

Photo, reflections in the water, taken in the refuge by U.S. Fish and Wildlife Service.

#### Yukon Flats National Wildlife Refuge 2022-2023 Annual Report

October 2022 - September 2023



Yukon Flats National Wildlife Refuge 2022-2023 Annual Staff Report



Photo, the refuge in fall by U.S. Fish and Wildlife Service.

## **Thank You**

The staff of the Yukon Flats National Wildlife Refuge have many responsibilities. Much of our work would not be possible without the support of others too numerous to mention. From our on-the-ground access across lands owned by a village or regional corporation to the sharing of information across social media, each and every day our friends and neighbors help us steward this amazing landscape for current and future generations.



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Photo, taken during duck banding in the refuge, by U.S. Fish and Wildlife Service.





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Photo, the braided Yukon River between Circle and Fort Yukon provides world class spawning habitat to sheefish, Bering cisco, and other whitefish species.

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# Refuge Overview

Yukon Flats National Wildlife Refuge was established in 1980 and has several purposes defined by law, including conserving fish and wildlife populations and habitats in their natural diversity, fulfilling the international treaty obligations of the United States with respect to fish and wildlife and their habitats, providing subsistence opportunities for local residents, and ensuring water quality and necessary water quantity within the refuge. Home to over 1,000 Indigenous people who have occupied these lands for thousands of years, the refuge boundary encompasses over 11-million acres of land (8.63-million federally managed acres) in east-central Alaska. The Yukon River sculpts the vast Yukon Flats floodplain as it flows. Countless



lakes, ponds, and streams in the basin support wildlife and humans as they have for generations. Through biology, education, outreach, and enforcement, Yukon Flats staff partner with others to conserve resources and monitor animals and habitats that are important from local, national and global perspectives. This report is a summary of staff activities occurring between October 2022 through September 2023.

#### Photo, the refuge in winter by U.S. Fish and Wildlife Service.



#### **Moose Population**

A moose survey was conducted in March 2023 for the western Yukon Flats. The estimate was 675 total observable moose. The density was 0.30 moose per square mile with 589 adults and 88 calves. Spring moose numbers were above the long-term average and the proportion of calves was intermediate relative to previous spring surveys. A moose survey of the eastern Yukon Flats may happen in fall 2023.



Photo: Moose by Tom Koerner/U.S. Fish and Wildlife Service.





# Lynx and Snowshoe Hare Populations Revealed through Camera Traps

Trail cameras capture life in the Yukon Flats year-round. Since 2016, up to 34 cameras have been operating. This story is one highlight from this project. A camera trap study was conducted during 2016-2022 in the refuge, with 4 to sixteen cameras that operated year-round. Placement of cameras across the refuge was stratified random in 100 km2 sample units. Cameras were checked in spring or summer and SD images were cataloged in a database. Relative abundance was assessed as independent detections/trap nights. Independent detections represented triggers separated by >60





minutes. Time period was July 1 until June of the following year. The lynx population peaked in 2018–2019, declined the following winter, and crashed by 2020–2021. Lynx numbers likely declined from reduced survival, and dispersal of individuals in search of snowshoe hares. Snowshoe hare numbers crashed a year earlier in 2018– 2019. Experimentation has demonstrated that snowshoe hare populations crash from predator chases.



## Lynx Movement Study

In March 2023, staff completed a seventh year studying lynx movement patterns, dispersal behavior, and survival in relation to snowshoe hare abundance. Lynx numbers decreased significantly in 2020 and staff have not livecaptured a lynx since 2020. Capture operations related to this study also occurred in Tetlin National Wildlife Refuge, Koyukuk/Nowitna/Innoko Refuge Complex, and Gates of the Arctic National Park and Preserve but only 8 lynx were captured in 2023 on the Yukon Flats. Snowshoe hare transects indicate a slight increase in hare abundance in 2023 in the Yukon Flats.



Photo, a lynx by Lisa Hupp/U.S. Fish and Wildlife Service.

## **Sheep Survey**

A White Mountains sheep survey was completed in July 2023 by Alaska Department of Fish and Game and the refuge. Overall counts of rams, ewes and lambs were similar to 2022 but the proportion of lambs was higher.



