

# SCHEDULE & ABSTRACTS - 2026 Yukon Biodiversity Forum Speaker and Poster Series

Saturday, March 28 at the Kwanlin Dün Cultural Centre – doors open at 8:30am

Slot #	Time slot	Presenter(s)	Affiliation	Title
<b>WELCOME</b>		9:00		
1	9:10	P. Sinclair	ECCC - CWS	Using Motus tracking data to investigate migratory and nesting behavior of Yukon River Bank Swallows
2	9:25	P. Sinclair	ECCC - CWS	Yukon's Upland Sandpipers: from Beringia to Argentina
3	9:35	P. Sinclair	ECCC - CWS	Short-billed Dowitcher: Endangered
4	9:45	J. Lowey	EDI	Evidence of River-Spawning Lake Trout in the Kathleen River, Yukon
5	10:00	K. Wilcox	ECCC - CWS	Listening for Shorebirds on the Yukon's North Slope
<b>BREAK</b>		10:15		
7	10:45	D. Reid	WCS	Open water in winter: An influential but underestimated ecosystem in northern boreal mountain regions
8	11:00	B. Bennett	Botanist, Retired YCDC Coordinator	Pineappleweed: Wild or Introduced?
9	11:15	Syd Cannings	Retired Species at Risk Biologist (CWS)	The Malaise Trap and BOLD DNA: The next generation of bug data
10	11:30	W. Strong	Arctic Institute of North America	Updated <i>Flora of Yukon</i> Taxonomic Keys
11	11:45	D. Bohmer	YG - ENV	Updates to YT species and results from 2025 BioBlitz
<b>Award Presentation</b>	12:00	Biodiversity Awareness Award		
<b>LUNCH</b>		12:10		
12	13:10	A. Perrin	YukonU	Building Win-Win Scenarios into Wildfire Risk Reduction in Teslin, YT
13	13:25	W. Halliday	WCS	Monitoring Marine Wildlife and Ship Noise near Ulukhaktok to Support Community Conservation Goals
14	13:40	W. Moir	USasK	Looking Back to Move Forward: Evaluating Historical Reference Streams for Benthic Macroinvertebrate Biomonitoring
15	13:55	A. Zeller	WCS	Cumulative effects influence northern boreal breeding bird abundances in a mining impacted landscape
16	14:10	F. Quinby	EDI	Asymmetry in density-dependent browse-site selection and occupancy dynamics during the snowshoe hare population cycle
<b>BREAK</b>		14:25		
18	14:45	T. Jung	YG - ENV	Trends in collared pika occupancy in Tombstone and Kusawa territorial parks.
19	15:00	T. Jung	YG - ENV	The Yukon's shrinking small mammals: climate change impacts are mediated by natural history.
20	15:15	Z. Fogel	U Alberta	<i>After the Gold Rush</i> : Seasonal habitat selection of wolverines ( <i>Nähtrǎ́', Gulo gulo</i> ), lynx (Ninju, <i>Lynx canadensis</i> ), and martens (Tsûk, <i>Martes Americana</i> ) in an industrialized boreal forest.
21	15:30	M. Elliot	U Alberta	Effect of Landscape Change on Northern Mountain Caribou in Central Yukon
22	15:45	P. Tobler	EDI	Chinook Passage at the Whitehorse Fishway - Improvement Plan Early Results
<b>CLOSING STATEMENTS</b>		16:00		

## Speaker Series

### **Using Motus tracking data to investigate migratory and nesting behavior of Yukon River Bank Swallows**

Sinclair, Pam, Kirsten Wilcox, Morgan Brown, Avery Bartels, Jukka Jantunen, Christina MacNeil

We used “nanotag” radio transmitters and Motus receivers to track migration of Bank Swallows nesting along the Yukon River near Whitehorse, and to investigate their behavior during nesting. After nesting, Yukon River Bank Swallows traveled through the Prairie Provinces, crossing into the U.S. from Manitoba on their way to South America. Flight speeds were impressive. During nesting, adults of both sexes spent most nights at the colony. Some individuals made diurnal trips of over 20km to the Whitehorse Sewage Lagoons, presumably to forage. Yukon birds migrate farther and faster than their southern counterparts. We found no evidence of communal night-roosting in the Yukon during or after nesting.

