



## IMPORT/EXPORT/RE-EXPORT OF BIOLOGICAL SPECIMENS (CITES/ESA) FOR SCIENTIFIC RESEARCH



☐ New ☐ Reissue/Renew ☐ Amendment

Complete Sections **A** or **B**, and C, D, and E of this application. U.S. address may be required in Section C.\*\*

<b>A. Complete if applying as an individual</b>				
1.a. Last name		1.b. First name	1.c. Middle name or initial	1.d. Suffix
2. Date of birth (mm/dd/yyyy)	5.a. Telephone number	5.b. Alternate telephone number	6. E-mail address	

<b>B. Complete if applying on behalf of a business, corporation, public agency, Tribe, or institution</b>				
1.a. Name of business, agency, Tribe, or institution			1.b. Doing business as (dba)	
2. Tax identification no.	3.a. Description of business, agency, Tribe, or institution		3.b. Website URL (if applicable)	
4.a. Principal officer (P.O.) last name	4.b. P.O. first name	4.c. P.O. middle initial	4.b. P.O. Title	
5. Primary contact name			6. Primary e-mail address	
7.a. Business telephone number		7.b. Alternate phone no.	8.a. Primary contact telephone no.	

<b>C. All applicants complete address information</b>				
1.a. Physical address (Street address; Apartment #, Suite #, or Room #; no P.O. Boxes)				
1.b. City	1.c. State	1.d. Zip code/Postal code	1.e. County/Province	1.f. Country
2.a. Mailing Address (include if different than physical address; include name of contact person if applicable)				
2.b. City	2.c. State	2.d. Zip code/Postal code	2.e. County/Province	2.f. Country

<b>D. All applicants MUST complete</b>	
1. Include a check or money order, payable to the U.S. FISH AND WILDLIFE SERVICE, a <b>nonrefundable processing fee</b> [50 CFR 13.11(d)(4)]. Federal, Tribal, State, and local government agencies, and those acting on behalf of such agencies, are exempt from the processing fee – <b>attach documentation of fee exempt status as outlined in instructions.</b> (50 CFR 13.11(d))	
2. If you are requesting a reissue/renew/amendment, what is your permit/file number?	
3. Certification: I hereby certify that I have read and am familiar with the regulations contained in Title 50, Part 13 of the Code of Federal Regulations and the other applicable parts in subchapter B of Chapter I of Title 50, and I certify that the information submitted in this application for a permit is complete and accurate to the best of my knowledge and belief. I understand that any false statement herein may subject me to the criminal penalties of 18 U.S.C. 1001.	
The individual/principal officer of the business must print and sign the application. (No photocopied or stamped signatures)	
Date (mm/dd/yyyy)	

\*\* Further instructions for the above application may be found on our ePermits website. See the last page for information on the Privacy Act, Paperwork Reduction Act, Estimated Burden, and Freedom of Information Act aspects of this application form.

Mail your application(s) to Division of Management Authority, Branch of Permits, MS:IA 5275 Leesburg Pike, Falls Church, VA 22041-3803.

## E. IMPORT/EXPORT/RE-EXPORT OF BIOLOGICAL SPECIMENS (CITES/ESA) FOR SCIENTIFIC RESEARCH

### General Information

This application covers activities involving CITES and ESA-listed animal specimens used for scientific research, including any readily recognizable parts, products, or derivatives unless otherwise noted in the Appendices.

Review this application carefully and **provide complete answers to all of the questions**. If you are applying for multiple species, be sure to indicate which species you are addressing in each response. **If more space is needed, attach a separate sheet with your responses numbered according to the questions.**

Please allow at least 90 days for the application to be processed.

### How do I determine whether the species is protected under CITES and/or the ESA?

CITES	ESA
To determine whether an animal species is protected under CITES, when the species was listed, or whether exemptions apply to your requested activity, see the <a href="#">list of CITES species</a>	<p>To determine whether an animal species is protected under the ESA, please review the list of <a href="#">ESA-listed species</a> in the Code of Federal Regulations.</p> <p>Please be aware that any permit request involving an <b>ESA endangered species</b> must be published in the Federal Register for a required 30-day public comment period.</p>

- If applying as an **individual or institution** please note that you will have to pay the appropriate permit fee.
- If applying as an **institution** that is (or is acting) on behalf of a Federal, Tribal, State, and/or local government agency, no permit fee is required. Provide fee exempt documentation with your application materials.
  - The individual signing the permit must have legal authority to do so if applying on behalf of the institution.

### Questions

If you have any questions regarding an action you are requesting authorization for please contact the Division of Management Authority at [managementauthority@fws.gov](mailto:managementauthority@fws.gov).

Please note: for renewal or amendment of a multi-use permit being requested **within the 5 year** Federal Register public notice period, use application [3-200-52](#)

### This form should NOT be used for:

- Captive Bred Wildlife Registration (use application [3-200-41](#))
- ESA Plants (use application [3-200-36](#))

### Electronic Information Submission

Electronic submission of inventories, photographs, and receipts: For hard copy applications, if you wish to provide information electronically, please include a flash drive containing this information with your physical application.

### All Applicants Must Complete

1. Name and address where you wish the permit to be mailed, **if different from physical address**. If you would like expedited shipping, please enclose a self-addressed, pre-paid, computer-generated, courier service airway bill. If unspecified, all documents will be mailed via regular mail through the U.S. Postal Service.
2. Point of contact if we have questions about the application (name, phone number, and email).
3. Have you or any of the owners of the business (if applying as a business, corporation, or institution), been assessed a civil penalty or convicted of any criminal provision of any statute or regulation relating to the activity for which the application is filed; been convicted, or entered a plea of guilty or nolo contendere, for a felony violation of the Lacey Act, the Migratory Bird Treaty Act, or the Bald and Golden Eagle Protection Act; forfeited collateral; OR are currently under charges for any violation of the laws mentioned above?

\_\_\_ No \_\_\_ Yes

If you answered "Yes" to Question 3, provide: a) the individual's name; b) date of charge; c) charge(s); d) location of incident; e) court, and f) action taken for each violation. Please be aware that a "Yes" response does not automatically disqualify you from getting a permit.

### Proposed Activity

- ☐ Import
- ☐ Export
- ☐ Re-export (e.g. export of a specimen that was previously imported into the United States)

4. The **current** location of the samples (if different from the physical address provided):

Name:

Address:

City:

State/Province:

Postal Code:

Country:

5. **Recipient/Sender:**

- If **export or re-export**, provide name and **physical address** of the recipient in the foreign country.
- If **import**, provide name and **physical address** of the exporter/re-exporter in the foreign country.

Name:

Address:

City:

State/Province:

Postal Code:

Country:

6. Information on the type of **biological samples** involved in the import/export/re-export, provide for **each species** (you may use the table located below):

- Scientific name (genus, species, and, if applicable, subspecies);
- Common name;
- Number and type of sample(s) (e.g. 10 blood samples, ear clips, etc.)
- Source (wild or captive-born)
- Approximate date of collection (MM/YYYY)
- Description of packaging (vials, slides, envelopes, etc.)
- Total # of all samples in shipment.

a. Scientific name (genus, species, and, if applicable, subspecies)	b. Common Name	c. Number & type of sample/part	d. Wild or Captive born	e. Approximate date of collection (mm/yyyy)	f. Description of packaging (vials, slides, envelopes, etc)
EXAMPLE: <i>Pan troglodytes</i>	Chimpanzee	10 blood samples; 4 hair samples	W	08/2015	Vial Envelope
				g. TOTAL # of all samples in the shipment:	

### Source of Specimen

7. For **each biological sample taken from a captive-born/captive hatched animal(s)**, provide a signed and dated statement from the breeder or appropriate documentation (e.g. Species 360 report) that includes the following:
- Scientific name (genus, species, and *if applicable*, subspecies),
  - Common name,
  - Name and address of the facility where the animal was bred and born;
  - Birth/hatch date (mm/dd/yyyy),
  - Identification information (studbook #, microchip, leg band, etc.),
  - Name and address of facility where the parental stock is located; and
  - A statement from the breeder that the animal was bred and born at the breeder's facility (including the facility's name and address), and
  - If not the breeder, documentation demonstrating the history of transactions (e.g., chain of custody or ownership of the sample(s), *if applicable*).
8. For **each biological sample taken from an animal in the wild**, provide:
- Scientific name (genus, species, and *if applicable*, subspecies),
  - Common name,
  - Specific location (e.g., county, state, province, country) where the samples were taken from the wild,
  - The name of the individual(s) who collected the animal/samples and their authorization to do so including (but not limited to) copies of foreign and domestic (Federal, State, and/or Tribal) government collecting permits, licenses, contracts, and/or agreements.
  - Method of collection: sampling protocol, approximate length of time held in captivity, any injury and/or mortality experienced during collection, transport, or holding;
  - Information related to any remuneration, either financial or in-kind, provided for acquiring the sample(s);
  - Efforts to use captive specimens (e.g., captive-born, captive-held) in lieu of taking samples from wild animals.
9. For **each biological sample being re-exported** (e.g., exporting a specimen that was previously imported into the United States), provide:
- A copy of the **canceled** CITES export or re-export document issued by the appropriate CITES office in the country from which the wildlife was imported;
  - A copy of your Declaration for Importation or Exportation of Fish or Wildlife (Form 3-177), **cleared** by USFWS Office of Law Enforcement.
  - A copy of the ESA permit that authorized the original import.
  - If you did not make the original import, please provide documentation outlining chain-of-ownership since import, including:
    - A copy of the importer's CITES, ESA, and declaration documents (a, b, & c above) and,
    - Subsequent invoices (or other documentation) showing the history of transactions leading to your ownership of the sample(s) after import (provenance).

### Description and Justification For Requested Activity

10. Describe the purpose of the scientific research and include:
- A copy of the research proposal (outlining the purpose, objectives, methods),
  - How long the research has been (or will be) conducted,

- c. Detailed information on sampling methods including:
  - i. who will be taking the samples
  - ii. equipment and methods used
  - iii. measures taken to prevent injuries and mortalities during collection
- d. A copy of the study's Institutional Animal Care and Use Committee (IACUC) form (*if applicable*),
- e. Peer-reviewed scientific papers published from this research (*if applicable*),
- f. An explanation of whether similar research has already been conducted or is currently being conducted.

11. Please provide a detailed description on how the proposed activities will **enhance or benefit the wild population within its native range** (e.g., direct or indirect **conservation efforts**) and provide documentation (e.g., signed memorandums of understanding) demonstrating your commitment to supporting the program and how the program contributes directly to the species identified in your application.

### Technical Expertise & Authorizations

12. CV or resume outlining the technical experience of the researchers and field technicians collecting the samples, as it relates to the proposed activities, including experience with other similar species.

### Shipment Information

13. Please indicate if this is a one-time shipment or if you anticipate needing to import/export/re-export samples multiple times within one year or over multiple years.
14. How will the samples be imported or exported (e.g., personally carried or shipped)?
15. If personally carried, please specify the individual(s) who will be transporting the samples.

*All international shipment(s) must be through a designated port. A [list of designated ports](#) (where an inspector is posted) is available. If you wish to use a port not listed, please contact the Office of Law Enforcement for a Designated Port Exemption Permit (form 3-200-2).*

### CITES Appendix I & Marine Mammal Species

- For **export** of a **CITES Appendix I-listed species**, provide a copy of the CITES import permit, or evidence one will be issued by the Management Authority of the country to which you plan to export the specimen(s). In accordance with Article III of the CITES treaty, it is required that import permits are issued before the corresponding export permit.
- For **import** of **CITES Appendix-I listed species**, provide information to show the import is not for primarily commercial purposes as outlined in [Resolution Conf. 5.10 \(Rev CoP15\)](#).
- For **import** of **CITES Appendix-I marine mammal samples**, please provide a copy of your FWS or NMFS Marine Mammal Protection Act (MMPA) permit or authorization.

## **Proposed Methods for Sea Turtle Ecology of Honduras Studies**

Stephen G. Dunbar

### 1. Sea Turtle Genetics

The genetic haplotype, obtained from the mitochondrial DNA (mtDNA) of turtle blood, is a useful tool for understanding and tracking the life cycle of turtles. By taking the blood from turtles nesting and foraging in the waters around Honduras, we can link them to other foraging and nesting sites, respectively around the Caribbean by shared haplotypes. This is important for the conservation of the entire turtle life cycle, as it highlights the different ecosystems in different countries used by these turtles.

### 2. Sea Turtle Nesting

Beach monitoring is foundational for turtle conservation and recovery and involves tagging and measuring nesting females, counting eggs, counting nests, and protecting nests from various threats. Tagging, especially, tells us how frequently an individual nests within a season and throughout its lifetime. Satellite telemetry is used to pinpoint the location of these females throughout the nesting season, including where they are resting offshore when not nesting, as well as their migration routes back to their home foraging sites.

### 3. Sea Turtle In-Water Assessments

In-water surveys are useful tools for the assessment of a number of factors. Tagging of individuals allows for the monitoring of population dynamics, such as when new turtles enter a foraging area or how long an individual stays in a particular area. We can also estimate age to maturity through tagging by investigating when a turtle is first and last seen in an area. We also assess the habitat of these turtles for long-term suitability and support of larger populations.

### 4. Sea Turtle Health, Rescue, and Recovery

By taking blood samples we will also be able to investigate the health of the turtles by analyzing different blood parameters (hematocrit) and hormone levels. We will also investigate the presence of heavy metals in turtles, which are often leached into the water, and can have detrimental effects on development.

### 5. Sea Turtle Behavioral Ecology

Through observation and experimentation, we can discern the ecology of these turtles. Our studies will be investigating juvenile turtles in their foraging grounds by logging the different behaviors of the turtles, how they interact with their environment, and how they interact with each other. We plan to utilize turtle-borne underwater video cameras, as well as Fastloc GPS satellite transmitters to track turtle movements within the MPA using time-depth-temperature recorders.

### 6. Sea Turtles and Human Communities

In order to truly protect turtles, community buy-in is of paramount importance, as much as government regulation. We will undertake outreach events to facilitate awareness about the importance of turtles and how turtles have a positive impact on ecosystem health and community economics. We will also discuss how to help protect turtles and mitigate the effects of coastal development. We will also discuss with local fishers how they can help protect turtles and what

to do when they spot or accidentally catch an injured turtle. Finally, we will work with local dive shops to increase visitor awareness regarding the turtles seen in Honduras.

## **Materials and Methods for ProTECTOR, Inc. Honduras Research Studies**

### **IN-WATER HAND CAPTURE, STANDARD WORK-UP, TAGGING AND FASTLOC GPA SATELLITE TRACKING**

Turtles will be hand captured in-water by divers using SCUBA. Once onboard the boat, they will be transported to our field laboratory facility, where turtles will undergo a standard work-up, including blood/skin/scute sampling and also the application of Inconel (681 style) flipper tags to the right front or right rear flippers to allow for future identification. Before tagging, the area will be cleaned with Betadine, and tags coated with Neosporin to reduce disease transmission (Berube, 2010; Dunbar & Salinas, 2008). Tagging will only be done by the PI (Dunbar) or by Dunbar's graduate students (to be determined, TBD). All graduate students will be fully trained on the tagging procedure by Dunbar, who has extensive flipper tagging experience. Blood collection sites will first be cleaned with alcohol or betadine swabs before the procedure is conducted. Blood will be drawn from the cervical sinus, and will be dependent on the size of the animal, withdrawing no more than approximately 1% of the turtles total blood volume. This will be calculated using the formula:

$$SBV = \text{Turtle Weight (g)} \times 0.08 \times 0.01 \quad (1)$$

where SBV is the sample blood volume to be collected, 0.08 is the fraction of total blood volume of the animal in relation to its weight, and 0.1 represents the fraction of total blood volume that may be sampled.

Blood will be collected only by the PI, or by the graduate students (TBD), who will be thoroughly trained in how to locate the cervical sinus and how to properly collect and preserve blood samples for different analyses (heavy metal, sexing, stable isotope analysis, genetic analyses, turtle health parameters). These students will also be required to watch the turtle blood sampling training video (and refresh their familiarity with the technique) found at:

<https://www.youtube.com/watch?v=qdjDKwivkdA>

Hand-capture and blood sampling may be repeated over time. However, Bjørndal, et al. (2010) have found that multiple blood/scute, and skin sampling in the loggerhead sea turtle (*Caretta caretta*) did not impact sea turtle health or physiology. Additionally, (Pan & Dunbar, 2023) have found no adverse effects on juvenile hawksbills behavior or physiology from sequential sampling over 75 years.

Fastloc GPS transmitters may be affixed to a small subsample of juvenile hawksbills on the anterior region of the carapace. Transmitters are small enough to ensure no swimming restrictions or obstructions will occur. The transmitters will contain Time Depth Recorders (TDR) and temperature sensors to monitor fine-scale movements of individuals within the MPA. Attachment of transmitters will require that turtles be brought back to land and kept in the shade for up to 2 hours while the 2-part marine epoxy (non-exothermic) dries. During this time, turtles will be kept cool and moist, and restricted to moving within a plastic tub large enough to



accommodate some restricted movement by the turtle. Once transmitters are attached, turtles will be released as close to the original capture location as possible.

Turtles will be tracked using a small boat and recaptured within three days of release. Once recaptured, the GPS transmitter will be removed, the carapace cleaned of remaining epoxy, and the turtle re-released to the habitat.

**PAIN LEVEL CAUSED BY THE STUDY: C**

**DRUGS USED FOR THE STUDY:** No drugs.

## **NESTING ADULTS PROCEDURES**

Nesting adults will be measured and flipper tagged during the deposition of eggs. Measuring will be done using a soft sewing-type tape measure for both carapace length and carapace width. Flipper tagging will be done in the same manner as for in-water hand captured turtles, including cleaning the tagging site with alcohol or betadine, and covering the piercing tooth of the flipper tag with Polysporin. Individuals flipper tagging will be required to wear disposable latex gloves for each flipper tagging and blood sampling event. After egg deposition, the turtle will be constrained by field assistants, and a blood sample taken from the cervical sinus with a 2-inch, 21 or 22 gage needle and 5 mL syringe. A maximum of 4 - 5 mL will be drawn from any individual turtle. If the same turtle returns to the beach again at a later time, measuring, blood sampling and flipper tagging will not be done for this individual again within a single nesting season. Blood samples will be used for heavy metal analyses, sexing, stable isotope analyses, and genetic analyses. Additionally, a small (1 g) sample of scute (shell) material may also be collected by cleaning the collection site with alcohol or betadine, and using a new scalpel or razor blade to slice off thin layers of shell material, while a cleaned pair of scissors will be used to carefully cut small samples (<1 g  $\times$  4 or 5 pieces) of skin from the rear flippers. These samples will be stored in salt for later stable isotope analysis and possible heavy metal and persistent organic pollutants (POP's) analyses.

## **HATCHLING STUDIES**

Hatchlings will be used to study both hatchling movements in relation to beach sand temperatures and in relation to hatchling condition, as well as to understand the rates of multiple paternity (multiple fathers for a single nest), determine sex ratios, and analyzing genetic stock (where the nesting turtles came from). Although movement studies will require us to manipulate hatchlings in corridors of different temperature sand, none of these proposed procedures will cause any level of pain. However, genetic studies will require us to take very small samples of blood. These will be taken from the cervical sinus (between the neck and shoulder) with a 24 or 26 gage insulin needle on a 1 mL volume syringe. Blood samples from hatchlings will not exceed 0.75 mL volume and will be calculated from Equation 1 (above) for each individual. Only the PI (Dunbar) or trained graduate students (TBD) will collect blood samples from hatchlings. Graduate students will be repeatedly trained in the blood sampling technique, including how to locate the cervical sinus, and in how to store the samples for different analyses.

Additional studies conducted will be collected from the beach upon emergence and taken to a dark room laboratory where they will be kept in ambient, dark conditions. Individual hatchlings will be tested in a Y-maze constructed out of PVC with a variable color and intensity output light source at each end. Tested hatchlings will be kept separate to ensure no repeat analyses. After

testing has concluded, all hatchlings will be released on the beach dune of their natal beach where they will be allowed to crawl toward the ocean as normal. The following morning the nest dead hatchlings will be collected (up to 100 total). These hatchlings will be stored in 70% ethanol or formaldehyde (depending on study) for transport back to Loma Linda University. These will be used for histological study under light microscopy, SEM, genetic analyses, parasite analyses, and sex determination.

