

Sonar & Marine Mammals: future focus

Sarah Dolman, WDC

Michael Jasny, NRDC

Sigrid Lüber & Niki Entrup, OceanCare

Sonar Symposium

St Andrews University

27th – 28th October 2015

Sarah.dolman@whales.org



Summary

- US Settlement
- Research funding
- Spatial management
- Existing policy guidance
- Potential subtle injurious effects
- Future focus



US Settlement - background

- Previous cases led to:
 - US navy compliance
 - Increased funding for science
 - Awareness of need for adequate mitigation policy
- NGOs, NOAA, US Navy
 - Sonar and underwater detonations
 - Hawaii and Southern California
 - 2016 to 2018

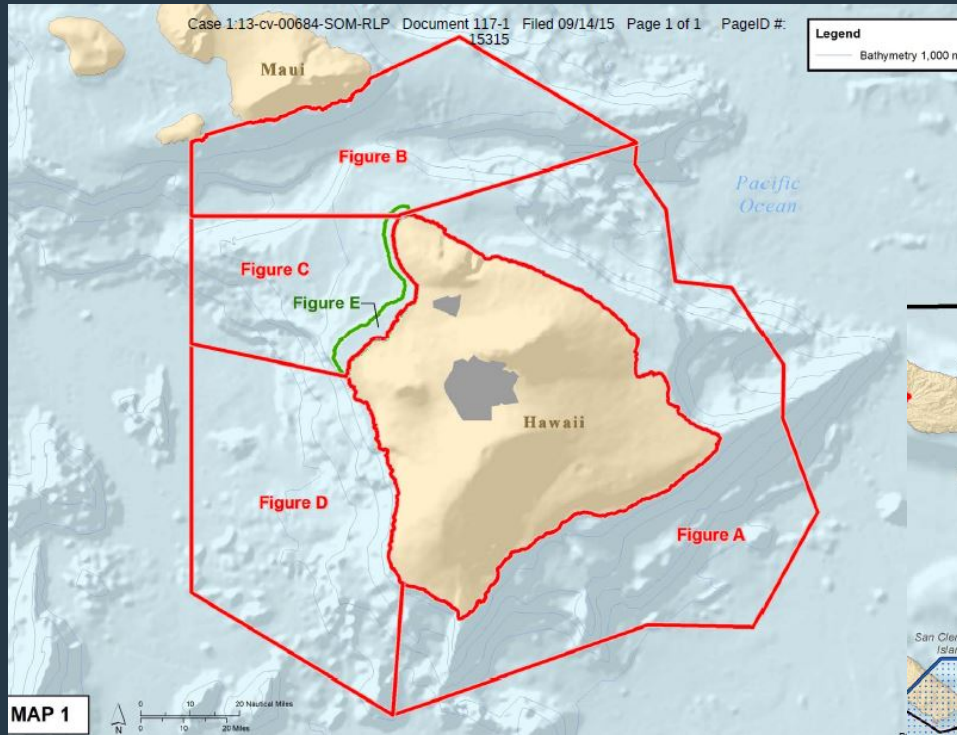


US Settlement - Research Funding

- \$3 M
 - Cuvier's beaked whales off Southern California Range
 - Abundance, site fidelity, age-class distribution
 - Habitat use
 - Foraging ecology
 - Wider passive acoustic monitoring
- Total US Navy funding > \$20 M
- EDA PoMM2 ~ 2.5 M Euro
- European navies spend & collaboration?

