

Yukon State of the Environment Report 2026

A report on environmental indicators

Yukon

Acknowledgements

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On the cover: An island on the Blackstone River, near Tombstone Territorial Park (Julien Schroder).

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Introduction

The *Environment Act* requires the Minister of Environment to table a comprehensive State of the Environment Report in the Yukon Legislative Assembly every three years, with interim reports provided in the intervening years. The State of the Environment Report serves as a key mechanism for informing Yukoners about the condition of the territory's environment and tracking changes over time.

The 2026 Yukon State of the Environment Report presents information on environmental climate change, air, water, land and fish and wildlife. The report provides environmental baselines, monitors key indicators and incorporates Yukon First Nations knowledge where available and identifies emerging issues that may influence the long-term health of the Yukon's environment.

Environmental indicators are used throughout this report to monitor, describe and interpret change. While indicators cannot provide a complete picture of every environmental issue, they offer valuable information about the condition of the environment and help identify whether trends are improving, remaining stable or declining. The indicators included in this report were selected based on criteria such as availability, reliability, relevance and ease of understanding.

In preparation for the 2026 report, a review of indicators was undertaken to ensure alignment with the legislative requirements and to reduce duplication with information reported elsewhere. As a result, several updates have been made to improve the relevance and accessibility of the report.

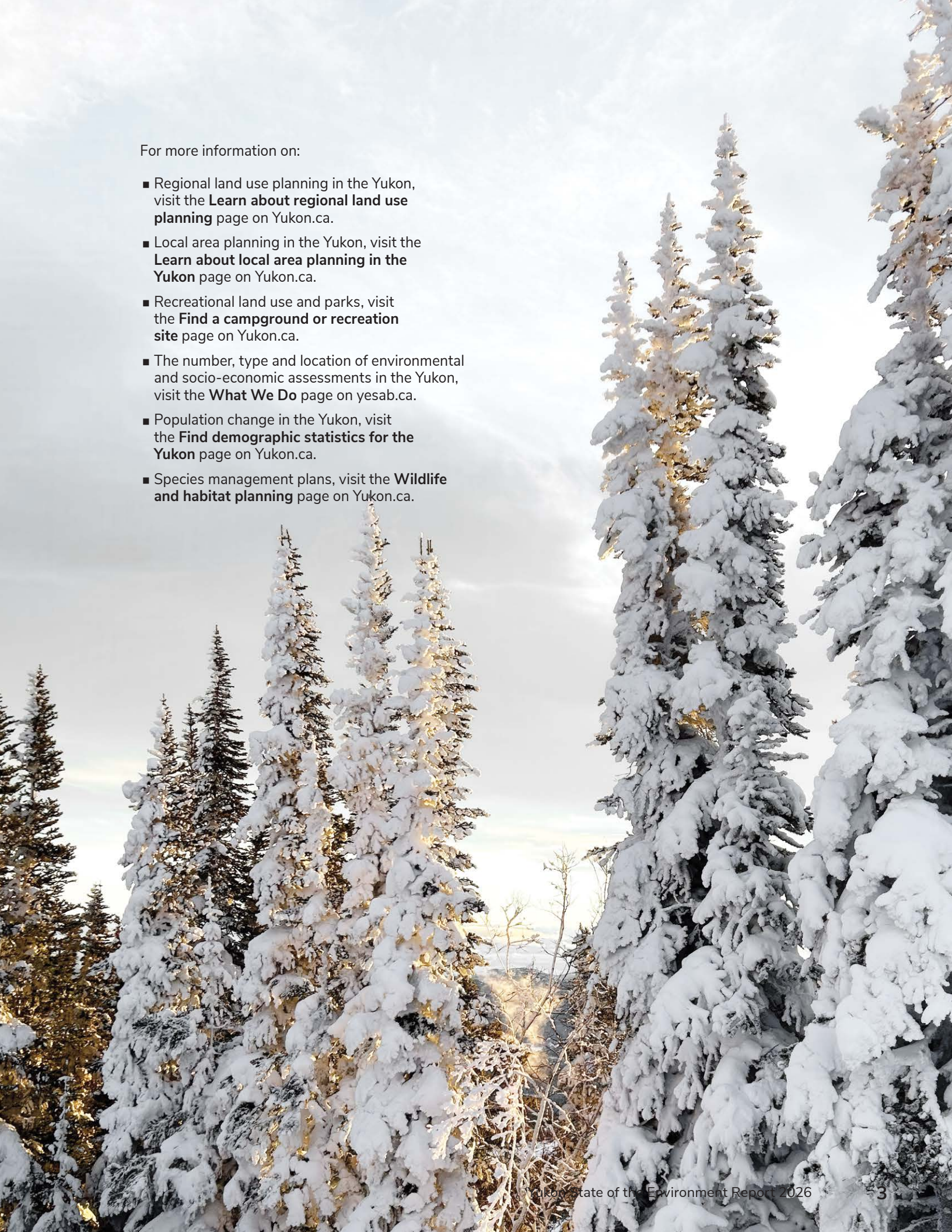
For the first time, greenhouse gas emissions have been included as a climate change indicator. Under the Fish and wildlife section, information previously presented through separate indicators for caribou, snowshoe hare, lake trout, Chinook salmon and trumpeter swan populations has been consolidated into a new fish and wildlife population status and trends indicator. Information related to respiratory pathogens and winter ticks is now presented under Emerging wildlife health threats, alongside information on Chronic Wasting Disease and White-nose Syndrome. Similarly, the Intersection of human and animal health indicator has been expanded to include information on rabies testing in the Yukon in addition to the highly pathogenic avian influenza.

