# Overview of SWFSC's Marine Mammal & Turtle Science Division

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Review of NOAA Fisheries' Science on Marine Mammals & Turtles

Southwest and Northwest Fisheries Science Centers

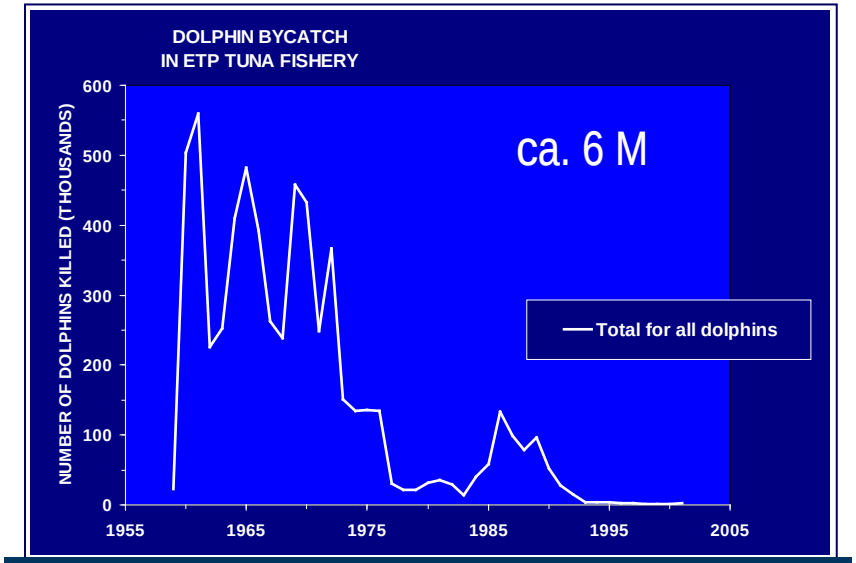
27-31 July 2015

La Jolla, CA

# The beginning

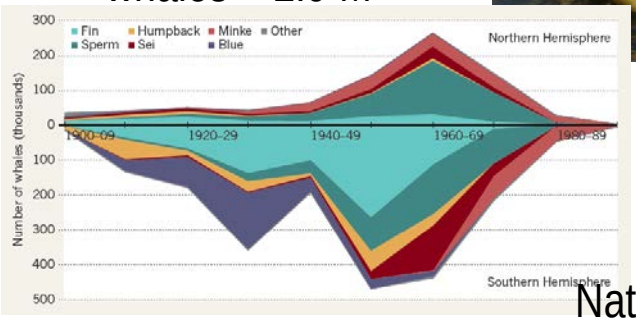
The “tuna-porpoise problem”
(one of three drivers for creation of Marine Mammal Protection Act)

