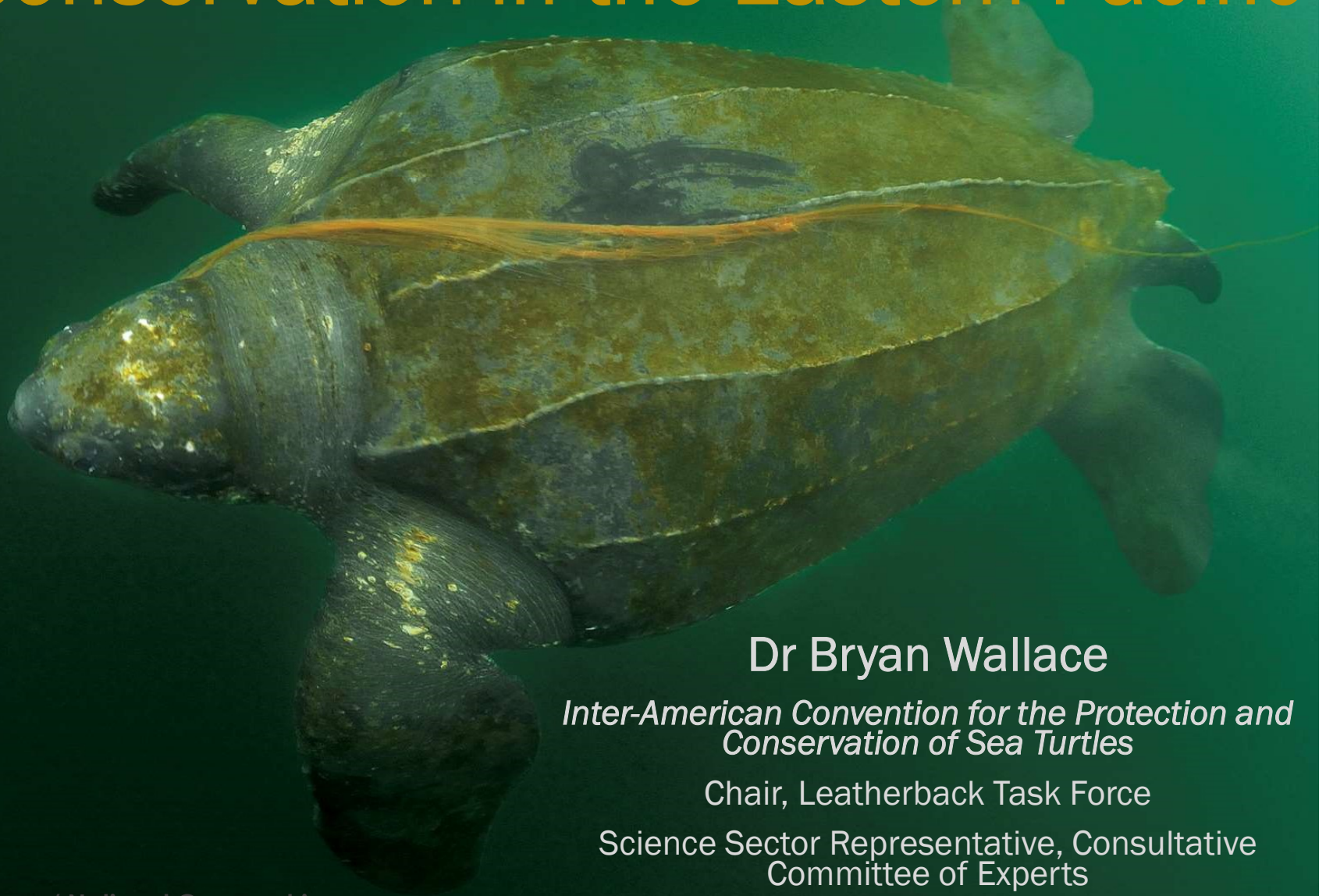


Opportunities for leatherback conservation in the Eastern Pacific



Dr Bryan Wallace

Inter-American Convention for the Protection and Conservation of Sea Turtles

Chair, Leatherback Task Force

Science Sector Representative, Consultative Committee of Experts

Background

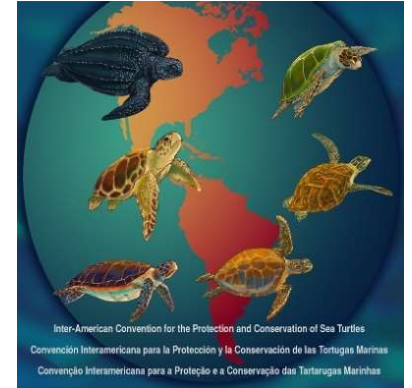
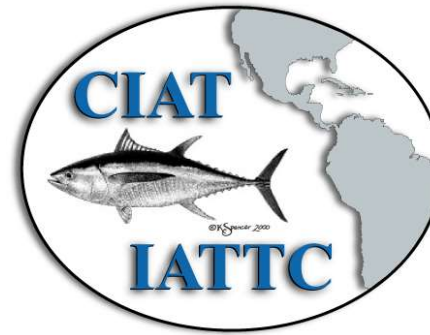
- **Dr. Bryan Wallace**
 - Chair, Leatherback Task Force, Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC)
 - Science Sector Representative, IAC Consultative Committee of Experts
 - Co-Coordinator, Red para la Conservación de la Tortuga Laúd en el Océano Pacífico Oriental (Laúd OPO)
 - Adjunct Assistant Professor, Nicholas School of the Environment, Duke University
 - IUCN SSC Marine Turtle Specialist Group Red List Coordinator



LAÚD OPO
RED LAÚD DEL OCÉANO
PACÍFICO ORIENTAL



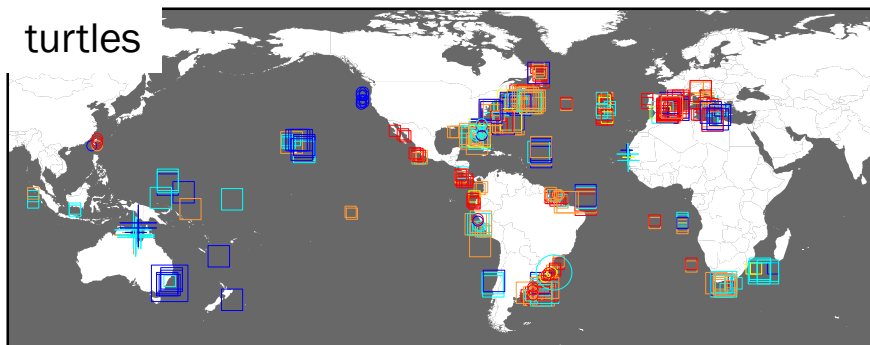
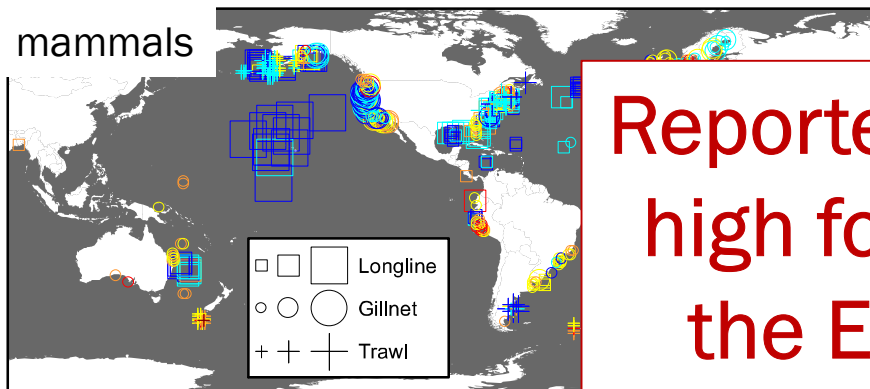
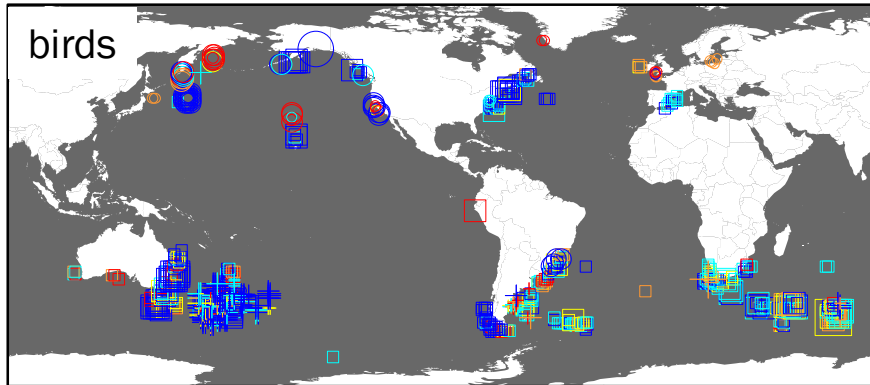
Background



- IAC and IATTC
 - MoU between IAC and IATTC (2011) (text at www.iacseaturtle.org)
 - OBJECTIVE: To facilitate cooperation between the IATTC and the IAC in order to enhance the conservation of sea turtles in the Eastern Pacific Ocean and reduce incidental by-catch of sea turtle species for IATTC vessels
 - CONSERVATION STATUS AND HABITAT USE OF SEA TURTLES IN THE EASTERN PACIFIC OCEAN: CIT-CC8-2011-Tec.1 presented by Dr. Jeff Seminoff (2017)
 - Recommendations of the IATTC Bycatch Working Group (BYC-07, 2017)

