

# US Navy Marine Species Monitoring Program

Intermediate Scientific Objectives	Which components of the conceptual framework does this question address?
Determine what species and populations of marine mammals and ESA-listed species are present in Navy range complexes, testing ranges, and in specific training and testing areas	Occurrence
Estimate the distribution, abundance, and density of marine mammals and sea turtles in Navy range complexes, testing ranges, and in specific training and testing areas	Occurrence
Determine what species and populations of marine mammals and ESA-listed species are exposed to Navy training and testing activities	Occurrence, Exposure
Establish the baseline habitat uses and movement patterns of marine mammals and sea turtles where Navy training and testing activities occur	Occurrence, Response
Establish the baseline behavioral patterns(foraging, diving, etc.) of marine mammals where Navy training and testing activities occur	Occurrence, Response
Establish the regional baseline vocalization behavior, including seasonality and acoustic characteristics) of marine mammals where Navy training and testing activities occur	Occurrence, Response
Determine what behaviors can most effectively be assessed for potential response to Navy training and testing activities	Response
Application of passive acoustic tools and techniques for detecting, classifying, and tracking marine mammals <sup>1</sup>	Occurrence, Exposure, Response
Application of analytic methods to evaluate exposure and/or behavioral response of marine mammals to Navy training and testing activities <sup>1</sup>	Exposure, Response
Evaluate acoustic exposure levels associated with behavioral responses of marine mammals to support development and refinement of acoustic risk functions	Exposure, Response
Evaluate behavioral responses of marine mammals exposed to Navy training and testing activities to support PCoD development and application	Response, Consequences
Evaluate trends in distribution and abundance for populations of marine mammals and ESA-listed species that are regularly exposed to sonar and underwater explosives	Exposure, Response , Consequences
Leverage existing data with newly developed analysis tools and techniques <sup>1</sup>	Occurrence, Exposure, Response, Consequences

<sup>1</sup> Primary R&D and DemVal investments for tools and techniques supported by ONR Marine Mammal & Biology and Living Marine Resource programs