# Incidental mortality




Wade 1995; Marine Mammal Commission 1998

Official cumulative world catch all great whales = 2.9 M




Nature 2015

# The ETP Research Program*

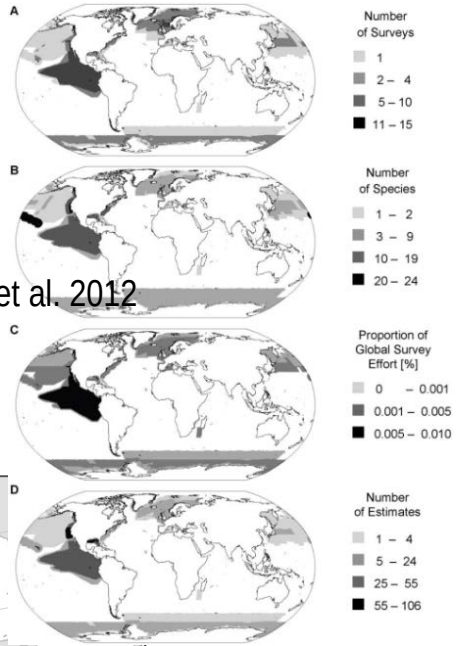
Abundance and trends

Stock structure

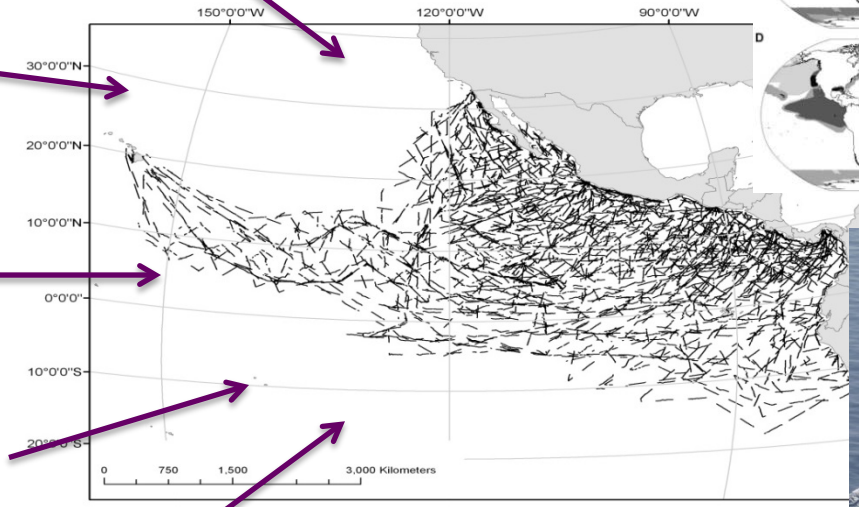
Life history

Ecosystem context

Process (question-based) Components




Kaschner et al. 2012



*"The Marine Mammal Division" – splinter group from "The Pelagic Division" 1970s

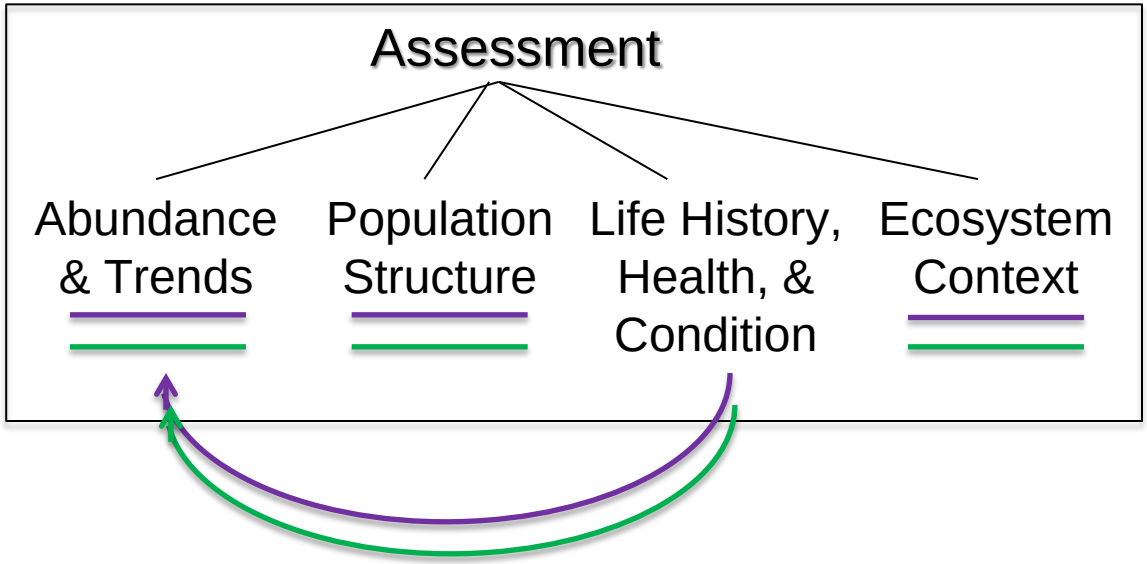
# The eastern Tropical Pacific Research Program has made its mark on the division.

