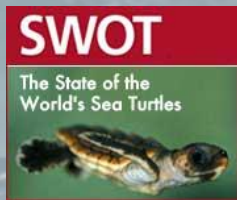


# ProTECTOR – Coordinating Sea Turtle Research and Conservation in Honduras



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<sup>1</sup>Protective Turtle Ecology Center for Training, Outreach and Research (ProTECTOR), Inc. Colton, CA 92324

<sup>2</sup>Department of Earth and Biological Sciences, Loma Linda University, Loma Linda, CA 92350

<sup>3</sup>Turtle Awareness and Protection Studies (TAPS), Oak Ridge, Roatan, Honduras

<sup>4</sup>Protective Turtle Ecology Center for Training, Outreach and Research, Honduras (ProTECTOR), Tegucigalpa, Honduras



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# INTRODUCTION

**Sea turtles of the Caribbean highly threatened.**

**Decline attributed to:**

- 👉 **habitat degradation**
- 👉 **increasing marine pollution**
- 👉 **removal of eggs and females from nesting beaches**
- 👉 **capture of juveniles from feeding grounds for consumption**
- 👉 **entanglement in commercial and artisanal nets**



# INTRODUCTION

Lack of awareness and conservation efforts partly due to large gap in information available on any aspect of sea turtle biology, ecology, life history in Honduras.

**De Rochefort (1666)** reported on plentiful hawksbills on the islands in Gulf of Honduras.

**Hodgson (1822)**, stated exports from the coast of Cen. Am. equated to ~3400 hawksbills/yr.

**Parsons (1972)** reports tortoiseshell as important trade item from the region, including Miskito area in 1722.

**Davidson (1979)** reports that both hawksbills and greens had been plentiful sources of shells and food “for at least three centuries, but now are only caught occasionally.”



# **INTRODUCTION**

**Honduras is conspicuously absent from reports, such as:**

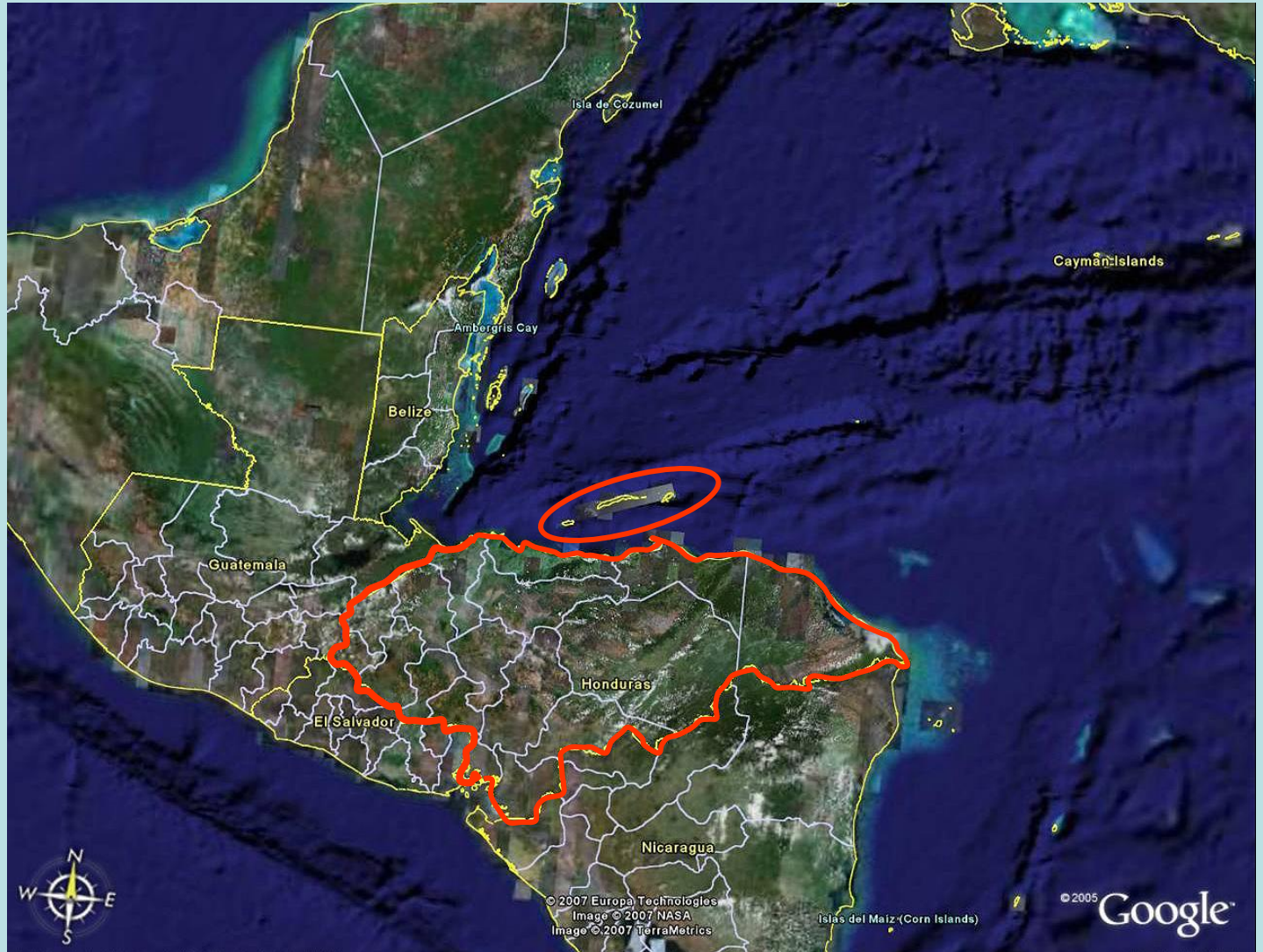
**Meylan & Donnelly (1999) Status Justification...**

