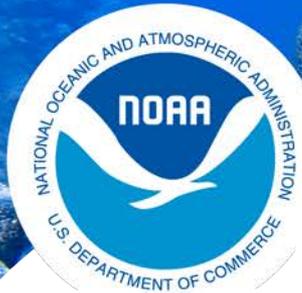


# Summary & Future Directions (Themes I, II, IV, V)

Lisa T. Ballance

Director, Mammal & Turtle Research Division

NOAA Fisheries, Southwest Fisheries Science Center



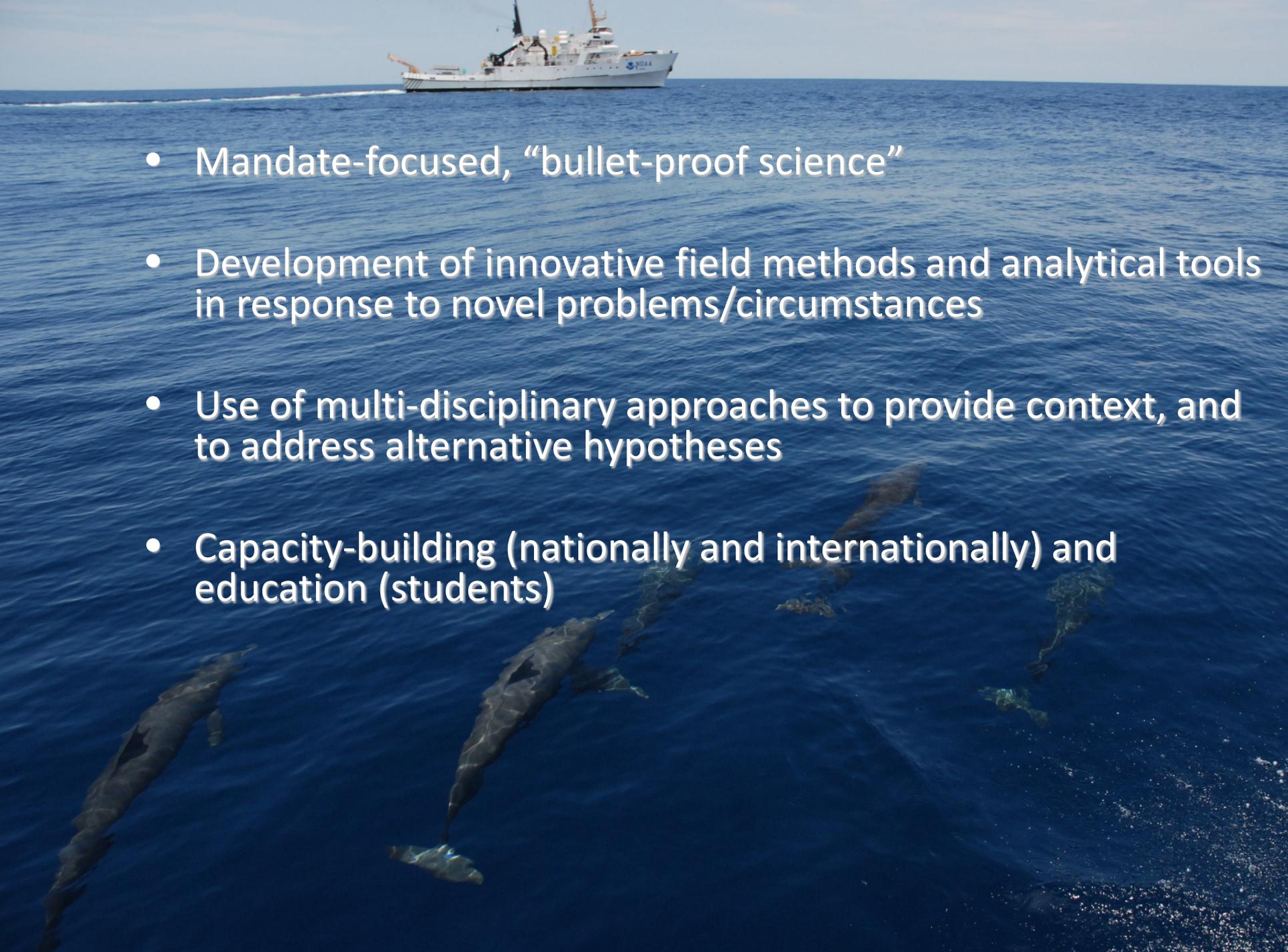
**NOAA**  
**FISHERIES**



Review of NOAA Fisheries' Science on Marine Mammals & Turtles  
Southwest and Northwest Fisheries Science Centers

