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

Finding of No Significant Impact for Issuance of Scientific Research Permit No. 15661-01 for Research on Protected Sea Turtles

National Marine Fisheries Service

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." The proposed action is to issue a modification to Permit No. 15661 for research on sea turtles in the Northern Mariana Islands. 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 cannot reasonably be expected to cause substantial damage to any ocean, coastal habitats, or essential fish habitat (EFH). The applicant is requesting to modify the permit to authorize blood and scute sampling of sea turtles already captured during research efforts. Thus impacts of this modification would be limited to the target captured sea turtles and would not impact any physical 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 research authorized by the permit cannot be expected to substantially affect biodiversity and/or ecosystem function. The research would cause short-term effects to target sea turtles but not significantly affect them, and the research would not have any population level effects. No other species or portion of the environment would be affected.

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

Response: The proposed action cannot reasonably be expected to have a substantial adverse impact on public health or safety because it involves standard research procedures on sea turtles and does not involve hazardous methods, toxic agents or

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pathogens, other materials, or activities that would have a substantial adverse impact on public health and safety. Aseptic techniques would be followed to prevent impacts to the animals' and the researchers' health.

4) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, their critical habitat, marine mammals, or other non-target species?

Response: The proposed action is expected to result in short-term harassment of threatened green and endangered hawksbill sea turtles. These effects will not be significant. No significant injuries to any animals would be expected and they would be released after they are sampled. The permit would contain mitigation measures to minimize the effects of the research and to avoid unnecessary stress to the sea turtles by requiring use of specific research protocols. The action is not likely to jeopardize the continued existence of any ESA endangered or threatened species and would not destroy or adversely modify any critical habitat. As discussed in question #1, due to the limited scope of the request, the proposed action would not affect marine mammals, other non-target species, or the habitat of those species.

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. No significant social or economic impacts would result from the proposed research because the researchers work on remote islands that have small local populations or are not civilized areas. Research would not impact use of the area by others.

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

Response: A *Federal Register* notice was published to allow other agencies and the public the opportunity to review and comment on each permit request. No public comments were received. Given the proposed research methodologies are well known and are expected to have minimal effects, NMFS believes that the action is not likely to be controversial.

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

Response: See response to question #1. The research activities would not take place near historic or cultural resources, parklands, prime farmlands, wetlands, or wild and scenic rivers. The proposed action cannot reasonably be expected to result in substantial impacts to EFH or other ecologically critical areas. Activities that have been shown to adversely affect EFH include disturbance or destruction of habitat from stationary fishing gear, dredging and filling, agricultural and urban runoff, direct discharge, and the

introduction of exotic species. None of these activities would occur under the proposed action.

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

Response: The research activities of the proposed research are not new or novel. Researchers have previously conducted the same type of research 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. If the permit modification is issued, it is not expected that the additional effects of this research would result in cumulatively significant impacts given the remote study area in the Central Pacific Ocean. The short-term stresses (separately and cumulatively when added to other stresses the species face in the environment) resulting from the research activities would be expected to be minimal. The added sampling would not substantially increase the animals' holding time before release and is not expected to result in significant impacts when added to the other activities already authorized on the subject sea turtles. These activities would be minimally invasive and would not result in serious injury or mortality. The permit would contain conditions to mitigate adverse impacts to species from these activities.

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

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

Response: The action would not affect any districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places as none are found in the action area. The research would not cause loss or destruction of significant scientific, cultural, or historical resources.

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

Response: The action would not remove or introduce any species; therefore, it would not result in the introduction or spread of a nonindigenous species. The research activities

would not involve bilge water or other issues of concern relative to nonindigenous 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 the permit modification 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, 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?

Response: The action would not result in any violation of Federal, State, or local laws for environmental protection. In addition, issuance of the permit modification would 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.

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 cumulative adverse effects that could have a substantial effect on the target species or non-target species. The proposed action would be expected to have minimal effects on threatened green and endangered hawksbill sea turtles. No effects on other aspects of the environment are expected.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Supplemental Environmental Assessment (SEA) prepared for issuance of Endangered Species Act Section 10(a)(1)(A) Scientific Research Permit No. 15661-01, and the ESA section 7 biological opinion, it is hereby determined that the issuance of Permit No. 15661-01 will not significantly impact the quality of the human environment as described above and in the SEA. In addition, all beneficial and adverse impacts of the

proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an Environment Impact Statement for this action is not necessary.