**MTSG (2004) Global Status Assessment...**

**Mast (2005) State of the World's Sea Turtles.**

# Roatan, Honduras

One of three, main islands of the Mesoamerican Barrier Reef system.



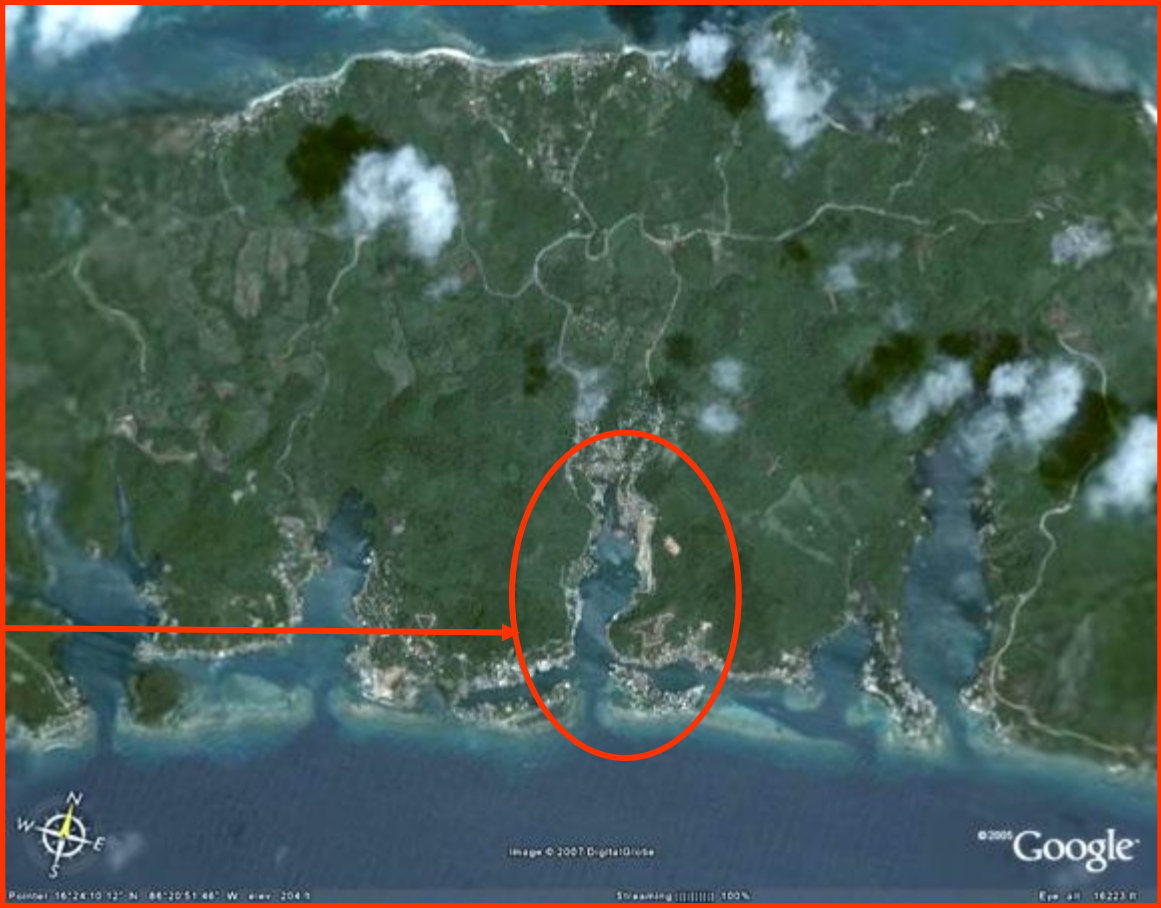
# Roatan, Honduras

Threats to turtles here include:

- Commercial fishing fleets
- Artisanal fishers.
- Increasing beach and water pollution.
- Development and alteration of beach habitat.



