



Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author: Scott Benson
Assignment title: R Siburian
Submission title: MOVEMENTS AND HIGH-USE ARE...
File name: PIT2_Movements_and_High_Use.p...
File size: 316.57K
Page count: 15
Word count: 4,113
Character count: 24,834
Submission date: 22-May-2019 04:43PM (UTC+1200)
Submission ID: 1134235981



MOVEMENTS AND HIGH-USE AREAS OF WESTERN PACIFIC LEATHERBACK TURTLES

by Scott Benson

Submission date: 22-May-2019 04:43PM (UTC+1200)

Submission ID: 1134235981

File name: PIT2_Movements_and_High_Use.pdf (316.57K)

Word count: 4113

Character count: 24834



NOAA Technical Memorandum NMFS-SEFSC-631

PROCEEDINGS OF THE THIRTY-FIRST ANNUAL SYMPOSIUM ON SEA TURTLE BIOLOGY AND CONSERVATION



10 to 16 April 2011
San Diego, California, USA

Compiled by:
T. Todd Jones & Bryan P. Wallace

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NOAA Fisheries Service
Southeast Fisheries Science Center
75 Virginia Beach Drive
Miami, Florida 33149

May 2012
(Updated November 2012)



NOAA Technical Memorandum NMFS-SEFSC-631

PROCEEDINGS OF THE THIRTY-FIRST ANNUAL SYMPOSIUM ON SEA TURTLE BIOLOGY AND CONSERVATION

10 to 16 April 2011
San Diego, California, USA

Compiled by:

T. Todd Jones & Bryan P. Wallace

U.S. DEPARTMENT OF COMMERCE
John Bryson, Secretary

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
Dr. Jane Lubchenco, Under Secretary for Oceans and Atmosphere

NATIONAL MARINE FISHERIES SERVICE
Samuel Rauch III, Acting Assistant Administrator for Fisheries

May 2012
(Updated November 2012)

This Technical Memorandum series is used for documentation and timely communication of preliminary results, interim reports, or special-purpose information. Although the memoranda are not subject to complete formal review, editorial control or detailed editing, they are expected to reflect sound professional work.

NOTICE

The NOAA Fisheries Service (NMFS) does not approve, recommend or endorse any proprietary product or material mentioned in this publication. No reference shall be made to NOAA Fisheries, or to this publication furnished by NOAA Fisheries, in any advertising or sales promotion which would indicate or imply that NOAA Fisheries approves, recommends or endorses any proprietary product or material herein or which has as its purpose any intent to cause or indirectly cause the advertised product to be use or purchased because of NOAA Fisheries promotion.

For bibliographic purposes, this document should be cited as follows:

Jones, T. Todd and Wallace, Bryan P., compilers. 2012 (Updated November 2012). Proceedings of the Thirty-first Annual Symposium on Sea Turtle Biology and Conservation. NOAA Technical Memorandum NOAA NMFS-SEFSC-631: 322p.

Technical Editor:
Lisa Belskis

Copies of this report can be obtained from:

NOAA Fisheries Service
Southeast Fisheries Science Center
75 Virginia Beach Drive
Miami, FL 33149

Request a hard copy, email: seaturtledocuments@noaa.gov
PDF version available at <http://www.sefsc.noaa.gov/species/turtles/publications.htm>

or

National Technical Information Service
5301 Shawnee Rd
Alexandria, VA 22312
(703) 605-6050, (888)584-8332
<http://www.ntis.gov/>



PRESIDENT'S REPORT

The President's Report may be found in its entirety in the Marine Turtle Newsletter 130:30-33, 2011 entitled 'President's Report for the 31st Annual Symposium on Sea Turtle Biology and Conservation 'The Next Generation of Research and Conservation', 10-16 April 2011, San Diego, California, USA.'