Perry Gayaudo

for Donna S. Wieting
Director, Office of Protected Resources, NMFS

DEC 2 4 2013
Date

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

Supplemental Environmental Assessment (SEA)

On the Issuance of a Modification to Scientific Research Permit No. 15661 to the Commonwealth of the Northern Mariana Islands Department of Lands and Natural Resources to Conduct Research on Listed Sea Turtles

[2013]

A supplement to the 2012 EA entitled "*Environmental Assessment and Supplemental Environmental Assessment on the Effects of Issuing a Permit and Permit Modification for Scientific Research on Protected Sea Turtles in the Western Pacific Ocean*"

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Abstract: The National Marine Fisheries Service (NMFS) proposes to issue a modification to a research permit to the Commonwealth of the Northern Mariana Islands, Division of Fish and Wildlife, Department of Lands and Natural Resources (Responsible Party: Arnold Palacios), for takes of threatened green (*Chelonia mydas*) and endangered hawksbill (*Eretmochelys imbricata*) sea turtles in the wild, pursuant to the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. §§ 1531 *et seq.*). The modification would be valid through January 31, 2017.

The original objectives of the sea turtle research would remain unchanged: to characterize population structure, size class composition, foraging ecology, and migration patterns for green and hawksbill sea turtles in the Northern Mariana Islands (NMI) to identify potential conservation or critical habitat areas for immature and adult sea turtles in nearshore waters. Authorized research consists of counts and hand captures of sea turtles during vessel surveys. Captured sea turtles may be measured, weighed, flipper and passive integrated transponder tagged, temporarily marked, tissue sampled, photographed, and released. A subset of the turtles may be satellite tagged before release and then tracked from the vessel. Sea turtle carcasses, tissues, or parts may be opportunistically salvaged each year.

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The permit would be modified to authorize blood and scute sampling of a subset of captured sea turtles to address a new objective: to analyze a broad suite of environmental pollutants that may be threatening the health of sea turtles in the NMI. All other research objectives, capture methods, take numbers, action area, and activities would remain unchanged. The data generated by the permit modification would help determine the movement and habitat use of green and hawksbill sea turtles found in the waters of the action area. Moreover, this data would provide information that could help with the management, conservation, and recovery of these listed species.

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CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

1.1 DESCRIPTION OF ACTION

The National Marine Fisheries Service (NMFS), Office of Protected Resources (NMFS PR) proposes to issue a modification of Permit No. 15661 to the Commonwealth of the Northern Mariana Islands (CNMI), Division of Fish and Wildlife, Department of Lands and Natural Resources (Responsible Party: Arnold Palacios), under Section 10(a)(1)(A) of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. §§ 1531 *et seq.*), and the regulations governing the taking, importing, and exporting of endangered and threatened species (50 CFR §§ 222-226). This modification would be valid through January 31, 2017.

1.1.1 BACKGROUND

In response to the receipt of an application for a modification from the CNMI Department of Lands and Natural Resources, NMFS PR proposes to issue a modification to scientific research Permit No. 15661 to include "takes"[1] of green and hawksbill sea turtles pursuant to the ESA and NMFS' implementing regulations. This document supplements the 2012 EA entitled "*Environmental Assessment and Supplemental Environmental Assessment on the Effects of Issuing a Permit and Permit Modification for Scientific Research on Protected Sea Turtles in the Western Pacific Ocean*" (NMFS 2012).

The applicant's permit currently authorizes counts and hand captures of hawksbill and green sea turtles during vessel surveys in the Northern Mariana Islands (NMI). Up to 300 green and 50 hawksbill sea turtles may be captured, measured, weighed, flipper and passive integrated transponder (PIT) tagged, temporarily carapace marked, tissue sampled, photographed, and released. A subset of the turtles may be satellite tagged before release and then tracked from the vessel. Sea turtle carcasses, tissues or parts may be opportunistically salvaged each year.

1.1.2 PURPOSE AND NEED

The primary purpose of the permit is to provide an exemption from the ESA take prohibitions by allowing "take" of listed sea turtle species for bona fide scientific research. The need for issuance of the permit is related to NMFS's mandates under the ESA, specifically, the responsibility 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 very specific exceptions, including for scientific research and enhancement purposes. Permit issuance criteria require the authorized research activities be conducted consistently with the purposes and policies of the ESA and to not have a significant adverse impact on the species. NMFS reviewed the proposed action to issue a permit modification and determined the proposed activities fulfill the ESA's permit issuance criteria.