**PAIN LEVEL CAUSED BY THE STUDY:** C

**DRUGS USED FOR THE STUDY:** No drugs.

## **REFERENCES CITED**

- Berube, M. (2010). *Home range and foraging ecology of juvenile hawksbill sea turtles around Roatan, Honduras* [Masters Thesis, Loma Linda University]. Loma Linda, CA.
- Bjorndal, K. A., Reich, K. J., & Bolten, A. B. (2010). Effect of repeated tissue sampling on growth rates of juvenile loggerhead turtles *Caretta caretta*. *Diseases of Aquatic Organisms*, 88, 271 - 273.
- Dunbar, S. G., & Salinas, L. (2008). *Activities of the Protective Turtle Ecology Center for Training, Outreach, and Research, Inc. (ProTECTOR) in Punta Raton, Honduras* (Annual Report of the 2007 - 2008 Nesting Seasons, Issue.
- Pan, D., & Dunbar, S. G. (2023, 20 – 24 March). *Growth dynamics of juvenile hawksbills in a marine protected area in Roatán, Honduras* 41st International Sea Turtle Symposium, Cartagena, Colombia.

## **USFWS CITES Import Permit Application for Sea Turtle Specimens from Honduras**

Stephen G. Dunbar

### **Research proposal.**

See attached.

### **Federal, State, Tribal, or foreign collection permits.**

See attached.

### **For ESA-listed species, documentation demonstrating that the proposed research will benefit the species in the wild.**

Because all sea turtle species in Honduras require scientific investigation to understand current status and plight, the investigations outlined in the attached research proposal will provide critical data for understanding population dynamics, genetic diversity, health status, behavioral aspects, and life history stages of sea turtles in the country of Honduras. These studies will result in increased understanding of all turtle species in Honduras in both nesting and foraging locations by local community members, resource managers, and government policy makers. This in turn will result in improved species and habitat management helping to fulfill the National Strategic Plan for the Conservation of Sea Turtles in Honduras (NSPCSTH, 2014). Since essentially no aspects of the current NSPCSTH have been undertaken, the proposed research will fill critical knowledge gaps for the NSPCSTH.

### **Qualifications and resumes of the staff responsible for collection and research activities at the field site/sending institution and receiving institution.**

See attached.

### **Information on the receiving institution's ability to conduct the proposed research.**

As an R2 Carnegie classified research institute Loma Linda University (LLU) has extensive experience managing large US Government grants and has had an active portfolio of Federally-funded grants and contracts for at least the last four decades. Funding is received from various agencies with the largest share from the Department of Health and Human Services, including several large program grants.

### **For the import of CITES Appendix I specimens, documentation showing that the activity will not be for primarily commercial purposes.**

All samples are only tissue or organs of sea turtle species, which are only useful for the scientific investigations outlined in the attached proposal. Dunbar has undertaken 15 years' worth of sea turtle research in Honduras and demonstrates the scientific use of all imported specimens and samples. A history of publications is provided on the attached CV.

## Addendum to Dunbar USFWS CITES Import Permit for Honduras Sea Turtle Samples

### Import.

**Section 8:** Samples are to be collected from the five species of turtles listed below. All information regarding the collection of samples is provided herein. Adults of each species will have blood and scute samples taken, live hatchlings will have blood taken while hatchlings found dead in the nest will be taken in whole body form. Numbers for each species and sample type are as follows: *Eretmochelys imbricata* 680 blood samples, 170 scute samples, 40 dead hatchling whole body; *Chelonia mydas* 340 blood samples, 85 scute samples, 20 dead hatchling whole body; *Caretta caretta* 40 blood samples, 10 scute samples; *Lepidochelys olivacea* 200 blood samples, 50 scute samples, 30 dead hatchling whole body; *Dermochelys coriacea* 80 blood samples, 20 scute samples, 10 dead hatchling whole body.

### 8A

- a. **Scientific name:** *Eretmochelys imbricata*
- b. **Common name:** Hawksbill sea turtle
- c. **Specific Location:** Bay Islands (Roatan, Guanaja, and Utila), Honduras
- d. **Collectors:** Stephen Dunbar
- e. **Method of Collection:**

### IN-WATER HAND CAPTURE, STANDARD WORK-UP, AND TAGGING

Turtles will be hand captured in-water by divers using SCUBA. Once onboard the boat, turtles will be transported to a makeshift laboratory where they will undergo a standard work-up, including blood/skin/scute sampling and also the application of Inconel (681 style) flipper tags to right rear flipper to allow for future identification. Blood collection sites will first be cleaned with alcohol or betadine swabs before the procedure is conducted. Blood will be drawn from the cervical sinus and will be dependent on the size of the animal, withdrawing no more than approximately 1% of the turtle's total blood volume. This will be calculated using the formula:

$$SBV = \text{Turtle Weight (g)} \times 0.08 \times 0.01 \quad (1)$$

where SBV is the sample blood volume to be collected, 0.08 is the fraction of total blood volume of the animal in relation to its weight, and 0.1 represents the fraction of total blood volume that may be sampled.

Blood will be collected only by the PI, who is thoroughly trained in how to locate the cervical sinus and how to properly collect and preserve blood samples for different analyses (heavy metal, sexing, stable isotope analysis, genetic analyses). A turtle blood sampling training video can found at: <https://www.youtube.com/watch?v=qdjDKwivkdA>

Hand-capture and blood sampling may be repeated over time. However, Bjorndal, et al. (2010) have found that multiple blood/scute, and skin sampling in the loggerhead sea turtle (*Caretta caretta*) did not impact sea turtle health or physiology, and Pan (2023) has found no adverse behavioral, physiological, or health effects of serial sampling over seven years of study on these populations in the Bay Islands.

## NESTING ADULTS PROCEDURES

Nesting adults in the Bay Islands, on the North Coast, and on the South Coast of the mainland, will be measured and flipper tagged during the deposition of eggs. Measuring will be done using a soft sewing-type tape measure for both carapace length and carapace width. After egg deposition, the turtle will be constrained by field assistants, and a blood sample taken from the cervical sinus with a 2-inch, 21 or 22 gage needle and 5 mL syringe. A maximum of 4 - 5 mL will be drawn from any individual turtle. If the same turtle returns to the beach again at a later time, measuring, blood sampling and flipper tagging will not be done for this individual again within a single nesting season. Blood samples will be used for heavy metal analyses, sexing, stable isotope analyses, and genetic analyses. Additionally, a small (1 g) sample of scute (shell) material may also be collected by cleaning the collection site with alcohol or betadine, and using a new scalpel or razor blade to slice off thin layers of shell material, while a cleaned pair of scissors will be used to carefully cut small samples (<1 g  $\times$  4 or 5 pieces) of skin from the rear flippers. These samples will be stored in salt for later stable isotope analysis and possible heavy metal and persistent organic pollutants (POP's) analyses, or in >70% Ethanol for use in genetic analyses.

## HATCHLING STUDIES

Hatchlings will be used to study both hatchling movements in relation to beach debris and in relation to hatchling condition, as well as to understand the rates of multiple paternity (multiple fathers for a single nest), determining sex ratios, and analyzing genetic stock (where the nesting turtles came from). Genetic studies will require us to take very small samples of blood. These will be taken from the cervical sinus (between the neck and shoulder) with a 24 or 26 gage insulin needle on a 1 mL volume syringe. Blood samples from hatchlings will not exceed 0.75 mL volume and will be calculated from Equation 1 (above) for each individual. Only the PI (Dunbar) will collect blood samples from hatchlings.

The morning following an emergence, the nest will be excavated, and any dead hatchlings will be collected (up to 40 total). These hatchlings will be decapitated with a scalpel and stored in 70% ethanol for transport back to Loma Linda University. These will be used for pathological study, light microscopy, and SEM.

- f. **Remuneration Information:** no remuneration for the acquisition of specimens.
- g. **Captive Specimen Efforts:** Our research concerns wild populations, life cycles, and ecology and thus cannot be substituted with captive specimens.

## **8B**

- a. **Scientific name:** *Chelonia mydas*
- b. **Common name:** Green sea turtle
- c. **Specific Location:** Bay Islands (Roatan, Guanaja, and Utila), Honduras
- d. **Collectors:** Stephen Dunbar
- e. **Method of Collection:**

## IN-WATER HAND CAPTURE, STANDARD WORK-UP, AND TAGGING

Turtles will be hand captured in-water by divers using SCUBA. Once onboard the boat, turtles will be transported to our makeshift laboratory facility where they will undergo a standard work-up, including blood/skin/scute sampling and also the application of Inconel (681 style) flipper tags to the right rear flipper to allow for future identification. Blood collection sites will

first be cleaned with alcohol or betadine swabs before the procedure is conducted. Blood will be drawn from the cervical sinus, and will be dependent on the size of the animal, withdrawing no more than approximately 1% of the turtles total blood volume. This will be calculated using the formula:

$$SBV = \text{Turtle Weight (g)} \times 0.08 \times 0.01 \quad (1)$$

where SBV is the sample blood volume to be collected, 0.08 is the fraction of total blood volume of the animal in relation to its weight, and 0.1 represents the fraction of total blood volume that may be sampled.

Blood will be collected only by the PI, who is thoroughly trained in how to locate the cervical sinus and how to properly collect and preserve blood samples for different analyses (heavy metal, sexing, stable isotope analysis, genetic analyses). A turtle blood sampling training video can found at: <https://www.youtube.com/watch?v=qdjDKwivkdA>

Hand-capture and blood sampling may be repeated over time. However, Bjorndal, et al. (2010) have found that multiple blood/scute, and skin sampling in the loggerhead sea turtle (*Caretta caretta*) did not impact sea turtle health or physiology, and Pan (2023) has found no adverse behavioral, physiological, or health effects of serial sampling over seven years of study on these populations in the Bay Islands.

## NESTING ADULTS PROCEDURES

Nesting adults in the Bay Islands, on the North Coast, and on the South Coast of the mainland, will be measured and flipper tagged during the deposition of eggs. Measuring will be done using a soft sewing-type tape measure for both carapace length and carapace width. After egg deposition, the turtle will be constrained by field assistants, and a blood sample taken from the cervical sinus with a 2-inch, 21 or 22 gage needle and 5 mL syringe. A maximum of 4 - 5 mL will be drawn from any individual turtle. If the same turtle returns to the beach again at a later time, measuring, blood sampling and flipper tagging will not be done for this individual again within a single nesting season. Blood samples will be used for heavy metal analyses, sexing, stable isotope analyses, and genetic analyses. Additionally, a small (1 g) sample of scute (shell) material may also be collected by cleaning the collection site with alcohol or betadine, and using a new scalpel or razor blade to slice off thin layers of shell material, while a cleaned pair of scissors will be used to carefully cut small samples (<1 g × 4 or 5 pieces) of skin from the rear flippers. These samples will be stored in salt for later stable isotope analysis and possible heavy metal and persistent organic pollutants (POP's) analyses.

## HATCHLING STUDIES

Hatchlings will be used to study both hatchling movements in relation to beach debris and in relation to hatchling condition, as well as to understand the rates of multiple paternity (multiple fathers for a single nest), determining sex ratios, and analyzing genetic stock (where the nesting turtles came from). Genetic studies will require us to take very small samples of blood. These will be taken from the cervical sinus (between the neck and shoulder) with a 24 or 26 gage insulin needle on a 1 mL volume syringe. Blood samples from hatchlings will not exceed 0.75

mL volume and will be calculated from Equation 1 (above) for each individual. Only the PI (Dunbar) will collect blood samples from hatchlings.

The morning following an emergence, the nest will be excavated, and any dead hatchlings will be collected (up to 20 total). These hatchlings will be stored in 70% ethanol for transport back to Loma Linda University. These will be used for pathological study, light microscopy, and SEM.

- f. **Remuneration Information:** no remuneration for the acquisition of specimens.
- g. **Captive Specimen Efforts:** Our research concerns wild populations, life cycles, and ecology and thus cannot be substituted with captive specimens.

## **8C**

- a. **Scientific name:** *Caretta caretta*
- b. **Common name:** Loggerhead sea turtle
- c. **Specific Location:** Bay Islands (Roatan, Guanaja, and Utila), Honduras
- d. **Collectors:** Stephen Dunbar
- e. **Method of Collection:**

## **IN-WATER HAND CAPTURE, STANDARD WORK-UP, AND TAGGING**

Turtles will be hand captured in-water by divers using SCUBA. Once onboard the boat, turtles will be transported to our makeshift laboratory facility where they will undergo a standard work-up, including blood/skin/scute sampling and also the application of Inconel (681 style) flipper tags to the right front and right rear flippers to allow for future identification. Blood collection sites will first be cleaned with alcohol or betadine swabs before the procedure is conducted. Blood will be drawn from the cervical sinus, and will be dependent on the size of the animal, withdrawing no more than approximately 1% of the turtles total blood volume. This will be calculated using the formula:

$$SBV = \text{Turtle Weight (g)} \times 0.08 \times 0.01 \quad (1)$$

where SBV is the sample blood volume to be collected, 0.08 is the fraction of total blood volume of the animal in relation to its weight, and 0.1 represents the fraction of total blood volume that may be sampled.

Blood will be collected only by the PI, who is thoroughly trained in how to locate the cervical sinus and how to properly collect and preserve blood samples for different analyses (heavy metal, sexing, stable isotope analysis, genetic analyses). A turtle blood sampling training video can found at: <https://www.youtube.com/watch?v=qdjDKwivkdA>

Hand-capture and blood sampling may be repeated over time. However, Bjorndal, et al. (2010) have found that multiple blood/scute, and skin sampling in the loggerhead sea turtle (*Caretta caretta*) did not impact sea turtle health or physiology, and Pan (2023) has found no adverse behavioral, physiological, or health effects of serial sampling over seven years of study on these populations in the Bay Islands.

## **NESTING ADULTS PROCEDURES**



Nesting adults in the Bay Islands, on the North Coast, and on the South Coast of the mainland, will be measured and flipper tagged during the deposition of eggs. Measuring will be done using a soft sewing-type tape measure for both carapace length and carapace width. After egg deposition, the turtle will be constrained by field assistants, and a blood sample taken from the cervical sinus with a 2-inch, 21 or 22 gage needle and 5 mL syringe. A maximum of 4 - 5 mL will be drawn from any individual turtle. If the same turtle returns to the beach again at a later time, measuring, blood sampling and flipper tagging will not be done for this individual again within a single nesting season. Blood samples will be used for heavy metal analyses, sexing, stable isotope analyses, and genetic analyses. Additionally, a small (1 g) sample of scute (shell) material may also be collected by cleaning the collection site with alcohol or betadine, and using a new scalpel or razor blade to slice off thin layers of shell material, while a cleaned pair of scissors will be used to carefully cut small samples (<1 g × 4 or 5 pieces) of skin from the rear flippers. These samples will be stored in salt for later stable isotope analysis and possible heavy metal and persistent organic pollutants (POP's) analyses.

## HATCHLING STUDIES

Hatchlings will be used to study both hatchling movements in relation to beach debris and in relation to hatchling condition, as well as to understand the rates of multiple paternity (multiple fathers for a single nest), determining sex ratios, and analyzing genetic stock (where the nesting turtles came from). Genetic studies will require us to take very small samples of blood. These will be taken from the cervical sinus (between the neck and shoulder) with a 24 or 26 gage insulin needle on a 1 mL volume syringe. Blood samples from hatchlings will not exceed 0.75 mL volume and will be calculated from Equation 1 (above) for each individual. Only the PI (Dunbar) will collect blood samples from hatchlings.

- f. **Remuneration Information:** no remuneration for the acquisition of specimens.
- g. **Captive Specimen Efforts:** Our research concerns wild populations, life cycles, and ecology and thus cannot be substituted with captive specimens.

## 8D

- a. **Scientific name:** *Lepidochelys olivacea*
- b. **Common name:** Olive Ridley sea turtle
- c. **Specific Location:** Gulf of Fonseca, Honduras
- d. **Collectors:** Stephen Dunbar
- e. **Method of Collection:**

## IN-WATER HAND CAPTURE, STANDARD WORK-UP, AND TAGGING

Turtles will be hand captured in-water by divers using SCUBA. Once onboard the boat, turtles will be transported to our makeshift laboratory facility where they will undergo a standard work-up, including blood/skin/scute sampling and also the application of Inconel (681 style) flipper tags to the right front and right rear flippers to allow for future identification. Blood collection sites will first be cleaned with alcohol or betadine swabs before the procedure is conducted. Blood will be drawn from the cervical sinus, and will be dependent on the size of the animal, withdrawing no more than approximately 1% of the turtles total blood volume. This will be calculated using the formula:

$$SBV = \text{Turtle Weight (g)} \times 0.08 \times 0.01 \quad (1)$$

where SBV is the sample blood volume to be collected, 0.08 is the fraction of total blood volume of the animal in relation to its weight, and 0.1 represents the fraction of total blood volume that may be sampled.

Blood will be collected only by the PI, who is thoroughly trained in how to locate the cervical sinus and how to properly collect and preserve blood samples for different analyses (heavy metal, sexing, stable isotope analysis, genetic analyses). A turtle blood sampling training video can found at: <https://www.youtube.com/watch?v=qdjDKwivkdA>

Hand-capture and blood sampling may be repeated over time. However, Bjorndal, et al. (2010) have found that multiple blood/scute, and skin sampling in the loggerhead sea turtle (*Caretta caretta*) did not impact sea turtle health or physiology.

## NESTING ADULTS PROCEDURES

Nesting adults on the South Coast of the mainland will be measured and flipper tagged during the deposition of eggs. Measuring will be done using a soft sewing-type tape measure for both carapace length and carapace width. After egg deposition, the turtle will be constrained by field assistants, and a blood sample taken from the cervical sinus with a 2-inch, 21 or 22 gage needle and 5 mL syringe. A maximum of 4 - 5 mL will be drawn from any individual turtle. If the same turtle returns to the beach again at a later time, measuring, blood sampling and flipper tagging will not be done for this individual again within a single nesting season. Blood samples will be used for heavy metal analyses, sexing, stable isotope analyses, and genetic analyses. Additionally, a small (1 g) sample of scute (shell) material may also be collected by cleaning the collection site with alcohol or betadine, and using a new scalpel or razor blade to slice off thin layers of shell material, while a cleaned pair of scissors will be used to carefully cut small samples (<1 g × 4 or 5 pieces) of skin from the rear flippers. These samples will be stored in salt for later stable isotope analysis and possible heavy metal and persistent organic pollutants (POP's) analyses.

## HATCHLING STUDIES

Hatchlings may be used to study both hatchling movements in relation to beach debris and in relation to hatchling condition, as well as to understand the rates of multiple paternity (multiple fathers for a single nest), determining sex ratios, and analyzing genetic stock (where the nesting turtles came from). Genetic studies will require us to take very small samples of blood. These will be taken from the cervical sinus (between the neck and shoulder) with a 24 or 26 gage insulin needle on a 1 mL volume syringe. Blood samples from hatchlings will not exceed 0.75 mL volume and will be calculated from Equation 1 (above) for each individual. Only the PI (Dunbar) will collect blood samples from hatchlings.

The morning following an emergence, the nest will be excavated, and any dead hatchlings will be collected (up to 30 total). These hatchlings will be stored in 70% ethanol for transport back to Loma Linda University. These will be used for pathological study, light microscopy, and SEM.

- f. **Remuneration Information:** no remuneration for the acquisition of specimens.

- g. **Captive Specimen Efforts:** Our research concerns wild populations, life cycles, and ecology and thus cannot be substituted with captive specimens.

## **8E**

- a. **Scientific name:** *Dermochelys coriacea*
- b. **Common name:** Leatherback sea turtle
- c. **Specific Location:** La Mosquitia (Rio Platano), Honduras
- d. **Collectors:** Stephen Dunbar
- e. **Method of Collection:**

## **NESTING ADULTS PROCEDURES**

Nesting adults in the Mosquitia region of the mainland will be measured and flipper tagged during the deposition of eggs. Measuring will be done using a soft sewing-type tape measure for both carapace length and carapace width. After egg deposition, the turtle will be constrained by field assistants, and a blood sample taken from the cervical sinus with a 2-inch, 21 or 22 gage needle and 5 mL syringe. A maximum of 4 - 5 mL will be drawn from any individual turtle. If the same turtle returns to the beach again at a later time, measuring, blood sampling and flipper tagging will not be done for this individual again within a single nesting season. Blood samples will be used for heavy metal analyses, sexing, stable isotope analyses, and genetic analyses. Additionally, a small (1 g) sample of scute (shell) material may also be collected by cleaning the collection site with alcohol or betadine, and using a new scalpel or razor blade to slice off thin layers of shell material, while a cleaned pair of scissors will be used to carefully cut small samples (<1 g  $\times$  4 or 5 pieces) of skin from the rear flippers. These samples will be stored in salt for later stable isotope analysis and possible heavy metal and persistent organic pollutants (POP's) analyses.

