



OCT 9 2010

To All Interested Government Agencies and Public Groups:

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

TITLE: Supplemental Environmental Assessment for Issuance of Modifications to Scientific Research Permits Nos. 13544 and 13307-01 to Conduct Research on Protected Sea Turtles

LOCATION: Permit No. 13544: Florida waters of Pine Island Sound, San Carlos Bay, Estero Bay, Charlotte Harbor, and adjacent Gulf of Mexico waters

Permit No. 13307-01: Waters of the Dry Tortugas National Park

SUMMARY: The National Marine Fisheries Service (NMFS) proposes to issue two modifications to scientific research permits for takes under the authority of the Endangered Species Act. The purpose of the modification to Permit No. 13544 (Principal Investigator- Jeffrey Schmid) is to satellite tag Kemp's ridley and loggerhead turtles. Radio/sonic telemetry are useful in documenting short-term, fine-scale movements and behaviors, but satellite telemetry is needed for discerning patterns on larger temporal and/or spatial scales. The purpose of the modification to Permit No. 13307-01 (Principal Investigator- Kristen Hart) is to increase the number of green sea turtles that may be captured due to Dr. Hart's high rate of capture success. The preferred alternative is not expected to have more than short-term effects on sea turtles and will not significantly impact the quality of the human environment. Each modification would be valid until the current permit's expiration date.

**RESPONSIBLE
OFFICIAL:**

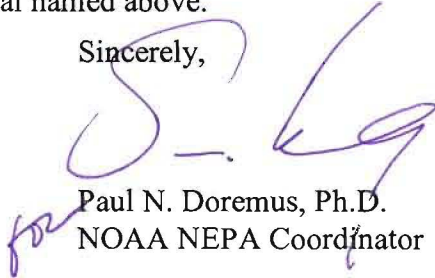
James H. Lecky
Director, Office of Protected Resources
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
1315 East-West Highway, Room 13821
Silver Spring, MD 20910
(301) 713-2332



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

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

Sincerely,

A handwritten signature in purple ink, appearing to read "P. N. Doremus", is written over the typed name and title.

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

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

FOR

Issuance of Modifications to Scientific Research Permits Nos. 13544 and 13307-01 to Conduct Research on Protected Sea Turtles

October 2010

Lead Agency: U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Office of Protected Resources

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

For Further Information Contact: Office of Protected Resources
National Marine Fisheries Service
1315 East West Highway
Silver Spring, MD 20910
(301) 713-2289

Documents Supplemented: Environmental Assessment on Effects of Issuance of
Scientific Research Permit to Karen Holloway-Adkins (File
No. 13306) and Kristen Hart (File No. 13307), June 2008.

Environmental Assessment for Issuance of Two Scientific
Research Permits for Research on Endangered Sea Turtles
in Florida Waters (Files Nos. 13544 and 13573), March
2009.

Abstract: The National Marine Fisheries Service (NMFS), Office of Protected Resources, proposes to issue modifications to two scientific research permits for takes of sea turtles in the wild, pursuant to 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). Research authorized under Permit No. 13307 addresses fine-scale temporal and spatial patterns of sea turtle habitat use, ecology, and genetic origin within the Dry Tortugas National Park. The proposed modification would increase the number of turtles captured. Research authorized under File No. 13544 characterizes the aggregations of sea turtles in the nearshore waters of southwest Florida. The proposed modification would authorize for the additional types of satellite tags. NMFS prepared environmental assessments (EAs) for issuance of the permits in 2008 and 2009. This supplemental EA (SEA) evaluates the potential impacts to the human environment from issuance of the proposed permit modifications by supplementing the previous EAs' assessments of potential impacts on sea turtles.



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CHAPTER 1 PURPOSE OF AND NEED FOR ACTION

1.1 DESCRIPTION OF ACTION

In response to receipt of requests from Kristen Hart, Ph.D. (Permit No. 13307-01) and Jeffrey Schmid (Permit No. 13544), NMFS proposes to issue modifications to their scientific research permits authorizing “takes”¹ of sea turtles in the wild pursuant to 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).

1.1.1 Purpose and Need

The primary purpose of the original permits is to provide an exemption from the take prohibitions under the ESA to allow “takes”. The need for issuance of the permits is related to NMFS’s 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 or stock. The proposed modifications would allow the applicants to better address recovery plan actions and provides information on sea turtles essential to their conservation and management.

1.1.2 Research Objectives

The objectives for both permits have not changed from previous objectives as described in the original Environmental Assessments (EAs). Instead the applicants are requesting modifications to their permits to help them improve data collection and reach their stated objectives.