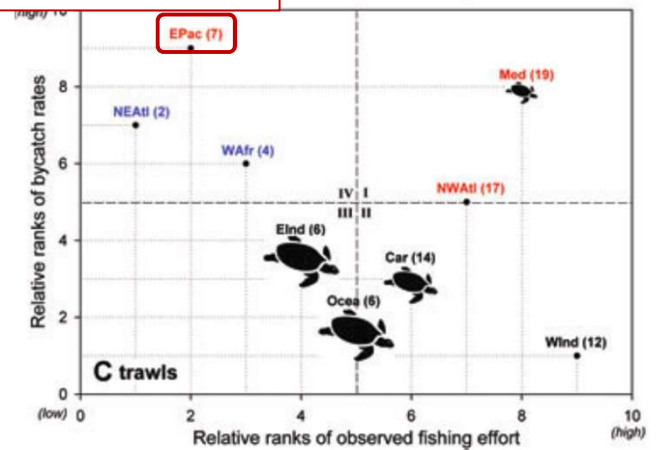
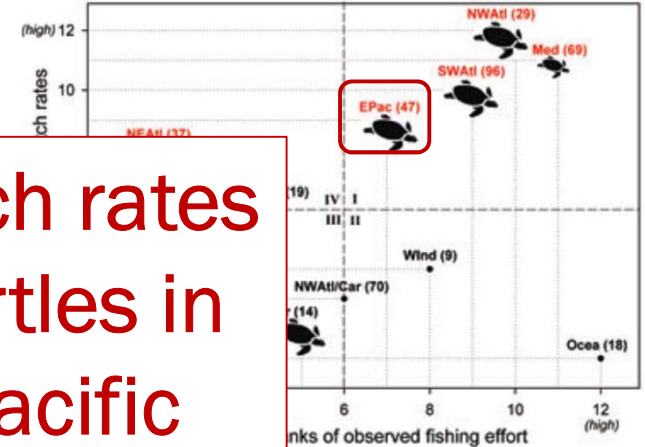
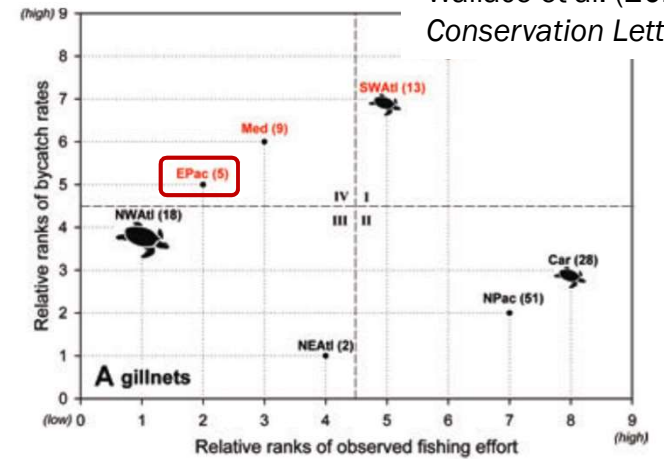
Global bycatch research

Wallace et al. (2010)
Conservation Letters



Lewison, Crowder, Wallace et al. (2014) *Proceedings of the National Academy of Sciences*

Reported bycatch rates high for sea turtles in the Eastern Pacific



Bycatch reduction through effective fisheries management

RESEARCH

Burgess et al., *Science* 359, 1255–1258 (2018)

16 March 2018

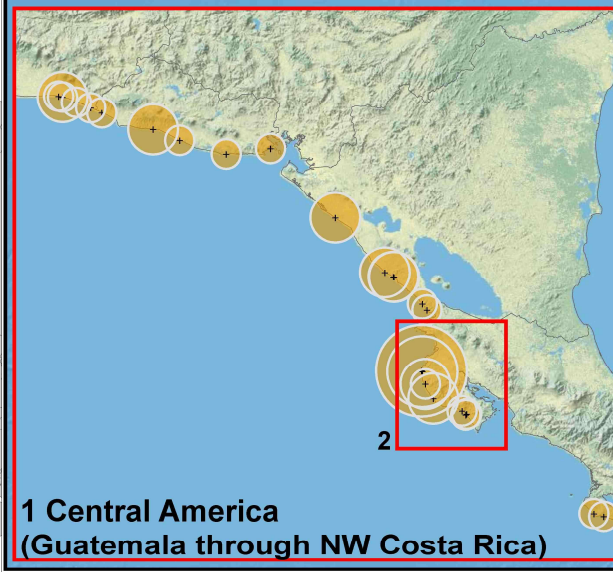
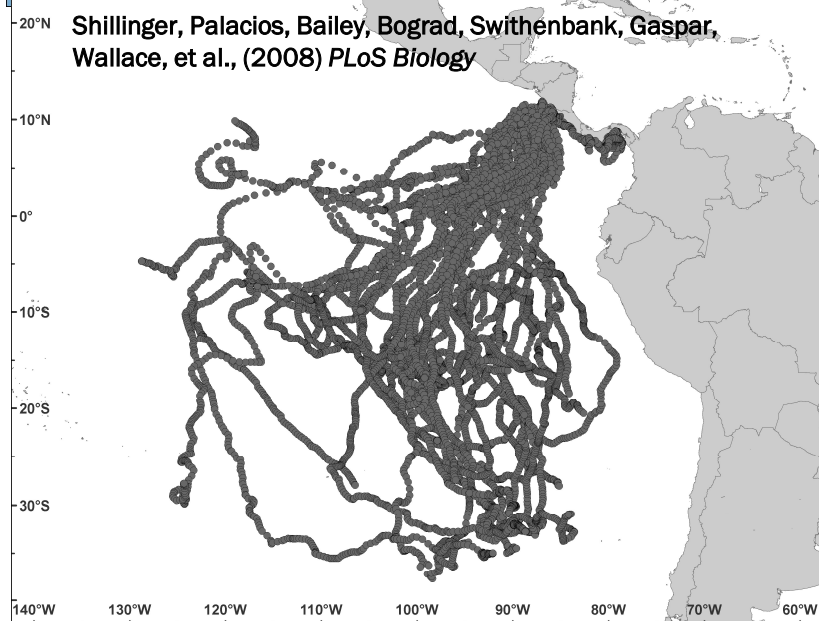
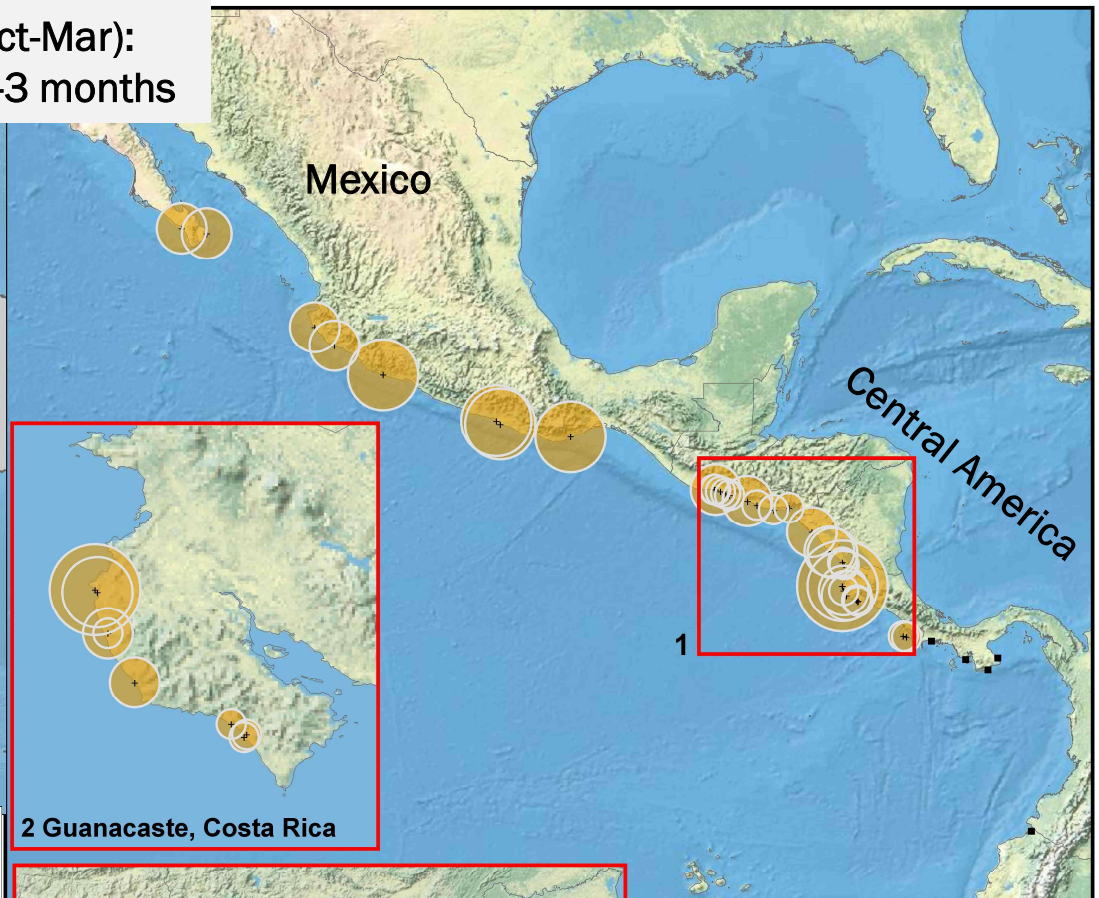
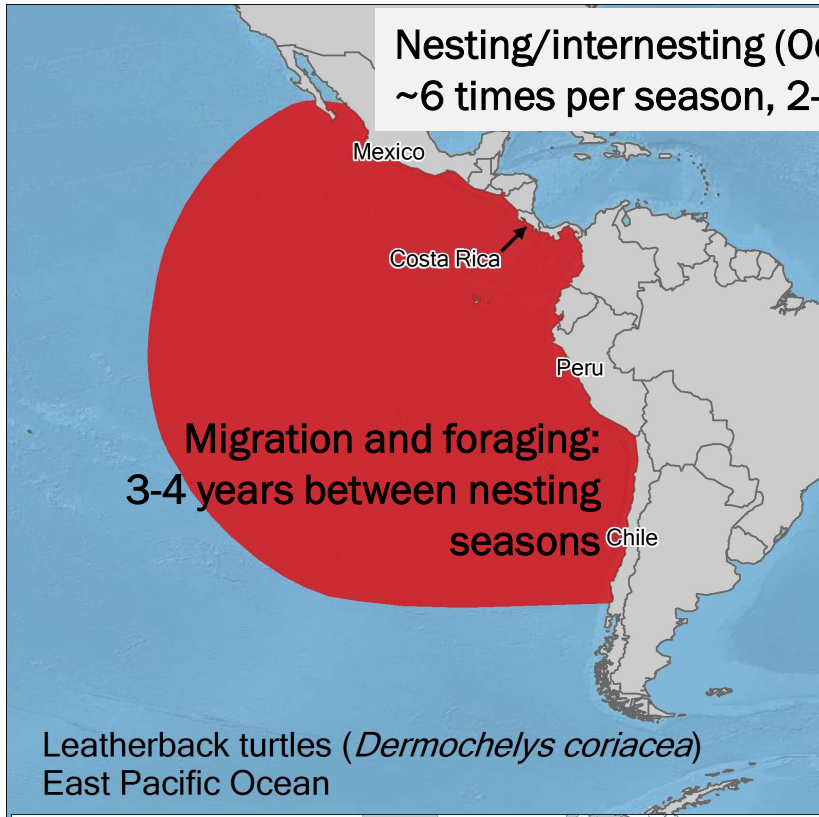
FISHERIES

