United States Department of the Interior

FISH AND WILDLIFE SERVICE
Alaska Peninsula and Becharof National Wildlife Refuges
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Agency Report to:

Bristol Bay Federal Subsistence Regional Advisory Council

Public Meeting, Naknek, Alaska
November 2-3, 2022

Staffing at Alaska Peninsula and Becharof NWR

Alaska Peninsula-Becharof NWR has hired Byrce Woodruff as our new Big Game/Mammal Wildlife Biologist, a position left vacant since January 2017. Bryce started with us on October 11th, relocating to King Salmon from Homer, AK. Byrce has worked seasonally on other Alaska refuges with the USFWS, most recently as biologist at Tetlin NWR in Tok, AK. We are happy to have Byrce on-board and eager to have him working with local subsistence users, collaborating with ADF&G on moose, caribou, and brown bear management in GMU 9, as well as initiating Refuge monitoring priorities for Alaska hare and small mammals on the Alaska Peninsula.

Additionally, we will soon be hiring a Refuge Avian Biologist, a position that has been vacant since 2020. We will initiate recruitment and hiring on that position in early 2023. By summer 2023, the wildlife biology program at Alaska Peninsula-Becharof NWR should be fully staffed for the first time since 2015.

For more information on staffing contact: Susan Alexander, USFWS, Alaska Peninsula/Becharof NWR, PO Box 277, King Salmon, AK 99613. Phone: 907-246-3339; e-mail: susan_alexander@fws.gov

Mammal Projects

Project**: Moose Composition and Trend Surveys (GMUs 9C & 9E)**

In collaboration and coordination with ADF&G the Refuge will conduct aerial moose composition surveys from Nov 1-Dec 10. Our focus will remain on surveying long-term Refuge trend areas. Special emphasis will be given to surveying the Big Creek and Black Lake trend areas, given the interest in attaining good moose survey data related to expanded harvest opportunities from increased 9C moose season length to Sept 25th and increased local interest in moose harvest due to declining salmon returns within the Chignik communities.

For more information on mammal projects contact: Bill Smith, USFWS, Alaska Peninsula/Becharof NWR, PO Box 277, King Salmon, AK 99613. Phone: 907-246-3339; e-mail: william_smith@fws.gov

Habitat Projects

Project: Landscape Change and Shrubification Monitoring on the Alaska Peninsula

During 2021 biologists from Alaska Peninsula-Becharof National Wildlife initiated a project to establish 32 long-term monitoring (LTM) plots on Becharof unit (15 plots) and Ugashik unit (17 plots). Our objective is to provide a quantitative basis for evaluating ecological change every 10-years in areas of maritime tundra, which have remained little studied in comparison to colder Arctic tundras.

Our 2022 analysis indicated 8 ecotypes represented within the LTM plot network established in 2021. The current network of LTM plots provides coverage of common habitats occurring at low elevations; future efforts to expand the LTM network will focus on improving the spatial balance of plots, adding plots in ecotypes not currently included in the network (particularly Alpine ecotypes), and increasing the sample size of ecotypes already represented in the network. These objectives would best be met using a helicopter for field access and require supplemental funding to implement.

For more information on habitat projects contact: Bill Smith, USFWS, Alaska Peninsula/Becharof NWR, PO Box 277, King Salmon, AK 99613. Phone: 907-246-3339; e-mail: william_smith@fws.gov

Avian Projects

Project: Spring Ptarmigan Density, Alaska Peninsula

In May 2022, the Alaska Peninsula & Becharof National Wildlife Refuges resampled 8 ptarmigan line transects at 4 different locations prior monitored in 2012, 2013, and 2015. Beginning in May 2021, Katmai National Park joined the efforts and adopted the U.S. Fish and Wildlife Service protocol so that the ptarmigan data could be combined across a larger area of the Northern Alaska Peninsula. In 2022, Katmai completed 9 line transects at 6 different locations, including the two sites within road access of Naknek and King Salmon. Through our combined efforts, we completed 17 Willow Ptarmigan line transects in 2022. Our results reported below reflect data summarized from only 8 Refuge transects, as Katmai National Park has not yet completed their analysis at this time.