- Mandate-focused, “bullet-proof science” in response to litigation-heavy issue (e.g., helicopter to calibrate school size estimates, survey encompassing complete range of focal taxa)
- Development of innovative field methods and analytical tools in response to novel problems/circumstances
- Use of multi-disciplinary approaches to provide context, and to address alternative hypotheses
- Maximum use of ship time in logistically challenging regions
- Capacity-building (nationally and internationally) and education (students)

We carry these lessons with us to this day.

# The present

- + Turtles (1990s)




- Mandate-driven
  - ESA
  - MMPA

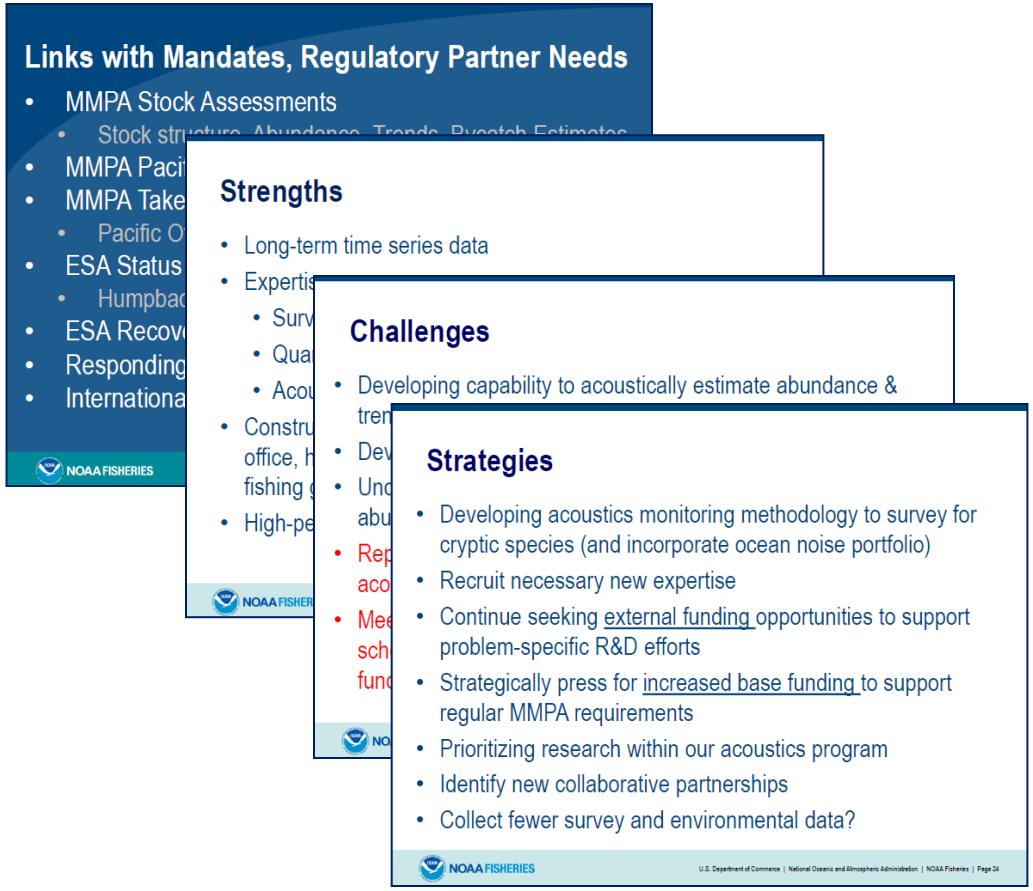
- Multidisciplinary, Collaborative (by design)
  - e.g., Gray Whales - Pacific Coast Feeding Group (stock structure, OSP determination, health & condition)

# Our review themes reflect this structure (and our mandates).

- Theme I: Abundance Estimation & Trends
- Theme II: Defining Units to Conserve
- *Theme III: Science to Support Recover of Southern Resident Killer Whales (M Ford)*
- Theme IV: Life History & Condition
- Theme V: Risk Assessment