1.2 OTHER EA/EIS THAT INFLUENCE SCOPE OF THIS EA

Environmental Assessments (NMFS 2008, 2009) were prepared for issuance of the original permits in 2008 and 2009 which determined that issuance of the permits and conduct of the associated research would not have measurable impacts on the physical, social, or economic environment but could result in harassment, as defined in the ESA, of sea turtles. The analyses focused on potential impacts to the biological environment, especially sea turtles. NMFS determined that the proposed harassment to sea turtles would not result in significant impacts to any portion of the human environment. A biological opinion was prepared for each action finding that the permits would not jeopardize the continued existence of any threatened or endangered species or result in destruction or adverse modification of any critical habitat.

Since the proposed action would not change the timing or location of research activities, they are not re-examined in this Supplemental Environmental Assessment (SEA). Therefore, the scope of

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

this SEA is limited to the potential impacts to sea turtles associated with the proposed research activities.

1.3 SCOPING SUMMARY

1.3.1 Public Comments

NMFS published a Federal Register notice (75 FR 16428) of receipt of the application for File No. 13307-02 on April 1, 2010. One comment was received, but the commenter did not provide substantive comments. The modified permit would authorize standard, well known research techniques that are not considered controversial.

NMFS published a Federal Register notice (75 FR 9580) of receipt of the application for File No. 13544 on March 3, 2010. No comments were received. The modified permit would authorize standard, well known research techniques that are not controversial.

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

No changes in the applicable laws and additional permits would result from the proposed action. The 2008 and 2009 EAs identified the National Environmental Policy Act (NEPA), Endangered Species Act (ESA), Marine Mammal Protection Act (MMPA), Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), and the National Marine Sanctuaries Act. The Proposed Action would not affect any physical environment or Essential Fish Habitat.

CHAPTER 2 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This chapter describes the range of potential actions (alternatives) determined reasonable with respect to achieving the stated objectives, as well as alternatives eliminated from detailed study. 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 modifications would not be issued. The No Action alternative is the baseline for rest of the analyses. The Proposed Action alternative represents the research proposed in the submitted applications for modifications to the permits, with standard permit terms and conditions specified by NMFS.

2.1 ALTERNATIVE 1 – No Action (Status Quo)

Under the No Action alternative, Permit Nos. 13544-01 and 13307-02 would not be issued for the activities proposed by the applicants. This alternative is the Status Quo because the applicants' current permits, No. 13544 and 13307-01, would remain valid and the research would proceed as authorized until they expire on April 30, 2014 and June 30, 2013, respectively. No other permits or permit requests would be affected by this alternative.

2.2 ALTERNATIVE 2 – Proposed Action (Issuance of Permit Modifications with Standard Conditions)

Under the Proposed Action alternative, permit modifications would be issued for activities as proposed by the applicants, with the permit terms and conditions standard to such permits as issued by NMFS.

Permit No. 13307-01 Summary

Permit No. 13307-01 authorizes the permit holder to conduct research in the Dry Tortugas National Park over five years. Dr. Hart is authorized to capture up to 30 green (*Chelonia mydas*), 20 hawksbill (*Eretmochelys imbricata*), and 20 loggerhead (*Caretta caretta*) sea turtles annually. Turtles are weighed, measured, flipper tagged, PIT tagged, blood sampled, tissue sampled, fecal sampled, and lavaged. A subset of turtles is tagged with a satellite tag or acoustic transmitter or a combination of both. This research addresses fine-scale temporal and spatial patterns of sea turtle habitat use, ecology, and genetic origin within the Dry Tortugas National Park.

Permit No. 13307 was issued on July 7, 2008. On July 21, 2008 the applicant requested the addition of the rodeo capture method as well as marking the turtles with paint. Rodeo capture involves the pursuit and hand capture of an individual turtle from a boat. Once the boat driver aligns the turtle just to the right or left of the bow, a diver jumps from the boat and attempts to capture the turtle. Once the diver has control of the turtle it is carefully brought on board. After being processed, the turtle is released back into the water in the area of initial capture. No significant change in effects to the turtles or any other part of the environment would occur from what was already analyzed for the existing permit and the permit modification would include conditions to ensure the safety of the turtles. Since authorization of the proposed modification would result in a lower level of environmental impact than originally anticipated under Permit No. 13307 NMFS PR authorized Dr. Hart to add the additional capture and marking methods as a minor modification to the permit. The minor modification to the permit (13307-01) was issued on July 30, 2008.

Due to the high rate of capture success in the Tortugas using both the rodeo and dip netting capture techniques, the permit holder now requests authorization to increase the number of green sea turtles captured annually from 30 to 80. The modification would be valid for the remainder of the permit, which would expire on June 30, 2013.