by Jeffrey Seminoff, President, ISTS

<http://www.seaturtle.org/mtn/archives/mtn130/mtn130p30.shtml>

COMMITTEES, CHAIRS, AND KEY ORGANIZERS

San Diego Coordinator	Ingrid Yañez
Symposium Coordinator	Donna Broadbent
Internet Communications Coordinator	Michael Coyne
San Diego Symposium Registration	Michael Coyne, Scott Handy, Sarah Lucas, Tina Fahy
Fund Raising	Jeffrey Seminoff, Elena Finkbeiner
Program Chairs	T. Todd Jones, Bryan P. Wallace
Program Committee Coordinator	DuBose Griffin
Program Committee	Stewart Allen, Ana Barragán, Peter Dutton, Tomo Eguchi, Nancy Fitzsimmons, Allen Foley, Mariana Fuentes, Matthew Godfrey, Heidi Gjertsen, Mark Hamann, Craig Harms, Chris Harvey-Clark, Lucy Hawkes, Sandra Hochscheid, Asuka Ishizaki, Michael Jensen, T. Todd Jones, Rebecca Lewison, Kate Mansfield, Zoe Meletis, Jeffrey Moore, Ronel Nel, Barbara Schroeder, Jeffrey Seminoff, Kelly Stewart, Amanda Southwood Williard, Mark Swingle, Manjula Tiwari, Jesús Tomás, Bryan Wallace, John Wang, Blair Witherington
Poster Session Chairs	Robin LeRoux, Aliko Panagopoulou
Travel Committee Chair	Alexander Gaos
Travel Regional Chairs	Karen Eckert (English-speaking Caribbean), Angela Formia (Africa), Alejandro Fallabrino (South America), Emma Harrison (Mexico, Central America, and Spanish-speaking Caribbean), Aliko Panagopoulou (Europe), Nicolas Pilcher (Asia/Pacific), Alan Rees (Middle East), Kartik Shanker (South Asia), Bryan Wallace (USA and Canada)
Student Judges Committee	Lisa Campbell, Matthew Godfrey, Jeanette Wyneken
Student Judges	Karen Arthur, Larisa Avens, Ray Carthy, Paolo Casale, Emma Harrison, Craig Harms, Jennifer Keller, Mike James, Cynthia Lagueux, Kate Mansfield, Catherine McClellan, Zoe Meletis, Terry Norton, Dave Owens, Andrea Phillott, Nick Pilcher, Peter Pritchard, Kim Reich, Erin Seney, Kelly Stewart, Tony Tucker, Roldan Valverde, Thane Wibbels
ISTS Awards Committee	Karen Arthur (Chair), Nancy Fitzsimmons, David Godfrey, David Owens, Chloe Schauble
ISTS Resolutions Committee	Marydele Donnelly, Scott Eckert, Jack Frazier
Student Committee	Lisa Komoroske, Alexander Gaos
Proceedings Compilers	T. Todd Jones, Bryan P. Wallace
Printed Program	T. Todd Jones, Bryan P. Wallace, Jeffrey Seminoff, Ingrid Yañez
Live and Silent Auction Chairs	Jennifer Homey, Marina Zucchini
Auctioneer	Rod Mast
Public Relations	Jean Beasley, Katie Wedermeyer
Volunteer Coordinator	Lauren Saez
Vendor Coordinator	Rachel Tuck
Activity Coordinators	Emma Harrison, Zoe Meletis
Education Coordinators	Barbara Andrews, Frances Kinney
The Thing Coordinator	Katherine Comer Santos
San Diego Visitors Guide	Cali Turner Tomaszewicz

Proceedings of the 31st Annual Symposium on Sea Turtle Biology and Conservation

Wild & Scenic Film Festival
Regional Meeting/Workshop Coordinator
Africa Regional Meeting

East Asia Regional Meeting
Eastern Pacific Hawksbill Initiative (ICAPO) Meeting
Indian Ocean & Southeast Asia Regional Meeting

IOSEA Marine Turtle Meeting
IUCN Marine Turtle Specialist Group Annual Meeting

Mediterranean Regional Meeting
Pacific Islands Region and Partners Meeting
Pacific Leatherback Turtle Conservation Fund Meeting
RETOMALA XVIII (Latin America) Meeting

Science of Advocacy Meeting
WIDECAST (Caribbean) Regional Meeting
Freshwater Turtle & Tortoise Symposium
NMFS Scientific Research and Enhancement Permits
3rd Workshop on Data Analysis in Marine Turtle Research
3rd Workshop on Sea Turtle Stable Isotope Research
Marine Turtle Conservation Fund (MTCF) -
Grant Writing Workshop
Marine Turtles, Hooks, and Related Lesions Workshop
Public Participation in Turtle Conservation Workshop
San Diego Schoolchildren Education Workshop
San Diego Teacher Education Workshop
Sea Turtle Medicine Workshop
Student Professional Development Workshop

