that are placed on their carapace tend to flap their flippers aggressively. Always exercise caution around the head and jaws.

If you are working alone then the best method might be to leave the turtle carapace up, with a damp cloth over its head.

5. To prepare the rear flippers for tagging thoroughly swab the areas with betadine. If someone is available to help, have them hold the flipper to improve leverage while you are applying the Inconel tag. Record the tag identification number prior to placing it into the applicator. Place the pointed (piercing) side of the tag up and place the end of your index finger inside the tag against the bend. Pull the tag straight back into the open jaws of the applicator, aligning the pointed side of the tag opposite to the side of the pliers that has the small depression. It can be helpful to mark one jaw of the applicator with colored paint as a reminder of the correct way to insert the tag. Do not squeeze the pliers before you are ready to tag or the tag will fall out.

6. Position the Inconel tag so that it extends slightly past (approx. 1/3 the length of the tag) the trailing edge of the rear flipper. It should not be cinched in too tight against the flipper without room to move freely. Also avoid positioning the tag close to edge of the flipper where it can rip out or catch on fishing gear.

7. There are two distinct motions involved in applying Inconel tags. The first step is to squeeze the applicator so the tag point pierces the flipper. The second step, a moment later, involves applying greater force to drive the point through the tag hole and make it bend over completely. Use both hands and squeeze in a firm, steady manner to ensure that the tag will fully lock. The handles of the applicator should always be gripped as far back as possible to gain maximum leverage. The tag point should pierce the flipper and lock into place with the tip bending securely over by 3-5 mm. After attachment, feel the tag with your finger and visually inspect to



make sure the point has bent over into a fully locked position. Repeat the procedure and apply a second tag on the other rear flipper. All turtles should be double tagged in this manner. If possible use consecutive tag numbers on the same turtle.

8. In the event that the Inconel tag does not lock, fit the pliers back around the tag and apply greater pressure. Tags that fail to lock when applied to a turtle are difficult, frustrating and sometimes impossible to properly correct, even when using additional tools. Improperly applied tags can be shed quickly. A tag that malfunctions should be removed, recorded as being destroyed and replaced with a new tag. If you are having persistent problems when attempting to apply Inconel tags please contact the NEFOP staff for additional training.

9. When you have finished working with one turtle clean and disinfect the applicator (plier) to avoid cross contamination between turtles. Maintain the tag applicators so they continue to work properly by washing them in fresh water after use, spraying the spring and pivot surface with WD40, and storing them in a sealed plastic bag.

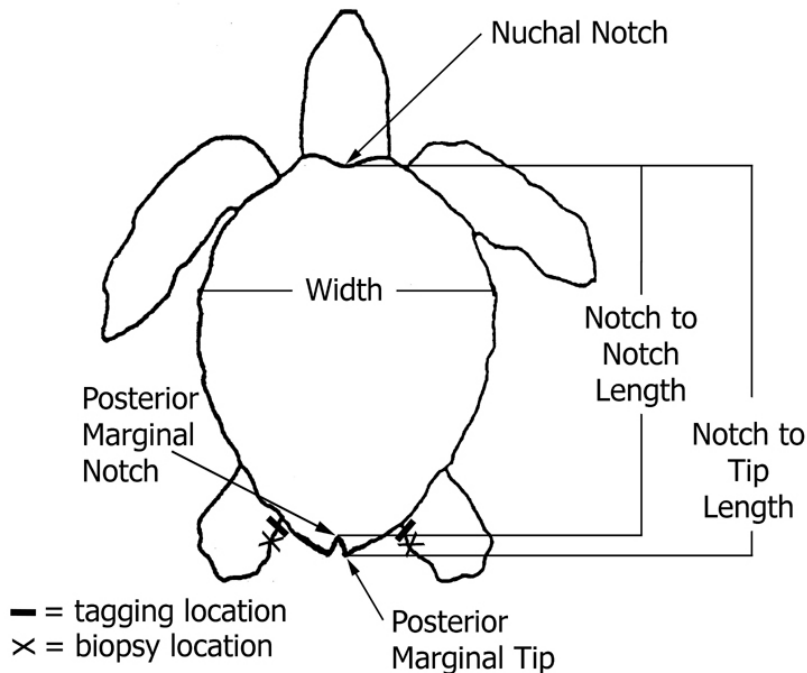
11/09

## Photographic Documentation of Sea Turtle Takes

Observers are required to photograph **all** sea turtles that are observed taken during commercial fishing operations. Although a properly completed Sea Turtle Biological Sample Log should provide all identifying characteristics used for species determination, it is imperative that the observer also provide photographic documentation to verify this identification for **every live or dead turtle reported**. Photographs should be taken of the head, flippers, carapace, and plastron. Photographs should also be taken of any injuries, healed scars or unusual markings. Cameras should be sent in with the data at the soonest opportunity, regardless of whether the roll has been completely used. Additional photographic instructions are given in the Photo Log section of the NEFOP Program Manual.

