Sagas, Science, and Sea Mammals: New Approaches to Whales, Archaeology, Ancient DNA, and Icelandic Literature

NABO Akureyri 2013

Dr. Vicki Szabo, Western Carolina University
Dr. Cecilia Anderung, Uppsala University
“They put to sea and arrived safe and sound at Leif’s Houses and carried their hammocks ashore. Soon they had plenty of good supplies, for a fine big rorqual was driven ashore; they went down and cut it up, and so there was no shortage of food.”

Grænlendinga saga.

“The next thing to be told is that a whale was stranded in Isafjord. Thorbjorn and Havard had drift rights on both sides. The first report was that the whale belonged to Havard. It was a splendid finback whale. Both went there and decided to accept the lawspeaker’s verdict.” Hávarðar saga Ísfirðings
Rorquals or Balaenopteridae

Blue, Fin, Sei, Humpback, Minke
Olaus Magnus, *Historia*, 1555
Olaus Magnus, *Historia*, 1555
“... This fish is the best of all for food. It is of a peaceful disposition and does not bother ships, though it may swim very close to them. [The rorqual] is of great size and length... Because of its quiet and peaceful behavior it often falls a prey to whale fishers. It is better for eating and smells better than any of the other fishes that we have talked about, though it is said to be very fat; it has no teeth. It has been asserted, too, that the sperm of this whale... will be found to be a most effective remedy for eye troubles, leprosy, ague, headache, and for every other ill that afflicts mankind.” – The King’s Mirror
Various Orkney & LAM
L’Anse aux Meadows
Sei whale (?)

Bretta Ness, Rousay, Orkney
National Museums Scotland Collections Centre, Granton
Red Bay, Labrador
bowhead, or Greenland right whale
(Balaena mysticetus)
length up to 20 m (66 ft)

northern right whale
(Eubalaena glacialis)
length up to 18 m (59 ft)
Sperm whale
N. Bottlenose whale
Killer whale
Long-finned pilot whale
White-sided dolphin
Harbor porpoise

Blue whale
Fin whale
Humpback whale
Sei whale
Minke whale
From Foote, Andrew D., et al. "Ancient DNA reveals that bowhead whale lineages survived Late Pleistocene climate change and habitat shifts," *Nature Communications* 10, 1038 (2013): 1-7. // Figure 2 | Modeled predictions of suitable habitat... Red areas correspond to core suitable habitat...
WE WANT YOUR WHALE BONES!

Olaus Magnus, whale bone house in Historia, 1555
Fig. 1. Genetic estimates and current census sizes (9, 25, 26) for North Atlantic humpback, fin, and minke whales. The confidence intervals are in light gray.
Historical reconstruction of pre-exploitation abundance, decline and recovery of Southern Right whales;

THANK YOU!

(apologies for not meeting minimum standards for logos & / or acronyms)

The US-UK Fulbright Commission
The American Philosophical Society
Western Carolina University

Fig. 3 Historical reconstructions (population trajectories) of the pre-exploitation abundance, decline (bottleneck) and recovery of southern right whales based on a Bayesian version of the HITTER population dynamic model (see Table 3). Each line represents the median values for trajectories, over 5000 resamples, for each of four demographic scenarios. ‘Base case’ refers to the catch record developed for the International Whaling Commission (IWC) Comprehensive Assessment (IWC 2001). The inset shows the median and 95% probability intervals for $N_{\text{min}}$, estimated from contemporary mtDNA haplotypes (for pre-exploitation richness of 100 or 150 haplotypes, see Table 2), superimposed on population trajectories for the median and 95% probability intervals of the ‘likely’ base case ($r_{\text{max}} = 0.075$).