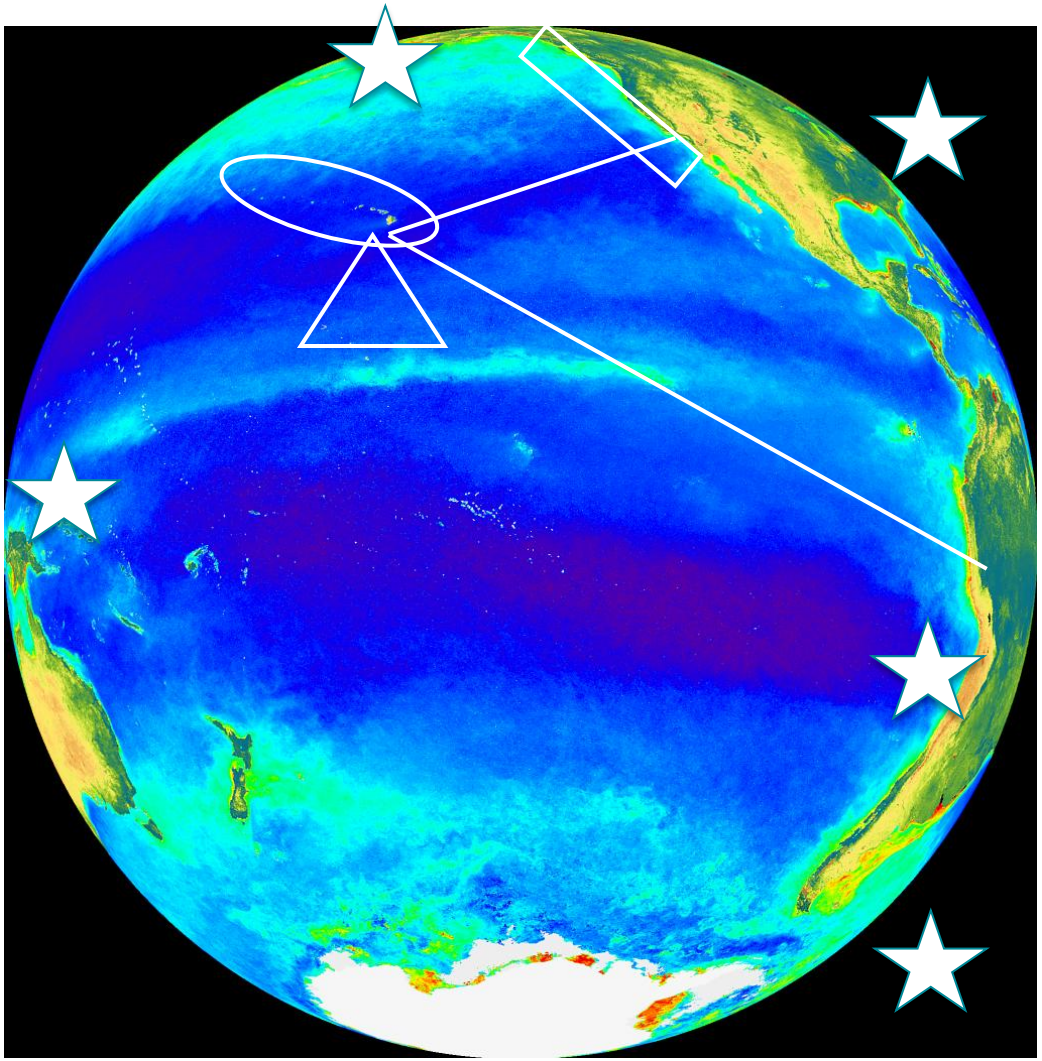
# Review Format

- Theme-specific overview presentations
  - Links to Management
  - Strengths, Challenges, Strategies
- Case study talks
- Laboratory tours

