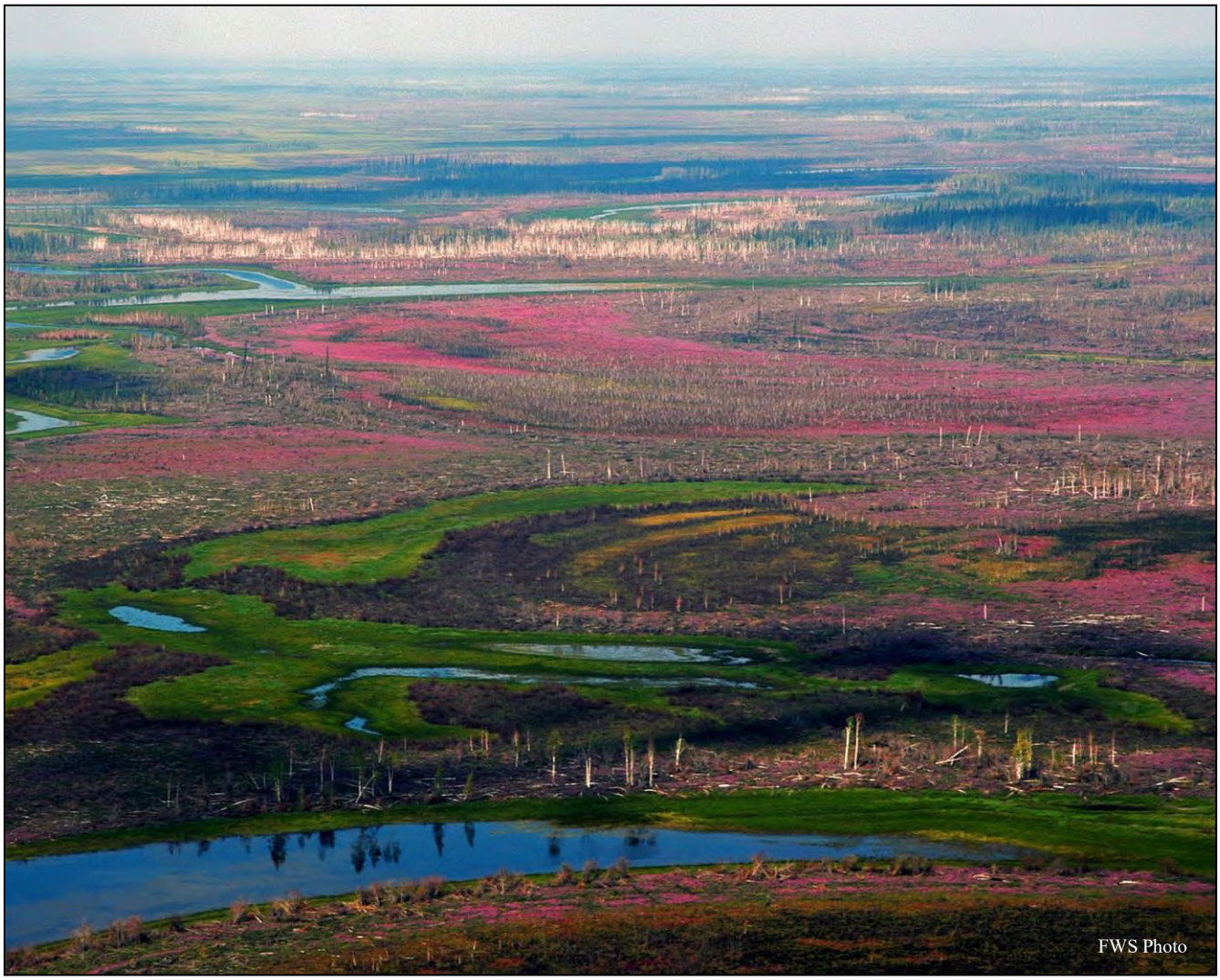
Yukon Flats National Wildlife Refuge

Annual Staff Report

October 2024 – September 2025



Refuge Overview

Yukon Flats National Wildlife Refuge (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 1,200 mostly 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, outreach, and enforcement, Refuge 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 2024 through September 2025.

