

NIWC Pacific Technology



U.S. Navy Marine Mammal Program

The **Reconnaissance and Interdiction Division** at NIWC Pacific manages the Navy's Marine Mammal Program which trains bottlenose dolphins and California sea lions to detect, locate, mark and recover objects in harbors, coastal areas, and at depth in the open sea.



Caring for and working with the Navy's marine mammals has generated over 1500 scientific publications in the open scientific literature on their health, physiology, sensory systems, and behavior.

Everyone is familiar with security patrol dogs, and how some service dogs use their keen sense of smell to detect explosives on land. Since 1959, the U.S. Navy has trained dolphins and sea lions as teammates for our Sailors and Marines to help guard against similar threats underwater. The Navy's Marine Mammal Program has been headquartered on Point Loma since the 1960's.

What species of marine mammals are used by the Navy?

In the early years of the program, more than a dozen different species of marine mammals, as well as sharks, rays, sea turtles, and marine birds were tested, and their sensory and physical capabilities explored. Today, the Navy relies on two species:

- Bottlenose dolphin (*Tursiops truncatus*)
- California sea lion (*Zalophus californianus*)

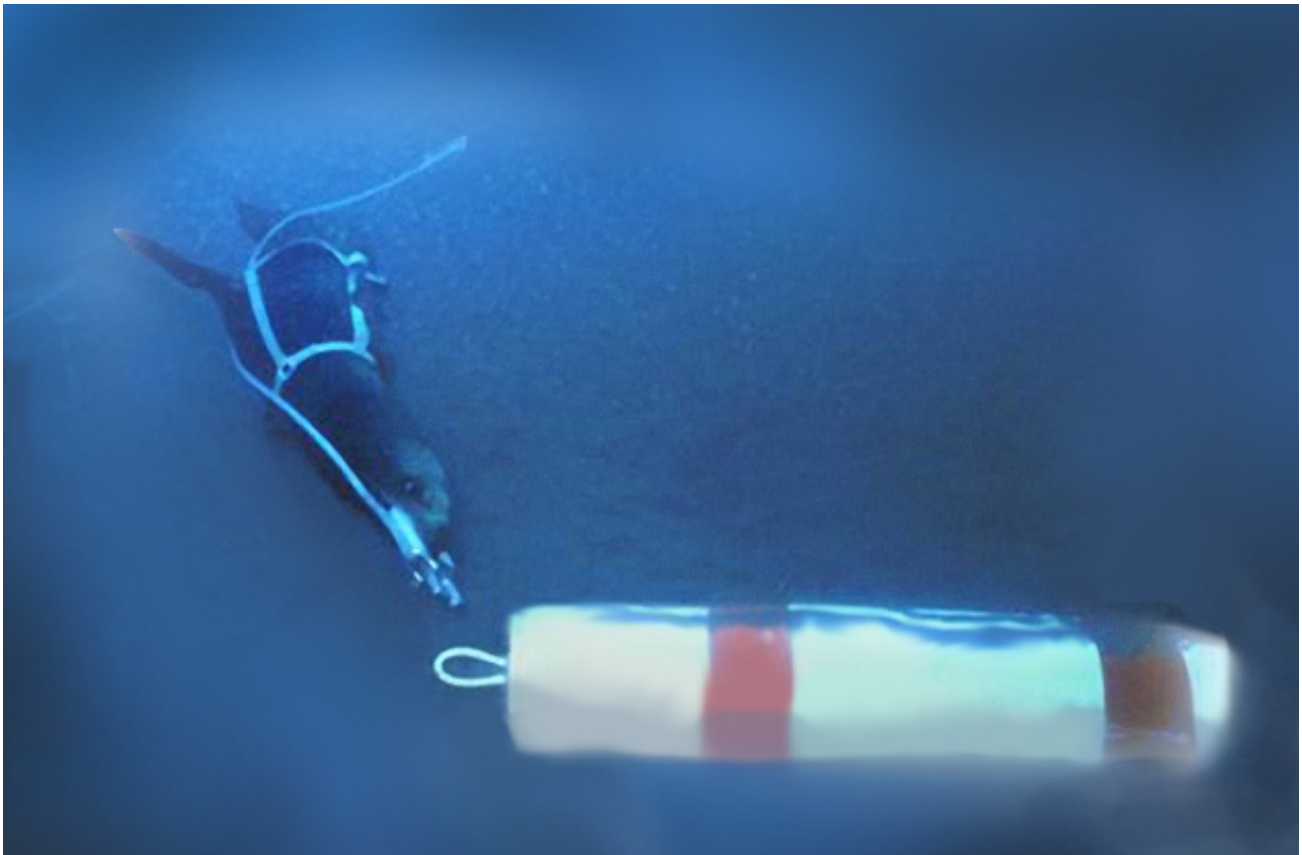
Both are known for their trainability and adaptability to a wide range of marine environments.

