

Rhinoceros Auklet Salish Sea Unusual Mortality Event 2016

Who:

Rhinoceros Auklet, *Cerorhinca monocerata*, is a medium-small (500-600 grams) fish-eating seabird that breeds across the North Pacific arc, from California north to Alaska and southwest down into Japan. Easy to recognize, breeding Rhinoceros Auklets have a chalky white horn on their orange bill, and white wispy whiskers and matching eye brows. In non-breeders and juveniles, the bill is dull orange-brown, and the horn is reduced to a bump. A relative of the more colorful, clown-like Tufted Puffin, Rhinoceros Auklets are actually puffins, and possess the "true puffin" characteristic - a pale (worn couch edge) stripe of feathers on the forward edge of the wing, above the wrist.

Population Size: ~2-3 Million

Population Center: Over 95% of the North American population occurs on eight islands in Washington, British Columbia, and southeast Alaska. In the Salish Sea, an estimated 72,000 Rhinoceros Auklets breed on Protection Island, making it the largest breeding colony in the region and one of the largest in the world.

Longevity: 20-25 years, max 28

Clutch Size: 1 egg annually

Diet: Rhinoceros Auklets are diving birds that specialize on small schooling fish. On Protection Island, their diet is dominated by sandlance. Most birds forage within 50 km of the colony.

Conservation: Rated "low concern" by most groups due to population size, distribution and positive trends in many locations, Rhinoceros Auklets are nevertheless susceptible to net-based fishery bycatch, coastal oil spills and introduced predators. The Puget Sound Partnership lists [*Rhinoceros Auklets as an indicator species*](#).

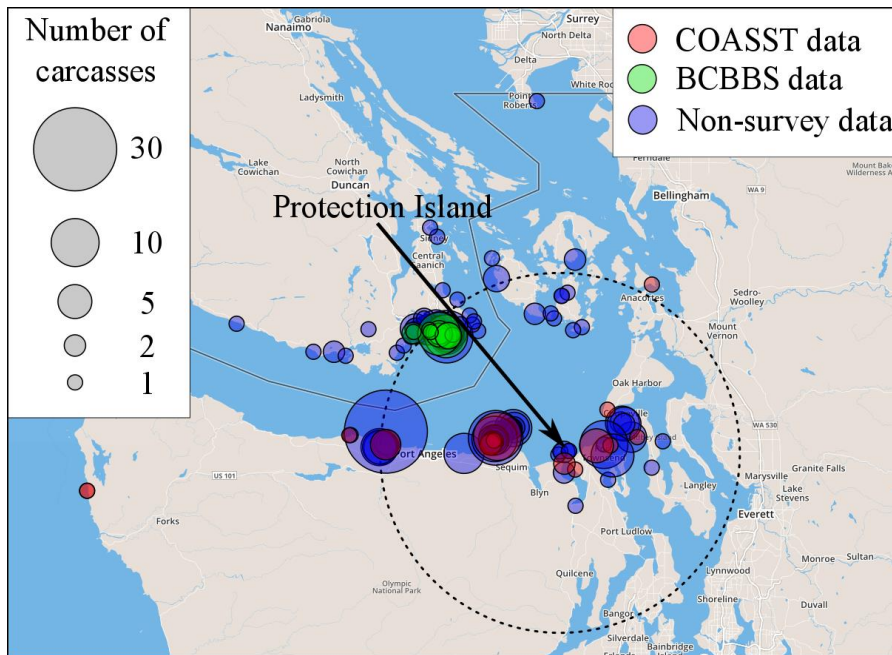
What, Where and How Many:

Starting in late May 2016, the [Coastal Observation and Seabird Survey Team \(COASST\)](#), the [British Columbia Beached Bird Survey \(BCBBS\)](#), [Washington Maritime National Wildlife Refuge Complex \(NWRC\)](#) personnel, the [British Columbia Wild Bird Mortality Investigation Network](#) personnel, and a wide range of individuals from the public have reported Rhinoceros Auklets washing ashore on beaches ringing the eastern end of the Strait of Juan de Fuca, with a concentration of carcasses close to Protection Island and Victoria BC (see Map). Moribund (close to death) birds on the water and onshore have also been reported. To date (5 August 2016), approximately 450 carcasses including both adults and juveniles.