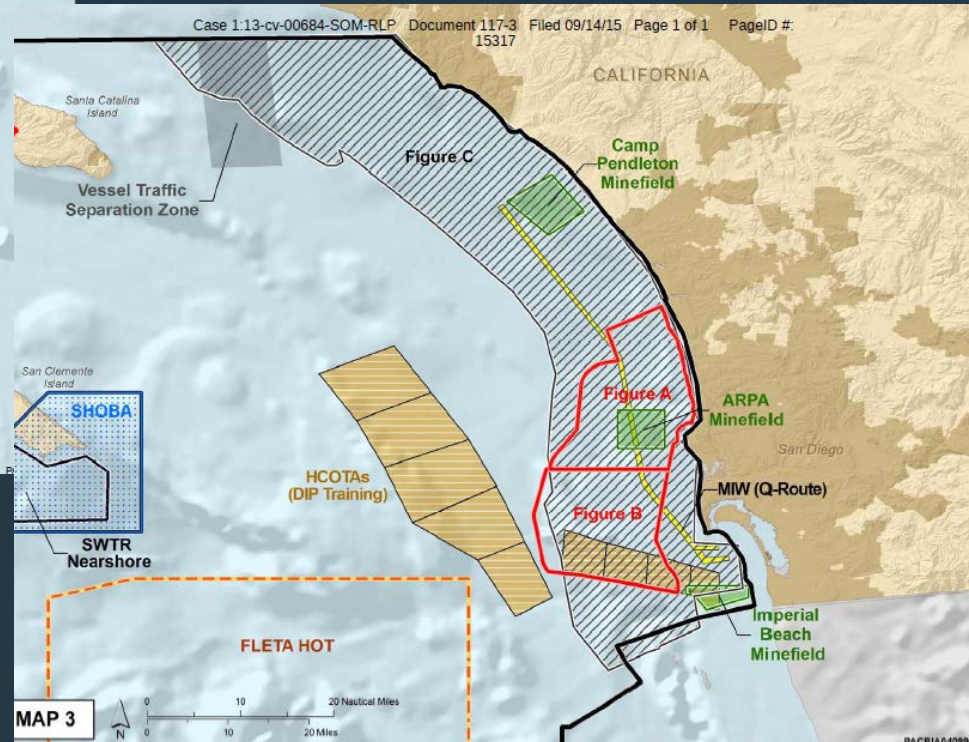


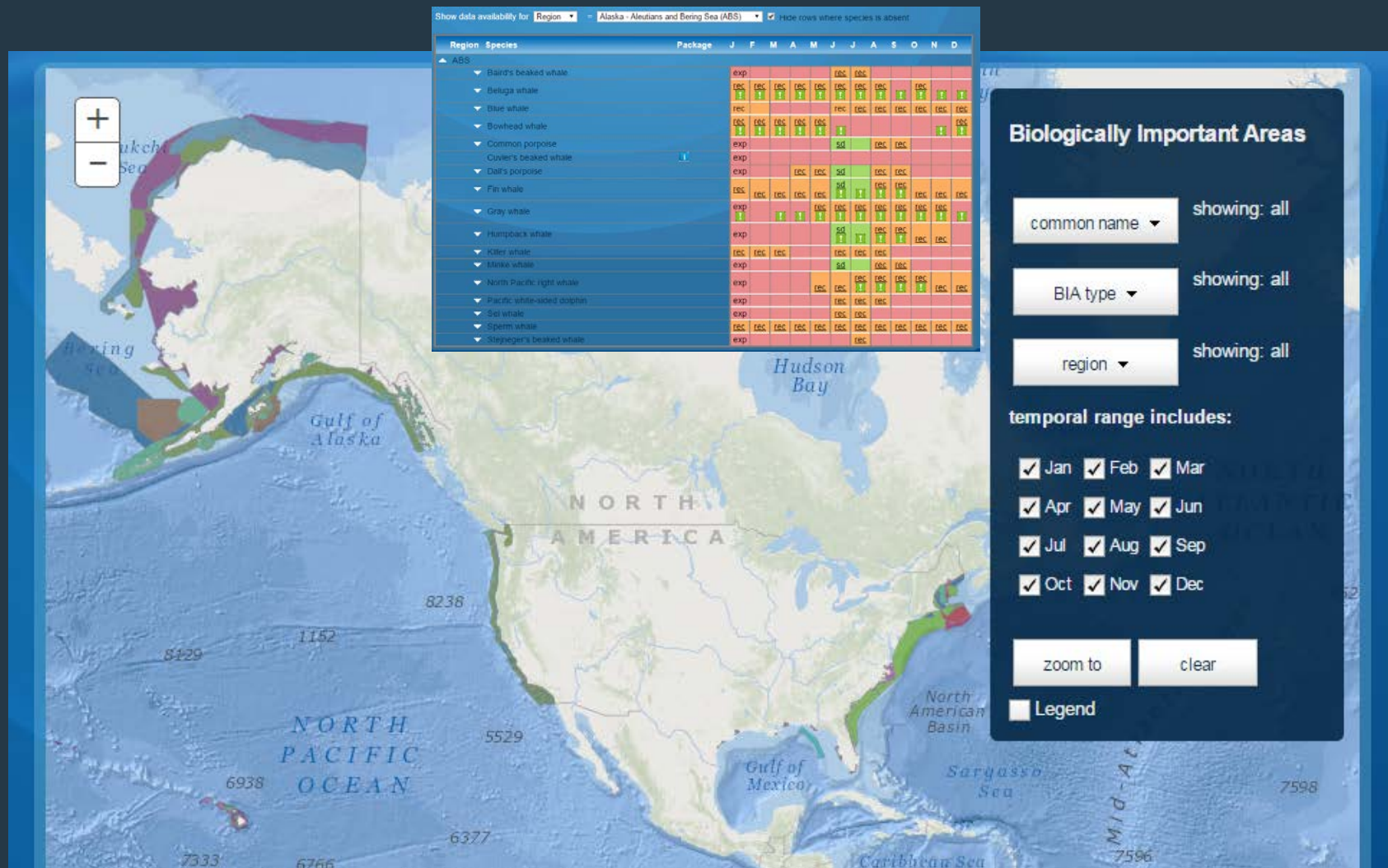
US Settlement - Spatial measures



Big Island, Hawaii

California





European spatial measures



“NURC’s precautionary policy .. to reduce the temporal and spatial interactions of sounds and beaked whales”