Giuliana Schroeder, Barbara Andrews
Kama Dean
Manjula Tiwari, Jacques Fretey,
Angela Formia
Yoshimasa Matsuzawa
Alexander Gaos, Ingrid Yañez
Maggie Muurmans, Rahayu Zulfiki, SMA Rashid,
Lalith Ekanayake
Douglas Hykle
Roderic Mast, Nicolas Pilcher,
Brian Hutchinson
Paolo Casale
Irene Kelly
Asuka Ishizaki
Alan Zavala, Juanpablo Muñoz,
Carlos Mario Orrego
J. Nichols, Todd Steiner
Karen Eckert
Chuck Shaffer
Amy Hapeman
Tomo Eguchi
Karen Arthur, Kim Reich, Bryan Wallace

Earl Possardt
Mariluz Parga
Samantha Burgess
Frances Kinney, Barbara Andrews
Frances Kinney, Barbara Andrews
Heather Harris
Lisa Komoroske

EXECUTIVE COMMITTEE

President	Jeffrey A. Seminoff
President-Elect	Ana Barragán
Past President	Kartik Shanker
Treasurer	Terry Meyer
Secretary	Manjula Tiwari

BOARD OF DIRECTORS AND THEIR END OF TERM

Ana Rebeca Barragan	2011
Naoki Kamezaki	2011
Jean Beasley	2012
Marydele Donnelly	2012
Didiher Chacon	2013
Scott Eckert	2013
Jack Frazier	2014
Mark Hamann	2014
Cynthia Lagueux	2015
Roldan Valverde	2015

April 2011 San Diego, California, USA

SPONSORS AND CONTRIBUTORS

The International Sea turtle Society gratefully acknowledges the generous financial support from the following organizations and individuals:

Lead Sponsors

NOAA Fisheries Service
U.S. Fish and Wildlife Service
Western Pacific Regional Management Council
The Ocean Foundation
Disney's Animal Programs

Sea World – San Diego
National Fish and Wildlife Foundation
San Diego Gas and Electric
Unified Port of San Diego

Sponsors

California Academy of Sciences
Chula Vista Nature Center
CLS America
Earthwatch Institute
Eastern Pacific Hawksbill Initiative (ICAPO)
International Community Foundation
Monterey Bay Aquarium
Ms. Hawksbill

Pro Peninsula Fund
ProTECTOR
San Diego Airport Authority
San Diego State University
South Asia Cooperative Environment Programme
SirTrack
Telonics, Inc.
Wildlife Computers

Coffee Break Sponsors

Leatherback Trust
Desert Star Systems
CLS America
Wildlife Computers

ISTS Room Sponsors

Syed Abdullah, Dave Allison, Kathryn Craven,
Nancy FitzSimmons, Karen Frutchey, Thomas Gray,
Janet Hochella, Cindy Lewis, Beth Marcus,
Kellie Pendoley, Debbie Sobel, Jessica Thompson,
Colette Wabnitz

Vendors

AG-GUA
AHI Enterprises
Bioko Biodiversity Protection Program (Drexel Univ.)
Boone's Georgia Jumper
Boyd Lyon Sea Turtle Fund
CARINAM
Center for Biological Diversity
CLS America, Inc.
Chelonian Research Foundation
Conservation International
Desert Star Systems
Earthwatch Institute
Eco
Everlasting Nature of Asia
Instituto de Fomento Pesquero
Inwater Research Group Inc.
Karumbe
Lotek
Manta Publications

Marinelife Alliance
Masirah
Mediterranean Association to Save the Sea Turtles
National Marine Fisheries Service
Oceana
Paso Pacifico
Pro Peninsula Fund
San Diego Turtle and Tortoise Society
Sea Turtle Restoration Project
SeaWorld – San Diego
SEE Turtles
SirTrack Ltd
Telonics, Inc.
The Leatherback Trust
NTV MSNBC
WIDECAST
Western Pacific Management Regional Council
Wildlife Computers
Zonk Galleries

STUDENT AWARDS

There were 181 student presentations – 58 papers and 123 posters with \$5,500 US awarded to 12 recipients. The awards committee was composed of Lisa Campbell, Matthew Godfrey, and Jeanette Wyneken. Student judges: Karen Arthur, Larisa Avens, Ray Carthy, Paolo Casale, Emma Harrison, Craig Harms, Jennifer Keller, Mike James, Cynthia Lagueur, Kate Mansfield, Catherine McClellan, Zoe Meletis, Terry Norton, Dave Owens, Andrea Phillott, Nick Pilcher, Peter Pritchard, Kim Reich, Erin Seney, Kelly Stewart, Tony Tucker, Roldan Valverde, and Thane Wibbels. The awards were financed by the International Sea Turtle Society. (Note that as in previous years, the judges decided not to award prizes in certain categories, based on their ranking system)