27-31 July 2015

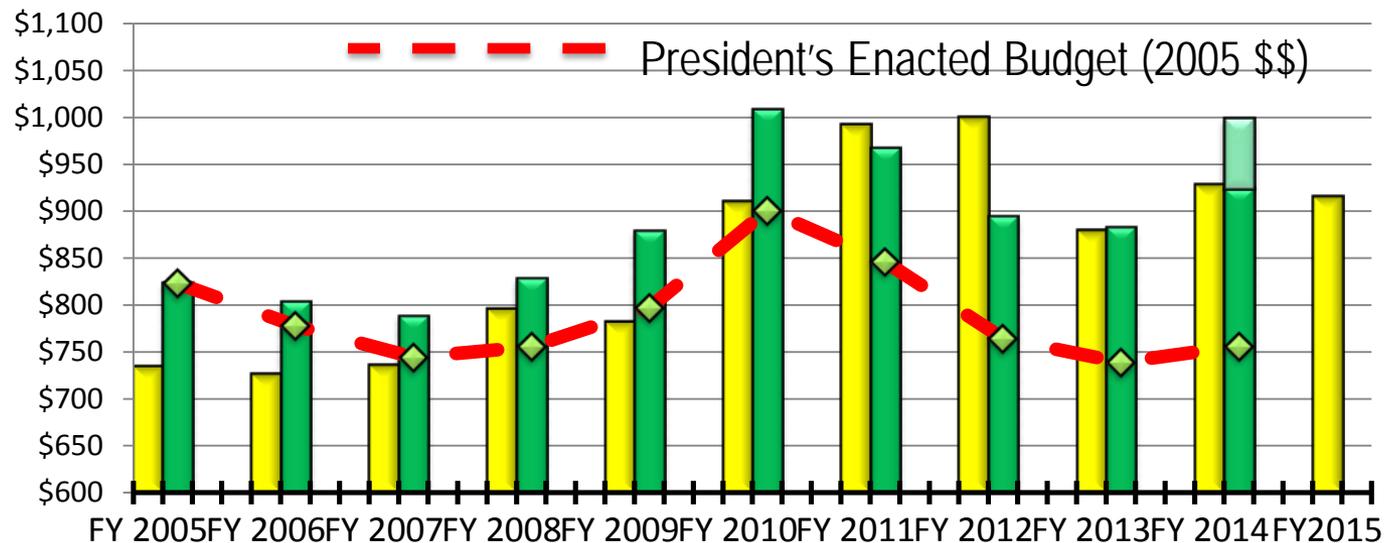
La Jolla, CA

- 
- Mandate-focused, “bullet-proof science”
  - 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
  - Capacity-building (nationally and internationally) and education (students)

# Challenges

- Level budgets for too long in a climate of increasing absolute costs
- Increasing scrutiny and restriction in an already scrutinized and restricted administrative environment

- Maintaining support for field & lab research
  - Maintaining collections
    - Data management
- Reduced scientific profiles, capabilities, leadership (decreased ability to network, attend meetings, etc.)
- Restricted ability to recruit new and critical talent
- Working unsustainably



# What are we not doing *that we should?*

Three-Year Science Plan (2016-2018)  
Marine Mammal & Turtle Division  
Southwest Fisheries Science Center, NOAA Fisheries

<http://swfsc.noaa.gov/mmttd.aspx>

Major Field Efforts (through 2018, *some 2019*)

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*Annual*

Gray Whale Calf Production and Condition (*pending funding*)  
March-May; Piedras Blancas Lighthouse Station, CA

Coastal Bottlenose Dolphin Ecology (*suspended 2014 due to lack of funding and infrastructure*)  
Year-round; Southern California Bight