**Protection of Marine Mammals (PoMM)
European Defence Agency (EDA)**



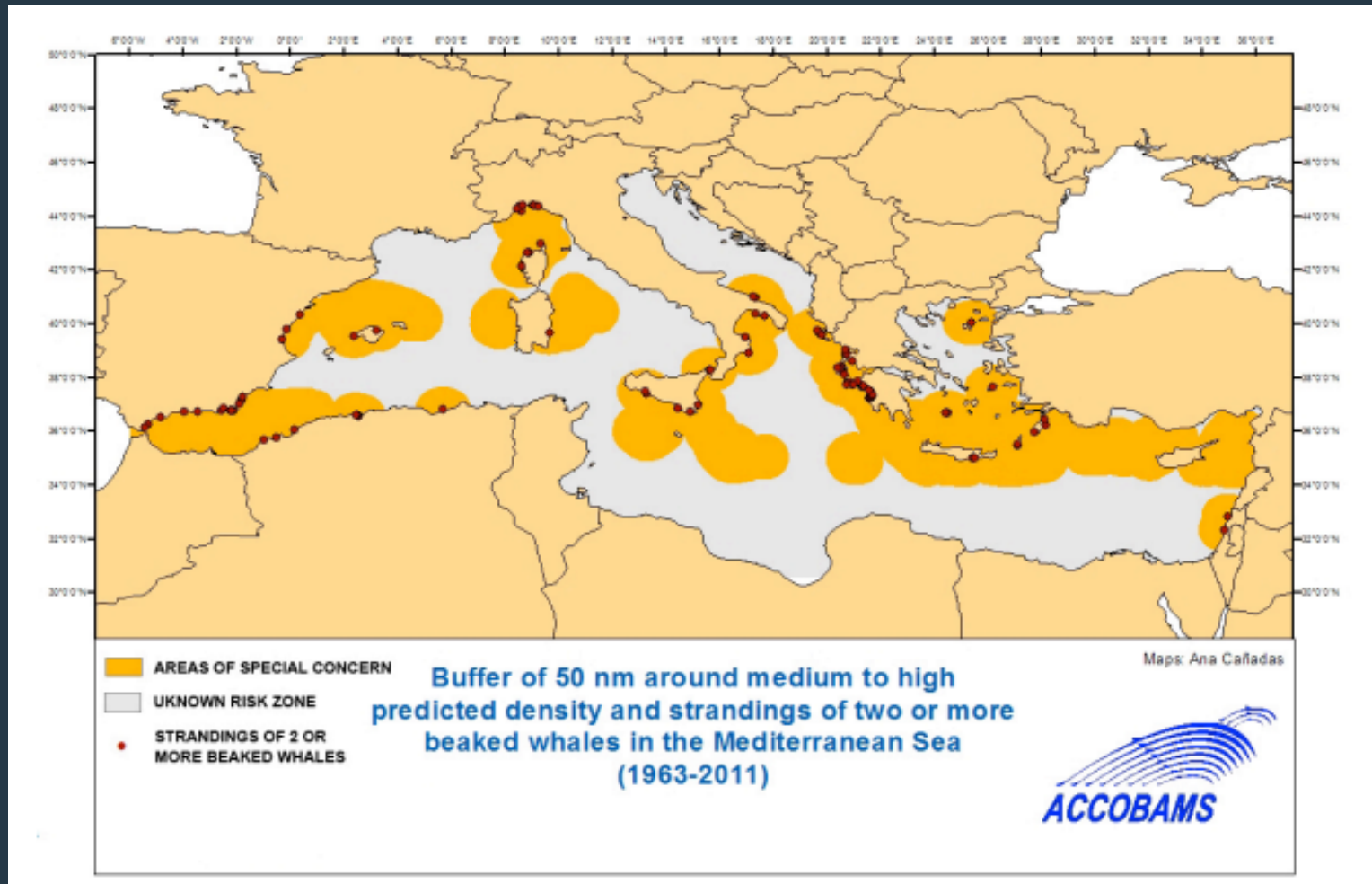
Michaela Knoll, René Dekeling, Mirko Stifani, Petter Kvadsheim, Kate Liddell, Stig-Lennart Gunnarsson, Torbjörn Johansson, Giliam Fevan, Nina Nordhus, Frank Benders, Timo van der Zwan, Stefan Ludwig, Dirk Lorenzen, Roman Kozmeyer, Ivor Nissen

Objective

The EDA project PoMM started in August 2010 and will run for 3 years. It aims to protect marine mammals against the impact of active sonar and maintain the ability to operate active sonar at the same time. In work package 1 (WP 1) a comprehensive marine mammal database, being essential for risk mitigation tools, will be established. In WP2 special investigations on marine mammal acoustics will be carried out.