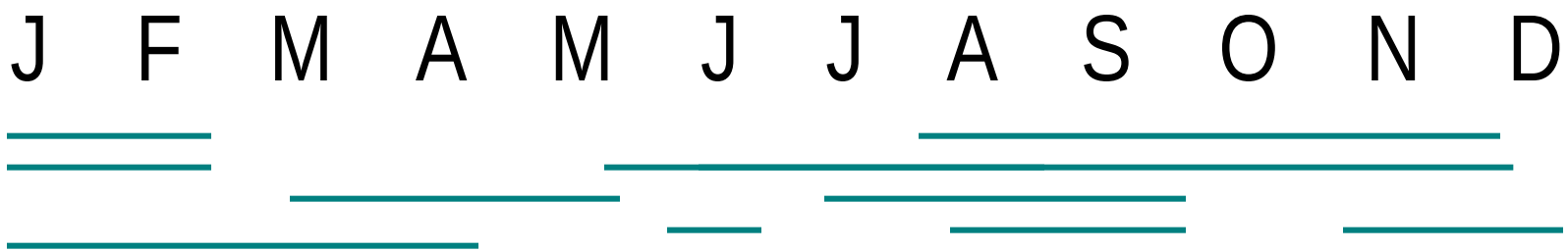


# The bigger division picture: Our Ecosystems

- Pacific Ocean
  - Eastern Tropical Pacific
  - Central Pacific
    - *In support of PIFSC*
  - Greater California Current
- And elsewhere…



# Typical Annual Calendar – Major Field Efforts




- Research Vessel Cruises (August-November)
- Pinniped & Cetacean Aerial Surveys (Jan-Feb; June-November)
- Southbound Gray Whale Population Abundance Survey (January-February)
- Northbound Gray Whale Calf Production Survey (March-May)
- San Diego Bay Green Turtle Ecology (November-April)
- Leatherback Turtle Feeding Ecology in Monterey Bay (June; August-September)
- St. Croix Leatherback Demography and Population Structure (July-September)

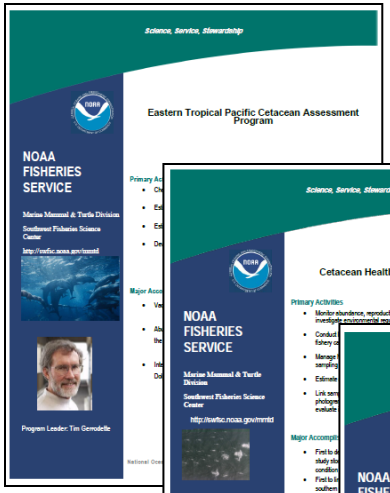
# Typical Annual Calendar – Major Meetings and Reports

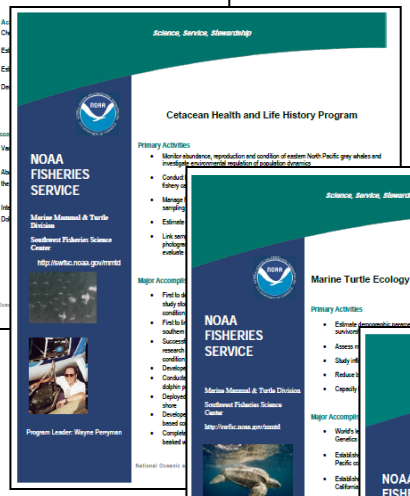
J F M A M J J A S O N D

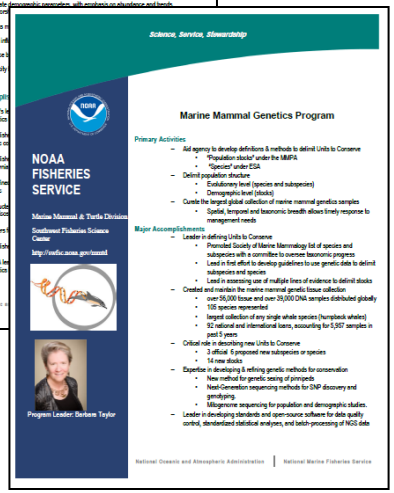
- Major Meetings
  - Conference on the Biology of Marine Mammals (~December - biennial)
  - International Sea Turtle Symposium (April)
  - Scientific Review Group (November)
  - International Whaling Commission (May/June)
  - Agreement on the International Dolphin Conservation Program (June)

