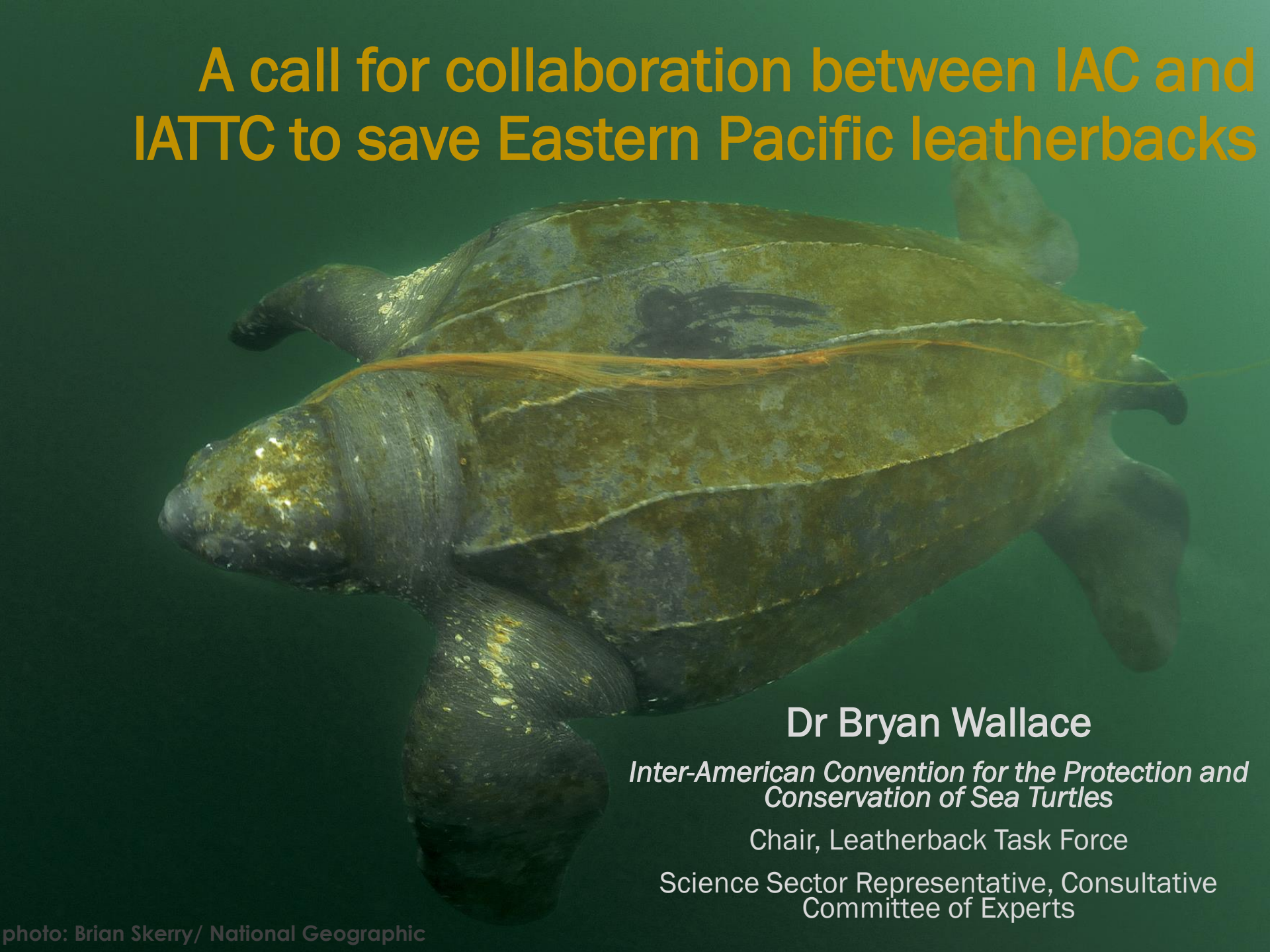
A call for collaboration between IAC and IATTC to save Eastern Pacific leatherbacks



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

photo: Brian Skerry/ National Geographic

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)
  - Presentation during the 8th 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

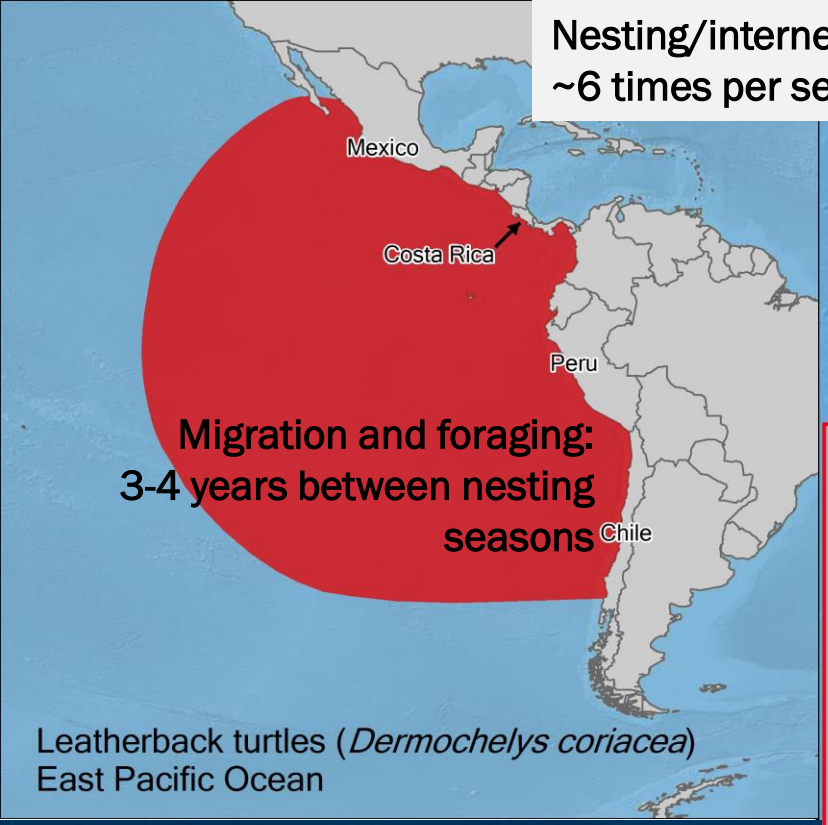
FISHERIES

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

Matthew G. Burgess,[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]