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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."

1.1.3 Objectives of the Research

The original objectives of the permit would remain in place: to characterize population structure, size class composition, foraging ecology, and migration patterns for green and hawksbill sea turtles in the NMI. Under the proposed modification, the applicant is adding a new objective to the permit. The objective of the proposed project is to analyze and identify the environmental pollutants that may be threatening the health of sea turtles in the NMI. To accomplish this, the applicant is now requesting the addition of two sampling activities to the permit: blood and scute sampling of green and hawksbill sea turtles. All other aspects of the currently permitted activity—the action area, capture methods, activities, and other research objectives—would remain the same.

The applicant is currently authorized for green and hawksbill sea turtle takes under Permit No. 15661. Sea turtles are captured by hand or dip net; carapace marked; PIT tagged; flipper tagged; measured; weighed; tissue sampled; and released. Under the proposed modification, the applicant also would take blood and scute samples from a subset of already captured sea turtles, and provide these samples to the National Institute of Standards and Technology for analysis.

1.2 OTHER EAs/EISs INFLUENCING THE SCOPE OF THIS SEA

An EA was prepared for issuance of the original Permit No. 15661 which determined that issuance of the permit and the associated research would not result in significant impacts to any portion of the human environment (NMFS 2012).

Because the proposed action would not change the nature or location of the research activities, the effects on the physical, social, and economic environment are not re-examined in this SEA. The modification would authorize additional research activities on green and hawksbill sea turtles; therefore, the scope of this SEA is limited to the potential impacts to on the sea turtles which are the subject of the permit.

1.3 SCOPING SUMMARY

The purpose of scoping is to identify the issues to be addressed and the significant issues related to the proposed permit modification, as well as identify and eliminate from detailed study the issues not significant or those having been covered by prior environmental review. An additional purpose of the scoping process is to identify the concerns of the affected public and Federal agencies, states, and Indian tribes. CEQ regulations implementing the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. §§ 4321 *et seq.*) do not require that a draft SEA be made available for public comment as part of the scoping process.

A Notice of Receipt of the application was published in the *Federal Register*, announcing the availability of the permit application and related documents for public comment (File No. 15661; June 25, 2013; 78 FR 38013). No comments were received from the public regarding this application.

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

This section has not changed from that described in the 2012 EA. Applicable laws include NEPA and ESA.

CHAPTER 2: ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 ALTERNATIVE 1 – NO ACTION

Under the No Action alternative, a modification to scientific research Permit No. 15661 to add blood and scute sampling to the permit would not be issued. The existing permit would remain in effect through expiration, allowing research to continue as originally authorized. The applicant is currently authorized to count and survey; capture by free-diving or SCUBA hand-capture; weigh; measure; tissue sample; flipper and PIT tag; and temporarily carapace mark up to 300 green and 50 hawksbill adult, sub-adult and juvenile sea turtles annually. The applicant also is currently authorized to attach an acoustic transmitter tag with epoxy to up to 15 green and 5 hawksbill sea turtles annually. These devices may be removed in the event the turtle is recaptured. The current permit also authorizes the salvage of green and hawksbill sea turtle carcasses that are found opportunistically.

2.2 ALTERNATIVE 2 – PROPOSED ACTION

Under the Proposed Action alternative, a permit modification would be issued for research activities having terms and conditions standard to such permits as issued by NMFS.

The applicant is requesting the addition of blood and scute sampling to the permit, so that an analysis of the extent of contamination from environmental pollutants in NMI sea turtles may be examined. The applicant is requesting to blood and scute sample a subset of the sea turtles captured for activities already authorized. All other aspects of the currently permitted activities would remain the same.

2.3 DESCRIPTION OF THE PROPOSED ACTION

2.3.1 Boundaries of Action Area

The action area is defined in 50 CFR § 402.02 as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The description of the action area therefore includes the areas affected by sampling activities as well as the area transited by project vessels.

Under the proposed modification, the action area would remain the same. Sampling would continue to occur in the nearshore waters of the NMI. Activities would continue to occur around the islands of Saipan, Tinian, Guam, and Rota. Sampling would also include Aguigan, Farallon de Medinilla, Anatahan, Sarigan, Guguan, Alamagan, Pagan, Agrihan, Asuncion, Uracas, and Maug should the opportunity arise.