Willow ptarmigan numbers appear to be rebounding on the Alaska Peninsula. The 2022 density of 21.4 male ptarmigan/km^2 is the second highest density recorded of four survey years and up considerably from the 2015 density estimate of 2.5 male ptarmigan/km^2 (Welfelt and Pepin 2016; Figure 2). The Alaska Peninsula ptarmigan numbers seem to indicate a 10-year population cycle, common in grouse and ptarmigan populations. However, given the large gap in survey efforts, it's impossible to know the density numbers between 2015 and 2022.

It should be noted that the 2022 Refuge willow ptarmigan density estimate is based on a much smaller sample size than the previous estimates (13 transects in 2012, 18 in 2013, and 21 in 2015). It should also be noted that the road accessible and more heavily hunted transects (Ralf's Road and Eight Mile) had considerably lower detections compared to the more remote locations (Table 1).

Figure 2. Male willow ptarmigan density estimates (male ptarmigan/km^2) by survey year, including the number of transects completed each year. Estimates are based on U.S. Fish and Wildlife Service data only.

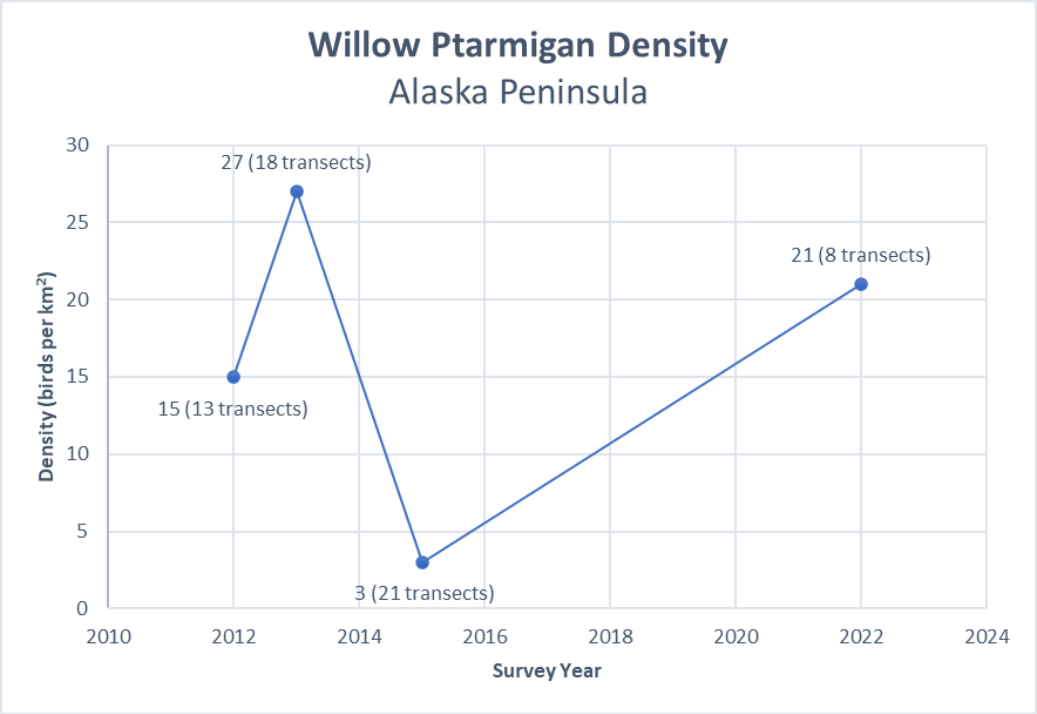

Table 1. All U.S. Fish and Wildlife Service and National Park Service 2022 male willow ptarmigan detections by transect line, Alaska Peninsula.