### **Yukon’s Upland Sandpipers: from Beringia to Argentina**

Sinclair, Pam, Avery Bartels, Jukka Jantunen, Julie-ann Bauer, Terry Skjonsberg, Kirsten Wilcox, Morgan Brown

We used satellite transmitters to track Upland Sandpipers nesting in the Yukon, as part of a continent-wide study. Yukon birds migrated using a track similar to birds nesting in Saskatchewan, continuing through Texas, the Gulf of Mexico, across Mexico to the Pacific Ocean to make landfall in Ecuador and on south to Argentina and Uruguay. Genetically, however, Yukon and Alaska birds were somewhat distinct from Prairie birds, suggesting they may have been isolated in Beringia during the ice age. Pesticides were widely present in birds across the study, including at least one Yukon bird. Along the Dempster Highway, we noted that Upland Sandpiper is one of the few shorebird species there that can still be reliably found nesting, after steep declines in many species.

### **Short-billed Dowitcher: Endangered**

Sinclair, Pam, Cameron Eckert, Jukka Jantunen, Avery Bartels, Marty Mossop, Lena Ware

We investigated the current Canadian status of the westernmost subspecies of Short-billed Dowitcher *Limnodromus griseus caurinus*, a boreal-nesting shorebird. This subspecies nests mostly in Alaska and extends into Canada in southwestern Yukon and the Chilkat Pass area of British Columbia. Despite steep declines, we confirmed continued nesting in the Canadian portion of the subspecies’ range, in southwestern Yukon. Using automated

recording devices, presence was also confirmed in the Chilkat Pass, although a sighting in 2014 remains the most recent direct human observation of the species there. We also present evidence that the nesting range of the central subspecies *L. g. hendersoni* extends much further north and west than previously known, including into the Yukon.

### **Evidence of River-Spawning Lake Trout in the Kathleen River, Yukon**

Jonathan Lowey, BSc, BPBio

Declining angler success as well as concern and interest for lake trout (*Salvelinus namaycush*) in the Kathleen River, prompted the Alsek Renewable Resources Council to collaborate with EDI Environmental Dynamics Inc., Yukon Government, Parks Canada, and Mt. Royal University, to assess the lake trout population within the Kathleen River system. Non-invasive snorkel surveys were trialed in 2023 and continued in 2024 to evaluate their effectiveness for monitoring lake trout presence, timing, and abundance.

Snorkel surveys conducted from August to October 2024 documented a peak count of 746 lake trout in the Kathleen River, with maximum abundance occurring in mid- to late September. This period coincides with the known spawning season for lake trout. Literature from other regions and timing suggested that lake trout observed in the Kathleen River were likely spawning, but this had not been confirmed. Field investigations in 2024 addressed this uncertainty. Kick-net sampling recovered lake trout eggs from riverbed substrates at multiple locations, and captured adult lake trout were sexually mature and in spawning condition, confirming active spawning in the Kathleen River.

Genetic sampling of lake trout from the Kathleen River and Kathleen Lake (Mät'atāna Män) during the spawning period revealed that river-spawning individuals may be genetically distinct from lake-spawning fish. Analyses indicate the presence of at least two, and potentially up to three, genetically distinct groups within the watershed.

These findings demonstrate that the Kathleen River supports a unique river-spawning lake trout population in the Yukon, which may be vulnerable to environmental disturbances and angling pressure.

