Unusual Mortality of Tufted and Horned Puffins

Figure 1. Carcasses recovered from North Beach, St. Paul Island, Pribilof Islands by ACSPI ECO. Top left are 2 murres, top center are 8 Horned Puffins, bottom two rows are 29 Tufted Puffins, 2 of which (extreme right) are juveniles.

On 17 October 2016, Paul Melovidov and Aaron Lestenkof, biologists from the Aleut Community of St. Paul Island Tribal Government Ecosystem Conservation Office (ACSPI ECO), Pribilof Islands, Alaska (see map) counted 39 fresh, completely intact beached birds along North Beach (see photo). The next day, an additional 8 carcasses were counted on North Beach and Benson Beach. Twenty-two carcasses were counted on the 18th. At this time of year in the Pribilof Islands, average monthly encounter rates of all species combined (carcasses per kilometer assessed once a month) are below 0.1 birds per kilometer across all monitored beaches (see graph), or approximately 20 times lower than the current beaching rate. As of 19 October 2016, no birds had been found on St. George.

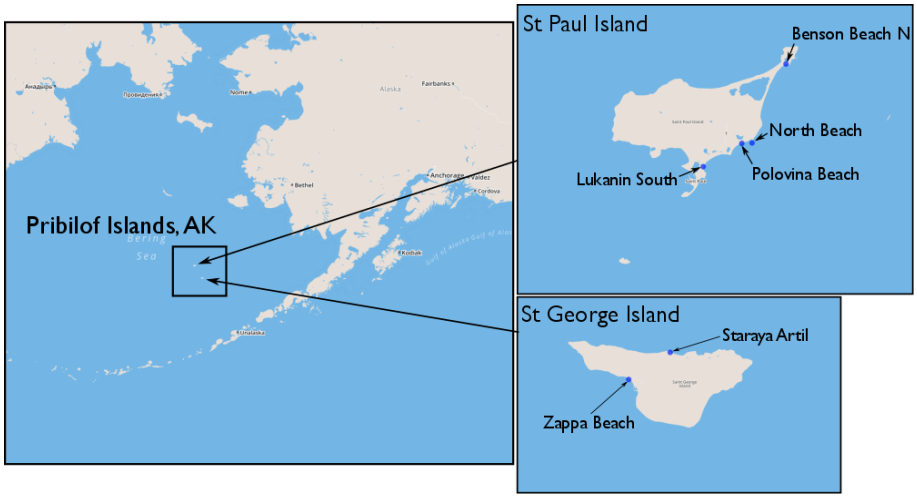

Figure 2. Map of the Pribilof Islands within Alaska, along with COASST beach locations on St Paul and St George.

Almost all of the birds found to date have been either Tufted Puffins (56) or Horned Puffins (10). Previous years' data from both St. Paul and St. George indicate that puffins have been a small minority of the species washing ashore at this time of year (see graph). In over 10 years (2006 to 2015) and 306 surveys between August and November, only 3 puffins (Tufted, Horned, and unidentified to species) have been found. Across all COASST surveys carried out on the Pribilof Islands regardless of time-of-year, only 6 puffins (3 Horned, 1 Tufted, 2 unidentified to species) have ever been found. Thus, ***the current beaching rate for puffins is at least 100 times the normal rate***.