Photo of a Dall's sheep ram by U.S. Fish and Wildlife Service.



#### Waterfowl Surveys -Scoters, Scaup and Loons

2023 marked the twenty-second year of annual aerial surveys to monitor scoter and scaup populations in the Yukon Flats. All these waterbirds are important indicators of good water quality and healthy habitats. Results from the 2023 scaup and scoter surveys are still being tabulated. The 2023 August loon survey was not completed due to weather and other factors. The White-winged Scoter estimate in the study area in 2022 (14,707) was very similar to the 20-year mean of 14,730, and the scaup estimate for 2022 was 31,653, which was slightly higher than average for all survey years (28,891). The Pacific Loon index for 2022 was 1,204, which was on the low end of estimates compared to previous surveys (2007 – 2021 average = 1,559, range = 1,071 – 2,125). The Trumpeter Swan population index was 1,162 in 2022, which was similar to the previous 14year average from 2008 – 2021 (935).



Photo, male Lesser's Scaup by U.S. Fish and Wildlife Service.



#### Invasive Plant Surveys -Yukon Flats and Interior Alaska

The U.S. Fish and Wildlife Service National Wildlife Refuge System manages invasive species collaboratively with public and private organizations, in and adjacent to 588 national wildlife refuges, including the Yukon Flats National Wildlife Refuge. Yukon Flats refuge staff work closely with Service programs, the Fairbanks Soil and Water Conservation District (FSWCD) and other partners to plan, survey and document terrestrial and aquatic plants that are not local to interior Alaska. Some of these nonlocal plants are considered invasive when their introduction causes or is likely to cause economic or environmental harm or harm to human health.

Our goal is to prevent and control the spread of invasive plant populations (on land and water) in refuges and private lands. The refuge and FSWCD have conducted early detection surveys on interior Alaska rivers and in Yukon Flats communities since 2010. Staff are revisiting Yukon Flats communities over the next couple of years to update the status of nonlocal and invasive plants.



Photo, Invasive Elodea Survey crew member recording a GPS waypoint on a slough east of Minto, Alaska (2022), by Delia Vargas Kretsinger/U.S. Fish and Wildlife Service.

Terrestrial invasive plant surveys were conducted in the communities of Stevens Village and Venetie in 2023. White sweet clover infestations were again seen in Stevens Village. No high priority invasive plants were detected in Venetie. A survey was also conducted at the Isom Creek firebreak line off the Dalton Highway by the U.S. Fish and Wildlife Service Division of Natural Resources staff. No terrestrial invasives were found and vegetation was mostly undisturbed.



#### ...continued, Invasive Plant Surveys -Yukon Flats and Interior Alaska



Photo, an Elodea survey map where crews conduct surveys, by Delia Vargas Kretsinger/U.S. Fish and Wildlife Service.

Fairbanks Soil and Water and the U.S. Fish and Wildlife Service (northern region) Invasive Species Program crews conducted surveys throughout interior Alaska including the Fairbanks North Star Borough and the Galena, Koyukuk, Nulato and Kaltag areas.

In mid-September Yukon Flats staff will conduct an Elodea survey downstream of the Dalton Highway Yukon River bridge toward the Nowitna River, Ruby and Galena. Members of the interior Cooperative Invasive Species Management Area (CISMA) will conduct a survey downstream of Nenana on the Tanana River as well. Invasives can directly affect Alaska's native wildlife populations by outcompeting vegetation that wildlife and subsistence users depend on. Aquatic invasives like Elodea can degrade salmon spawning beds. This could adversely impact Yukon River salmon population numbers which are already imperiled. Elodea can also make boat travel difficult, possibly preventing access to favorite hunting grounds.

You can prevent the spread of both terrestrial and aquatic invasive plants by cleaning your footwear, ATV's and boats/gear before visiting new locations (fish/duck and moose hunting camps, quiet backwaters). If you see anything different, feel free to contact refuge staff or call the Invasive Species Hotline: 1–877– INVASIV.



