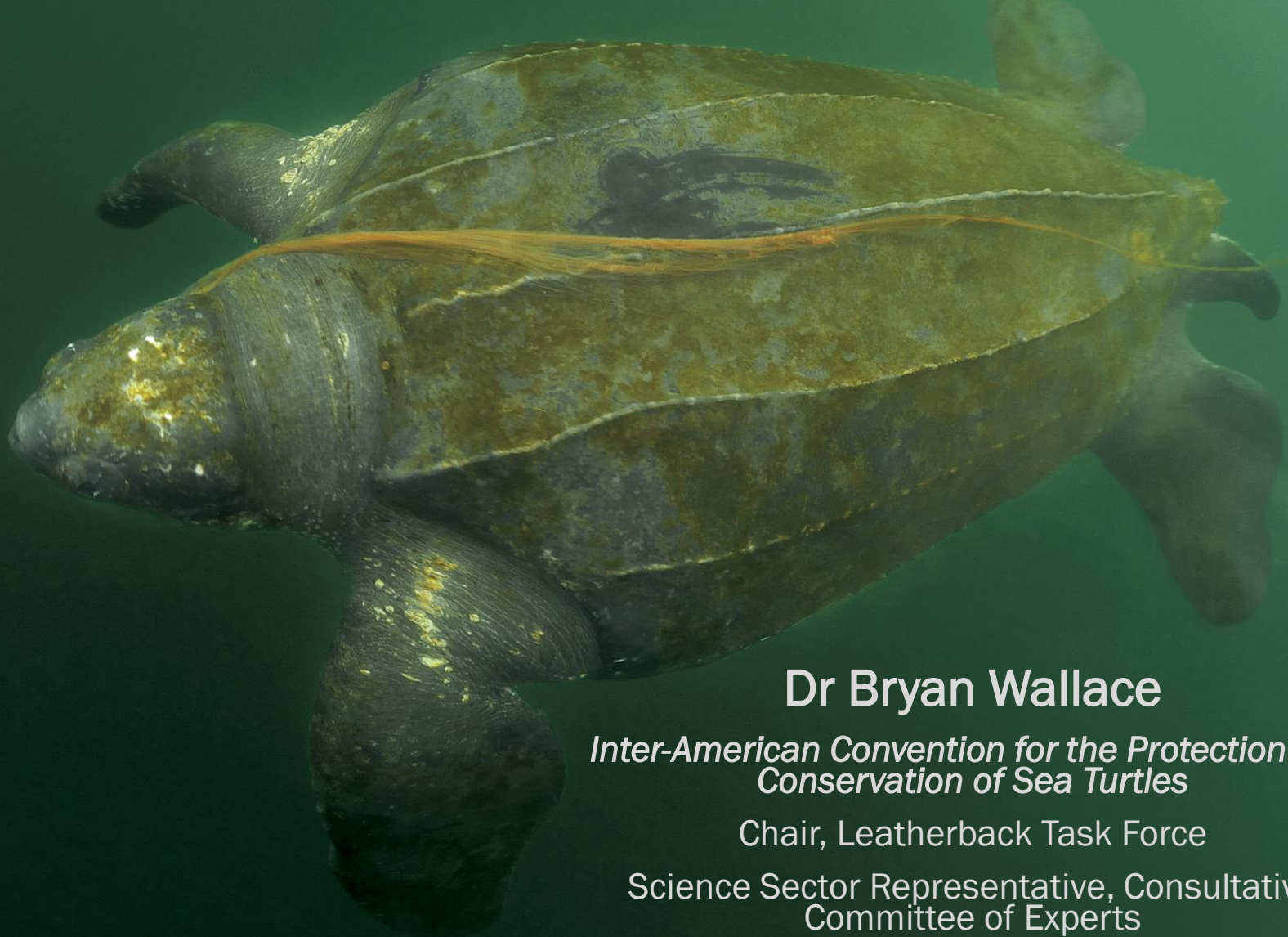


# A call for collaboration between IAC and IATTC to save Eastern Pacific leatherbacks



**Dr Bryan Wallace**

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

Chair, Leatherback Task Force

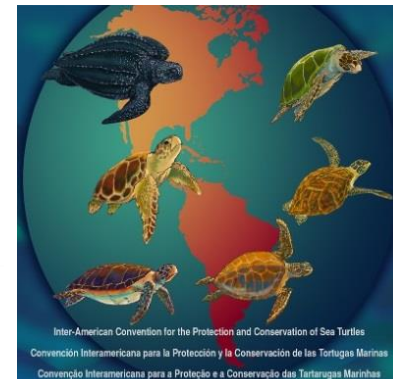
Science Sector Representative, Consultative Committee of Experts

# Background

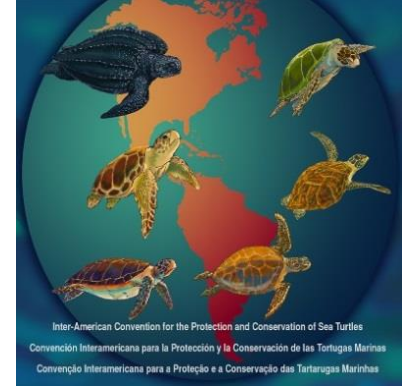
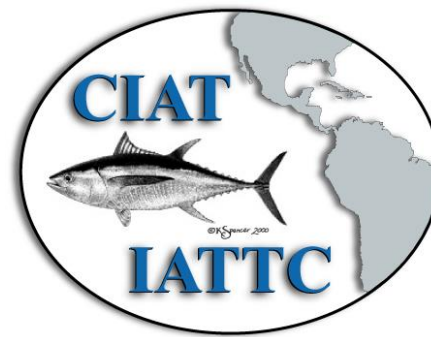
- **Dr. Bryan Wallace**
  - Chair, Leatherback Task Force, Inter-American Convention for the Protection and Conservation of Sea Turtles (IAC)
  - Science Sector Representative, IAC Consultative Committee of Experts
  - Co-Coordinator, Red para la Conservación de la Tortuga Laúd en el Océano Pacífico 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 OCEANO  
PACIFICO ORIENTAL



# Background



## • IAC and IATTC

- MoU between IAC and IATTC (2011) (text at [www.iacseaturtle.org](http://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)
- Presentation during the 8<sup>th</sup> IATTC Bycatch Working Group meeting, May 2018

# 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,<sup>1,2\*</sup>† Grant R. McDermott,<sup>3,1†</sup> Brandon Owashi,<sup>1,2</sup>  
Lindsey E. Peavey Reeves,<sup>1,4</sup> Tyler Clavelle,<sup>1,2</sup> Daniel Ovando,<sup>1,2</sup> Bryan P. Wallace,<sup>5,6</sup>  
Rebecca L. Lewison,<sup>7</sup> Steven D. Gaines,<sup>1,2</sup> Christopher Costello<sup>1,2</sup>