## **HATCHLING STUDIES**

Hatchlings may be used to study both hatchling movements in relation to beach debris and in relation to hatchling condition, as well as to understand the rates of multiple paternity (multiple fathers for a single nest), determining sex ratios, and analyzing genetic stock (where the nesting turtles came from). Genetic studies will require us to take very small samples of blood. These will be taken from the cervical sinus (between the neck and shoulder) with a 24 or 26 gage insulin needle on a 1 mL volume syringe. Blood samples from hatchlings will not exceed 0.75 mL volume and will be calculated from Equation 1 (above) for each individual. Only the PI (Dunbar) will collect blood samples from hatchlings.

The morning following an emergence, the nest will be excavated, and any dead hatchlings will be collected (up to 10 total). These hatchlings will be stored in 70% ethanol and some in formalin for transport back to Loma Linda University. These will be used for pathological study, light microscopy, and SEM.

- f. **Remuneration Information:** no remuneration for the acquisition of specimens.
- g. **Captive Specimen Efforts:** Our research concerns wild populations, life histories, and ecology and thus cannot be substituted with captive specimens.



**DICTAMEN**

DICTAMEN-ICF-121-2023 Tegucigalpa, Municipio del Distrito Central, veintidós (26) de mayo del año dos mil veintitrés (2023).

**Vista:** Para dictaminar sobre la solicitud de **RENOVACION DEL PERMISO PARA LA CONTINUACION DEL ESTUDIO DE LA DINAMICA POBLACIONAL Y ECOLOGIA DE LAS TORTUGAS MARINAS ERETMOCHELYS IMBRICATA, CARETTA CARETTA, CHELONIA MYDAS Y DERMOCHELYS CORIACEA EN EL CARIBE HONDUREÑO**, presentada por el Abogado **Kevin Roberto Manzanares Merlo**, quien actúa en su condición de Apoderado Legal de la **Organización No Gubernamental Centro Ecológico de Protección de las Tortugas Marinas (PROTECTOR)**; esta Dirección Legal del ICF, se pronuncia en base a los siguientes:

**ANTECEDENTES**

**PRIMERO:** Que corre agregado a las presentes diligencias, la Solicitud de **Renovación del permiso para la continuación del estudio de la dinámica poblacional y ecología de las Tortugas Marinas Eretmochelys Imbricata, Caretta Caretta, Chelonia Mydas y Dermochelys Coriacea en el Caribe Hondureño** área de estudio Parque Nacional Marino Islas de la Bahía, que lo comprende los municipios de Útila, Roatán y Guanaja, del departamento de Islas de la Bahía.

**SEGUNDO:** Que consta en folios 56 a 59 Dictamen Técnico ICF-ORFA-VS-07-2023, con fecha 20 de abril de 2023 emitido por la Región Forestal del Atlántico, en el cual establece como antecedentes: la resolución **DE-MP-215-2015**, Para esta renovación se presentó la siguiente documentación:

- investigador principal Dr. Stephen G. Dunbar, Propuesta del estudio, Hoja de vida de cada uno de los investigadores principales, Carta de compromiso, Formato de registro de investigación, Cartas de apoyo, Publicaciones, Acta de compromiso.
- a) El objetivo general es investigar las tortugas marinas y su hábitat en el parque nacional marino Islas de la Bahía, fortaleciendo el manejo a través de la generación de información científica calificada estandarizada y continua.
  - b) El objetivo específico es dar a conocer las rutas migratorias de las tortugas marinas con el fin de fortalecer el corredor biológico marino, promover la zonificación de sitios de alimentación y protección de hábitat a través de los estudios de distribución y diversidad genética, fortalecer la conservación en su proceso de anidamiento y éxito de eclosión, a través de estudios de cambio climático y patrones conductuales tanto en neonatos como hembra anidantes.

**Área de estudio**

Se revisó la documentación donde se expresa que la investigación se realizará en el Parque Nacional Marino Islas de la Bahía en los municipios de Útila, Guanaja, Roatán.

d) La metodología a seguir en esta investigación se realizará varios métodos de acuerdo con los objetivos planteados:

- 1) Para la distribución: a) captura y recaptura b) instalación de radios transmisores, c) foto identificación, d) rastreo satelital, 2) Análisis de alimento: lavado gástrico 3) Estudio de Diversidad a) colecta de sangre y tejido 4) Estudio de anidamiento) monitoreo remoto de nidos en tiempo real con tecnología Nestingsafe Inc medidores de Humedad, temperatura y vibración, análisis estadístico, exposición de laberinto, colores y temperatura de arena.







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Los investigadores deberán de cumplir con lo siguiente de acuerdo al manual de normas técnicas administrativas de la vida silvestre acuerdo 045-2011.

1. El permiso de investigación tiene vigencia de un (1) año a partir de la fecha de emisión, según acuerdo 045-2011.
2. El investigador principal es el Doctor **Stephen G. Dunbar** y su contraparte licenciada **Lidia Salinas**.
3. Es **OBLIGATORIO** que el investigador principal porte su respectivo permiso y se reporte en la oficina regional ICF con el coordinador de Áreas Protegidas o el coordinador de Vida Silvestre del ICF, además deberá reportarse ante las instituciones co-manejadoras de las áreas protegidas que formen parte del área de estudio. En este ultimo caso, los investigadores deberán acoplarse a cualquier reglamento o normativa sobre el desarrollo de investigación y colecta que exista para esa área.
4. Este permiso autoriza la colecta de muestras obtenidas mediante técnicas **NO INVASIVAS**.
5. En el caso que la investigación tuviera como resultado hallazgos de tecnología sujetas a patentes, derecho de propiedad intelectual, publicaciones y otros el investigador debe comunicarse con el **Departamento De Vida Silvestre**. Quien en colaboración con la Secretaria General del ICF son los encargados de negociar acordar las condiciones de acceso y utilización de la vida silvestre, incluida la distribución de los beneficios que se deriven de la utilización de dicho recurso, durante y después de las investigación y utilización de estos.
6. El ICF a través del departamento de Vida Silvestre está facultado para **detener el desarrollo de la investigación en caso de no cumplir los objetivos propuestos en la solicitud o el incumplimiento de las disposiciones anteriores; artículo 41 según acuerdo 045-2011.**

Y finalizando, con base en lo antes descrito la Región Forestal Atlántico, considera que el permiso de investigación científica, y autorización para exportación de muestras solicitadas por el Centro Ecológico de Protección de las Tortugas Marinas para el Entrenamiento Difusión e Investigación (Pro Tector inc.) **ES TECNICAMENTE FACTIBLE**.

**TERCERO:** Que corre a (folio 61-64) el Dictamen Técnico ICF-DVS-013-2023, emitido por El Departamento de Vida Silvestre de fecha 27 de abril de 2023, en el cual concluye con en base a lo descrito anteriormente considera que la investigación " **Estudio de la Dinámica Poblacional y Ecología de las Tortugas Marinas de las especies Eretmochelys Imbricata, Caretta Caretta, Chelonia Mydas, Dermochelys Coriácea en el Caribe Hondureño, es TECNICAMENTE FACTIBLE LA RENOVACION DE PERMISO DE INVESTIGACION**, por lo que se recomienda a la Secretaria General continuar con el tramite respectivo.

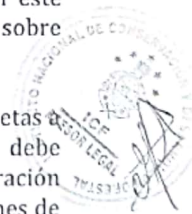
Departamento Legal una vez analizada la documentación presentada y con fundamento en los artículos 80 y 340 de la Constitución de la República; 21, 22, 23, 24, 25, 26, 27 y 72 de la Ley de Procedimiento Administrativo; 1, 2, 3, 11, 108, 115 de la Ley Forestal, Áreas Protegidas y Vida Silvestre; 37, 38, 39, 40, 41, 42 del Manual de Normas Técnico-Administrativas para el Manejo y Aprovechamiento Sostenible de la Vida Silvestre.

**DICTAMINA**

**PRIMERO:** Se recomienda la renovación del permiso para el Estudio de la Dinámica Poblacional y Ecología de las Tortugas Marinas de las especies Eretmochelys

**imbricata, caretta caretta, Chelonia Mydas, Dermochelys coriácea en el caribe Hondureño, bajo los siguientes términos:**

- 1) La renovación del permiso tendrá una vigencia de 1 año a partir de la fecha de emisión.
- 2) La investigación se llevará a cabo en los siguientes lugares: Parque Nacional Marino Islas de la Bahía (Utila, Roatán, Guanaja sus cayos y los cayos Cochinos)
- 3) Que el investigador principal será: **Stephen George Dunbar**, con número No. de pasaporte HM44197 de nacionalidad canadiense y como contraparte nacional **Iris Massiel Rodríguez Salgado** de nacionalidad hondureña.
- 4) Investigador principal **Stephen George Dunbar** es el responsable de presentar el informe de los resultados de la investigación ante el Departamento de Vida Silvestre.
- 5) El investigador secundario **Anuar Romero Acosta** como coordinador de Green Island Challenge, en la Isla de Guanaja deberá informar y enviar ayudas memorias de manera mensual al coordinador de vida silvestre de la coordinación del ICF en Islas de la bahía.
- 6) Para la exportación de los especímenes resultantes de la investigación deberá realizar el trámite de acuerdo a lo establecido en el Acuerdo No.936-13 e instructivo ICF-001-2017. Es importante considerar, que las especies a estudiar en dicha investigación, se encontraran en alguno de los apéndices CITES<sup>4</sup>, se tendrá que acatar a los trámites correspondientes según la oficina CITES-SAG, y deberá de apagar los valores correspondientes por dicha institución.
- 7) No se permitirá la manipulación de otras especies durante el proceso de investigación ya que el permiso solamente para las tortugas marinas enunciadas **Eretmochelys Imbricata, Caretta Caretta, Chelonia Mydas, Dermochelys Coriácea** en base a la Resolución-DE-MP-215-2021 (numeral 5). (folio 196-198)
- 8) El Informe final deberá presentarse impreso en papel bond, tamaño carta y CD en formato Microsoft Word y PDF. El mismo deberá entregarse en un periodo de un mes (1) a (6) meses una vez concluido la investigación; el idioma de presentación del informe es español. Este debe de incluir un listado detallado de los especímenes colectados y reportados referentes a la investigación, con fotografías de los especímenes debidamente identificados; formato de presentación JPG, adjuntando en una carpeta en CD.
- 9) Es obligatorio que los investigadores porten el permiso de investigación y se reporten en la Oficina Regional y/o local con el Coordinador de Áreas Protegidas y Vida Silvestre del ICF en la jurisdicción correspondiente y autoridades locales que los solicite, además deberá reportarse ante la institución co-manejadora de las Áreas Protegidas a visitar. En este último caso, los investigadores deberán acoplarse a cualquier reglamenta o normativa sobre el desarrollo de investigación y colecta que exista para esa área de estudio.
- 10). En el caso que la investigación tuviera como resultado hallazgos de tecnología sujetas a patentes, derecho de propiedad intelectual, publicaciones y otros el investigador debe comunicarse con el **DEPARTAMENTO DE VIDA SILVESTRE** del ICF, quien en colaboración con la Secretaria General del ICF son los encargados de negociar acordar las condiciones de acceso y utilización de la vida silvestre, incluidas la distribución de los beneficios que se deriva de la utilización de dicho recurso, durante y después de la investigación y utilización de datos.
- 11) El ICF a través del departamento de Vida Silvestre está facultado para detener el desarrollo de la investigación en caso de no cumplir los objetivos propuestos en la solicitud o el incumplimiento de las disposiciones anteriores; artículo 41 según acuerdo 045-2011.







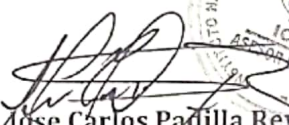
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Gobierno de la República

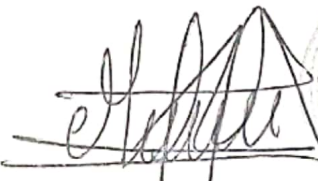


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12) El canon que debe cancelarse, según lo contenido en el artículo 185 de manual de normas técnicas administrativas para el manejo y aprovechamiento sostenible de la Vida Silvestre de Honduras (acuerdo No.045-2011). Se presenta a continuación el total con el detalle correspondiente que el investigador principal deberá de cancelar

ACTIVIDAD	PORCENTAJE DEL SALARIO MINIMO 2023 <sup>5</sup>	CANON
Permiso de investigación	25%	L. 2,520.22
Colecta científica (investigadores nacionales)	2 <sup>6</sup> *10%	L. 2,016.17
Exportación de muestra	30%	L.3,024.26
	<b>TOTAL</b>	<b>L.7,560.65</b>

  
Abg. Jose Carlos Padilla Reyes  
Asesor Legal

  
Abg. Maryury Alejandra Licona.  
Jefa Interina Departamento Legal

**INSTITUTO NACIONAL DE CONSERVACIÓN Y DESARROLLO FORESTAL ÁREAS PROTEGIDAS Y VIDA SILVESTRE (ICF). - DIRECCIÓN EJECUTIVA. - COMAYAGÜELA, MUNICIPIO DEL DISTRITO CENTRAL, CINCO DE JUNIO DEL AÑO DOS MIL VEINTITRES.**

**VISTA:** Para RESOLVER SOBRE LA "SOLICITUD DE RENOVACION DEL PERMISO PARA LA CONTINUACION DEL ESTUDIO DE LA DINAMICA POBLACIONAL Y ECOLOGIA DE LAS TORTUGAS MARINAS ERETMOCHELYS IMBRICATA, CARETTA, CARETTA, CHELONIA MYDAS Y DERMOCHELYS CORIACEA EN EL CARIBE HONDUREÑO", presentada por el Abogado KEVIN ROBERTO MANZANARES MERLO, quien actúa en su condición de Apoderado Legal de la ORGANIZACIÓN NO GUBERNAMENTAL CENTRO ECOLÓGICO DE PROTECCIÓN DE LAS TORTUGAS MARINAS (PROTECTOR). - Esta Dirección Ejecutiva se pronuncia en los siguientes términos:

**CONSIDERANDO:** Que corre agregado a las presentes diligencias, Solicitud de Renovación del permiso para la continuación del estudio de la dinámica poblacional y ecología de las Tortugas Marinas Eretmochelys Imbricata, Caretta Caretta, Chelonia Mydas y Dermochelys Coriacea en el Caribe Hondureño área de estudio Parque Nacional Marino Islas de la Bahía, que lo comprende los municipios de Útila, Roatán y Guanaja, del departamento de Islas de la Bahía.

**CONSIDERANDO:** Corre agregado al expediente ICF-132-2023, Dictamen Técnico ICF-ORFA-VS-07-2023, con fecha 20 de abril de 2023 emitido por la Región Forestal del Atlántico, en el cual establece como antecedentes la Resolución DE-MP-215-2015. (folios 56 a 59)

**CONSIDERANDO:** Que consta en el expediente de mérito que el Abogado KEVIN ROBERTO MANZANARES MERLO presentó la siguiente documentación: A) Investigador principal Dr. Stephen G. Dunbar, Propuesta del estudio, Hoja de vida de cada uno de los investigadores principales, Carta de compromiso, Formato de registro de investigación, Cartas de apoyo, Publicaciones, Acta de compromiso. B) El objetivo general es investigar las tortugas marinas y su hábitat en el parque nacional marino Islas de la Bahía, fortaleciendo el manejo a través de la generación de información científica calificada estandarizada y continua C) El objetivo específico de dar a conocer las rutas migratorias de las tortugas marinas con el fin de fortalecer el corredor biológico marino, promover la zonificación de sitios de alimentación y protección de hábitat a través de los estudios de distribución y diversidad genética, fortalecer la conservación en su proceso de anidamiento y éxito de eclosión, a través de estudios de cambio climático y patrones conductuales tanto en neonatos como hembra anidantes.

**CONSIDERANDO:** Que la investigación se realizará en el Parque Nacional Marino Islas de la Bahía en los municipios de Útila, Guanaja, Roatán. La metodología a seguir en esta investigación, se realizarán varios métodos de acuerdo con los objetivos planteados: 1) PARA LA DISTRIBUCIÓN: a) captura y recaptura b) instalación de radios transmisores, c) foto identificación, d) rastreo satelital, 2) Análisis de alimento: a) lavado gástrico 3) Estudio de Diversidad a) colecta de sangre y tejido 4) Estudio de anidamiento a) monitoreo remoto de nidos en tiempo real con tecnología Nestingsafe Inc medidores de Humedad, temperatura y vibración, análisis estadístico, exposición de laberinto, colores y temperatura de arena.

**CONSIDERANDO:** Que de acuerdo al manual de normas técnicas administrativas de la vida silvestre acuerdo 045-2011, los investigadores deberán de cumplir con lo siguiente: 1) Permiso de investigación con vigencia de un (1) año a partir de la fecha de emisión, según acuerdo 045-2011. 2) El investigador principal es el DOCTOR STEPHEN G. DUNBAR y su contraparte la LICENCIADA LIDIA SALINAS. 3) Es OBLIGATORIO que el investigador principal porte su respectivo permiso y se registre en la oficina regional ICF con el coordinador de Áreas Protegidas o el coordinador de Vida Silvestre del ICF, además deberá reportarse ante las instituciones co-manejadoras de las áreas protegidas que formen parte del área de estudio. En este último caso, los investigadores deberán acoplarse a cualquier reglamento o normativa sobre el desarrollo de investigación y colecta que exista para esa área. 4) Este permiso autoriza la colecta de muestras obtenidas mediante técnicas NO INVASIVAS. 5) En el caso que la investigación tuviera como resultado hallazgos de tecnología sujetas a patentes, derecho de propiedad intelectual, publicaciones y otros el investigador debe comunicarse con el Departamento De Vida Silvestre, quien en colaboración con la Secretaria General del ICF son los encargados de negociar y acordar las condiciones de acceso y utilización de la vida silvestre, incluida la distribución de los beneficios que se deriven de la utilización de dicho recurso, durante y después de las investigación y utilización de estos. 6) El ICF a través del departamento de Vida Silvestre está facultado para detener el desarrollo de la investigación en caso de no cumplir los objetivos propuestos en la solicitud o el incumplimiento de las disposiciones anteriores; artículo 41 según acuerdo 045-2011.



**CONSIDERANDO:** Que la Región Forestal Atlántico, considera que el permiso de investigación científica, y autorización para exportación de muestras solicitadas por el Centro Ecológico de Protección de las Tortugas Marinas para el Entrenamiento Difusión e Investigación (Pro Tector inc.) **ES TECNICAMENTE FACTIBLE.**

**CONSIDERANDO:** Que corre agregado al expediente de mérito Dictamen Técnico ICF-DVS-013-2023, de fecha 27 de abril de 2023, emitido por El Departamento de Vida Silvestre, en el cual concluye que **LA RENOVACIÓN DE PERMISO DE INVESTIGACIÓN “Estudio de la Dinámica Poblacional y Ecología de las Tortugas Marinas de las especies Eretmochelys Imbricata, Caretta Caretta, Chelonia Mydas, Dermochelys Coriácea en el Caribe Hondureño, es TECNICAMENTE FACTIBLE**

**POR TANTO:**

La Dirección Ejecutiva del Instituto Nacional de Conservación y Desarrollo Forestal, Áreas Protegidas y Vida Silvestre (ICF), en el uso de sus facultades que la Ley le confiere, una vez visto y analizada la documentación presentada y con fundamento en los artículos 80 y 340 de la Constitución de la República; 21, 22, 23, 24, 25, 26, 27 y 72 de la Ley de Procedimiento Administrativo; 1, 2, 3, 11, 108, 115 de la Ley Forestal, Áreas Protegidas y Vida Silvestre; 37, 38, 39, 40, 41, 42 del Manual de Normas Técnico-Administrativas para el Manejo y Aprovechamiento Sostenible de la Vida Silvestre.