Permit No. 13544 Summary

Permit No. 13544 authorizes the permit holder to conduct research in the Florida waters of Pine Island Sound, San Carlos Bay, Estero Bay, Charlotte Harbor, and adjacent Gulf of Mexico waters. The permit holder is authorized to capture up to 130 Kemp's ridley (*Lepidochelys kempii*), 50 loggerhead, 20 green, and five hawksbill sea turtles annually. Turtles are measured, weighed, and tagged with Inconel tags on the trailing edge of the front flippers and a passive integrated transponder tag inserted in the left front flipper. Tissue samples are collected for genetic and stable isotope analyses. A subset of Kemp's ridleys is held for 24-48 hrs for fecal sample collection. Another subset of Kemp's ridleys receives radio/sonic tags to investigate their movements, home range, and habitat associations.

The permit holder is now requesting authorization to satellite tag Kemp's ridley and loggerhead turtles. Radio/sonic telemetry are useful in documenting short-term, fine-scale movements and behaviors, but satellite telemetry is needed for discerning patterns on larger temporal and/or spatial scales.

Based on these changes, Tables 1 and 2 (Appendix A) illustrate the proposed changes, shown in **bold** font, to the take tables for Permit No. 13307-01 and 13544.

Research Activities

Research activities for Permit No. 13307-02 would not change from what is currently authorized. The permit holder is requesting an increase in the number of takes authorized. The permit holder would continue to conduct research activities as previously described in the 2008 EA.

Research activities for Permit No. 13544 would now authorize the attachment of satellite transmitters. Satellite tagging would be conducted in accordance with conditions in the permit to mitigate potential effects of the activity.

The following methods of transmitter attachment would be used.

Turtles would be transported to Mote Marine Laboratory's field station on Demere Key via research vessel for transmitter attachment (< 30 min. travel time). During transmitter attachment (Girard et al., 2009; Tucker, in press), turtles would be restrained within a portable wooden box with a towel draped over its head to keep the turtle relaxed. The carapace would be cleaned of epibiota, rinsed with alternating washes of freshwater and ethanol, and then dried prior to transmitter attachment. Depending upon the size of a given turtle, it would be fitted either with a Sirtrack Kiwisat 101 (350 g) or 202 (100 g) or equivalent Wildlife Computer SPOT5 platform transmitter terminals (PTTs). The mass of the transmitter would be less than 5% the mass of the turtle. A base of slow cure two-part epoxy adhesive would be applied to attach the transmitter on the second vertebral scute. Additional thin layers of epoxy are built up along the sides, top, and extending away from the PTT to provide secure attachment. The application process takes 1–2 hrs to complete, after which time the turtle would be released near the capture location.

Mitigation Measures

In addition to the measures the applicant has identified, NMFS would add language to Permit No. 13544-01 to reduce the chance of stress, harm or injury to the target sea turtles. This includes:

- Minimizing the potential for entanglement of tag units;
- Reducing hydrodynamic drag and energetic costs of tag units; and
- Minimizing the risk of harm and infection to turtles during tag attachment.

No changes to the Mitigation Measures would occur as a result of issuing Permit No. 13307-02.

CHAPTER 3 AFFECTED ENVIRONMENT

Research is authorized to occur in the Dry Tortugas National Park and Florida waters of Pine Island Sound, San Carlos Bay, Estero Bay, Charlotte Harbor, and adjacent Gulf of Mexico waters. Because the Proposed Action involves sea turtles that would already be authorized for capture by the current permits, the affected environment is limited to the biological environment, essentially, the target sea turtles.

Since the 2008 EA was written, NMFS reviewed the status of the loggerhead sea turtle. 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 public has until September 13, 2010 to comment on the proposed rule.

With the exception of the updated loggerhead status, the affected environment would not change as a result of the Proposed Action and would remain as previously described in the 2008 and 2009 EAs. The physical, social, and economic environment would not be affected by the Proposed Action and are not considered further in this SEA.

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

The No Action alternative would eliminate any potential risk to the environment from the proposed research activities. The target sea turtles would not be impacted by the additional activities. However, activities currently authorized by Permit No. 13307-01 and 13544 would continue under the Status Quo. The scientific community would lose the opportunity to collect valuable data from turtles and information that could aid the understanding of turtle habitat use in the action area.

4.2 EFFECTS OF ALTERNATIVE 2: Issue permit modifications with standard conditions

Because these modifications focus on activities that would occur to sea turtles, any impacts of the proposed action would be limited primarily to the biological environment. The type of activities proposed in the permit modifications would be unlikely to affect the physical environment, socioeconomic environment or pose a risk to public health and safety.

