

## Current Methods for Determining Serious Injury

### ALASKA (Robyn Angliss)

#### **Nature of interactions**

Injuries to several different marine mammal stocks in Alaska result from vessel strikes and incidental entanglement in a variety of fishing gear. Most of the federally-regulated fisheries (groundfish trawl, longline, and pot fisheries) have some level of observer coverage: there are occasional reports of marine mammal incidental mortalities reported for some of these fisheries, but very few reported injuries. However, because most fisheries that may cause incidental injury or mortality of marine mammals in Alaska are not observed, information on the entanglements can be collected only through opportunistic accounts from commercial fishers, researchers, and the general public. Due to the opportunistic nature of the reporting, many entanglement/injury reports are received in areas where there is substantial research effort, public boating, and public awareness of entanglements, such as in Southeast Alaska. Far fewer reports of injury or entanglement are available in less populated areas, such as Bristol Bay. The extent of entanglement ranges from loose loops of line around the body and/or pectoral fins with no apparent wounds, to gear that has cut deeply into the flesh, to gear that is so tightly wound around the animal that the head and flukes were bound together. In many cases, the entangling line cannot be identified to a fishery. A disentanglement program in Southeast Alaska aids some of the entangled humpback whales and thus reduces the total number of animals that would otherwise be considered injured. A few injuries of bowhead whales and fin whales due to entanglement or ship strikes have been reported, but the frequency of these reports is under one animal per year.

#### **Cause of Injuries**

*Traps/pots:* Large whales—primarily humpbacks and grey whales--are entangled in a variety of pot fisheries. Types of pot fisheries include commercial crab pot, commercial shrimp pot, personal use pot, subsistence use pot, or unspecified. In many cases, it is not possible to determine from the records what type of pot fishery was responsible for the entanglement.

*Salmon gillnet:* Ranks second in entanglement rates for humpback and grey whales.

*Salmon purse seine:* Infrequent entanglement of humpback and grey whales.

*Troll gear:* Steller sea lions have been reported with hooks and flashers in their mouths. Reports are currently infrequent, but occurrence is also known to be underreported.

*Ship strikes:* Collisions between humpback whales and pleasure craft in Southeast Alaska occur at a rate of ~1/year.

#### **Methods of determining serious injury**

Until 2004, assessing whether an injury should be considered “serious” involved one individual who reviewed a stranding report summary. Entanglements or other injuries reported through the observer program or through stranding reports were considered serious if they were deemed to be likely to impede movement or feeding, per the serious injury guidelines. Entanglements that clearly bound an animal’s appendages sufficiently to prevent movement or that wrapped around an animals’ mouth were considered to be likely to impede movement or feeding. Entanglement in or dragging of large quantities of gear were considered to be likely to impede movement, and were considered serious injuries. If the report of the entanglement/injury was poor, a best guess was made; the assessment erred on the conservative side and designated an injury as “serious”.

Due to concerns about how the serious injury designation was being made for humpback whales, the Alaska Stock Review Group (SRG) convened a subcommittee to review the raw data for each entanglement and made recommendations regarding whether each entanglement should be considered serious, not serious, or “cannot be determined” (Wynne *et al.* 2003). The 2005 draft Stock Assessment Report (SAR) included the majority opinion of the SRG for each humpback whale entanglement. In 2006, the Alaska Fisheries Science Center and Alaska Regional Office reviewed the SRG’s assessment of each entanglement for consistency with the serious injury guidelines, and with the exception of three records, accepted the SRG’s advice. For the 2006 draft SARs, of the 38 injuries of humpback whales between 2001-05, 9 (24%) were considered seriously injured, 18 (47%) were

considered not seriously injured, and the information on the remaining interactions was insufficient to make a determination.

### **Key issues/questions**

- It would be helpful to learn how some types of entanglements directly affect survival of an individual large whale in the short-term (days to weeks) and long-term (a year). Entanglement types include single or multiple wraps of line, line through the mouth or restricted to other parts of the body, trailing small or large amounts of pot gear, and trailing small or large amounts of gillnet gear.
- There are a variety of opinions as to whether a hook in a pinniped's mouth should be considered a serious injury. Whether this does, in fact, commonly cause mortality of the pinniped should be explored.
- The Wynne *et al.* 2003 white paper documented a remarkable lack of consensus among several experts as to whether many different types of humpback whale entanglements or injuries should be considered serious or not serious. It would be helpful to develop a set of guidelines or a process that can be used to reduce this variability.

***The SRG has suggested that “serious injury” be assessed in a probabilistic way (e.g., there is a 50% chance the animal would die as a result of the injury) instead of simply using the terms “injured” or “seriously injured”.***

### **REFERENCES**

Wynne, K., J. Straley, C. Matkin, L. Lowry, and S. Hills. 2003. Report from the serious injury subcommittee of the Alaska Scientific Review Group. Unpublished manuscript submitted to the Alaska Scientific Review Group. 11pp. Available from the lead author or R. Angliss, NMML.