- 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

Migration and foraging:  
3-4 years between nesting  
seasons

Leatherback turtles (*Dermochelys coriacea*)  
East Pacific Ocean



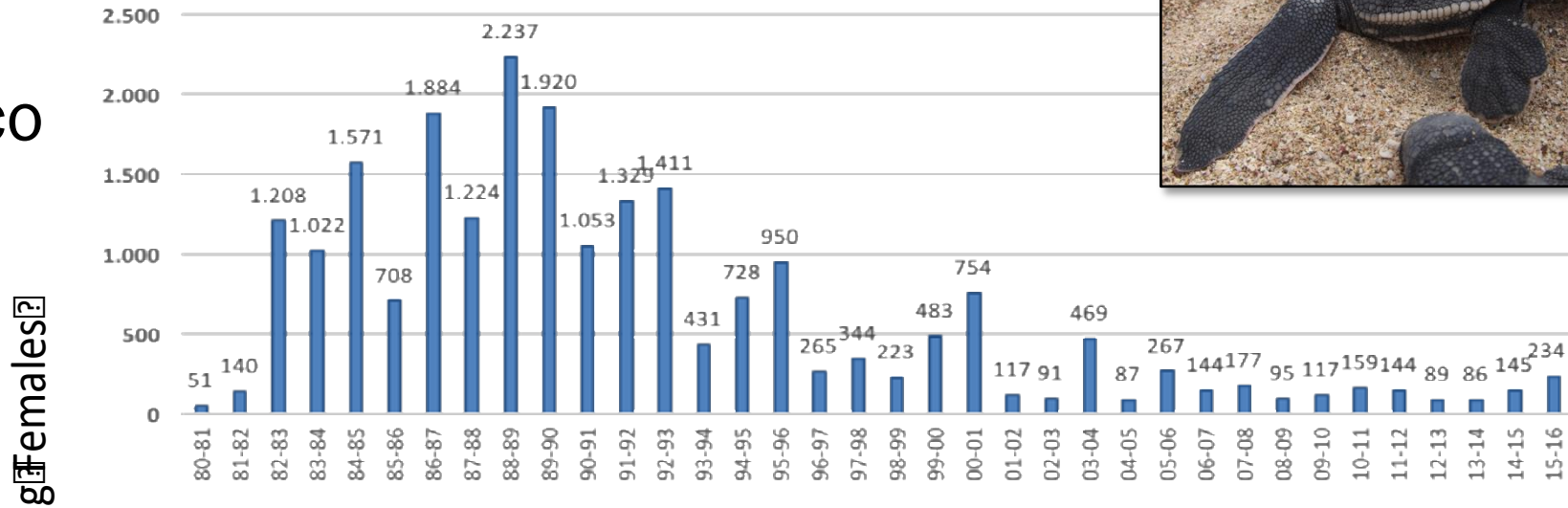
Photo: Brian Skerry



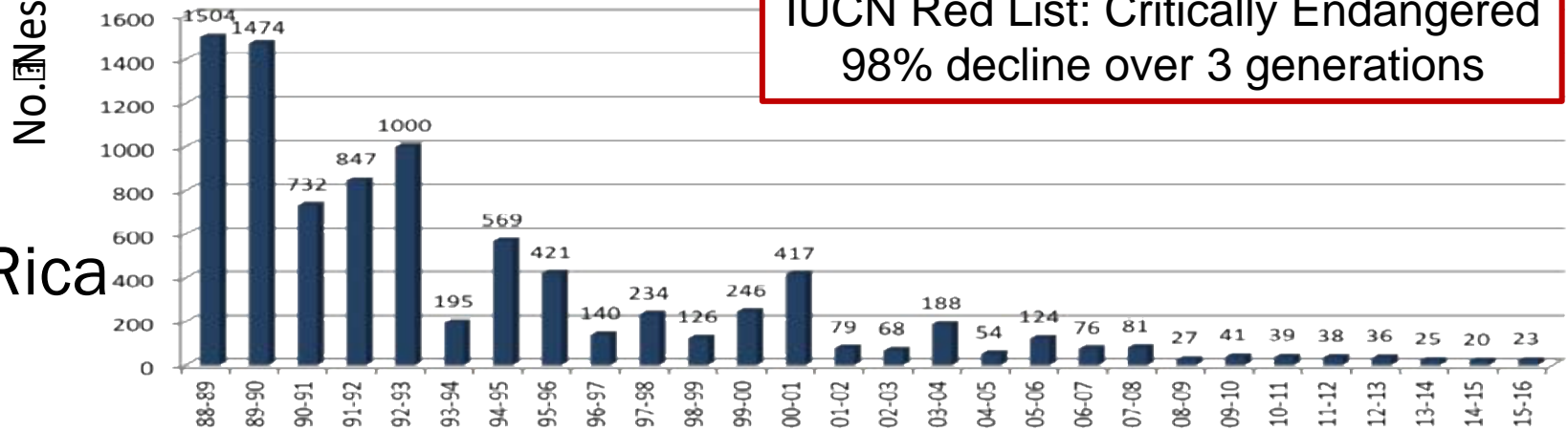
# Status of EP leatherbacks



Mexico



IUCN Red List: Critically Endangered  
98% decline over 3 generations



Costa Rica

No. Females per Season

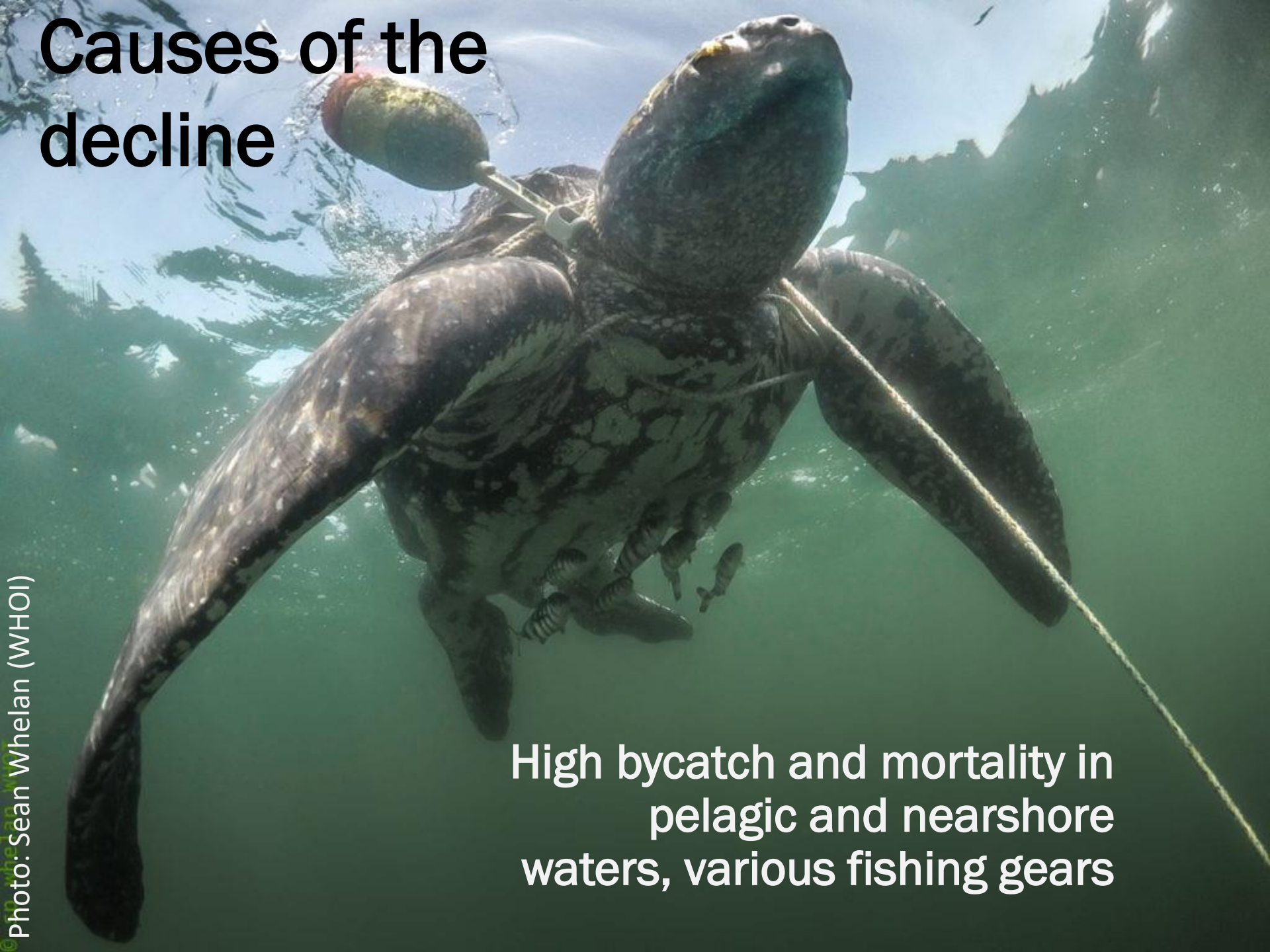
Total number of females per season.