**RESUELVE:**

Tomando en consideración los Dictámenes Técnicos emitido por diferentes Departamentos, del **INSTITUTO NACIONAL DE CONSERVACIÓN Y DESARROLLO FORESTAL ÁREAS PROTEGIDAS Y VIDA SILVESTRE (ICF).** - Está Dirección Ejecutiva **RESUELVE:**

**PRIMERO:** DECLARAR CON LUGAR LA RENOVACIÓN DEL “PERMISO PARA EL ESTUDIO DE LA DINÁMICA POBLACIONAL Y ECOLOGÍA DE LAS TORTUGAS MARINAS DE LAS ESPECIES ERETMOCHELYS IMBRICATA, CARETTA CARETTA, CHELONIA MYDAS, DERMOCHELYS CORIÁCEA EN EL CARIBE HONDUREÑO”, bajo los siguientes términos:

**PRIMERO:** La renovación del permiso tendrá una vigencia de 1 año a partir de la fecha de emisión.

**SEGUNDO:** La investigación se llevará a cabo en los siguientes lugares: Parque Nacional Marino Islas de la Bahía (Útila, Roatán, Guanaja sus cayos y los cayos Cochinos)

**TERCERO:** Que el investigador principal será: STEPHEN GEORGE DUNBAR, CON NÚMERO NO. DE PASAPORTE HM44197 DE NACIONALIDAD CANADIENSE y como CONTRAPARTE NACIONAL IRIS MASSIEL RODRÍGUEZ SALGADO DE NACIONALIDAD HONDUREÑA.

**CUARTO:** Investigador principal Stephen George Dunbar es el responsable de presentar el informe de los resultados de la investigación ante el Departamento de Vida Silvestre.

**QUINTO:** El investigador secundario ANUAR ROMERO ACOSTA como COORDINADOR DE GREEN ISLAND CHALLENGE, en la Isla de Guanaja deberá informar y enviar ayudas memorias de manera mensual al coordinador de vida silvestre de la coordinación del ICF en Islas de la bahía.

**SEXTO:** Para la exportación de los especímenes resultantes de la investigación deberá realizar el trámite de acuerdo a lo establecido en el Acuerdo No.936-13 e instructivo ICF-001-2017. Es importante considerar, que las especies a estudiar en dicha investigación, se encontraran en alguno de los apéndices CITES\*, se tendrá que acatar a los trámites correspondientes según la oficina CITES-SAG, y deberá de pagar los valores correspondientes por dicha institución.

**SÉPTIMO:** No se permitirá la manipulación de otras especies durante el proceso de investigación ya que el permiso es solamente para las tortugas marinas enunciadas Eretmochelys Imbricata, Caretta Caretta, Chelonia Mydas, Dermochelys Coriácea en base a la Resolución-DE-MP-215-2021 (numeral 5), (folio 196-198)

**OCTAVO:** El Informe final deberá presentarse impreso en papel bond, tamaño carta y CD en formato Microsoft Word y PDF. El mismo deberá entregarse en un periodo de un mes (1) a (6) meses una vez concluidos la investigación; el idioma de presentación del informe es español. Este debe de incluir un listado detallado de los especímenes colectados y reportados referentes a la investigación, con fotografías de los especímenes debidamente identificados; formato de presentación JPG, adjuntando en una carpeta en CD.

**GOBIERNO DE** **NOVENO:** Es obligatorio que los investigadores porten el permiso de investigación y se reporten en la Oficina Regional y/o local con el Coordinador de Áreas Protegidas y Vida Silvestre del ICF en la jurisdicción correspondiente y autoridades locales que los solicite, además deberá reportarse ante la institución co-manejadora de las Áreas Protegidas a visitar. En este último caso, los investigadores deberán acoplarse a cualquier reglamento o normativa sobre el desarrollo de investigación y colecta que exista para esa área de estudio.

**DECIMO:** En el caso que la investigación tuviera como resultado hallazgos de tecnología sujetas a patentes, derecho de propiedad intelectual, publicaciones y otros el investigador debe comunicarse con el **DEPARTAMENTO DE VIDA SILVESTRE del ICF**, quien en colaboración con la Secretaria General del ICF son los encargados de negociar las condiciones de acceso y utilización de la vida silvestre, incluidas la distribución de los beneficios que se deriva de la utilización de dicho recurso, durante y después de la investigación y utilización de datos.

**DECIMOPRIMERO:** El ICF a través del departamento de Vida Silvestre está facultado para detener el desarrollo de la investigación en caso de no cumplir los objetivos propuestos en la solicitud o el incumplimiento de las disposiciones anteriores; artículo 41 según acuerdo 045-2011.

**DECIMOSEGUNDO:** El canon que el investigador principal debe cancelar, es el siguiente:

ACTIVIDAD	PORCENTAJE DEL SALARIO MINIMO 2023 <sup>s</sup>	CANON
Permiso de investigación	25%	L. 2,520.22
Colecta científica (investigadores nacionales)	26*10%	L. 2,016.17
Exportación de muestra	30%	L.3,024.26
<b>TOTAL</b>		<b>L.7,560.65</b>

según lo contenido en el artículo 185 del manual de Normas Técnicas Administrativas para el manejo y aprovechamiento sostenible de la Vida Silvestre de Honduras (acuerdo N. 2045-2011). **NOTIFIQUESE.**

ING. LUIS EDGARDO SOLIZ LOBO  
DIRECTOR EJECUTIVO DE ICF.

ABOGADA. DANIA MARÍA RAMÍREZ NAJERA  
SECRETARIA GENERAL ICF



**Stephen G. Dunbar, PhD**  
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Graduate Biology Program Director  
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<http://resweb.llu.edu/sdunbar/>

<http://www.turtleprotector.org>

### **Professional Preparation**

Central Queensland University

Marine Biology

PhD. 2002

University of British Columbia

Secondary Education

BEd. 1991

University of British Columbia

General Biology

BSc. 1989

### **Academic Awards**

Best Student Paper Award, - received at the 5<sup>th</sup> International Crustacea Congress, Melbourne, Australia, July, 2001

Coastal Cooperative Research Centre Postgraduate Student of the Year Award – received at the 3<sup>rd</sup> Annual Coastal CRC Retreat, July, 2001

Coastal Cooperative Research Centre PhD Scholarship, 1999 - 2002

### **Honors**

President, International Sea Turtle Society (ISTS), 2024

President-Elect, International Sea Turtle Society (ISTS), 2023

Loma Linda University Health Speakers Bureau, 2013 –

### **Appointments**

Professor (Promotion, July 30, 2015), Department of Earth and Biological Sciences, Loma Linda University, 2015 –

Adjunct Professor, Department of Biology, Walla Walla University, 2013 –

Adjunct Professor, Department of Biology, Andrews University, 2012 -

Associate Professor (Promotion, May, 2009), Department of Earth and Biological Sciences, Loma Linda University, 2009 – 2015

Location: Loma Linda, California, USA

Duties: Graduate (MS and PhD) Biology Program Director. Review and continue development of graduate biology programs, supervision of graduate students at MS and PhD levels, active program of research, teach graduate level biology courses.

President/Founder, Protective Turtle Ecology Center for Training, Outreach and Research, Inc. (ProTECTOR), 501 (c)(3), 2007 -

Location: Incorporated, California, 2007.

Duties: Develop and conduct research, training and capacity-building regarding conservation of endangered sea turtles in Central America.

Assistant Professor, Department of Earth and Biological Sciences, Loma Linda University, 2002 – 2009

Location: Loma Linda, California, USA

Duties: Graduate Biology Program Director. Supervision of graduate students at MS and PhD levels, active program of research, teach graduate level biology courses.

Senior Academic Tutor, Capricornia College, Central Queensland University, 1999 - 2002

Location: Rockhampton, Queensland, Australia

Duties: Tutor individuals and groups in undergraduate Biology, Chemistry and Research. Instruct in English as a Second Language.

Teaching Assistant, Central Queensland University, 1998-2000

Location: Rockhampton, Queensland, Australia

Duties: Assist in the set-up and teaching of laboratory sections of undergraduate Biology and Ecology.

Invited Lecturer, Fulton College, Fiji, 1997-1998, 1999-2000, 2005

Location: Tailevu, Fiji

Duties: Instruction in Science Curriculum for upgrading primary school teachers from across the S. Pacific.

Teacher, Abbotsford School District, BC, Canada, 1993-1995, 1996-1997

Location: Abbotsford, British Columbia, Canada

Duties: Instruct students at the high school level in Biology, Advanced Placement Biology, Chemistry and Science.

Institute Coordinator, SDA Language Institutes, South Korea, 1995-1996

Location: Chuncheon, S. Korea

Duties: Instruct in ESL and coordinate the teaching and activities of ESL teachers. Liaise between foreign English teachers and national staff.

Senior Instructor, Abbotsford Continuing Education, BC, Canada, 1993-1995

Location: Abbotsford, BC, Canada

Duties: Instruction in Grade 12 Biology for returning adults.

Chair of Sciences and Math, Fulton College, Fiji, 1992

Location: Tailevu, Fiji

Duties: Coordination of courses and instruction for the Department of Math & Sciences.

## **Publications**

### **Peer Reviewed**

**\* indicates advised PhD graduate student author;**

**+ indicates advised MS graduate student author;**

**^ indicates advised undergraduate student author**



- Nyborg, T, H. B. Fraaije, R., and **Dunbar, S. G.** 2023. Pliocene hermit crabs (Decapoda, Anomura, Paguroidea) preserved *in situ* in host gastropods shells from the San Diego Formation near San Diego (southern California, USA). *Neues Jahrbuch für Geologie und Paläontologie - Abhandlungen*. 310(1):71-81.
- Srisiri, S., Haetrakul, T. **Dunbar, S. G.**, Chansue, N. 2024. Microplastic contamination in edible marine fishes from the upper Gulf of Thailand. *Marine Pollution Bulletin*. 198: 115785
- Dunbar, S. G.** 2023. 42<sup>nd</sup> Annual Symposium on Sea Turtle Biology and Conservation, 24-29 March, 2024 in Pattaya, Thailand. *Marine Turtle Newsletter*. 166: 34.
- Hile, T. D.\*, **Dunbar, S. G.**, Sinclair, R. G. 2023. Microbial contamination analysis of drinking water from bulk dispensers and fast-food restaurants in the Eastern Coachella Valley, California. *Water Supply*, 23 (9): 3578–3596. <https://doi.org/10.2166/ws.2023.200>
- Hyatt, E. C.\*, Hayes, W. K., and **Dunbar, S. G.** 2023. Ecophenotypic variation or genetic differentiation? Ambiguity of morphological and molecular relationships presents uncertainty in host-specific plasticity of Chelonibia barnacles. *Estuarine, Coastal and Shelf Science*, 292 (2023) 108470. <https://doi.org/10.1016/j.ecss.2023.108470>
- Hile, T.D.\*, **Dunbar, S. G.**, Escobar, N., Sinclair, R. G., 2022. Assessment of tap water quality in Mobile Homes in the Eastern Coachella Valley, California. *PLOS Water*, 1(9): e0000037. <https://doi.org/10.1371/journal.pwat.0000037>
- Wright, M. K.\*, Pompe, L., Mishra, D. R., Baumbach, D. S.\*, Salinas, L., and **Dunbar, S. G.** 2022. Hawksbill utilization and habitat suitability of a marine reserve in Roatán, Honduras. *Ocean and Coastal Management*, 225: <https://doi.org/10.1016/j.ocecoaman.2022.106204>
- Dos Santos, T.<sup>+</sup>, Danilo S. Boskovic, Wendy Shih, **Stephen G. Dunbar**. 2022. Heavy metals in the blueband hermit crab, *Pagurus samuelis* (Stimpson, 1857), and its Southern California habitat. *Journal of Crustacean Biology* 42(1): ruac015.
- Baumbach, D. S.\*, Renwu Zhang, Christian T. Hayes<sup>+</sup>, Marsha K. Wright\*, **Stephen G. Dunbar**. 2022. Strategic foraging: Understanding hawksbill (*Eretmochelys imbricata*) prey item energy values and distribution within a marine protected area. *Marine Ecology* 43(1): e12703. <https://doi.org/10.1111/maec.12703>
- Hile, T.\*, **Dunbar, S. G.**, Sinclair, R. 2021. Microbial contamination of drinking water from vending machines of Eastern Coachella Valley. *Water Supply*. ws2020372. <https://doi.org/10.2166/ws.2020.372>
- Dunbar, S. G.**, Anger, E. C., Parham, J. R., Kingen, C., Wright, M. K.\*, Hayes, C.T.<sup>+</sup>, Safi, S., Holmberg, J., Salinas, L., Baumbach, D. S.\* 2021. HotSpotter computer-driven photo-ID for in-water and out-of-water identification of sea turtles. *Journal of Experimental Marine Biology and Ecology*. 535: 151490. <https://doi.org/10.1016/j.jembe.2020.151490>
- Wright, M. K.\*, Baumbach, D. S.\*, Collado, N., Safi, S. B., and **Dunbar, S. G.** 2020. Influence of boat traffic on distribution and behavior of juvenile hawksbills foraging in a marine protected area in Roatán, Honduras. *Marine and Coastal Management*. 198: 105379. <https://doi.org/10.1016/j.ocecoaman.2020.105379>

- Dunbar, S. G.**, Daochai, C., Haetrakul, T., Smithiwong, S., Charoenpak, P., Saelim, S., Chansue, N. 2020. Developing the Gulf of Thailand Sea Turtle Nesting Recovery Network through an initial workshop: 13 – 15 November, 2019 at Koh Talu, Thailand. *Marine Turtle Newsletter*. 161: 35 – 39.
- Dunbar, S. G.**, Baumbach, D. S.\* 2020. Sea Turtles of Pacific Honduras. *Marine Turtle Newsletter*. 160: Cover, 1 - 4.
- Pasini, G., Garassino, A., Nyborg, T., **Dunbar, S. G.**, Fraaije, R. H. B. 2020. *In situ* hermit crab (Anomura, Paguroidea) from the Oligocene Pysht Formation, Washington, USA. *Neues Jahrbuch für Geologie und Paläontologie*. 295(1): 17 – 22.
- Baumbach, D. S.\*, Anger, E. C., Collado, N. A., **Dunbar, S. G.** 2019 Identifying sea turtle home ranges utilizing data from novel web-based and smartphone GIS applications. *Chelonian Conservation and Biology*. 18(2): 133 – 144.
- Valere-Rivet, M. G.\*, Boskovic, D. S., Estevez, D., and **Dunbar, S. G.** 2019. Changes in hemolymph lactate and ammonia in the hermit crab *Pagurus samuelis* (Stimpson, 1857) (Decapoda: Anomura: Paguridae) during shallow burial. *Journal of Crustacean Biology*. 39(2): 172 – 180.
- Haetrakul, T., **Dunbar, S. G.**, and Chansue, N. 2018. Antiviral activities of *Clinacanthus nutans* (Burm.f.) Lindau extract against Cyprinid herpesvirus 3 in koi (*Cyprinus Carpio koi*). *Journal of Fish Diseases*. 41: 581 – 587.
- Rigley, S., Ingle, M.\*, Gathany, M., and **Dunbar, S. G.** 2017. Raccoon (*Procyon lotor*) diets shed light on *Baylisascaris procyonis* roundworm prevalence. *Journal of Ecology and Natural Resources*. 1(2): 1 – 6.
- Dunbar, S. G.**, Shives, J.<sup>+</sup>, and Boskovic, D. 2017. Lactate accumulation in response to burial in the hermit crab, *Pagurus samuelis*. *Journal of Crustacean Research* 46: 121 – 136.
- Valere-Rivet, M. G.\*, Juma, D., & **Dunbar, S. G.** 2017. Thermal tolerance of the hermit crab *Pagurus samuelis* subjected to shallow burial events. *Journal of Crustacean Research*. 46: 65 – 82.
- Baumbach, D.\* and **Dunbar, S. G.** 2017. Animal mapping using a citizen-science web-based GIS in the Bay Islands, Honduras. *Marine Turtle Newsletter*. 152: 16 – 19.
- Dunbar, S. G.**, Hudgins, J., and Jean, C. 2016. 1<sup>st</sup> Photo ID Workshop (29 February) As Part of the 36<sup>th</sup> Annual Symposium on Sea Turtle Biology and Conservation, Lima, Peru, 29 February – 4 March, 2016. *Marine Turtle Newsletter*. 151: 32 - 37.
- Hayes, C.T.<sup>+</sup>, Baumbach, D.S.\*, Juma, D., and **Dunbar, S.G.** 2016 (online), 2017 (hardcopy). Impacts of recreational diving on hawksbill sea turtle (*Eretmochelys imbricata*) behavior in a marine protected area. *Journal of Sustainable Tourism*. 25(1): 79 - 95
- Karen A. Bjorndal, Milani Chaloupka, Vincent S. Saba, Carlos E. Diez, Robert P. van Dam, Barry H. Krueger, Julia A. Horrocks, Armando J. B. Santos, Cláudio Bellini, Maria A. G. Marcovaldi, Mabel Nava, Sue Willis, Brendan J. Godley, Shannon Gore, Lucy A. Hawkes, Andrew McGowan, Matthew J. Witt, Thomas B. Stringell, Amdeep Sanghera, Peter B. Richardson, Annette C. Broderick, Quinton Phillips, Marta C. Calosso, John A. B. Claydon, Janice Blumenthal, Felix Moncada, Gonzalo Nodarse, Yosvani Medina, **Stephen G. Dunbar**,

- Lawrence D. Wood, Cynthia J. Lagueux, Cathi L. Campbell, Anne B. Meylan, Peter A. Meylan, Virginia R. Burns Perez, Robin A. Coleman, Samantha Strindberg, Vicente Guzmán-H., Kristen M. Hart, Michael S. Cherkiss, Zandy Hillis-Starr, Ian F. Lundgren, Ralf H. Boulon, Jr., Stephen Connett, Mark E. Outerbridge, and Alan B. Bolten. 2016. Somatic growth dynamics of West Atlantic hawksbill sea turtles: a spatio-temporal perspective. *Ecosphere*. 7(5): e01279, DOI: 10.1002/ecs2.1279, 1 – 14.
- Magrann, T.\*, Howard, M., Sutula, M., Boskovic, D. S., Hayes, W. K., and **Dunbar, S. G.** 2015. Screening assessment of cyanobacteria and cyanotoxins in Southern California lentic habitats. *Environmental Management and Sustainable Development* 4(2): 91 – 111.
- Duran, N.\* and **Dunbar, S. G.** 2015. Differences in diurnal and nocturnal swimming patterns of olive ridley hatchlings in the Gulf of Fonseca, Honduras. *Journal of Experimental Marine Biology and Ecology* 472:63 - 71.
- Duran, N.\*, **Dunbar, S. G.**, Escobar, R. A.<sup>+</sup>, Standish, T. G. 2015. High frequency of multiple paternity in a solitary population of olive ridley sea turtles in Honduras. *Journal of Experimental Marine Biology and Ecology* 463(2015): 63 – 71.
- Dunbar, S. G.**, Ito, H.<sup>^</sup>, Bahjri, K., Dehom, S. and Salinas, L. 2014. Recognition of juvenile hawksbills (*Eretmochelys imbricata*) through face scale digitization and automated searching. *Endangered Species Research* 26:137 – 146.
- Ingle, M. E.\*, **Dunbar, S. G.**, Gathany, M. A., Vasser, M. M., Bartsch, J. L., Guffey, K. R., Knox, C. J., Nolan, A. N., Rowlands, C. E., Trigg, E. C. 2014, Predicting *Baylisascaris procyonis* roundworm prevalence, presence, and abundance in raccoons (*Procyon lotor*) of southwestern Ohio using landscape features. *International Journal of Parasitology: Parasites and Wildlife* 3 (2014): 113 – 117.
- Magrann, T.\*, **Dunbar, S. G.**, Boskovic, D., and Hayes, W. K. 2012 Impacts of *Microcystis* on algal biodiversity and use of new technology to remove *Microcystis* and dissolved nutrients. *Lakes & Reservoirs: Research and Management* 17:231-239
- Berube, M.<sup>+</sup>, **Dunbar, S. G.**, Rützler, K., and Hayes, W. K. 2012 Home range, prey distribution and gut content analysis of juvenile hawksbills (*Eretmochelys imbricata*) sea turtles on inshore reefs of Honduras. *Chelonian Conservation and Biology* 11(1): 33 – 43.
- Nisani, Z.\*, Boskovic, D., **Dunbar, S. G.**, Kelln, W. and Hayes, W. K. 2012. Investigating the Chemical Profile of Regenerated Scorpion (*Parabuthus transvaalicus*) Venom in Relation to Metabolic Cost and Toxicity. *Toxicon* 60 (2012) 315-232
- Billock, W. L.\* and **Dunbar, S. G.** 2011. Shell and food acquisition behaviors; Evidence of Contextual Decision Hierarchies in hermit crabs. *Journal of Experimental Marine Biology and Ecology*. 389: 26 – 32.
- Shives, J.<sup>+</sup> and **Dunbar, S. G.** 2010. Behavioral response to burial in the hermit crab, *Pagurus samuelis*: implications for the fossil record. *Journal of Experimental Marine Biology and Ecology*. 388: 33 – 38.
- Sjobergen, A. D.<sup>+</sup>, **Dunbar, S. G.**, and Boskovic, D. 2010. Temporal fluctuations of fatty acids in *Pachygrapsus crassipes* from Southern California. *Journal of Crustacean Biology*. 30(2): 257 – 265.