California Current Humpback and Blue Whale Photographic Identification  
(*suspended 2010 due to lack of funding*)  
June-November; coastal California, Oregon, and Washington waters

Bahamas Behavioral Response of Deep-Diving Cetaceans to Navy Sonar  
(*pending funding*)  
Spring & Fall; Bahamas

Northern and Southern Resident Killer Whale Condition Assessment (*pending funding*)  
Summer & Fall; Pacific Northwest coast

Antarctic Killer Whale Biology, Ecology, and Ecosystem Impacts (*pending funding*)  
December-March; Southern Ocean

CLAWS

SWFSC  
AFSC  
S&T  
PR

\*Background Materials

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

# Strategies

~~Complain~~

Help ourselves

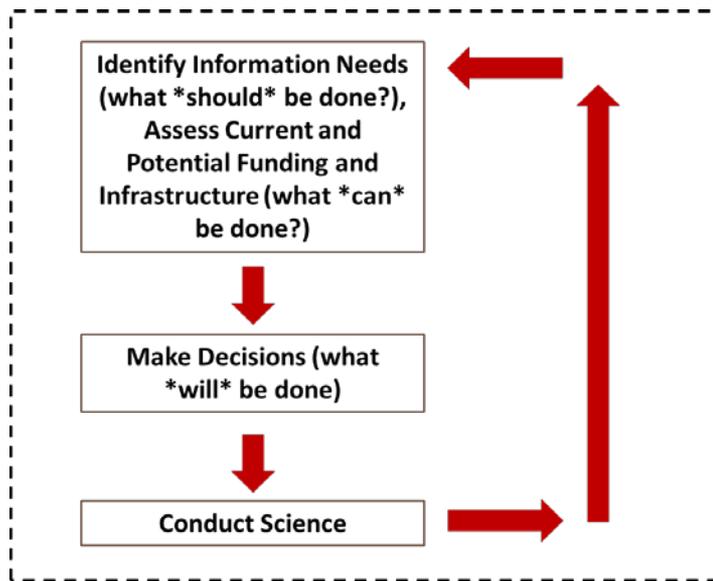
- Speak with a unified voice



An example

# The Protected Resources Science Investment & Planning Process\*

- Secure investment in science by identifying common needs and addressing them through enhanced partnerships