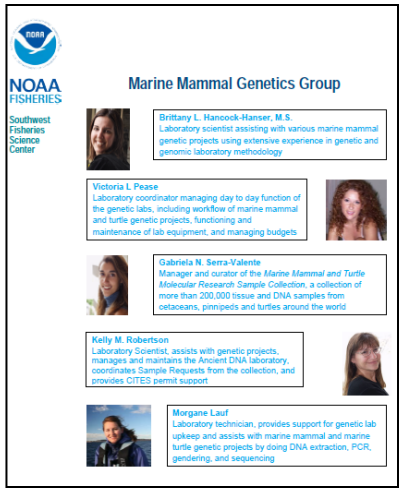
- Major Reports
  - Stock Assessment Reports (November)
  - IDCPA Report to Congress (July)
  - Report to IWC (April)

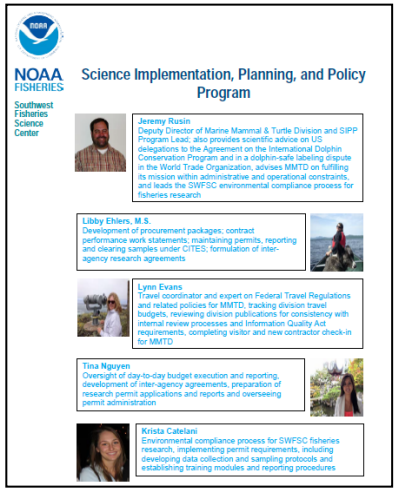
# Our Programs & People

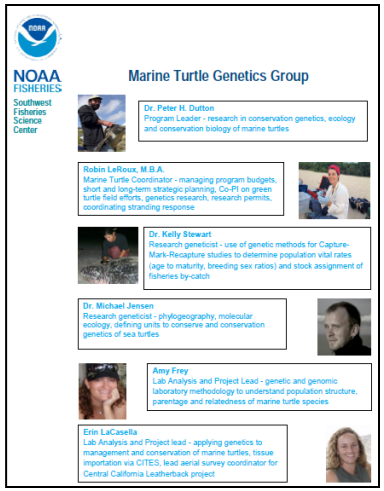


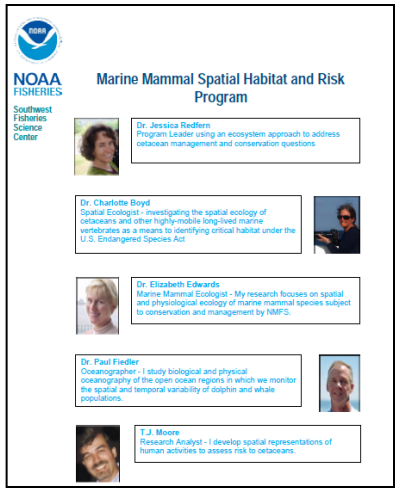





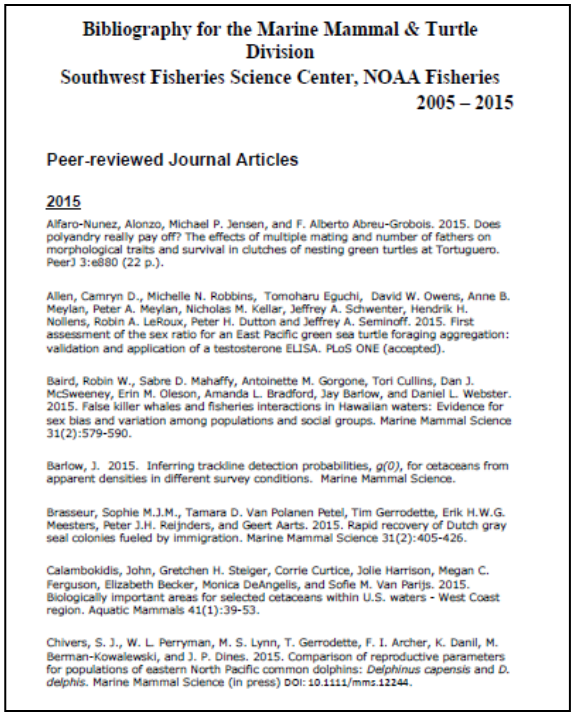



# Our “Science Footprint”*

- Comprehensive Bibliography (past 10 years)
  - Division-wide
    - Peer-reviewed Journal Articles (65 pp.)
    - Books (7) & Book Chapters (10 pp.)
    - NOAA publications & working papers (39 pp.)
  - Theme-specific