Why does the Navy use marine mammals?

Dolphins naturally possess the most sophisticated sonar known to science. Mines and other potentially dangerous objects on the ocean floor that are difficult to detect with electronic sonar, especially in coastal shallows or cluttered harbors, are easily found by the dolphins. Both dolphins and sea lions have excellent low light vision and underwater directional hearing that allow them to detect and track undersea targets, even in dark or murky waters. They can also dive hundreds of feet below the surface, without risk of decompression sickness or "the bends" like human divers. Someday it may be possible to complete these missions with underwater drones, but for now technology is no match for the animals.

What do the animals do?

Recovering objects in harbors, coastal areas, and at depth in the open sea, sea lions locate and attach recovery lines to Navy equipment on the ocean floor. Dolphins are trained to search for and mark the location of undersea mines that could threaten the safety of those on board military or civilian ships. Both dolphins and sea lions also assist security personnel in detecting and apprehending unauthorized swimmers and divers that might attempt to harm the Navy's people, vessels, or harbor facilities.



Sea lions locate and attach recovery lines to Navy equipment on the ocean floor.

How do the animals travel to remote work sites?

Over short distances, they are trained to either swim alongside a small boat or ride in the boat itself. For longer trips, animals can be transported by sea on naval vessels or by air in planes or helicopters.

Sea lions ride in specially designed kennels and are kept cool, wet, and comfortable. Dolphins are placed in fleece-lined stretchers that are suspended in fiberglass containers filled with enough water to comfortably support their weight. A veterinarian oversees the comfort and care of all the animals while each is constantly monitored by an experienced trainer.

Have the Navy's animals been used to help in other ways?

Yes. Caring for and working with the Navy's marine mammals has generated over 1500 scientific publications in the open scientific literature on their health, physiology, sensory systems, and behavior. Teaming with trained animals in the open sea has allowed Navy and visiting scientists to learn many things about marine mammals that we would not know otherwise.

See <http://www.nmmf.org/research-database.html>

(<https://web.archive.org/web/20201113204712/http://www.nmmf.org/research-database.html>). Select "Annotated Bibliography", then search on "Facility" by entering "Navy."

Why have there been so many rumors about the program?

Several decades of classification of the program's true missions led to media speculation and animal activist charges of dolphins used as offensive weapons—claims that could not be countered due to that classification. A popular movie in 1973 ("The Day of the Dolphin") reinforced those ideas. Since declassification of the program in the early 1990s, the Navy has repeatedly and openly shared the story of its marine mammals and their missions in the media, but rumors are not easily forgotten, and there are those few who continue to actively promote them.

Walking tours of the facility, guided by the program's student volunteers, for personnel with base access can be scheduled by emailing the Biosciences Division at spawar_info@navy.mil (https://web.archive.org/web/20201113204712/mailto:spawar_info@navy.mil).

Questions? Please contact the SSC Pacific Public Affairs Office at **(619) 553-2717**.



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REQUEST MAMMAL RECOVERY SERVICES

The MK 5 QuickFind Marine Mammal System provides highly effective, rapid recovery of submerged objects from the sea floor.