Protecting marine mammals, turtles, and birds by rebuilding global fisheries

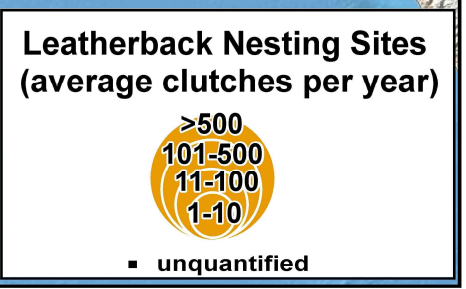
Matthew G. Burgess,^{1,2*}† Grant R. McDermott,^{3,1†} Brandon Owashi,^{1,2}
Lindsey E. Peavey Reeves,^{1,4} Tyler Clavelle,^{1,2} Daniel Ovando,^{1,2} Bryan P. Wallace,^{5,6}
Rebecca L. Lewison,⁷ Steven D. Gaines,^{1,2} Christopher Costello^{1,2}

- Rebuilding fisheries benefits protected species caught as bycatch
- Maximizing fisheries profits would halt declines of ~50% of mammal, turtle, and bird populations
- Turtle populations generally could benefit from sustainable fisheries
- In particular, tremendous potential for EP leatherbacks

Nesting/internesting (Oct-Mar):
~6 times per season, 2-3 months



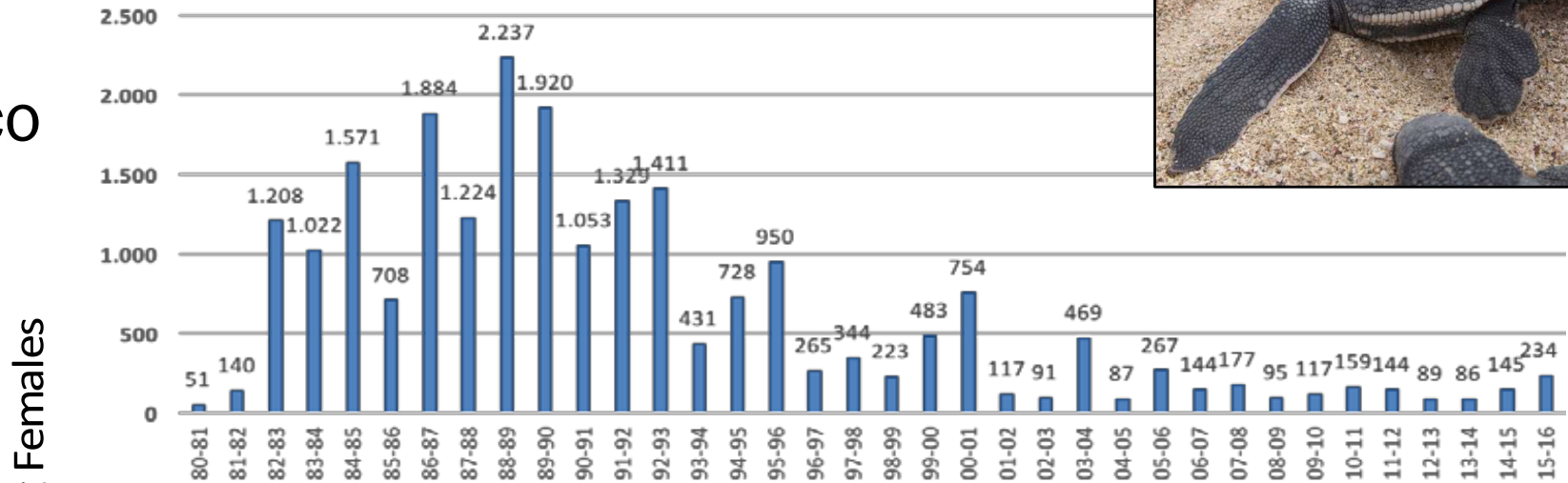
Seminoff and Wallace (2012) *Sea Turtles of the Eastern Pacific*. Univ Arizona Press



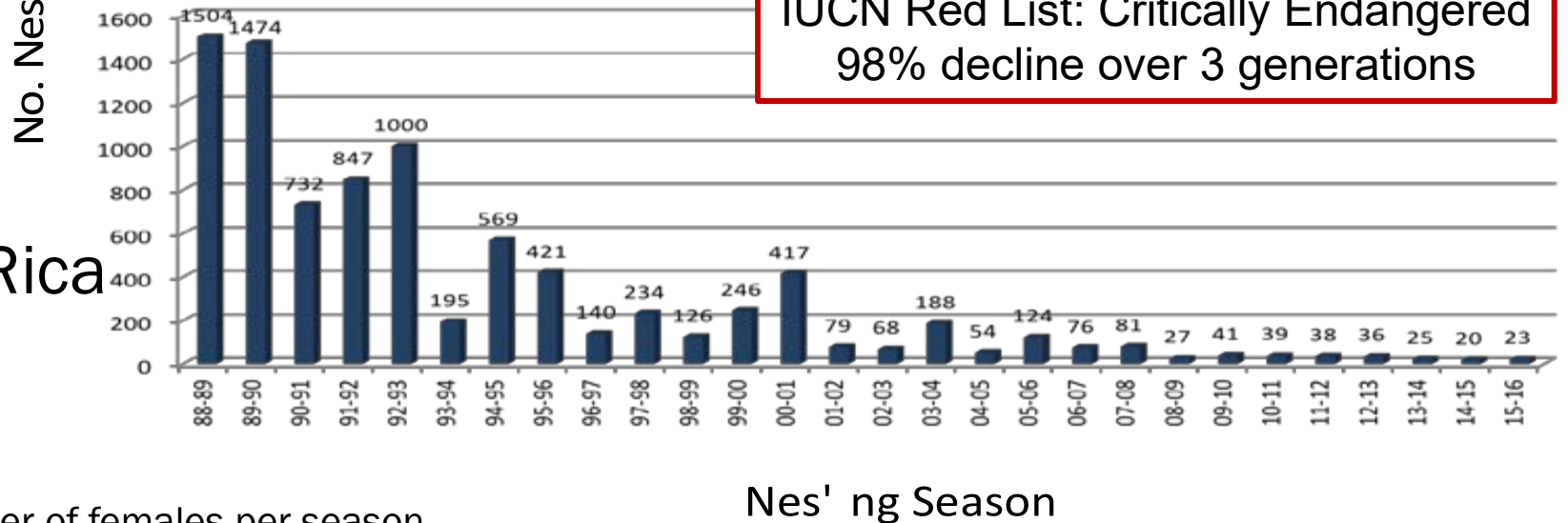
Status of EP leatherbacks



Mexico



Costa Rica



Total number of females per season.

Top: 4 index beaches in Mexico (data from CONANP / Kutzari);

Bottom: Las Baulas National Park, CR (data from TLT, KUEMAR, SINAC).