- Bacchus, M-L.<sup>+</sup>, **Dunbar, S. G.**, and Self-Sullivan, C. 2009. Characterization of resting holes and their use by the Antillean manatee (*Trichechus manatus manatus*) in the Drowned Cayes of Belize. *Aquatic Mammals*. 35(1): 62 - 71
- Billock, W. L.\* and **Dunbar, S. G.** 2009. Influence of motivation on behavior in the hermit crab, *Pagurus samuelis*. *Journal of the Marine Biological Association of the U. K.*, 89(4): 775 - 779.
- Dunbar, S. G.**, Salinas, L. and Stevenson, L., 2008. In-water observations of recently-released juvenile hawksbills (*Eretmochelys imbricata*). *Marine Turtle Newsletter*. 121: 5 - 9.
- Revell, T.\* and **Dunbar, S. G.** 2007. The energetic savings of sleep in the Desert Iguana (*Dipsosaurus dorsalis*) at three ecologically significant temperatures. *Comparative Biochemistry and Physiology A*. 148: 393 - 398
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- Salinas, L., Pastor de Maria y Campos, R., Bermudez, J., Soliz, L., Pereira, S., Flores, D., Dunbar, S.G. 2023. Scientific research and government process: paradigm shifts in the conservation of sea turtles in Honduras. 41<sup>st</sup> International Sea Turtle Symposium. 20 – 24 March, 2023. Cartagena, Colombia.
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### **Published Reports and Briefs**

- 2021: Dunbar, S.G. and Salinas, L. 2021. ProTECTOR, Inc. Reporte Nacional De Las Actividades De Investigacion 2019.
- 2020: Eckert, K. .... 2020. Turtles of the Caribbean. *State of the World's Sea Turtles (SWOT) Report*. XV: 15 – 27.
- 2019: Dunbar, S.G., Chansue, N., Smithiwong, S., Haetrakul, T., Vanarin, C., Sakaew, C., and Sahang, S. 2019. Progress report to the United States Fish and Wildlife Service for the rapid nesting and threats assessments for the recovery of hawksbill nesting in the Gulf of Thailand. A mid-term progress report 2018, United States Fish and Wildlife Services 2019.
- 2019: Dunbar, S. G., Wright, M.K., Hyatt, E. C., Gammariello, R. T., Baumbach, D. S., Salinas, L. 2019. ProTECTOR, Inc. ProTECTOR, Inc. National Report of Activities for the 2018 Research Season in Honduras.
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- 2016: Baumbach, D. S. and Dunbar, S. G. Turtles Uniting Researchers and Tourists (TURT): The Next Generation of Sea Turtle Data Collection. Florida Environmental Outreach 2016, V8(2): 12 – 13.
- 2016: Dunbar, S. G., Hayes, C. T., and Baumbach, D. S. Impacts of Recreational Diving on Hawksbill Sea Turtles (*Eretmochelys imbricata*) in the Roatán Marine Park, Honduras. Summer 2014 Research Report. ProTECTOR Inc., Loma Linda. Pp. 19.
- 2015: Dunbar, S. G., Duran, N., Hayes, C. T., and Salinas, L. Activities of the Protective Turtle Ecology Center for Training, Outreach, and Research, Inc (ProTECTOR) in Honduras; Annual Report of the 2013 and 2014 Seasons. ProTECTOR Inc., Loma Linda. Pp. 21
- 2015: Dunbar, S. G. and Ito, H. Picture Perfect: Photography for Hands-off Turtle Monitoring. Invited article author for State of the Worlds Sea Turtles (SWOT) Report, 2015 (10 year Anniversary Edition). Pp. 10 – 11.
- 2013: Dunbar, S. G. and Salinas, L. Activities of the Protective Turtle Ecology Center for Training, Outreach, and Research, Inc (ProTECTOR) in Honduras; Annual Report of the 2011 and 2012 Seasons. ProTECTOR, Loma Linda. Pp. 53
- 2013: Dunbar, S. G., Randazzo, A., Salinas, L., and Luque J. Final Report of the Community-Directed Capacity Building for Hawksbill Conservation and Population Recovery in Caribbean Honduras. Final Report 2013, United States Fish and Wildlife Service. ProTECTOR, Loma Linda. Pp. 147
- 2012: Dunbar, S. G., Salinas, L., and Castellanos, S. Report of the Gulf of Fonseca Hawksbill Project In Pacific Honduras. Year-End Report From 2011, ProTECTOR, Loma Linda. Pp. 30
- 2011: Dunbar, S. G., Salinas, L., Castellanos, S. Activities of the Protective Turtle Ecology Center for Training, Outreach, and Research, Inc. (ProTECTOR) in Punta Raton, Honduras; Annual Report of the 2009 - 2010 Season. Tegucigalpa. Ministry of Environment (SERNA). Pp. 57
- 2010: Nuila Coto, R. W. “Erica,’ la de Punta Ratón, primera Tortuga golfina hondureña con monitoreo satelital.” La Tribuna (Honduras National Newspaper), Sunday October 3, 2010, Pp. 2B – 3B.
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- 2009: Roth, D. Loma Linda City News. “LL Marine Biologist Has a Special Place in His Heart for Sea Turtles.” December 24, 2009. Pg. 11.
- 2009: Dunbar, S.G., Salinas, L., and Berube, M.D. Annual Report on the Activities of the Protective Turtle Ecology Center for Training, Outreach, and Research, Inc. (ProTECTOR) on Hawksbill (*Eretmochelys imbricata*) and Green (*Chelonia mydas*) sea turtles in Roatan, Honduras. Ministry of Environment (SERNA), Honduras.
- 2009: Dunbar, S.G. Contribution to the SWOT Report Volume IV: State of the World’s Sea Turtles. SWOT Outreach Grant for a Series of School Visits to Commence the Turtle Nesting Hotline’s “Turtle Art and Jingle Challenge” in the Bay Islands, Honduras: An Education and Awareness Initiative.

- 2009: Dunbar, S.G., Salinas, L., and Berube, M. Activities of the Turtle Awareness and Protection Studies (TAPS) Program Under the Protective Turtle Ecology Center for Training, Outreach, and Research, Inc (ProTECTOR) in Roatan, Honduras. 2007-2008 Annual Report, Ministry of the Environment, Honduras.
- 2008: Dunbar, S.G., and Salinas, L. Activities of the Protective Turtle Ecology Center for Training, Outreach, and Research, Inc. (ProTECTOR) on Olive ridley (*Lepidochelys olivacea*) in Punta Raton, Honduras. Annual Report of the 2007 – 2008 Nesting Seasons. Ministry of Environment (SERNA), Honduras.
- 2008: Dunbar, S.G., and Berube, M. D. United States Fish and Wildlife Services – Marine Turtle Conservation Fund. “Hawksbill Nesting Beach Reconnaissance Project on Roatan, Honduras, 2007 – 2008.
- 2008: Dunbar, S.G. Contribution to the SWOT Report Volume III: State of the World’s Sea Turtles. SWOT Outreach Grant for Two workshops to facilitate positive change among indigenous fishers of the Bay Islands, Honduras.
- 2008: Adventists Making a Difference - Dr. Stephen G. Dunbar; Adventist Environmental Advocacy. <http://adventist-environmental-advocacy.blogspot.com/2008/01/adventists-making-difference-dr-stephen.html>
- 2008: Final Report on a proposal for a series of school visits to commence the “Turtle Nesting Hotline’s Turtle Art and Jingle Challenge” In the Bay Islands, Honduras; an education and awareness initiative. SWOT.
- 2007: Final Report on a proposal to facilitate positive change among indigenous fishers of the Bay Islands, Honduras. SWOT.
- 2006: Preliminary Report on Activities Under Permits # DGPA/005/2006 and DGPA/245/2006 by the Turtle Awareness and Protection Studies (TAPS) Group. ProTECTOR, Loma Linda.
- 2005: The Roatan Rapid Assessment Project: Part I for Spiny Lobster, *Panulirus argus*, 23 Pp; Part II for Queen Conch, *Strombus gigas*, 25 Pp; Part III for common hermit crabs of Roatan, 23 Pp, Bay Islands, Honduras. Prepared for USAID/MIRA, Honduras.
- 2005: The Yaqara Bay Biodiversity Inventory Project; Report for the 2003 and 2005 field seasons. The Marine Research Group, Department of Earth & Biological Sciences, Loma Linda University, Loma Linda. 35Pp.
- 2005: Bay of Plenty; Website at Vancouver Aquarium: <http://www.vanaqua.org/aquanews/field/index.html>
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- 2003: Ozestuaries Coastal Indicator Development and Information System web page author. “Hermit Crab Species” [http://www.ozestuaries.org/indicators/In\\_hermit\\_crabs\\_f.html](http://www.ozestuaries.org/indicators/In_hermit_crabs_f.html)
- 2002: “Surviving the storm.” Queensland Regional Ripples; Marine and Coastal Community Network. 8 (4), 6
- 1998: ABC National Radio. “Spot-on find comes out of its shell.” September.
- 1998: Rockhampton ABC Science News. “Scientist and spot-on find.” August.

### **Invited Community Presentations**

- Invited – Presenter. WIDECASST Monthly Meeting #3 of 2023 “An Overview of Photot-Identification (PID) Use in Sea Turtle Ecology.” & “Determining Sea Turtle Home Ranges Through Photo-Identification (PID) Techniques.” December 5, 2023.

Invited – Presenter. Ocean Institute’s Distinguished Speakers Series. Dana Point, California. “Introducing ProTECTOR, Inc. and Our Sea Turtle Research Around the World.” January 4, 2023.

Invited – Presenter. Duke University undergraduate student seminar. Zoom recording with Kellye Stewart and Matthew Godfrey. March 17, 2021.

Invited – Presenter. California Turtle and Tortoise Club, Low Desert Chapter. “Potential Impacts of Nesting Beach Loss on the SBWEMR.” February 3, 2020. (Audience: 25)

Invited – Presenter. Montemorelos University, Montemorelos, Mexico. “What We’re Learning About Sea Turtles in Honduras.” October 25 - 26, 2019. (Audience: 1,785)

Invited – Presenter. Southwestern Adventist University Guest Lecture Series. “Here’s Looking At You; Using New Photo ID and Mapping Techniques in Sea Turtle Research.” April 4, 2019 (Audience: 35)

Invited – Presenter. Adventist Colleges Abroad Gala Event. “Why ACA; My Experiences at Sagunto College.” Riverside, California. March 17, 2019. (Audience: 115)

Invited – Presenter. South Orange County Dive Club. “Here’s Looking at You; Using New Photo ID and Mapping Techniques in Sea Turtle Research.” March 13, 2019. (Audience: 60)

Invited – Publishing Workshop, Chulalongkorn University, 17 – 18, July, 2018. Bangkok, Thailand.

Invited – Guest Classroom Speaker (via Zoom), Laura Duncan’s Grade 1 Class. Hertford, North Carolina. May 21. (Audience: 17)

Invited – Guest Speaker, Redlands SDA Retirees, Redland, CA. May 10. “Here’s Looking at You: Using New Photo-ID and Mapping techniques in Sea Turtle Research”. (Audience: 65)

Invited – Walla Walla University Biology Seminar Lecture Series, Walla Walla, WA. May 8, 2018. “Here’s Looking at You: Using New Photo-ID and Mapping techniques in Sea Turtle Research”. (Audience: 80)

Invited – Middle school presentation. Moreno Valley Christian School. 17 November, 2017. (Audience: 58)

Invited – Keynote Speaker. Clyto Marine Science Research and Technology Conference. 22 – 24 May, 2017, Kuala Lumpur, Malaysia.

Invited – 37<sup>th</sup> ISTS Citizen Science Session Chair (with Dustin Baumbach and Catherine Bell). 18 April, 2017

Invited – Presenter. 37<sup>th</sup> ISTS ICAPO (Eats Pacific Hawksbill Network) Regional Meeting. 17 April, 2017.

Invited – 37<sup>th</sup> ISTS Workshop Organizer (with Claire Jean and Jillian Hudgins). 16 April, 2017

Invited – Presenter. WIDECAST Annual General Meeting. “Looking at You: Advances in Sea Turtle Photo ID” 20 – 24 March, 2017. Curaçao.

Invited – Presenter. WIDECAST Annual General Meeting. “There’s an App for That: Development and Use of the TURT and RASTR Smartphone Apps for Global Sea turtle Sightings” 20 – 24 March, 2017. Curaçao.

Invited – Presenter. Chulalongkorn University. Hosted by Professor Nantarika Chansue. “Artificial Reefs”, 20 January, 2017. Bangkok, Thailand. (Audience: 74)

Invited – Loma Linda University Research Symposium. “Resolving Conflicts between Research, Community Interests, and Government Agencies in the Foreign Context.” Loma Linda University, 20 – 21, October, 2016. (Audience: 65)

Invited – Mrs. Medley’s Kindergarten and Grade 1 Classes. Loma Linda Academy Elementary, Loma Linda, CA. “A Little Turtle Talk” May 23, 2016. (Audience: 42)

Invited – Dr. Saenz Biology Club. Oak Hills High School. “Here’s Looking At You: Using New Photo ID and Mapping Techniques in Sea Turtle Research.” Hesperia, CA. 4<sup>th</sup> Annual Invited Lecture. May 11, 2016 (Audience: 53).

Invited – San Bernardino Chapter of the California Turtle and Tortoise Club. “Here’s Looking At You: Using New Photo ID and Mapping Techniques in Sea Turtle Research.” Redlands, CA. May 6, 2016. (Audience: 60)

Invited – Ms. Duncan’s Grade 1 Class. Ballentine Elementary, 6<sup>th</sup> Annual “Turtle Talk” by Skype. May 4, 2016. (Audience: 15)

Invited – E.O. Grundset Biology Lecture Series, Southern Adventist University, Collegedale, TN, USA. “Here’s Looking at You: Using New Photo ID and Mapping Techniques in Sea Turtle Research.” April 7, 2016. (Audience: 250)

Invited – Andrews University Biology Seminar, Andrews University, Berrien Springs, MI, USA. “Here’s Looking at You: Using New Photo ID and Mapping Techniques in Sea Turtle Research.” April 5, 2016. (Audience: 32)

Invited – Camilla Rd. Senior Public, Mississauga, Ont. Canada. “A Place in the Sea: What We’re Learning About Sea Turtles in Honduras.” Nov 20, 2015 (Audience: 700)

Invited – Photo Identification Workshop Session Organizer, 36<sup>th</sup> International Sea Turtle Symposium, February 28 – March 4, 2015, Lima, Peru (Audience: 48).

Invited – EXSEED Workshop Session Presenter – A Skype Sea Turtle Workshop From the Field, Loma Linda University EXSEED Conference. July 14, 2015. (Audience: 9).

Invited – 1-Day Sea Turtle Workshop for Dive Operators. West End, Roatán, Honduras. July 7, 2015. (Audience: 21).

Invited – 1<sup>st</sup> Roatán Sea Turtle Workshop, West End, Roatán, Honduras. May 12 – 13, 2015. (Audience: 16).

Invited – Ms. Duncan’s Grade 1 Class. Ballentine Elementary, 5<sup>th</sup> Annual “Turtle Talk” by Skype. May 19, 2015. (Audience: 20).

Invited – Wil Alexander Wholeness Series, Loma Linda University. “Saving Earth’s Species: The Sea Turtle Project (and animal exhibit).” Mar. 11, 2015. (Audience: 140).

Invited – Linda Valley Retirement Villa. “A Place in the Sea: What We’re Learning About Sea Turtles in Honduras.” Jan. 10, 2015. (Audience: 60).

Invited – E.O. Grundset Biology Lecture Series. Southern Adventist University. “A Place in the Sea: What We’re Learning About Sea Turtles in Honduras.” March 19, 2015. (Audience: 162).

Invited – Oakwood University. “A Place in the Sea: What We’re Learning About Sea Turtles in Honduras.” March 18, 2015. (Audience: 70).

Invited – Southwestern Adventist University. “A Place in the Sea: What We’re Learning About Sea Turtles in Honduras.” Dec. 2, 2014. (Audience: 59).

Invited – National Autonomous University of Honduras (UNAH). “A Place in the Sea: What We’re Learning About Sea Turtles in Honduras.” Nov. 28, 2014 at the occasion of the signing of a partnership agreement between ProTECTOR and UNAH. Tegucigalpa, Honduras.

Invited – Biola University Biology Seminar. “A Place in the Sea: What We’re Learning About Sea Turtles in Honduras.” Biola University, La Mirada, CA. Nov. 7, 2014. (Audience: 90).

Invited – Aquarium of the Pacific Evening Lecture Series. “A Place in the Sea: What We’re Learning About Sea Turtles in Honduras.” Aquarium of the Pacific, Long Beach, CA. Oct. 16, 2014. (Audience: 74). AquaCast Interview at:  
[http://www.aquariumofpacific.org/multimedia/player/stephen\\_dunbar](http://www.aquariumofpacific.org/multimedia/player/stephen_dunbar)  
 Evening Lecture at:  
[http://www.aquariumofpacific.org/multimedia/player/lecture\\_archive\\_stephen\\_dunbar](http://www.aquariumofpacific.org/multimedia/player/lecture_archive_stephen_dunbar)

Invited – Orange County Chapter of the California Turtle and Tortoise Club. August 8, 2014

Invited – San Bernardino Chapter of the California Turtle and Tortoise Club. June 6, 2014

Invited – Ms. Duncan’s Grade 1 Class. Ballentine Elementary, 4th Annual “Turtle Talk” by Skype. May 5, 2014.

Invited – Inter-American Convention for the Conservation of Sea Turtles, Scientific Advisory Committee Meeting, Tegucigalpa, Honduras, September 10, 11, 12, 2013.

Invited – Asia Pacific International University, Muak Lek, Thailand, July, 2013.

Invited – San Bernardino Chapter of the California Turtle and Tortoise Club. June 7, 2013

Invited – Long Beach Chapter of the California Turtle and Tortoise Club. May 17, 2013

Invited – Ms. Duncan’s Grade 1 Class. Ballentine Elementary, 3<sup>rd</sup> Annual “Turtle Talk” by Skype. May 5, 2013.

Invited – Global Practice Class Lecture, Masters in Social Work. “ProTECTOR and Partners – Saving Turtles, Helping People.” Loma Linda University. April 25, 2013.

Invited – Loma Linda University Workers Retreat. February, 2013.

Invited – EXSEED Session Presenter, Loma Linda University EXSEED Conference. June 18, 2012.

Invited – San Bernardino Chapter of the California Turtle and Tortoise Club. June 1, 2012

Invited – Los Angeles Underwater Photography Association. “Photos of Sea Turtle Conservation” May 16, 2012

Invited – Ms. Duncan’s Grade 1 Class. Ballentine Elementary, 2<sup>nd</sup> Annual “Turtle Talk” by Skype. May 2, 2012.

Invited – Dunbar, S. G. ProTECTOR: Working with communities for sea turtle conservation. Presentation for the Opening of the 2011 "la Veda" Season. 1 September, 2011. Cedenó, Choluteca, Honduras.

Invited – San Bernardino Chapter of the California Turtle and Tortoise Club. “Communicating Science: Linking Disparate Interests on a Common Theme.” June 3, 2011.

Invited – Chino Valley Chapter of the California Turtle and Tortoise Club. “Communicating Science: Linking Disparate Interests on a Common Theme.” May 20, 2011

Invited – Ms. Duncan’s Grade 1 Class. Ballentine Elementary, 1st Annual “Turtle Talk” by Skype. May 2, 2011.

Invited – Saturday Nights. “ProTECTOR – Influencing Change through Wholeness in Honduras.” January 15, 2011. Loma Linda Retirement Villa., Loma Linda, CA

Invited – GC Retirees Luncheon. “ProTECTOR – Influencing Change through Wholeness in Honduras.” November 14, 2010. Loma Linda Mobile Home Park, Loma Linda, CA.

Invited – Loma Linda University, Adventist Accreditation Association Review Reception. “ProTECTOR – Influencing Change through Wholeness in Honduras.” November 8, 2010. Loma Linda University.