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

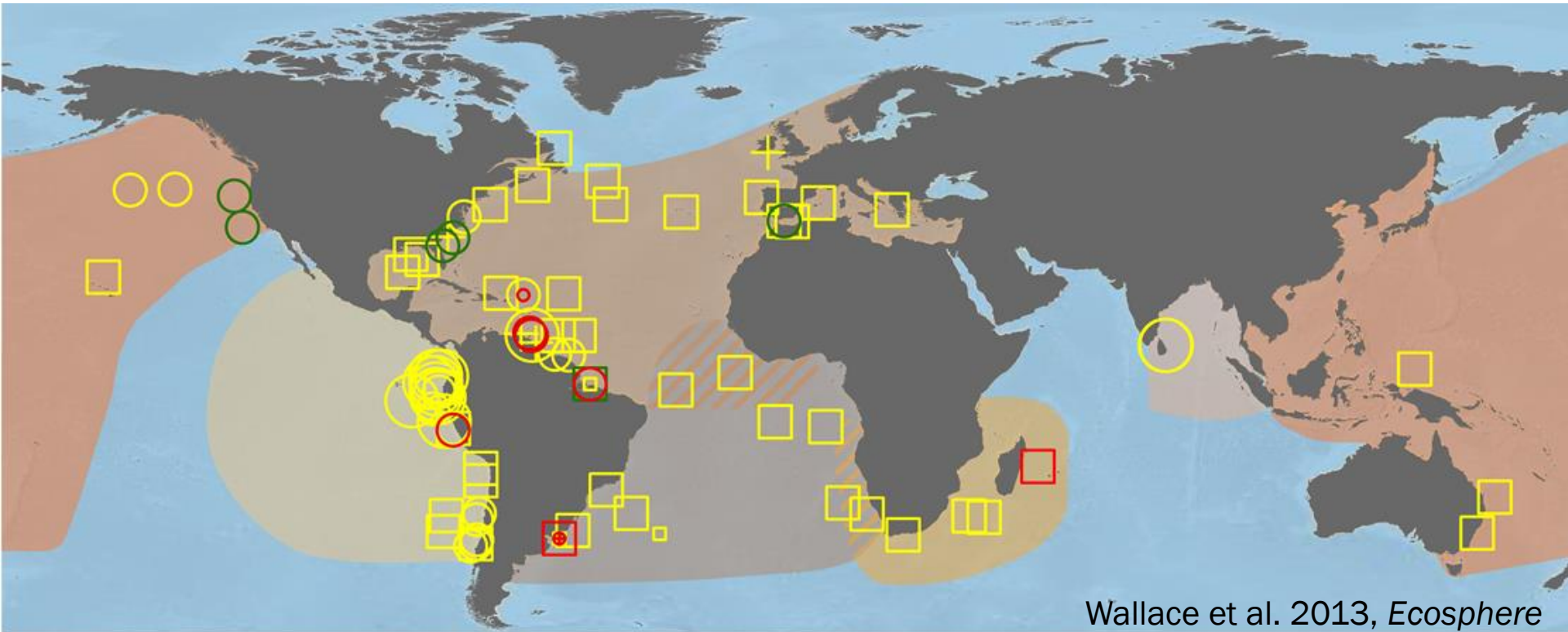
Bottom: Las Baulas National Park, CR (data from The Leatherback Trust, KUEMAR, SINAC).

# 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)
  - Huge gaps in open-ocean areas in EP



# Current EP Leatherback conservation efforts:

## Laúd OPO

### Red de la Conservación de la Tortuga Laúd en el Océano Pacífico Oriental

- 70+ members from Chile to USA from government agencies, academia, conservation NGOs
- Key activity: working with fishermen to assess and reduce turtle bycatch from Chile to México

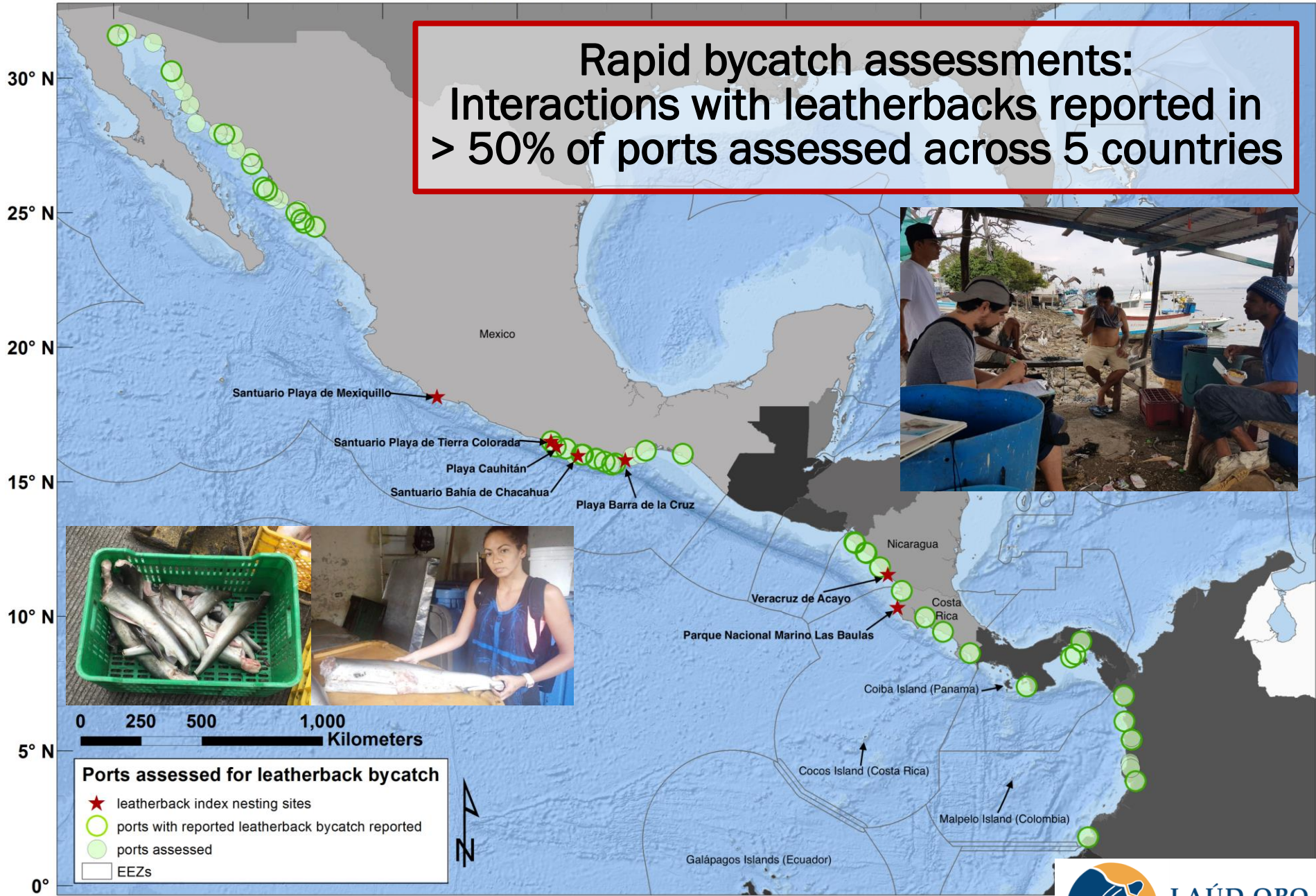


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115° W 110° W 105° W 100° W 95° W 90° W 85° W 80° W 75° W