### **Listening for Shorebirds on the Yukon's North Slope**

Kirsten A. Wilcox\*, Morgan Brown

Canadian Wildlife Service – Northern Region, 91780 Alaksa Hwy, Whitehorse, YT

Rapid environmental change across the Arctic and sub-Arctic is increasing concern for many shorebird species, yet major data gaps remain in remote regions such as the Yukon's North Slope. These gaps limit the ability to assess at-risk species, including the Hudsonian

Godwit (*Limosa haemastica*), which is assessed as Threatened in Canada. Although the species is known to nest in the Mackenzie River Delta of the Northwest Territories, there have been no confirmed breeding records from the Yukon's North Slope despite occasional observations. The goals of the project were to 1) improve understanding of which Arctic breeding birds, particularly at-risk species, currently use the Yukon's North Slope, and 2) search for evidence that Hudsonian Godwit, a large shorebird that is at risk, breeds on the Yukon's North Slope. We deployed 14 autonomous recording units in summer 2023 within 3 km of the coast in wetland habitats of Ivvavik National Park. Using an AI recognizer and manual review of recordings in BirdNet we documented species presence, with a focus on species of conservation concern. We detected four at-risk species and four additional species currently under assessment, including Hudsonian Godwit. Notably, the project produced the first records of American Coot and Short-billed Dowitcher for the Yukon's North Slope and yielded the first suggestive evidence of Hudsonian Godwit breeding in the region, based on repeated detections across multiple days. These findings provide updated baseline information for the Yukon's North Slope and will support upcoming species assessments and conservation planning.

### **Open water in winter: An influential but underestimated ecosystem in northern boreal mountain regions**

Donald G. Reid <sup>1</sup>, Maria C.-Y. Leung <sup>2</sup>, René Rivard <sup>3</sup> and Piia Kortsalo <sup>1</sup>

<sup>1</sup> Wildlife Conservation Society Canada, Whitehorse, YT

<sup>2</sup> Wild Tracks Ecological Consulting, Whitehorse, YT

<sup>3</sup> Independent Biologist, Whitehorse, YT

Patches of open water (polynyas) persist throughout six-month winters on many ice-covered lakes in boreal mountain ecoregions of northwestern North America. We explored their distribution and hydrological correlates, and the diversity of species using them from freeze-up to break-up in headwater drainages in south-central Yukon. Lakes with outflow polynyas were significantly larger than those without, but many small lakes also had polynyas. There was a consistent threshold in upstream catchment size below which outflow polynyas were absent and above which they persistently occurred in downstream lakes. Outflow polynyas depend on winter-long through-flow of water, likely maintained by the hydraulic head of higher elevation ground water in perched water tables in this region of very limited permafrost. Based on camera trapping, two species, American dipper and river otter, used polynyas heavily throughout winter for foraging. Polynyas likely provided crucial forage for at least 9 species of migratory waterfowl (Anatidae) to complete their spring migration or to prepare for reproduction on local lakes. Waterfowl using polynyas in spring

showed initial alertness at 450 m from an approaching observer on foot. Cameras recorded additional 5 bird and 11 mammal species, as foragers, scavengers, or incidentally. These spatially-limited and seasonal polynya ecosystems expand the diversity of winter ecological opportunity for numerous species on small to medium-sized lakes, and require more complete mapping and recognition.

### **Pineappleweed: Wild or Introduced?**

Bruce Bennett

Pineapple Weed (*Matricaria discoidea*) has been widely considered to be an introduced or exotic plant in Yukon and throughout most of North America. This presentation will present the origin of the plant and discuss its distribution.

### **The Malaise Trap and BOLD DNA: The next generation of bug data**

Syd Cannings

The Malaise trap is a simple and extremely effective means of sampling flying insects, especially small flies and wasps. These are insects that are often missed or just plain ignored in targeted surveys using standard nets. One of the challenges of using Malaise traps is managing the volume of the catch: how do you process and identify all these valuable specimens? Malaise traps have been used in the Yukon since the 1980s and back then the catch was sorted by hand, pinned, and ultimately identified by experts. In the last dozen years, however the catch has been largely identified using DNA barcoding techniques. As of 2024, over 100,000 specimens have been sent to the Center for Biodiversity Genomics at the University of Guelph in Ontario. These represent over 12,000 “BINs” (distinct genetic taxonomic units)—over 8000 of these BINs have been assigned to 2115 genera and almost 3500 have been assigned to 2950 species.

