

Threatened Species Permit Application
Attachments to Form 3-200

Submitted by: George H. Balazs
Hawaii Institute of Marine Biology
University of Hawaii
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Telephone (808) 247-6631

17.32 (a)

1. Adult and immature Hawaiian green turtles (*Chelonia mydas*) will at various times be observed, tagged, measured, sampled for dietary constituents, and affixed with instrumentation for short periods in conjunction with ongoing life history research conducted by the applicant.

2. Research activities will encompass green turtles in the wild which are: nesting in the vegetation zone; basking along the shoreline; foraging in inshore waters; and resting in underwater habitat. Turtles will at times be retained for up to 30 minutes in order to conduct the necessary research activities. Dead specimens which may be found will be salvaged for laboratory analyses of gastrointestinal contents and morphology.

8 (i) (ii) The applicant has been professionally involved in the research and conservation of Hawaiian sea turtles since 1972. He is a member of the Marine Turtle Specialist Group of the International Union for Conservation of Nature (IUCN). The research program currently under the applicant's full time direction involves the following principal components: (1) definition of the ecological characteristics of the breeding colony at French Frigate Shoals (23°45'N, 166°10'W); (2) identification and analysis of major aggregations of foraging turtles throughout the Hawaiian Archipelago; (3) determination of food sources used at the various inshore pastures; (4) determination of the rates of growth of immature turtles; (5) determination of the migratory patterns of both

adult and immature turtles; (6) identification of mortality factors that limit the population; (7) delineation of marine and terrestrial habitats critical to the population's continued survival; and (8) investigation of the thermal ecology of the unique land basking behavior exhibited by certain Hawaiian green turtles. The long term identification of individual turtles of both sexes by continued capture, tagging and recapture is basic to the research program. Prior to 1973, personnel of the Fish and Wildlife Service tagged approximately 800 turtles in the Northwestern Hawaiian Islands. The applicant has monitored peak periods of reproduction at French Frigate Shoals during each year since 1973.

Components 1-7 of the applicant's research program are being conducted with grants from the State of Hawaii, Office of the Marine Affairs Coordinator, and the Sea Grant College Program of the University of Hawaii. Component 8 is being conducted in collaboration with a co-investigator, Dr. G. Causey Whitton (Kewalo Marine Laboratory, University of Hawaii), with a grant from the National Geographic Society.

Details of the specific activities carried out are provided as follows:

TAGGING - Corrosion resistant tags specially manufactured from Inconel alloy 625 by the National Band and Tag Company (Newport, Kentucky) are being applied to the trailing edges of the turtles' front flippers. These tags weigh 3.5 grams each and have been successfully used on all sizes of turtles 6 kg and larger.

CAPTURE - Tagging and tag recovery on the nesting beaches take place following natural egg deposition and nest covering. Tagging and tag recovery of baskers take place by the applicant approaching the turtles from behind with a low profile to avoid undue disturbance. Tagging and tag recovery of

turtles in the water take place through capture by: (1) hand, using Scuba; (2) long handled scoop nets from shore or from a small boat; and (3) large mesh tangle nets set at appropriate locations only in waters adjacent to the main Hawaiian Islands (Hawaii, Maui, Kahoolawe, Lanai, Molokai, Oahu, Kauai, Niihau). The nets are carefully monitored by the applicant in order to prevent injury or undue stress to turtles.

MEASUREMENTS - Carapace and other standard body measurements are recorded for the appropriate turtles using a flexible tape and calipers.

SAMPLING OF DIETARY CONSTITUENTS - Food sources utilized by green turtles are determined through two noninjurious sampling techniques. These are: (1) the recovery of food items directly from the mouths of turtles that are captured while actively engaged in feeding; and (2) the sampling of stomach contents using a lubricated small diameter plastic tube that is inserted down the esophagus and moderately aspirated. Turtles sampled by this procedure have exhibited no adverse affects, with recaptures being made after periods of up to 13 months in the wild.

FIELD OBSERVATIONS - Direct behavioral observations are carried out on turtles present on land, at the ocean's surface, and while underwater. In conjunction with research of the thermal ecology of basking turtles, carapace and skin temperatures of baskers are being obtained in a non-disturbing manner using a hand-held radiometer. The internal body temperatures of ten previously tagged turtles at French Frigate Shoals are being sampled under differing environmental conditions using a telethermometer fitted with a flexible probe that can be inserted for short periods into the cloaca.