Breeding Biology

Best Oral Presentation

Anthony Rafferty, Pilar Santidrián Tomillo, James Spotila, Frank Paladino, Richard Reina. Embryonic death is linked to maternal identity in the leatherback turtle (*Dermochelys coriacea*). (Monash University) \$500

Runner Up Oral Presentation

Jeanne Garner, Tomo Eguchi, Duncan MacKenzie, Scott Jacques. Evaluating steroid hormone data in association with reproductive parameters in a population of endangered leatherback sea turtles and the application to conservation and management. (Texas A&M University) \$250

Best Poster Presentation

Hannah B. Vander Zanden, Karen A. Bjorndal, Alan B. Bolten. Nutrient transport by green turtles. (University of Florida) \$500

Conservation through Social, Economic, Cultural, & Legal Pathways

Best Oral Presentation

Courtney Shephard. Optimizing U.S. Endangered Species Act protection by integrating recovery planning, Section 7 Consultations, and incidental take authorizations: A sea turtle case study. (Duke University). \$500

Foraging, Physiology, & Movements

Best Oral Presentation

Simona Ceriani, James D. Roth, Daniel Evans, Llewellyn M. Ehrhart. Satellite tracking confirms the use of stable isotopes to infer foraging grounds of loggerhead turtles (*Caretta caretta*) nesting on Florida's East coast. (University of Central Florida). \$500

Runner Up Oral Presentation

Alexander R. Gaos, Rebecca L. Lewison, Ingrid L. Yañez, Wallace J. Nichols, Andres Baquero, Michael Liles, Mauricio Vasquez, Jose Urteaga, Bryan Wallace, Jeffrey A. Seminoff. Satellite telemetry reveals novel insights into the biology and conservation of hawksbill turtles (*Eretmochelys imbricata*) in the eastern Tropical Pacific. (San Diego State University). \$250

Foraging, Physiology, & Movements

Best Poster Presentation

Morgan Young, Michael Salmon, Richard Forward. Visual wavelength discrimination by the loggerhead turtle. (Florida Atlantic University). \$500

Health & Rehabilitation

Best Poster Presentation

Virginie Plot, Jean-Patrice Robin, Thomas Jenkins, Sabrina Fossette, Jean-Yves Georges. Physiological state and condition in nesting leatherback turtles in French Guiana. (Université Strasbourg) \$500

April 2011 San Diego, California, USA

Population Assessment

Best Oral Presentation

Brian M. Shamblin, Mark G. Dodd, Kristina L. Williams, Michael G. Frick, Terry M. Norton, Stephanie Ouellette, Rebecca Bell, Douglas M. Hoffman, Debra Barnard-Keinath, Gale G. Bishop, Scott Coleman, Stacia Hendricks, Tammy Smith, Campbell J. Naim. Genetic mark-recapture of the female loggerhead population nesting in Georgian 2008-2009: Abundance, nest site fidelity, and relatedness. (University of Georgia). \$500

Best Poster Presentation

Vanessa Bezy, Roldan A. Valverde. Comparison of methodologies for estimating the nest density of olive ridley arribadas at Ostional, Costa Rica. (UNC – Wilmington). \$500

Threats

Best Oral Presentation

Qamar Schuyler, Kathy A. Townsend, Justin Marshall. To eat or not to eat? The roles of choice and vision in ingestion of marine debris by sea turtles. (University of Queensland). \$500

Best Poster Presentation

Leigh Ann Harden, Amanda S. Williard. Using spatially explicit predator-prey model to investigate bycatch risk of terrapins in crab pots. (UNC – Wilmington). \$500

ISTS AWARDS 2011

Award certificates were designed by Dawn Witherington.