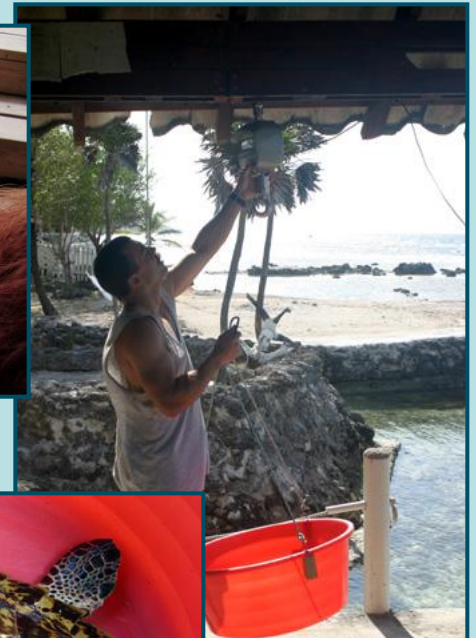
# Roatan, Honduras



Oak Ridge



Turtles are weighed, measured (SCL, SCW, CCL, CCW) checked for general health.



Each animal photo'd to keep a digital record of each individual.



Any special marks or unique features are also photographed for later identification.

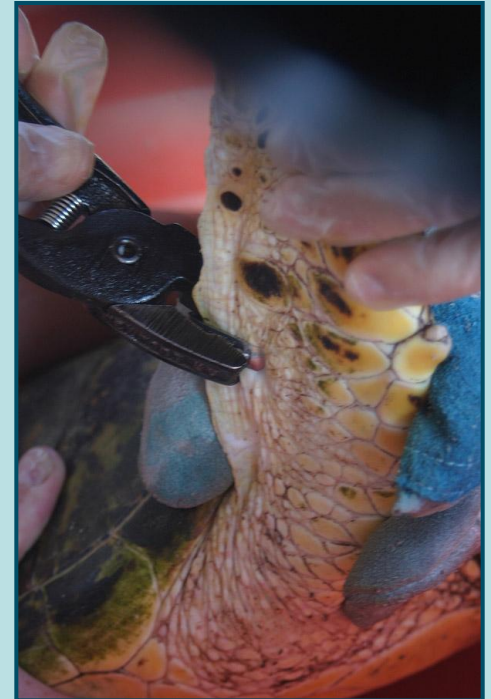






**Turtles receive a temporary ID number for easy tracking in the pool.**

**Each turtle is flipper tagged with two tags; one front, one rear.**





- Transported by boat  
~10 - 20 min.



- Released one at a time.
- Observed for as long as possible: 3 – 48 min.
- Behaviors photographed and times recorded with stopwatch.