Causes of the decline

Comprehensive egg harvest on beaches (Mexico, Central America)





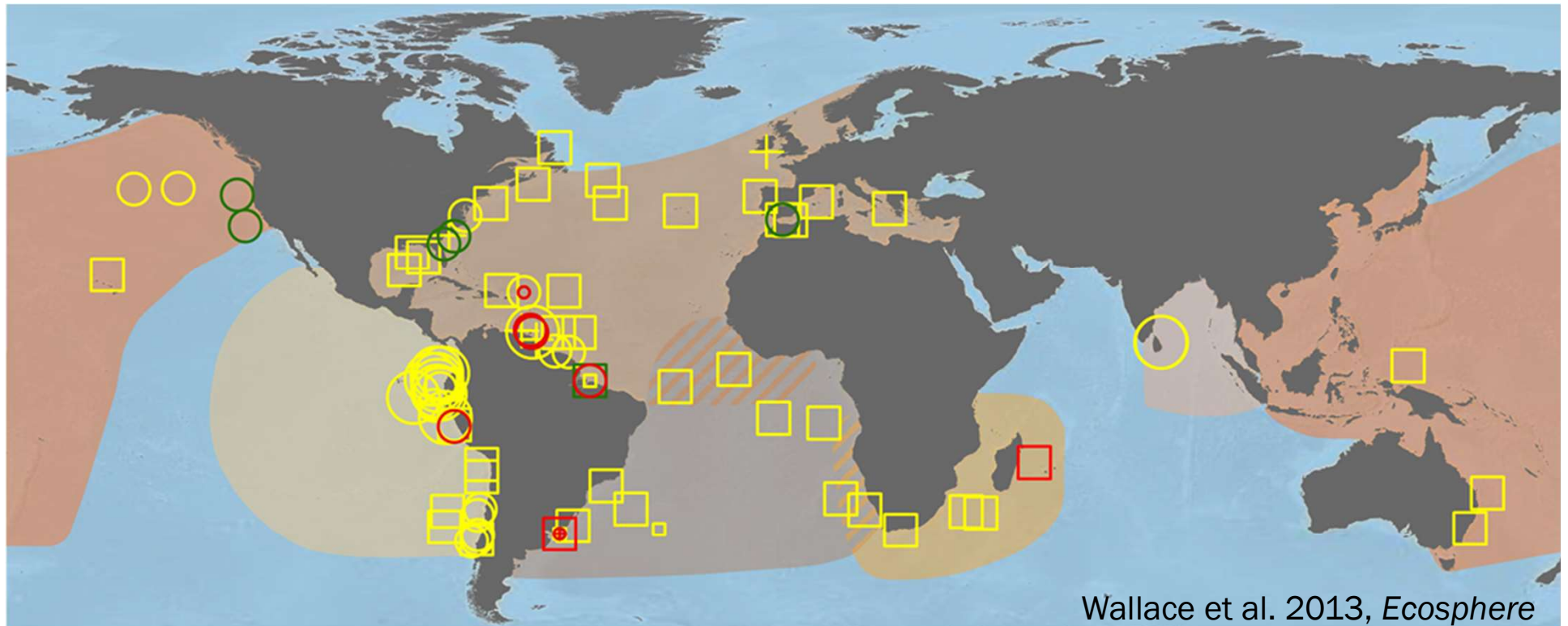
Other
threats

Causes of the decline

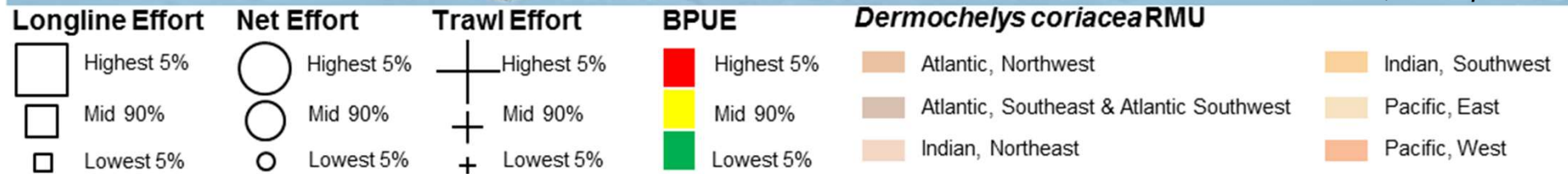
High bycatch and mortality in pelagic and nearshore waters, various fishing gears



EP leatherback bycatch



Wallace et al. 2013, *Ecosphere*



Globally and in EP, records with both bycatch AND fishing effort are limited

Nets, longlines are primary gears that interact with leatherbacks
(purse seines not analyzed)

Current EP Leatherback conservation efforts

3 Strategies of the Action Plan

- 1) Reduce bycatch mortality
- 2) Increase hatchling production
- 3) Strengthen regional implementation of priority strategies

REGIONAL ACTION PLAN FOR REVERSING THE DECLINE OF
THE EAST PACIFIC LEATHERBACK



2013



Red de la Conservación de la Tortuga Laúd en el Océano Pacífico Oriental: Laúd OPO

- 70+ members from Chile to USA from government agencies, academia, conservation NGOs
- Action Plan used to inform IAC Resolution on Conservation of Leatherbacks in the Eastern Pacific
- Ongoing activities to increase hatchling production and reduce bycatch from Mexico to Chile

EP leatherback conservation: working with fishermen to assess and reduce turtle bycatch from Chile to Mexico

