



## U.S. Navy Marine Species Research and Monitoring

The Navy must maintain operational readiness by conducting training and testing at sea. To ensure the best available science is used in compliance with the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA), the Navy invests in three main programs that range from basic research to monitoring marine species. Coordination across all three programs ensures projects with the highest potential to be beneficial to the Navy receive prioritization for support and funding.

### Office of Naval Research Marine Mammals and Biology (ONR MMB) Program

*Supports basic and early applied research and technology development*

- Mission: Support science-driven research related to understanding the effects of sound on marine mammals, including physiological, behavioral, and ecological effects, as well as population-level effects.
- Focus areas: Monitoring and detection, integrated ecosystem approach, and effects of sound on marine life.
- For more info: <https://www.nre.navy.mil/organization/departments/code-32/division-322/marine-mammals-and-biology>

### Living Marine Resources (LMR) Program

*Demonstrates and validates applied research methods and technologies*

- Mission: Improve the Navy's understanding of how Navy activities may affect marine life, particularly the potential effects from activities that use sonar or explosives.
- Focus areas: Hearing studies, technology development, response studies, data analysis tools and standards.
- For more info: <https://exwc.navfac.navy.mil/lmr>

### Navy Marine Species Monitoring Program

*Implements validated tools and techniques to support Navy environmental compliance*

- Mission: Monitor and assess the effects of Navy training and testing activities on protected marine species in compliance with MMPA/ESA permits and authorizations.
- Focus areas: Species distribution, abundance, habitat use, ecology and behavioral response.
- For more info: <https://www.navymarinespeciesmonitoring.us>

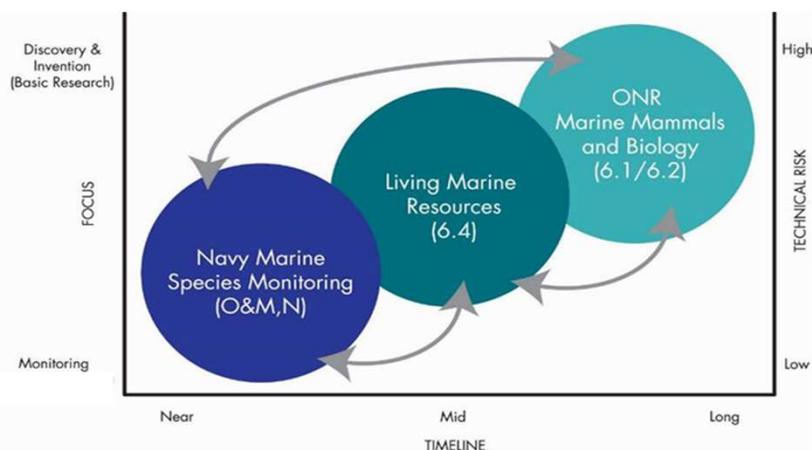


Figure displays the roles and relationships of each of the three Navy funded programs by focus and risk. Funding categories or budget activity codes are in parenthesis, 6.1 is for basic research, 6.2 is for early applied research, 6.4 is for advance component development and prototypes (validation) and O&M,N is for operation and maintenance.

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# Research In Action

## Project Spotlight: Whale Tags

Tags are important tools used to help better understand animal behavior. These small instrument packages are attached to whales and dolphins to track their baseline movements and diving behaviors. Tags are especially useful during sound exposure experiments, enabling the Navy to better understand and assess potential effects of training and testing activities.

**ONR MMB** – Began funding tag research in the 1990s.

**LMR** – Funds demonstration and validation of new tag technologies.

**Navy Marine Species Monitoring Program** – Today, multiple field teams use these tags and provide feedback to ONR MMB and LMR to facilitate continuing improvements in the tag technologies.

From research to field testing to implementation, the coordination among these three programs contributes to advancements in important tools for the Navy's environmental compliance efforts, helping to maintain at-sea training and testing capabilities.



## U.S. Navy Marine Species Research and Monitoring (cont.)

Leaders from ONR MMB, LMR, and the Navy Marine Species Monitoring Program work together to review work accomplished, introduce emerging science, address new issues or areas of concern, and adjust research needs or goals to ensure successful transitions from basic research to the monitoring program. The main goal of all three programs is to support the Navy in collecting data and information necessary to obtain or comply with environmental permits and ensure uninterrupted training and testing.

- The Navy is a world leader in marine mammal science, investing over \$20 million in technology development, research, and monitoring each year.
- Key research goals include understanding the effects of sound on marine mammals, developing new and modifying existing protective measures, and improving tools to model and estimate potential impacts.
- The Navy's research and monitoring efforts contribute not only to the scientific community's understanding of marine mammals, but to sea turtles, fishes, corals, ocean bottoms, and marine habitats as well.

The data obtained from these programs ultimately ensures the Navy is able to meet specific analysis, monitoring, and reporting requirements for military readiness activities in compliance with the ESA and MMPA.