Achieved through a simple and adaptive *process-oriented* approach

\*Agency-level effort

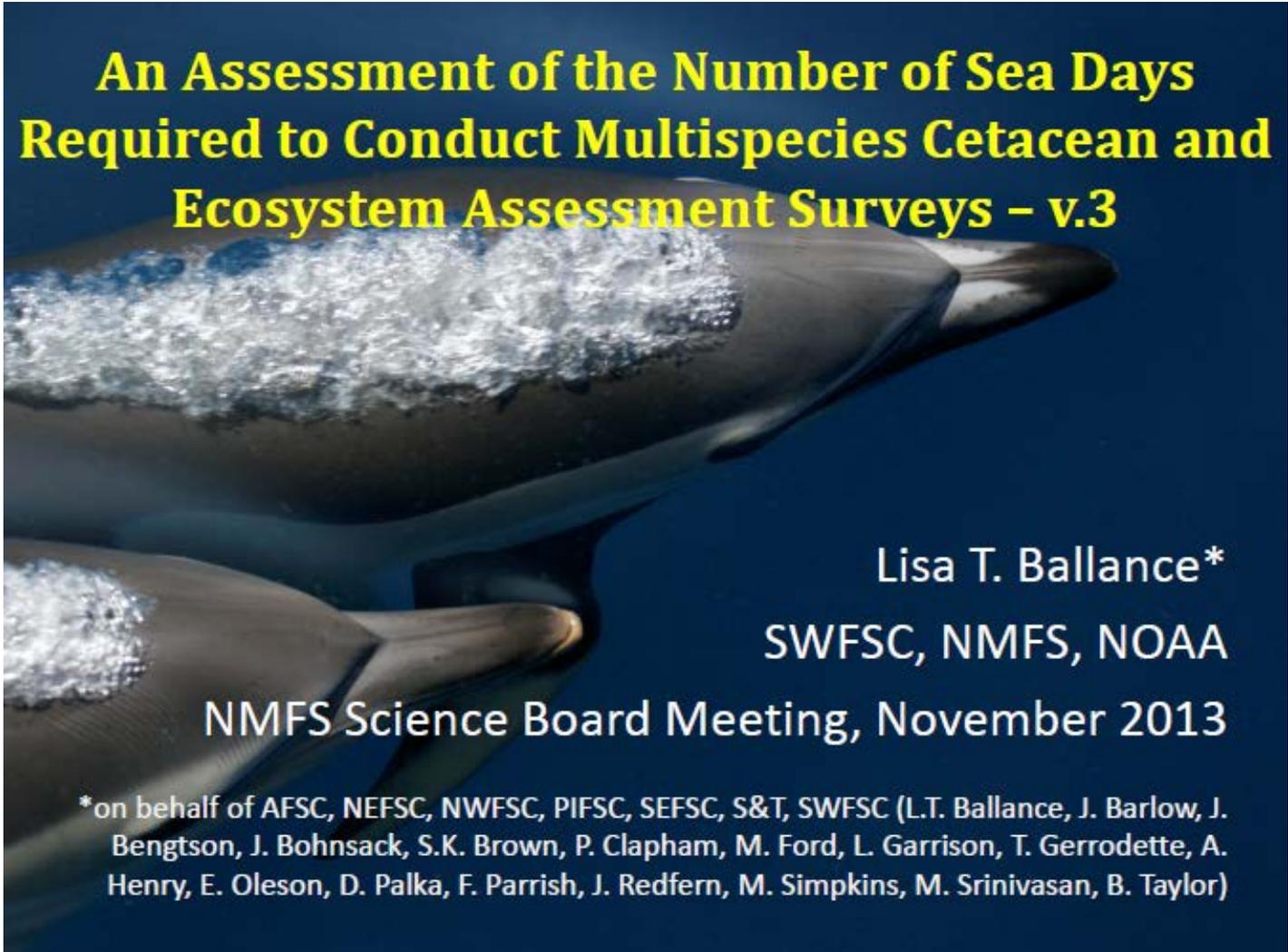
# The process in 2013:

- A Common Information Need: NOAA Fisheries managers & scientists, other Federal agencies (energy & defense)
  - Long-term data on marine mammal & turtle\* distribution and abundance, and an ecosystem context

\* Protected Species

# Addressing a Common Need

## **An Assessment of the Number of Sea Days Required to Conduct Multispecies Cetacean and Ecosystem Assessment Surveys – v.3**