President's Award

Margie Stinson

Ed Drane Award for Volunteerism (new award)

Ed Drane

Life Time Achievement Award

Sally Murphy

Karen Bjorndal

Peter Pritchard

Champions Awards

Jepson Prince

Sinkey Boone

Colum Muccio

Grass Roots Awards (new award)

Ingrid Yañez

KEYNOTE PRESENTERS

Peter C. H. Pritchard

The Eastern Pacific: Where the Turtles are all Different

Karen A. Bjorndal

Planning Our Future: Expanding the Known, Learning the Unknown, and Minimizing the Unknowable

April 2011 San Diego, California, USA

VIDEO PRESENTATIONS - WILD AND SCENIC FILM FESTIVAL

Your Unknown Killings

Jayesh Shirakhane

Port of San Diego, NOAA Project

Barbara Moreno

The Heartbreak Turtle Today

Sea Turtle Restoration Project, presented by Carole Allen

The Jurassic Journey

John Dutton

Between the Harvest

Scott Drucker

Saving Sea Turtles of Sri Lanka

Thushan Kapurusinghe

Kurma

Arun Krishna

Sanctuary in the Sea: a Gulf of the Farallones Experience

Bob Talbot

Sea Turtle Conservation with Grupo Tortuguero

Roger Roth, presented by Wallace J. Nichols

Foraging, Physiology, and Movements

Page

130. ROLE OF OCEAN CURRENTS IN SHAPING THE STOCK COMPOSITION OF THE GREEN TURTLE AGGREGATION AT THE GORGONA (COLOMBIA) FORAGING GROUND
F. Alberto Abreu-Grobois, Diego F. Amoroch, Richard D. Reina, Peter Dutton, and Nathan F. Putman
131. HOME RANGE AND MIGRATION OF EAST PACIFIC GREEN TURTLES TAGGED IN COCOS ISLAND NATIONAL PARK, COSTA RICA, USING SATELLITE AND ACOUSTIC TELEMETRY
Randall Arauz, Todd Steiner, Diego Amoroch, Javier Carrion, and Jeffery Madrigal
131. COMPOUND SPECIFIC STABLE NITROGEN ISOTOPE ANALYSIS OF AMINO ACIDS: NEW INSIGHT INTO TURTLE ECOLOGY
Karen Arthur, Brian Popp, Stacy Hargrove, George Balazs, Scott Benson, and Jeff Seminoff
132. FEEDING PATTERN OF GREEN TURTLES EXPLOITING AN INTERTIDAL SEAGRASS MEADOW
Katia Ballorain, Jérôme Bourjea, Stéphane Ciccione, Jean-Patrice Robin, Manfred Enstipp, and Jean-Yves Georges
133. MOVEMENTS OF JUVENILE LOGGERHEADS IN THE SOUTHWESTERN ATLANTIC
Caren Barceló, Andrés Domingo, Philip Miller, Leonardo Ortega, Bruno Giffoni, Gilberto Sales, Lianne McNaughton, Maria Marcovaldi, Selina S. Heppell, and Yonat Swimmer
133. MOVEMENTS AND HIGH-USE AREAS OF WESTERN PACIFIC LEATHERBACK TURTLES
Scott R. Benson, Tomo Eguchi, Peter H. Dutton, David G. Foley, Helen Bailey, Creusa Hitipeuw, Betuel Samber, Ricardo Tapilatu, Vagi Rei, Peter Ramohia, John Pita, and Barbara Block
134. HOME RANGE AND FORAGING ECOLOGY OF JUVENILE HAWKSBILL SEA TURTLES AROUND ROATÁN, HONDURAS
Melissa D. Berube, Stephen G. Dunbar, Klaus Rützler, and William K. Hayes
135. POST-NESTING MOVEMENTS AND HIGH USE INTERNESTING AREAS FOR EAST PACIFIC GREEN TURTLES NESTING IN COSTA RICA
Gabriela S. Blanco, Stephen J. Morreale, Jeffrey A. Seminoff, Rotney Piedra, Frank V. Paladino, and James R. Spotila
136. FORAGING IN PERIPHERAL HABITATS: ATLANTIC HAWKSBILLS IN SEAGRASS PASTURES
Alan B. Bolten and Karen A. Bjorndal
136. CONSERVATION OF THE LOGGERHEAD SEA TURTLE (*CARETTA CARETTA*) IN THE SHALLOW WATERS OF AEOLIAN ARCHIPELAGO (SICILY, ITALY)
Valeria Casciello, Miriam Paraboschi, Gianluca Benzi, Gianni Insacco, and Monica F. Blasi
137. STOMACH TEMPERATURE TELEMETRY INDICATES LEATHERBACK SEA TURTLES MAINTAIN ELEVATED, STABLE BODY TEMPERATURES AT HIGH LATITUDE FORAGING GROUNDS
James Casey, Mike James, and Amanda Southwood Williard
137. COMPARATIVE STUDY OF SEA TURTLE POPULATION IN TWO ESTUARIES IN BAHIA MAGDALENA, BCS, MEXICO
Alfonso Antonio Romero Castro and Gustavo Hinojosa Arango
138. SATELLITE TRACKING CONFIRMS THE USE OF STABLE ISOTOPES TO INFER FORAGING GROUNDS OF LOGGERHEAD TURTLES (*CARETTA CARETTA*) NESTING ON FLORIDA'S EAST COAST
Simona A. Ceriani, James D. Roth, Daniel Evans, and Llewellyn M. Ehrhart
138. NEW PACIFIC GREEN TURTLE FORAGING GROUND AT DULCE GULF, SOUTH PACIFIC COAST OF COSTA RICA
Didiher Chacon, David Rojas, Adi Barash, and Claudio Quesada
139. HAWAIIAN GREEN TURTLES UP AND DOWN THE ANAHULU RIVER
David L. Clarke, George Balazs, and Stacy Hargrove