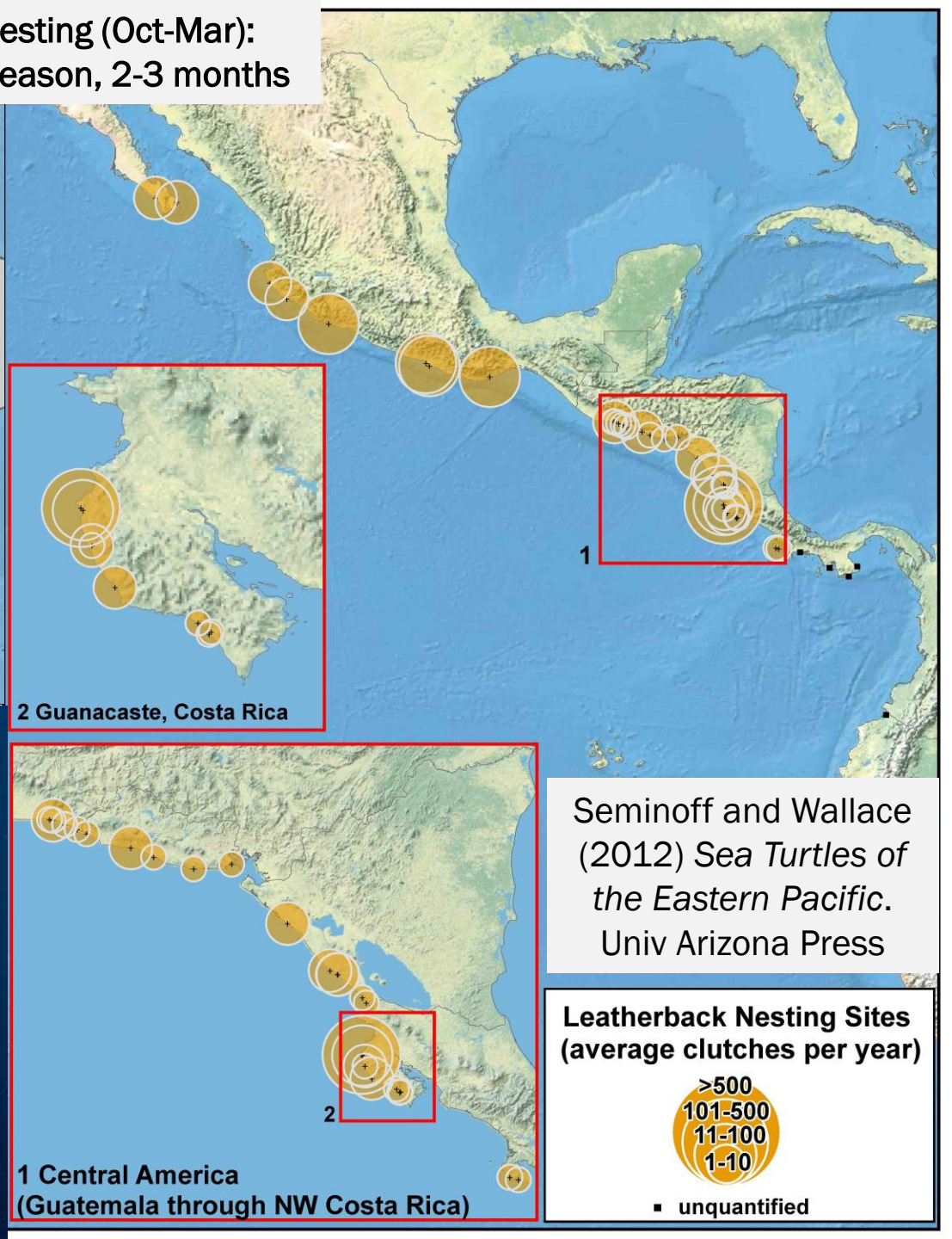
- Rebuilding fisheries benefits protected species caught as bycatch
- Maximizing fisheries profits would halt declines of ~50% of mammal, turtle, and bird populations
- Turtle populations generally could benefit from sustainable fisheries
- **In particular, tremendous potential for EP leatherbacks**

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



Leatherback turtles (*Dermochelys coriacea*)
East Pacific Ocean

Photo: Brian Skerry



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

Leatherback Nesting Sites
(average clutches per year)

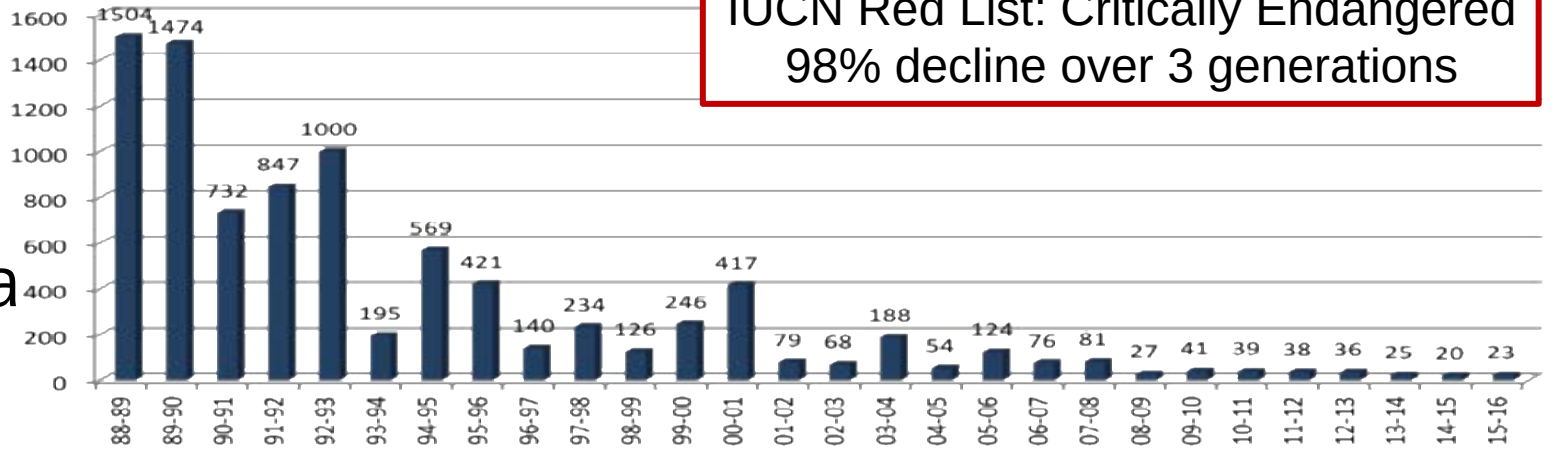
- >500
- 101-500
- 11-100
- 1-10
- unquantified