### **Updated Flora of Yukon Taxonomic Keys**

Wayne Strong

The vascular plant identification keys presented by W.J. Cody in his 2000 edition of the *Flora of the Yukon Territory* have been updated and tentatively revised. A secondary objective of the revision was to produce a more field-friendly version of the Flora than is currently available. The more prominent of the revisions include: (1) an expanded *Draba* key; (2) a modification *Salix* key; and (3) a subdivision of the larger subkey for the Carices. Individual plant taxa were also classified as Beringian, postglacial migrants, or introduced to facilitate a more comprehensive understanding of Yukon’s floristic development. The proposed taxonomic keys are expected to be available for internet download in a pdf

format before the end of the year. This provisional revision is made available so users can test the suitability and accuracy of the keys, or provide related feedback.

### **Bioblitz 2026 and Species Updates from YCDC**

Denny Bohmer

In 2025, the Yukon Conservation Data Centre (YCDC; Department of Environment) organized a small Bioblitz event in the Tagish area to collect baseline data on biodiversity and possible rare species values in the area and increase public engagement with biodiversity. We present here a summary of activities and preliminary results from the event.

We present additionally, statistics from our database on new species recorded from Yukon in calendar year 2025, as well as significant changes to status rank, track status, and other noteworthy biodiversity discoveries and trends.

### **Building Win-Win Scenarios into Wildfire Risk Reduction in Teslin, YT**

Alison Perrin\* (Yukon University), Jill Johnstone (Yukon University), Dorothy Cooley (Teslin Tlingit Council), Stefan Howarth (Teslin Tlingit Council), Georgina Preston (Yukon University), and Luc Bibeau (Yukon Wildfire Management)

*\*presenting author*

Recent wildfires in the boreal forest of northern Canada have threatened communities repeatedly. As a result, boreal communities in the Yukon, Canada are prioritizing wildfire risk reduction through vegetation (fuels) management. In addition to reducing wildfire risk for a community, fuels management can have multiple other local benefits. Research led by Teslin Tlingit Council (TTC), Yukon University and the Government of the Yukon has been exploring how forest harvest and regeneration interventions can produce co- benefits for ecological and social sustainability in Teslin, Yukon. Project objectives were to 1) improve access to a local wood supply, 2) use forest harvest to strategically reduce wildfire risk to the community, and 3) promote recovery of native plants that are less flammable and of interest to local people. Planting experiments used trials with birch trees, berry plants, and native wildflowers to test the selection of species and planting methods that could be used, and to engage the community in developing a recovery plan for future harvest in the Teslin North forest management area. Both the successes and challenges from this project are helping Teslin, as well as other communities in the Yukon, expand their understanding of possible ‘win-wins’ when preparing their community for wildfire emergencies through fuels management.