MOVEMENTS OF JUVENILE LOGGERHEADS IN THE SOUTHWESTERN ATLANTIC*

Caren Barceló¹, Andrés Domingo², Philip Miller³, Leonardo Ortega², Bruno Giffoni⁴, Gilberto Sales⁴, Lianne McNaughton⁵, Maria Marcovaldi⁴, Selina S. Heppell¹, and Yonat Swimmer⁶

¹ Oregon State University, Corvallis, Oregon, USA

² Dirección Nacional de Recursos Acuáticos, Montevideo, Uruguay

³ Centro de Investigación y Conservación Marina (CICMAR), Canelones, Uruguay

⁴ Projeto TAMAR, Fundação Pró Tamar / ICMBio, Salvador, Bahia, Brazil

⁵ Joint Institute for Marine and Atmospheric Research, University of Hawaii

⁶ NOAA Fisheries, Honolulu, Hawaii, USA

In the Southwestern Atlantic (SWA) off the coasts of Uruguay and Brazil, juvenile and sub-adult loggerhead sea turtles (*Caretta caretta*) are very abundant and frequently incidentally captured by pelagic longline fisheries. There is a need to improve our understanding of turtle behavior and habitat use in this region to identify high use areas and reduce fishery interactions. We used satellite telemetry to characterize the broad-scale behavioral patterns, inter-seasonal variability and general high use areas of 27 bycatch juvenile and subadult loggerheads turtles released from pelagic longline fishery between July 2006 and March 2010 (mean CCL: 61.8±6.9 cm, range: 49-83 cm). The mean turtle tracking duration was 259±159 days, during which time turtles moved between latitudes of 25 to 45°S and longitudes 35 to 54°W. Turtles traveled a mean minimum distance from release location of 6,050±3,630 km. The areas of highest use for all the tracked turtles were located over the continental shelf and slope within the Uruguayan and Brazilian EEZs, as well as oceanic international waters off the continental slope of southern Brazil. Maximum dive depth recorded varied by turtle between 100 and 300m depths, and two turtles demonstrated dives to depths close to the bottom within the 200m isobath. The overall mean SST encountered by tracked turtles was 19.8±2.3°C (range: 10.21°C-28.4°C) and turtles showed an affinity for mesotrophic/eutrophic chlorophyll a values (mean: 0.458±1.012 mg m⁻³). Latitudinal movements varied by season and sea surface temperature, however seasonal differences were observed with bathymetry or Chl a concentrations. We also present preliminary results from a first-passage time analysis performed on these data to determine whether turtles exhibit distinct scales of movement, and whether those scales of movements are associated with mesoscale environmental features. Overall, in concert with other studies conducted in the region, our analyses demonstrate the need to focus further regional and international collaborative efforts on habitat use research for the management of sea turtles in this area.

MOVEMENTS AND HIGH-USE AREAS OF WESTERN PACIFIC LEATHERBACK TURTLES*

Scott R. Benson¹, Tomo Eguchi², Peter H. Dutton², David G. Foley³, Helen Bailey⁴, Creusa Hitipeuw⁵, Betuel Samber⁶, Ricardo Tapilatu⁷, Vagi Rei⁸, Peter Ramohia⁹, John Pita⁹, and Barbara Block¹⁰

¹ Protected Resources Division, Southwest Fisheries Science Center, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, c/o Moss Landing Marine Laboratories Norte, Moss Landing, CA, USA

² Protected Resources Division, Southwest Fisheries Science Center, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, La Jolla, CA, USA