Land Manager	Site	Transect Name	Male Detections
Paug-Vik	Ralf's Road	RARO040	**10**
Paug-Vik	Eight Mile	EIMI026	**3**
State of Alaska	Jensen Strip	JEST007	**37**
		JEST283	**54**
State of Alaska/USFWS	Becharof Outlet	BEOU218	**24**
		BEOU288	**23**
USFWS	Blue Mountain	BMNW035	**29**
		BMNW318	**50**
USFWS	Ugashik Creek	UGAS007	**21**
		UGAS135	**30**
NPS	Kukaklek Lake	KULA_01	**59**
		KULA_02	**69**
NPS	Contact Creek	CTCR_01	**27**
		CTCR_02	**34**
NPS	Albert Johnson Creek	ALJO_01	**17**
		ALJO_02	**17**
NPS	Nanuktuk Creek	NNKTK_01	**59**

For more information on avian projects contact: Bill Smith, USFWS, Alaska Peninsula/Becharof NWR, PO Box 277, King Salmon, AK 99613. Phone: 907-246-3339; e-mail: william_smith@fws.gov

Aquatic Projects

Project: Watershed Processes- Stream and Lake Temperature

In 2022 Refuge staff established 17 new stream temperature monitoring sites in 3 Bristol Bay watersheds on the Northern Alaska Peninsula to record continuous year-round stream temperatures with intermittent water quality measurements (i.e., pH/ORP, conductivity, nitrate, ammonia, dissolved oxygen). In 2023 we will expand our monitoring locations to include 2 additional Bristol Bay watersheds and 1 Pacific watershed, while adding ambient air temperature and lotic light attenuation monitoring to each site. In 2024 we will contrast stream temperatures to probed hyporheic substrate temperatures to identify at least 1 gaining reach per tributary in chinook or rainbow spawning habitats for at least 5 of the 8 monitored watersheds. At each gaining reach, we will install mini piezometers to interpret the vertical temperature gradient, flow/heat balance, and exchange and influx rates.

Over the next 15-years (2022-2036) our objective will not only entail temperature monitoring, but ultimately position the Refuge to be able to determine the controlling influence of climate, geomorphology, land cover, and hydrology on the spatial and temporal variability of water temperature for at least 4 anadromous Chinook watersheds on the Northern Alaska Peninsula.

Project: Naknek River Chinook- Big Creek Salmon Weir

Alaska Peninsula-Becharof NWR is collaborating with fisheries biologists from the USFWS Kenai Fish and Wildlife Conservation Office to attain funding for the construction and operation of salmon weir on Big Creek, a tributary of the Naknek River. Anecdotal information in recent years points to declining Chinook subsistence and recreational catch rates on the Naknek. Our objective will be to secure adequate funding to operate a weir on Big Creek form 2024-2028 to attain an accurate and precise 5-year estimate of Big Creek adult salmon return abundance and run timing through in-river run enumeration in comparison to Big Creek weir data from 2003-2004. Should we be able to secure adequate funds, we may also initiate Big Creek study objectives for determining: smolt abundance (via mark-recapture), total return of smolts as adults (as calculated); and estimating fry abundance and brood-year strength to better understand if coherent trends exist.

For more information on aquatic projects contact: Bill Smith, USFWS, Alaska Peninsula/Becharof NWR, PO Box 277, King Salmon, AK 99613. Phone: 907-246-3339; e-mail: william_smith@fws.gov

Visitor Services Programs

Project: Multi-Use Visitor and Community Center, King Salmon, AK.

Alaska Peninsula and Becharof National Wildlife Refuges is working with three partner organizations – the Bristol Bay Borough, Bristol Bay Borough Chamber of Commerce, Katmai National Park and Preserve, to develop a vision for a new multi-use space in King Salmon, Alaska.

Through community and tribal consultation, we envision a Bristol Bay Regional Visitor Center that:

- Provides a gateway to area communities and Southwest Alaska's diversity of lands by creating a welcoming environment for visitors to learn about the Bristol Bay watershed, wildlife, and the region's natural, cultural, geologic, and industrial heritage
- Orients, informs, and inspires newcomers by providing information about local cultures, businesses, tourism, facilities, and recreation opportunities across the region
- Offers an education campus available for local community access, particularly during non-tourism seasons
- Advances the region's growing tourism industry by attracting and encouraging visitors to fully explore Southwest Alaska

For more information on the visitor services program contact: Sarah Lang, USFWS, Alaska Peninsula/Becharof NWR, PO Box 277, King Salmon, AK 99613. Phone: 907-246-1201; e-mail: sarah_lang@fws.gov