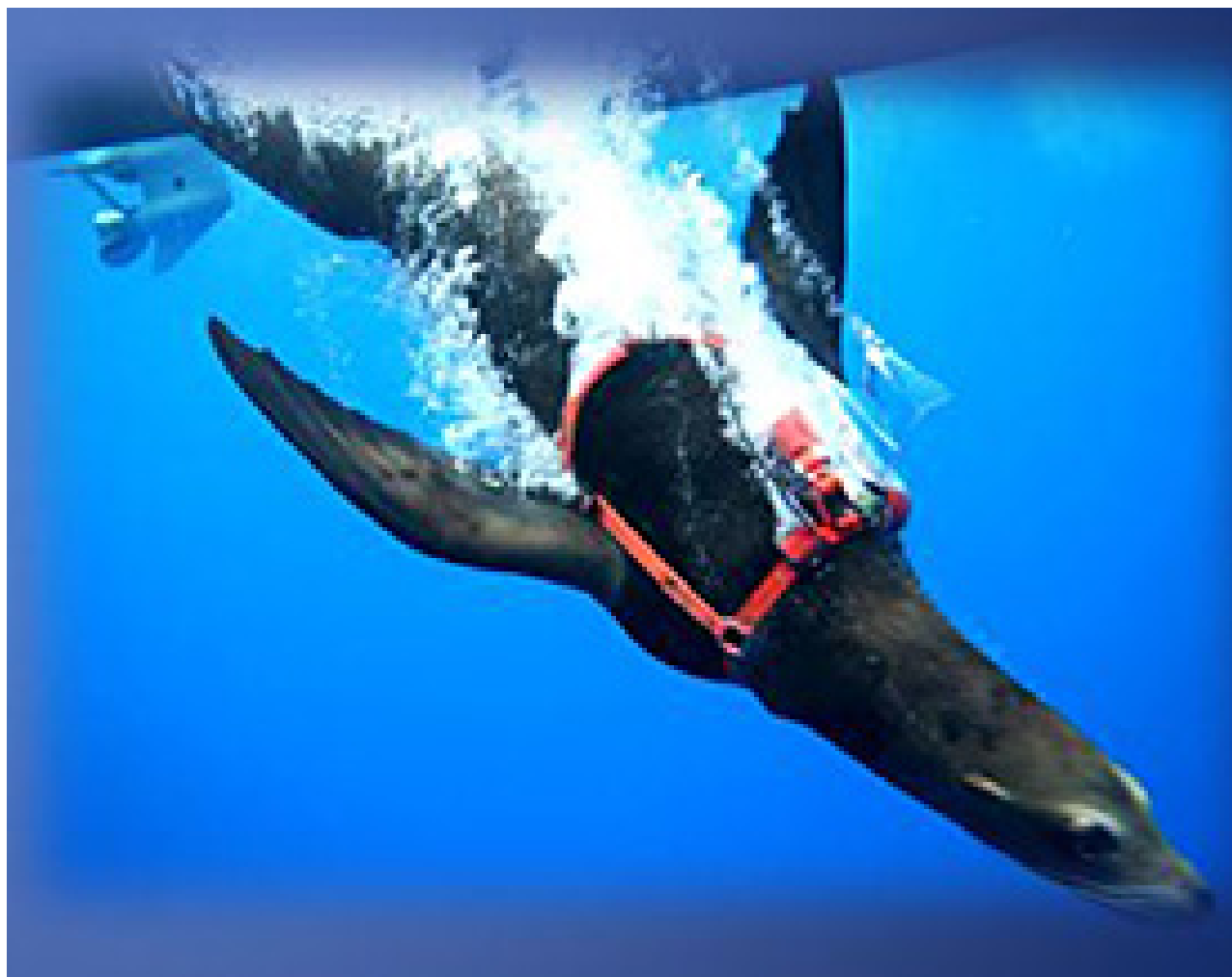
Cost analyses have consistently shown the MK5 QuickFind program is much less expensive to employ than either remotely operated vehicles or human divers for depths from 100 - 1000 feet.

The primary mission of MK 5 is support of the Navy's mine warfare community, however, the use of MK5 is not limited to recovery of Navy assets.

The system is available for tasking by:

- Any branch of the armed forces or DOD RDT&E labs
- Other federal, state, and local agencies
- Private parties with an approved support agreement

In most cases the cost of employing MK 5 services is limited to travel-related expenses.





Dolphins naturally possess the most sophisticated sonar known to science.

Releasing a floating strobe light to mark the location of a diver.



Jaw phone (soft rubber suction cup) for echolocation.



Dolphins can be transported by sea on naval vessels or by air in planes or helicopters.



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Official Website of the United States Navy (<https://web.archive.org/web/20201113204712/https://www.navy.mil/>).

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