Cetacean Research Program
Summary & Challenges

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The CRP in a Nut-Shell

• The CRP is a young Program that has expanded its mission and focus dramatically in the last 5 years
• The CRP exists as a collaboration between Federal scientists, the Cooperative Institutes, contractors, and other internal and external partners
• The CRP is still evolving - how do we deal with assessment challenges, conservation crises, and long-term needs
# Primary Goals of the Cetacean Research Program

| Assess the status of cetacean populations within the U.S. waters of the Pacific Islands Region  
  Occurrence / Geographic range  
  Stock structure  
  Population size, trends, and productivity |
| Understand impacts of human-caused and natural threats to cetacean populations  
  Fisheries  
  Anthropogenic sound  
  Environmental change |
| Provide science support for management teams & products  
  Take-Reduction Teams  
  ESA Status Reviews, Critical habitat evaluation, recovery science  
  Biological Opinions |
Program Research Priorities

1. Conduct stock assessments in Pacific Islands Region EEZs
   - Large-scale assessments prioritized based on known impacts, time since last survey, ship-time allocation (both regional & available days), and funding
   - Local or smaller-scale surveys fill some gaps
   - Passive acoustic monitoring research and development augments standard assessment approaches

2. Understand stock structure using all available data and techniques

3. Characterize cetacean-fishery interactions, and conduct research to reduce or mitigate fishery impacts

4. Characterize and understanding other sources of human-caused mortality & impacts of environmental change
The task exceeds our capability & resources, so how do we proceed?

1. Keep going...
   - As funds allow, we will keep chipping away
   - Work with partners to conduct research for which we don’t have expertise or capability
   - Focus on regions of greatest need

2. Modify our strategy and expand our toolset...
   - Develop alternative survey designs & analysis approaches
   - Acoustic monitoring for occurrence
   - Accept that some EEZs are low priority for assessment
Do current and planned activities fulfill mandates and requirements under the ESA and MMPA?

<table>
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<th>Successes</th>
<th>Challenges</th>
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<td>- Stock Assessment research is primary Program focus</td>
<td>- Conducting assessment surveys in all EEZs is resource prohibitive</td>
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<td>- Active contribution to MMPA Take-Reduction science needs, ESA Status Reviews</td>
<td>- Small island-associated populations versus transboundary / migratory populations</td>
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<td>- Significant attention to Hawaiian false killer whale stock designation, abundance, habitat</td>
<td>- Science by crisis: so much effort on FKWs means many other stocks are inadequately assessed</td>
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Are current research & conservation collaborations effective? What other opportunities should be pursued?

**Successes**

- Diverse group of partners bring capability & opportunity
- Advances in acoustic technology & assessment capabilities largely possible through partnerships
- External funding & strong partnerships in the territories make assessment research there possible

**Challenges/New directions**

- Collaboration with local-scale fisheries is needed to understand potential impacts on cetaceans & how to mitigate those impacts
- Academic and non-PR science missions could be leveraged (i.e. coral reef research, Okeanos, ...)

Are the scientific objectives adequate to meet the long-term & short-term goals?

**Successes**
- Up-to-date with Hawaii EEZ assessments. On track to draft SARs for some Marianas cetaceans
- Focus on accurate stock delineation to prevent localized depletion
- Investing in new techniques and technologies to augment or replace standard approaches

**Challenges**
- Standard approaches to assessment are inadequate in many PIR EEZs
- Still working on a baseline
- Partnerships are key, but only succeed with continued support
- Many “threats” are still undefined or not well characterized
Are studies being conducted properly (survey design, statistical rigor, standardization, integrity, peer review, transparency, confidentiality, etc.)?

**Successes**
- Using standardized techniques where appropriate
- Developing new approaches where our situation requires
- Collaborate to bring in expertise where needed

**Challenges**
- Standard survey approaches often don’t yield enough data to apply standard analytical tools
- Reliance on outside experts may not yield the products we need
- Quantitative needs far outpace current capability
Are advances in protected species science and methodological approaches being incorporated into PIFSC research? Is PIFSC active in advancing protected species science? Are these advances communicated and applied in NMFS broadly?

**Successes**

- Using broad array of new techniques in stock assessment
  - Satellite tagging, passive acoustics, habitat modeling
- Develop data collection & analysis approaches for complex social species
  - Sub-group behavior in false killer whales
- Disseminate findings through variety of forums
- Broad partnerships within NMFS to develop and share new approaches to:
  - Acoustic technology & techniques
  - Acoustic assessment
  - Stock delineation
Greatest Challenges for CRP

- Limited quantitative expertise given need to develop new survey designs, statistical approaches, address fisheries-interaction issues, and meet current needs
- Contracting staff creates instability. Relying on external funds creates opportunity, but also instability.
- The bulk of our acoustic effort is based on temporary or external funds, though it is now a core part of our operations
- Robust alternatives to ship-based assessment surveys
  - Requires funds and ship-time to test and compare techniques
- Improvements to data management infrastructure
  - >100TB of acoustic and photo data cannot be sustained on individual hard drives
  - Data management is not centralized; meeting requirements is very difficult
Most Significant Data Gaps

Assessment:

• Species occurrence, structure, and abundance in PIR EEZs other than Hawaii
• Life history and demography for all species
• Factors influencing stock distribution

Population threats:

• Impact of nearshore fisheries on insular stocks
• Extent and magnitude of other potential threats (disease, contaminants, noise, ...)
Where (we hope) we’re going...

• New Federal acoustician will solidify our commitment to passive acoustics to augment assessments

• New Logistics Lead will ease burden on existing Program staff from cruise & survey preparation to focus on survey design and assessment challenges

• Developing new survey approaches more compatible with the reality of ship time and funding availability