



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kodiak National Wildlife Refuge
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Federal Subsistence Activity Report March 2017 – August 2017

Fisheries

Please note that results of salmon counts presented below were provided by the Alaska Department of Fish and Game (ADF&G).

Western Area

Subsistence users from Karluk and Larsen Bay were fairly successful in 2017. Strong returns of early-run sockeye salmon were reported and escapement goals met for both Karluk River and Ayakulik River. Escapement of early-run sockeye totaled 235,225 fish in the Karluk and 204,497 fish in the Ayakulik. Also noteworthy was escapement of 83,614 early-run sockeye salmon to Upper Station, which was 125% greater than average 2008-2016 returns (37,416 fish).

Regarding Chinook salmon, 2,578 returned to the Karluk River and 3,692 returned to the Ayakulik River. Neither stock met the lower escapement goal (3,000 in Karluk, 4,000 in Ayakulik).

Northern Area

Litnik escapement totaled 21,868 (escapement goal 20,000 to 50,000 fish), and Buskin River escapement totaled 7,212 (escapement goal 5,000 to 8,000 fish). Subsistence users from Kodiak, Port Lions and Ouzinkie routinely targeted these runs in federal marine areas adjacent to Afognak “Litnik” River and Buskin River.

Akalura Creek Salmon Escapement Monitoring

We counted adult sockeye salmon returning to Akalura Lake for a third consecutive year. Monitoring was initiated on July 6 and will conclude September 30. Field methods include a combination of automated timelapse photography and video to document salmon passing over panels mounted over the stream substrate. In the office, time-lapse photos are reviewed, fish are enumerated, and video is used to calibrate time-lapse counts. In 2016, we estimated that $30,902 \pm 7,990$ (95% CI) sockeye salmon returned to Akalura Lake.

Brown Bear

Population Assessment

In collaboration with ADF&G, we annually survey brown bear in late May to monitor trend in population size in different regions of Kodiak Island. In 2017, we surveyed a 122 square-mile area

between Sturgeon River, Akalura Lake, and west Frazer Lake. Results will be shared with the Council in our next report.

The Refuge annually surveys population composition and habitat use along selected streams of southwest Kodiak Island. In 2017, weekly surveys were initiated on July 2 and will continue through mid-August. Results will be shared with the Council in our next report.

Bear-Salmon Research

In July 2017, the technical report entitled “*Phenological Synchronization Disrupts Trophic Interactions between Kodiak Brown Bears and Salmon*” was accepted for publication in the journal Proceedings of the National Academy of Sciences. Co-authors included William Deacy, Jonathan Armstrong, William Leacock, Charles Robbins, David Gustine, Eric Ward, Joy Erlenbach, and Jack Stanford. Contact William Leacock or Bill Pyle at Kodiak National Wildlife Refuge if you would like to receive a copy of the report.

We continued to monitor bear use along three streams in the Karluk Lake basin (Meadow Creek, Canyon Creek, and O’Malley River) using automated timelapse cameras. The primary purposes are to document timing, both daily and diel patterns, intensity of use, and composition of seasonal bear use of selected salmon-spawning stream sites.

Bear-Berry Research

Our objective was to apply a research process to develop and select methods for annual monitoring of the berry supply, with focus on species of presumed high nutritional importance to Kodiak brown bear. In April 2017, we reported results from 2015-2016 pilot study of methods for monitoring phenology and abundance of red elderberry, salmonberry, oval-leaf blueberry, and devilsclub. Based on the successful outcome, we decided to immediately implement selected methods in an annual monitoring program. Preliminary results of 2017 monitoring have indicated a low supply of elderberry, salmonberry, and blueberry due to overwinter top-kill of stems. Apparent casual factors of salmonberry and blueberry top-kill include below average temperature between December-March coupled with minimal snow cover. In elderberry, primary apparent factors were girdling of stems by a sizeable population of Sitka black-tailed deer, which could access interior and mountain stands due to minimal snowpack.

Community Bear Dedication

On August 19, 2017, the Refuge Visitor Center hosted a community celebration and unveiling ceremony for a new bronze bear statue. A symbol for residents, the Kodiak brown bear represents a rich history of human connection to wildlife. For the past two years, a community team led by the Kodiak Brown Bear Trust has worked to bring this symbol to downtown Kodiak as permanent public art and Island icon. This successful project reflects the spirit of collaboration for conservation and management of bears and their habitat, and continues the legacy of a much-loved bear statue that honored Charles Madsen, early bear guide and champion of the Emerald Isle.