Environmental Consequences to the Biological Environment – Sea Turtles

Modification of Permit No. 13307-01 would authorize an increase in capture of 50 green sea turtles annually. The action would not change the effects to the biological environment originally analyzed in the 2008 EA. There is no mortality authorized and none is expected. The additional capture would result in short-term stress to individuals but would not affect the population at a species level. Researchers would still be expected to closely monitor all capture events.

Modification of Permit No. 13544 would allow the permit holder to attach satellite transmitters to captured sea turtles. An analysis of the effects of the issuance of the modification request follows.

The environmental consequences to the biological environment for currently authorized research activities (capture, weigh, handle, measure, photography, skin biopsy, flipper and PIT tagging, fecal sampling, sonic/radio tagging, and release of sea turtles) have not changed from how they were described in the 2009 EA. Hence, the following discussion focuses on the effects of research activities that would be new to the permit.

Effects of Satellite Tagging

Studies have shown that Kemp's ridley (Gregory and Schmid, 2001) and loggerhead turtles (Gregory et al. 1996) respond to capture and handling with increased levels of plasma stress hormones. Corticosterone concentrations increased rapidly during the first hour of captivity and, for trawl-caught loggerheads, peaked at 3 hrs. and decreased by 6 hrs. However, it is not known if these brief stress responses to temporary captivity have any chronic or long-term effects on the health of the turtle. Radio/sonic telemetered Kemp's ridley turtles exhibited surface durations of 1-2 seconds and submergence durations of 1-2 minutes upon release and continuing for several hours, but longer surface and submergence intervals were observed after 24 hrs and this respiratory pattern continued through the remainder of the monitoring sessions (Schmid, 2000; Schmid et al., 2002). These fine-scale behavioral data are not available via satellite telemetry but a similar pattern would be expected for turtles instrumented with satellite transmitters given similar handling procedures. Telemetric monitoring has demonstrated that Kemp's ridley turtles that were captured and handled resume their activities and foraging during their seasonal occurrence in nearshore waters (radio/sonic telemetry - Schmid et al., 2002, 2003; Schmid, 2000, 2003, 2004) and return to capture sites following winter migrations (satellite telemetry - Schmid and Witzell, 2006). Furthermore, female loggerheads instrumented with satellite transmitters continued nesting during the course of the season (Tucker, 2009, in press), successfully completed post-nesting migrations (Girard et al., 2009), and returned to the nesting beach where they were initially tagged and then subsequently returned to previously occupied foraging areas all of which indicate that reproductive activities and migrations are not affected by attached transmitters.

The following mitigations would be in place to ensure the tagging results in minimal effects to the turtles.

- The mass of the transmitters will be less than 5% the mass of the turtle
- Turtles will be kept in a shaded area during attachment
- Epoxy used to attach transmitters will be shaped into a streamlined surface to minimize drag while the turtle is swimming
- Epoxy is also painted with anti-foulant to reduce the growth of barnacles and other epibionts that may create additional drag

Based on the study results of hardshell sea turtles equipped with this and other tag setups NMFS is unaware of transmitters resulting in any serious injury or mortality to sea turtle species. Attachment of satellite, sonic, or radio transmitters with epoxy is a commonly used and permitted technique by NMFS.

Environmental Consequences to the Biological Environment – Other Species

Because research activities under Permit No. 13544-01 would occur solely on sea turtles already captured, NMFS does expect any non-target species to be impacted by the proposed action. During her first year of research conducted under Permit No. 13307-01 the applicant found that rodeo capture and dip netting were the most successful methods of capture. These capture methods do not result in the capture of non-target species. Therefore, the additional capture proposed under Permit No. 13307-02 would not impact non-target species.

Summary of Effects

The short-term stresses resulting from the research activities discussed above are expected to be minimal. Animals would be released within hours of capture and should recover from the procedures within the same day. The permit modifications would contain conditions to mitigate adverse impacts to turtles from these activities. Turtles would be worked up as quickly as possible to minimize stress resulting from the research and the applicants would also be required to follow procedures designed to minimize the risk of either introducing a new pathogen into a population or amplifying the rate of transmission from animal to animal of an endemic pathogen when handling animals. The applicants would be required to exercise care when handling animals to minimize any possible injury. During release, turtles would be lowered as close to the water's surface as possible, to prevent potential injuries. Overall, the individual and combined impacts of the proposed research activities are not expected to have more than short-term effects on individual sea turtles.

