How "resident" are resident-type killer whales in Alaska?

New data show similar widespread movement patterns in the fall

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Why this is important – Unbiased movement data are needed for habitat use and stock structure

- Telemetry tags can provide valuable new information on movements and habitat use of difficult to study cetaceans
- Alaska resident-type ("piscivorus") killer whale pods designated AF and AG pods have been well-documented within the inland waters of Southeast Alaska (SEAK) and Prince William Sound (PWS) since photo-id studies first began in the mid-1980s and are considered "resident" in these study areas
- However, inclement weather and short days during both fall and winter have restricted studies to summer and protected near-shore waters

What we did – Remotely deployed dart-attached tags

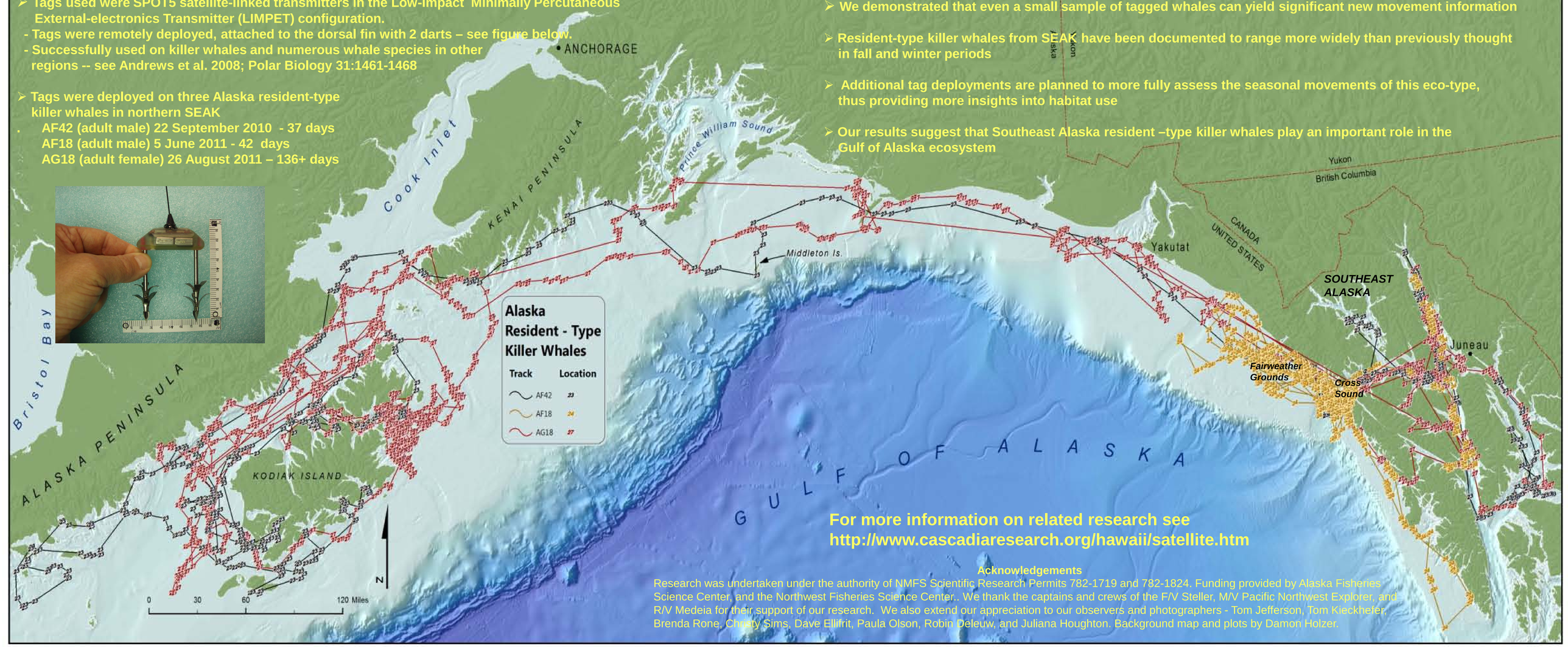
- Tags used were SPOT5 satellite-linked transmitters in the Low-Impact Minimally Percutaneous External-electronics Transmitter (LIMPET) configuration.
  - Tags were remotely deployed, attached to the dorsal fin with 2 darts – see figure below.
  - Successfully used on killer whales and numerous whale species in other regions -- see Andrews et al. 2008; Polar Biology 31:1461-1468
- Tags were deployed on three Alaska resident-type killer whales in northern SEAK
  - AF42 (adult male) 22 September 2010 - 37 days
  - AF18 (adult male) 5 June 2011 - 42 days
  - AG18 (adult female) 26 August 2011 – 136+ days

What we found – Fall range extended much further west than previously documented

- All 3 whales spent substantial time in the Gulf of Alaska with relatively limited time in SEAK and essentially no time in PWS
- The 2 whales tagged in the fall both traveled rapidly along similar routes to the west from SEAK, ultimately spending considerable time in the nearshore waters off Kodiak Island and the Alaska Peninsula
- Following an extended stay around Kodiak, AG18 rapidly returned to SEAK with most recent locations (still transmitting as of 8 Jan 2012) in the vicinity of Yakutat
- The summer range of AF18 following its departure from the inland waters of SEAK was heavily concentrated near the Fairweather Grounds and the entrance to Cross Sound

Implications from this study

- We demonstrated that even a small sample of tagged whales can yield significant new movement information
- Resident-type killer whales from SEAK have been documented to range more widely than previously thought in fall and winter periods
- Additional tag deployments are planned to more fully assess the seasonal movements of this eco-type, thus providing more insights into habitat use
- Our results suggest that Southeast Alaska resident –type killer whales play an important role in the Gulf of Alaska ecosystem



For more information on related research see http://www.cascadiaresearch.org/hawaii/satellite.htm

Acknowledgements

Research was undertaken under the authority of NMFS Scientific Research Permits 782-1719 and 782-1824. Funding provided by Alaska Fisheries Science Center, and the Northwest Fisheries Science Center.. We thank the captains and crews of the F/V Steller, M/V Pacific Northwest Explorer, and R/V Medeia for their support of our research. We also extend our appreciation to our observers and photographers - Tom Jefferson, Tom Kieckhefer, Brenda Rone, Cheryl Sims, Dave Ellifrit, Paula Olson, Robin Deleuw, and Juliana Houghton. Background map and plots by Damon Holzer.