Several indicators have also been removed from this report, including those related to regional land use planning, community and local area planning, recreational land use and parks, environmental and socio-economic assessments, Yukon population, and species management plans. These changes allow the report to focus on priority environmental measures while avoiding duplication with information available through other reporting processes. Although these topics are no longer included as indicators in the State of the Environment Report, they remain important components of environmental management and stewardship in the Yukon. For readers seeking additional information, links to relevant resources and reporting programs are provided below.

This report reflects information available as of December 31, 2025. Trend analyses use 2022 as the baseline year for comparison. Because some agencies require up to 36 months to complete data collection, compilation, analysis and reporting, the most current information may not yet be available for all indicators. The report is informed by data, information and advice provided by scientific experts, government agencies and non-governmental organizations.

For more information on:

- Regional land use planning in the Yukon, visit the **Learn about regional land use planning** page on Yukon.ca.
- Local area planning in the Yukon, visit the **Learn about local area planning in the Yukon** page on Yukon.ca.
- Recreational land use and parks, visit the **Find a campground or recreation site** page on Yukon.ca.
- The number, type and location of environmental and socio-economic assessments in the Yukon, visit the **What We Do** page on yesab.ca.
- Population change in the Yukon, visit the **Find demographic statistics for the Yukon** page on Yukon.ca.
- Species management plans, visit the **Wildlife and habitat planning** page on Yukon.ca.



Highlights

Climate change

Arctic sea ice extent and volume

Arctic sea ice extent and volume have declined since records began in 1979. This has serious impacts for northern communities and wildlife that rely on the ice for hunting and travel.

Long-term precipitation and temperature variation

Over the past 50 years, both temperature and precipitation have increased in the Yukon. Climate projections estimate that both will continue to increase over the next 30 years.

Greenhouse gas emissions

Over the past few decades, the Yukon's annual greenhouse gas emissions have increased. The main contributors are transportation (on-road), residential and industrial heating emissions.

Air

Levels of particulate matter

Overall, air quality in the Yukon varies throughout the year but continues to meet standards set by the Canadian Council of Ministers of the Environment.

Organic pollutants

Concentrations of some organic pollutants monitored at Little Fox Lake in 2024 were higher than expected, suggesting wind and water are transporting chemicals from distant regions.

Water

Snow accumulation

Snow accumulation has increased over the past several decades at the 62 locations monitored across the Yukon.

Extreme high and low water in lakes and rivers

Over the past few decades, winter water levels have been changing. Minimum winter river flows have increased, while minimum winter water levels have increased in some lakes and decreased in others.

