

James Michael Price

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Headquarters

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2.2 FY 2014 Table

Table 2. Headquarters Studies Proposed for the Fiscal Year 2014 NSL

Page 45; MM (Marine Mammals); Tentative Rank 10

Support for the Development of an Improved Biostatistical Method to Analyze and Interpret Observations from Marine Mammal Behavioral Response Studies

BOEM Information Need:

Impact Assessments

seismic; construction; demolition

Rule Making

geographic or seasonal limits

Mitigation

ramp-up; alternative methods



Study Title to be Discussed

BOEM Information Need:

Compliance

MMPA; ESA

Date Information is Required:

Ongoing

(yesterday; today; foreseeable future)

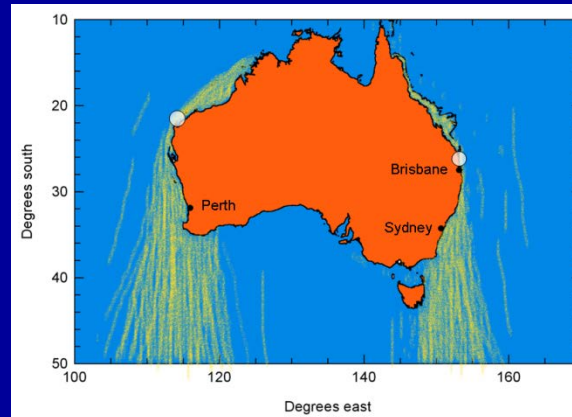


Background:

A) Relationship with Previous Work/Efforts

Since 1998, 15 M\$ Noise Impacts Studies
Alternative Technology Workshop
Sperm Whale Seismic Study (BRS)
Australian Humpback Whale BRS

2011 Field Season



2011 Field Season

Background:

A) Relationship with Previous Work/Efforts

U. S. Navy extensive program

SOCAL (2010-2015) simulated & actual sonar

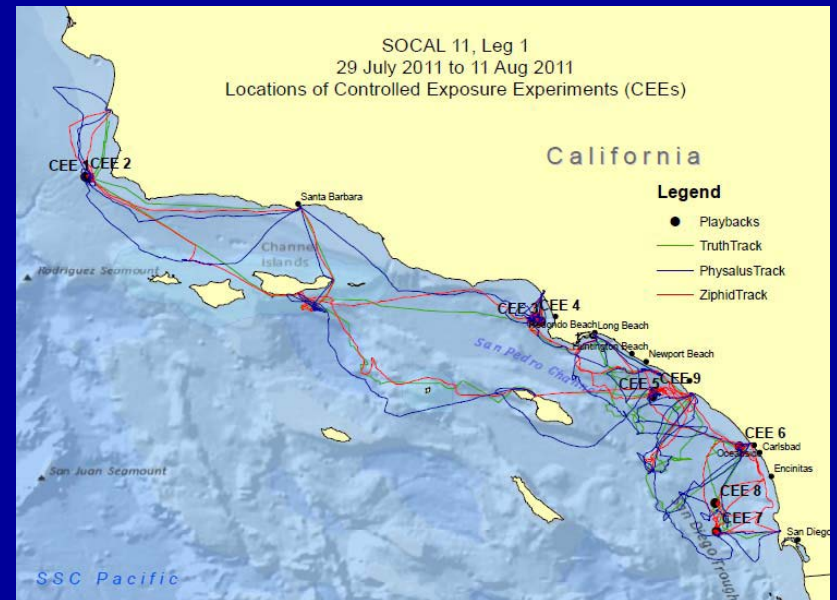
2010 & 11: 100+ tags
46 trials

Blue Whales

Rissos Dolphins

Cuvier's Beaked Wales

Bottlenose Dophlins



Background:

A) Relationship with Previous Work/Efforts

Norwegian and Dutch Military; St. Andrews Univ.;
Woods Hole Oceanographic

Norwegian Behavioural Response Studies of
Cetaceans to Naval Sonar Signals in Norwegian
Waters --- 2006, 2008 (with U.S.N.) and 2011
Humpback and Minke Whales, Bottle Nosed
Dolphins; Killer Whales



Background:

B) Relationship with Concurrent/Future Efforts

MOCHA

Multi-study Ocean acoustics Human
effects Analysis

University of St. Andrews

Centre for Research into Ecological and
Environmental Modelling (CREEM)



Background:

B) Relationship with Concurrent/Future Efforts

ONR-funded

improve methods for combining diverse behavioral measures into a **single response metric**

improve estimates of **dose-response functions** from individual studies through the use of cutting edge (hierarchical Bayesian) statistical techniques

Background:

B) Relationship with Concurrent/Future Efforts

make scientifically valid predictions about **taxa or contexts not yet studied** by combining information across studies in a meta-analysis framework, informed by biological knowledge

conduct **sensitivity analyses** to quantify where future experimental effort will most reduce uncertainty



Study's Objectives:

**Assess Noise Impacts with Greater
Statistical Significance**

**Better Determine the Effectiveness of
Ramp-Up**



Study's Methods:

Contribute East-Coast Australian
Humpback Whale Data to MOCHA

Fund Post-Doc to Assist in the Data
Assimilation and Analysis



Addition *Pertinent* Information

BOEM makes managerial decisions based upon the best-available science.