2.3.2 *Request for Blood and Scute Sampling*

The research protocols are described in detail in the application on file for this action and are briefly summarized here. The applicant requests blood and scute sampling of up to 20 green and 15 hawksbill sea turtles annually as shown in Table 1. The overall number of sea turtle takes would remain the same; the number of green and hawksbill sea turtles slated for the blood and scute sampling would now be a second subset of the 300 green and 50 hawksbill sea turtles already authorized for capture.

Sampling would continue to occur year round during CNMI surveys. Areas for sampling would continue to be those in the original permit. Upon capture, turtles would be identified to species, weighed, measured, tissue sampled, flipper and PIT tagged, temporarily carapace marked, blood and scute sampled, and released. Estimated additional time to conduct the blood and scute sampling would be minimal (less than 15 minutes).

Table 1: Proposed annual takes of juvenile, sub-adult, and adult green and hawksbill sea turtles for Permit No. 15661-01. Proposed changes are in bold.

No. Turtles	Sea Turtle Species	Collection Method	Take Activity
265	Green	Hand Capture	Count/survey, measure, Mark, carapace (temporary), weigh, flipper tag, PIT tag, tissue sample, photograph/video, and release
15	Green	Hand Capture	Count/survey, measure, Mark, carapace (temporary), weigh, flipper tag, PIT tag, tissue sample, photograph/video, Instrument, epoxy attachment (e.g., satellite, VHF tag), gear removal if recaptured, transport, release and tracking
20	**Green**	**Hand Capture**	**Count/survey, measure, Mark, carapace (temporary), weigh, flipper tag, PIT tag, tissue sample, blood sample, scute scraping, photograph/video, and release**
30	Hawksbill	Hand Capture	Count/survey, measure, Mark, carapace (temporary), weigh, flipper tag, PIT tag, tissue sample, photograph/video, and release
5	Hawksbill	Hand Capture	Count/survey, measure, Mark, carapace (temporary), weigh, flipper tag, PIT tag, tissue sample, photograph/video, Instrument, epoxy attachment (e.g., satellite, VHF tag), gear removal if recaptured, transport, release and tracking
15	**Hawksbill**	**Hand Capture**	**Count/survey, measure, Mark, carapace (temporary), weigh, flipper tag, PIT tag, tissue sample, blood sample, scute scraping, photograph/video, and release**
5	Green	Hand Capture	Salvage of carcass, tissue and parts from dead animals
5	Hawksbill	Hand Capture	Salvage of carcass, tissue and parts from dead animals

CHAPTER 3: AFFECTED ENVIRONMENT

The affected physical environment would not change as a result of the proposed action and would remain as previously described in the 2012 EA. Research is authorized to occur in the nearshore waters of the NMI. The modification proposed in this SEA is not expected to impact the physical environment in ways that have not previously been analyzed. The affected biological environment has not changed since the writing of the 2012 EA; the 2012 EA is incorporated by reference.

Because the Proposed Action involves sea turtles that would already be authorized for capture, the affected environment is limited to the biological environment, essentially, the target sea turtles.

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

This chapter represents the scientific and analytical 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

Under the No Action alternative, the take activities would continue as currently authorized under the existing permit. Based on the analyses in the 2012 EA, NMFS determined issuance of the permit and conduct of the associated research would not likely jeopardize the continued existence of hawksbill or green sea turtles or any other non-target species. Additionally, the activities conducted under the permit were not expected to significantly affect any other portions of the environment (NMFS 2012).

4.2 EFFECTS OF ALTERNATIVE 2 – PROPOSED ACTION

Any impacts of the Proposed Action alternative would be limited to the target species and would not affect the physical or socioeconomic environment or pose a risk to public health and safety in any way not already analyzed in the EA (NMFS 2012) previously prepared for this permit. The following discussion assesses the effects of directed take activities on green and hawksbill sea turtles.

4.2.1 EFFECTS OF PROPOSED ADDITIONAL SAMPLING ACTIVITIES

Modification of Permit No. 15661 would allow the applicant to collect blood samples and scute scrapings from 20 green and 15 hawksbill sea turtles already captured annually. The permit modification would contain conditions specific to each activity to mitigate adverse impacts to sea turtles.