Status of EP leatherbacks

Mexico

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

Costa Rica



No. Nes' ng females

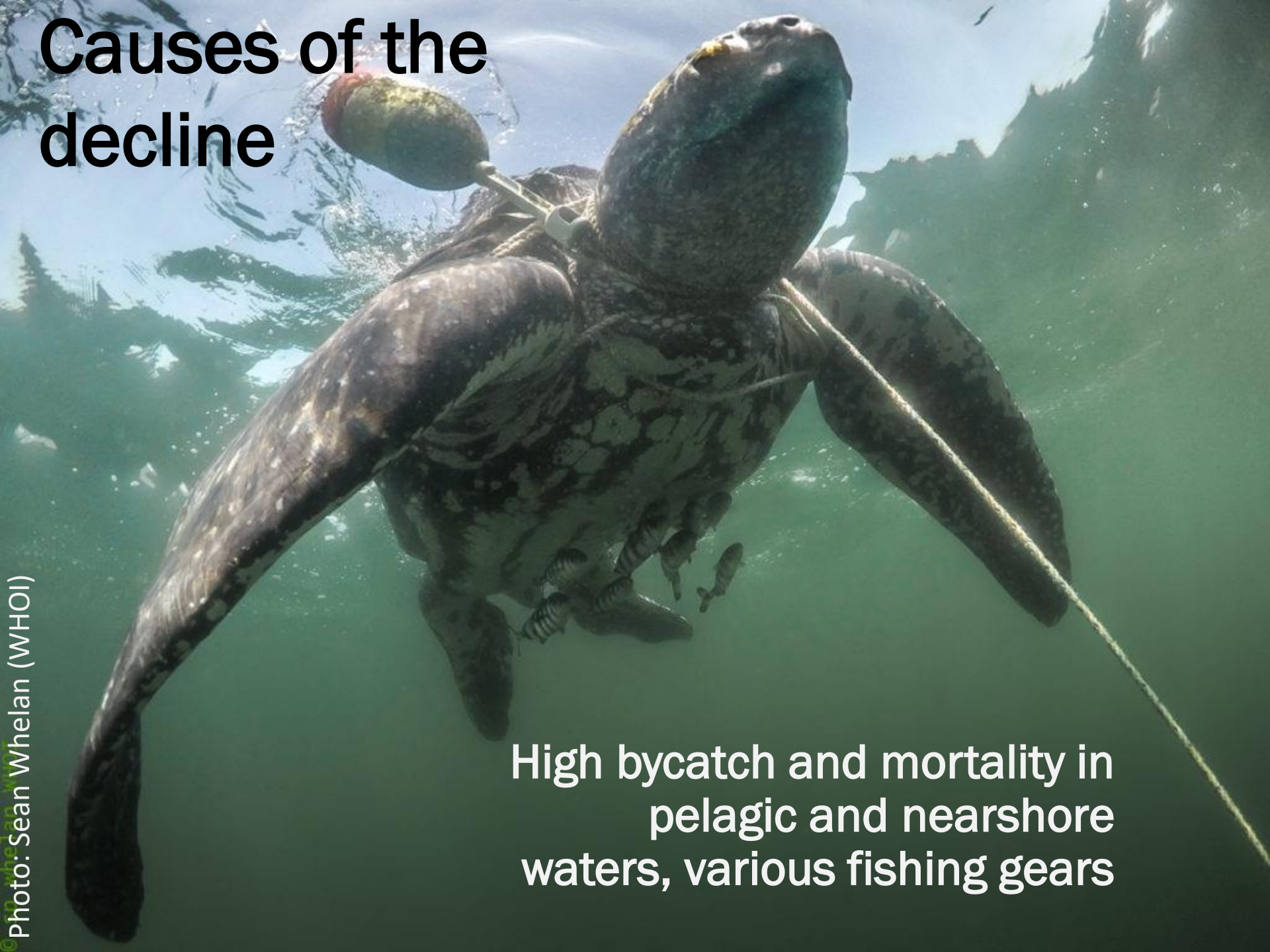
Nes' ng Season

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).

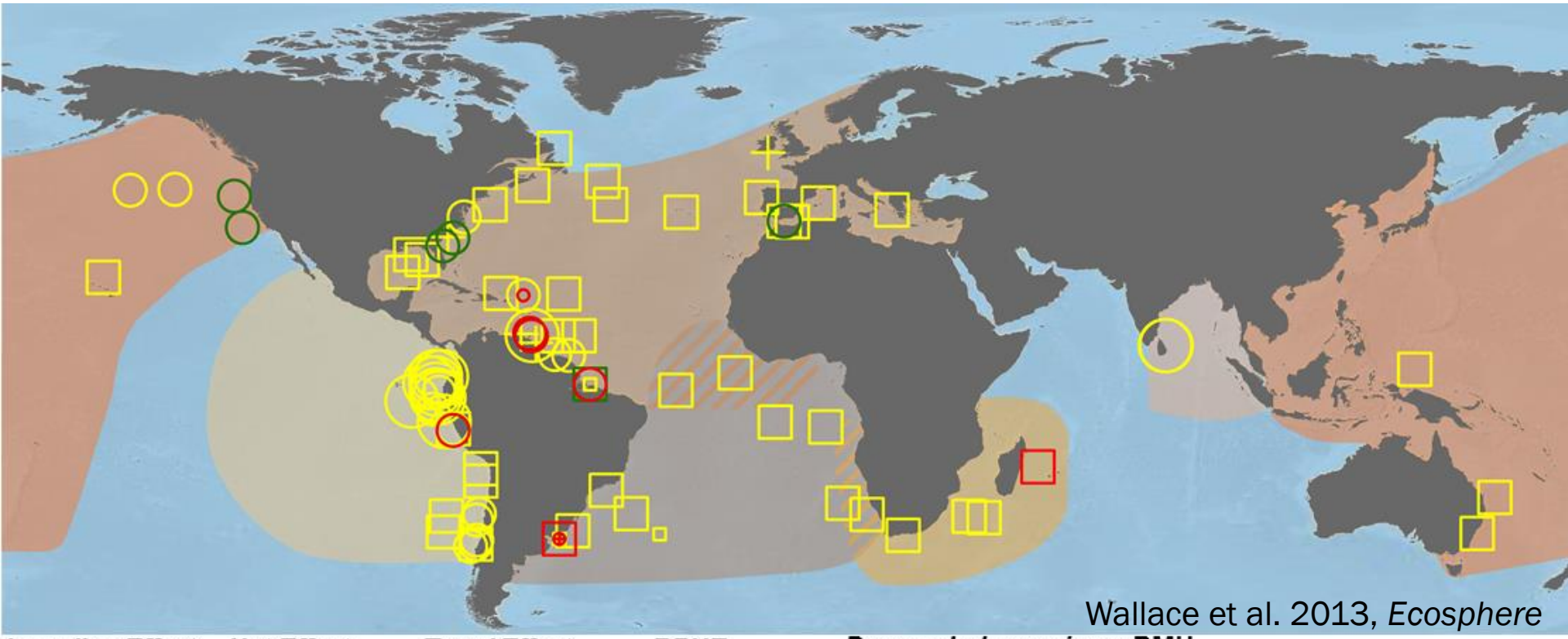
Causes of the decline



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

Photo: Sean Whelan (WHOI)

EP leatherback bycatch



- 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**

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

Mexico
Nicaragua
Costa Rica
Santuario Playa de Mexiquillo
Santuario Playa de Tierra Colorada
Playa Cauhitán
Santuario Bahía de Chacahua
Playa Barra de la Cruz
Veracruz de Acayo
Parque Nacional Marino Las Baulas
Coiba Island (Panama)
Cocos Island (Costa Rica)
Malpelo Island (Colombia)
Galápagos Islands (Ecuador)