**Rapid bycatch assessments:  
Interactions with leatherbacks reported in  
> 50% of ports assessed across 5 countries**



135° W 125° W 115° W 105° W 95° W 90° W 85° W 80° W 75° W 70° W 65° W 60° W 55° W 50° W 45° W 40° W

Now have a regional baseline  
of sea turtle interactions

México, Nicaragua, Costa Rica  
Ortíz et al. (2019)

Panamá, Colombia  
JUSTSEA Foundation (2018);  
Ortíz et al. (2019)

Ecuador, Perú, Chile  
Alfaro-Shigueto et al. (2018)  
>45,000 sea turtle  
interactions per year

0 500 1,000 2,000  
Kilometers

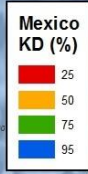
Ports assessed for leatherback bycatch

- ports assessed for leatherback bycatch
- ★ leatherback index nesting sites
- EEZs

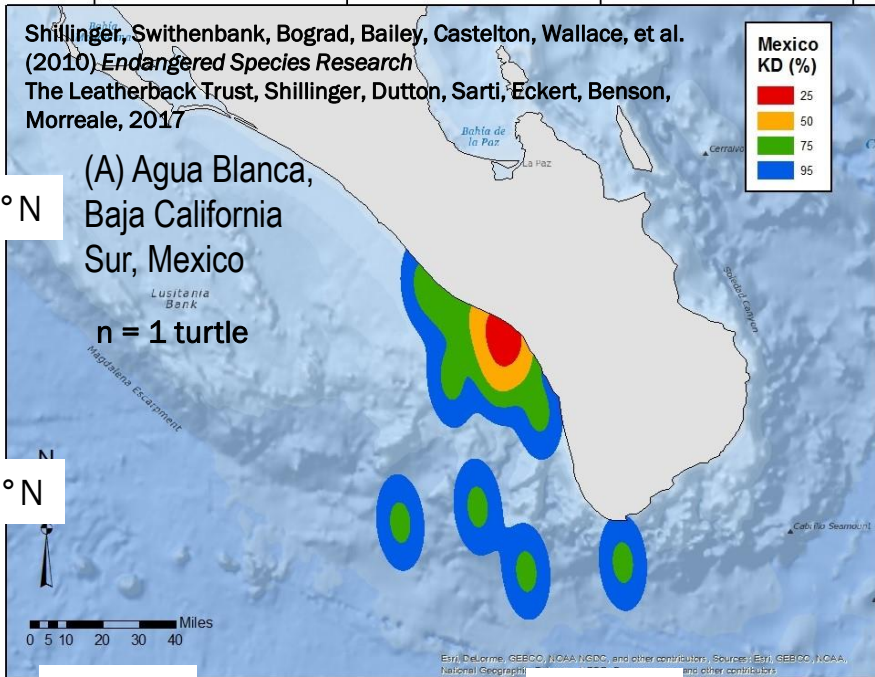


LAÚD OPO  
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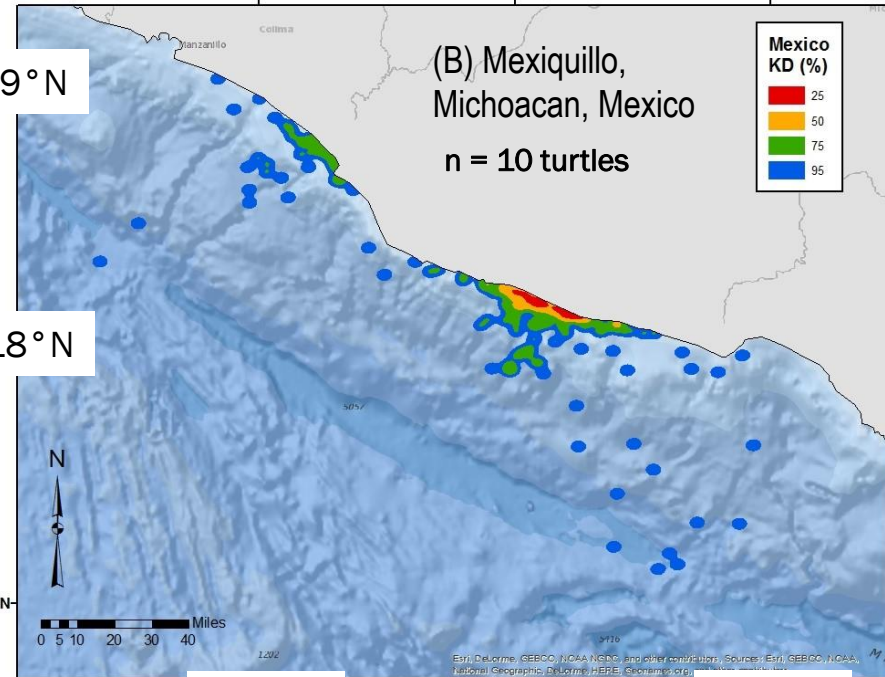
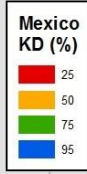
Shillinger, Swithenbank, Bograd, Bailey, Castelton, Wallace, et al. (2010) *Endangered Species Research*  
The Leatherback Trust, Shillinger, Dutton, Sarti, Eckert, Benson, Morreale, 2017



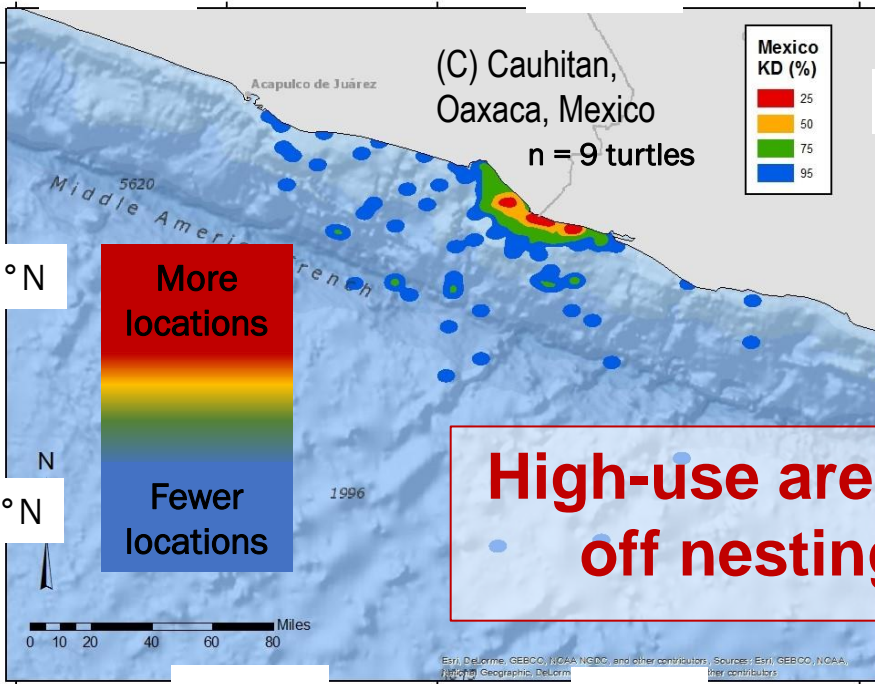
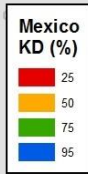
(A) Agua Blanca, Baja California Sur, Mexico  
n = 1 turtle