Staffing

Refuge staffing was reduced by 50% this past year. Refuge Manager Jimmy Fox, Pilot and Wildlife Biologist Nikki Guldager, and Wildlife Biologist Delia Vargas Kretsinger all retired. Our remaining staff include Mark Bertram, Acting Refuge Manager, Bryce Lake, Wildlife Biologist, and Clayton Merrill, Subsistence Coordinator. We were aided by Carly Eakin, an experienced Fish and Wildlife Biologist based out of Anchorage, for most of the summer to aid in refuge operations following our staffing reduction in April and May. Despite these significant losses in capacity, we managed to have a relatively productive field season, thanks in large part, to our regional pilot Brett Nigus. The following is an update on refuge activities.

Lynx Movement Study

Refuge staff have been monitoring lynx movement patterns, dispersal behavior, and survival in relation to snowshoe hare abundance since 2017. Lynx and hare numbers are beginning to increase from the low point in their population cycles. One lynx was captured and collared in 2025. We have learned that lynx can disperse great distances, sometimes over 1,000 miles, when their food source- snowshoe hare, is depleted. There appear to be no barriers to lynx movements with direct crossings documented over mountain ranges and the largest rivers in Alaska and Canada. We plan a 10th year of trapping lynx next March given adequate staffing and budget.

Waterbird Surveys – Scoters, Scaup and Loons

Yukon Flats has some of the highest nesting densities of scoters, scaup and loons in Alaska, therefore these annual surveys to monitor their health in the Alaska boreal forest are important. Results from the 2024 survey indicated that scoter and scaup numbers were similar to the long-term mean. 2024 loon numbers were slightly down, and common loon numbers were up from the long-term mean. After 23 consecutive years we were unable to conduct the spring aerial scoter/scaup surveys in 2025 due to loss of pilots. We were however able to conduct the August loon survey; data has not been tabulated. Observers commented that swan production in 2025

may be up based on the high numbers of cygnets (young swans) observed incidental to the loon survey.

Survey of Bald Eagles and Other Stick-nesting Birds

We were able to conduct the tenth annual survey of bald eagle nests and other stick-nesting birds on the Draanjik River on May 7, 2025. We observed one active Osprey nest and seven active Bald Eagle nests, plus 18 empty nests. One-time inventory surveys were conducted in previous years (since 2014) along the Yukon, Hodzana, Beaver, Birch, Porcupine and Teedrinjik rivers. Inventorying and monitoring bald eagle nests and foraging sites 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 rights-of-way, special use permits, mining activities, land exchanges, seismic work and oil and gas activities, etc., we are required to protect nests (active and inactive) and foraging sites.

Sheep Survey

A White Mountains sheep survey was completed in July 2025 by ADF&G and the Refuge. Overall counts of rams, ewes and lambs were low at 123 total sheep (long term average is 354, details in table below). Fewer observed lambs are the primary cause of the low estimate. This year only 8 lambs were observed. We suspect the high snow load, its persistence until late in spring and the likelihood of ice on snow events may have contributed to a poor crop of lambs in 2025. The low numbers observed in the survey are comparable to low levels observed in the past, and to many other sheep populations throughout Alaska.

2025 White Mountains sheep counts by demographic group and survey area.

Survey area	Ewe-like[a]	Lamb	Full Curl Ram[b]	Stumphorn Ram	Sublegal Ram	Total	Survey time
Cache Mtn.	0	0	0	0	0	0	0:32
Fossil Ridge	19	2	1	1	7	30	2:24
Lime Peak	4	0	0	0	3	7	1:18
Mount Prindle	29	3	0	0	6	38	1:13
Mount Schwatka	33	3	2	0	7	45	2:47[c]
Victoria Mountain	2	0	0	0	1	3	2:47[c]
Total[e]	87	8	3	1	24	123	8:14

[a] Includes ewes, yearlings of both sexes, and rams of ¼ curl or less.

[b] Includes rams that are ≥full curl or rams with both horns broken.

[c] Combined USFWS survey time for Mount Schwatka and Victoria Mountain.

Duck Brood Production Survey

In July 2025, a duck brood survey was conducted at four wetland complexes, Canvasback Lake, a wetland by Track Lake, Shack Lake, and Plot F. This survey is conducted late in the summer and targets primarily diving ducks such as lesser scaup. Data is currently being analyzed. Although high water was common in all areas, it appears that brood numbers for diving ducks, such as scaup are average to up. Dabbing duck observations appeared to be down. A report is anticipated in December. No evidence of sick ducks from avian influenza was observed.