Yukon River ice breakup at Dawson City

In Dawson City, the Yukon River breakup occurred on April 30, 2025, at 10:56 am. On average, breakup occurs about a week earlier than it did in the early 1900s.

Water quality

Water quality remained generally stable across Yukon rivers during the 2022 to 2024 assessment period, with most monitoring stations showing little change and the Alsek River demonstrating improved conditions.

Groundwater levels in the Yukon Observation Well Network

Between 2019 and 2023, peak annual groundwater levels increased, but in 2025, most decreased.

Land

Wetlands

Based on the wetland maps that are currently available, 5,813 km^2 of wetlands are being conserved within territorially protected areas.

Whitehorse Waste Management Facility

Over the past several years, waste tonnage at the Whitehorse Waste Management Facility has continued to increase roughly in line with population growth. In 2025, 22,135 tonnes of waste were landfilled in the Yukon – about 569 kg per resident.

Status of Parks and Conserved Areas

The total protected and conserved areas in the Yukon cover 101,760 km^2 (21.1%) of the territory's lands and waters. In 2025, the Yukon reported Tatchun Lake Recreation Park as its first interim "other effective area-based conservation measure". This designation recognizes the important cultural and ecological values of the habitat and wildlife within the recreation park.

Forest health

The last forest health survey was completed in 2023. There is no new data available for 2025.

Fish and wildlife

Emerging wildlife health threats

In the Yukon, the presence and distribution of several emerging infectious diseases that could harm wildlife are monitored. These diseases may be caused by prions (Chronic Wasting Disease), bacteria (Mycoplasma ovipneumoniae), fungi (White-nose Syndrome) or parasites (winter ticks).

Presence of introduced species

As of 2025, 152 introduced species are present in the Yukon. Seventeen of these species are considered “invasive”, which means they have the potential to spread aggressively and cause harm to the environment or economy.

Fish and wildlife population status and trends

Several key fish and wildlife population trends are monitored in the Yukon, including caribou population levels, snowshoe hare density, the sustainability of lake trout fisheries, Chinook salmon spawning numbers and trumpeter swan populations.

- Northern Mountain caribou herds remain stable, while some migratory herds continue to decline.
- Snowshoe hare populations are increasing rapidly and may reach a rare “super peak” in 2026 or 2027.
- In 2025, whitefish catch rates were determined sustainable in Frenchman Lake while trout fishing restrictions are recommended to be maintained.
- Chinook salmon spawning numbers remained low in 2025, with an estimated 24,205 fish entering the Canadian Yukon River drainage to spawn.
- Trumpeter swan populations remain stable. In 2025, the peak daily swan count at Swan Haven Interpretive Centre was 1,067 birds on April 19.

Biodiversity

There are currently 8,837 species of living organisms known to occur in the Yukon. As of 2025, 119 are recognized as critically imperilled.

Caribou mercury levels

Mercury concentrations in the Porcupine caribou herd have been measured since 1990 and continue to be monitored under the Northern Contaminant Program’s Contaminants in Arctic Caribou Project. Samples from 2024 showed that meat (muscle) from Yukon caribou remains a healthy food choice, as heavy metals are present only in extremely low concentrations.

Monitoring breeding waterfowl

Breeding waterfowl populations are monitored using two species of diving duck (lesser scaup and greater scaup) and one species of dabbling duck (mallard). The long-term population trends for both scaups and mallards at Old Crow Flats remain stable.

One Health indicator – Intersection of human and animal health

In the Yukon, zoonotic diseases that can spread between animals and people are monitored. Current monitoring is focused on rabies and highly pathogenic avian influenza.



Climate change

Arctic sea ice extent and volume

Significance

Ice, ocean and atmospheric systems converge in the Arctic Ocean. Sea ice extent and sea ice volume are important indicators of climate change because they show how warming is affecting these connected systems.

Sea ice extent measures the area of the Arctic Ocean and other northern seas covered by ice. Sea ice volume combines sea ice area with ice thickness, providing a more complete picture of changes in Arctic sea ice. Together, these indicators help track changes in the Arctic Ocean and improve our understanding of the broader impacts of climate change.