Given that 1) the environmental consequences to the biological environment for currently authorized research activities have not changed from how they were described in the 2012 EA and 2) the impacts of the proposed activities are not expected to rise to impacts at the population or species level, the following discussion focuses on the effects of research

activities that would be new to the permit and the resulting increase in activities on the target animals.

Blood Sampling

Blood sampling is expected to result in minimal impacts to the target animals. NMFS does not expect that individual turtles would experience more than short-term stress. Taking a blood sample from the dorsal side of the neck is a routine procedure when conducted by trained personnel following proper guidelines (Owens 1999). According to Owens (1999), with practice it is possible to obtain a blood sample 95 percent of the time, and the sample collection time should take about 30 seconds. Sample collection sites would always be disinfected prior to sampling with alcohol or other antiseptics. The permit would be conditioned to limit blood sample volume to a conservative amount based on the size of the turtle captured. Blood hormones and heart rate have been measured in animals that have had blood drawn from them and no stress has been observed. Bjorndal et al. (2010) investigated the effects of repeated skin, blood, and scute sampling on juvenile loggerhead growth. Turtles were sampled for each tissue type three times over a 120-day period. The authors found that repeated sampling had no effect on growth rates; growth rates of sampled turtles were not significantly different from control animals. Turtles exhibited rapid healing at the sampling site with no infection or scarring. Further, all turtles increased in body mass during the study indicating that sampling did not have a negative impact on growth or weight gain. The authors concluded that the sampling did not adversely impact turtle physiology or health (Bjorndal et al. 2010).

Scute Sampling

Scute sampling is a minimally invasive procedure that involves collecting a small amount of keratin from the outermost edge of the marginal scutes of the carapace, or turtle shell. Because the keratin layer has no nerve endings or blood vessels, scute scraping would not be expected to result in bleeding, discomfort, or pain to the turtle. NMFS does not expect that individual turtles would experience more than short-term stress during scute sampling. Impacts would be negligible to the animal with the scute growing back over time.

NMFS does not expect the proposed additional activities to result in significant adverse effects of the target sea turtles. NMFS finds that the adverse effects of these directed research activities on green and hawksbill sea turtles will be minimal and short in duration (NMFS 2013). The number of total captures would remain the same in the proposed action as is currently authorized by the permit. Moreover, the NMFS biological opinion prepared in accordance with the ESA for the issuance of the proposed modification concluded that the additional sampling activities would not reduce the likelihood of the survival and recovery of the affected sea turtle populations in the wild and would not likely jeopardize the continued existence of green and hawksbill sea turtles (NMFS 2013). Therefore, the Proposed Action would result in no more than minimal impacts to the target sea turtles when added to the other currently authorized activities.

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

As summarized below, NMFS 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 modification would be consistent with the ESA. Issuance of this modified permit, however, would not relieve the Permit Holder of the responsibility to comply with any other Federal, State, local, or international laws.

4.3.1 Compliance with The Endangered Species Act

The consultation process under section 7 of the ESA was concluded after close of the comment period on the application for File No. 15661-01 to ensure that no relevant issues or information were 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.

After reviewing the current status of endangered hawksbill and threatened green sea turtles, the environmental baseline for the action area, the effects of the proposed research program, and the cumulative effects, NMFS' biological opinion is that issuance of this permit modification would not likely jeopardize the continued existence of the hawksbill or green sea turtles, nor would it be likely to destroy or adversely modify any of its designated critical habitat.

4.4 COMPARISON OF ALTERNATIVES

The No Action alternative would not allow any aspects of the proposed modification to be authorized. The research would continue as currently authorized. This alternative would not result in any significant impacts to the social, economic, biological, or physical environment; however, the opportunity to gather additional information that would aid in the conservation and management of listed sea turtles would be lost.

The Proposed Action alternative would authorize blood and scute sampling of a subset of the green and hawksbill sea turtles that are already captured for research purposes. Although this alternative would result in impacts to the individual sea turtles sampled, no other aspects of the environment are expected to be affected. The mitigation measures proposed in the original permit would be used to guard against any significant effects to the species and population.

4.5 MITIGATION MEASURES

The current mitigation measures contained in Permit No. 15661 are intended to minimize the potential for adverse effects on green and hawksbill sea turtles. The modification to Permit No. 15661, if approved, would require the Permit Holder to adhere to permit conditions 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 of the mitigation measures in the current permit would remain in effect. In addition, conditions would be added to the permit to minimize potential impacts from blood sampling such as limiting the volume of blood collected and frequency of sampling.