## **Monitoring Marine Wildlife and Ship Noise near Ulukhaktok to Support Community Conservation Goals**

William D. Halliday, PhD

Arctic marine wildlife are facing concurrent threats from a changing climate and increased anthropogenic activities. These species are crucial to subsistence and culture for Inuit. As such, many Inuit communities have a vested interest in the conservation of marine wildlife around their communities. For example, all communities in the Inuvialuit Settlement Region have developed Community Conservation Plans, some have established Marine Protected Areas (MPAs) near their communities, and those without MPAs are interested in getting an MPA for their community. Olokhaktomiut Hunters and Trappers Committee, Ulukhaktok Aquatic Monitoring and Observation, and Wildlife Conservation Society Canada are collaboratively collecting data on marine wildlife near Ulukhaktok to support the marine conservation goals of the community. This presentation will focus on our data collection efforts, including ringed seal surveys by snowmachine and plane, passive acoustic monitoring for marine mammals and to measure ship noise, new boat-based surveys for marine wildlife, and community-based monitoring of seals, beluga, and Arctic char, among other species. We are using these data to identify hotspots and temporal patterns for how different marine species use these areas, monitor the health and ecology of important subsistence species, and monitor anthropogenic pressures such as ship noise. We are also working towards supporting the community taking over the surveys for marine wildlife, which will provide the community with skilled workers who can monitor these important areas into the future. This project will ultimately provide scientific evidence on the spatial and temporal distribution of marine species around Ulukhaktok, thereby supporting future conservation efforts.

## **Looking Back to Move Forward: Evaluating Historical Reference Streams for Benthic Macroinvertebrate Biomonitoring**

Wes Moir<sup>1</sup>, Tim Jardine<sup>1</sup>, Robert Bailey<sup>3</sup>, and Chrystal Mantyka-Pringle<sup>1,2</sup>

<sup>1</sup>University of Saskatchewan

<sup>2</sup>Wildlife Conservation Society Canada

<sup>3</sup>Ontario Tech University

Northern river ecosystems are increasingly affected by cumulative stressors such as wildfire, placer mining, and hydroelectric development. To track ecological responses to these pressures, benthic macroinvertebrates (BMI) are widely used as bioindicators because their communities respond quickly to environmental change. However, infrequent

sampling, especially in northern regions, often results in patchy monitoring records and raises uncertainty about whether historical reference sites remain valid benchmarks under current cumulative stressor scenarios. This study tests whether historical reference sites are ecologically stable and comparable to current conditions, a necessary first step for strengthening reference-condition assessments. Using a network of stream monitoring sites across central Yukon within the Traditional Territory of the First Nation of Na-Cho Nyäk Dun, we compared BMI communities sampled at the same stations roughly 15 years apart. Preliminary results indicate broader community turnover at disturbed sites between historic and current sampling events, whereas communities at reference sites remain relatively stable through time. These early findings suggest that historical reference sites may still provide reliable benchmarks for contemporary assessments, although ongoing climate change may erode benchmark quality over time. By quantifying reference-site stability through time, this work will strengthen the reference condition approach that underpins some Yukon biomonitoring programs and improve cumulative effects assessment in northern river ecosystems.

### **Cumulative effects influence northern boreal breeding bird abundances in a mining impacted landscape**

Austin Zeller

Resource extraction industries such as mining create a mosaic of disturbances on the landscape, interacting uniquely with each other and the natural ecosystem to influence species abundances. In the northwestern boreal forest, mining exploration and production represents a major source of anthropogenic disturbance, yet the cumulative effects of these disturbances on wildlife remain poorly understood. We conducted bird surveys across a mining impacted landscape in central Yukon to assess how disturbances (surface disturbance, roads, and revegetating areas) influence breeding bird abundance. Shrub associated species showed predominantly positive responses to all disturbance features, while coniferous and mixedwood forest species demonstrated negative relationships. Roads had a positive effect on 15 species abundances (42% of all species modelled), and a negative effect on 3 species (8% of species). Surface disturbance showed a mixed response on species abundances (9 species positive [25%], 10 negative [28%]), while revegetation also had a mixed effect (11 positive [31%]; 11 negative [31%]). Non-linear relationships suggest declines in Bank Swallow and Chipping Sparrow when disturbance exceeds a ~30% area threshold. Interacting effects exhibited complex relationships between disturbance and habitat variables for 10 species. Disturbance within coniferous forests exacerbated negative effects for Chipping Sparrow, Hermit Thrush, and White-crowned Sparrow. Conversely, revegetation within shrubby or wetland dominated matrices

benefited Fox Sparrow, Yellow Warbler, Alder Flycatcher, Northern Waterthrush, and Wilson's Warbler. These interactions demonstrate that ecosystem structure fundamentally shapes disturbance impacts. These findings provide the first empirical assessment of cumulative effects in a northern region impacted by mining on breeding birds.