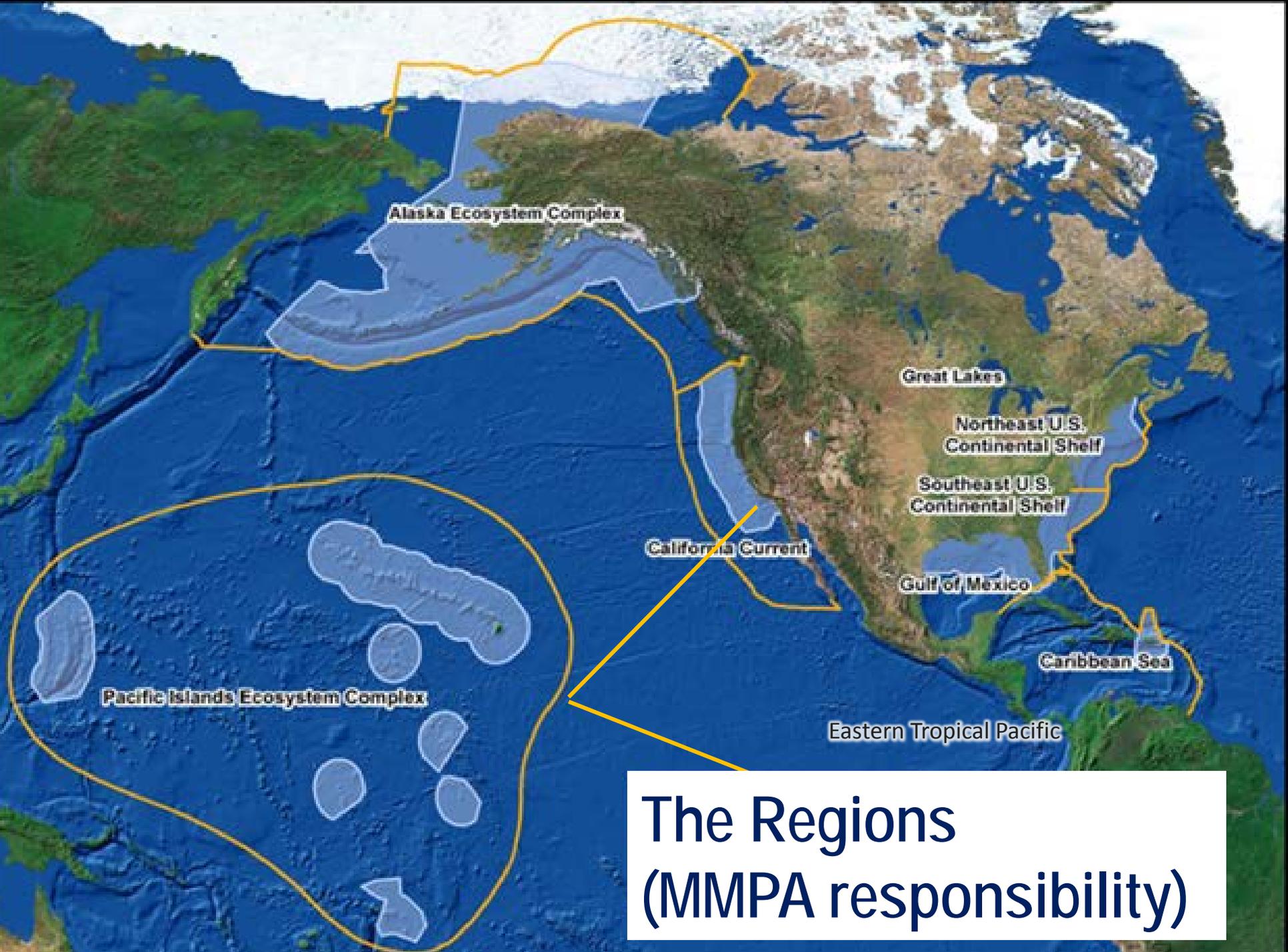


Lisa T. Ballance\*

SWFSC, NMFS, NOAA

NMFS Science Board Meeting, November 2013

\*on behalf of AFSC, NEFSC, NWFSC, PIFSC, SEFSC, S&T, SWFSC (L.T. Ballance, J. Barlow, J. Bengtson, J. Bohnsack, S.K. Brown, P. Clapham, M. Ford, L. Garrison, T. Gerrodette, A. Henry, E. Oleson, D. Palka, F. Parrish, J. Redfern, M. Simpkins, M. Srinivasan, B. Taylor)



Alaska Ecosystem Complex

Great Lakes

Northeast U.S.  
Continental Shelf

Southeast U.S.  
Continental Shelf

Gulf of Mexico

Caribbean Sea

California Current

Pacific Islands Ecosystem Complex

Eastern Tropical Pacific

**The Regions  
(MMPA responsibility)**

# A Proposed Survey Cycle

- Accomplished with NOAA ships, leveraged funding from Federal partners
- A successful model in the Atlantic and California Current (NOAA, energy, defense)

Year	Regions to be Surveyed	Days Required
1	E Coast, W Coast, Bering Sea, Chukchi Sea, Palmyra & Kingman, Jarvis	488
2	E Coast, W Coast, Bering Sea, Chukchi Sea, Commonwealth of N Mariana Islands	534
3	Gulf of Mexico, Gulf of Alaska, Howland & Baker	328
4	Gulf of Mexico, Gulf of Alaska, Johnston	322
5	Caribbean, ETP, American Samoa, Wake	443
6	Caribbean, Hawaiian Archipelago	306

# Strategies

~~Complain~~

## Help ourselves

- Speak with a unified voice
- Grow existing and develop new partnerships
- Aggressively pursue existing funding initiatives and develop new ones



## Embrace change

- Evolve with agency needs
- Expand into high-need areas
- Develop new ways of getting into the field/sampling our animals & ecosystems



# Strengths

## 1. Our people

- Dedication
- Passion
- Self-motivation
- World-class expertise
- Productive
- Collaborative
- Innovative
- Proactive
- Connected

Our Leadership



## 2. Our time series (incl. collections)

**Marine Mammal Genetics Group**  
 Brittany L. Harwood, M.S. Laboratory scientist assisting with various marine mammal genetic projects using extensive experience in genetics and genomic laboratory methodology.