4.6 UNAVOIDABLE ADVERSE EFFECTS

Because the research involves wild animals that are not accustomed to being captured, 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. Because 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 2012 EA, which is hereby incorporated by reference.

4.7 CUMULATIVE EFFECTS

A cumulative effects analysis for research permit No. 15661 is included in the original 2012 EA and discusses the past, present, and reasonably foreseeable future actions that may impact the affected environment of the action area. The 2012 cumulative impacts analysis, which is incorporated by reference, concluded that the cumulative impacts on listed sea turtles are not significant. To determine whether Permit No. 15661-01 would result in significant cumulative impacts, the 2012 analysis is summarized here, as well as the impacts of the reasonably foreseeable future actions that were not included in the 2012 analysis.

Other than the applicant's current permit (No. 15661), only one NMFS research permit (No. 17022) currently authorizes take of the target species in the NMI. Permit No. 17022 is held by the NMFS Pacific Islands Fisheries Science Center (PIFSC) and authorizes research on sea turtles throughout most of the Central Pacific U.S. territories and islands and thus their work is not concentrated solely at the NMI. Given the NMI's remote location in the Pacific Ocean, PIFSC's work would be limited and may not occur every year based on resource availability (e.g., ship time) and funding; further, PIFSC surveys would be well coordinated with the applicant so that their work does not overlap in time and space. Two other research permits (Nos. 15685 and 14381) authorize take of these species in the Hawaiian Islands. However, not enough information is available to determine whether sea turtle populations at each site are distinct. Even if the CNMI researchers are able to target the same animals as other Permit Holders in the Pacific, NMFS would not expect cumulative impacts because effects of routine research activities, including capture, minimally invasive sampling and tagging of sea turtles, authorized by these permits would dissipate within a day as previously discussed before they are likely to be targeted by other researchers. Moreover, researchers working under NMFS permits are required to notify the appropriate NMFS Regional Office in advance of field work. The Pacific Islands Regional Office is tasked with coordinating activities under multiple permits for the action area to ensure there is not unnecessary duplication of research.

There are no actions in the foreseeable future that are directed on the target species that were not considered in the 2012 EA. The Office of Protected Resources has not received any permit requests for research in the action area on the target sea turtle species or other listed species. NMFS believes that the proposed modification to research permit No. 15661 would not result in significant cumulative effects. The proposed action is directed at specific green and hawksbill sea turtles and as modified would also not have a significant cumulative impact on non-target species encountered or on the physical environment in the proposed action area. Further, as informed by the Biological Opinion for this action, issuance of this modification is not likely to jeopardize the continued existence of endangered sea turtles, their critical habitat, or of other listed species.

Overall, the Proposed Action would not be expected to have more than short-term effects on endangered and threatened sea turtles species. 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 proposed action 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.

CHAPTER 5 LIST OF PREPARERS AND AGENCIES CONSULTED

This SEA was prepared by NMFS' Office of Protected Resources in Silver Spring, MD. No other agencies were consulted in the preparation of this document.

LITERATURE CITED

Bjorndal, K.A., K.J. Reich, and A.B. Bolten. 2010. Effect of repeated tissue sampling on growth rates of juvenile loggerhead turtles *Caretta caretta*. Diseases of Aquatic Organisms 88:271-273.

NMFS 2012. Environmental Assessment and Supplemental Environmental Assessment on the Effects of Issuing a Permit and Permit Modification for Scientific Research on Protected Sea Turtles in the Western Pacific Ocean. Silver Spring, MD.

NMFS 2013. Biological opinion on the proposal to issue modification to Permit No. 15661 to Arnold Palacios of the Commonwealth of the Northern Mariana Islands (CNMI) Division of Fish and Wildlife for research on green and hawksbill sea turtles in the CNMI, pursuant to section 10 (a)(1)(A) of the Endangered Species Act of 1973. Silver Spring, MD.

Owens, D.W. 1999. Reproductive Cycles and Endocrinology in Research and Management Techniques for the Conservation of Sea Turtles. K. L. Eckert, K. A. Bjourndal, F. A. Abreu-Grobois and M. Donnelly (editors). IUCN/SSC Marine Turtle Specialist Group Publication No 4, 1999.