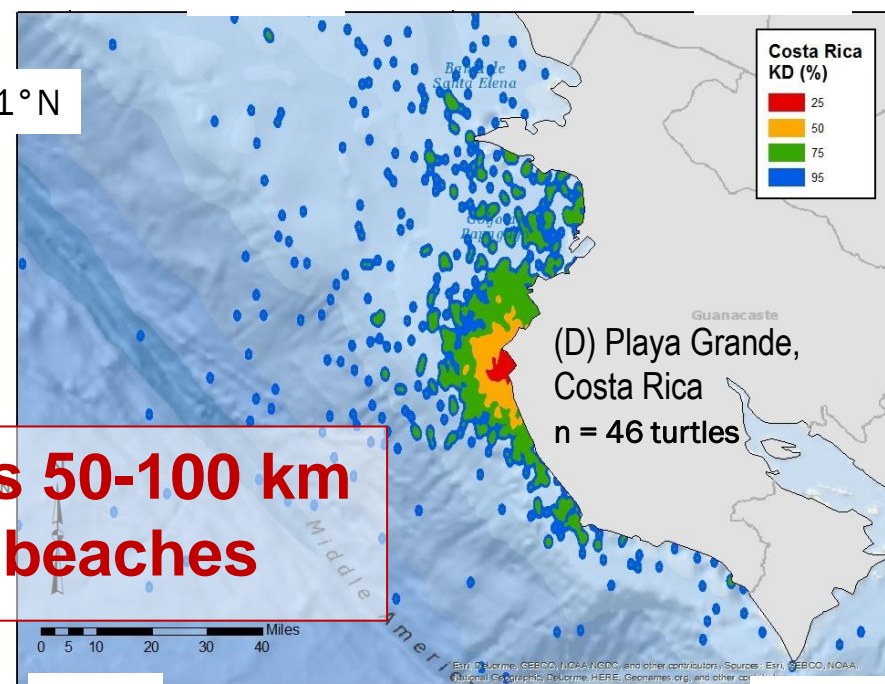
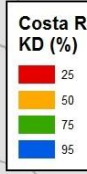
(B) Mexiquillo, Michoacan, Mexico  
n = 10 turtles



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

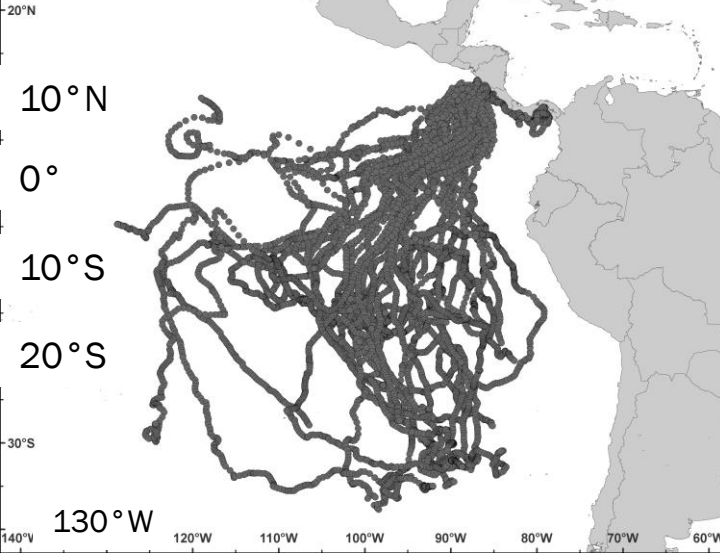


(D) Playa Grande, Costa Rica  
n = 46 turtles



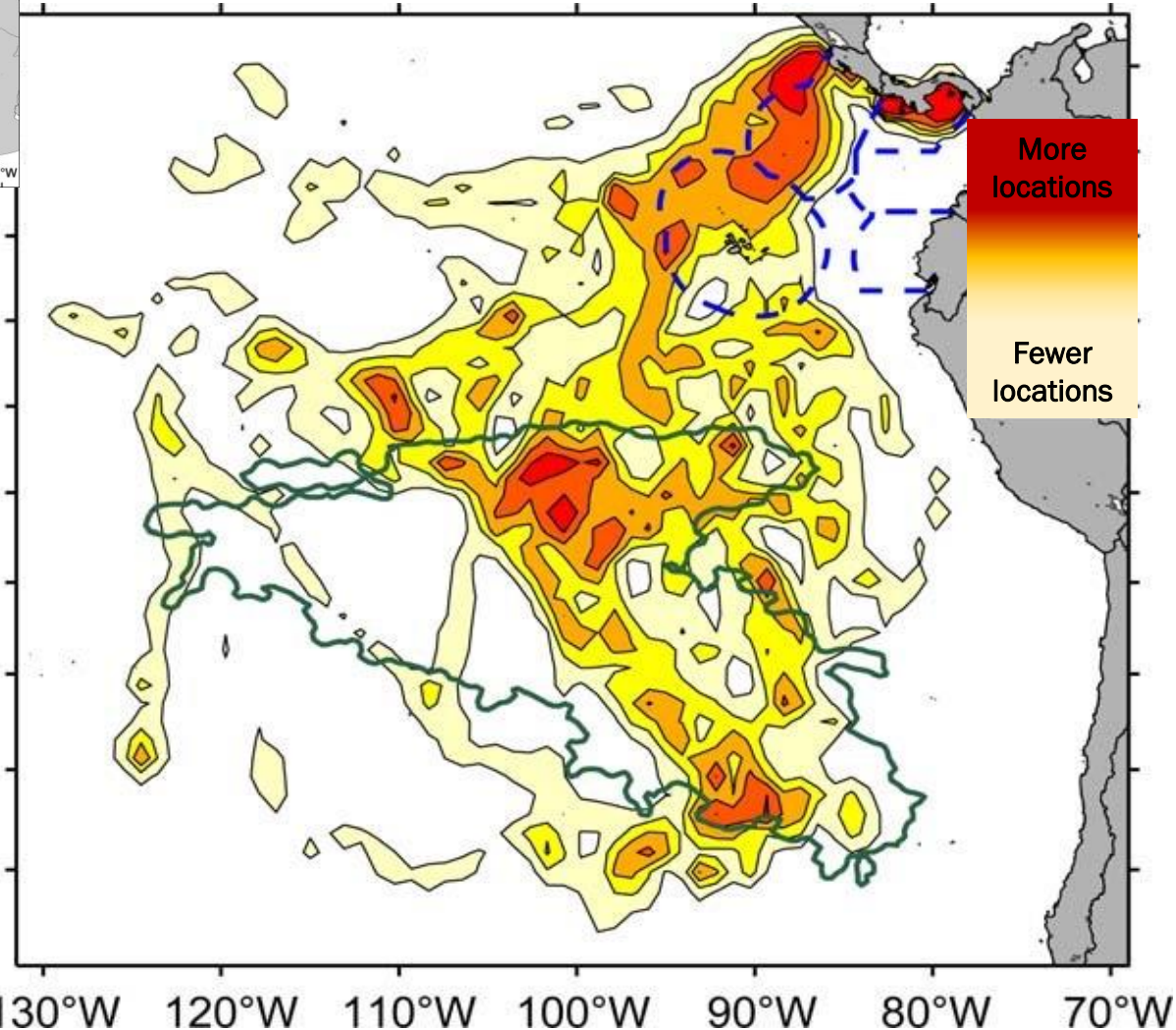
**High-use areas 50-100 km off nesting beaches**