³ Environmental Research Division, Southwest Fisheries Science Center, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Pacific Grove, CA, USA

⁴ Chesapeake Biological Laboratory, University of Maryland Center for Environmental Science, MD, USA

⁵ World Wide Fund for Nature-Indonesia, Jakarta, Indonesia

⁶ KSDA II Papua, Forestry Department, Sorong, Papua Barat, Indonesia

⁷ Marine Laboratory, The State University of Papua (UNIPA), Manokwari, Papua Barat, Indonesia

Abstract titles marked with an * denote Oral Presentations

⁸ Office of Environment and Conservation, Boroko, National Capital District, Papua New Guinea

⁹ The Nature Conservancy, Honiara, Solomon Islands

¹⁰ Tuna Research and Conservation Center, Stanford University, Hopkins Marine Station, Pacific Grove, CA, USA

The western Pacific leatherback (*Dermochelys coriacea*), one of three genetically distinct stocks in the Indo-Pacific region, has declined markedly during past decades. This diverse metapopulation nests year-round at beaches of several western Pacific island nations and has been documented through genetic analysis and telemetry studies to occur in multiple regions of the Pacific, including waters of the eastern and central North Pacific, the western South Pacific, the South China Sea, and the Sea of Japan. The objective of this study is to synthesize results of 126 satellite telemetry deployments conducted on leatherbacks at western Pacific nesting beaches and at one eastern Pacific foraging ground during 2000-2007, to provide a large-scale picture of movements, high use areas, and habitat associations and to support ecosystem-based management and conservation. Nesting beach deployments were conducted in Papua New Guinea (PNG) and Solomon Islands during boreal winter (December-February), and in Papua Barat, Indonesia (PBI) during boreal summer (July-August) and winter. Deployments at distant foraging grounds off California, USA were conducted during September. A Bayesian switching state-space model (SSSM) was applied to raw Argos-acquired surface locations to estimate daily positions for each turtle. The SSSM provided a posterior distribution of behavioral mode for each daily location, from which a probability of transit ($P_{\text{transit}, t}$) was derived to infer behavior (transiting vs. foraging). Monthly areas of high use were identified for post-nesting periods using kernel density estimation. There was a clear separation of migratory destinations for boreal summer vs. boreal winter nesters, and leatherbacks used multiple large marine ecosystems (LMEs) as foraging destinations. Individuals nesting in PBI during boreal summer moved either to the temperate North Pacific Ocean, including the Kuroshio Extension or the California Current, or to tropical waters of the South China Sea, remaining north of the equator at all times. Foraging habitats included diverse pelagic and coastal regions exhibiting a wide range of mechanisms that are known or expected to aggregate leatherback prey, including mesoscale eddies, coastal retention areas, and current boundaries. In contrast, individuals tagged at the same PBI beaches during January-February and leatherbacks tagged in PNG and the Solomon Islands moved into tropical and southern hemisphere LMEs, including the East Australia Current, the New Zealand Shelf, and tropical Indonesian seas. These regions are also characterized by mesoscale eddies, stationary fronts, or coastal retention areas. Western Pacific leatherbacks thus exploit diverse ecological processes that can aggregate gelatinous prey in different ways throughout the Pacific basin. Use of the most distant, temperate LME (California Current) required a 10-12 month trans-Pacific migration and commonly involved multiple years of migrating between high-latitude summer foraging grounds and low-latitude eastern tropical Pacific wintering areas without returning to western Pacific nesting beaches. In contrast, tropical foraging destinations in the South China Sea and Indonesian seas were reached within 5-7 months and appeared to support year-round foraging, potentially allowing a more rapid return to nesting beaches. Based on these considerations, we hypothesize that demographic differences are likely among nesting females using different LMEs.

HOME RANGE AND FORAGING ECOLOGY OF JUVENILE HAWKSBILL SEA TURTLES AROUND ROATÁN, HONDURAS

Melissa D. Berube^{1,2}, Stephen G. Dunbar^{1,2,3}, Klaus Rützler⁴, and William K. Hayes¹

¹ Department of Earth and Biological Sciences, Loma Linda University, Loma Linda, CA 92350

² Turtle Awareness and Protection Studies (TAPS), Reef House Resort, Roatán, Honduras

³ Protective Turtle Ecology Center for Training, Outreach and Research, Inc. (ProTECTOR)