ACCOBAMS Areas of Special Concern for Beaked Whales



Recommendation on the conservation of Cuvier's Beaked Whales in the Mediterranean: "Areas of Special Concern for Beaked Whales" (ASC-BW) and mitigation protocols for anthropogenic activities using intense underwater sound sources:

<http://www.disciara.org/documents/Recommendation%2020130430.pdf>

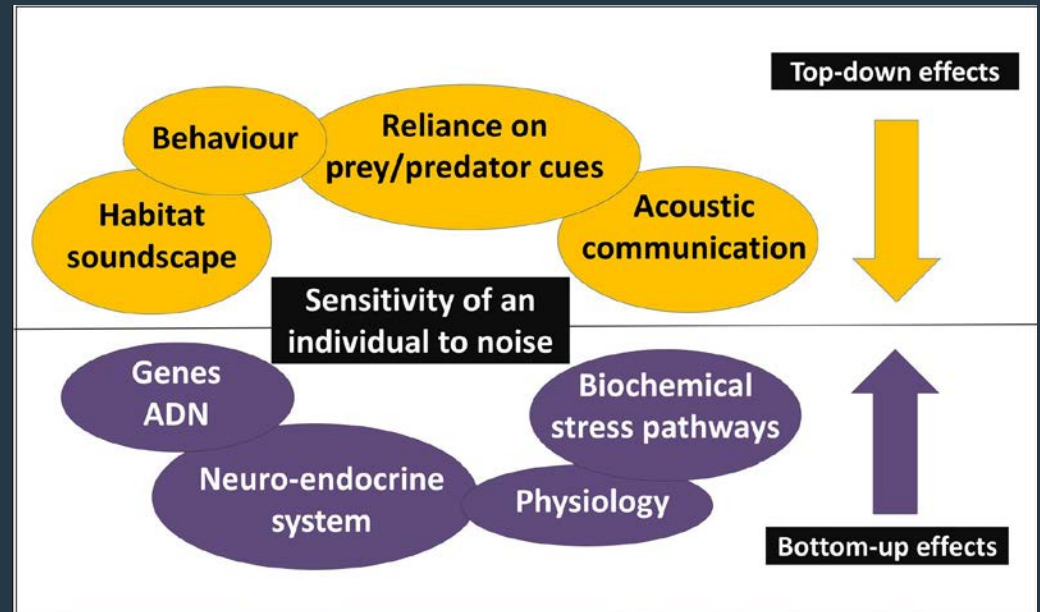
Existing policy guidance

- US Noise Strategy
- NURC MMRM R&P
- EDA PoMM
- EU MSFD indicators
- National guidance
 - All necessary, but piecemeal
 - Do they go far enough?



“Potential injurious effects that are subtle, hard to measure and hence overlooked”

“..marine mammals may .. suffer from noise-induced neurological disorders that go undetected, but which are potentially more problematic than TTS. This possibility sheds .. doubt on the idea that PTS is an appropriate general threshold for concern about physiological effects ..” (Tougaard et al., 2015)



(Aguilar de Soto., in press)

Tougaard J, Wright AJ, Madsen PT. 2015. Cetacean noise criteria revisited in the light of proposed exposure limits for harbour porpoises. MPB, 90, 196-208.

Aguilar de Soto. In press. Physiological effects of noise on aquatic animals. Chapter 9 in: *Stressors in the Marine Environment*. Oxford UP.

Some policy requirements

Absence of detectable reaction \neq absence of impact

Protecting Europe's nature: more ambition needed to halt biodiversity loss by 2020 (EC, Oct 2015)

- Aim to reduce impacts towards zero
- Regulation for both disturbance & injury; risk of severe acute impacts
- Cumulative impacts of repeated exposure & other sectors (Judd et al 2015)
- Measure effectiveness of management
- Existing laws



Future Focus: Navies & Governments

1. **Funding for surveillance** - real-time, baseline, post mortem, long term fitness consequences
2. **Areas of exclusion & restriction** in important habitats
3. **Clear policy guidance** – wide and immediate application of adequate management



In conclusion

Specifically, European Navies should:

- Undertake SEAs/EIAs, inc. for future sonars
- Continue & increase coordination with MSFD indicator guidance and monitoring

European Commission should:

- Establish a noise impact descriptor



Thanks to conference organisers &
thank you!



Photo credits: Nicola Hodgins/WDC, Vidal Martin/Guayarina Brito, Karin Hartman/Nova
Atlantis Foundation, Sara Rodriguez