Following are the results of the 2024 surveys:

Lesser Scaup Production in 2024 was greater than the long-term average at all four wetland complexes. Observer differences were evident at all four wetland complexes. Age classes trended toward younger ducklings.

White-winged Scoter Production in 2024 was greater than the long-term average at three wetland complexes and well above average at Wetland by Track Lake. Observer differences were evident at Plot F, Wetland by Track Lake, and Shack Lake. Age classes were heavily skewed toward younger ducklings.

Canvasback Production was greater than the long-term average at Canvasback Lake, Plot F, and Shack Lake. Production was similar to the long-term average at Wetland by Track Lake. Observer differences were evident at Canvasback Lake, Plot F, and Shack Lake. Age classes included a mix of young and moderate age ducklings.

American Wigeon Production was greater than the long-term average at Wetland by Track Lake, Plot F, and Shack Lake. Production was lower than the long-term average at Canvasback Lake. Observer differences were evident at Canvasback Lake and Plot F. Age classes trended toward the moderate age classes, 1b-2b, with some class 3 ducklings.

Green-winged Teal Production was well above the long-term average at Canvasback Lake, greater than the long-term average at Plot F and Shack Lake, and similar to the long-term average at Wetland by Track Lake. Observer differences were evident at Plot F. Age classes trended toward older ducklings.

Horned Grebe Production was lower than the long-term average at Wetland by Track Lake, unchanged from the long-term average at Canvasback Lake and Shack Lake, and greater than 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.

Furbearers and Trail Cameras

We use a series of 38 trail cameras distributed across the Refuge to monitor furbearers. Processing of photos is near complete through 2024. Photo processing, typically assisted by a seasonal technician, was not staffed in 2025. Cameras are being checked in 2025 and cards swapped and batteries replaced.

Duck Banding

A total of 219 ducks were banded at Canvasback Lake during August 2025. The goal of the project is to band mallards and northern pintail to inform harvest management. Young of the year numbers for all species were down which indicates poor production for dabbling ducks in 2025. Banded duck species included mallard (18), northern pintail (134), and green-winged teal (67). No sick or dead birds or other evidence of avian influenza was observed. One highlight was the recapture of a female northern pintail originally banded as a young-of-the-year in 2021.

Moose Management

A survey of the eastern half of the Yukon Flats (25D remainder) is scheduled for November 2025 and will be conducted by the Alaska Department of Fish and Game. Efforts to conduct this survey the past two years have been canceled due to lack of adequate snow cover during the survey window. The last survey in this region was conducted in 2015. Questions about the upcoming survey can be directed to Fort Yukon Area Biologist Mark Nelson or Assistant Area Biologist, Jordan Pruszenski.

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 state-wide Alaska Bee Atlas project again this year and collected samples from Shack, Track and Canvasback Lake, and Plot F in July 2025. Collections from 2024 resulted in new bee species range extensions for Alaska.

Bison and Moose Habitat Assessment

In response to the State of Alaska's plan to release bison on state lands northeast of Circle in 2028, the Refuge in collaboration with the Alaska Center for Conservation Science conducted habitat assessments to estimate potential available food for bison and moose in Refuge lands in July and August 2025. The goal of the project is to produce a map of potential forage biomass for bison and moose across the Yukon Flats. Bison and moose food plant samples were collected on the Yukon River between Stevens Village and Fort Yukon. Data will be analyzed this winter.

Permafrost

Yedoma is Pleistocene-era, thick permafrost high in carbon and ice. It exists in the foothills surrounding Yukon Flats. We partnered with permafrost and soils expert Torre Jorgenson in August 2025 to measure soil and water temperatures and thaw depths in both burned and unburned habitats. Also in September 2025, USGS conducted additional work to survey the impacts of wildfire and wildfire management on permafrost vulnerability and soil carbon sequestration.

Salmon Habitat Thermal Mapping

Aerial surveys are scheduled for the Teedrinjik River in early October to map hot spots (elevated water temperatures) that would indicate good spawning habitats for chum salmon. Thermal cameras will be used to identify the warm upwelling waters in the river. These surveys will also be conducted in other areas of the state to develop a remote method to identify chum spawning habitats.

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 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. A draft design was developed this past year and staff are currently testing the latest version.

