Current Methods for Determining Serious Injury

SOUTHWEST (Karin Forney)

Nature of interactions

Most cetacean-fishery interactions on the U.S. West coast involve small cetaceans, and the interaction generally leads to the death of the animal. Large whales, however, may swim away with gear attached. Since 1999, at least ten humpback whales off the U.S. West Coast have been observed entangled in fishing gear, including line from crab pots, traps, and nets. In some cases, the animals were freed or subsequently stranded dead, but in most cases, the fate of the animal is unknown. Ship strikes have also been implicated in the deaths of humpback whales, blue whales, and fin whales. Additional whales have been observed with ship strike injuries (e.g., propeller gashes), but their fate is not generally known. A few humpback whales have been observed with healed scars from apparent ship strikes.

Cause of Injuries

Pelagic drift gillnet fishery (~20" mesh). Large whales are occasionally entangled and released with a portion of the net, or they may swim through the net and continue with or without gear attached. Pingers may be attached.

Traps/pots: Humpback whales occasionally get entangled in traps/pots set for spot prawns or crabs, and may swim away with lines, traps and/or floats attached. They may also become anchored.

Ship strikes: Ship strike injuries and deaths have been documented for several cetacean species, including humpback, blue, and fin whales.

Current methods of determining serious injury

Carretta *et al*. (2005) summarizes the approach used to determine serious injury in marine mammals entangled in driftnet fishing gear:

"Occasionally, entangled animals were released with injuries that made future survival doubtful. These cases of "serious injuries" were defined by reviewing observer notes and comparing the extent of the injuries with the serious injury guidelines used by NMFS (Angliss and DeMaster, 1998). A serious injury is defined as "any injury that will likely to lead to mortality. Serious injuries may include--but are not limited to--the following: animals released with trailing gear that would impair the animal's mobility or ability to feed, ingested hooks, visible blood flow, loss or damage to an appendage, listless appearance or inability to defend itself, inability to swim or dive upon release from fishing gear, signs of equilibrium imbalance, perforation of any part of the body by fishing gear, and animals that swim abnormally after release."

Ship strike injuries are evaluated on a case by case basis, but serious injury determinations are not always possible.

Key issues/questions

- How much and what type of trailing gear is likely to cause the mortality of large whales?
- How does the impact of differ:
  - … when an animal has gear entangled around the head, body, pectoral fins, fluke?
  - … if the animal is entangled in bottom-anchored gear and struggles for a period of time?
  - … by type of gear (monofilament line, multifilament line, netting, pots, floats attached,…)?
- What types of entanglement injuries are whales known to have survived (or not)?
- What types of ship strike injuries are whales known to have survived (or not)?

REFERENCES

Angliss, R.P. and D.P. DeMaster. 1998. Differentiating serious and non-serious injury of marine mammals taken incidental to commercial fishing operations. NOAA Tech. Memo. NMFS-OPR-13, 48 pp.

Carretta, J.V., T. Price, D. Petersen, and R. Read. 2005. Estimates of marine mammal, sea turtle, and seabird mortality in the California drift gillnet fishery for swordfish and thresher shark, 1996-2002. Marine Fisheries Review 66(2): 21-30.