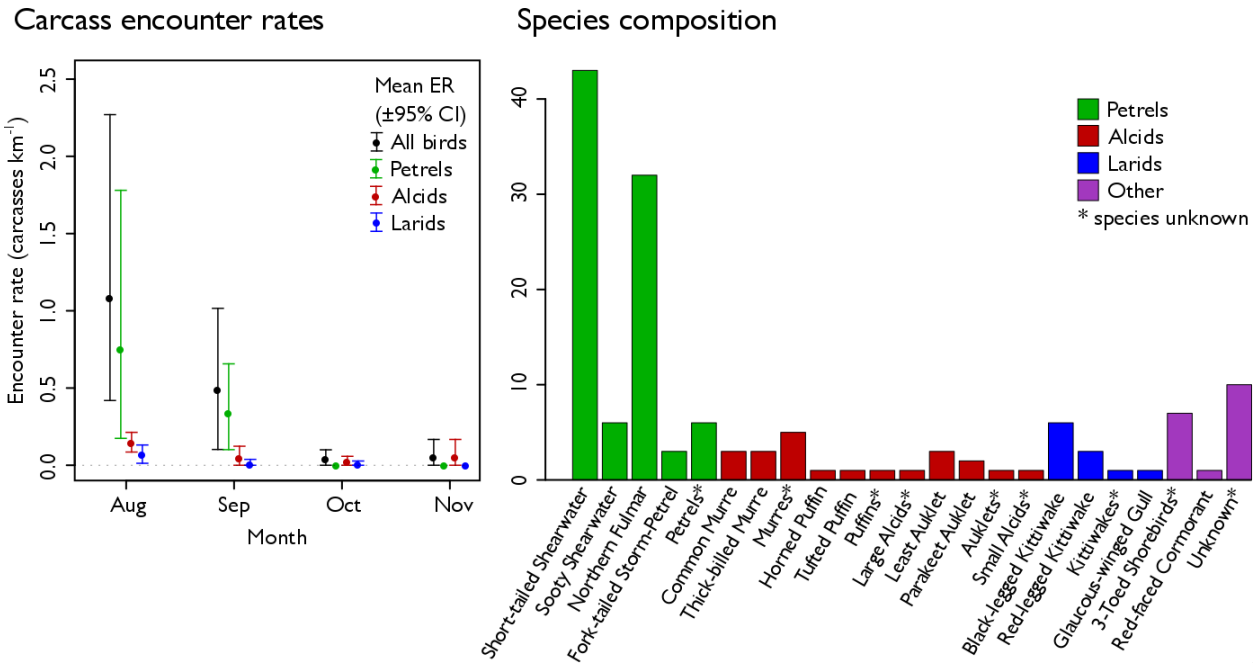

Figure 3. *left*: The average number of carcasses per km on both St Paul and St George Islands plotted for the months of August to November (2006-2015) and NOT including the present UME indicates that usually less than 1 carcass would be encountered every 10 km in October, and even fewer of these would be Alcids, which includes puffins and murres. *right:* Species composition of carcasses across the fall time-period (August to November) from previous years' surveys indicates that carcasses were predominantly petrels (Shearwaters and Fulmars).

Finally, during regular COASST surveys of Pribilof Island beaches, only 22% of birds have been found completely intact, indicating most fall victim to a combination of predation and scavenging. In the recent event, ***68 of the 69 birds found within the last 3 days have been intact*** (see photo), indicating these birds did not die from predation, and that they have beached very recently such that surveyors could find them before scavenging foxes discovered them.

All of these data (higher than normal encounter rates, vastly higher than normal frequency of puffins, higher than normal percent of intact carcasses) are indicative of an unusual mortality event (UME), or an event where a sudden increase in the number of carcasses of a small number of species overwhelms the scavenging population. The cause of this mortality is

unknown at present. Carcasses have been collected for transport to the National Wildlife Health Center for post-mortem analysis.
Population size of puffins breeding in the Pribilof Islands is in the thousands based on USFWS surveys: 6,000 for Tufted Puffins and over 30,000 for Horned Puffins (Beringian Seabird Colony Catalog 2005).

For more information, contact:
Pamela Lestenkof, ACSPI ECO Co-Director, pmlestenkof@aleut.com
Lauren Divine, ACSPI ECO Co-Director, lmdivine@aleut.com
Julia K Parrish, Executive Director, COASST, coasst@uw.edu, jparrish@uw.edu

Changes from previous version (1.0):
1. clarification of all birds versus puffins only
2. clarification of the range of years the figures represent