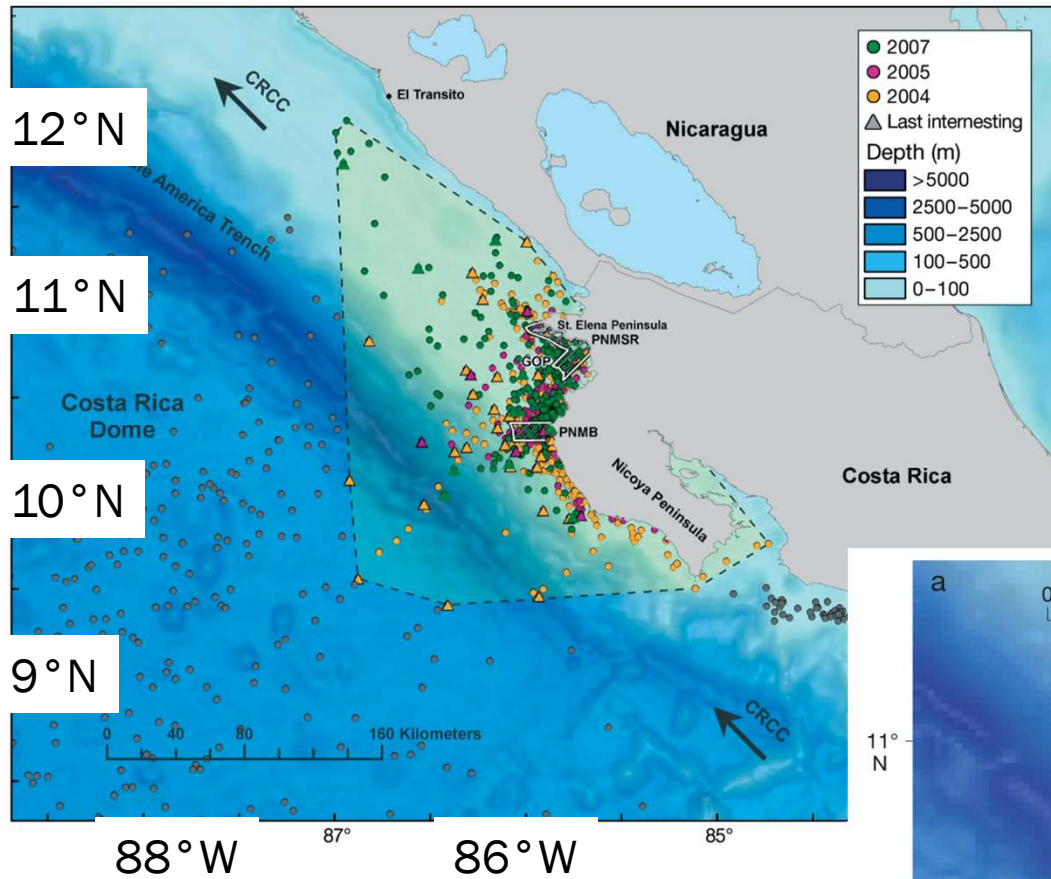


LAÚD OPO
RED LAÚD DEL OCEANO
PACIFICO ORIENTAL



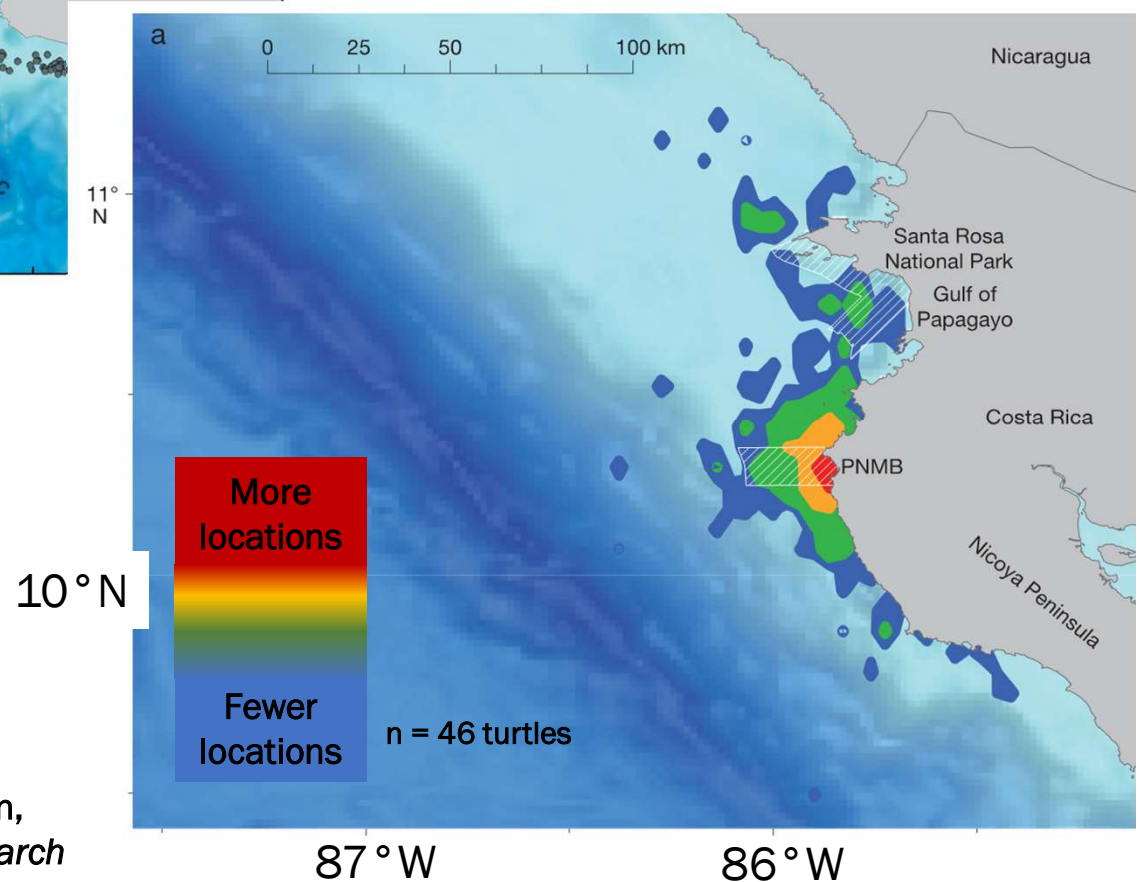
Leatherback high-use areas: near nesting beaches

During nesting season
(October to March)



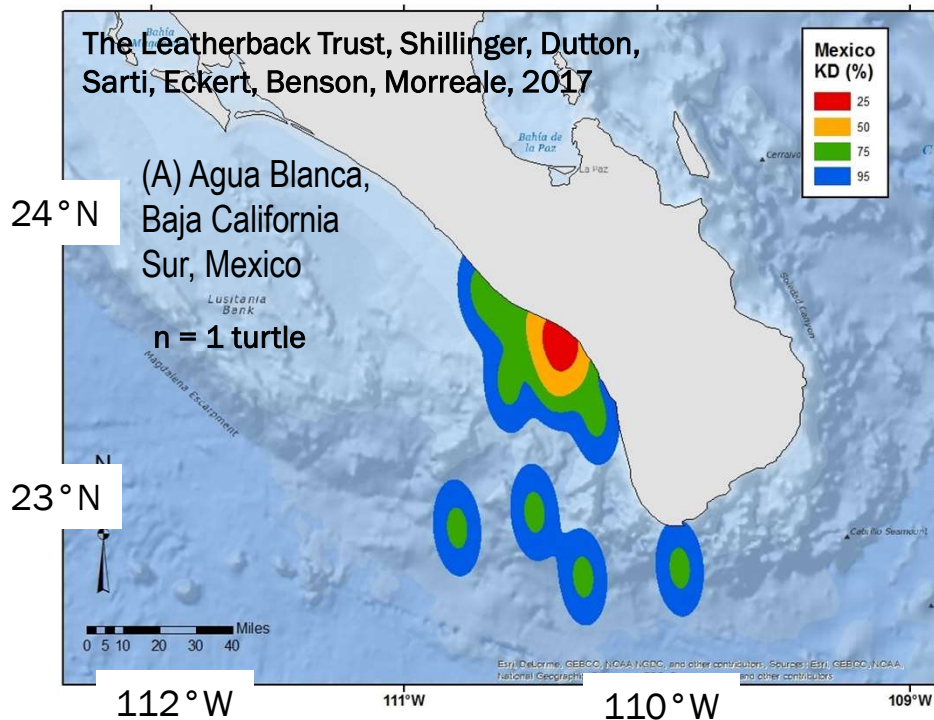
Core areas within 50-100 km
of the main nesting beaches

Turtles cross borders

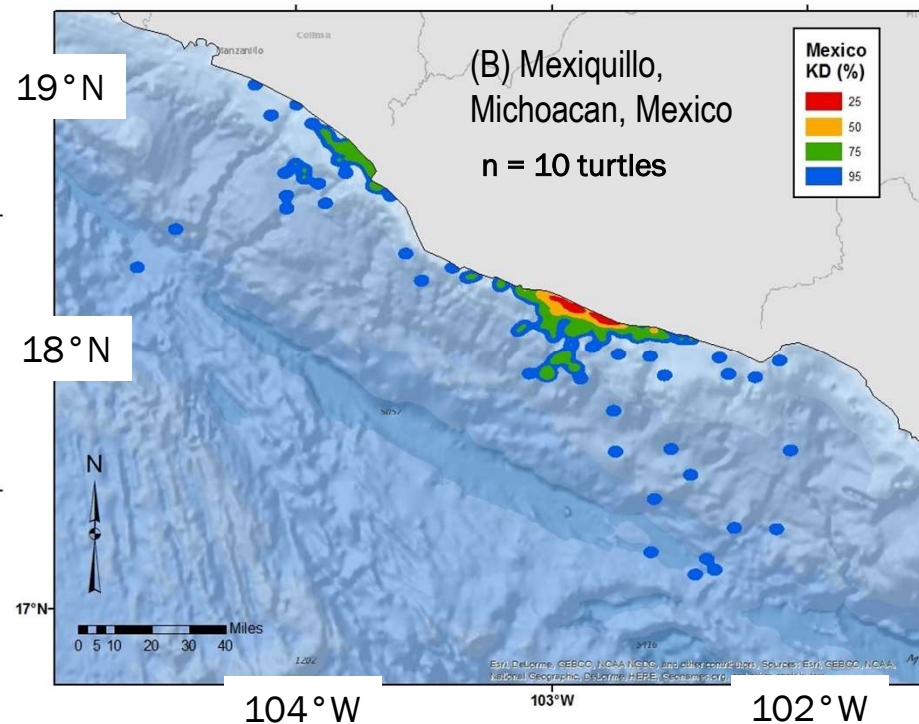


The Leatherback Trust, Shillinger, Dutton,
Sarti, Eckert, Benson, Morreale, 2017

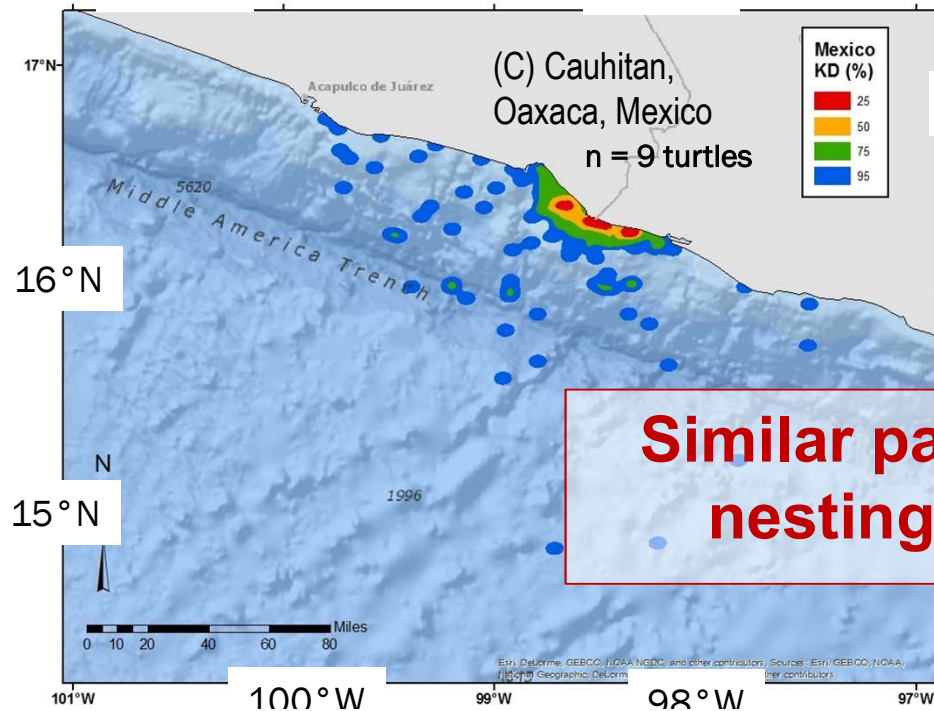
(A) Agua Blanca,
Baja California
Sur, Mexico
n = 1 turtle