### Protocol for Measuring Turtles

Accurate and precise measurements are critical. All measurements should be recorded to the nearest 0.1 cm. The following guidelines apply to over the curve (curvilinear) measurements using a flexible tape. The standard measure of carapace length is **Notch-to-Tip**. This is measured along the centerline from the center of the carapace nuchal notch to the longest posterior tip. Because the posterior tips are frequently broken in juveniles, or worn away in adults, it is recommended that a nuchal notch to posterior notch measurement also be taken. This is known as a **Notch-to-Notch** length. Carapace width is measured perpendicular to the centerline of the carapace at the widest point. If epibiota is present do not include it, if possible, when taking measurements. If it is unavoidable and your measurements do include epibiota please be sure to include detailed comments in your Marine Mammal, Sea Turtle and Sea Bird Incidental Take Log.



7/07 **Pit Tag Scanning Guidelines**

**All** turtles should be scanned for PIT tags. Many turtle research projects now routinely use PIT tags in addition to external tags.

1. Keep your PIT tag scanner inside a plastic ziplock bag whenever you use it. PIT tag scanners are expensive and since they are **not** waterproof this will help protect them from water or slime. Even the smallest amount of water will destroy a PIT tag scanner, so please be careful when using or storing the scanner. Placing the scanner in a plastic bag will not affect its performance. Some scanners are issued with a nylon case. If your scanner has a nylon case then it is not necessary for you to also use a plastic bag. It is not recommended that a scanner be stored in a plastic bag since condensation may develop inside the plastic bag.
2. Scan the provided (attached) sample tag to verify that the batteries are good and that the PIT tag scanner is working properly. Be sure to hold/keep the sample tag well out of the way when you are scanning a sea turtle. Test the scanner periodically. Establish if your scanner uses AA or AAA batteries and always keep extra batteries on hand. Avoid situations where you are unable to properly scan turtles because of dead batteries.
3. Place the PIT tag reader scanning surface directly on the skin of the turtle and **SLOWLY** scan the dorsal (top) surface of both front flippers, including the “shoulder”, “armpit” and neck areas. For the scanner to work properly, you will need to hold the button down while scanning. It is important to move the reader slowly since it cycles through different tag types (Avid, Destron, Trovan) and frequencies (125 and 400 kHz). An overlapping circular scanning motion has been shown to increase tag detection over a straight swiping motion. Scan the entire area multiple times to ensure that you have not missed a tag. Repeat the same procedure for both rear flippers.
4. For all turtles, **except** leatherbacks, gently place the turtle on its carapace and scan the ventral (bottom) surface of all flippers following the procedures outlined above. Also check the area of plastron between the front and rear flippers. This may require assistance from a crew member since turtles can be difficult to handle when on their backs. Leatherback turtles should not be turned on their back since this may damage their skin.
5. If a PIT tag is detected, record the identification code exactly as it appears on the PIT tag scanner display on the Sea Turtle Biological Sample Log. You can take your finger off the button for this and the identification code will stay on the display screen. I.D. codes may be all numbers or alpha numeric. Record all hyphens which may appear as part of the code. Double check to make sure you have recorded the code exactly as it appears on the reader display. Please be especially careful with the letters and numbers which are easily confused.
6. Please retain the turtle and notify the Incidental Take Team Lead at NEFOP if a tag is detected. We will be able to learn more about the history of the PIT tag. If the tag involved is from a dead animal, **do not dispose of the carcass** until given permission do so, since additional valuable information may be obtained from the PIT tagged turtle.