115° W 110° W 105° W 100° W 95° W 90° W 85° W 80° W 75° W
30° N 25° N 20° N 15° N 10° N 5° N 0°

0 250 500 1,000 Kilometers

Ports assessed for leatherback bycatch
- leatherback index nesting sites
- ports with reported leatherback bycatch reported
- ports assessed
- EEZs

N

Ortíz et al. 2019 International Sea Turtle Symposium; manuscript in preparation

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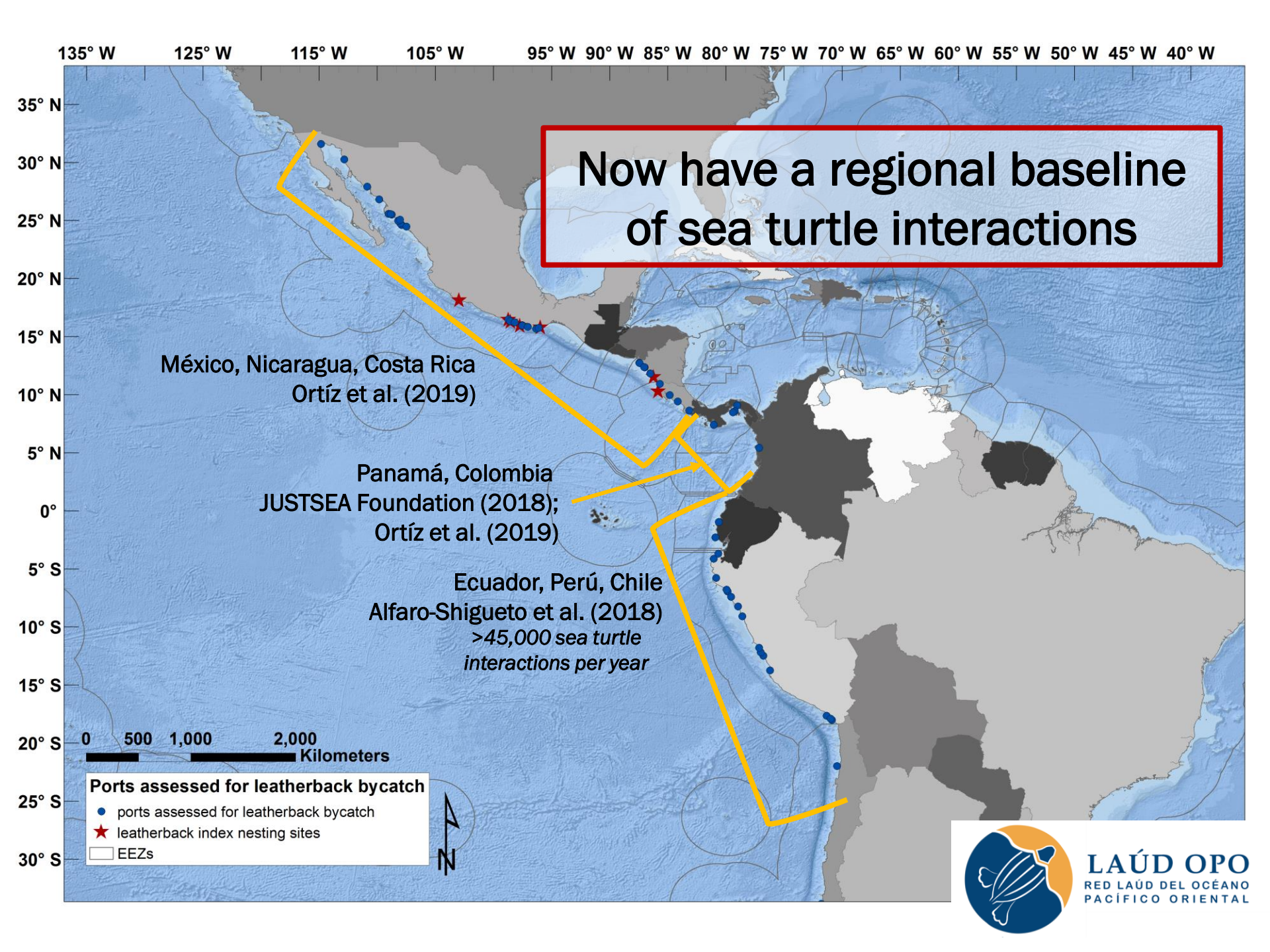
135° W
125° W
115° W
105° W
95° W
90° W