SHORT-TERM AFFIXED INSTRUMENTATION - Depth gauges 8 cm in diameter weighing 0.3 kg are scheduled to be affixed to 5 turtles 50 kg and larger for periods ranging up to 20 days in the wild in order to gather data on habitat utilization. Each gauge will be temporarily secured to a turtle's carapace by drilling four small holes through the 10th and 11th marginal scutes passing to the ventral surface. Similar holes formed in captive reared turtles by the applicant have not resulted in any adverse affects. The gauges will be permanently removed from the turtles during subsequent predictable periods on land while engaged in basking or nesting.

8 (iii) The research activities of the applicant are being conducted to further man's scientific knowledge of the green turtle, and to enhance the species' survival through the development of soundly based programs for conservation and management.



UNITED STATES DEPARTMENT OF THE INTERIOR
~~BUREAU OF SPORT FISHERIES AND WILDLIFE~~
 U.S. Fish and Wildlife Service
 Hawaiian Islands National Wildlife Refuge
SPECIAL USE PERMIT

Permit number HWN-12-76	Sta. No. to be credited 12 521
Contract number N.A.	
Date December 21, 1976	

Permittee (Name and address)
 Mr. George H. Balazs (Principal Investigator)
 Hawaii Institute of Marine Biology
 University of Hawaii, P.O. Box 1346
 Kaneohe, Hawaii 96744

Period of use (inclusive)
 From January 1, 1977
 To See Special Conditions 3

Purpose (Specify in detail privilege requested, or units of products involved)
 To continue the green sea turtle population dynamics study that has been conducted for the past 3 years per study outlines dated February 24, 1975 and October 16, 1975. Said study to be further continued as per attached study outline dated November 26, 1976.

Description (Specify unit numbers, notes and bounds, or other recognizable designations)
 Hawaiian Islands National Wildlife Refuge - all units.

Amount of fee \$ none If not a fixed fee payment, specify rate and unit of charge: _____

- Full payment
- Partial payment - Balance of payments to be made as follows:

Record of Payments
 N.A.

- Special Conditions
1. This permit is only for the study of the green sea turtle per the attached study outline dated November 26, 1976 and only in the areas listed under "Description." Entry onto the islands is limited to the permittee and his designated assistant.
 2. Permission is hereby granted to Mr. Alan H. Kam to accompany Mr. Balazs as a research assistant on all refuge units during the study. He will be accountable to Mr. Balazs and the Refuge Manager for compliance with all refuge rules and conditions of this permit and attached study outline.
 3. The period of use of this permit shall be from January 1, 1977 to December 31, 1979 or to the date that the green sea turtle is included on the official Endangered Species List if such listing occurs prior to December 31, 1979. Upon official listing, this permit is void until and unless the permit required under the Endangered Species Act
- continued on page 2

This permit is issued by the Bureau of Sport Fisheries and Wildlife, and accepted by the undersigned, subject to the terms, covenants, obligations, and reservations, expressed or implied therein, and to the conditions and requirements appearing on the reverse side.

Permittee (Signature) <i>George H. Balazs</i> George H. Balazs	Issuing Officer (Signature and Title) <i>Palmer C. Sekora</i> Palmer C. Sekora, Refuge Manager
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Mr. George H. Balazs

HWN-12-76

December 21, 1976

continued from page 1

Special Conditions

of 1973 is obtained.

4. All operations and activities of the permittee and his assistant are subject to all Federal laws, rules, and regulations governing National Wildlife Refuges (50 CFR).
5. The taking of any animal, vegetable, or mineral matter except as authorized in writing by the Refuge Manager or by this Special Use Permit (and Endangered Species permit if applicable) is prohibited on all refuge units. Disturbance to any wildlife except as outlined in the study outline is also prohibited. Seabird nesting colonies will be avoided.
6. All clothing, gear, and materials taken onto each island must be inspected and found to be free of foreign plants, seeds, animals, and insects prior to entry onto the island.
7. The permittee will be responsible for removing all trash and refuse resulting from his activities. No trash or pollutants of any kind will be dumped into adjacent waters.
8. The permittee shall protect, maintain, and keep in good order the premises and/or facilities occupied under this agreement.
9. Monk Seal Restrictions: Minimum distances of 50 feet from all monk seals and 100 feet from females with pups or breeding pairs must be maintained. No harassment of any kind is allowed. Since this permit allows permittee entrance during the pupping season to critical pupping areas, extreme care must be taken to avoid disturbance to the monk seal. Turtle research activities which cause disturbance to the seals will be terminated or delayed by the permittee until such time as the possibilities of disturbance have passed.
10. The permittee will furnish the Refuge Manager with copies of all reports resulting from his investigations as listed in the study outline.
1. On certain islands further restrictions will be in effect as outlined below:
 - a. Laysan Island: The permittee will have no need to traverse the interior portions of the island except when en route to and from the eastern shore. Travel through the interior portions of the island will be restricted to designated trails as delineated by the Refuge Manager or his designated representative. Any campsites will be limited to the area of the ironwood tree on the western shore of the island.
 - b. Pearl and Hermes Reef: The campsite will be restricted to Southeast Island to a spot near the southeast landing site as designated by the Refuge Manager or his representative.
 - c. French Frigate Shoals: The permittee and his research assistant may utilize the FWS boat and the FWS lab and quarters at the main headquarters building on Tern Island.

