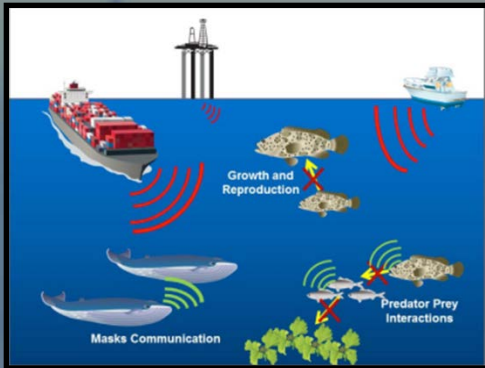


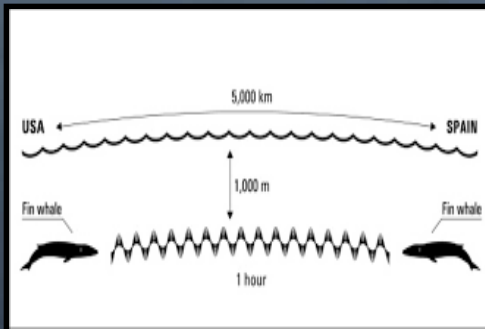
Mitigation and Monitoring of Underwater Noise



Noise Overview



- Sound is a primary means of communication, foraging, navigating and predator avoidance for marine mammals and other marine species
- Various cetacean species have been shown to alter vocalization frequencies or their behavior in the presence of ship noise and other anthropogenic activities



- Consequences/cost of noise exposure (behavioral, hearing damage, systemic or reproductive impacts) are unknown – especially on the population level
- Cumulative impacts remain a concern



Harassment from Sound Exposure Marine Mammal Protection Action (MMPA) Definitions

Level A Harassment

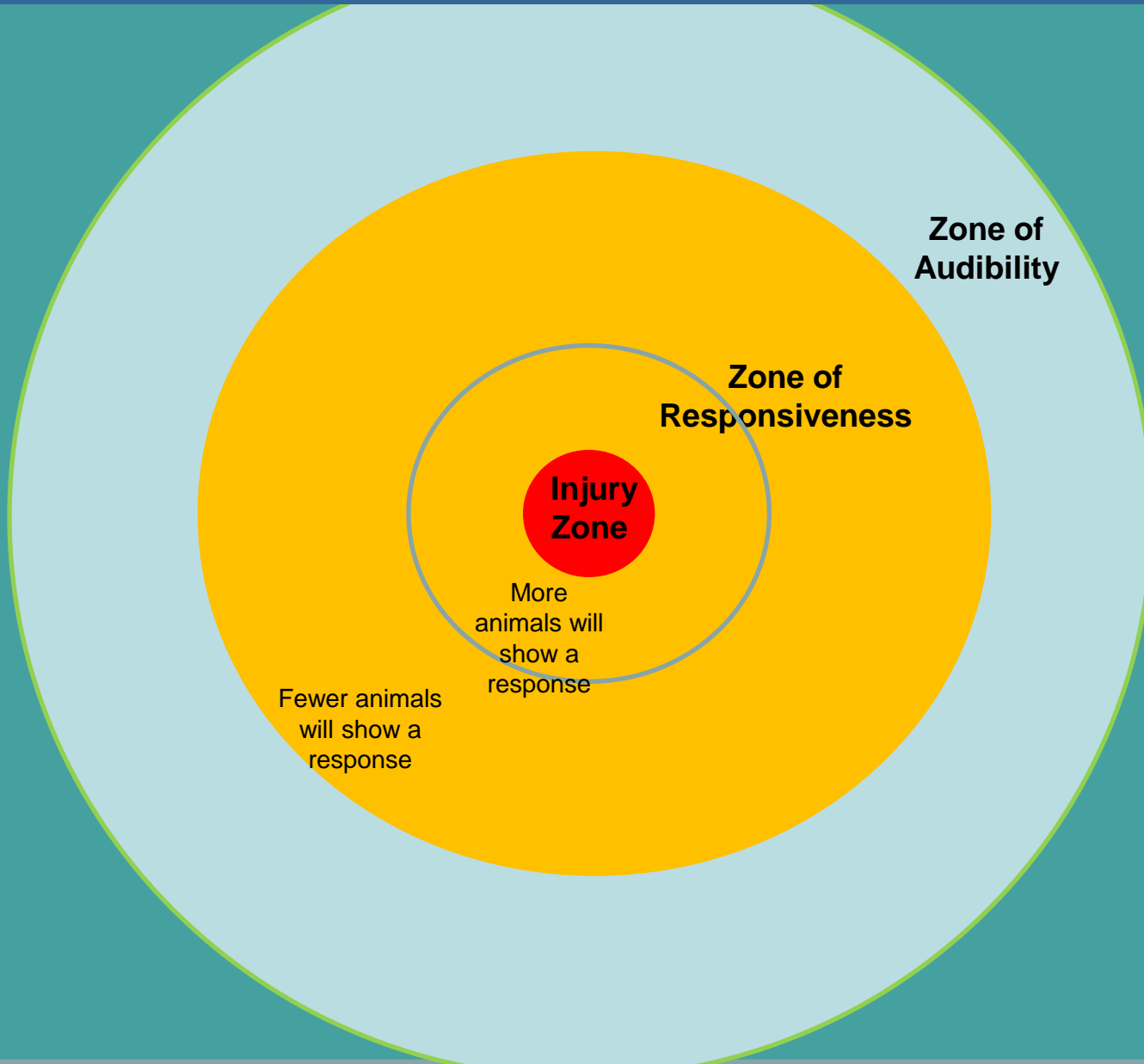
- has the potential to injure a marine mammal or marine mammal stock in the wild (ear injury)
- current focus of mitigation measures

Level B Harassment

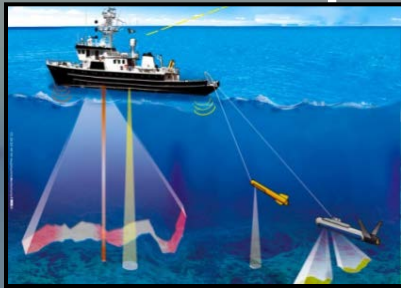
- has the potential to disturb a marine mammal by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild



Zones of Influence for Sound Based on Current Guidance



Noise-producing activities associated with the development of offshore wind facilities



HRG



Vessels



Construction: Drilling and Pile Driving



Operation & Maintenance



Mitigation and Monitoring of Underwater Noise OBJECTIVES

- Identify effective and practicable mitigations to minimize or avoid potentially harmful acoustic impacts from noise-producing activities
- Understand how to mitigate and monitor acoustic from both day and night activities
- How to the assess effectiveness of mitigation techniques
- Discuss standard data protocols, management, and data sharing of data