The loss of sea ice can affect ocean circulation, weather patterns and Arctic ecosystems. Many Arctic wildlife species, including polar bears, walruses and seals, rely on sea ice for habitat. Sea ice loss also affects northern communities that depend on sea ice for hunting, travel and cultural practices.

The Government of Yukon does not conduct its own sea ice monitoring. Instead, it uses publicly available data developed by scientific organizations and universities. Sea ice extent is measured using daily satellite observations provided through the National Snow and Ice Data Center. Sea ice volume is estimated using the Pan-Arctic Ice Ocean Modeling and Assimilation System, which combines observations with a computer model to estimate sea ice thickness and total volume.

What is happening

Arctic sea ice extent and volume have both declined substantially since satellite records began in 1979. From 1979 to 2025 (Figure 1 and Figure 2). September sea ice extent declined by an average of about 76,000 km^2 per year, while sea ice volume declined by about 300 km^3 per year. These long-term declines show the continuing effects of climate change on ice coverage in the Arctic Ocean and other northern seas.

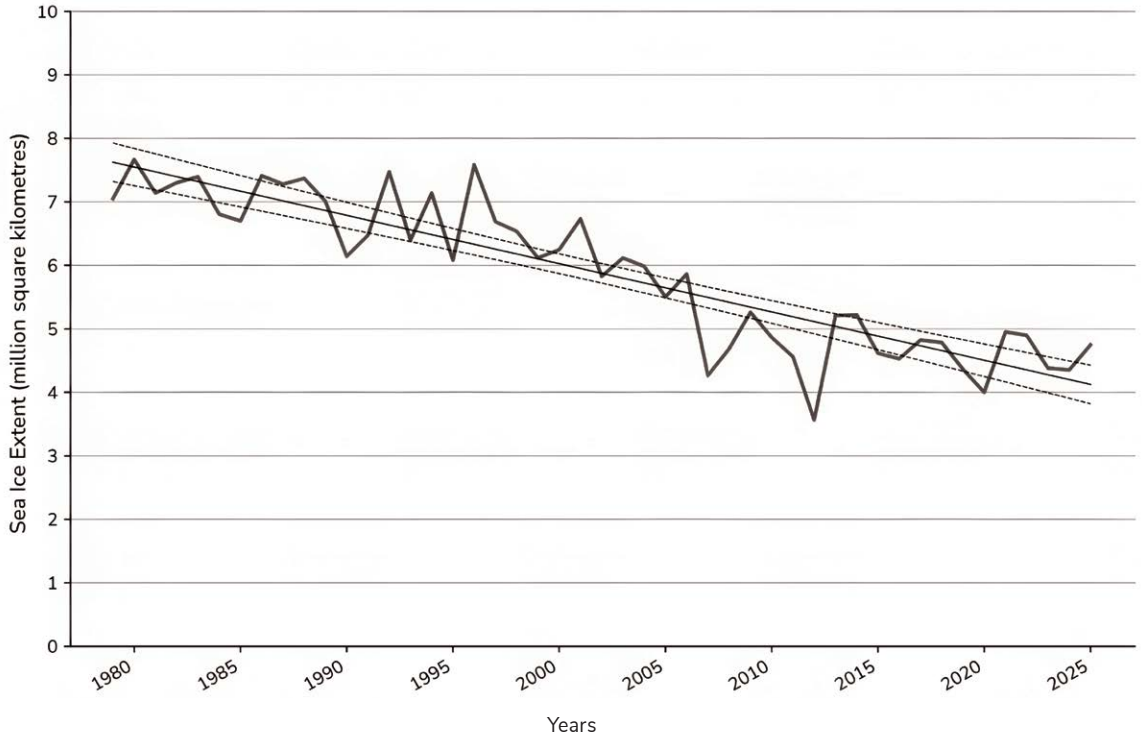


Figure 1: September Arctic sea ice extent, 1979 to 2025.