# Radio Telemetry



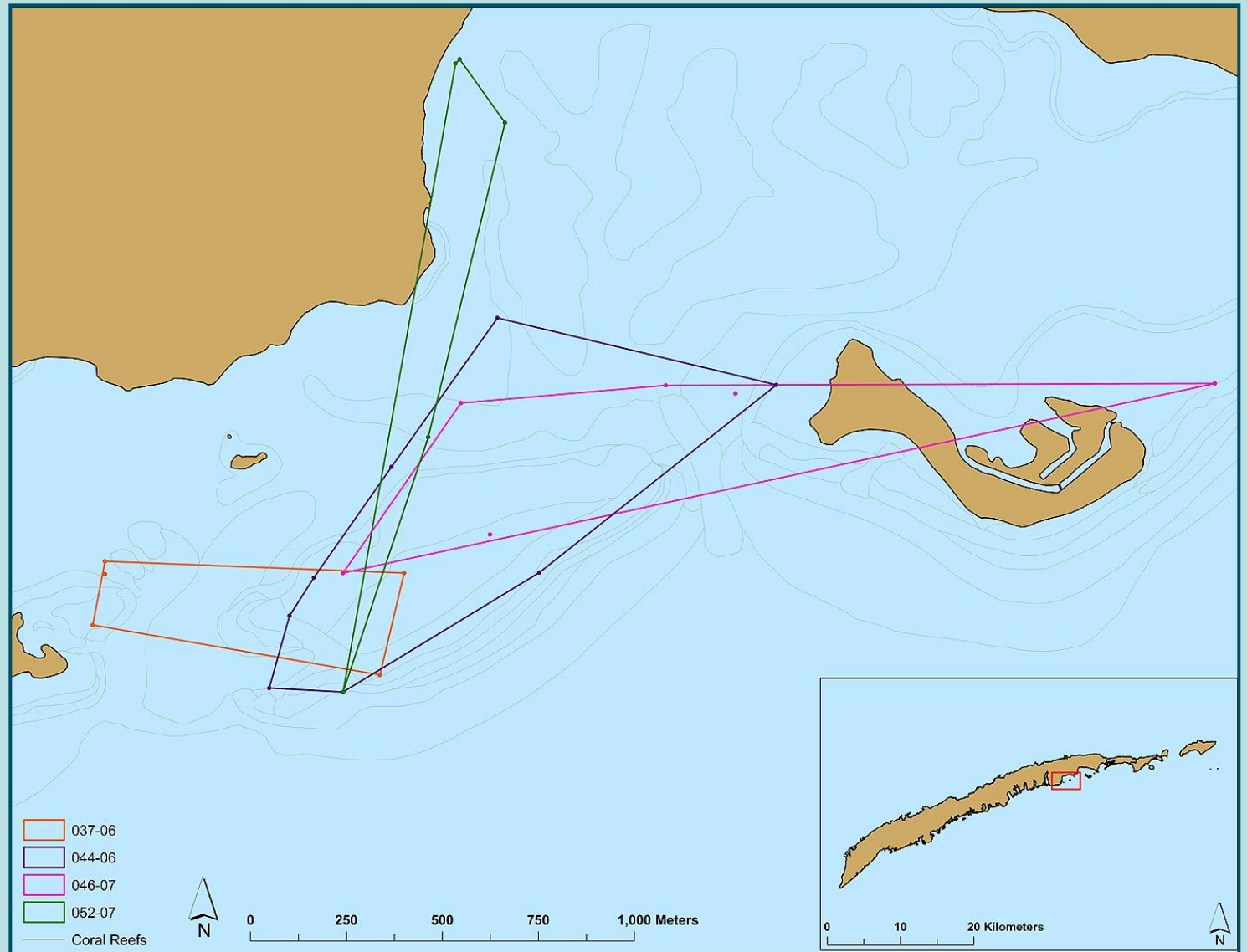
S.G. Dunbar 2007

# Radio Telemetry



**Melissa Berube  
tracking turtles with  
radio telemetry.**

# Radio Telemetry



M. Berube, 2009

# Mapping and Monitoring of Nesting Beaches



# Monitoring Hawksbill Nesting



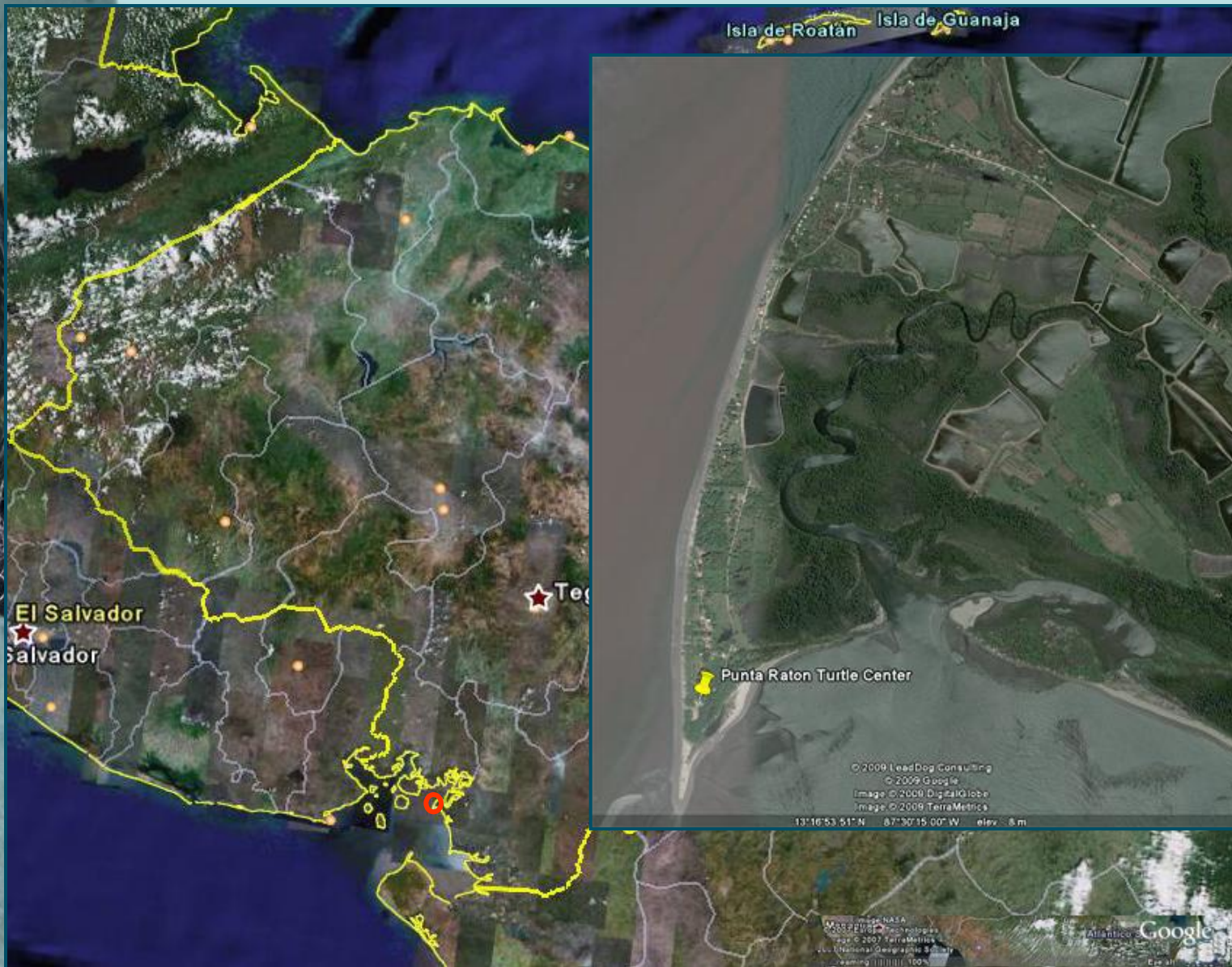