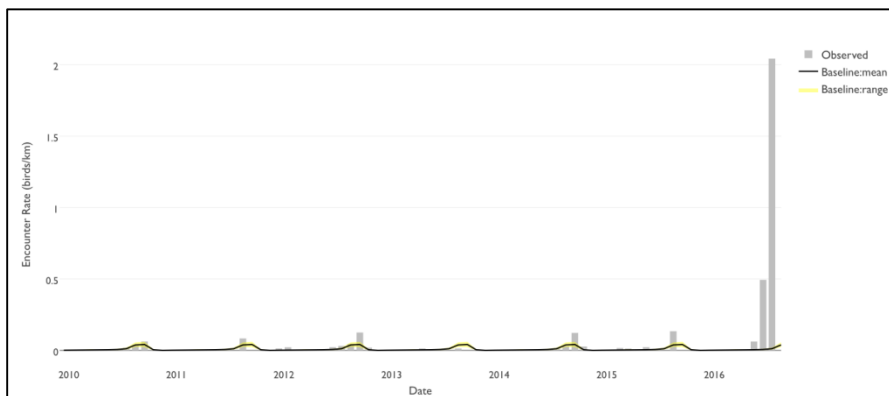
COASST data for the eastern Strait of Juan de Fuca suggest that:

- The usual "peak season" for finding beachcast Rhinoceros Auklets is August-September (post-breeding), when approximately one carcass washes in per 25 km of coastline.
- In July 2016, the average for the same beaches was just over 1 carcass every 0.6 km, or 150 times higher than normal. Estimates may change as data continues to be reported.

August 8, 2016



Map of affected area, showing where Rhinoceros Auklet carcasses have been reported. Arrow points to Protection Island, the largest breeding colony of Rhinoceros Auklets in the region. Dashed circle indicates a 50km foraging range. Canadian data are place-specific (not abundance-specific). Standardized survey sites with zeroes (i.e. no auklets found) are not shown. Non-survey data include federal, tribal and provincial agencies, and validated public reports.



Encounter rate (number of Rhinoceros Auklets found on a kilometer of beach in the eastern Strait of Juan de Fuca). Gray bars are the monthly average in a given year, from 2010 through July 2016. Black line is the long-term average (baseline), and the yellow shading is the 95% confidence interval around the baseline. Data are from COASST surveys only.

Breeding Success:

Rhinoceros Auklets are burrow-nesters that breed on islands devoid of mammalian predators. On Protection Island, although the numbers of returning birds and eggs hatched was not different from past years, chick growth rate is delayed and researchers expect that productivity for the year will be the lowest observed in a decade. Chick mortality appears to be high. Delayed or failed breeding is a common response in seabirds during years of food scarcity.

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August 8, 2016

Cause of Death:

Investigation into the cause of death is ongoing. Rhinoceros Auklet carcasses were collected from beaches in affected areas in Washington and British Columbia, and sent for necropsy to the USGS National Wildlife Health Center and BC Ministry of Agriculture Animal Health Centre, respectively. Birds examined by the National Wildlife Health Center from Lopez Island and Dungeness Spit showed indications of pneumonia and emaciation. The birds examined at the Provincial Vet Lab in BC were in poor body condition and had lesions consistent with bacterial septicemia and pneumonia. It is likely that both groups of birds are components of the same mortality event. So far, tests for avian influenza, paramyxovirus (Newcastle Disease) and poisoning due to harmful algae (saxitoxin and domoic acid) were negative. Additional tests, including identification of bacterial pathogens, are pending. Chick carcasses will be also be examined to determine the cause of mortality and slowed growth.

There is no *known* health risk to people or their pets walking the shoreline. However, untrained individuals should *leave carcasses in place*, and not touch, remove or bury them.

What You Can Do:

Report dead or moribund bird sightings and consider **participating** in regular monthly surveys through the following citizen science programs. Findings are shared with a network of local, tribal, state, provincial and federal agencies.

British Columbia, Canada:

British Columbia Beached Bird Survey

www.birdscanada.org/volunteer/bcbeachbird

Contact: Karen Devitt, BCBBS, BCvolunteer@birdscanada.org

British Columbia Wild Bird Mortality Investigation Network 1-866-431-2473

Washington State, United States:

Coastal Observation and Seabird Survey Team

www.COASST.org

Contact: COASST@uw.edu; Julia Parrish, Executive Director, jparrish@uw.edu;

Hillary Burgess, Science Coordinator, hkb10@uw.edu

Please include the following information in any reports:

count, condition (dead or moribund, fresh or decayed), location, date, and photographs

Updates from previous version (1.1):

1. Baseline Rhinoceros Auklet carcass encounter rates, and 2016 encounter rates, have been provided.
2. Canadian data and non-standardized data from public reports have been included in the map.
3. Breeding season information updated. Status is significantly more negative.
4. Initial results from necropsies from Canadian and US agencies have been added.

Authors:

This document is a collaborative effort of all organizations listed as contacts above.