

# Study shows whales dive deeper and longer when exposed to human produced sonar

August 30 2017, by Bob Yirka

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A combined team of researchers from Marine Ecology and Telemetry Research and the U.S. Navy's Naval Undersea Warfare Center Division has found evidence of whales diving deeper and longer than normal

when exposed to sonar from submarines and helicopters. In their paper published in the journal *Royal Society Open Science*, the group describes their study, which included tagging whales and monitoring their behavior when exposed to artificial sonar signals.

In recent years, some groups have suggested that an apparent increase in the numbers of [whales](#) beaching themselves is due to exposure to mid-frequency active sonar (MFAS), but it has remained unclear how such an association could result in whales beaching themselves. More recently, researchers found that many whales stranded on beaches had gas bubble-associated lesions and fat emboli that were similar in nature to those seen in human divers that submerge too long or surface too rapidly. This led the researchers to consider the possibility that the whales have been beaching themselves due to decompression sickness, aka "the bends."

To find out if this might be the case, the researchers affixed tracking devices to 16 Cuvier's [beaked whales](#) and monitored their movements for approximately 88 days in a location off the coast of Los Angeles associated with MFAS interference (from U.S. Navy submarines and helicopters) regarding whales. At the same time, the group also monitored and tracked all MFAS emissions from all U.S. Navy ships and submarines in the same area.

The researchers report that the whales clearly reacted to the MFAS by diving deeper and staying down longer than they normally would—one whale dived for almost an hour longer than has ever been observed by any mammal. Proximity to MFAS also led to longer times between dives, which, the researchers noted, could adversely impact foraging. They also note that such behavioral changes were more defined the closer the whales were to MFAS sources. Interestingly, they also found that the whales appeared to react more strongly to weaker signals from helicopters than from submarines—which, they note, might be due to the more sudden onset of the signals.

Prior to the study of whale beaching, it was not known that whales could suffer from decompression sickness, but data from this new study suggests that not only is it possible, it happens because the whales are trying to escape MFAS noise.

**More information:** "Diving behaviour of Cuvier's beaked whales exposed to two types of military sonar," *Royal Society Open Science* (2017). [DOI: 10.1098/rsos.170629](https://doi.org/10.1098/rsos.170629)

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