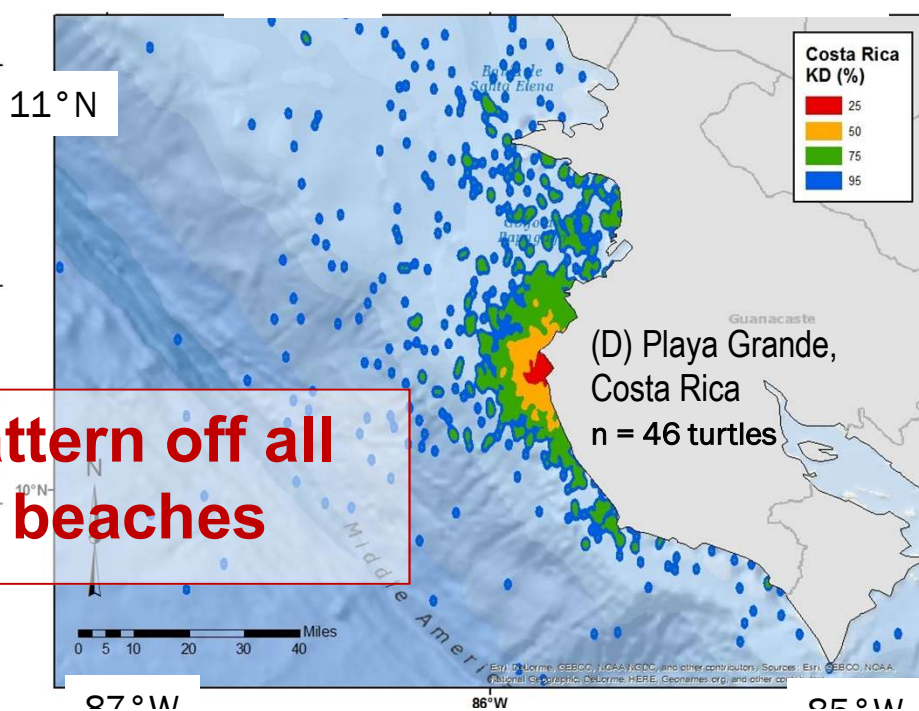
(B) Mexiquillo,
Michoacan, Mexico
n = 10 turtles



(C) Cauhitan,
Oaxaca, Mexico
n = 9 turtles



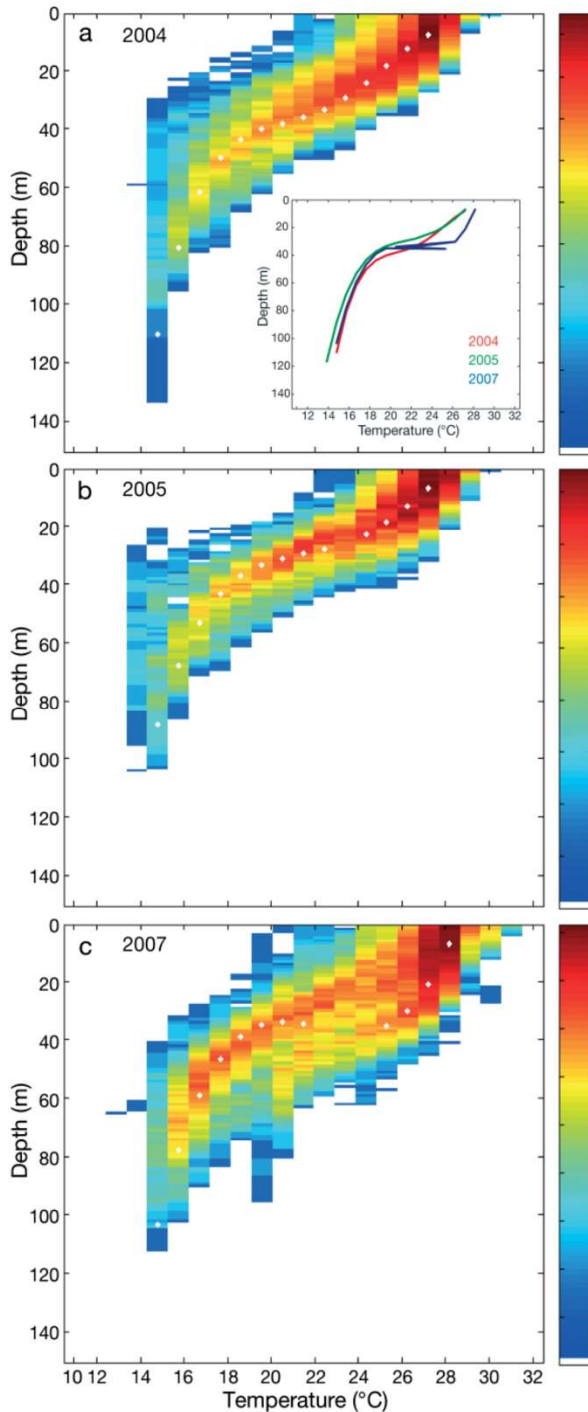
(D) Playa Grande,
Costa Rica
n = 46 turtles



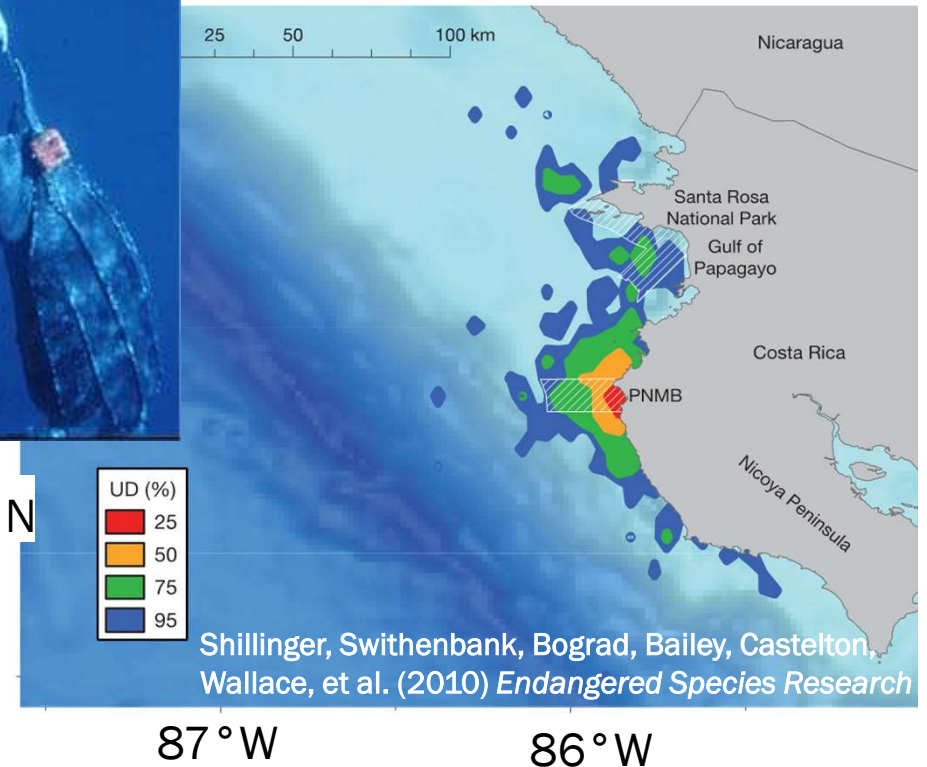
**Similar pattern off all
nesting beaches**

Leatherback high-use areas: depth

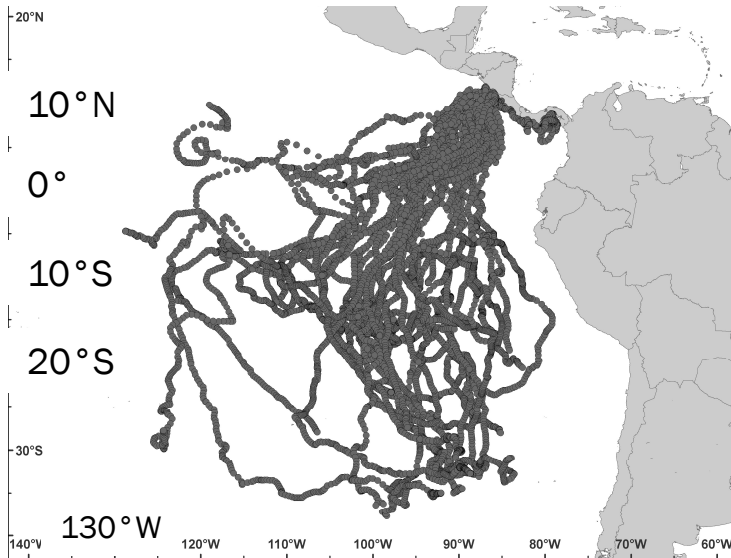
- High-use areas near nesting beaches
- Down to > 50m, not just at the surface