The proposed action is not expected to cause serious injury or mortality of any animals. Thus the research would not result in a permanent decrease in a sea turtle species' or populations' reproductive success, lead to a long-term reduction in prey availability, the survival of young turtles, or the number of young turtles that annually recruit into the breeding populations of any of the sea turtle species. Given this analysis of impacts to sea turtles, NMFS does not expect the proposed action to result in significant impacts to the target sea turtles, their populations or species. Further, the Biological Opinion (NMFS 2010) concluded that the Proposed Action is not likely to jeopardize any listed species or result in the destruction or modification of any critical habitat. Because the activities would only be conducted on turtles authorized for capture by the permit, NMFS does not expect the proposed action to significantly impact any non-target

species or other portions of the human environment.

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 regulations. NMFS issuance of the permit modifications would be consistent with the ESA.

4.3.1 Endangered Species Act

This section summarizes conclusions resulting from consultation as required under section 7 of the ESA. The consultation process was concluded after close of the comment period on the amendment applications and after a draft of the SEA was prepared to ensure that no relevant issues or information was overlooked during the initial scoping process summarized in Chapter 1. For the purpose of the consultation, the draft SEA represented NMFS' assessment of the potential biological impacts. The Biological Opinion (NMFS 2010) concluded that the Proposed Action is not likely to jeopardize any listed species or result in the destruction or modification of any critical habitat.

4.3.2 Marine Mammal Protection Act

The applicant of File No. 13544-01 consulted with NMFS about the need to secure an Incidental Harassment Authorization (IHA). An IHA shall be granted if the Secretary finds that the taking will have a negligible impact on the species or stock(s); will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses. The applicant of File No. 13544 applied for an IHA but it was determined via a Letter of Concurrence (January 22, 2009) that harassment of marine mammals during his sea turtle research was unlikely so no IHA was issued.

The proposed action does not affect the previous analysis from the 2009 EA.

4.4 COMPARISON OF ALTERNATIVES

While the No Action alternative would limit environmental effects to those analyzed in the previous EAs, the opportunity would be lost to collect information that would contribute to better understanding sea turtles and that would provide information to NMFS that is needed to implement NMFS management activities. This is important information that would help conserve and manage sea turtles as required by the ESA and implementing regulations. The Proposed Action alternative would only impact individual sea turtles. However, the effects would be minimal and this alternative would allow the collection of valuable information that could help NMFS' efforts to recover sea turtles. Neither the No Action or Proposed Action are anticipated to have adverse population or stock-level effects on sea turtles. Given the Proposed Action's minimal impact to the environment and the potential positive benefits of the research, it is the most desirable action to pursue.

4.5 MITIGATION MEASURES

The modifications, if approved, would require the applicants to adhere to permit conditions discussed in Ch. 2 to minimize and mitigate any effects of the proposed procedures. These

include conditions that will minimize the potential for injury and stress during procedures. All mitigation and minimization measures currently in the existing permits would remain in effect.

4.6 UNAVOIDABLE ADVERSE EFFECTS

Because the research involves wild animals that are not accustomed to being captured and handled, the research activities will unavoidably result in some harassment. The research activities would cause disturbance and stress to sea turtles already captured. The research is not expected to have more than a minimal effect on individuals, and no effect on populations with animals recovering within the day of the procedures. While individual animals may experience short-term stress and discomfort in response to the activities of researchers, the impact to individual animals is not expected to be significant. The minimization measures imposed by permit conditions are intended to reduce, to the maximum extent practical, the potential for adverse effects of the research on these species. Since the Proposed Action would only occur on sea turtles already captured, no other portion of the human environment would be affected in a manner not already considered in the 2008 and 2009 EAs.

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. Cumulative impacts can result from individually minor but collectively significant actions that take place over a period of time.

Overall, the nature of cumulative impacts to sea turtles have not changed from those identified in the 2008 and 2009 EAs. This section identifies cumulative impacts to sea turtles that have changed since the previous EAs. Changes are largely due to the expiration and issuance of research permits since 2008.

4.7.1 Other Research Permits and Authorizations

Table 3 lists the active scientific research permits that study the target sea turtle populations. Some of these occur outside of the action area but have been included here to illustrate the level of research on the target sea turtle populations. Since the 2008 analysis, 12 permits have expired. Three new permits, denoted with an asterisk, have been issued. None of these actions are focused in the proposed action areas.