Fire Season Update

As of August 15th, the Refuge has had five reported wildfires burning 50,754 acres on the refuge. Actual acres burned are lower however, as fires typically burn in a mosaic pattern, leaving pockets of unburned vegetation within the calculated perimeters. All fires were determined to be started by lightning with the first fire detection occurring on June 20. The most recent fire was discovered August 13 via satellite imagery but was a cold fire scar that likely started in late July and was subsequently extinguished by rain showers.

Of these five Refuge fires, two plotted within a modified fire management option and received full suppression actions from Alaska Fire Service smokejumpers and aircraft. Three fires plotted within a limited fire management option and continue to be remotely monitored. The Christian fire accounted for more than 97% of the acres burned on the refuge in 2025. Located 50 miles north of Fort Yukon, this fire received support actions from firefighters to protect a nearby Native Allotment and high-value US Air Force seismic sensors at the Burnt Mountain seismic array site.

This summer, Alaska saw more than 1 million total acres of wildfire. The long-term average for the state is approximately one million acres burned annually.

Fire Management Pilot Project

A fire management change was made in 2023 that moved eight areas (1.8-million acres) within the Refuge from fire management option Limited (ie. less fire protection) to Modified (ie. more fire protection). 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. Additionally, some structures, allotments and private lands may be further protected from wildfire because of the option change.
Of the five Refuge fires in 2025, two plotted within a modified fire management option and received full suppression actions from Alaska Fire Service smokejumpers and aircraft. One of these was contained to a quarter-acre (Hermit fire). The other (Fortymile fire) was the first Alaskan wildfire suppressed due to it's location over carbon-rich yedoma permafrost. It was a wind-driven fire that grew to 307 acres within two days, with resources able to "hold fire in place but only with significant effort". An additional seven days were spent securing the fire perimeter, ensuring no new growth, and mopping up hot areas 150 feet or more in from the perimeter.

This winter Woodwell Climate Research Center and the Cary Institute of Ecosystem Studies will monitor the ecological and cost-effectiveness of this pilot project.

Law Enforcement Program

FWO Smith patrolled the Refuge during winter subsistence moose season. FWO Smith located two illegally harvested moose on tribal land and the incident is being investigated by the AK Wildlife Troopers. FWOs Long and Smith assisted in hosting a youth hunter/firearm safety training event at the school in Fort Yukon, with all grades in attendance.

Annual Funding Agreement with the Council of Athabascan Tribal Governments

The U.S. Fish and Wildlife Service entered its 21st 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 perform include Eyes in the Bush monitoring in Circle and Fort Yukon; cultural and science camp; maintenance and logistics in Beaver and Fort Yukon; hunter liaison work in Circle; and a pilot project with tribes in Beaver, Birch Creek and Stevens Village to improve reporting outcomes for the 25D-West federal moose hunt. Due to funding uncertainty and lack of refuge staff to manage the agreement these projects are currently on pause. It is hoped that this winter we can initiate dialog on next steps for this historic agreement.

Status of Doyon-Hilcorp Project

In January 2025 the refuge provided comments to Alaska Department of Natural Resources (ADNR) for the Hilcorp Alaska, LLC request for temporary water use authorization (TWUA) application for waters adjacent to the refuge and situated on Doyon Limited lands. The requested authorization would allow Hilcorp to obtain water from three water bodies to facilitate subsurface exploration activities. This summer helicopter supported drilling activities occurred at these sites.

In a related issue, the Refuge also provided comment this summer to AK Department of Natural Resources which issued a notice of intent solicitation for comment to evaluate oil and gas exploration proposals on State lands adjacent to the Refuge. The area of interest includes the entirety of the Yukon Flats Basin.

Old BIA School Contaminant Remediation Project

As we reported last year, the Refuge owns a lot in Beaver, Alaska, which contains the current school and old Bureau of Indian Affairs school and associated structures. The grounds and the old school are contaminated with an assortment of chemicals. In 2023, a site report and scope of remediation was completed. BIA has partially funded the project and this past August all above ground structures were removed from the site. The Service will continue to seek 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. There will also be an informational kiosk constructed that commemorates the old school and its rich history.

If you have any questions about any of the projects reported on above please contact Acting Refuge Manager Mark Bertram at 907 347-1524, mark_bertram@fws.gov.