## **Duck Brood Survey**



In July 2023, a duck brood survey was conducted at four wetland complexes; Canvasback Lake, a wetland by Track Lake, Shack Lake, and Plot F. Data are being reviewed and preliminary observations were that brood numbers were reduced in 2023. A report is anticipated in December. No evidence of sick ducks from avian influenza was observed. White-winged Scoters are a boreal nesting sea duck. After hatching, the ducklings begin aggregating into multi-brood creches. The creche in the above photo had over 100 ducklings in it.

Photo, a creche of ducklings in the refuge by Sheila Dufford/U.S. Fish and Wildlife Service.



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### Duck Brood Production Survey Summary

#### Lesser Scaup

Production in 2022 was similar to the long-term average at Canvasback Lake and a wetland by Track Lake, and below average at Plot F. Observer difference were evident at Canvasback Lake. Age classes trended toward younger ducklings.

#### White-winged Scoter

In 2022, production at Canvasback Lake was below average at Track Lake, and better than average at Plot F. Observer differences were evident at Canvasback Lake. Age classes were heavily skewed toward younger ducklings.

#### Canvasback

In 2022, Canvasback were the bright spot. Production was well above average at Track Lake, above average at Plot F, and similar to the long-term average at Canvasback Lake. Observer differences were evident at Plot F and Canvasback Lake. Age and classes included a mix of young and moderate age ducklings.



Photo, Mallard with duckling at Shack Lake by U.S. Fish and Wildlife Service.

#### **American Wigeon**

At Track Lake, production was better than average, and average at the other two locations. Observer differences were evident at Plot F where there was an experienced and inexperienced observer. Age classes trended toward the moderate age classes, 1b-2b, with some class 3 ducklings.

#### **Green-winged Teal**

Production was mixed. At Canvasback Lake, production was greater than average, similar to the long-term average at Track Lake, and lower than average at Plot F. Observer differences were evident at Plot F and Track Lake. Age classes trended toward older ducklings.

#### Horned Grebe

Production was low in 2022. At Canvasback Lake and Track Lake, production was below average, and similar to the long-term average at Plot F. Brood sizes tended to be low, probably because this species does not forage as a group like waterfowl. Age classes were moderate to young, with a few individuals in the older classes.



### Survey of Bald Eagles and Other Stick-nesting Birds

The eighth annual survey of Bald Eagle nests and other stick-nesting birds was conducted on the Draanjik River in 2023. Results from the 2023 survey are still being tabulated, so 2022 results are below. One-time inventory surveys were conducted in previous years (since 2014) along the Yukon, Hodzana, Beaver, Birch, Porcupine and T'eedriinjik rivers. Inventorying and monitoring Bald Eagle nests and foraging sites will provide information on their local densities, trends, and habitat use, and will provide a database needed for responsible management. Federal law (Federal Register: 50 Part 22) requires permits to disturb Bald Eagles. As management activities arise, such as requests for right-of-ways, special use permits, mining activities, land exchanges, etc., we are required to



protect nests (active and inactive) and foraging sites. This project is an effort to acquire data to properly support such actions. Results from the 2023 survey are still being tabulated.

The Number of Active Nests on the Draanjik River from 2014-2022 are as follows:

Bald Eagle Nests: •2014: 6 •2015: 10 •2016: 8 •2017: 5 •2018: 7 •2019: 8 •2021: 11 •2022: 7	Great Horned Owl nests: •2014: 0 •2015: 1 •2016: 0 •2017: 0 •2018: 0 •2019: 0 •2021: 0 •2022: 0	Osprey nests: •2014: 5 •2015: 4 •2016: 6 •2017: 0 •2018: 0 •2019: 0 •2021: 1 •2022: 1
Raven nests: •2014: 1 •2015: 0 •2016: 3 •2017: 0 •2018: 1 •2019: 1 •2021: 0 •2022: 0	Northern Goshawk nests: •2014: 2 •2015: 0 •2016: 0 •2017: 0 •2018: 0 •2019: 0 •2021: 1 •2022: 0	Red-tailed Hawk nests: •2014: 0 •2015: 0 •2016: 0 •2017: 1 •2018: 0 •2019: 0 •2021: 0 •2022: 0

Photo, a Bald Eagle by George Geleta/U.S. Fish and Wildlife Service.