Sitka Black-tailed Deer

Significant overwinter deer mortality of deer was reported by agency biologists, local residents, and hunting guides in western and northern Kodiak Island. A likely consequence will be substantially reduced availability of deer for hunters in this region in 2017.

Roosevelt Elk

Radio-collared elk provide a basis for ADF&G's tracking of herd locations to estimate herd composition, population size and harvest quotas in the Afognak Island vicinity including Refuge lands on northeastern Afognak and Ban Islands. The ADF&G annually completes a population survey in late summer before the start of hunting seasons. Results will be shared with the Council in our next report.

Mountain Goat

The Refuge and ADF&G collaborate on monitoring and research. In 2017, annual monitoring of herd composition and distribution was conducted between late July and mid-August. Regarding research, McCrea Cobb, biometrician with the Service's Inventory and Monitoring Division, Alaska Region, is presently completing analysis of distribution data acquired from radio-collared mountain goat between 2015 and 2017. Monitoring and research results will be shared with the Council in our next report.

Migratory Birds

Seabird Colony Surveys

In summer 2017, avian biologists and volunteers targeted the nearly 400 seabird colonies in the archipelago for re-survey. These colonies were last surveyed during 2008-2010. Our goal is to visit approximately 200 colonies around Kodiak Island in 2017 and complete surveys around Afognak and Shuyak Islands in summer 2018. In addition to visiting known colony locations, biologists are on the lookout for newly established colonies. In August we also gather information on seabird productivity by recording the number of adult and young birds seen on the nesting islands and cliffs. The previous seabird colony survey report (2008-2010) can be viewed or downloaded from the refuge webpage at:

https://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Kodiak/PDF/Kodiak%20Seabird%20Colony%20Report%202013.pdf

Aleutian and Arctic Tern Monitoring

In cooperation with ADF&G and other researchers, Refuge biologists continued to monitor nesting terns throughout the archipelago in hopes of determining reasons for declines in populations of both species throughout coastal Alaska. To date (Aug. 7) we visited 42 sites used previously for nesting, but recorded terns at only 12 locations and confirmed nesting at only nine sites. At most colonies we placed digital game cameras at nests to document hatching success, nest persistence, adult attendance patterns, adult vigilance, and nest predators.

Migratory Bird Subsistence Harvest

Outreach and Law Enforcement staff coordinated with staff at the Sun'aq Tribe of Kodiak to provide information to the public about migratory bird subsistence harvest and the 2017 change in regulations for harvest of emperor goose. New outreach materials included a fact sheet about Kodiak area subsistence harvest for migratory birds, an internal powerpoint presentation for any staff with public outreach duties, and a new page on the Kodiak Refuge website: https://www.fws.gov/refuge/Kodiak/visit/rules_and_regulations/migbird.html. The Refuge also shared materials developed by the AMBCC and Sun'aq Tribe of Kodiak specific to emperor goose harvest, both in print at the Visitor Center and online. Staff brought printed materials and an emperor goose exhibit to the village of Old Harbor during a traveling visitor center trip on board the r/v Ursa Major II.

Alaska Migratory Bird Calendar

An outreach visit to Old Harbor in May provided opportunity to celebrate local resident participation and accomplishment in the 2018 Alaska Migratory Bird Calendar Contest, which featured the theme "*Migratory Birds Bring Me _____*". Six students from Sheila Leinberger's 2nd-5th grade class had art and literature entries that were selected to advance to the state competition; two of the students will have art and poetry featured in the 2018 calendar. Ribbons were presented, and all students received a round of applause for their beautiful work. The Refuge plans to again solicit rural school participation in the 2019 calendar contest in fall 2017. The 2019 calendar theme is "*Birds Bouncing Back - Conservation Works*," celebrating the success and increase in numbers of birds of concern.

Migratory Bird and Alutiiq Culture Workshop

Refuge staff partnered with the Sun'aq Tribe of Kodiak to propose a fall 2017 outreach art workshop celebrating Alutiiq culture and birds. We secured funding through an internal Alaska Fish and Wildlife Service call for proposals for projects that *Connect People with Nature*, with the intent to conduct a workshop in the city of Kodiak and in some of Kodiak's villages.

Other News

Village-based Science & Culture Camps

The Refuge received a small grant to support Dig Afognak, Nuniaq, and Akhiok Kids Camp. Grant funds were used to support camp travel and purchase of camp supplies and equipment.

Refuge Information Technician

We plan to recruit a locally-based Refuge Information Technician or Subsistence Biologist in fall 2017. Outreach efforts continue; anyone knowing likely candidates please contact Refuge Manager Mike Brady.