### **Asymmetry in density-dependent browse-site selection and occupancy dynamics during the snowshoe hare population cycle**

Francis Quinby

Snowshoe hare population cycles are a defining feature of North American boreal forests. During these 9-11 year cycles, predation pressure and conspecific density fluctuate, and as a result optimal habitat for hares may vary. However, it remains unclear whether habitat associations in cyclic snowshoe hare populations are density-dependent and/or vary with cyclic phase. To test this, we assessed the habitat factors driving winter snowshoe hare occupancy and browse site selection through a population cycle, using data collected from 2014-2025 along a network of 52 fecal pellet plot transects distributed throughout the Kluane Valley, YT. Habitat covariates were quantified at multiple scales ranging from 5 to 50 m, using 3-dimensional drone-collected RGB imagery processed with structure-from-motion photogrammetry. Mixed-effects logistic regression models were used to determine the top habitat covariates predicting occupancy and browse site selection, and to test for interactions with population density and trend (i.e., increasing or decreasing) using an information theoretic model selection framework. Results show that snowshoe hare site occupancy is best explained by the percent of spruce cover in a 10 m radius, irrespective of population trend. Snowshoe hare browse site selection is best explained by the percent of shrub cover 1 to 2 m above ground level, but at a larger scale during population decline. For both occupancy and browse site selection, density-dependent interactions were stronger when populations were declining rather than increasing. This asymmetry in habitat association suggests that the drivers of habitat use are dynamic throughout a snowshoe hare population cycle.

### **Trends in collared pika occupancy in Tombstone and Kusawa territorial parks**

Thomas Jung

### **The Yukon's shrinking small mammals: climate change impacts are mediated by natural history**

Thomas Jung

## **After the Gold Rush: Seasonal habitat selection of wolverines (Nàhträ', *Gulo gulo*), lynx (Ninju, *Lynx canadensis*), and martens (Tsûk, *Martes Americana*) in an industrialized boreal forest.**

Zachary Fogel<sup>1,2,4</sup>, Karlie Knight<sup>3</sup>, Alice McCulley<sup>3</sup>, Thomas Jung<sup>1,2,4</sup>, Fiona Schmiegelow<sup>1,2</sup>

<sup>1</sup> University of Alberta, <sup>2</sup> Yukon University, <sup>3</sup> Tr'ondëk Hwëch'in Department of Natural Resources, <sup>4</sup> Yukon Department of Environment

Industrial placer mining is an ongoing source of disturbance in northern boreal ecosystems, yet its ecological impacts remain poorly understood. We evaluated how physical and acoustic components of placer mining disturbance influenced the occurrence of three small carnivores—wolverine (Nàhträ', *Gulo gulo*), American marten (Tsûk, *Martes americana*), and Canada lynx (Ninju, *Lynx canadensis*)—within the Tr'ondëk Hwëch'in Traditional Territory. Using 161 paired trail cameras and autonomous recording units deployed across an industrial gradient, we quantified the influence of both the mining footprint and acoustic disturbance on species detection rates. We compared candidate models that considered disturbance, biophysical, and abiotic variables for the mining and winter seasons using generalized linear models. Responses varied by species, disturbance type, and season. Wolverine avoided areas with active mining activity as determined by acoustic sampling, but not the physical footprint, indicating sensitivity to human presence rather than habitat alteration. Marten avoided disturbed areas in both seasons, regardless of activity level, reflecting dependence on mature forest structure. Lynx, in contrast, were detected more often near mining and trail networks during the mining season, likely using disturbed areas and trails for foraging movements during a low in the snowshoe hare cycle. Our results indicate that physical and acoustic disturbance represent distinct ecological stressors and that species' responses differ in direction and strength. Our findings provide the first quantitative assessment of placer mining effects on boreal carnivores and demonstrate the value of integrating sound-based monitoring with physical disturbance mapping for managing industrial development in northern ecosystems.