## **Duck Banding**

Ducks were banded at Canvasback Lake during August 2023. The goal of the project is to band mallards to inform harvest management. Other ducks incidentally captured were banded. Totals included 19 Mallard, 212 Northern Pintail, and 4 American Greenwinged Teal. No sick or dead birds or other evidence of avian influenza was observed.



Photo, duck banding on Canvasback Lake by Bryce Lake/U.S Fish and Wildlife Service.

### Geospatial Application Developed to Measure a Changing Landscape

Refuge staff entered into a partnership with the Geographic Information Network of Alaska at the University of Alaska Fairbanks to develop a web application that will allow managers and biologists the ability to easily display and summarize remotely sensed data to inform natural resource management. Staff will be able to spatially monitor the growing season, snow cover, surface water, wildfires and more through time. The new application will be highly interactive and easy to use allowing staff to produce maps, tables and figures that display change across the Yukon Flats Basin.



## Eyes in the Bush –Monitoring in Fort Yukon, Circle, Venetie, and Beaver

Eyes in the Bush monitoring program was expanded to the communities of Venetie and Beaver this past year. Technicians include Robert Knudson and Mike Peter from Fort Yukon, Amanda Pope from Circle, Kayleen Ward Peter from Venetie and Birdie Billy from Beaver. Eyes in the Bush resource monitoring program was established in 2021 to monitor measures of snow, thawed soil and air quality; dates for green up, river ice in/out, and migratory bird arrival; early detection of emerging soil-based pathogens, invasive plants and ticks; and fire monitoring.

The information is recorded in the Indigenous Sentinels Network (ISN) database, which provides Indigenous communities with tools, training, networking and convening, coordination, and capacity for ecological, environmental, and climate monitoring. If you are interested in expanding this effort to your Yukon Flats community contact Refuge Biologist, Mark Bertram at 907-456-0440 for more information.



Photo, willow plants in early spring with buds emerging are a sign of green up in the refuge, by U.S. Fish and Wildlife Service.



## Water Monitoring

Dr. Tamlin Pavelsky, University of North Carolina, and crew installed automated water level gauges in 23 lakes in the Yukon Flats Refuge and surrounding areas in support of the National Aeronautics and Space Administration (NASA) Surface Water and Ocean Topography (SWOT) satellite mission. Additionally, three of the gauges were installed in collaboration with Amanda Pope in lakes near Circle. These gages will evaluate the capabilities of the SWOT satellite mission, which is designed to measure water levels in lakes and rivers and will help to better understand the patterns of lake water level variation in the refuge. In addition to this work on lakes, they also worked with Wade Fields of Fort Yukon to

conduct long profiles of water surface elevation measurements on the Yukon River between Circle and Ft. Yukon.



Photo, surface water gage equipment mounted on a tripod in a wetland in the refuge by Tamlin Pavelsky.

#### Fire Season Update It was a very quiet fire season across Alaska

It was a very quiet fire season across Alaska and the Yukon Flats Refuge was no exception. The first fire was reported on the refuge on July 26, approximately 6 weeks later than normal. In all, 9 fires burned 6192acres in the refuge in Limited Fire Management areas. There was a nonstandard response to suppress one of these fires when it threatened nearby Alaska Native allotments. No fires impacted any of the newly designated yedoma protection areas.



Photo, the Sand Fire demonstrating minimal fire behavior on August 17, by Alaska Fire Service.



## Fire Management Pilot Project

A change was made in 2023 that moved eight areas (1.8-million acres) within the refuge from fire management option Limited to Modified. These areas have not had fire since 1990 and sit atop yedoma permafrost. Our intent is to preserve mid-to-late successional plant communities for habitat diversity, protect carbon-rich, deep yedoma to delay the release of greenhouse gases into the atmosphere, and reduce air pollution and its impacts to subsistence users.