# Bottle-2-Buildings Roatan Conservation Center Project





# Population Dynamics of *Lepidochelys olivacea*, Punta Raton.



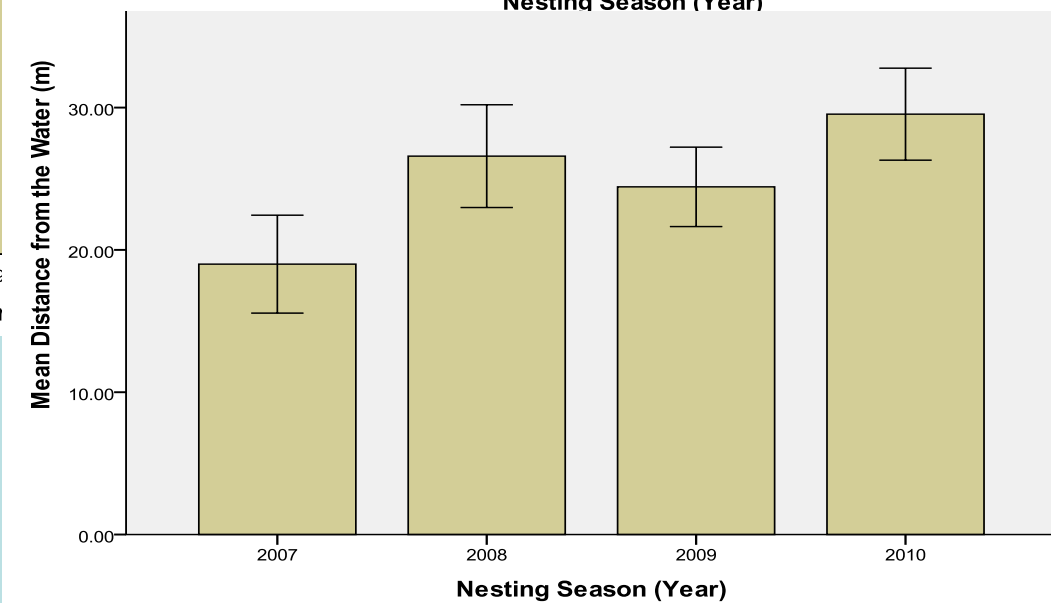
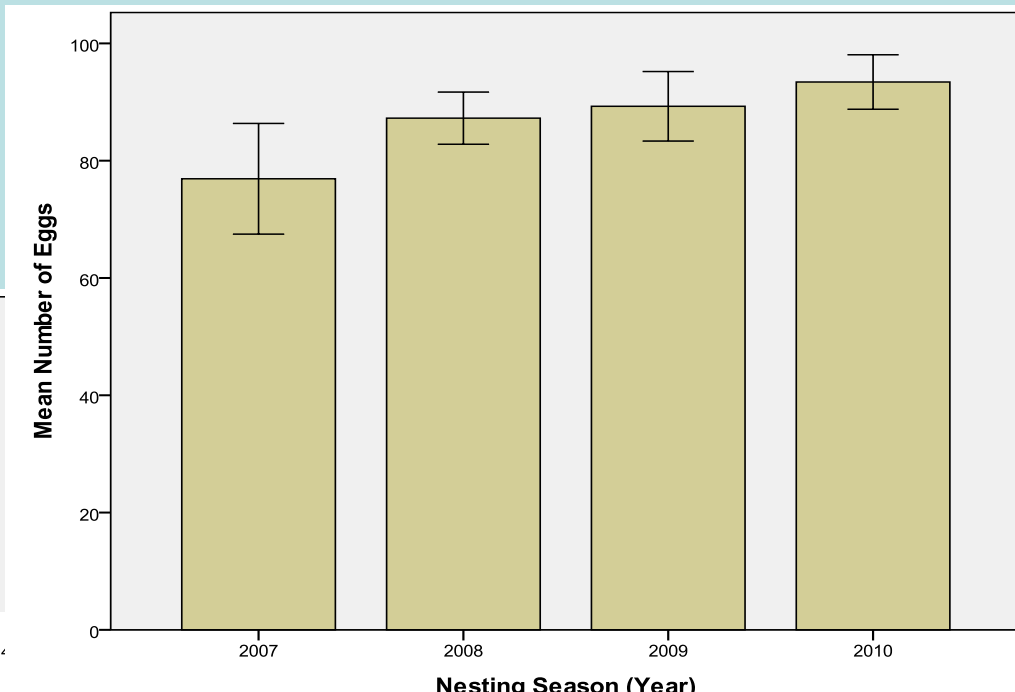
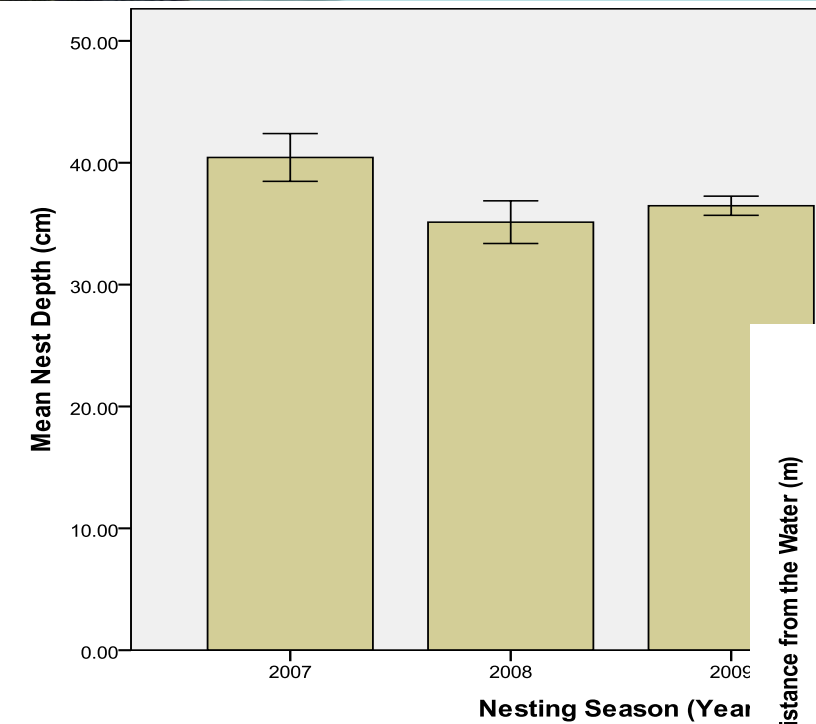
# Population Dynamics of *Lepidochelys olivacea*, Punta Raton.



