

# THE NOT-SO-SECRET LIVES OF MAMMAL-EATING KILLER WHALES: DORSAL FIN-MOUNTED SATELLITE TAGS REVEAL SOME OF THEIR FAVORITE HAUNTS IN THE EASTERN NORTH PACIFIC

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## Why this is important – Unbiased movement data are needed to assess the role of mammal-eating killer whales (n~350) in the southern Gulf of Alaska and California Current Ecosystems

- > Mammal-eating killer whales have been implicated to play a major role in shaping community structure in Alaska
- > Known ranges and prey preferences of West Coast Transient killer whales have only been assessed by photo ID efforts which are generally limited to daylight hours in protected or nearshore waters
- > Telemetry tags can provide valuable new unbiased information on movements and habitat use

## What we did – Deployed dart-attached tags on 14 whales from 12 unique social groups in the temperate eastern north Pacific

- > The tag used was a SPOT5 satellite-linked transmitter in the Low-Impact Minimally Percutaneous External-electronics Transmitter (LIMPET) configuration and was remotely deployed and attached to the dorsal fin with 2 darts – see arrow on dorsal fin below. The design has been used successfully on killer whales and numerous whale species in other regions
- See Andrews et al. 2008; Polar Biology 31:1461-1468

- > Durations of contact ranged from 7-95 days (median=27, 414 days total). Locations included in the analysis were all Argos LC2 and LC3 as well as LC0, LCA, LCB, and LCZ locations (with no estimation of accuracy) if they passed pre-determined Douglas Argos-Filter criteria

- > Visit duration in each 5x5km grid cell was calculated as the prorated duration between sequential locations for each cell and totaled for all animals

← Tag

## What we found – Extensive movements north and south of tagging sites were confined to continental shelf and inland waters

- > Most whales generally ranged north of the tagging site, with 3 moving as far as southern Southeast Alaska, but only three ranging south into northern California, and one traveling to Monterey Bay

- > In all cases the whales' seaward distribution was limited to the shelf break with a few whales exhibiting extensive use of this area

- > Specific regions identified to have relatively high use by one or more whales included Central California shelf break, nearshore northern California/southern Oregon, canyon heads in Oregon, Washington, and British Columbia, nearshore and shelf slope of central Vancouver Island, central eastern Vancouver Island, central Queen Charlotte Sound/Hecate Strait and Chatham Sound

## Implications from this study – New areas of preferred use for this killer whale eco-type were identified

- > Use of some of these areas was known from photo ID studies, but the more remote areas were not previously known to be important to mammal-eating killer whales
- > Given that this population of whales feeds on marine mammals, and prey assemblages differ between coastal and nearshore waters, a variety of marine mammal species are likely consumed throughout this range
- > These preliminary analyses indicate that additional tag deployments, taking season, encounter location, and social network into consideration, will be needed to adequately assess the seasonal movements of this eco-type
- > These data will be important in understanding the role that mammal-eating killer whales play in the southern Gulf of Alaska and California Current ecosystems

For more information on related research see <http://www.cascadiaresearch.org/kws/kwsattagging.htm>  
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