Invited – Loma Linda University, WASC Educational Effectiveness Review Reception. “ProTECTOR – Influencing Change through Wholeness in Honduras.” October 27, 2010. Loma Linda University.

Invited – Mind and Spirit Symposium. “Earth: A Mourning Like This” Loma Linda University, January 23, 2010.

Invited - San Bernardino County Museum; Turtle and Tortoise Club. “ProTECTOR-Coordinating Sea Turtle Research in Honduras.” June 4, 2010

Invited – Center for Spiritual Life and Wholeness. Health and Faith Forum. “Outreach Through Environment; Working with Turtles for a Better World?” January 27, 2010.

Invited – Third Thursday Presentation. Outreach Through Environment; Working with Turtles for a Better World?

Invited – Evensong. Loma Linda University Mobile Home Park. “Outreach Through Environment; Working with Turtles for a Better World?” November 27, 2009.

Invited – Loma Linda University Winter Wednesdays. “Sea Turtles of the World; Their Conservation in Honduras.” January, 2009.

### **Synergistic Activities**

Collaborative Partnership with the Treasure Beach Turtle Group for the Jamaica Sea Turtle Active Monitoring Project (JSTAMP). *Funded by a SEETurtles Billion Baby Sea Turtles Grant*, August – October, 2022.

2<sup>nd</sup> Gulf of Thailand Nesting Recovery Network National Sea Turtle Workshop, Pattaya, Thailand. March 13 – 15, 2022. *Funded by USFWS-MTCF Grant*.

1<sup>st</sup> Gulf of Thailand Nesting Recovery Network National Sea Turtle Workshop, Koh Talu Island, Thailand. November 14 – 15, 2019. *Funded by USFWS-MTCF Grant*.

1<sup>st</sup> ProTECTOR, Inc. – UNEP Inter-Governmental Sea Turtle Workshop, Tegucigalpa, Honduras. May 15 – 16, 2018. *Funded by UNEP*.

Revised TURT App Release and Release of Records Assistant for Sea Turtle Researchers (RASTR) Smartphone App with Dustin S. Baumbach. January 4, 2017. Press Release by LLU. Development and Release of the Turtles Uniting Researchers and Tourists (TURT) Smartphone App with Dustin S. Baumbach. April, 2016. Press Release by LLU.

Coordinator and Facilitator, West End Dive Shops and Turtle Photo ID Workshop in partnership with the Roatán Marine Park, West End, Roatán, Honduras. July 7, 2015.

Coordinator and Facilitator, Roatán Sea Turtle Workshop, West End, Roatán, Honduras in partnership with the Roatán Marine Park, West End, Roatán, Honduras. May 11 - 12, 2015

Integrating Health, Community Development and Services, and Ecological Conservation in the Rural Community of El Venado, Honduras; A Partnership of ProTECTOR with Students for International Mission Service (SIMS), Loma Linda University, Loma Linda, CA, USA.

Monitoring of sea turtle presence and condition in the Roatán Marine Park, Roatán, Honduras with the Roatán Marine Park.

Conservation of Hawksbill, Green and Loggerhead Sea Turtles through Research, Participatory Monitoring, Beach Patrolling and Environmental Education in Utila, Bay Islands, Honduras with BICA Utila

Coordination and development of the Workshops to Facilitate Positive Change among Indigenous Fishers of the Bay Islands, Honduras with Mr. Larry Stevenson, Owner, Reef House Resort, Roatan. July 10 – 12, 2007.

Establishment of the non-profit organization, Protective Turtle Ecology Center for Training, Outreach and Research, Inc. (ProTECTOR) with Mr. Larry Stevenson (Owner, Reef House Resort), Mr. Joe Breman (Marine Data Modeler, Alaka’ina, Hawaii) and Mrs. Sabine Dunbar (Professor of Nursing, Loma Linda University).

Development of the Turtle Awareness and Protection Studies Program (TAPS) on Roatan, Honduras with Mr. Larry Stevenson, Owner, Reef House Resort, Roatan, Honduras.

Coordination and development of the Shallow Water Ecological Program (SWEET) with Mr. Brian Hamilton, Director of Primary Education, Fulton College, Fiji.

Coordination and development of the These Are My Oceans (TAMO) curriculum for primary schools with Ms. Teri Faight, Science Department, William Fremd High School.

Development of the Science Curriculum course for upgrading primary teachers of the South Pacific, Fulton College, Fiji.

Assisted Coates and Kay in the development of community monitoring tools, used by Rocky Reef Watch Program, Queensland, Australia.

Participant in and contributor to the meta-database of the Coastal Cooperative Research Centre, Brisbane, Australia.

### **Peer Journal Reviewer**

Philippine Journal of Science – Editor-in-Chief – Caesar Saloma (*University of the Philippines, Philippines*).

North-Western Journal of Zoology – Editor-in-Chief - Severus-Daniel COVACIU-MARCOV (*University of Oradea, Romania*).

PLOS One - Academic Editor for Materials science - Structural materials Section, Dr. Hannes C Schniepp (*The College of William & Mary, Williamsburg, Virginia*).

Invertebrate Biology – Editor-in-Chief, Michael W. Hart (*Simon Fraser University, Canada*).

Ocean and Coastal Management – Editors-in-Chief, Jihong Chen (*Shenzhen University, Shenzhen, China*), Bruce Glavovic (*Massey University, Palmerston North, New Zealand*), and Tim Smith (*University of the Sunshine Coast, Australia*).

Marine Ecology – Editor-in-Chief, Craig M. Young (*Oregon Institute of Marine Biology, University of Oregon, Charleston, Oregon, USA*)

Aquatic Ecology – Editor-in-Chief, Télesphore Sime-Ngando (*Laboratory Microorganisms: Genome & Environment, CNRS & Université Clermont Auvergne, France*)

Global Ecology and Conservation – Editor-in-Chief, Dr. Richard T. Corlett (*Chinese Academy of Sciences, China*)

Animal Conservation – Editor-in-Chief, Dr. Karl Evans (*Department of Animal and Plant Sciences, University of Sheffield, Western Bank, Sheffield, UK*)

Regional Studies in Marine Science – Editors-in-Chief, Dr. Gunnar Lauenstein (*Cut Bank, Montana, USA*), Professor Kenneth Leung (*University of Hong Kong*), Dr. Jinyu Sheng (*Dalhousie University, Halifax, Nova Scotia, Canada*)

Journal of Comparative Physiology Part B – Editor-in-Chief, Gerhard Heldmaier (*Fachbereich Biologie, Universität Marburg, Germany*)

Micronesica – Editor-in-Chief, G. Curt Fiedler (*University of Guam, Guam, Micronesia*)

Chelonian Conservation and Biology – Executive Editor, Jeffrey Seminoff (*Southwest Fisheries Science Center, La Jolla, California, USA*)

Comparative Biochemistry and Physiology, Part A – Editor-in-Chief, Michael Hedrick (*California State University, East Bay, Hayward, California, USA*)

Journal of Applied Animal Welfare Science – Editors-In-Chief - Kenneth J. Shapiro (*Animals & Society Institute*) and Emily Weiss (*The American Society for the Prevention of Cruelty to Animals*)

Biologia – Editor-in-Chief – F. Hindák. (*Institute of Botany Slovak Academy of Sciences, Bratislava, Slovakia*)

Environmental Pollution – Editor-in-Chief – D. O. Carpenter (*University at Albany, SUNY*) and E. Y. Zeng (*School of Environment, Jinan University, Guangdong, China*)

Herpetological Conservation and Biology, Editor-in-Chief – David F. Bradford (*USEPA, ORD Landscape Ecology Branch*) and Brian T. Miller (*Middle Tennessee State University*)

Oecologia – Editor-in-Chief - C.L. Ballaré (*Universidad de Buenos Aires, Buenos Aires, Argentina*); R. Brandl; K.L. Gross; R.K. Monson; J.C. Trexler; H. Ylönen

Journal of Crustacean Research (International Advisory Board Member), Editor-in-Chief – Akira Asakura (*Kyoto University, Kyoto, Japan*)

Aquaculture Research - Editors - Ronald W. Hardy (*Aquaculture Research Institute University of Idaho, Moscow, Idaho*), Lindsay Ross, Shi-Yen Shiau and Marc Verdegem

Chemosphere – Open Access, Co-Editors-in-Chief – Jacob de Boer (*Free University of Amsterdam, Amsterdam, Netherlands*) and Shane Snyder (*University of Arizona, Tucson, Arizona*)

Journal of Sea Research - Open Access, Editor – Paul Snelgrove (*Memorial University, Newfoundland, Canada*)

Marine Biology, Editor – Rebecca Lewison (*San Diego State University, San Diego, California*)

Journal of Experimental Marine Biology and Ecology. Editors – Sandra E. Shumway (*University of Connecticut, Storrs, Connecticut*), Richard N. Hughes and S. F. Thrush.

Comparative Biochemistry and Physiology. Editors - Thomas P. Mommsen (*University of Victoria, Victoria, British Columbia*) and Patrick J. Walsh (*University of Ottawa, Ottawa, ON, Canada*)

Biology of the Anomura II. Guest Editor – Akira Asakura (*Kyoto University, Kyoto, Japan*)

Ophelia. Subject Editor – Kerstin Johannesson (*University of Gothenburg, Gothenburg, Sweden*)

Comparative Biochemistry and Physiology. Editors – Thomas P. Mommsen (*University of Victoria, Victoria, British Columbia*) and Patrick J. Walsh (*University of Ottawa, Ottawa, ON, Canada*)

Memoirs of Museum Victoria. Special Edition; Biology of the Anomura. Scientific Editor – Gary C. B. Poore (*Museum Victoria, Melbourne, Australia*)

### **Grant Proposal Reviewer**

USC Sea Grant - August, 2017 Optimizing temperature in green abalone culture methods. Claisse, et al.

### **Recent Grants**

**PI.** The Hawksbill Project.

**PI.** SEETurtles Billion Baby Sea Turtles. Jamaica Sea Turtle Active Monitoring Project (JSTAMP). August, 2022 – October, 2023. \$10,000



**PI.** US Fish and Wildlife Services. Community Focused Training for Sea Turtle Beach Monitoring, Information Gathering, and In-Water Sightings in the Gulf of Thailand. August, 2021 – August, 2024. \$87,829

**PI.** State of the World's Sea Turtles (SWOT) and the Oceanic Society. Developing the Gulf of Thailand Sea Turtle Nesting Recovery Network. November 12, 2019. \$1,000

**PI.** California Turtle and Tortoise Club. Continuing ProTECTOR, Inc. Research on Sea Turtles of Honduras. January, 2019. \$2,000

**PI.** US Fish and Wildlife Services. Rapid Assessment of Nesting and Threats Assessment for Hawksbills (*Eretmochelys imbricata*) in the Eastern Gulf of Thailand. May, 2018 – May 2020. \$27,931

**PI.** The Ocean Foundation through Sea Turtles. Too Rare To Ware Project Campaign. November, 2016 to March, 2017. \$1,000

**Coordinator.** (Jillian Hudgins and Claire Jean, Co-Coordiators). The Ocean Foundation. Support for the 1<sup>st</sup> Photo ID Workshop (29 February) As Part of the 36<sup>th</sup> Annual Symposium on Sea Turtle Biology and Conservation, Lima, Peru, 29 February – 4 March, 2016. \$1,500

**Coordinator.** (Jillian Hudgins and Claire Jean, Co-Coordiators). State of the Worlds Sea Turtles (SWOT). Support for the 1<sup>st</sup> Photo ID Workshop (29 February) As Part of the 36<sup>th</sup> Annual Symposium on Sea Turtle Biology and Conservation, Lima, Peru, 29 February – 4 March, 2016. \$1,000

**Coordinator.** (Jillian Hudgins and Claire Jean, Co-Coordiators). World Wildlife Fund for Nature International (WWF International). Support for the 1<sup>st</sup> Photo ID Workshop (29 February) As Part of the 36<sup>th</sup> Annual Symposium on Sea Turtle Biology and Conservation, Lima, Peru, 29 February – 4 March, 2016. \$2,000

**PI.** (Co-PI: Boskovic, D.) GRASP grant (LLU). Heavy metals and POPs in Hawksbills and their prey implications for human health. 2014 - 2016. \$75,000.

**Scientific Expert.** Sea World and Busch Gardens, for Conservation of Hawksbill, Green and Loggerhead Sea Turtles through Research, Participatory Monitoring, Beach Patrolling and Environmental Education in Utila, Bay Islands, Honduras to BICA Utila partnering with ProTECTOR. 2012. \$10,000.

**PI.** (Co-PI: Salinas, L.) US Fish and Wildlife Services. Community-directed capacity building for hawksbill conservation and population recovery in Caribbean Honduras. 2011. \$25,422

**PI.** (Co-PI: Duran, N.) GRI. for Genetic Structure of the Olive Ridley Sea Turtle (*Lepidochelys olivacea*) in the Gulf of Fonseca, Honduras, as Revealed by Mitochondrial DNA: Historical and Conservation Management Implications. 2010. \$3,000.

**PI.** (Co-PI's: Obenaus, A. Nick, K. Vlokolinsky, R. Barnes, S. Einspahr, M.) GRI. for A Proposal to Develop Magnetic Resonance Imaging Methods for the Detection of Magnetite in Developing Sea Turtle Embryos. 2010. \$2,080.

**PI.** (Co-PI: Blackmer, M.) GRI. for Fluctuations in Blood Parameters in Nesting Olive Ridley (*Lepidochelys olivacea*) Sea Turtles in Response to a Minimally Painful Stimuli. 2010. \$1,885.

**Co-PI.** National Fish and Wildlife Foundation. Eastern Pacific Initiative: Phase III. 2011. \$116,181.

- PI.** Center for Global Outreach (LLU) for A Proposal for Seed Funding Toward an Integrated, Multi-Disciplinary Approach to Sustainable Community Development: A Three-Year Pilot Study with Two Communities in Honduras. 2008. \$10,000.
- PI.** SWOT (Conservation International) for A Proposal for a Series of School Visits to Commence the Turtle Nesting Hotline's "Turtle Art and Jingle Challenge" in the Bay Islands, Honduras: An Education and Awareness Initiative. 2008. \$1,150.
- PI.** US Fish and Wildlife Services for Hawksbill Nesting Beach Reconnaissance Project on Roatan, Honduras. 2007. \$5,700.
- PI.** SWOT (Conservation International) for a Proposal for Two Workshops to Facilitate Positive Change among Indigenous Fishers of the Bay Islands, Honduras. 2007. \$1,000.
- PI.** ESRI Conservation Grant, for Proyecto Manejo Ambientales de Islas de Bahia (PMAIB), Roatan, Bay Islands, Honduras. 2006. \$12,000.
- PI.** USAID/MIRA, for the Roatan Rapid Assessment Project for Queen Conch, *Strombus gigas* and the common hermit crabs of Roatan, Bay Islands, Honduras. 2005. \$8,300.
- PI.** USAID/MIRA, for the Roatan Rapid Assessment Project for the Caribbean Spiny Lobster, *Panulirus argus*, Roatan, Bay Islands, Honduras. 2005. \$9,700.
- PI.** The Yaqara Group, for the Yaqara Bay Biodiversity Inventory Project. 2005. \$4,015.00.
- PI.** Fiji Water, for the Yaqara Bay Biodiversity Inventory Project. 2005. \$5,000.
- Co-PI.** NASA/USRA, for A proposal to participate in the NASA/USRA Earth Systems Science Education for the 21<sup>st</sup> Century Program. 2004. \$90,000.

### **Collaborators and Other Affiliations**

Splash Inn Dive Center, Roatán, Honduras. Sea Turtle Research in the Sandy Bay West End Marine Reserve. August, 2018 – Present.

Kelonia and the Olive Ridley Project for the Sea Turtle Photo Identification Workshop II. 37<sup>th</sup> ISTS, 15 – 21, April 2017. Las Vegas, USA.

World Wildlife Fund International (WWF) sponsorship (\$1,000) for Photo Identification Workshop. 36<sup>th</sup> ISTS, 28 February – 4 March 2016, Lima, Peru.

State of the Worlds Sea Turtle's (SWOT – Oceanic Society) sponsorship (\$1,000) for Photo Identification Workshop. 36<sup>th</sup> ISTS, 28 February – 4 March 2016, Lima, Peru.

Whale Shark Oceanic and Research Center (WSORC), Utila, Bay Islands, Honduras

Roatán Marine Park, Roatán (RMP), Bay Islands, Honduras

National Autonomous University of Honduras (UNAH), Tegucigalpa, Honduras

Bay Island Conservation Association (BICA) Utila, Honduras

Foundation for Cuero y Salado Wildlife Refuge (FUCSA). La Ceiba, Honduras

Roatan Marine Park, Roatan, Honduras

Sherman Arch's Iguana Farm, Roatan, Honduras

ADRA, Honduras

Ministry of Tourism, Honduras

Municipality of Marcovia, Honduras.

Ministry of Environment (SERNA), Honduras

Division of Biodiversity (DiBio), Honduras

Stevenson, L., Owner, Reef House Resort, Roatan, Honduras.  
 Coates, M., Senior Research Fellow, Central Queensland University, Australia.  
 Currie, D., Centre for Land and Water Resource Management, Central Queensland University, Australia.  
 Kay, A., Queensland Parks and Wildlife Service, Australia.  
 McKillup, S., Associate Professor, Central Queensland University, Australia.  
 Petroseschevsky, A., NRM, Queensland Government, Australia.  
 Tudge, C. C., Assistant Professor, American University, Washington, USA.  
 Harris, L., Natural History Museum of Los Angeles County, USA.  
 Lee, R., OurSeas.org, Highland, California, USA.  
 Ware, R. Principal/Senior Biologist, Coastal Resources Management, Fallbrook, USA.

### **Graduate Advisors**

Coates, M., Principal Supervisor for Doctoral studies. Senior Research Fellow, Central Queensland University, Australia.  
 McKillup, S., Associate Supervisor for Doctoral studies. Associate Professor, Central Queensland University, Australia.

### **Thesis and Dissertation Advisor**

Stephanie Molina, Earth & Biological Sciences, LLU, (MS), **Principal Advisor**, Current  
 Sean Richards, Earth & Biological Sciences, LLU, (MS), **Principal Advisor**, Current  
 Robert Gammariello, Earth & Biological Sciences, LLU, (PhD), **Principal Advisor**, Current  
 Emily Hyatt, Earth & Biological Sciences, LLU, (PhD), **Principal Advisor**, Current  
 Chelsey Navarro, Earth & Biological Sciences, LLU, (PhD), **Principal Advisor**, Current

### **Thesis and Dissertation Advisor or Committee Member - Completed**

Thomas Hile, Earth & Biological Sciences, LLU, (PhD), Advisory Committee, 2023. “  
 Dustin Baumbach, Earth & Biological Sciences, LLU, (PhD), **Principal Advisor**, 2020. “Foraging Ecology of Hawksbill Turtles within a Roatán Marine Reserve.”  
 Marsha Wright, Earth & Biological Sciences, LLU, (PhD), **Principal Advisor**, 2020. “The Sandy Bay West End Marine Reserve: Hawksbill Inhabitation and Reserve Suitability”  
 Tyler dos Santos, Earth & Biological Sciences, LLU, (MS), **Principal Advisor**, 2019. “Determining Heavy Metal Concentrations in *Pagurus samuelis*.”  
 Magalie Valere-Rivet, Earth & Biological Sciences, LLU, (PhD), **Principal Advisor**, 2019. “Response Mechanisms of *Pagurus samuelis* to Environmental Hypoxia.”  
 Arti Desai, Earth & Biological Sciences, LLU, (PhD) Advisory Committee, 2018. “Risk Factors for Gastroschisis Pathogenesis.”  
 Ijeoma Esiaba, Earth & Biological Sciences, LLU, (PhD) Advisory Committee, 2018. “  
 Noemi Duran, Earth & Biological Sciences, LLU, (Post Doc), **Principal Advisor**, 2016. “Reproductive and Hatchling Behavior of Olive Ridley Sea Turtles.”  
 Christian T. Hayes, Earth & Biological Sciences, LLU, (MS), **Principal Advisor**. 2015. “Recreational Diving and Hawksbill Sea Turtles (*Eretmochelys imbricata*) in a Marine Protected Area.”  
 Noemi Duran, Earth & Biological Sciences, LLU, (PhD), **Principal Advisor**, 2015. “Reproductive Ecology and Hatchling Behavior of Olive Ridley Sea Turtles in Honduras.”