By elevating the default response to early season fires in these areas from Monitor to Full Suppression, it is expected that annual yedoma area burned will be reduced resulting in less loss of insulating duff, retention of older plant communities, increased yedoma persistence, and lowered greenhouse gas emissions from yedoma carbon stores. Additionally, some structures, allotments, and private lands may be further protected from wildfire because of the option change. The areas to protect were selected in consultation with Alaska Fire Service and others to avoid adjacent private land boundaries, and to ensure fire personnel, if injured, can be reached by helicopter, and delivered to the



nearest airport for transport to a medical facility without refueling. It is the intent of the U.S. Fish and Wildlife Service that initial attack of fires within the change areas only take place when higher priority threats to life and property do not take precedence and there is a high confidence that the fire can be fully contained within 72 hours. Decisions to engage a fire beyond this 72-hour window will be made by the Alaska Fire Service on an incident-byincident basis in consultation with the U.S. Fish and Wildlife Service. Fires that originate outside of, but move into the area, will not be suppressed. Given the fire history and resulting mosaic of successional vegetation communities in this area, there has been a relatively low number of fire starts in the past 23 years. For all yedoma (3.9 million acres) in the refuge, fifty-five fire starts were recorded from 2000-2022, or 2.4 starts per year. It is recognized, however, that burn scars transitioning to spruce will become more susceptible to burning and fire starts will likely increase in the future.

Photo, fireweed growing back after a wildfire, by U.S. Fish and Wildlife Service.



## Civilian Climate Corps Fellow

Denna Martinez was selected as Civilian Climate Corps Fellow assigned to both Yukon Flats and Kenai refuges in 2022. In 2023 Denna assisted us in the field with brood surveys in July. She recently drafted an assessment of climate change effects and management implications for climate change adaptation for the refuge.



Photo, Denna Martinez, by U.S. Fish and wildlife Service.



Photo, Keeley Lanigan helping with duck banding, by U.S. Fish and wildlife Service.

#### Directorate Resource Fellow

Keeley Lanigan was assigned to assist with the US Fish and Wildlife Service's Anthropocene Working Group this past summer and also volunteered to assist with several refuge projects which included duck banding, and bee, microbe, and plant sampling.



## **Venetie Culture Camp**

Refuge staff participated in the Venetie Culture Camp July 10-12. Other participants included the Council of Athabascan Tribal Governments, Tanana Chiefs Conference, Alaska Department of Fish & Game, Arctic Village residents, and Arctic National Wildlife Refuge staff. Activities were hosted at Big Lake and the community hall. We provided GPS and archery instruction and thoroughly enjoyed the one-on-one interaction with all participants.

### Law Enforcement Program

Senior Federal Wildlife Officer (FWO) Cody Smith continued working towards becoming a carded pilot and spent a significant amount of time in flight training. Sr. FWO Smith attended the Big Game Commercial Services Board meeting and joined in discussion on regulatory updates and issues pertaining to big game guides and transporters on interior Alaska refuges. An aerial patrol was conducted for spring bear hunt season and contact was made with permitted guides. Sr. FWO Smith conducted river patrols throughout Yukon Flats National Wildlife Refuge during the salmon run for closure enforcement and gear restrictions, and additional river patrols for fall moose hunting season.



Photo, Venetie residents sewing beaded handiwork at the Venetie Culture Camp, by U.S. Fish and Wildlife Service.



Photo, Senior Federal Wildlife Officer Cody Smith in the field, by U.S. Fish and Wildlife Service.



## Pollinator (Bee) Sampling

Pollinators play a key ecological role in ensuring seed and fruit production for plants. In the past 50 years there have been significant declines in bee populations nationwide. We participated in the Alaska Bee Atlas project again this year and collected samples from Venetie, Shack Lake, and Plot F. Collections from 2022 resulted in 18 new bee species in the refuge species database such as the Gypsy Cuckoo Bumblebee pictured here.



Photo of a Gypsy Cuckoo Bumblebee in the refuge, by U.S. Fish and Wildlife Service.

## **Soil Microbe Sampling**



Recent increases in air temperature in Alaska has initiated warming of permafrost laden soils. Permafrost is a reservoir to microorganisms and viruses, some potentially viable. We have limited knowledge of the potential impacts to humans, animals and plants from thawing soils. In 2021 the refuge teamed up with University of Alaska-Fairbanks to begin inventorying soil microbes. Thus far we have sampled in Fort Yukon, Circle and a few wetlands across Yukon Flats. In 2023 we sampled in Circle, Fort Yukon, Beaver and Venetie. Findings indicate a diversity of microbes are present.