⁴ Smithsonian Institution, National Museum of Natural History

The hawksbill (*Eretmochelys imbricata*) is one of seven species of sea turtle. It is listed as critically endangered and has suffered population declines of 80 % worldwide, and 95 % in the Caribbean. Understanding habitat use, migration routes, and foraging ecology are important for conservation efforts and implementing management strategies. The objectives of this study were to determine the home range of juvenile hawksbills, the abundance of available dietary items in resident juvenile versus non-resident sites, and the diet of juvenile hawksbills on inshore reefs in Honduras. This study was initiated to determine if there is a link between home range size, food availability, and diet for juvenile hawksbills in Honduras. We found that the home range of juvenile hawksbills in the study area is small. Minimum

Author Index

- Sprintall, Janet, 146
- Squires, Dale, 7
- Srodes, Zander, 123
- St. Clair, Katie I., 164
- St. John, Jill, 122
- Stacy, Brian, 10, 13, 19, 21, 296
- Staggs, Lydia A., 11, 179
- Stahelin, Gustavo D., 193, 293
- Stamper, Andy, 11
- Stapleton, Seth, 35, 228
- Stasiak, Iga, 185
- Steiner, Todd, 9, 16, 89, 98, 124, 131, 282
- Steinwald, Molly, 113
- Stephan, David L., 179
- Stephens, Brail S., 20, 66
- Sterling, Eleanor J., 155, 165, 193, 249
- Sterner, Andrew T., 250
- Stevens, April, 67
- Stewart, Kelly R., 23, 250
- Stock, Charles A., 287, 296
- Stohs, Stephen M., 276
- Stokes, Kimberley L., 176
- Stokes, Lesley W., 294
- Strahlendorf, Jean, 301
- Stringell, Thomas B., 205
- Suárez, M. Medina, 62
- Sugiyama, Takafumi, 276
- Sullivan, Laurie, 20
- Summers, Tammy M., 96
- Svendsen, Guillermo, 147
- Swimmer, Yonat, 133, 213, 256, 262, 294
- Swithenbank, Alan M., 176
- Takase, Mai, 119
- Talavera, Ana L., 295
- Tanaka, Eriko, 119, 153
- Tanga, Jean-Jacques, 163
- Tanjung, Maburi, 109
- Tapia, Amaury Cordero, 202
- Tapilatu, Ricardo F., 67, 133, 146
- Tarbox, Buffy Martin, 124, 291
- Teas, Wendy, 11, 13
- Techera, Bruno N., 162
- Tellería, María T., 289
- Templeton, Robert P., 175
- Testa, Jamie C., 251
- Therrien, Corie, 68
- Thomas, Christine, 271
- Thomas, Rachael, 198
- Thorvalson, Kelly J., 205
- Tiburcio, Graciela, 65
- Tilley, Dominic, 46, 68, 241
- Tinelli, Antonella, 204
- Tiwari, Manjula, 67, 79, 119, 177
- Tokpa, Andrew S., 119
- Tomás, Jesús, 177
- Tomaszewicz, Cali Turner, 125, 178
- Tomillo, Pilar Santidrián, 60, 117, 296
- Torres Hahn, Anelise, 26
- Torres, Perla, 78, 252
- Toruño, Carlos, 219
- Townsend, Kathy A., 290
- Tran, Diem-Hong, 256
- Trapani, Christina M., 19, 179, 190, 256, 296
- Trejo, Carlos Delgado, 297
- Tremblay, Yann, 58
- Trindell, Robbin, 13, 15

MOVEMENTS AND HIGH-USE AREAS OF WESTERN PACIFIC LEATHERBACK TURTLES

ORIGINALITY REPORT

10%

SIMILARITY INDEX

9%

INTERNET SOURCES

7%

PUBLICATIONS

5%

STUDENT PAPERS

MATCH ALL SOURCES (ONLY SELECTED SOURCE PRINTED)

1%

★ scholarsrepository.llu.edu

Internet Source

Exclude quotes Off

Exclude matches < 1%

Exclude bibliography On

MOVEMENTS AND HIGH-USE AREAS OF WESTERN PACIFIC LEATHERBACK TURTLES

GRADEMARK REPORT

FINAL GRADE

/0

GENERAL COMMENTS

Instructor

PAGE 1

PAGE 2

PAGE 3

PAGE 4

PAGE 5

PAGE 6

PAGE 7

PAGE 8

PAGE 9

PAGE 10

PAGE 11

PAGE 12

PAGE 13

PAGE 14

PAGE 15