- Carizma Chapman, Marriage and Family Therapy, LLU, (DMFT), Advisory Committee, 2015.  
 “Communities in Action: Participatory Assessments as an Initial Stage in Critical Consciousness Raising in Community Capacity Building.”
- Aaron Corbit, Earth & Biological Sciences, LLU, (PhD) Advisory Committee, 2015.
- Eric Gren, Earth & Biological Sciences, LLU, (MS) Advisory Committee, 2014. “Geographic Variation of Proteomic Profiles and Toxicity in the Venom of the Rattlesnakes *Crotalus oreganus* and *Crotalus oreganus helleri*.”
- Allen Cooper, Earth & Biological Sciences, LLU, (PhD) Advisory Committee, 2014. “
- Lindsey Damazo, Earth & Biological Sciences, LLU, (MS), **Principal Advisor**. 2014. “Nesting Ecology of Hawksbill Turtles (*Eretmochelys imbricata*) on Utila, Honduras.”
- Matthew Ingle, Earth & Biological Sciences, LLU, (PhD), **Principal Advisor**. 2014.  
 “*Baylisascaris procyonis* Prevalence and Impact in Raccoon Populations.”
- Maria Kim, Earth & Biological Sciences, LLU, (MS), **Principal Advisor**. 2013. “Sexual Dimorphism and Behavioral Responses to Conspecific Chemical Cues in *Pagrus samuelis*.”
- Tracey Magrann, Earth & Biological Sciences, LLU, (PhD), **Principal Advisor**. 2011. “Factors Affecting Phytoplankton Biodiversity and Toxin Production.”
- Melissa Price, Earth & Biological Sciences, LLU, (PhD) Advisory Committee, 2011.
- Torrey Nyborg, Earth & Biological Sciences, LLU, (PhD) Advisory Committee. 2011.
- Valerie Robinette, Earth & Biological Sciences, LLU, (MS) Advisory Committee. 2011.
- Meredith Einspahr, Earth & Biological Sciences, LLU, (MSNS), Advisory Committee. 2011.
- Janelle Shives, Earth & Biological Sciences, LLU, (MS), **Principal Advisor**. 2010. “Behavior and Physiology of Hermit Crabs During Burial.”
- Melissa Berube, Earth & Biological Sciences, LLU, (MS), **Principal Advisor**. 2010. “Home Range and Foraging Ecology of Juvenile Hawksbill Sea Turtles Around Roatán, Honduras.”
- Amy Utt, Earth & Biological Sciences, LLU, (PhD) Advisory Committee, 2010.
- Uriel Vidal, Earth & Biological Sciences, LLU, (MS) Advisory Committee, 2010.
- Matthew Ingle, Earth & Biological Sciences, LLU, (MSNS), Advisory Committee, 2010.
- Wendy Billock, Earth & Biological Sciences, LLU (PhD), **Principal Advisor**. 2008. “Behavioral Evidence for “Contextual Decision Hierarchies” in the Hermit Crab, *Pagurus samuelis*.”
- April Sjoboen, Earth & Biological Sciences, LLU, (MS), **Principal Advisor**. 2007. “Temporal Fatty Acid Fluctuations of *Pachygrapsus crassipes* in Southern California.”
- Marie-Lys Bacchus, Earth & Biological Sciences, LLU, (MS), **Principal Advisor**. 2007.  
 “Characterization of Resting Holes and Use by the Antillean Manatee (*Trichechus manatus manatus*).”
- Viren Perumal, Earth & Biological Sciences, LLU, (MS), **Principal Advisor**. 2007. “Responses to Salinity of Color Polymorphs in Two Populations of the Sea Star, *Pisaster ochraceus*.”
- Katsura Matsuda, Earth & Biological Sciences, LLU, (MS), **Principal Advisor**. 2006.  
 “Comparison of the Barnacle, *Balanus Amphitrite* in Different Environments.”
- Zia Nisani, Earth & Biological Sciences, LLU, (PhD) Advisory Committee. 2008. “Behavioral and Physiological Ecology of Scorpion Venom Expenditure: Stinging, Spraying, and Venom Regeneration.”
- Ricky Escobar, Earth & Biological Sciences, LLU, (MS) Advisory Committee. 2007. “Post-Release of Headstarted Green Iguanas (*Iguana iguana*) in Costa Rica”
- Meagan Harless, Earth & Biological Sciences, LLU, (MS) Advisory Committee. 2007. “Spatial Ecology of the Desert Tortoise: Sampling Frequency and Biological Influences.”

Leroy Leggitt, Department of Natural Sciences, LLU, (PhD) Advisory Committee. 2005. “An Avian Botulism Epizootic Affecting a Nesting Site Population of *Presbyornis* on a Carbonate Mudflat Shoreline of Eocene Fossil Lake”

Neville Trimm, Department of Natural Sciences, LLU, (PhD) Advisory Committee. 2004. “Behavioral Ecology of Audubon’s Shearwaters at San Salvador, Bahamas”

John Scarborough, Department of Natural Sciences, LLU, (PhD) Advisory Committee. 2004.

### International Dissertation Reviews

Christine Madden Hof, School of Science, Technology and Engineering, University of the Sunshine Coast, Queensland, Australia. External PhD Dissertation Review. 2023.  
 “Investigating hawksbill turtle migratory paths and foraging grounds as strongholds or targets driving critical population declines.” Pp. 383

Christopher R. Gatto, School of Biological Sciences, Monash University, Melbourne, Victoria, Australia. External PhD Dissertation Review. 2020. “The Role of Incubation Moisture and Metabolism in Sea Turtle Hatchling Locomotor Performance.” Pp. 309

Jessica Lauren Williams, College of Marine and Environmental Sciences, James Cook University, Townsville, Queensland, Australia. External PhD Dissertation Review. 2016.  
 “Multidisciplinary Insights into the Conservation and Biology of Sea Turtles in Mozambique” Pp. 205

### Advised Undergraduate Students

Tori Bolin. Department of Biology, Southern Adventist University. **Principal Research Advisor.** 2019 – 2020. “Detection of microplastics in the fecal matter of juvenile sea turtles in Roatan, Honduras.”

Miranda Wredberg. **Principal Research Advisor.** 2019 – 2020. “Microepibionts Found on Hawksbill Sea Turtles (*Eretmochelys imbricata*) of Honduras.”

Zoe Aguila. **Principal Research Advisor.** 2019 – 2019. “Mutualism between the Hawksbill Sea Turtle and Various Fish Species.”

Stephen Wilkinson. Department of Biology, Walla Walla University. **Principal Research Advisor.** 2019. “Hawksbill Foraging Observation Research.”

Mark Oliinik. **Principal Research Advisor.** 2019. “Impacts of Beach Sand Temperature on Turtle Hatchling Speed.”

Walker Johnson. **Principal Research Advisor.** 2019. “Sea Turtle Hatchlings and the Effect of Plastic Pollution on their Metabolism.”

Nellie Covert. The Master’s University. **Principal Research Advisor.** 2019.

Sean Richards. Pacific Union College. **Principal Research Advisor.** 2019.

Shannon Marcy. **Principal Research Advisor.** 2018 – 2019.

Robert Gamamriello. **Principal Research Advisor.** 2018 – 2019. “Color preferences of *Eretmochelys imbricata* hatchlings.”

Lindsay Marston. **Principal Research Advisor.** 2018 – 2019.

Emily Hyatt. **Principal Research Advisor.** 2018 – 2019. “Community-based evidence accrual for characterization of Guanaja, Honduras as an active nesting site for Caribbean sea turtle populations.”

Emily Hardin. **Principal Research Advisor.** 2018 – 2019.

Dustin Geinger. Department of Biology, Walla Walla University, Walla Walla, WA. **Principal Research Advisor.** 2018 – 2019. “The Effects of Sand Temperature on Running Speed and Migration of Hawksbill Hatchlings.”

Ashlyn Lewis. Department of Exotic Animal Training and Management, Moorpark College, Moorpark, CA. **Principal Research Advisor.** 2018 – 2019. “Hawksbill sea turtle-fish interactions: more than foraging friends?”

Ashley Morrow. Department of Biology, Union College, Lincoln, NB. **Principal Research Advisor.** 2018 – 2019. “Hawksbill sea turtle-fish interactions: more than foraging friends?”

Emily Manzano, Department of Biology, Southwestern Adventist University. **Principal Research Advisor.** 2016 – 2017. “The effect of plastic pollution density on sand temperature in Utila, Honduras.”

Ryan De La Garza, Department of Biology, Southwestern Adventist University. **Principal Research Advisor.** 2016 – 2017. “The effects of plastic pollution on sand temperatures.”

Daniel Trujillo, Department of Biology, Walla Walla University. **Principal Research Advisor.** 2016. “Sea turtles are not the ocean’s speed bumps: an analysis of boat traffic effects on *Eretmochelys imbricata* compared with other aquatic life.”

Selina Anaya, Department of Biology, La Sierra University. **Principal Research Advisor.** 2015 – 2016.

Roberto Reyna, Department of Biology, Southwestern Adventist University. **Principal Research Advisor.** 2015 – 2016.

Diana Espinoza, Department of Biology, Southwestern Adventist University. **Principal Research Advisor.** 2015 – 2016.

Kyungje Sung, Department of Biology, Andrews University (J.N. Andrews Honors Program). **Principal Research Advisor.** 2013 – 2014. “Effects of Plastic Pollution Density on the Crawling Rates of Hawksbill (*Eretmochelys imbricata*) Hatchlings in Utila, Honduras”

Ariana Cunningham, Department of Biology, Andrews University (J.N. Andrews Honors Program), **Principal Research Advisor.** 2012- 2013.

Haruka Ito, Department of Biology, Pacific Union College, **Principal Research Advisor.** 2010 – 2011. “Face Recognition of Juvenile Hawksbills through Computer-Assisted Searching.”

April Sjoboen, Biology Department, Southern Adventist University, **Principal Research Advisor.** 2003 – 2004.

### **Student Volunteers and Interns**

Mallori Lloyd. ProTECTOR Inc. Intern, Department of Biology, Walla Walla University. June – July, 2023

Emma Carlson. ProTECTOR Inc. Intern, Department of Biology, Southwestern Adventist University. June – July, 2023.

Treson Thompson. ProTECTOR Inc. Intern, Department of Biology, Southern Adventist University. June – July, 2022

Jayden Wilson. ProTECTOR Inc. Intern, June – July, 2022

Ben Streit, ProTECTOR Inc. Intern, June – July, 2022

Dawson Pan, ProTECTOR Inc. Intern, June – July, 2022

Tori Bolin. ProTECTOR Inc. Intern, Department of Biology, Southern Adventist University, June – July, 2019.

Miranda Wredberg. ProTECTOR Inc. Intern, Department of Biology, Walla Walla University. August – September, 2019.

Zoe Aguila. ProTECTOR Inc. Intern, Department of Biology, University of California, Santa Barbara, July, 2019.

Stephen Wilkinson. ProTECTOR Inc. Intern, Department of Biology, Walla Walla University. August – September, 2019.

Mark Oliinik. ProTECTOR Inc. Intern, Department of Biology, Walla Walla University. August – September, 2019.

Walker Johnson. ProTECTOR Inc. Intern, Department of Biology, Walla Walla University. August – September, 2019.

Nellie Covert. ProTECTOR Inc. Intern, The Master's University, June – July, 2019.

Sean Richards. ProTECTOR Inc. Intern, 2019.

Voicu Tulai. ProTECTOR, Inc. Port Moody, British Columbia, Canada, Volunteer, 2019

Sebastian Tulai. ProTECTOR, Inc. Port Moody, British Columbia, Canada, Volunteer, 2019

Razvan Orban. ProTECTOR, Inc. Port Moody, British Columbia, Canada, Volunteer, 2019

Josephine Shannon. ProTECTOR, Inc. Volunteer, Bethany, OK– July, 2019

Laura Yilmazcetin. ProTECTOR, Inc. Volunteer, Bethany, OK – July, 2019

Robert Gammariello, ProTECTOR Inc. Intern, CA – July – September, 2018.

Emily Hyatt, ProTECTOR Inc. Intern, Calimesa, CA – July – September, 2018.

Samantha Read, ProTECTOR Inc. Intern, Toronto, Canada – June – August, 2017.

Kevin Mahoney, ProTECTOR Inc. Volunteer, South Africa – July, 2017

Justin Cruz Le Duc, ProTECTOR Intern, Puerto Rico. July – September, 2016

Emily Manzano, ProTECTOR Intern, Department of Biology, Southwestern Adventist University. July – August, 2016

Ryan De La Garza, ProTECTOR Intern, Department of Biology, Southwestern Adventist University. July – August, 2016

Daniel Trujillo, ProTECTOR Intern, Department of Biology, Walla Walla University. July – September, 2016.

Sarah Holloway, ProTECTOR Intern, Southern Adventist University, August – September, 2015

Diana Espinoza, ProTECTOR Intern, Southwestern Adventist University, August, 2015

Selina Anaya, ProTECTOR Intern, La Sierra University, June – August, 2015

Roberto Reyna, ProTECTOR Intern, Southwestern Adventist University, June – August, 2015

Linda Baeza, ProTECTOR Intern,

Marsha White, ProTECTOR Intern, Oakwood University, July – September, 2014.

Rodney Smith, ProTECTOR Intern, Walla Walla University, July – September, 2014.

Gabriela Ochoa, ProTECTOR Volunteer, Tegucigalpa, Honduras, August, 2013 – October, 2014.

Liesl Cole, ProTECTOR Intern, Walla Walla University, July – September, 2013.

Lelyn Castilo, ProTECTOR Intern, Pacific Union College, June – August, 2013.

Christian Hayes, ProTECTOR Intern, Cedarville University, July – September, 2013.

Dustin Baumbach, ProTECTOR Intern, Pacific Union College, June – September, 2012.

Robyn Reeve, ProTECTOR Intern, Walla Walla University, July – September, 2012.

Amy Tan, ProTECTOR Intern, Walla Walla, University, July – August, 2012.

Katelyn Schiller, ProTECTOR Volunteer, Central Washington University, August, 2011.

Christine Ha, ProTECTOR Volunteer, California, August, 2011.

Tyler Dos Santos, ProTECTOR Volunteer, Southern Adventist University, July – August, 2011.

Christina Martin, ProTECTOR Volunteer, August, 2010.

Marta Llorca, ProTECTOR Volunteer, Spain, August, 2010.

Lesley Roberson, ProTECTOR Volunteer, July, 2010.

## **Non-Student Volunteers and Interns**

Carolina Germakova, ProTECTOR Inc. Volunteer, Anesthesiologist from Chile. June – July, 2022  
Samantha Serna, ProTECTOR Volunteer, California, August, 2013.  
Ken Lindsay, ProTECTOR Volunteer, New York, September, 2012.  
Christi Linardich, ProTECTOR Volunteer, July – August, 2011.  
Larry Williams Bracho, ProTECTOR Intern, Venezuela, June – September, 2011.  
Ken Lindsay, ProTECTOR Volunteer, New York, August, 2010.

## **Advised Student Grants and Scholarly Awards**

Robert Gammariello, *Boyd Lyon Sea Turtle Research Scholarship*. March, 2023.  
Robert Gammariello, *Association of Reptile and Amphibian Veterinarians (ARAV)*, February, 2022  
Celina Ceballos, *Fulbright Undergraduate Scholarship* for Honduras Sea Turtle Research, June, 2021.  
Magalie Valere-Rivet, *Society for Integrative and Comparative Biology (SICB)*, January, 2018  
Marsha Wright, *Beneath the Sea, Spirit of the Sea Scholarship*, January, 2016  
Magalie Valere-Rivet, *The Crustacean Society*, May, 2015  
Magalie Valere-Rivet, Southern California Academy of Sciences, April, 2015  
Dustin Baumbach, Sigma Xi, Student Grant in Aid, April, 2013  
Lindsey Damazo, Travel Award, The Sea Turtle Society, 2013  
Noemi Duran Royo, Travel Award, The Sea Turtle Society, 2013  
Noemi Duran Royo, Sigma Xi – Faculty of Graduate Studies (LLU) Grant, 2012  
Noemi Duran Royo, Travel Award, The Sea Turtle Society, 2012  
Noemi Duran Royo, Boyd Lyon Sea Turtle Research Scholarship, The Ocean Foundation, 2011  
Tracey Magrann, Preserve Calavera Grant, September, 2009  
Tracey Magrann, Blue Water Technologies Grant, September, 2009  
Tracey Magrann, Sea and Sage Audubon Society Grant, May, 2009  
Tracey Magrann, Southern California Academy of Sciences Student Grant, May, 2009  
Wendy Billock, Loma Linda University Chancellor's Award, June, 2008  
Wendy Billock, The Crustacean Society Student Scholarship, January, 2008  
Wendy Billock, Southern California Academy of Sciences Student Grant, May, 2007  
April Sjoboen, Loma Linda University, Faculty of Graduate Studies Dean's Award, June, 2008  
April Sjoboen, Sigma Xi, Student Grant in Aid, April, 2007

## **External Association Service**

Board of Directors, International Sea Turtle Society. 2021 – 2026.  
Presentation Session Co-chair, Conservation, Management and Policy Session, 36<sup>th</sup> ISTS, 28 February – 4 March, 2016. Lima, Peru  
International Advisory Board of Journal of Crustacean Research – Open Access, Print, Editor – Akira Asakura, 2015 -  
Presentation Session Chair, The Sea Turtle Society, 33<sup>rd</sup> ISTS, 2-8 February, 2013. Baltimore, MD  
Awards Committee, The Sea Turtle Society, 33<sup>rd</sup> ISTS, 2-8 February, 2013. Baltimore, MD  
Awards Committee, The Sea Turtle Society, 32<sup>nd</sup> ISTS, 13-16 March, 2012. Huatulco, Mexico  
Organizing Committee Member, The Sea Turtle Society, 31<sup>st</sup> ISTS, 10 – 16 April, 2011, San Diego, CA, USA.



### **University Committee Service**

Faculty of Graduate Studies Admission Review Committee, 2009 – 2012  
Loma Linda University Inter-Faculty Advisory Council (IFAC), 2009 - present  
Loma Linda University Program Review Committee, 2008 – present  
Faculty of Graduate Studies Dean's Award Committee,  
School of Science and Technology Administrative Council, 2005 – 2011  
School of Science and Technology Assessment Committee, 2007 – 2011  
School of Science and Technology Academic Standards Committee, 2007 - 2011  
School of Science and Technology Research Committee, 2006 - 2007  
Graduate Council, 2006 – 2008, 2010 -  
Faculty of Graduate Studies General Assembly, 2006 – present

### **Department Committee Service**

Department of Earth and Biological Sciences Graduate Biology Program Review, 2009 - 2014.  
Department of Earth and Biological Sciences Graduate Biology Program Review, 2004 - 2009.  
Department of Earth and Biological Sciences Administrative Committee, 2002 – present.  
Graduate (MS and PhD) Biology Program Director, 2004 – present.  
American Institute of Biological Sciences, Loma Linda Chapter Faculty Sponsor, 2006 – 2010.

### **Courses Currently Teaching**

Science Communication Outreach, BIOL 664  
Orientation to Graduate Biology, BIOL 588  
Current Topics: Writing for Publications, BIOL 588  
Biology Seminar, BIOL 607  
Marine Biology, BIOL 505  
Biology of Marine Invertebrates, BIOL 504  
Ecological Physiology I, BIOL 517  
Biodiversity & Conservation, BIOL 549  
Biology of Marine Life, NSCI 386  
Introduction to Field Tropical Marine Biology, NSCI 205  
Advanced Field Tropical Marine Biology, NSCI 286  
Field Tropical Marine Biology Laboratory, NSCI 289  
El Niño Visitors to the Rocky Shores of S. California, NSCI 286-1  
Introduction to the Rocky Shores of S. California, NSCI 205  
Public Health Biology (invited lecturer) NUTR 505

### **Workshops and Training Courses**

Facilitator and Organizer (with Jillian Hudgins and Claire Jean) – 3<sup>rd</sup> Sea Turtle Photo Identification Workshop. 39<sup>th</sup> International Sea Turtle Symposium, 2 – 8 February 2019, Charleston, SC, USA.  
Facilitator and Organizer (with Jillian Hudgins and Claire Jean) – 2<sup>nd</sup> Sea Turtle Photo Identification Workshop. 37<sup>th</sup> International Sea Turtle Symposium, 16 - 20, 2017, Las Vegas, NV, USA.