10° N



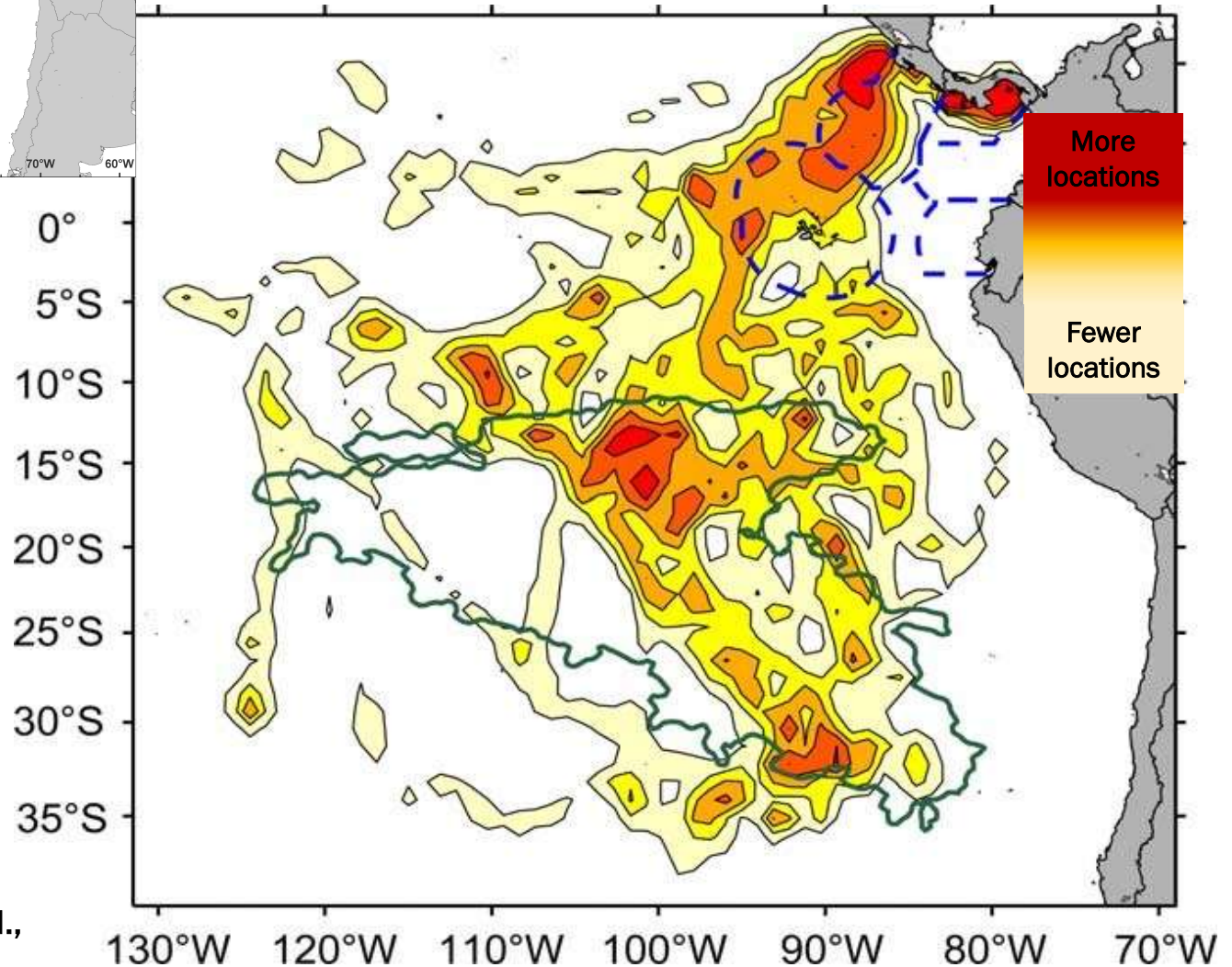
Leatherback high-use areas: Post-nesting migration and foraging



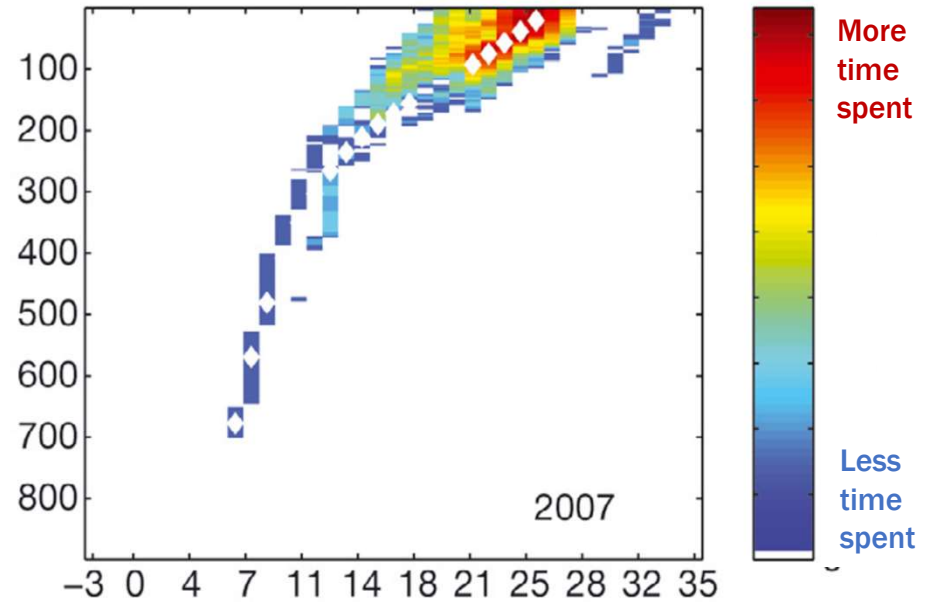
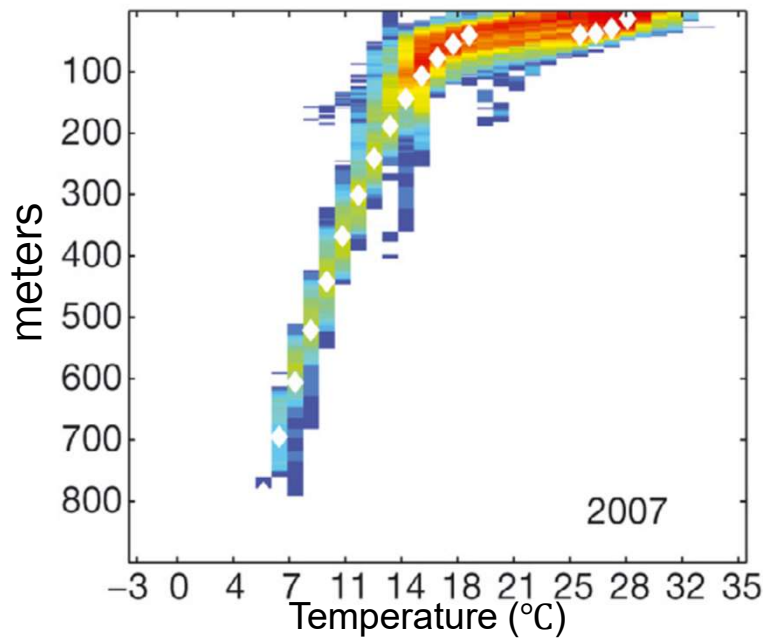
Corridor from
nesting beaches
toward Galapagos
to 10°S

Dispersed
foraging in the
South Pacific
down to 35°S

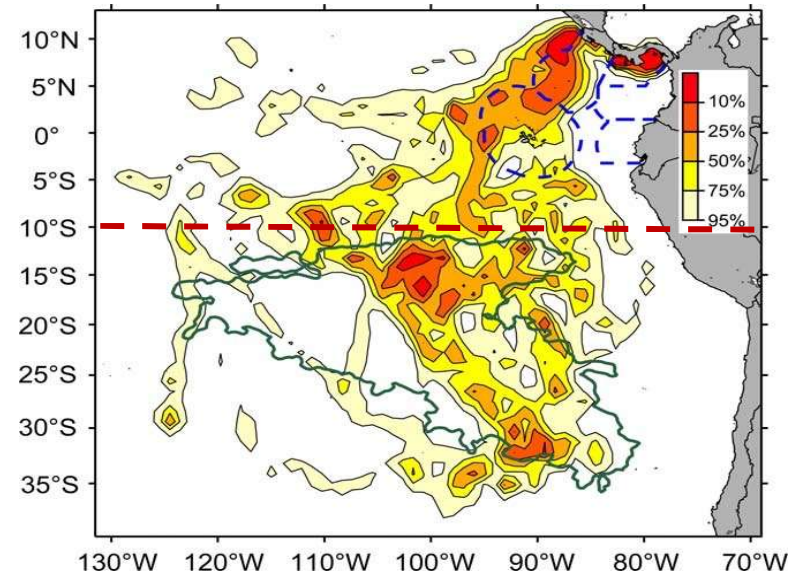
Shillinger, Palacios, Bailey, Bograd,
Swithenbank, Gaspar, Wallace, et al.,
(2008) *PLoS Biology*