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



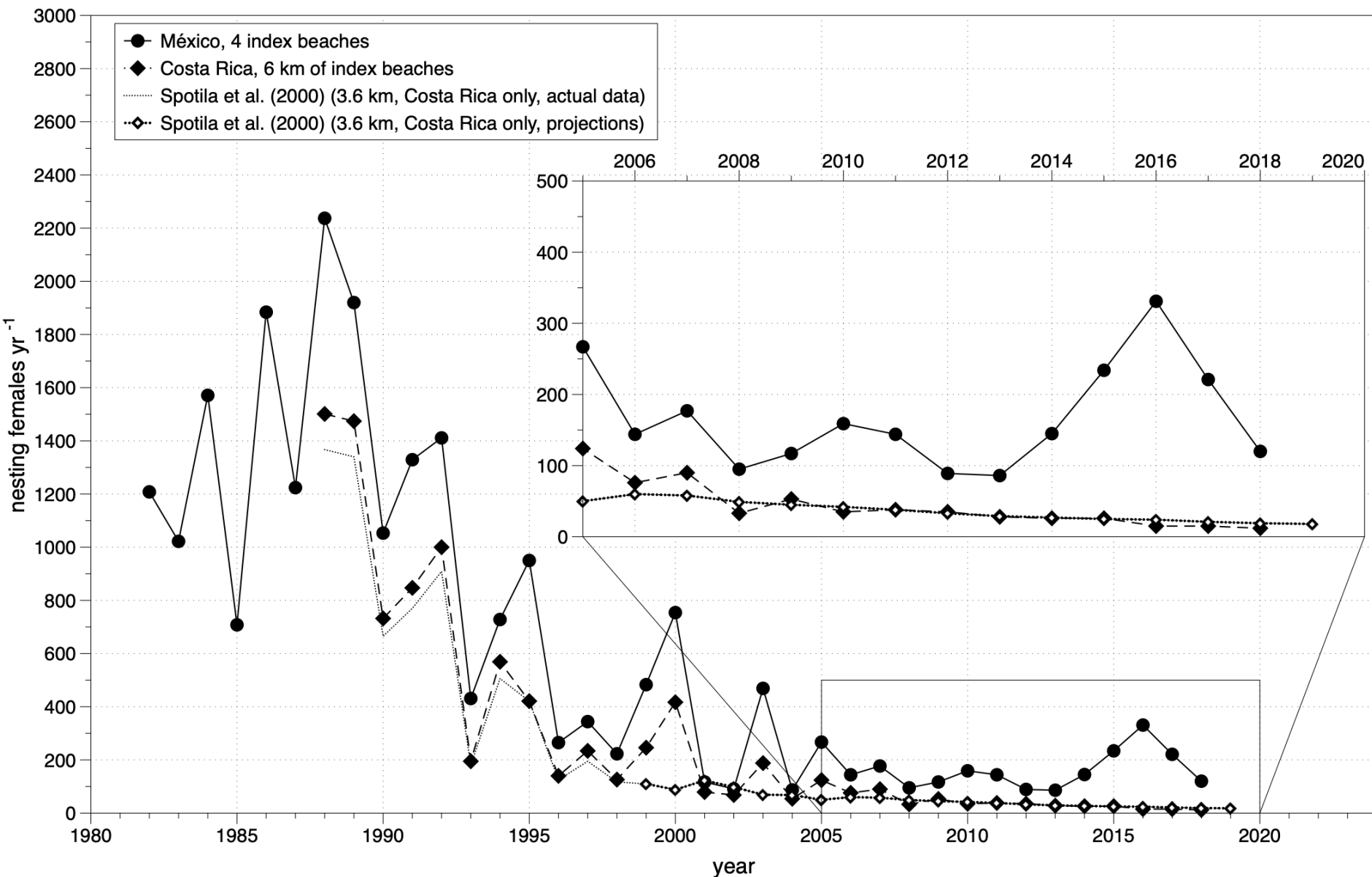
Corridor from  
nesting beaches  
toward Galapagos  
to 10°S

Dispersed  
foraging in the  
South Pacific  
down to 35°S



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

# Current population status



Data: CONANP, Kutzari (Mexico); The Leatherback Trust, KUEMAR, SINAC (Costa Rica)

We know the past and present, what about the future?

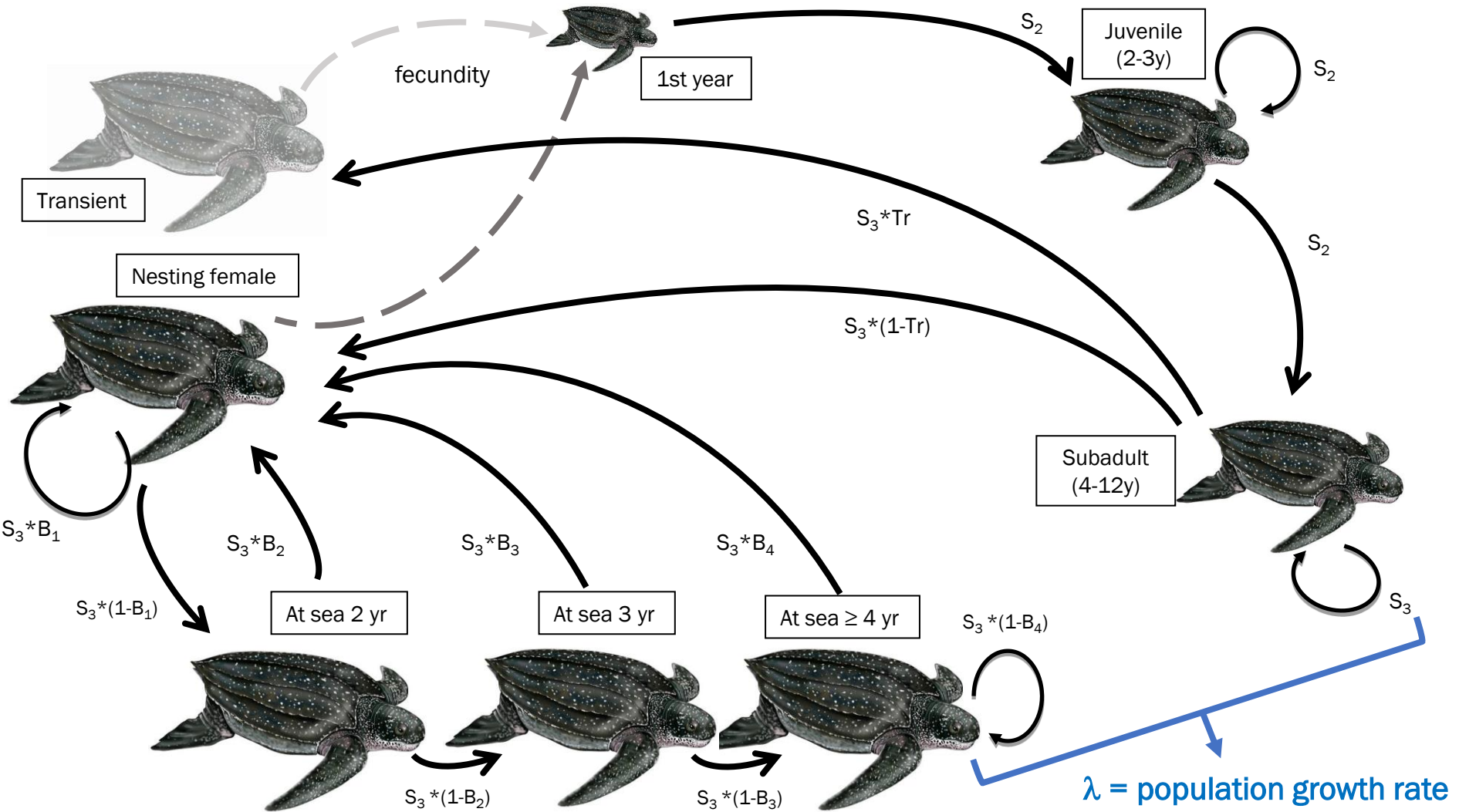
### Goals of stage-based population model:

