

COPY

Protocol #18

Location: Gulf of Maine, MA, 16 animals as follows:

Sixteen humpback whales were tagged with location-only implantable satellite tags in the Gulf of Maine in July 2012 to evaluate physical and physiological impacts of these types of tags on humpback whales. Focal animal follows of tagged animals were conducted for up to one hour after tagging. Some tagged animals exhibited more pronounced or extended reactions to the procedure than others, although they typically returned to pre-tagging behavior within one hour. Behavioral responses likely occurred due to penetration of the skin and sub dermal tissue by the tags. The specific cause of pronounced and extended behavioral reactions will be further examined as research continues, but it is conceivable that it reflects pain or distress. Swelling was apparently caused by tissue reaction to the presence of a foreign body. Given these observations and the difficulty in assessing pain in free-ranging large whales, 7 of the 16 animals that exhibited extended behavioral reactions and/or swelling are listed under Category E on the report. Routine follow-ups were performed to evaluate tagged animals and those data are under current evaluation to determine the extent and duration of the lesions. No intervention was performed because the study was designed to evaluate the physical and physiological effects to individual whales instrumented with implantable satellite transmitters as well as to understand the process by which this type of transmitter is rejected. Tags stop transmitting when they are lost by the animals and these tags transmitted for an average of 29 days and a maximum of 83 days. Additionally, techniques do not yet exist for the routine treatment of pain in free-ranging large whales at sea.

Protocol #19

Location: Gulf of Maine, MA, 10 animals as follows:

Ten animals were tagged with LIMPET (Low-impact minimally invasive percutaneous electronic tag) tags in the Gulf of Maine in July 2012 to assess the feasibility of using this type of instrument on humpback whales.

Fin Whale (*Balaenoptera physalus*)

Protocol #20

Location: Southern California, USA, 8 animals as follows:

Eight fin whales were tagged with satellite tags in southern California in March 2012 to observe the movement of individuals from this area during a time of normal migration for other Balaenopterid whales. Tags used were LIMPET (Low-impact minimally invasive percutaneous electronic tag) tags, which attach to the dorsal fin via two medical-grade titanium darts. Reactions to tagging were noted as no response (1), sink (1), accelerate (3), and tail flick (3), within the usual range of reactions seen from both this type of tagging and biopsy sampling.

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