Leatherback high-use areas: depth



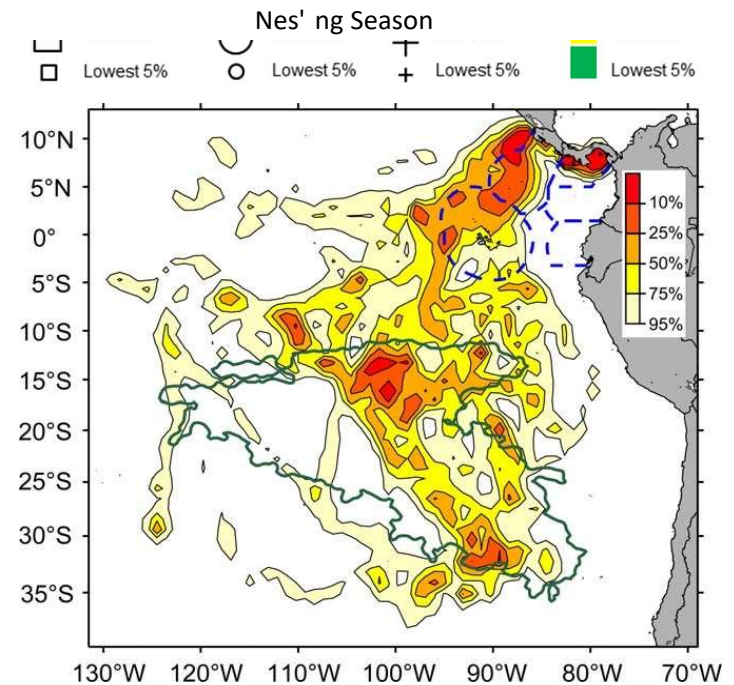
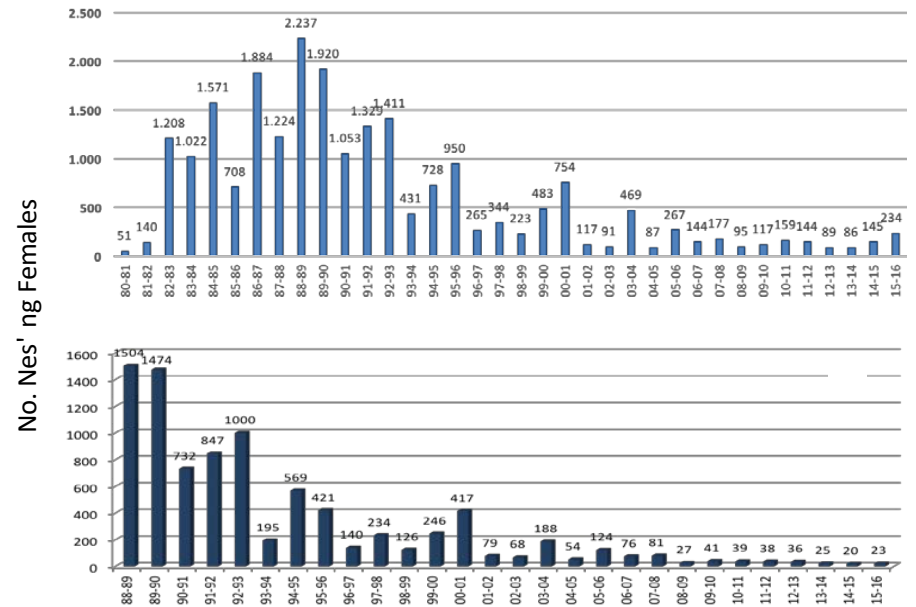
Dive depths from surface to 500 m during migration and foraging



Shillinger, Swithenbank, Bograd, Bailey, Castelton, Wallace, et al. (2011) *Marine Ecology Progress Series*

What does the science say?

- We know a lot about bycatch, but gaps remain
 - In high-seas and coastal areas
 - In longlines, nets, purse seines, and trawls
 - Throughout the leatherback's range
 - Need better observer coverage and reporting to target mitigation measures
- We know a lot about leatherback status and high-use areas
 - Still in danger of extinction in the EP
 - Many turtles, many sites, many years
 - Habitat use varies by location and life cycle
 - Well-defined areas within 50-100 km of all nesting beaches (females and males)
 - Well-defined areas in migratory corridor and in coastal foraging areas (adults and subadults)
 - Potential to link leatherbacks to environmental conditions in foraging areas





Opportunities for conservation

IAC Resolution CIT-COP7-2015-R2

Conservation of the Eastern Pacific Leatherback Turtle (*Dermochelys coriacea*) strategic actions:

1. Reduce bycatch of adult and sub adult leatherback turtles in fisheries
2. Identify areas of high interaction with fisheries of more importance for the leatherback survival.
3. Define and protect important areas for the leatherback turtle survival in different life stages.
4. Eliminate any consumption and illegal use of the leatherback turtle, including parts and derivatives, as well as all kinds of capture, transportation and trade.
5. Nesting sites protection.



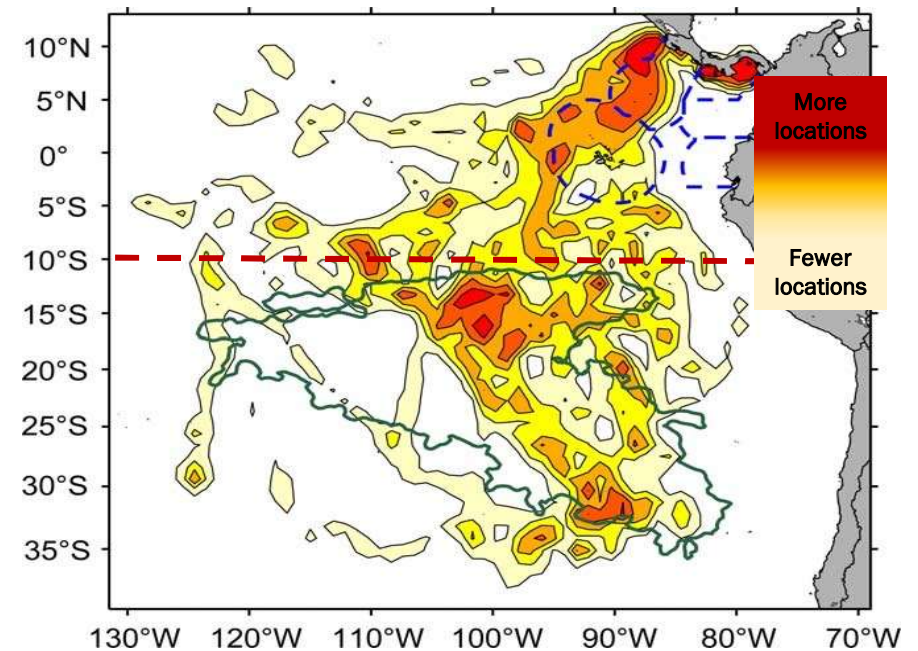
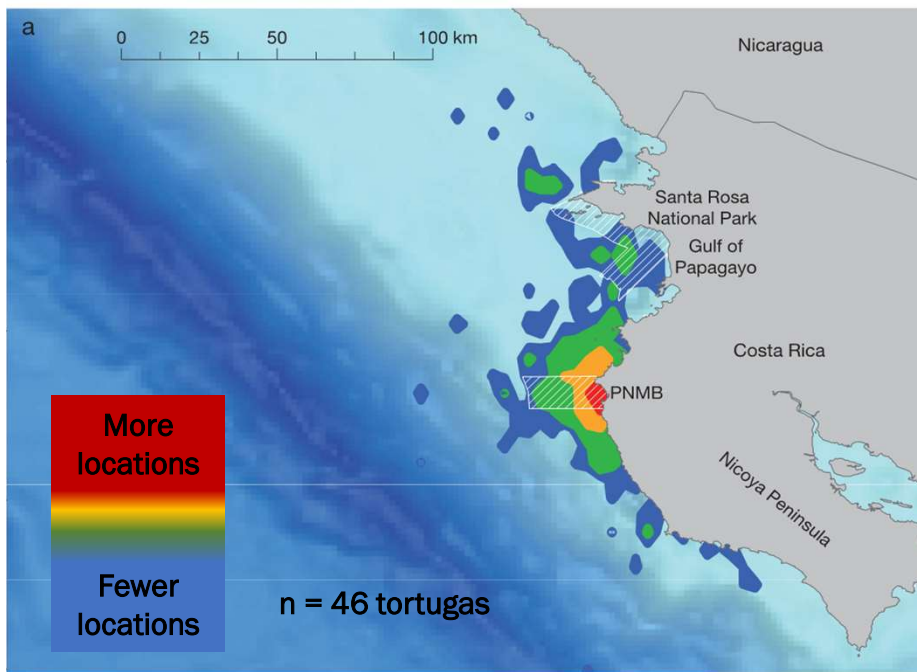
Photo: Brian Skerry

Opportunities for conservation



IATTC and IAC Recommendations: IATTC BYC-07 and CIT-CC8-2011-Tec.1

- Encourage the IATTC to collaborate with the IAC scientific committee to identify bycatch hotspots in leatherback inter-nesting areas



Opportunities for conservation



IATTC and IAC Recommendations: IATTC BYC-07 and CIT-CC8-2011-Tec.1

- Encourage the IATTC to collaborate with the IAC scientific committee to identify bycatch hotspots in leatherback inter-nesting areas
- Increase the current 5% to 20% observer coverage in longline operations based upon the recommendation of the IATTC scientific staff, as well as request the submission of the operational-level data recorded by observers at board.
- Develop and adopt a general format for reporting on the implementation of **FAO Guidelines to reduce sea turtle mortality** in fishing operations, as mandated by Resolution C-07-03, as well as improving compliance with the submission of reports.
- Ensure that such reports are made available to CPCs through a controlled-access page on the IATTC website.
- Analyze the level of implementation of **Resolution C-07-03** regarding the application of measures to reduce the sea turtles bycatch, with a view to its updating, if necessary.

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Inter-American Convention for the Protection and Conservation of
Sea Turtles (IAC)

www.iacseaturtle.org



@IAC_SeaTurtles

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Assessing and reducing leatherback bycatch in the Eastern Pacific

Ongoing activities

1. Capacity building
 - One-on-one training: Mundo Ecológico staff visiting Peru
 - Development of training courses in Peru, Ecuador
2. Technological development
 - Electronic monitoring: In 3 ports
 - Net illumination trials: 2 ports in Ecuador
 - Line cutters/Dehookers (home-made)
 - Radio Program (2 bases in Peru, 1 in Ecuador)
3. Assessment of use of incentives program
4. Data analysis
 - Gathering data from Chile to Mexico