Table 3. Active NMFS Permits for Sea Turtle Research

Permit Number	Permit Holder	Location	Expiration Date
1506	Blair Witherington, Florida Fish and Wildlife Conservation Commission	Florida coastal waters, Keys, Gulf Stream	March 31, 2011
1501	Florida Marine Research Institute	FL Bay; Everglades	March 31, 2011
1507	Ehrhart	Indian River Lagoon, FL	March 31, 2011
1526	Andre Landry	Coastal LA & TX	August 1, 2011
1518	Carlos Diez	Puerto Rico	August 31, 2011

Permit Number	Permit Holder	Location	Expiration Date
1540	State of South Carolina	Coastal SC to Cape Canaveral, FL	April 1, 2011
1527	Jack Musick	Chesapeake Bay	April 1, 2011
1551	NMFS SEFSC	North Atlantic Ocean and Gulf of Mexico	July 1, 2013
1552	NMFS SEFSC	North Atlantic Ocean	June 30, 2011
1557	Molly Lutcavage	Cape Cod, MA; Savannah, GA—Cape Canaveral, FL	June 30, 2011
1570	NMFS SEFSC	North Atlantic Ocean	December 31, 2011
1571	NMFS SEFSC	North Atlantic Ocean	December 31, 2011
1576	NMFS NEFSC	Western Atlantic Ocean	September 30, 2011
1599	Inwater Research Group Inc.	Key West	June 30, 2012
13306*	Karen Holloway-Adkins	Brevard Co., FL	June 30, 2013
14272*	Larry Wood	Palm Beach County, FL	June 30, 2014
13573*	Michael Salmon	Palm Beach County, FL	May 1, 2012

NMFS currently authorizes mortality in a minor number of research permits. Permit No. 1576 authorizes the lethal take of up to 23 loggerhead, 1 green, 1 leatherback, 1 Kemp's ridley sea turtles annually, and up to 1 loggerhead and 1 Kemp's ridley over the course of the permit, through 2011. Permit No. 1570 authorizes the lethal take of up to 3 loggerhead, 2 green, 1 leatherback, 2 Kemp's ridley, 1 hawksbill, and 1 olive ridley sea turtle over the course of the permit through 2011.

NMFS does not expect the combination of these activities to negatively affect sea turtle populations. Most of these permitted actions will not overlap in space and time with the Proposed Action because they are not located in or have a focus in the study areas of Dry Tortugas National Park or Pine Island Sound, San Carlos Bay, Estero Bay, Charlotte Harbor, and adjacent Gulf of Mexico waters. Further, NMFS has taken steps to limit repeated harassment of individual turtles and avoid unnecessary duplication of research efforts by requiring coordination among permit holders. All scientific research permits are also conditioned with mitigation measures to ensure that the research impacts target and non-target species as minimally as possible.

Overall, the preferred alternative would not be expected to have more than short-term effects on endangered and threatened sea turtles. The impacts of the non-lethal research activities are not expected to have more than short-term effects on individual sea turtles and any increase in stress levels from the research would dissipate within approximately a day. Even if an animal was exposed to additional research effort (e.g., a week later), no significant cumulative effects would be expected given the nature of the effects. NMFS expects the authorization of the proposed research activities of the preferred alternative to not appreciably reduce the species likelihood of survival and recovery in the wild by adversely affecting their birth rates, death rates, or recruitment rates. In particular, NMFS expects the proposed research activities to not 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.

The incremental impact of the action when added to other past, present, and reasonably foreseeable future actions discussed here would not be significant at a population level.

CHAPTER 5 LIST OF PREPARERS AND PERSONS/AGENCIES CONSULTED

National Marine Fisheries Service, Office of Protected Resources in Silver Spring, Maryland.

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APPENDIX A: PROPOSED ANNUAL TAKES UNDER FILE NO. 13307-02 AND 13544-01

Changes to original take table appear in **bold**.

Table 1: Proposed Annual Takes under File no. 13307-02. Research would occur in Dry Tortugas National Park.

SPECIES	EXISTING UNIT/STOCK	NUMBER OF ANIMALS	PROCEDURES	EFFECTS
Turtle, green sea	Florida Breeding Populations (NMFS Endangered)	60	Lavage; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, blood; Sample, fecal; Sample, tissue; Weigh	tangle net, rodeo capture, dip net, cast net
Turtle, green sea	Florida Breeding Populations (NMFS Endangered)	10	Instrument, epoxy attachment (e.g., satellite tag, VHF tag); Lavage; Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, blood; Sample, fecal; Sample, tissue; Weigh	satellite and acoustic tag, tangle net, rodeo capture, dip net, cast net
Turtle, green sea	Florida Breeding Populations (NMFS Endangered)	10	Instrument, epoxy attachment (e.g., satellite tag, VHF tag); Lavage; Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, blood; Sample, fecal; Sample, tissue; Weigh	acoustic tag, tangle net, rodeo capture, dip net, cast net
Turtle, hawksbill sea	Range-wide (NMFS Endangered)	20	Lavage; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, blood; Sample, fecal; Sample, tissue; Weigh	tangle net, rodeo capture, dip net, cast net