## APPENDIX C. ACTIVE PERMITS IN 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**.

Permit Number	Permit Holder	Expiration Date
1544	East Coast Observers, Inc	December 31, 2010
<b>1448</b>	<b>NMFS NEFSC</b>	<b>December 31, 2010</b>
1527	College of William and Mary	April 1, 2011
1552	NMFS SEFSC	June 30, 2011
1557	University of Massachusetts, Amherst	June 30, 2011
1576	NMFS NEFSC	September 30, 2011
1570	NMFS SEFSC	December 31, 2011
1571	NMFS SEFSC	December 31, 2011
10014	New Jersey Department of Environmental Protection	December 31, 2012
1551	NMFS SEFSC	July 1, 2013
13543	South Carolina Department of Natural Resources	April 30, 2014
14249	Coonamessett Farm Foundation, Inc	October 31, 2014

**Table 2.** Types of research activities authorized by active permits. The 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 the **bold** permit.

Permit No.	Capture	Blood sampling	Fecal sampling/lavage	Laparoscopy	Tissue sampling	Attach instruments	Tags or marks	Mortality
1544	√	√	√		√	√	√	
<b>1448</b>					√		√	
1527		√				√	√	
1552					√		√	
1557	√	√			√	√	√	
1570	√				√		√	√
1571					√		√	
1576	√				√		√	√
1551	√	√	√	√	√	√	√	
13543							√	
14249	√	√			√	√	√	√
<i>15122</i>					√		√	





DEC 30 2010

**Finding of No Significant Impact  
Issuance of Scientific Research Permit No. 15112**

**Background**

In November 2009, the National Marine Fisheries Service (NMFS) received an application for a permit (File No. 15112) from NMFS Northeast Fisheries Science Center to conduct research on sea turtles captured incidental to commercial fishing operations in the Exclusive Economic Zone in the Northwest Atlantic Ocean. 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 Scientific Research Permit for Sea Turtle Research in the Northwest Atlantic Ocean [File No. 15112]; December 2010). In addition, a Biological Opinion was issued under the Endangered Species Act (ESA; December 2010) summarizing the results of an intra-agency consultation. The analyses in the EA, as informed by the Biological Opinion, support the below findings and determination.

**Analysis**

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

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

**Response:** This action would not impact any ocean, coastal habitats, or essential fish habitat. The permit would authorize the measuring and sampling of turtles already legally captured under another authority. This permit would not authorize in-water activities, therefore the research would not affect the ocean habitat.

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:** The effects of the action on ESA-listed species and their habitat, EFH, marine sanctuaries, and marine mammals were all considered. The research would not affect predator-prey relationships, other species, or habitat. The research would cause short-



term effects to sea turtles; however they would be returned alive to the water. 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., handling, 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.

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 biological opinion, the proposed action would adversely affect individual sea turtles during the research. However, the biological opinion concluded that the effects of the proposed action would be short-term in nature. 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 any marine mammals or their critical habitat. No non-target species would be captured, handled, or affected by this research.

In addition, Permit No. 15112 would contain mitigation measures to minimize the effects of the research on target sea turtles.

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

**Response:** There would be no significant social or economic impacts interrelated with significant natural or physical environmental effects.

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

A *Federal Register* notice (75 FR 16428) was published to provide the public the opportunity to review and comment on the action. No substantive public comments were received; therefore NMFS does not expect the issuance of the proposed permit to have highly controversial effects on the quality of the human environment.

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

**Response:** The action would not take place in any of these areas nor affect them indirectly, thus none would be impacted.

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; 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?



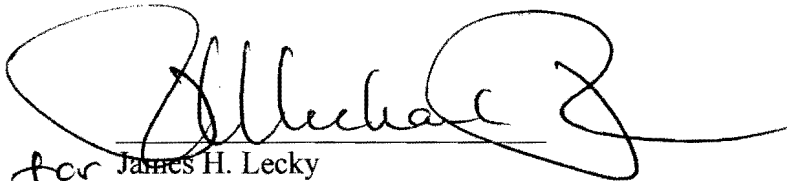
**Response:** The action would not result in any violation of Federal state or local laws for environmental protection. The permit applicant is required to obtain any state and local permits necessary to carry out the action, and takes for scientific purposes would only be authorized on sea turtles that were legally captured under other authority during commercial fishing operations.

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 the target species (sea turtles). No 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 Biological Opinion prepared for issuance of Permit No. 15112, 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.

  
for James H. Lecky  
Director, Office of Protected Resources

DEC 30 2010

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Date