85° W
80° W
75° W
70° W
65° W
60° W
55° W
50° W
45° W
40° W
35° N
30° N
25° N
20° N
15° N
10° N
5° N
0°
5° S
10° S
15° S
20° S
25° S
30° S
Now have a regional baseline of sea turtle interactions
México, Nicaragua, Costa Rica
Ortíz et al. (2019)
Panamá, Colombia
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
N
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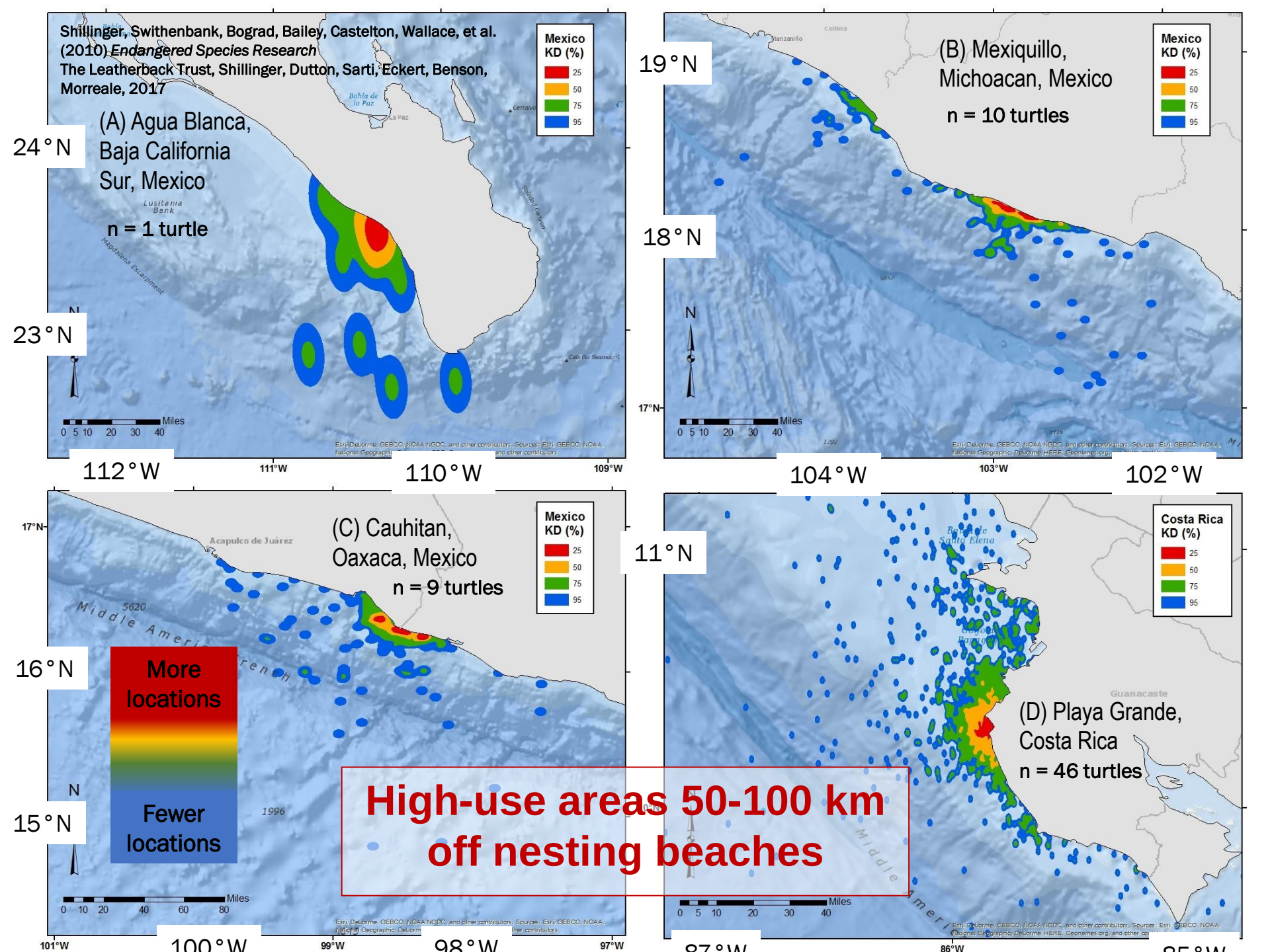
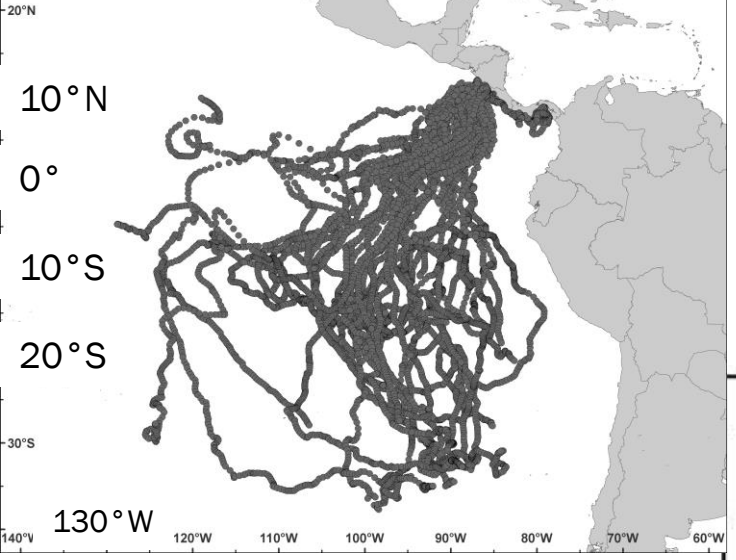
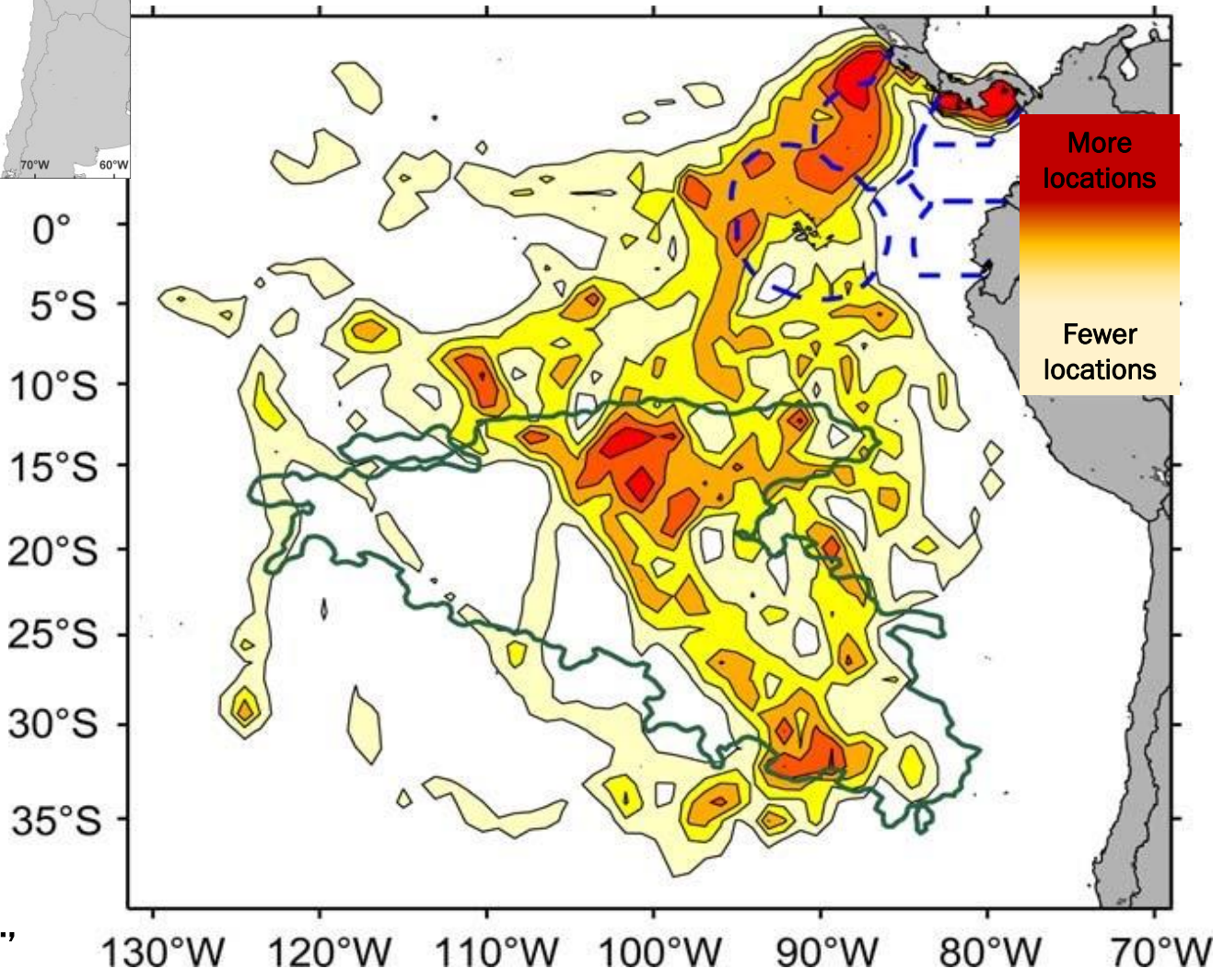

