Seabird Mass Mortality Event on St. Paul, Pribilofs

Lauren Divine, Co-Director ACSPI ECO Julia K Parrish, Executive Director COASST



Paul Aaron Melovidov Lestenkof

Ecosystem Conservation Office Island Sentinels







Day 1 – 39 Carcasses, Mostly Tufted Puffins, Mostly Intact



photograph courtesy of ACSPI Ecosystem Conservation Office

Day 32 – 45 Carcasses, incl'ing a new species: Crested Auklets



photograph courtesy of ACSPI Ecosystem Conservation Office

How Many of Which Species Have Been Found?



photographs: adt TUPU – Tringa Photography, juv TUPU – Terry Sohl, adt HOPU – Lee Rentz, CRAU – Cristophe Gouraud, TBMU – All About Birds, Arctic Fox – ACSPI ECO; data courtesy of ACSPI Ecosystem Conservation Office; graphics by COASST

Tufted Puffin Natural History



- Nests underground in a burrow
- Lays one egg each year
- Deep diver ("flies" underwater)
- > Eats small fish like capelin and sandlance
- Winters in the North Pacific



photographs: breeding – Tringa Photography, nonbreeding – All About Birds, juvenile – Terry Sohl, range map – Cornell Lab of Ornithology

Sampling Beaches on St. Paul

COASST regular (blue); Puffin Die-off (red)



Which Seabirds Normally Wash Up on St. Paul?

COASST "regular beach" Data

not this bird



photographs: STSH – Kingfisher Bay Resort and Fraser Island, NOFU – Birdspix, TBMU – Trinja Photography; data courtesy of COASST, ACSPI ECO; graphics - COASST



Where are Tufted Puffins Found on the Water in Aug-Nov?



North Pacific Pelagic Seabird Database (NPPSD) 1975-2012, courtesy of John Piatt, USGS

Ocean Warming in 2016

Ice Edge – *farther north than normal*



Mooring map and sea ice extent data courtesy of Phyllis Stabeno, PMEL, NOAA

Ocean Warming in 2016



Mooring temperature data courtesy of Phyllis Stabeno, PMEL, NOAA

Ocean Warming in 2016

Sea Surface Temperature Anomaly - 31 Oct 2016



SST data from above: OI v2 AVHRR only; below: NCEP OI v2, both courtesy of Nate Mantua, NOAA

lower quality prey for young pollock (and Crested Auklets?)



Zooplankton data courtesy of Stephani Zador, Elizabeth Siddon, Ivonne Ortiz – Ecosystem Considerations Presentation at BSAI Groundfish Plan Team Meeting, 14 Nov 2016

Summary – What We Know

Seabirds:

- > all are Alcids (murres, puffins, auklets)
- most are Tufted Puffins
- both fish-eaters (puffins, murres) and plankton-eaters (Crested Auklets)
- Ive birds are very close to shore
- carcasses are under-weight, starving
- event is still happening
- geographic extent is unknown

Ocean Conditions:

- Bering Sea is warmer than normal, less ice, no cold pool
- zooplankton (copepods) are smaller than normal, lower quality food

USFWS Puts Out a Bulletin on the St. Paul Seabird Die-off



USFWS Alaska Migratory Bird Management 1011 E. Tudor Rd. Anchorage AK 99503 1-866-527-3358 (phone) AK_MBM@fws.gov November 2016

What's Happening?

Biologists at the Aleut Community of St. Paul Island Tribal Government Ecosystem Conservation Office (ACSPI ECO) have counted nearly 300 beached seabird carcasses on the island since October 17, 2016. The species found are mostly tufted puffins, but horned puffins, murres, and recently, crested auklets have been found. The current encounter rate (carcasses/kilometer) of puffin carcasses in the past three weeks is more than 350 times the normal rate based on surveys conducted at St. Paul over the past ten years (2006-2015) according to the Coastal Observation and Seabird Survey Team (COASST) and ACSPI ECO.

Because only a fraction of birds that die at sea will become beached, and even fewer counted prior to removal by scavengers, the report of nearly 300 seabirds (adults and juveniles) washed up on four monitored beaches at St. Paul Island raises concern.

What Do We Know?

The U.S. Geological Survey National Wildlife Health Center (NWHC) in Madison, WI performed necropsies to determine cause of death of eight of the Pribilof beached puffins. All puffins showed severe emaciation. At this time, no pathogenic bacteria, viruses, or parasites have been identified and the current cause of death of seabirds at St. Paul Island appears to be starvation. These results are similar to murres examined during the 2015-2016 Alaskan seabird die-off.

U.S. Fish & Wildlife Service

Pribilof Islands Seabird Die-off



Carcasses recovered from North Beach, St. Paul Island, Pribilof Islands by Aleut Community of St. Paul Island Tribal Government Ecosystem Conservation Office (ACSPI ECO). Photo credit: ACSPI ECO.

Why Are They Starving?

The causes of the seabird starvation, both of murres and puffins, is unknown but may be linked to changes in prey distribution or abundance due to above average sea surface temperatures (SST). Abnormally high SST were recorded in the Bering, Beaufort and Chukchi Seas in October 2016, as well as record low levels of Arctic sea ice extent.

What Can I Do?

Report sick or dead birds to:

- 1-866-527-3358 or email AK_MBM@fws.gov
- Time & Date
- Exact location (latitude/longitude, length of beach)
- Type of bird (species name or group e.g., murre, puffin, etc.)
- · Estimated number of birds
- Photos

Participate in monitoring efforts on your local beaches

The Coastal Observation and Seabird Survey Team (COASST) can connect you with existing citizen science survey teams and provides training in how to identify birds and collect high quality data that are shared with researchers and resource management agencies. Visit <u>www.coasst.org</u> to learn more or contact COASST at 1-206-221-6893 or email coasst@uw.edu.



also check out: *LEO website*: www.leonetwork.org; *COASST website*: www.coasst.org; *National Geographic*: news.nationalgeographic.com/2016/11/tufted-puffis-die-off-bering-sea-alka-starvation-warm-water-climate-change/

What You Can Do

*Collect observation*s and post to the LEO Network.

Become trained in a monitoring protocol as part of BeringWatch and collect regular monthly (given weather) data.

- ➢ join COASST
- attend the COASST-BeringWatch training at AFE