## **Effect of Landscape Change on Northern Mountain Caribou in Central Yukon**

Maegan Elliott, MSc.

Supervisory Committee: Fiona Schmiegelow, Kelsey Russell, Mark O'Donoghue

This research documents and quantifies trends in surface disturbance and its effect on the distribution of two Northern Mountain caribou (*Rangifer tarandus caribou*) herds, the Clear Creek and Klaza caribou herds, in the Yukon Territory. I developed a temporal surface disturbance database spanning 1973 – 2021 and quantified changes in surface disturbance, wildfire, and cumulative disturbance in each caribou herd's range. To assess

the effect of human disturbance on caribou distribution over time, I drew on multiple lines of evidence. I reviewed previously recorded Indigenous knowledge from Tr'ondëk Hwëch'in First Nation, and I conducted community knowledge interviews. I also reviewed licensed harvest data for each caribou herd from 1995 – 2023. Using binomial logistic regression Generalized Linear Models, I examined caribou habitat selection over time and across seasons. Very High Frequency (VHF) collar data from the 1990s and Global Positioning System (GPS) collar data from the 2010s were used in seasonal models. These qualitative and quantitative analyses indicated human disturbance influenced caribou distribution: Caribou avoided areas in their range with the most surface disturbance and access, and avoidance increased over time. Roads, trails and mining and exploration were the greatest sources of landscape change that contributed to changes in caribou distribution. Licensed harvest decreased over time in concert with caribou distribution changes identified by Indigenous and community knowledge holders. Human development has influenced the Clear Creek and Klaza caribou herds. Northern Mountain caribou require improved management of industrial activity, access and cumulative effects within herd ranges.

### **Chinook Passage at the Whitehorse Fishway – Improvement Plan Early Results**

Pat Tobler

Updates to the proposed improvements at the Whitehorse Rapids Fishway to improve passage of migrating Chinook Salmon.

## Posters

### **Why Are Some Creeks Turning Orange?**

Friends of the Dempster Country

As global temperatures rise, small creeks and headwater streams are changing in appearance. Water that was once clear may now look orange, rust-coloured, or milky. These changes are linked to thawing permafrost and chemical reactions in the ground.

### **Tree Cavity-users in the FireSmart North**

Shyloh van Delft , Katie Aitken, Fiona Schmiegelow  
University of Alberta and Yukon University

Deeper understanding of natural systems is essential for supporting the well-being of both ecological and human communities. More information can help decision-makers, including land, wildlife, and wildland fire managers, balance multiple priorities and mandates. Tree cavities are a keystone vegetation structure used by birds, mammals, insects, reptiles, and amphibians for nesting, roosting, caching, and foraging. Cavities most often occur in decaying or dead trees, which may be removed during wildfire risk-reduction initiatives, such as FireSmart, that thin forests to reduce fuel loads and protect communities. Because cavities are likely a limited resource in northern ecosystems, their loss may significantly impact dependent wildlife. However, information on these keystone structures is limited in northern environments, and the potential impacts of initiatives such as FireSmart on them are not well understood.

This study was developed in partnership with Ta'an Kwäch'än Council, Kwanlin Dün First Nation, the Yukon Wildland Fire Management Branch, and others to better understand the tree cavity-using community and evaluate the potential impacts of initiatives like FireSmarting. We surveyed sites around Whitehorse, Yukon, including planned FireSmart, Shelterwood, and Partial Retention areas. We documented more than 500 cavities, most commonly in Trembling Aspen and Scouler's Willow, with the highest densities in mixedwood stands. Cameras monitoring 38 cavities between June and October recorded several cavity-using species. Ongoing monitoring and analyses will clarify how fuel-reduction treatments influence cavity availability and wildlife use, informing fire management that balances wildfire risk reduction with biodiversity conservation.