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## **Introduction**

Simply put, sonar is the use of an echo. This involves the use of sound navigation and ranging techniques for the propagation of sound underwater, with the overall intention of navigating, communicating or detecting objects that are in or on water surface. Specialized machines and sea creatures such as whales have the ability to use reflect waves for sensing shape and movement of objects and for locating these distant objects. Because there are different ranges of frequencies for sonar, there are low-frequency, mid-frequency and high-frequency sonar. Like any other use of technology or technological enhancement, sonar testing has its advantages and drawbacks as shall be seen in the ensuing discussion.

## **Thesis statement**

The use of navy sonar testing is very sacrosanct because of the gains accrued from it, despite the staggering pitfalls that accompany it; and thereby necessitating the need to improve its use instead of shelving it completely.

Brosnan posits that the idea that the use of navy sonar testing has been and can be lethal is a matter that is beyond gainsay. At the heart of the matter is that whales and a large part of marine life depend on hearing to actualize basic functions such as communication, orientation, finding food, making friends, meeting mates and sea exploration. He points out that whales and other marine life use low-frequency sonar. In the event that higher frequencies of sonar are introduced, all the immediately aforementioned functions are interfered with. The import of this is that higher sonar

frequencies are inevitably bound to interfere with basic functions such as feeding and mating. Feeding and mating are two basic functions of organic life forms and in the event that they are interfered with, death and extinction automatically follow (Brosnan, 1).

Brosnan contends that it is also true that an active sonar system produces very intense sound waves which have the potency to travel through the ocean like floodlight and thereby unveiling the objects in its path. The gravity of the matter is underscored by the fact that some sonar systems operate at decibels as high as 235. According to him, this amount of sound frequency can travel across hundreds of ocean miles. For instance, noise from the navy's main low frequency sonar sound system was felt across the northern Pacific Ocean during tests that were carried off the coast of California.

Moreover, these sonic waves have the capacity to retain decibels as high as 140. This sound intensity is one hundred times more powerful than the amount that is known to alter or interfere with whales' behavior (Brosnan, 1).

Presently, the navy's widest used solar system runs in mid frequency range. The credibility of this standpoint was brought to the fore in 2000 when four different species of whales beached themselves along the shores of Bahamas. This incident was followed by a notable disappearance of Cuvier's beaked whales. Marine researchers concluded that the Cuvier's beaked whales had either died in the sea or abandoned their habitat. Similar mass beaching and deaths at the sea shore were also noted in Greece, Madeira, the Canary Islands and the United States- particularly in the Virgin Islands and Hawaii.

During the aforementioned instances of higher sonar frequencies, marine life and beach whales have sustained extensive physical trauma. This physical trauma has included bleeding in the ears, brain and oral tissues. Foley elaborates that whales and marine life have also sustained bubbles in their internal and external organs. To divulge on the severity of these forms of physical trauma, scientists such as Foley point out that the symptoms are tantamount to illnesses that kill scuba divers when they surface fast from deep water. Foley divulges that mid frequency sonar blast has the power (and it does) to significantly modify the diving patterns of whales. These newly acquired diving patterns are diabolical in the sense that the body of the whales or marine life cannot handle them. Resultantly, they subject whales and marine life to fatal injuries (Foley, 1).

Ocean Blog points out that the beaching whales are not the ultimate manifestation of the adversity of higher sonar frequency. On the contrary, beaching whales are but the most visible signs of the problems that affect the much larger community of marine life. According to the Ocean Blog, apart from the previously mentioned disrupted feeding, communication, socialization and mating habits, naval sonar has consistently shown its ability to alter the behavior of whales and marine life by making the same amenable to panic and needless flight. Scientists point out that the cumulative effects of naval sonar have not yet been known but that they could be staggering (Ocean Blog, 1).

At the moment, the navy has made estimates that are not any comforting. Recently, the navy said that its heightened extents of sonar training was inevitably going to extensively harm marine life, more than 10 million times

than it did between 2000 and 2003. These significant damages and injuries are bound to be realized in the next five years. The US coasts (Virgin Islands and Hawaii) are said to be the greatest potential casualty in this unfortunate prognosis (Evans, 1).

The information that has been provided above cannot be disputed, since the drawbacks of naval sonar testing are readily palpable. However, the need for naval sonar testing cannot also be discounted. Naval sonar testing is indispensable for marine and submarine warfare. The same is also of critical importance in guarding the US shores and seas. To argue in favor of the dereliction on naval sonar testing is to intimate that the US should engage in land and air militancy but not the sea/water. This suggestion is untenable since other developed countries are advancing their military capacity in marine warfare. To follow this course is to force America down the primrose: no sooner will America have adopted this strategy than for it to be defeated in marine warfare. There should be no debating on the need for the maintenance of combat readiness on the side of the American Navy (Chang & Watson, 1).

Seeing that the practicality of making total dereliction on naval sonar testing is untenable in military strategy, yet the pitfalls of the same undertaking cannot be denied, it behooves the United States to look for a compromise. First, it is important that the navy expedites and carries on with its plan to limit its testing of submarines to Fort Lauderdale. The plan also involves the installation of much more sophisticated weapons across the East Coast so as to ensure that the impact is much negligible on dolphins, whales and other

forms of marine life. These recommendations are still in the draft federal report. This recommendation is also to be followed with the gradual shifting to undersea cables and newer forms of protection devices. The installation of these undersea cables and safer devices are to begin off the coast of Port Everglades.

The US through the Environmental Protection Agency (EPA) should move quickly to establish marine life/mammal protection zones. All the ship should have Navy observers on standby so that detonations can be stopped immediately a marine mammal has been detected. This calls for the implementation of the stranding response plan.

The amendments recommended above should be followed by the strengthening of relevant organizations and environmental safety agencies such as the Natural Resources Defense Council (NRDC). The fact that informs this recommendation has its underpinnings in the NRDC having been the principal in the effort to have sonar use regulated, as a way of protecting whales and other forms of marine life from sustaining harmful effects. It is against this backdrop that the NRDC was able to file a case in 2008, against the US Navy. This case was presided over by the United States Supreme Court. Again, the NRDC should be equipped with the power to oversee adherence to the stranding response plan. Specifically, it will be of great help to have the NRDC send its officers to the sonar testing site so as to ensure conformity to the dictates of the stranding response plan. To this effect, US Navy ships should be accompanied by NRDC officers during naval sonar testing. The NRDC is also to be made independent so as to ward off any chances of collusion with the navy.

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