Permittee (signature)

George H. Balazs
George H. Balazs

Issuing Officer (signature and title)

Palmer C. Sekora
Palmer C. Sekora, Refuge Manager

State of Hawaii
Department of Land & Natural Resources
Division of Fish and Game
1151 Punchbowl Street
Honolulu, Hawaii 96813

Permit No. 79-13
Date of Issue: 08/01/78
Expiration Date: 06/30/79

AUG 17 1978

SCIENTIFIC COLLECTING PERMIT

The Board of Land and Natural Resources hereby grants permission under the authority of Section 187-4, Hawaii Revised Statutes and all other applicable laws, to: (name, title, affiliation and address of permittee)

Assistant
George H. Balazs, ~~Xxxxx~~ Marine Biologist
Hawaii Institute of Marine Biology
University of Hawaii
P. O. Box 1346
Kaneohe, Hawaii 96744

(and designated assistant listed on Attachment No. 1, page 5 of this permit)

to ~~(take, catch, possess, ~~store~~~~, transport) for the purpose of conducting life history studies on the green sea (Chelonia sp.) and hawksbill sea (Eretmochelys sp.) turtles in the Hawaiian Archipelago

the following ~~(birds, mammals, aquatic)~~ life:

Common Name	Scientific Name	No. of Specimens	Collection Location
*Green sea turtle	<u>Chelonia sp.</u>	As may be captured by methods allowed in Special Conditions section, page 3 of this permit	State waters, except as prohibited in Special Conditions section, page 3 of this permit
**Hawksbill sea turtle	<u>Eretmochelys sp.</u>		

NOTE: *With appropriate Federal permit that may be required if placed on the threatened list during the effective period of this permit.
**With appropriate Federal permit only.

subject to the following conditions:

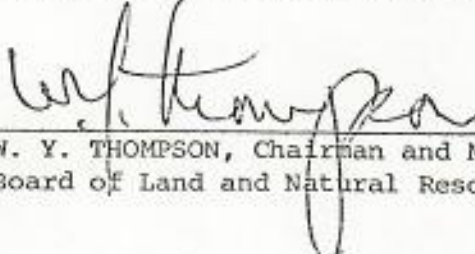
I. GENERAL CONDITIONS:

- A. 1. This permit is non-transferable or assignable; a copy must be carried by the permittee(s) while engaged in activities permitted under this permit.

2. Each permittee is individually responsible and accountable for his or her actions under this permit.
- B. This permit only authorizes the permittee to conduct collecting activities under the control of the Division of Fish and Game, Department of Land and Natural Resources (DLNR), and requires that the permittee obtain prior approval from all others involved, including other Divisions of the DLNR, private landowners, tenants, and County, State and Federal agencies.
 - C. This permit does not in any way make the Board of Land and Natural Resources of the State of Hawaii liable for any claims of personal injury or property damage to the permittee(s) or his party which may occur while engaged in activities permitted under this permit; further, the permittee(s) agrees to hold the State harmless against any claim of personal injury, death or property damage resulting from the activities of the permittee(s).
 - D. This permit is valid for species protected by federal law only if accompanied by proper federal permit and listed on page 1 of this permit.
 - E. The permittee shall return this permit with a complete report of all collecting done under this permit to the Division of Fish and Game no later than one month after the expiration date (attached).
 - F. This permit shall become valid upon completion of the following:
 1. All persons whose names are listed in Attachment 1, which is attached hereto and made a part of this permit, have read this permit in-toto and acknowledge understanding and agreement to abide by the conditions by signing (affixing his or her signature) in the space provided on the original and duplicate copies.
 2. Both copies of the signed permit must be returned to the Division of Fish and Game. Upon complete execution of the permit, a copy will be returned to the applicant.
 - G. Any person violating any of the conditions stipulated under this permit shall be subject to the penalty provisions provided by law. Further, any infractions of this permit may be cause for denial of future permit requests.
 - H. The permittee shall provide copies of all published reports of the study to the Division of Fish and Game. Permittee shall also provide or make available for inspection any raw data that may be obtained under this permit when requested by the Division.