# Population Dynamics of *Lepidochelys olivacea*, Punta Raton.



# Population Dynamics of *Lepidochelys olivacea*, Punta Raton.



# ProTECTOR's Efforts

the Web: Wildlife Trade on the Internet. International Fund for Animal Welfare. London. 41 p. <http://www.ifaw.org>

KOCH, V., W.J. MICHOLS, H. PECKHAM & V. DE LA TOBA. 2006. Estimates of sea turtle mortality from poaching and bycatch in Bahia Magdalena Bay, California-San Mexico. *Biological Conservation* 128: 317-324.

MARQUEZ, M. R. 1990. FAO species catalogue. Vol. 11: Sea Turtles of the World. FAO Fisheries Synopsis. FAO, Rome. 81 pp.

MCLENNACHAN, L., J.B. JACKSON & M.J. NEWMAN. 2006. Conservation implications of human sea turtle nesting beach loss. *Frontiers in Ecology and the Environment* 4: 290-296.

PEREZ GONZALEZ, M.F. 2009. Preventing illegal trade of hawksbill sea turtle products: a survey on public awareness programs in the wider Caribbean region. M.S. Thesis, University of Minnesota.

ROSE, D., T. MULLIGAN, S. MCELDERE, J. MERRIS & M.O.S.A. & M. GRIEG-GREAN. 2002. Making a killing or making a living? Wildlife trade, trade controls and rural livelihoods. *Biodiversity and Livelihoods Issues No. 8*. International Institute for Environment and Development and TRAFFIC. <http://www.traffic.org>

SCHLAEPFER to evaluating poaching. SHENKAR, Trade in Sea nesting of Green 2009 cop1317a1. US FISH AND Animal Repo US FISH AND Annual Repo US FISH AND TY 2002 Ann US FISH AND Washington.

## United States Fish and Wildlife Services



### In-Water Observations of Recent Juvenile Hawksbills (*Eretmochelys imbricata*)

Stephen G. Duhaime<sup>1</sup>, Lidia Salinas<sup>2</sup> & L. Prosenza Turtle Ecology Center for Training, Outreach and Research, Inc. (ProTECTOR), Colton, CA 92324 (E-mail: [stephen@protector.org](mailto:stephen@protector.org))  
<sup>1</sup>Department of Earth and Biological Sciences, Loma Linda University  
<sup>2</sup>Department Turtle Awareness and Protection Studies (TAPS), Conservation P...

Direct observations of animals at different life history stages provide important information regarding habitat use and behavior. Furthermore, understanding daily movements and activity patterns of sea turtles can provide insights into important foraging and resting sites, and therefore critical habitats (Genschoff et al., 2002) that may require specific conservation measures. Focal follows of marine turtles have been reported by several authors (Slooten et al., 2000; Das et al., 2002; Houghton et al., 2003; Meadows 2004; Schofield et al., 2006). Meadows (2004) used focal-animal activity budget observations to study impacts of human-turtle interactions and categorized observed behaviors as inactive on the bottom, swimming, resting on the bottom, resting on the beach, resting on the shore, and resting on the water.