SPECIES	TESTING UNITS/STATUS	NUMBER OF SAMPLES	TECHNIQUES	DEVELOPMENT
Turtle, hawksbill sea	Range-wide (NMFS Endangered)	10	Instrument, epoxy attachment (e.g., satellite tag, VHF tag); Lavage; Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, blood; Sample, fecal; Sample, tissue; Weigh	satellite and acoustic tag, tangle net, rodeo capture, dip net, cast net
Turtle, hawksbill sea	Range-wide (NMFS Endangered)	10	Instrument, epoxy attachment (e.g., satellite tag, VHF tag); Lavage; Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, blood; Sample, fecal; Sample, tissue; Weigh	acoustic tag, tangle net, rodeo capture, dip net, cast net
Turtle, loggerhead sea	Range-wide (NMFS Threatened)	20	Lavage; Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, blood; Sample, fecal; Sample, tissue; Weigh	tangle net, rodeo capture, dip net, cast net
Turtle, loggerhead sea	Range-wide (NMFS Threatened)	10	Instrument, epoxy attachment (e.g., satellite tag, VHF tag); Lavage; Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, blood; Sample, fecal; Sample, tissue; Weigh	satellite and acoustic tag, tangle net, rodeo capture, dip net, cast net

Table 2: Proposed Annual Takes under File no. 13544-01. Research would occur in Pine Island Sound, San Carlos Bay, Estero Bay, Charlotte Harbor and adjacent Gulf of Mexico waters.

SPECIES	LISTING UNIT/STOCK	LIFE STAGE	NUMBER OF ANIMALS	PROCEDURES	DETAILS
Turtle, Kemp's ridley sea	Range-wide (NMFS Endangered)	Subadult	50	Mark, flipper tag; Mark, PIT tag; Measure; Sample, tissue; Weigh	strike netting
Turtle, Kemp's ridley sea	Range-wide (NMFS Endangered)	Subadult	35	Mark, flipper tag; Mark, PIT tag; Measure; Sample, fecal; Sample, tissue; Transport; Weigh	strike netting, hold 24-48 hrs for fecal sampling
Turtle, Kemp's ridley sea	Range-wide (NMFS Endangered)	Subadult	30	Instrument, drill carapace attachment; Mark, flipper tag; Mark, PIT tag; Measure; Sample, tissue; Weigh	strike netting
Turtle, Kemp's ridley sea	Range-wide (NMFS Endangered)	Subadult	15	Instrument, epoxy attachment (e.g., satellite tag, VHF tag); Mark, flipper tag; Mark, PIT tag; Measure; Sample, fecal; Sample, tissue; Weigh	strike netting, hold 24-48 hrs for fecal sampling
Turtle, green sea	Florida Breeding Populations (NMFS Endangered)	Subadult	20	Mark, flipper tag; Mark, PIT tag; Measure; Sample, tissue; Weigh	strike netting
Turtle, hawksbill sea	Range-wide (NMFS Endangered)	Subadult	5	Mark, flipper tag; Mark, PIT tag; Measure; Sample, tissue; Weigh	strike netting

SPECIES	RANGE/STATUS	SEX/AGE	REMARKS	PROCEDURES	HAZARD
Turtle, loggerhead sea	Range-wide (NMFS Threatened)	Subadult/ Adult	40	Mark, flipper tag; Mark, PIT tag; Measure; Sample, tissue; Weigh	strike netting
Turtle, loggerhead sea	Range-wide (NMFS Threatened)	Subadult/ Adult	10	Instrument, epoxy attachment (e.g., satellite tag, VHF tag); Mark, flipper tag; Mark, PIT tag; Measure; Sample, tissue; Weigh	strike netting



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

Finding of No Significant Impact

Issuance of Scientific Research Permit Nos. 13544-01 and 13307-02

Background

In March and April 2009, the National Marine Fisheries Service (NMFS) received applications for permits (File No. 13544 and File No. 13307) from Jeffrey Schmid and Kristen Hart, respectively, to conduct research on sea turtles in Florida. In accordance with the National Environmental Policy Act, NMFS has prepared a Supplemental Environmental Assessment (SEA) analyzing the impacts on the human environment associated with permit issuance (SEA for Issuance of Modifications to Scientific Research Permits Nos. 13544-01 and 13307-02 to Conduct Research on Protected Sea Turtles). In addition, a Biological Opinion (BO) was issued under the Endangered Species Act (October 2010) summarizing the results of an intra-agency consultation. The analyses in the SEA, as informed by the Biological Opinion, support the below findings and determination.