Photo, the eroding shoreline of Big Lake, Venetie Alaska, and the site of soil microbe sampling, by U.S. Fish and Wildlife Service.



## Permafrost Sampling

Yedoma is very old, ice-rich permafrost that is loaded with carbon. Yedoma exists in the foothills surrounding Yukon Flats. We have partnered with permafrost and soils expert Torre Jorgenson to initiate permafrost monitoring stations at two locations in the Yukon Flats Basin to monitor both soil and water temperatures and measure thaw depths in both burned and unburned habitats.



Photo, Torre Jorgenson monitoring soil temperatures in a burn site in the Yukon Flats, by U.S. Fish and Wildlife Service.

## Isom Creek Sampling

U.S. Fish and Wildlife Service crew comprised of Brett Parks, Keeley Lanigan, Emily Yurcich, Roger Kaye and Liz Moore conducted bee, microbe, and invasive sampling and fire habitat inventory on the 2019 Isom Creek Fire site located on the refuge.



Photo, the Isom Creek sampling crew stops at the Arctic Circle crossing sign along the Dalton Highway, by U.S. Fish and Wildlife Service.



## Staffing and Budgets

Due to long-term funding declines for the National Wildlife Refuge System, the U.S. Fish and Wildlife Service initiated a multiyear effort to thoughtfully adjust distribution of funding and staffing among the 16 refuges in Alaska. The intent was to meet Refuge System goals and priorities while giving flexibility to managers in response to unpredictable budget cycles. As a result, staffing and budgets for the Kanuti and Yukon Flats refuges are being reduced. As staff leave or retire many positions will not be refilled and eventually the two offices will be merged with each retaining a manager. This plan is subject to change if funding for the Refuge System increases significantly. The USFWS offered consultation to Tribes and ANCSA (Alaska Native Claims Settlement Act) corporations within the region. Gwich'yaa Zhee Gwich'in Tribal Government adopted a resolution in opposition to the merger.



Photo, Beaver Creek (looking south) by U.S. Fish and Wildlife Service.

We welcomed two new employees this year. Marissa Banks and Emily Magnuson. Marissa is our shared budget analyst and Emily is the assistant refuge manager. Emily grew up in Fairbanks and worked over a decade with USFWS most recently with Arctic Refuge. Marissa enjoys being in the great outdoors and providing support working on conservation matters that will endure for future generations to experience.

## Status of Doyon-Hilcorp Project

Last fall we reported that in 2021 we commented on Hilcorp applications for temporary water use authorizations to support a stratigraphic well program on lands adjacent to the refuge. We have no further news to share since our report last October.



#### Annual Funding Agreement with the Council of Athabascan Tribal Governments

The U.S. Fish and Wildlife Service entered its 21<sup>st</sup> year of partnering with the Council of Athabascan Tribal Governments (CATG) under the Indian Self-determination and Education Assistance Act. Programs, functions, services and activities CATG employees performed included brush clearing, fence construction and repair; Eyes in the Bush monitoring in Circle and Fort Yukon; cultural and science camp in multiple villages; maintenance and logistics in Beaver and Fort Yukon; hunter liaison work in Circle and Fort Yukon; and a pilot project to partner with tribes in Beaver, Birch Creek and Stevens Village to improve reporting outcomes for the 25D-West federal moose hunt.

#### **Status of Compatibility Determinations**



After two years of engagement with Tribes, Tanana Chiefs Conference, ANCSA (Alaska Native Claims Settlement Act) corporations, the State of Alaska and the public, this spring we finalized the required review of various uses of the refuge to ensure they are compatible with achieving the purposes of the refuge. The uses reviewed were hunting, fishing, trapping, natural resource gathering, cabins, motorized access, wildlife observation and photography, scientific research and surveys and management activities of the State of Alaska. We anticipate releasing a draft determination for surface exploration for oil and gas, for public review and comment, next year.

Photo, the 10,000-square mile Yukon Flats Basin is central to the Yukon Flats Refuge, by U.S. Fish and wildlife Service.



