Should I Stay or Should I Go: Movement and Residency Patterns of Satellite-tagged Pilot Whales Offshore of Cape Hatteras, NC

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Cape Hatteras Special Research Area (CHSRA)
2006 - 2015
231 pilot whale sightings

155 survey days

98 survey days
Cape Hatteras Residency

Ongoing photo-id work

60 pilot whale matches

16% of 367 in catalog

Intra- and Inter-annual

Intra- and Inter-seasonal

Re-sighted up to five times
Longest Match
8 years, 8 months
September 2006 – May 2015
May 31, 2007
Gm 8-022
3 years - all in May
8 year span
<3 km apart
May 16, 2015
May 12, 2012
OBJECTIVE

Obtain medium-term movement and diving patterns of short-finned pilot whales to complement the existing information on long-term residency patterns from photo-id and short-term DTag dive records.
EFFORT

May, June and September 2014
11 days with Cascadia Research Collective
20 short-finned pilot whales tagged

14 Wildlife Computers
SPOT5 location-only LIMPET tags

6 MK 10-A depth-transmitting LIMPET tags
DATA FILTERING

811 Locations

Douglas Filter

516 Locations
5,496 locations (n = 17)
May – December 2014
Transmission Duration
1 – 194 days (median 49)
Locations per Tag
17-608 (median 316)
5,496 locations (n =17)
May – December 2014
Transmission Duration 1 – 194 days (median 49)
Locations per Tag 17-608 (median 316)
1-194 day durations (median = 49)

Cumulative distance traveled
56 – 7,564 km (median 2,322 km)

Mean/Maximum distance from tagging location 69 km/1,192 km

Median/Maximum distance from shelf break 3 km/395 km
Two habitat use modes

- Shelf break associated
- Gulf Stream associated
- Some exhibit both
Two habitat use modes

- Gulf Stream associated
Habitat use may be specific to social group
Photo-Id of satellite-tagged animals

3 of 15 distinct individuals (20%) matched to catalog

1 re-sight with tag
194 day deployment
543 locations
Distance traveled – 7,564 km
GmTag087
18 May 2014 – 28 November 2014
194 day deployment – 543 locations – 7,564 km traveled
Conclusions

- Short-finned pilot whales exhibit widely-varying and complex movement and spatial use patterns, which may differ by social group.

- Despite significant distances traveled, high resighting rates suggest Cape Hatteras is an important area for short-finned pilot whales, indicating the potential for fisheries interactions.
Additional Work

• Habitat models of spatial use
  - Dr. Lesley Thorne  Wednesday 3:20  Foraging Ecology

• Increase sample size (19 tagged in 2015)
  - similar patterns this year (17% matched to catalog, 1 re-sight)

• Additional sites
  - Jacksonville, FL

• Seasonality
  - January – May data
  - 6 tags still currently transmitting