Shillinger, Swithenbank, Bograd, Bailey, Castelton, Wallace, et al. (2010) *Endangered Species Research*
The Leatherback Trust, Shillinger, Dutton, Sarti, Eckert, Benson, Morreale, 2017
(A) Agua Blanca, Baja California Sur, Mexico
n = 1 turtle
(B) Mexiquillo, Michoacan, Mexico
n = 10 turtles
(C) Cauhitan, Oaxaca, Mexico
n = 9 turtles
(D) Playa Grande, Costa Rica
n = 46 turtles
Mexico KD (%)
Costa Rica KD (%)
25
50
75
95
More locations
Fewer locations
High-use areas 50-100 km off nesting beaches
24°N
23°N
19°N
18°N
17°N
16°N
15°N
11°N
112°W
111°W
110°W
109°W
104°W
103°W
102°W
101°W
100°W
99°W
98°W
97°W
87°W
86°W
85°W
Miles

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



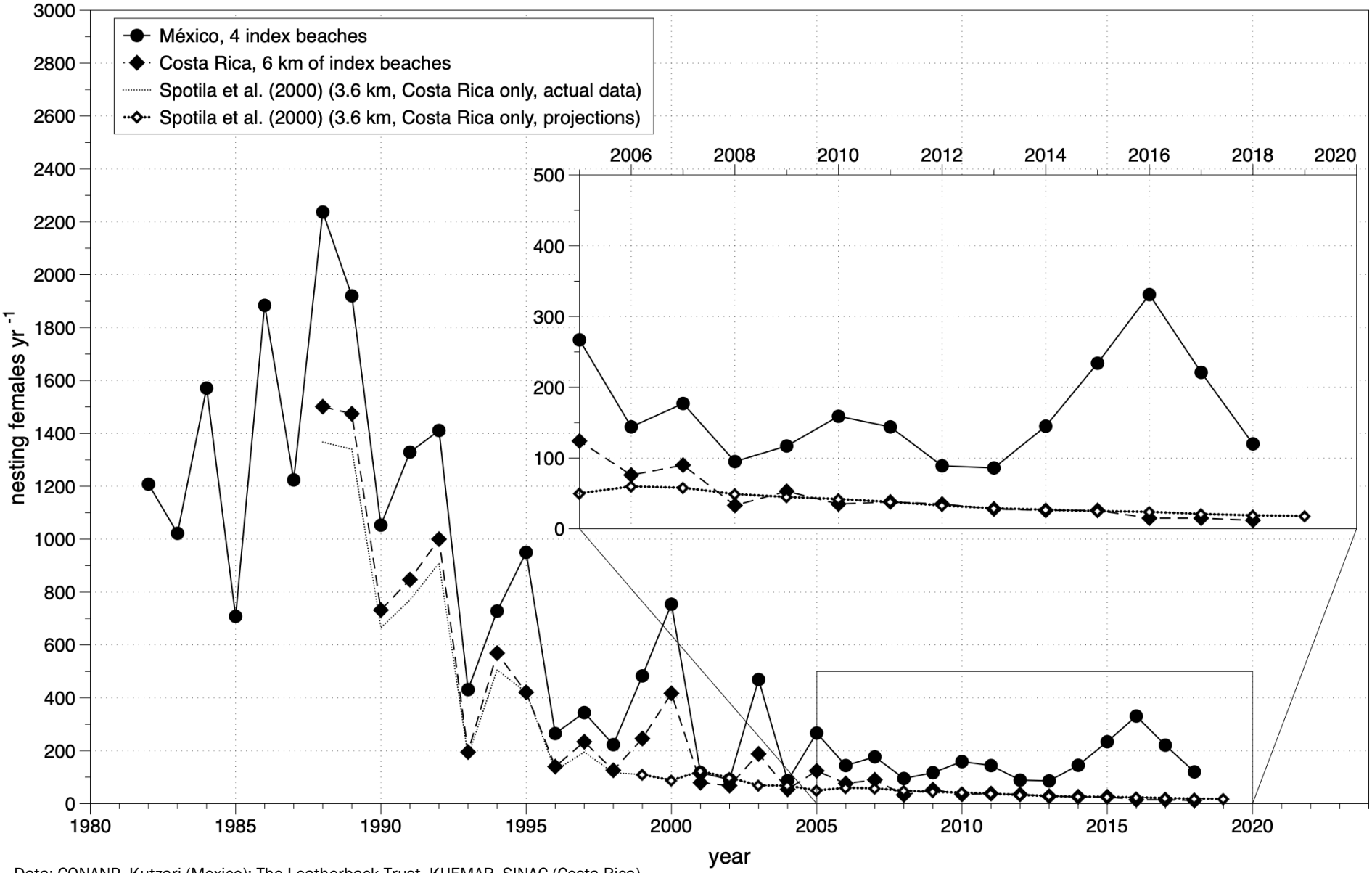
Corridor from nesting beaches toward Galapagos to 10°S

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?

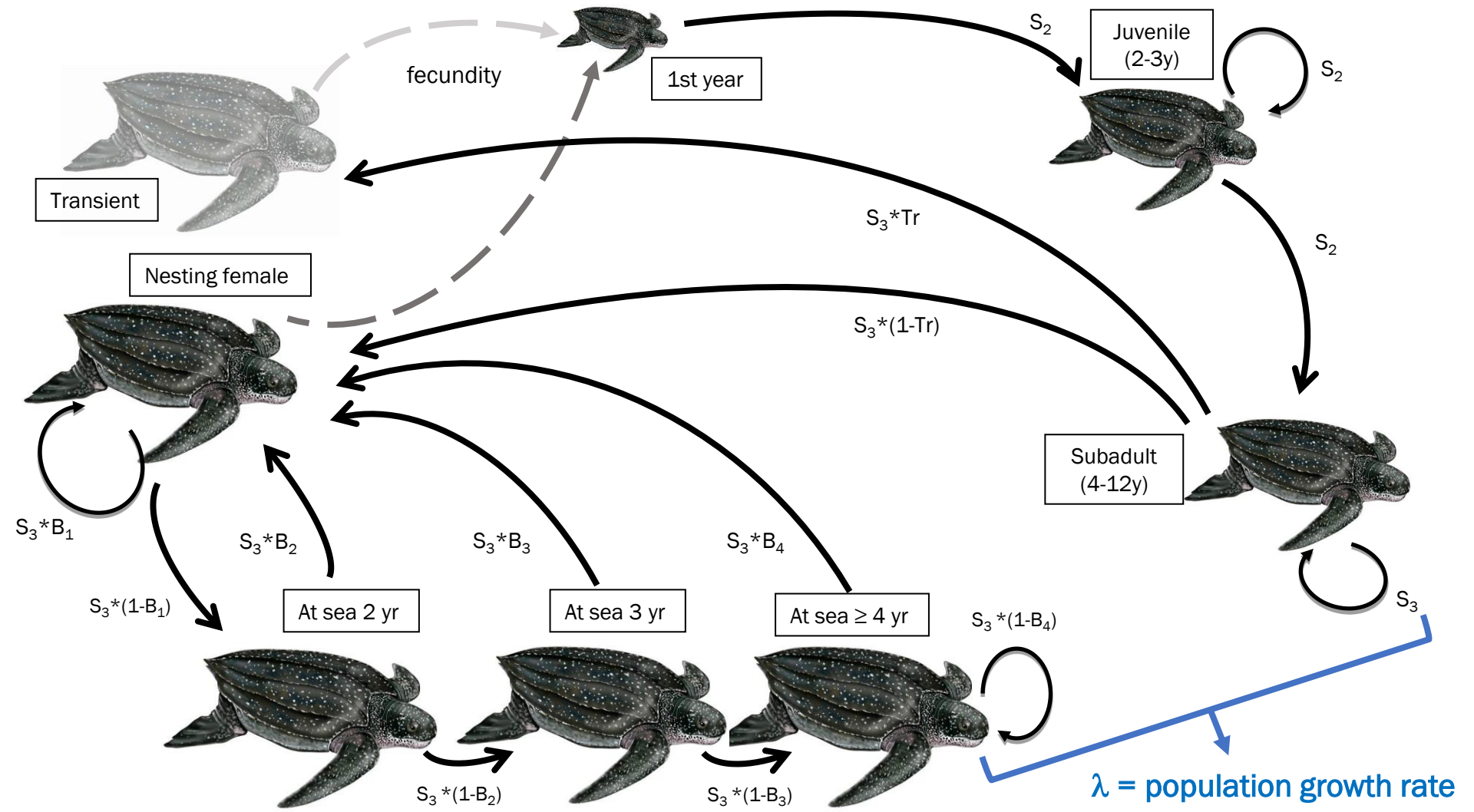
Goals of stage-based population model:

- Determine the current population status
- Simulate effects of conservation

S = survivorship

B = remigration probability

Transient: breed once then not seen again



Red Laúd OPO, manuscript in preparation

Future scenarios with conservation

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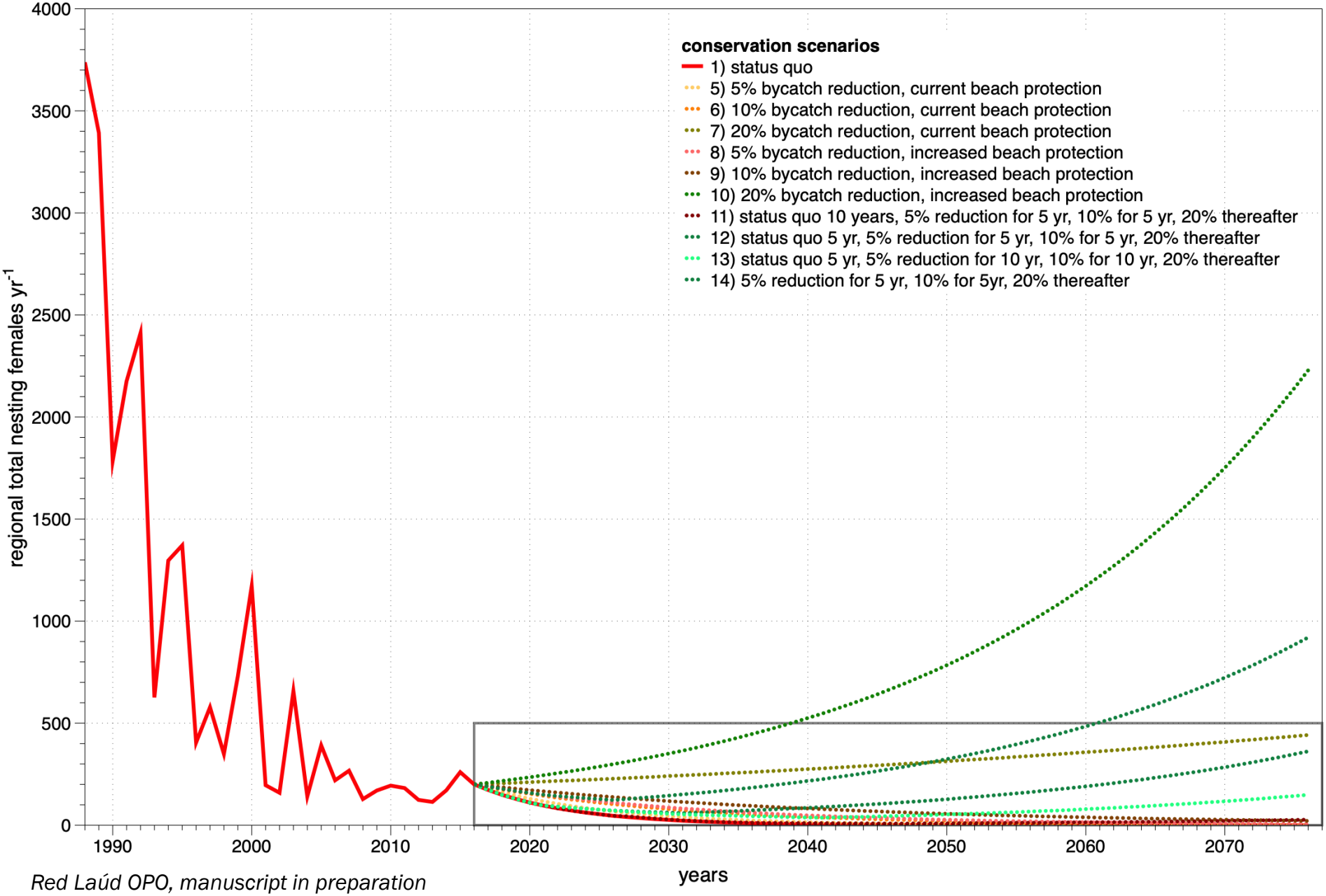
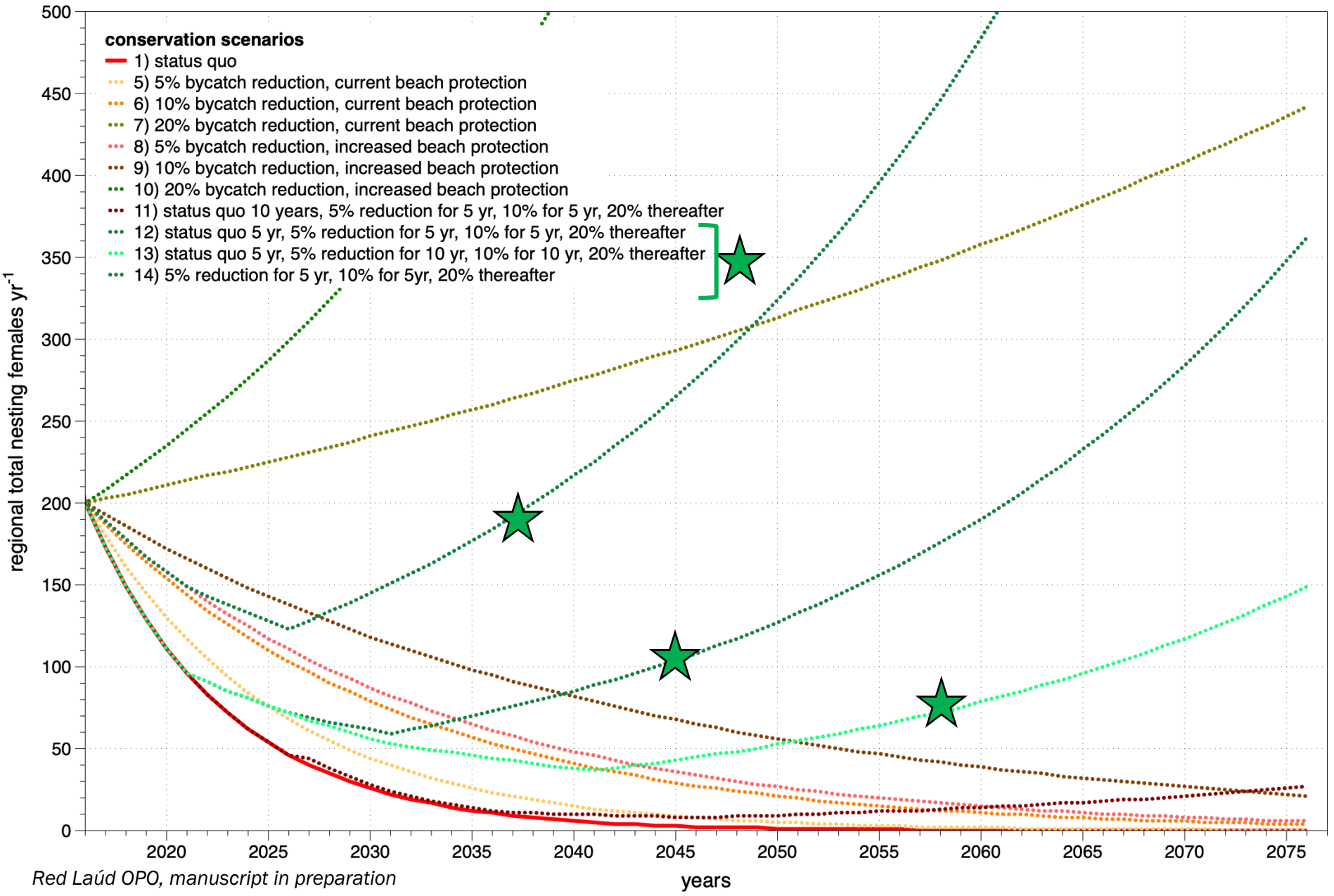