In most cases, individuals of a distribution at 2002). How with little previous information in some work has critically end juvenile stages van Dam & van Dam 2002 of hawksbill

## Hawksbill Sea Turtle Nesting Beach Reconnaissance Honduras

## MINISTRY OF ENVIRONMENT, DIGEPESCA, HONDURAS



## ACTIVITIES OF THE PROTECTIVE TURTLE ECOLOGY CENTER FOR TRAINING, OUTREACH, AND RESEARCH, INC. (ProTECTOR) IN THE GOLF OF FONSECA, HONDURAS 2009 - 2010 ANNUAL REPORT MARCH 15, 2011

## RATON, HONDURAS 2008 - 2009 ANNUAL REPORT FEBRUARY 15, 2010

- 1) Marine Research Group, earth and biological sciences department, Loma Linda University, Loma Linda, California
- 2) Protective Turtle Ecology Center for Training, Outreach, and Research Incorporated (ProTECTOR), Colton, California
- 3) Turtle Awareness and Protection Studies (TAPS) program, Raaf Houa Resort, Roatan, Honduras
- 4) Marine science department, College of Arts and Sciences, University of Hawaii at Hilo, Hawaii

# SWOT

The State of the World's Sea Turtles



report

Volume III

# SWOT

The State of the World's Sea Turtles

report

Volume IV

INSIDE:  
 CONFRONTING CLIMATE CHANGE  
 STUDYING HAWKSBILLS IN THE DEEP  
 MINIMIZING LOGGERHEAD AND LONGLINE INTERACTIONS  
 AND MORE ...

## DISCOVERING THE FLATBACK AUSTRALIA'S OWN SEA TURTLE



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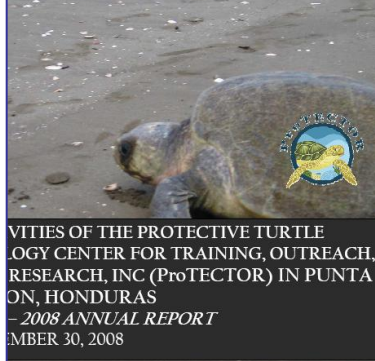


## MINISTRY OF ENVIRONMENT, HONDURAS

## and green sea turtles: voyagers of the Pacific oceans

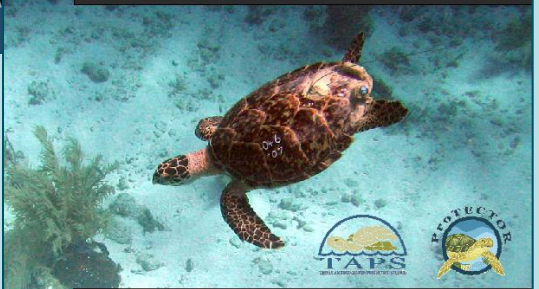
and David Howard<sup>4</sup>

compelling, exploited, yet persistent sea turtles represent some of the most mysterious and elusive creatures on the planet. How fitting that these silent creatures should harbor so many secrets. We still know little about their social and artisanal exploitation. We still know little about their life histories, what motivates their migrations, how their diets develop, and how they interact with their environment. But with help from modern technology, sea turtles are revealing their secrets to us. As a pair of researchers working on two separate projects in the Caribbean and the Pacific, we have taken a step back to introduce some of the big issues facing sea turtles in general and the Caribbean hawksbill and Pacific green in particular.



## ACTIVITIES OF THE PROTECTIVE TURTLE ECOLOGY CENTER FOR TRAINING, OUTREACH, RESEARCH, INC (ProTECTOR) IN PUNTA GORDA, HONDURAS - 2008 ANNUAL REPORT DECEMBER 30, 2008