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Photo, two moose by Ryan Hagerty/U.S. Fish and Wildlife Service.

## **Hunter Liaison Project**

At the time of this writing, hunter liaisons are working in Circle. After consultation with the Council of Athabascan Tribal Governments (CATG), a decision was made to not post a hunter liaison in Fort Yukon due to lack of hunters in the village in 2022. We appreciate funding support from the Yukon-Charley Rivers National Preserve (National Park Service) in support of the liaison position in Circle.

#### **Permitted Activities**

All permittees are required to avoid interfering with subsistence activities, and if operating aircraft to do so in a manner that does not result in harassment of wildlife. Eight air taxi operators received a permit to provide services on refuge lands and waters in 2023, if needed. Nearly twenty permits are valid for subsistence and trapping cabins. Zero filming permits were issued. Two big game guides and zero recreational guides operated in 2023. Two scientific researchers were permitted to investigate the level of fire severity in recent burns and validate the National Aeronautics and Space Administration (NASA) Surface Water and Ocean Topography mission through the collection of water surface elevation measurements. The Poker Flats Research Range continued their annual operation under permit to retrieve rocket debris located on refuge lands.



### **Facilities and Property**



Photo, Trent Adams works on a fence in Beaver, Alaska, by Dorothea Adams/Council of Athabascan Tribal Governments.

The U.S. Fish and Wildlife Service constructed a bunkhouse in Fort Yukon that has already supported researchers working on migratory birds and icthyophonus in Chinook salmon.

Due to rising costs and volatility of fossil fuel-based energy and decreasing costs of renewable energy, U.S. Fish and Wildlife Service evaluated the financial and logistical feasibility of installing solar photovoltaic electricity systems in facilities in Fairbanks and Fort Yukon.

Updated thermostat controls were installed in the hangar in Fairbanks and the heating source will be converted from fuel oil to natural gas. This year repairs were also completed to the security fence and storage shed in Beaver.



## Old Bureau of Indian Affairs School Contaminant Remediation Project

As we reported last year, the U.S. Fish and Wildlife Service owns a lot in Beaver, Alaska, which contains the current school and an old Bureau of Indian Affairs(BIA) school. The grounds and the old school are contaminated with an assortment of chemicals. Refuge staff were successful in obtaining funds to characterize the contamination and prepare a scope of remediation and that work will be completed by the end of September 2023. The U.S. Fish and Wildlife Service will be seeking funds to remediate the site. Once remediated, a land exchange with Beaver Kwitch'in Corporation could be done so the Corporation would own this valuable site within the community.



Photo, former Bureau of Indian Affairs school facility in Beaver, Alaska, by Jimmy Fox/U.S. Fish and Wildlife Service.

#### **Moose Hunter Outreach Project**

In partnership with a social scientist and the Council for Athabascan Tribal Governments, Yukon Flats Refuge staff initiated a new project to improve administration of the federal moose hunt for GMU 25D West and help tribal administrators and hunters in Beaver, Birch Creek and Stevens Village be familiar with federal and state moose hunting requirements.





Photo, Bruce Thomas (Council of Athabascan Tribal Governments) instructs Shannon Schill-Zonts (Beaver Tribal Council) on how to obtain a hunting license online, by Jimmy Fox/U.S. Fish and Wildlife Service.

#### Ikheenjik River (Birch Creek) Watershed Management Plan

Last year we reported that Refuge staff were invited to share comments, questions and observations with the Bureau of Land Management (BLM) regarding their intent to develop a watershed management plan for lands they administer. We provided input about protecting water quality and quantity to help ensure that downstream in the refuge the Service can fulfill that purpose. BLM is working on the plan.

#### Contact Yukon Flats National Wildlife Refuge

Visit our website: https://www.fws.gov/ refuge/yukon-flats

Find us on Facebook: https://www.facebook.c om/YukonFlatsNational WildlifeRefuge

Contact the Yukon Flats National Wildlife Refuge Office in Fairbanks, Alaska:

Call the Refuge at: 1-907-456-0440 or 1-800-531-0676

Email the refuge at: yukonflats@fws.gov.