II. SPECIAL CONDITIONS

1. This permit authorizes the permittee and designated assistant only to capture green sea turtles (Chelonia sp.) and hawksbill sea turtles (Eretmochelys sp.) using hand or scoop nets in a non-injurious manner only in the waters of the State except at the following prohibited locations: Oahu - Hanauma Bay Marine Life Conservation District, Ala Wai and Kapalama Canals, Heeia Kea Wharf, Pokai Bay, Haleiwa Harbor, and Waikiki-Diamond Head Fishery Management Area; Hawaii - Kealahou Bay Marine Life Conservation District and Kailua Bay; Maui - Ahihi-Kinau Natural Area Reserve and Molokini Shoal Marine Life Conservation District; Lanai - Manele-Hulopoe Marine Life Conservation District; Kauai - Kapaa and Waikaena Canals; and any other area that may be designated as a Marine Life Conservation District, Natural Area Reserve, Marine Refuge or Fisheries Management Area during the effective period of this permit. Discretion should be used to avoid conflict with fishermen or others during collecting activities at any location
2. The permittee and designated assistant will also be allowed to use large mesh nets to capture the turtles providing that a list of locations are provided to the Division of Fish and Game for approval and attached to this permit as an Amendment. (Attachment #2)
3. Following the capture of the turtles, the collection of the required data and the affixing of the identification tags, all captured turtles will be returned to the wild.
4. This permit does not by implication authorize the permittee and designated assistant to engage in any activity if they are in violation of other State, Federal or County laws, regulations or ordinances. The permittee shall obtain all necessary Federal permits and/or authorizations required for entry into Federal property and for the capturing of hawksbill sea turtles (protected species), and provide copies to the Division of Fish and Game prior to initiating any activities authorized under this permit. The permittee shall immediately suspend all activities related to the green sea turtle if such species is placed on the threatened list and may not initiate further activities unless the applicable Federal permit is obtained and a copy provided to the Division of Fish and Game.
5. The permittee or designated assistant shall notify the Enforcement Branch of the Division of Fish and Game at least 48 hours in advance of any field collecting activity and provide such information as date, time, location, method to be used and names of persons to be involved (Telephone: Honolulu - 548-5918, 548-3966 or 548-5919; or any of the District offices located on Hawaii, Maui or Kauai).
6. The permittee shall provide the Director of the Division of Fish and Game all reports and/or findings of the study.


 W. Y. THOMPSON, Chairman and Member
 Board of Land and Natural Resources

cc: Enforcement Branch
 Fisheries Branch
 Wildlife Branch
 Special Agent in Charge,
 USFWS, Honolulu
 H. Hanson, USFWS

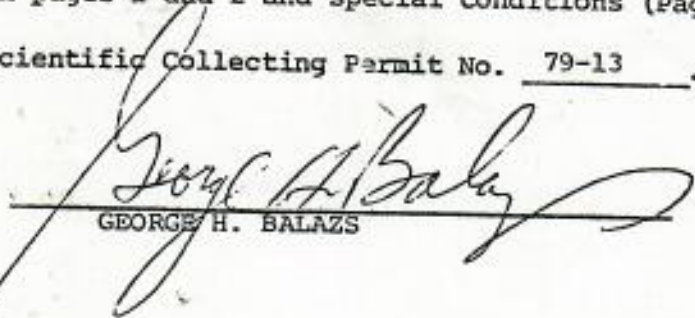
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Attachment No. 1 to Scientific Collecting Permit No. 79-13

Principal Permittee: George H. Balazs

The undersigned have read, understand and hereby agree to abide by the general conditions stipulated on pages 1 and 2 and special conditions (Page 3) No(s) _____

-1,2,3,4,5,6- in Scientific Collecting Permit No. 79-13



GEORGE H. BALAZS

DESIGNATED ASSISTANT:



ALAN K. H. KAM

Attachment No. 2 to Scientific Collecting Permit No. 79-13

Principal Permittee: George H. Balazs

Approved locations for using large mesh nets to capture turtles. (Please use discretion to avoid user conflicts with fishermen or others.)

Kaneohe Bay, Ahu O Laka Island
Mokuleia
Barbers Point (adjacent to USCG Air Station)
Bellows Beach
Kawela Bay

Kaalualu Bay, Island of Hawaii
Punaluu Bay, Island of Hawaii
Kiholo Bay, Island of Hawaii

Paia, Maui

Smuggler's Cove, Kahoolawe