Facilitator and Organizer (with Jillian Hudgins and Claire Jean) – Sea Turtle Photo Identification Workshop. 36<sup>th</sup> International Sea Turtle Symposium, 28 February – 4 March, 2016, Lima, Peru.

Invited Workshop Organizer and Presenter – “Artificial Reefs.” Hosted by SCG. Rayong, Thailand. 22 – 27, January, 2017.

Facilitator - Endnote: Basic Training for the New User. Oct. 8, 2010.

# Multi-use Sea Turtle Import Application # CS4858503 / PER9040983

Vargas, Darcy <darcy\_vargas@fws.gov>

Thu 2024-02-29 5:29 PM

To: Dunbar, Stephen (LLU) <sdunbar@llu.edu>

Good afternoon,

We hope you are doing well.

Your referenced application has been reviewed and we need a few clarifications. Therefore, please reply to the following:

1. The loggerhead sea turtle (*Caretta caretta*) is listed in the "Addendum to Dunbar USFWS CITES Import Permit for Honduras Sea Turtle Samples," as part of the research information. However, this species was not included in part e. of the application form. Is this species being requested to be added to the application request for 40 blood samples and 10 scute samples?
2. Please provide a copy of the Honduras collection permit?
3. Please provide the dates that the proposed research is planned to continue until.
4. Has any scientific papers already been published from this research and/or are any papers planned to be published in the near future?

In accordance with 50 CFR 13.11(e), if the requested information is not received by this office by April 21, 2024 (45 calendar days of the date of this email), your application will be abandoned and administratively closed. Once a file is closed, you will need to submit a new application, and all required fees, for the Service to consider your proposed activity.

Kind regards,

Darcy Vargas 🐸

Biologist

US Fish and Wildlife Service

MS: IA

5275 Leesburg Pike

Falls Church, VA 22041-3803

[www.fws.gov](http://www.fws.gov)

[www.cites.org](http://www.cites.org)

(703) 358-2399

**Re: Multi-use Sea Turtle Import Application # CS4858503 /  
PER9040983**

Vargas, Darcy <darcy\_vargas@fws.gov>

Fri 2024-03-01 1:39 PM

To: Dunbar, Stephen (LLU) <sdunbar@llu.edu>

Good afternoon,

We also need to ask an additional question.

5. Will all of the shipments be sent from the following as the consignee or are you requesting for us to leave the consignee field blank for you to complete?:

ELWIN PLACE

LITTLE EDEN, ACROSS FROM NAVIA HYBUR, MAIN STREET

FRENCH HARBOR

ROATAN

34101

HONDURAS

Additionally, upon reviewing the provided documentation further, it appears as if a document from Honduras was provided, but since it is written completely written in Spanish, we can not determine what the document is with certainty, at this time. Please let us know when you reply.

Kind regards,

Darcy Vargas 

Biologist

US Fish and Wildlife Service

MS: IA

5275 Leesburg Pike

Falls Church, VA 22041-3803

[www.fws.gov](http://www.fws.gov)

[www.cites.org](http://www.cites.org)

(703) 358-2399

---

**From:** Vargas, Darcy <darcy\_vargas@fws.gov>  
**Sent:** Thursday, February 29, 2024 5:29 PM  
**To:** Dunbar, Stephen (LLU) <sdunbar@llu.edu>  
**Subject:** Multi-use Sea Turtle Import Application # CS4858503 / PER9040983

Good afternoon,

We hope you are doing well.

Your referenced application has been reviewed and we need a few clarifications. Therefore, please reply to the following:

1. The loggerhead sea turtle (*Caretta caretta*) is listed in the "Addendum to Dunbar USFWS CITES Import Permit for Honduras Sea Turtle Samples," as part of the research information. However, this species was not included in part e. of the application form. Is this species being requested to be added to the application request for 40 blood samples and 10 scute samples?
2. Please provide a copy of the Honduras collection permit?
3. Please provide the dates that the proposed research is planned to continue until.
4. Has any scientific papers already been published from this research and/or are any papers planned to be published in the near future?

In accordance with 50 CFR 13.11(e), if the requested information is not received by this office by April 21, 2024 (45 calendar days of the date of this email), your application will be abandoned and administratively closed. Once a file is closed, you



will need to submit a new application, and all required fees, for the Service to consider your proposed activity.

Kind regards,

Darcy Vargas 🖐️

Biologist

US Fish and Wildlife Service

MS: IA

5275 Leesburg Pike

Falls Church, VA 22041-3803

[www.fws.gov](http://www.fws.gov)

[www.cites.org](http://www.cites.org)

(703) 358-2399

[EXTERNAL] RE: Multi-use Sea Turtle Import Application # CS4858503 / PER9040983

Dunbar, Stephen <sdunbar@llu.edu>

Sun 2024-03-03 7:50 PM

To: Vargas, Darcy <darcy\_vargas@fws.gov>

 1 attachments (1 MB)

ICF Research Permit 2023 - 2024.pdf;

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Hi Darcy,

Thanks so much for contacting me regarding these questions.

I'm providing answers here to each of your questions below.

1. I am not currently at my office desk, but will check on the numbers for loggerheads that we would like to add (if that will not delay the issuing of the permit). We are now starting to see some loggerhead nesting on some nesting beaches, so would like to start tagging and sampling them for genetic haplotyping. I'll reply on this question again tomorrow.

2. The current Honduras permit is attached. It is, of course, issued in Spanish (the official language of the country). However, in the 6<sup>th</sup> full paragraph on the first page (section 3a), it states that we are able to collect blood and tissue samples.

3. These studies are ongoing and will continue (and be expanded) for at least the next 5 – 8 years (until 2029 – 2032). We will be undertaking a rapid assessment for leatherback turtles (*Dermochelys coriacea*) this May, and will then begin a monitoring program for leatherbacks this (2024) or next (2025) summer in which we plan to collect skin and blood samples for various analyses.

4. Yes! We have continued to publish peer-reviewed articles in international research journals over the past 16 years, and have several manuscripts in progress at the moment. There are many additional manuscripts planned as outcomes of expected results from ongoing and new research efforts in the country.

We currently have the following manuscripts (topic area only provided here) in preparation:

- a) Stable isotope analysis of juvenile hawksbills in the Sandy Bay West End Marine Reserve (SBWEMR), Roatan, Honduras
- b) Juvenile hawksbill feeding interactions with other marine vertebrates in the SBWEMR.
- c) Photo-ID of juvenile hawksbills over 8 years in the SBWEMR.
- d) Blood parasite comparisons of hatchlings and nesters from two locations in the western Caribbean.
- e) Anatomy of hatchling hawksbill eyes.

Additionally, we continue to present research at international symposia and have produced more than 50 accepted, reviewed abstracts over the past 17 years.

For a list of some of the published papers from Honduras, please see:

<https://www.widecast.org/who-we-are/widecast-ccs/honduras/> (these do not include papers published from the Pacific Coast of Honduras).

If you require a full and detailed list of all published papers and all abstracts presented to date, please let me know and I will prepare and forward a detailed list.

Thank you for your continuing assistance in providing the CITES Import permit for our work to be able to continue.

Cheers,

Steve

**Stephen G. Dunbar, PhD**

Professor of Biology,

Graduate Biology Program Director,

Department of Earth and Biological Sciences,

Loma Linda University,

Loma Linda, CA 92350

Ph: +1 (909) 558-1000, x48903

Website: <http://ftp.llu.edu/sdunbar/>

.....

Director,

Marine Research Group

Loma Linda University,  
Loma Linda, CA 92350

.....  
Founder and President,  
Protective Turtle Ecology Center for Training, Outreach, and Research, Inc. (ProTECTOR,  
Inc.)

11065 Campus St. Griggs Hall,  
Loma Linda, CA 92350

Website: [www.turtleprotector.org](http://www.turtleprotector.org)

Facebook: <https://www.facebook.com/ProTECTOR-199247040225339>

Instagram: @protectorinc

.....  
President,  
International Sea Turtle Society, 2024



<https://www.ists42thailand.org/>

Facebook: seaturtlesociety, SeaTurtleSymposium

Instagram: @seaturtlesociety

Twitter: @ISTS\_Symposium

**From:** Vargas, Darcy <darcy\_vargas@fws.gov>

**Sent:** Thursday, February 29, 2024 2:30 PM

**To:** Dunbar, Stephen <sdunbar@llu.edu>

**Subject:** [EXTERNAL] Multi-use Sea Turtle Import Application # CS4858503 / PER9040983

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Good afternoon,

We hope you are doing well.

Your referenced application has been reviewed and we need a few clarifications. Therefore, please reply to the following:

1. The loggerhead sea turtle (*Caretta caretta*) is listed in the "Addendum to Dunbar USFWS CITES Import Permit for Honduras Sea Turtle Samples," as part of the research information. However, this species was not included in part e. of the application form. Is this species being requested to be added to the application request for 40 blood samples and 10 scute samples?
2. Please provide a copy of the Honduras collection permit?
3. Please provide the dates that the proposed research is planned to continue until.
4. Has any scientific papers already been published from this research and/or are any papers planned to be published in the near future?

In accordance with 50 CFR 13.11(e), if the requested information is not received by this office by April 21, 2024 (45 calendar days of the date of this email), your application will be abandoned and administratively closed. Once a file is closed, you will need to submit a new application, and all required fees, for the Service to consider your proposed activity.

Kind regards,

Darcy Vargas 🐸

Biologist

US Fish and Wildlife Service

MS: IA

5275 Leesburg Pike

Falls Church, VA 22041-3803

[www.fws.gov](http://www.fws.gov)

[www.cites.org](http://www.cites.org)

(703) 358-2399

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[EXTERNAL] RE: Multi-use Sea Turtle Import Application # CS4858503 / PER9040983

Dunbar, Stephen <sdunbar@llu.edu>

Sun 2024-03-03 7:56 PM

To: Vargas, Darcy <darcy\_vargas@fws.gov>

**This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.**

Hi Darcy,

Yes, this address is fine to use as the consignee. This is the address at which I store the samples when they need to be stored if the USFWS CITES Import, or Honduras CITES Export permit have not been issued in time to coincide with the corresponding permit (i.e. if I receive the Honduras CITES export permit (only valid for 6 months), but do not receive the USFWS CITES Import permit before the Honduras CITES export permit has expired, I store the samples at this address).

I will need to look online at the application, but I have sent the current Honduras collecting permit to you in my prior e-mail, so you can see if they are the same. In any case, I'll also confirm from my office in the morning.

Thanks again for your continuing help with these permits.

Cheers,

Steve

**Stephen G. Dunbar, PhD**

Professor of Biology,

Graduate Biology Program Director,

Department of Earth and Biological Sciences,

Loma Linda University,

Loma Linda, CA 92350

Ph: +1 (909) 558-1000, x48903

Website: <http://ftp.llu.edu/sdunbar/>

Re: [EXTERNAL] RE: Multi-use Sea Turtle Import Application # CS4858503 /  
PER9040983

Vargas, Darcy <darcy\_vargas@fws.gov>

Mon 2024-03-11 10:30 AM

To: Dunbar, Stephen <sdunbar@llu.edu>

Good morning,

Thank you very much for the helpful responses.

We have just a few more questions regarding the methodologies, and would appreciate your replies to the following:

1. Please provide information as to how you will be obtaining the hatchlings to take blood. Will you be digging into the nests or waiting until the hatchlings emerge naturally?
2. Please provide details as to whether this type of invasive genetic sampling is critical to the study or is there a less invasive method that could be used such as using egg membranes as an alternative?
3. Following the collection and hatchling fitness stud, please provide details as to how long the hatchlings will be held and following the study ,where and when the hatchlings will be released?
4. Please also explain why it is critical to collect blood from nesting females while they are laying their eggs and not following oviposition? On rare occasions, nesting females can abandon laying even during oviposition, as such we would like to better understand this choice of methodology, as well.

In accordance with 50 CFR 13.11(e), if the requested information is not received by this office by April 25, 2024 (45 calendar days of the date of this email), your application will be abandoned and administratively closed. Once a file is closed, you will need to submit a new application, and all required fees, for the Service to consider your proposed activity.

Kind regards,

Darcy Vargas 🐢

Biologist

US Fish and Wildlife Service

MS: IA

5275 Leesburg Pike

Falls Church, VA 22041-3803

[www.fws.gov](http://www.fws.gov)

[www.cites.org](http://www.cites.org)

(703) 358-2399

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**From:** Dunbar, Stephen <sdunbar@llu.edu>

**Sent:** Sunday, March 3, 2024 7:55 PM

**To:** Vargas, Darcy <darcy\_vargas@fws.gov>

**Subject:** [EXTERNAL] RE: Multi-use Sea Turtle Import Application # CS4858503 / PER9040983

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Hi Darcy,

Yes, this address is fine to use as the consignee. This is the address at which I store the samples when they need to be stored if the USFWS CITES Import, or Honduras CITES Export permit have not been issued in time to coincide with the corresponding permit (i.e. if I receive the Honduras CITES export permit (only valid for 6 months), but do not receive the USFWS CITES Import permit before the Honduras CITES export permit has expired, I store the samples at this address).

I will need to look online at the application, but I have sent the current Honduras collecting permit to you in my prior e-mail, so you can see if they are the same. In any case, I'll also confirm from my office in the morning.

Thanks again for your continuing help with these permits.

Cheers,

Steve

**Stephen G. Dunbar, PhD**

Professor of Biology,  
Graduate Biology Program Director,  
Department of Earth and Biological Sciences,  
Loma Linda University,  
Loma Linda, CA 92350  
Ph: +1 (909) 558-1000, x48903  
Website: <http://ftp.llu.edu/sdunbar/>

.....  
Director,  
Marine Research Group  
Loma Linda University,  
Loma Linda, CA 92350

.....  
Founder and President,  
Protective Turtle Ecology Center for Training, Outreach, and Research, Inc. (ProTECTOR, Inc.)  
11065 Campus St. Griggs Hall,  
Loma Linda, CA 92350

Website: [www.turtleprotector.org](http://www.turtleprotector.org)

Facebook: <https://www.facebook.com/ProTECTOR-199247040225339>

Instagram: @protectorinc

.....  
President,

International Sea Turtle Society, 2024



<https://www.ists42thailand.org/>

Facebook: seaturtlesociety, SeaTurtleSymposium

Instagram: @seaturtlesociety

Twitter: @ISTS\_Symposium

**From:** Vargas, Darcy <darcy\_vargas@fws.gov>

**Sent:** Friday, March 1, 2024 10:39 AM

**To:** Dunbar, Stephen <sdunbar@llu.edu>

**Subject:** [EXTERNAL] Re: Multi-use Sea Turtle Import Application # CS4858503 / PER9040983

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Good afternoon,

We also need to ask an additional question.

5. Will all of the shipments be sent from the following as the consignee or are you requesting for us to leave the consignee field blank for you to complete?:

ELWIN PLACE

LITTLE EDEN, ACROSS FROM NAVIA HYBUR, MAIN STREET

FRENCH HARBOR

ROATAN

34101

HONDURAS

Additionally, upon reviewing the provided documentation further, it appears as if a document from Honduras was provided, but since it is written completely written in Spanish, we can not determine what the document is with certainty, at this time. Please let us know when you reply.

Kind regards,

Darcy Vargas 🐢  
Biologist  
US Fish and Wildlife Service  
MS: IA  
5275 Leesburg Pike  
Falls Church, VA 22041-3803  
[www.fws.gov](http://www.fws.gov)  
[www.cites.org](http://www.cites.org)  
(703) 358-2399

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**From:** Vargas, Darcy <[darcy\\_vargas@fws.gov](mailto:darcy_vargas@fws.gov)>  
**Sent:** Thursday, February 29, 2024 5:29 PM  
**To:** Dunbar, Stephen (LLU) <[sdunbar@llu.edu](mailto:sdunbar@llu.edu)>  
**Subject:** Multi-use Sea Turtle Import Application # CS4858503 / PER9040983

Good afternoon,

We hope you are doing well.

Your referenced application has been reviewed and we need a few clarifications. Therefore, please reply to the following:

1. The loggerhead sea turtle (*Caretta caretta*) is listed in the "Addendum to Dunbar USFWS CITES Import Permit for Honduras Sea Turtle Samples," as part of the research information. However, this species was not included in part e. of the application form. Is this species being requested to be added to the application request for 40 blood samples and 10 scute samples?
2. Please provide a copy of the Honduras collection permit?
3. Please provide the dates that the proposed research is planned to continue until.
4. Has any scientific papers already been published from this research and/or are any papers planned to be published in the near future?

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administratively closed. Once a file is closed, you will need to submit a new application, and all required fees, for the Service to consider your proposed activity.

Kind regards,

Darcy Vargas 🌿  
Biologist  
US Fish and Wildlife Service  
MS: IA  
5275 Leesburg Pike  
Falls Church, VA 22041-3803  
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RE: [EXTERNAL] RE: Multi-use Sea Turtle Import Application # CS4858503 / PER9040983

Dunbar, Stephen <sdunbar@llu.edu>

Mon 2024-03-11 2:07 PM

To: Vargas, Darcy <darcy\_vargas@fws.gov>

Hi Darcy,

Thanks for your e-mail. I appreciate you seeking clearance, rather than simply rejecting the application outright!! Much appreciated!

I'm providing answers below in **BLUE** for each of your questions.

Please let me know if you need any other details clarified.

Thanks so much for your help, Darcy!

Cheers,

Steve

---

**From:** Vargas, Darcy <darcy\_vargas@fws.gov>

**Sent:** Monday, March 11, 2024 7:31 AM

**To:** Dunbar, Stephen <sdunbar@llu.edu>

**Subject:** [EXTERNAL] Re: [EXTERNAL] RE: Multi-use Sea Turtle Import Application # CS4858503 / PER9040983

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Good morning,

Thank you very much for the helpful responses.

We have just a few more questions regarding the methodologies, and would appreciate your replies to the following:

1. Please provide information as to how you will be obtaining the hatchlings to take blood. Will you be digging into the nests or waiting until the hatchlings emerge naturally?

**Hatchlings will only be collected for blood samples once they have emerged naturally from nests. We do not plan to excavate nests until 24 – 30 hrs after the first emergence of the main group of hatchlings.**

2. Please provide details as to whether this type of invasive genetic sampling is critical to the study or is there a less invasive method that could be used such as using egg membranes as an alternative? We are not opposed to using egg membranes for samples from which to do genetic analyses. However, because we do not plan to excavate the nest until well after the main emergence of the hatchlings, it is likely that egg membranes will already have deteriorated within the nest, leaving material that is inviable from which to extract DNA at a later date. During the upcoming research season, we will collect some samples of egg membranes, as well as blood samples to determine if egg membrane samples are a viable substitute for blood collection from hatchlings. The other potential concern is that through blood sampling individuals, we will also be able to collect photos of individual turtles to be used in Phot-ID (PID), which could be used in subsequent years to further re-identify individual turtles. Collecting egg materials will not provide the ability to utilize PID at a later date.

3. Following the collection and hatchling fitness study, please provide details as to how long the hatchlings will be held and following the study, where and when the hatchlings will be released? Individuals from which blood will be collected will not be used in the fitness study. After blood sampling, hatchlings will be placed in a bucket with sand for 10 – 15 mins to ensure no signs of injury are present, and then will be released at the same beach near the nest location. Turtles used in the fitness experiment (a running test) will be allowed to immediately continue their run to the water and out to sea.

Dunbar has extensive experience collecting blood samples from no less than 600 – 800 hatchling turtles in Honduras, Thailand, and Jamaica. The graduate student who will take part in this study has extensive training and experience collecting blood samples from at least 200 hatchlings in Jamaica.

4. Please also explain why it is critical to collect blood from nesting females while they are laying their eggs and not following oviposition? On rare occasions, nesting females can abandon laying even during oviposition, as such we would like to better understand this choice of methodology, as well.

We typically only take blood samples from turtles after they have deposited the eggs and are either near the end of the covering process, or after they have completed nesting, and are then restrained for 5 – 10 mins to collect blood samples and attach an Inconel 681-style flipper tag. If we suggested that the sampling would be done during the egg-laying process, that is an error. However, some studies (Stewart, et al, 2012; Honarvar, et al, 2011) have suggested that taking blood from nesting turtles may be done during the laying trance period of nesting. However, we do not wish to disturb the turtle while egg deposition is occurring.

In accordance with 50 CFR 13.11(e), if the requested information is not received by this office by April 25, 2024 (45 calendar days of the date of this email), your application will be abandoned and administratively closed. Once a file is closed, you will need to submit a new application, and all required fees, for the Service to consider your proposed activity.

Kind regards,