Red Laúd OPO, manuscript in preparation

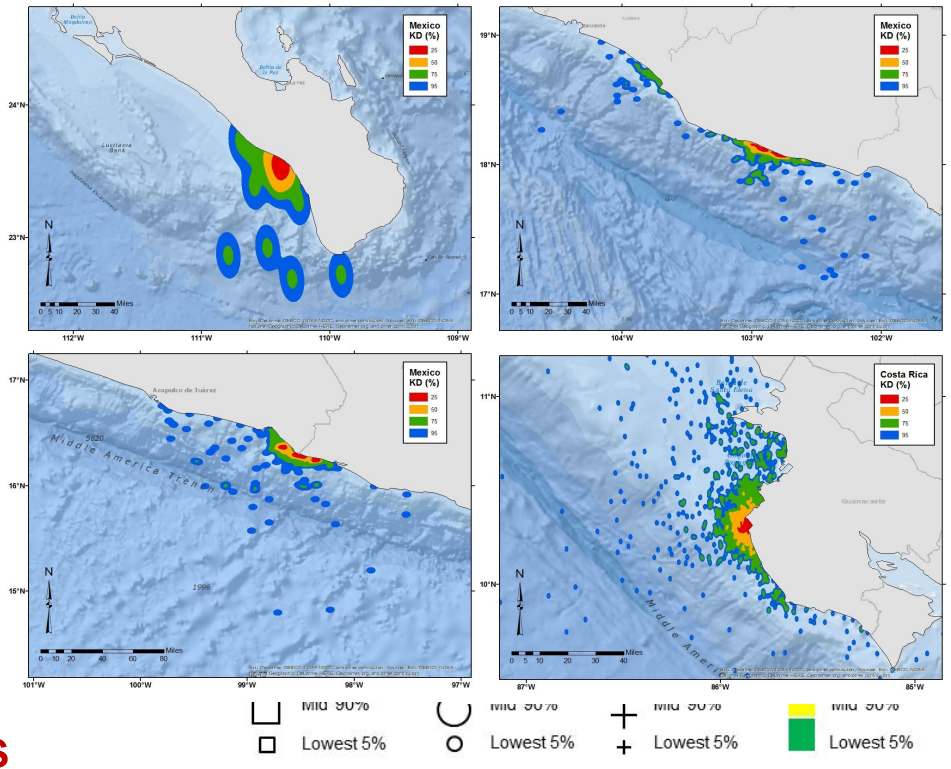
Increase survival in next 5 years, to 20% in next 20 years



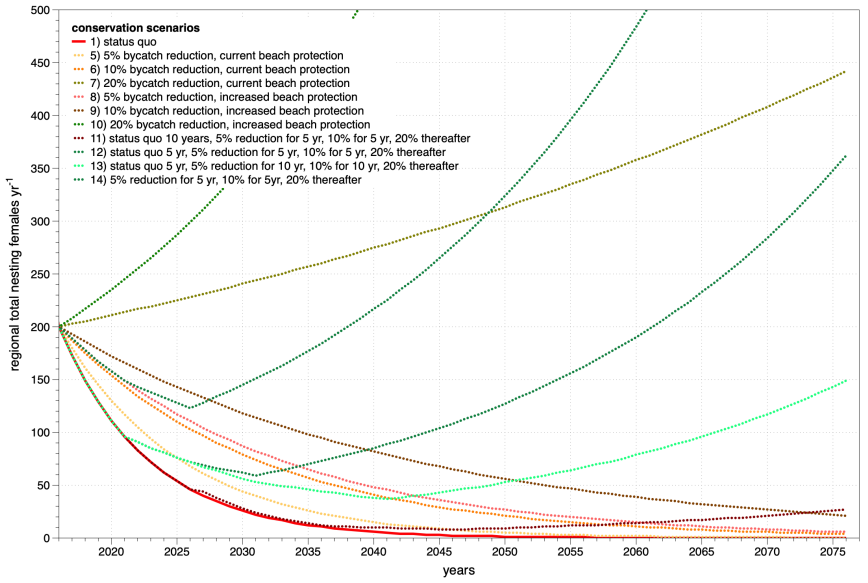
Red Laúd OPO, manuscript in preparation

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 reportir 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?

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www.iacseaturtle.org @IAC_SeaTurtles ecolibrium.inc@gmail.com