**Marine Turtle Genetics Group**  
 Dr. Peter H. Dutton Program Leader - research in conservation genetics, ecology and conservation biology of marine turtles.

**Marine Mammal Life History Program**  
 Wayne Parysman, M.S. Program Leader - aerial photogrammetry and environmental factors.

**U.S. EEZ Mammals & Acoustics Program**  
 Dr. Jeff Moore Program Leader - population dynamics, risk assessment modeling, and analysis of survey data to estimate population abundance and trends.

**Marine Mammal Spatial Habitat and Risk Program**  
 Dr. Jessica Reithen Program Leader using an ecosystem approach to address landscape management and conservation questions.

**Science Implementation, Planning, and Policy Program**  
 Dr. Charles Brad Spacie Ecologist of cetaceans and other vertebrates as a member of the U.S. Exchange Program.

**Eastern Tropical Pacific Cetacean Assessment Program**  
 Dr. Tim Gerrodette Program Leader - abundance and trend assessment using ship-based line-transect methods.

**Marine Turtle Ecology and Assessment Program**  
 Dr. Jeffrey Benowitz Program Leader - stable isotope analysis, biometrics, aerial surveys, science outreach.

# Priorities for Marine Mammal Science



Southwest Fisheries Science Center  
NMFS, NOAA

Meeting with the U.S. M

2

## Top Five Marine Mammal Science Priorities - SWFSC

1. Respond to urgent management needs
2. Identify and mitigate threats
3. Develop tools (analytical & sampling)
4. Understand marine mammals as parts of their ecosystems
5. Maintain time series

Immediate/  
Reactive



Long-term/  
Proactive

# Embracing change: how do we stay relevant and successful?



- Emerging Issues – How do we best place ourselves to address them?
  - Careful selection of scientists with complementary expertise
  - Periodic opportunities to conduct question-based research
  - Maintain time series

Secure the potential to address the unexpected

# Epilogue: MMTD's 2009 science review\*

## Recommendations

- Maintain capacity & expertise in complementary disciplines
- Maintain time series
- Maintain focus on collaboration, capacity building, education
- Recognize importance of research in international waters

REVIEW OF MARINE MAMMAL AND TURTLE RESEARCH PROGRAMS -- FINAL AGENDA --	
Southwest Fisheries Science Center NOAA Fisheries June 2-4, 2009	
TUESDAY, 2 JUNE	
9:00 - Welcome and Introduction - Dr. Norm Bartoo	
9:15 - Overview of Marine Mammal and Turtle Research Programs - Dr. Lisa T. Ballance	
9:45 - Marine Mammal and Turtle Mandates 101 - Jeremy Rusin	
10:15 - Abundance Estimation, Assessment, and Reducing Bycatch	
• Marine Mammals	
◦ U.S. EEZ	▪ Dr. Jay Barlow ▪ Wayne Perryman
◦ Transboundary	▪ Dr. Tim Gerrodette ▪ Dr. Jay Barlow
LUNCH	

### Reviewers:

Dr. Frank Stone, Office of the Chief of Naval Operations, U.S. Navy  
Dr. Jim Harvey, Professor, Moss Landing Marine Laboratories  
Jim Lecky, Director, Office of Protected Resources, NOAA Fisheries  
Vicki Cornish, Vice President, Marine Wildlife Conservation, The Ocean Conservancy  
Dr. Tim Ragen, Executive Director, U.S. Marine Mammal Commission

- Agency-wide discussion on better integration of regional capacity to provide more efficient national capacity (incl. Centers of Excellence)

\*Background Materials

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

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