

Free essay on the effects of medium frequency sonar on right whales

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Sonar stands for Sound for Navigation and Ranging. It is a technique used in navigation to detect objects underwater. Active sonar is a technique which utilizes sound to locate underwater objects as well as marine animals like whales and fish. The devices that apply the sonar technique are used by marine vessels controlled by the military and other marine users. When marine objects produce sound, the sonar device emits a signal as well as collects echoes from them. This technique imitates the behavior of marine animals while detecting food and enemies among other functions for example the right whales. After the sonar gadget detects sound from the object, it determines its location through sound waves reflection. Medium frequency sonar emits sound of the range 1000-10000HZ frequencies (<http://www.intechopen.com>), with a high output power which when released to the sea endanger the lives of the marine animals.

Right whales, very rare species, swim gradually at a speed of six miles per hour through consecutive dives. They go underwater for up to twenty minutes (Kraus and Rolland, 2007). The whales are characterized by emission of low frequent sound when communicating. As they eat, water moving beside them creates a clicking sound, baleen rattle, which transmits waves for communication purpose by their baleen plates. This is exactly what has been imitated by the sonar gadget used by water vessels. The right whales are endangered species with a population of around three hundred whales in the world hence a concern to protect them from extinction.

The use of medium frequency sonar with high output power and frequency, have impact on the right whales as they interfere with their communication. The impact on the right whales arises from the behavioral sensitivity

depending on the distance between the vessel and the right whales. In the Whale and Dolphin Conservation Society (2009), it is clear that sound travels faster in water as compared to their speed in air and this cause the right whale to come to the surface within a short period. The high speed can make the mammals deafen affecting their behavioral sensitivity since low frequency sound is what they use to communicate. It gets much difficult for the whales to detect predators due to the disorientation that comes with sonar effect. Almost 60 percent of the population of right whales has signs of an embarrassing situation due to sonar exposure.

The sonar danger is more rampant with the mother whales while calving. They spend much time at near the sea surface giving birth as well as allow time for their young ones to grow enough until their lung capacity enables them to go deep underwater. During this crucial period, the young ones and their mother undergo a difficult time making them vulnerable. The sonar sound hence interferes with the usual whales' activity of reproduction making them to panic getting unsettled. It also disrupts the feeding behavior reducing their chances of survival as well as productivity (cited in Best and Prescott, 2007). This has resulted into the notably small population making the mammals to become endangered species in the world.

Sonar generates deafening to the right whales affecting their communication since they sense through sound waves. According to Chapman (2006), whales are estimated to encounter 130-150 decibels while the navy vessels use sonar that produces sound at 240 decibels causing injury to them. The injury is severe that it leads to internal bleeding to the brain and ear. The high level of sound causes psychological effects which are deadly. " In 2005,

34 whales were found beached immediately after the navy had done sonar training.” (Whale and Dolphin Conservation Society, 2009). This shows how the sonar greatly affects the right whales.

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