

Form Rev. 10.3.14

1. Program Number: *See*, Reporting Policy at III (C) (1).

15120114-N

2. Project Title: *See*, Reporting Policy at III (C) (2).

Long-term Monitoring: Pelagic Monitoring Component - Long-term monitoring of humpback whale predation on Pacific herring in Prince William Sound.

3. Principal Investigator(s) Names: *See*, Reporting Policy at III (C) (3).

John R. Moran (NOAA) and Janice M. Straley (UAS)

4. Time Period Covered by the Report: *See*, Reporting Policy at III (C) (4).

Feb. 2015-Jan. 2016

5. Date of Report: *See*, Reporting Policy at III (C) (5).

March 1, 2016

6. Project Website (if applicable): *See*, Reporting Policy at III (C) (6).

www.gulfwatchalaska.org

7. Summary of Work Performed: *See*, Reporting Policy at III (C) (7).

All work during 2015 proceeded as planned. During the reporting period we completed our scheduled April survey of Prince William Sound (PWS).

All obligations to the Trustees were met.

Unusual whale/herring behavior

In December of 2014 shoals of overwintering Pacific herring and their predators failed to return to Port Gravina. The 2015 spawning event also proved to be unusual: we did not locate large shoals of herring typical of the area in spring and whales targeted small, fast moving herring schools. Figure 1 shows April PWS humpback whale locations in 2015 relative to previous years.

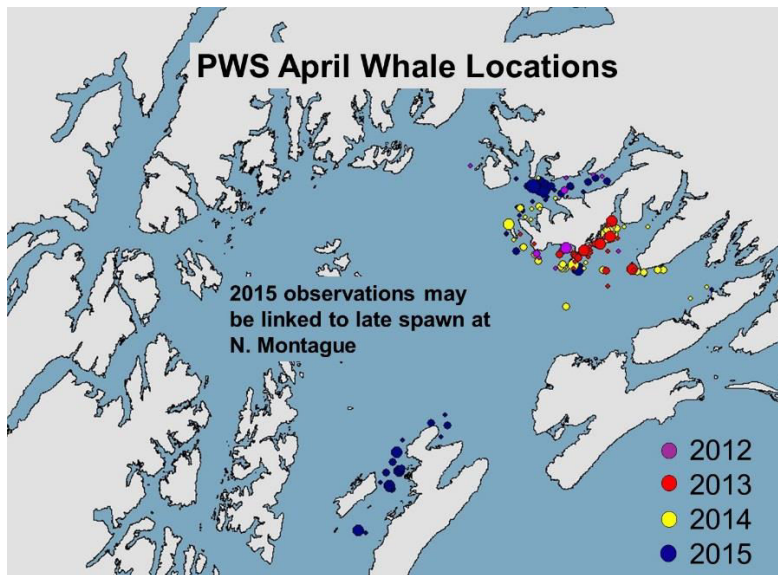


Figure 1. April locations of humpback whales in PWS, 2012-2015.

An increase in whales targeting bird feeding flocks in April.

Typical whale behavior when using feeding flocks of birds to target fish involves fast swimming, shallow dives (without fluking), and frequent changes in direction. When a feeding flock of birds forms (over 1 km away in some cases), the whale beelines to the birds and engulfs the fish school using a vertical or horizontal surface lunge. Whales often change their direction of travel 90° when a bird flock forms, making it clear the whales detected the fish cued by the birds/fish. A noteworthy observation occurred on April 3, 2015 outside of Stockdale Harbor. Two whales, now named the “Bird Killers” engulfed and spit out 8 glaucous winged gulls. In the wake of a lunge through the flocks, the dead and dying birds appeared to have lost their water proofing.

Deliverable/Milestone	Status
April 2015 Survey	completed
Data entry	Data entry completed with QA/QC.

8. Coordination/Collaboration: See, Reporting Policy at III (C) (8).

a. Coordination within and between council funded programs

- Killer whale and humpback whale photos were exchanged with Craig Matkin. This collaboration expands the temporal and spatial scope of both projects.
- Adam Zenone ran hydroacoustic equipment on our April survey. These data will be used for a manuscript on whale/herring interactions.

b. Coordination with other Council funded projects – there was no collaboration with other Trustee funded projects.

c. Coordination with management agencies and Trustees

- We provided data for the Ecosystems Considerations Report to The North Pacific Fishery Management Council.

- John Moran is on the investigative team for the Alaska Large Whale Unusual Mortality Event and contributing Gulf Watch Alaska data.
- John Moran is a member of the humpback whale Post Delisting Monitoring Plan working group.
- John Moran presented at the Whale Tales Conference Kapalua, Maui, February 2016 – Hawaii’s Humpbacks: what are they doing in Alaska?

9. Information and Data Transfer: See, Reporting Policy at III (C) (9).

Outreach

Prince William Sound Science Center Community Lecture Series, *Field Notes* radio program, Gulf Watch Alaska Virtual Field Trip, Gulf Watch Alaska project brochure, and a KCAW public radio interview.

Alaska Fisheries Science Center quarterly report:

<http://www.afsc.noaa.gov/Quarterly/OND2015/tocABL.htm> and National Oceanographic and Atmospheric Administration Fisheries - Fish News. (Moran)

Presentations

Sea birds as prey indicators. John Moran, 2015 Juneau Marine Naturalist Symposium.

Fisheries Anomalies. John Moran, 2015 Anomalous Gulf of Alaska Workshop, January 2016, Anchorage, AK.

Alaska Marine Science Symposium 2016

Kevin Boswell, Mark Barton, Alexandra Brownstein, Jan Straley, John Moran. Stable Isotope Analysis of Humpback Whales (*Megaptera noveangliae*) to Confirm Diet During Winter Foraging.

John Moran, Jan Straley. Missing Herring: Water Temperature, Relocation or Dinner?

Jan Straley, John Moran. Bird Killers of Prince William Sound: A Foraging Strategy Used by Humpback Whales to Detect Schooling Fish.

Tammy Hoem Neher, Kris Holderied, Molly McCammon, Katrina Hoffman, Tom Weingartner, Ballachey, Daniel Esler, Heather Coletti. Gulf Watch Alaska in Hot Water! Ecological Patterns in the Northern Gulf of Alaska Under the Pacific 2014-2015 Warm Anomaly.

Publications

Boswell K., Rieucan G. Vollenweider JJ, Moran JJ, Heintz RA, Blackburn JK, Csepp DJ. In Review. Changes in over-wintering Humpback whale abundance structure Pacific herring school distribution, morphology and internal organization. Accepted in CJFAS.

Straley J. and Moran J. 2015. Friends of Admiralty Island Newsletter Issue no.19 February 2015. *Whales in Seymour Canal*.

Data

The PWS humpback whale catalog has been made available to public via Oceans workspace.

All data and metadata have been posted to the Oceans Workspace.

10. Response to EVOSTC Review, Recommendations and Comments: See, Reporting Policy at III (C) (10).

N/A

11. Budget: *See, Reporting Policy at III (C) (11).*

Please see provided program work book.

At the end of FY15 we are within 10% of the proposed budget in all categories.