- Determine the current population status
- Simulate effects of conservation

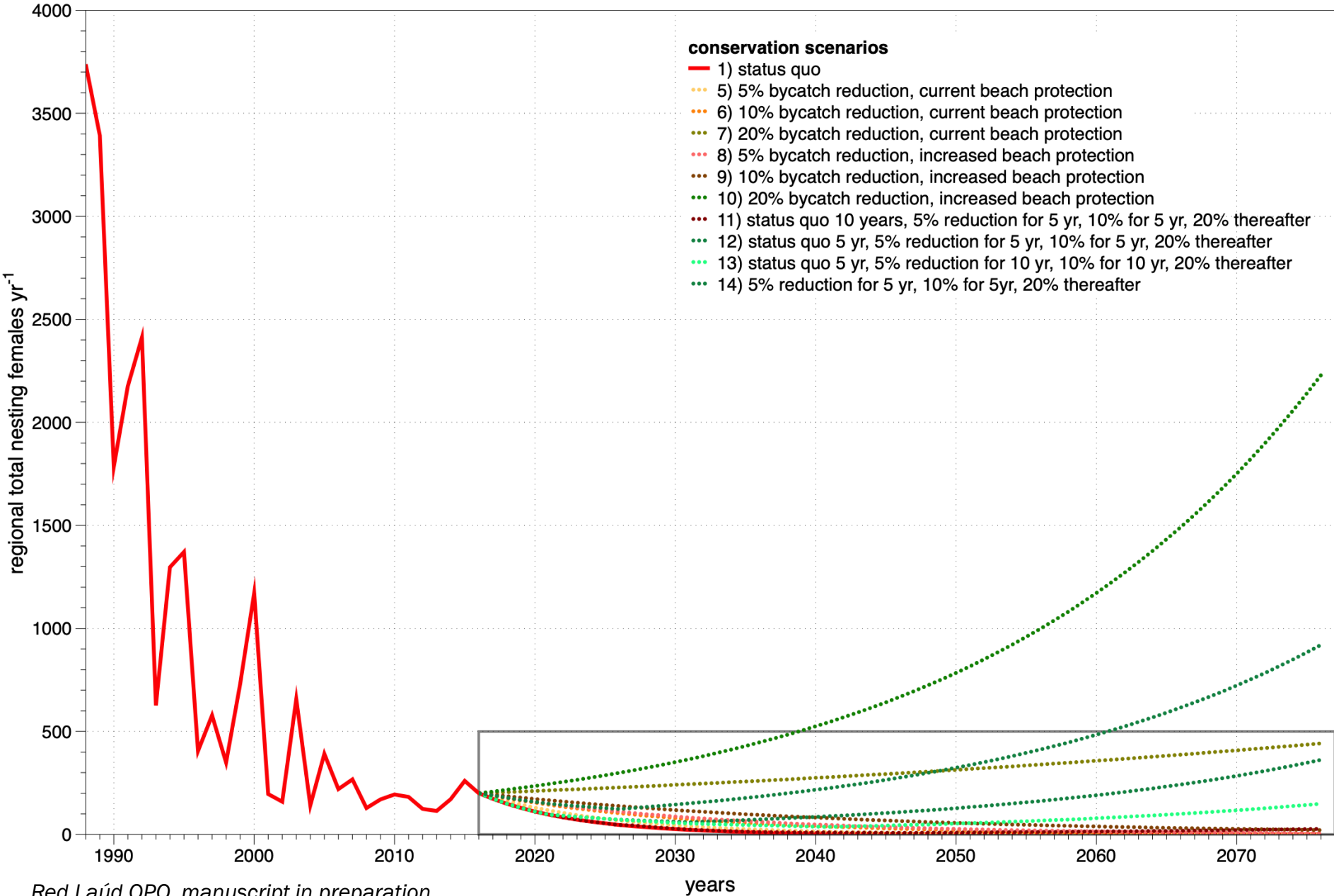
S = survivorship

B = remigration probability

Transient: breed once then not seen again

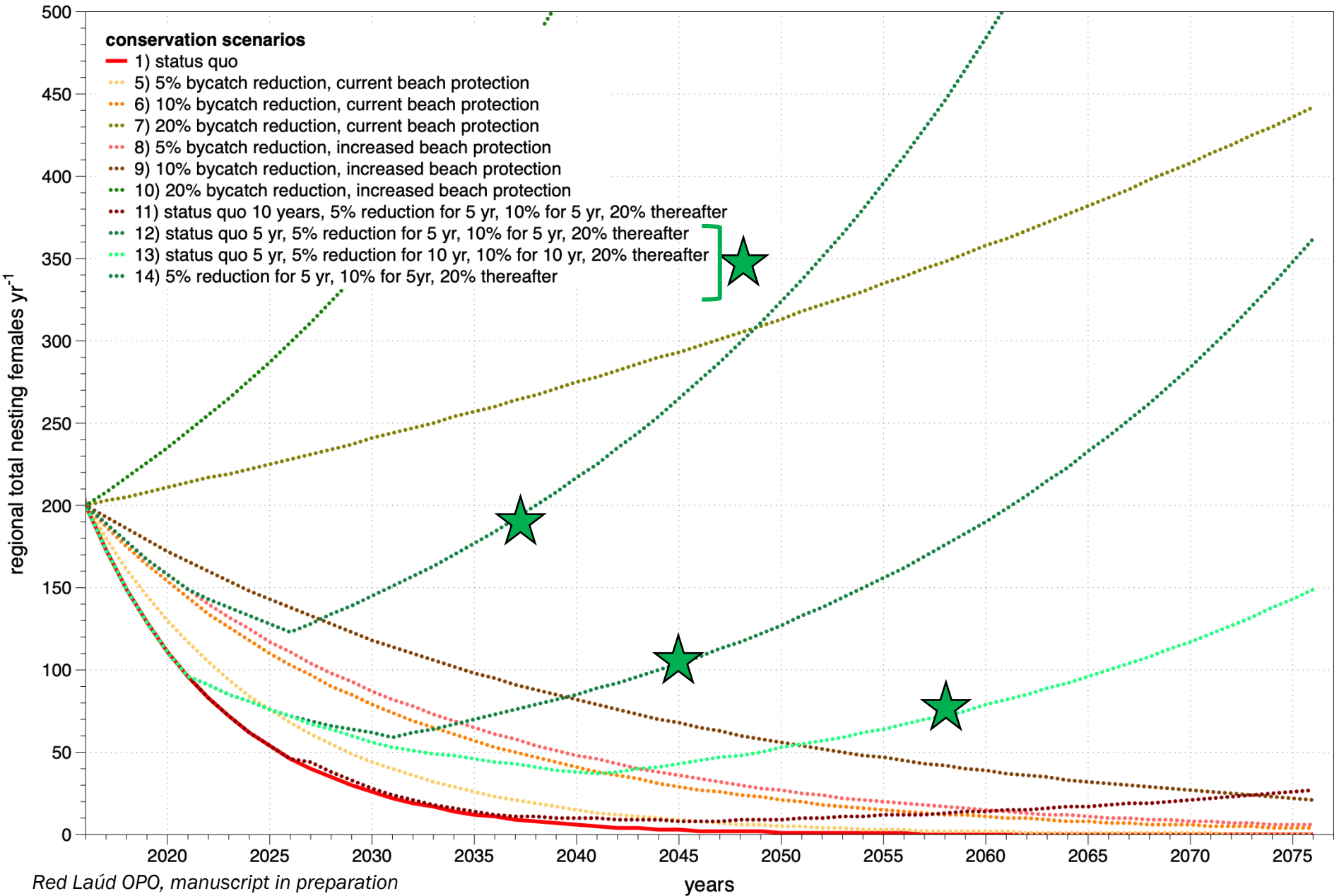


# Future scenarios with conservation





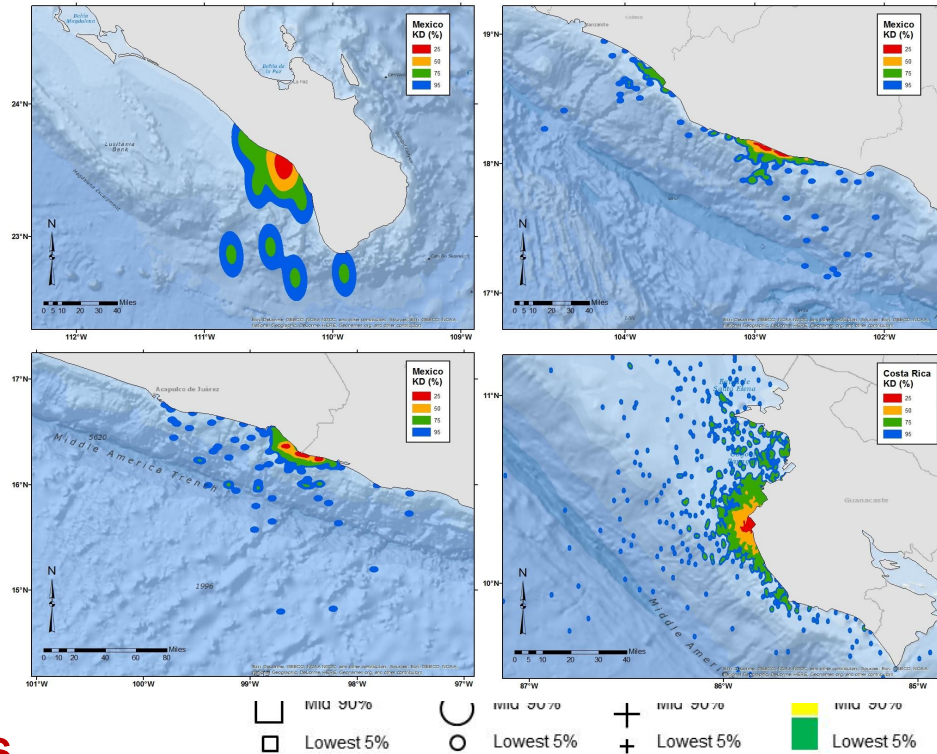
# Increase survival in next 5 years, to 20% in next 20 years



# What does the science say?

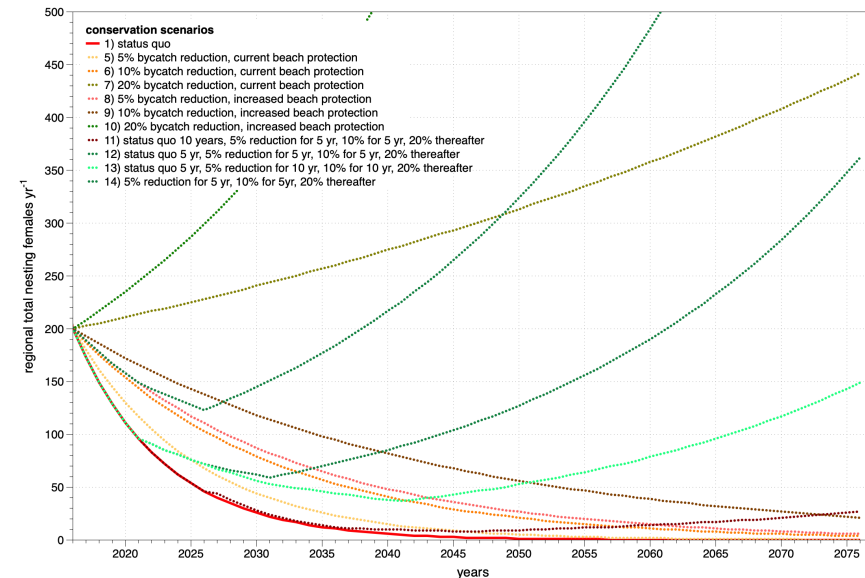
- We know a lot about bycatch, but information gaps remain**

- 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
- 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)
- Bycatch reduction in the next 5 years critical**



# Urgent conservation action required for EP leatherbacks



The IAC urges the IATTC to join with IAC and other regional partners by taking action immediately to reduce EP leatherback bycatch in the IATTC Convention Area.

The IAC recommends that the Commission take the following actions:

- 1. Develop conservation measures to reduce bycatch (e.g., circle hooks, fish bait, spatial management) in leatherback high-use areas, as described in the MoU between IAC and IATTC**
- 2. Improve data quality and reporting of bycatch data for EP leatherbacks and all other endangered, threatened, and protected species by**
  - Increasing observer coverage or electronic monitoring in longline operations from 5% (as required by Resolution C-11-08) to 20%, as recommended by IATTC Scientific staff, especially on vessels operating in leatherback high-use areas with possible fisheries interactions, and
  - Ensuring that CPCs comply with data collection and reporting requirements and adopt improved data reporting form sufficient to inform and evaluate conservation (DOCUMENT SAC-10-19 STAFF RECOMMENDATIONS FOR MANAGEMENT AND DATA COLLECTION, 2019)
- 3. Verify and document that fishermen or vessel operators in the Convention Area follow sea turtle handling and release guidelines, including that fishermen or vessel operators**
  - Carry safe-handling tools on-board and using them to ensure the prompt and safe release of incidentally-caught sea turtles, as described in Resolution C-07-03, and,
  - Where necessary, receive proper training in best practices for handling and release of sea turtles

# IAC invites IATTC to collaborate on conservation efforts



*IAC can partner on joint proposals to fund and implement:*

- Purchase of equipment and training programs for safe handling and release
- Observer programs or other programs to improve data collection and reporting
- Joint analysis of bycatch data to evaluate conservation success
- Testing of bycatch reduction measures
- Other ideas?

All Nippon Airlines Airbus A380



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