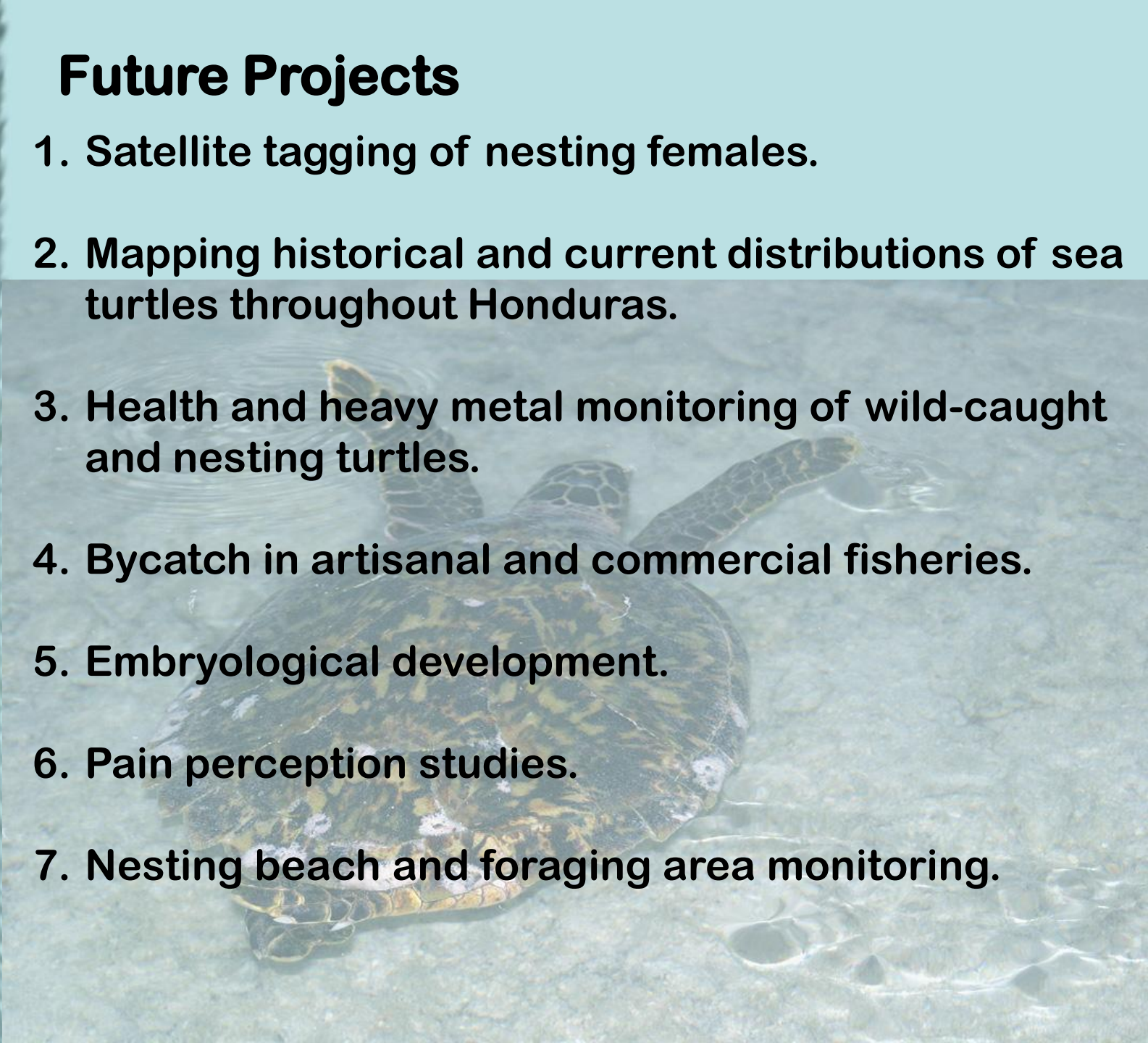
## MINISTRY OF ENVIRONMENT, HONDURAS



## ACTIVITIES OF THE TURTLE AWARENESS AND PROTECTIVE STUDIES (TAPS) PROGRAM, PROTECTIVE TURTLE ECOLOGY CENTER FOR TRAINING, OUTREACH, AND RESEARCH, INC. (ProTECTOR) IN ROATAN, HONDURAS 2007 - 2008 ANNUAL REPORT JANUARY 15, 2009

# Future Projects

1. Satellite tagging of nesting females.
2. Mapping historical and current distributions of sea turtles throughout Honduras.
3. Health and heavy metal monitoring of wild-caught and nesting turtles.
4. Bycatch in artisanal and commercial fisheries.
5. Embryological development.
6. Pain perception studies.
7. Nesting beach and foraging area monitoring.



# Current and Future Projects



# Acknowledgements

- Department of Earth & Biological Sciences (LLU).
- Reef House Resort (ProTECTOR/TAPS).
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- National Fish and Wildlife; Ocean Foundation; ICAPO
- SWOT (CI)
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- Nancy Blauers (BlauersArt,Inc.), April Sjoboen, Melissa Berube







Protective Turtle Ecology Center for Training, Outreach and Research  
(ProTECTOR)

## ProTECTOR



[Turtle Adoption](#)

[TAPS](#)

[HeMoCaST](#)

[SatTrack](#)

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ProTECTOR is an organization with the goal of expanding our understanding of sea turtle biology and ecology in the country of Honduras.

The organization was formed because we recognized that there is great need for research on sea turtles in the region and that research, linked with educational outreach and community involvement, can strongly influence management decisions about these valuable marine residents.

To do this, ProTECTOR oversees the establishment, continuance and completion of numerous research and outreach projects, with the aim of facilitating better decision-making for marine area management, as well as awareness of sea turtles on the part of both local residents and the visiting public.

Projects include the Turtle Awareness and Protection Studies (TAPS), which is tracking juvenile turtles along the coast of Roatan. TAPS also provides opportunities for public support of this research through the Turtle Adoption Program. Other projects include satellite tracking (SatTrack), the development of a national Nesting Beach Monitoring Network (NBMN), Health Monitoring of Captive Sea Turtles (HeMoCaST) and a series of Honduras Sea Turtle Active Research workshops (HSTAR).

Our office is currently located at:

Department of Earth & Biological Sciences  
Loma Linda University  
Loma Linda, California 92350

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

Adopt a Sea Turtle