**Bibliography for the Marine Mammal & Turtle Division**
**Southwest Fisheries Science Center, NOAA Fisheries**
**2005 – 2015**

**Peer-reviewed Journal Articles**

**2015**

Alfaro-Nunez, Alonzo, Michael P. Jensen, and F. Alberto Abreu-Grobois. 2015. Does polyandry really pay off? The effects of multiple mating and number of fathers on morphological traits and survival in clutches of nesting green turtles at Tortuguero. PeerJ 3:e880 (22 p.).

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Chivers, S. J., W. L. Perryman, M. S. Lynn, T. Gerrodette, F. I. Archer, K. Danil, M. Berman-Kowalewski, and J. P. Dines. 2015. Comparison of reproductive parameters for populations of eastern North Pacific common dolphins: *Delphinus capensis* and *D. delphis*. Marine Mammal Science (in press) DOI: 10.1111/mms.12244.

- Awards, Appointments, Service to Agency (past 5 years)

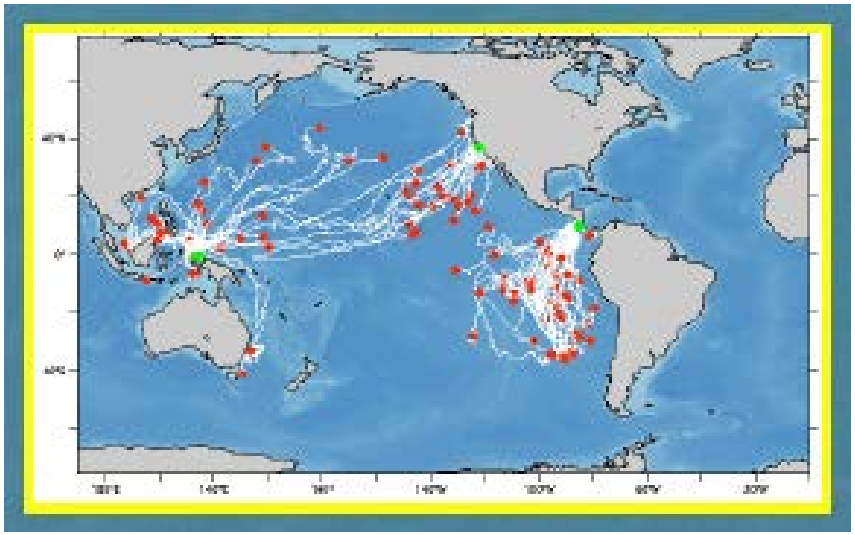
- Students Mentored

*Background Materials

https://swfsc.noaa.gov/2015ProtectedMammalTurtleReview/

# Cross-cutting themes

- Research outside of US Exclusive Economic Zones (why?)
  - International responsibilities
    - (e.g., IWC, IACST, AIDCP)
  - Transboundary nature of our species
  - Value of a global context for regional interpretation



- Engagement at the Regional and Agency level
- Attention to emerging themes
- Conducting science in a time of resource-constraints →

# Decision-Making (how do we decide what science to conduct?)

-Regional Office priorities
-Science Center priorities
    Strategic Science Plan & Annual Guidance Memo
-Agency Priorities
    Science Board, PR Board, PRSIPP

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-Partner and Constituent priorities
    e.g., BOEM, Navy – look for common science needs!
    Marine Mammal Commission (recent priorities exercise)
    NRC-commissioned Reviews/Reports & similar

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-Annual Division exercise: "Go – Hold – No Go"

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-MMTD 3-yr science plan – *remember for Wed afternoon*