Analysis

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

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

Although Essential Fish Habitat (EFH) may be present in the action area, the proposed action under File No. 13544-01 will only affect sea turtles authorized to be captured under the existing permit. The proposed capture method for File No. 13307-02 is rodeo capture or dip net. Neither of these capture methods affect bottom habitat. In addition, impacts to EFH for both Permit No. 13544 and No. 13307-01 were previously analyzed and found to not be significant (NMFS 2008, 2009). The affected environment is limited to the targeted sea turtles and therefore, ocean, coastal habitats, and EFH will not be affected by this action.



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.)?

The research will not have a substantial impact on predator-prey relationships or biodiversity. The research will cause short-term effects to the target species (sea turtles). No other species will be affected.

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

The proposed action involves basic research of sea turtles and does not involve hazardous methods, toxic agents or pathogens, other materials, or activities 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?

The proposed action would affect endangered green, hawksbill, Kemp's ridley, and threatened loggerhead sea turtles since they are the target of the proposed activities; however, impacts are expected to be short-lived and negligible to the species. NMFS is proposing to update the status of the loggerhead to recognize nine distinct population segments (DPSs) and to reclassify the two DPSs within the United States as endangered. As a standard practice during Section 7 consultation, the BO prepared for this action treated loggerheads as if they were already endangered when analyzing impacts of the proposed action. The BO concluded that the proposed action would not jeopardize any endangered species or result in destruction or adverse modification of critical habitat. Therefore, NMFS does not expect loggerhead, green, hawksbill and Kemp's ridley sea turtles to be significantly impacted by the proposed action. Since the action is limited to conducting activities on turtles already captured under the permit or captured by hand, no other species or critical habitat would be affected by this action.

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

There will be no social or economic impacts as result of the proposed action.

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

NMFS does not consider the proposed action controversial nor have they been considered controversial in the past. The applications were made available for public comment and no substantive comments were received. The research methods are commonly used.

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?

Research under File No. 13544 occurs in the waters of Charlotte Harbor National Estuary and Pine Island National Wildlife Refuge. At the time of issuance of 13544 the permit holder consulted with the Florida Department of Environmental Protection and the Florida Fish and Wildlife Conservation Commission to ensure their presence has the least amount of impact to the area.

Research under File No. 13307 occurs in the Dry Tortugas National Park. The permit holder consulted with the National Park Service to ensure their presence has the least amount of impact to the area.

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

The research activities of the proposed permits are not new. Researchers have previously conducted the same type of research with no significant impacts to the environment. The effects on the human environment will not be highly uncertain and the risks will be minimal and known.

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

The proposed action is not related to other actions with individually insignificant, but cumulatively significant impacts. If the proposed modifications are issued, it is not expected that the additional effects of this research would result in cumulatively significant impacts. The short-term stresses (separately and cumulatively when added to other stresses the species face in the environment) resulting from the sampling and tagging activities would be expected to be minimal. Animals would be exposed to low level harassment and no serious injuries would be expected. The current permit conditions will remain in effect to ensure the activities are mitigated.

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

The research conducted under File No. 13544 does not take place in any areas listed or eligible for listing in the National Register of Historic Places. Fort Jefferson in the Dry Tortugas serves as a field station to researchers under File No. 13307. Researchers continue to work with the National Park Service to ensure their presence doesn't cause the loss or destruction of this monument.

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

The proposed research is not expected to result in the spread of non-indigenous species. Researchers take precautions to ensure all equipment is cleaned before transiting to another study location.

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

The decision to issue these modifications will not be precedent setting and will 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, nor does it involve irreversible or irretrievable commitment of resources.

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?

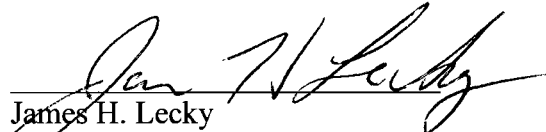
The action will not result in any violation of Federal, State, or local laws for environmental protection. In addition, the permits do not relieve the Permit Holder of the responsibility to obtain any other permits, or comply with any other Federal, State, local, or international laws or regulations necessary to carry out the action. Both researchers are aware that if they modify their NMFS permit they must also modify their State of Florida marine turtle permit.

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?

The action is not expected to result in cumulative adverse effects to the species that are the subject of the proposed research. The proposed action would be expected to have minimal effects on affected species' populations. No substantial adverse effects on non-target species 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 SEA and BO prepared for issuance of Permit Nos. 13544-01 and 13307-02, it is hereby determined that permit issuance will not significantly impact the quality of the human environment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an Environmental Impact Statement for this action is not necessary.


James H. Lecky
Director, Office of Protected Resources

OCT 29 2010
Date