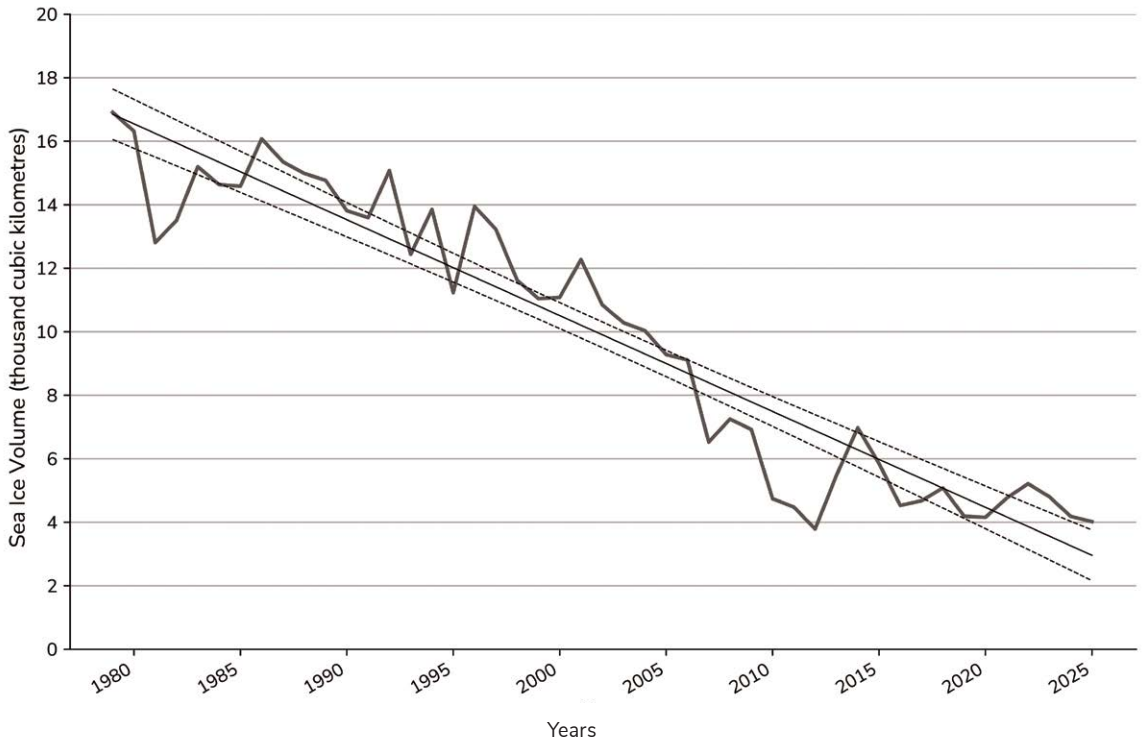


Figure 2: September Arctic sea ice volume, 1979 to 2025.

The decline in sea ice has consequences for Arctic ecosystems and for northern communities, including Inuvialuit communities, that rely on sea ice for hunting and travel. Monitoring these indicators improves our understanding of climate change impacts in the North. The Government of Yukon continues to monitor climate change indicators to better understand the impacts of climate change in the Yukon and to use this information to support work that helps make communities more resilient.

References

Fetterer, F., Knowles, K., Meier, W.N., Savoie, M., Windnagel, A.K. and Stafford, T. 2025. Sea Ice Index, Version 4. Boulder, Colorado USA. National Snow and Ice Data Center. Available from: **https://doi.org/10.7265/a98x-0f50**. Accessed June 16, 2026.

Polar Science Center. 2026. PIOMAS Ice Volume Data, 1979-present. University of Washington. Available from: **https://psc.apl.uw.edu/wordpress/wp-content/uploads/schweiger/ice_volume/PIOMAS.monthly.Current.v2.1.csv**. Accessed June 16, 2026.

Schweiger, A., Lindsay, R., Zhang, J., Steele, M. and Stern, H. 2011. Uncertainty in modeled Arctic sea ice volume. Journal of Geophysical Research 116: C00D06. Available from: **https://doi.org/10.1029/2011JC007084**. Accessed June 16, 2026.

Long-term precipitation and temperature variation

Significance

Temperature is one of the most widely monitored climate variables globally and is a key indicator of long-term climate change. The temperature anomaly indicator shows how much the temperature has changed over time compared to a 30-year climate baseline, which for this indicator is 1961 to 1990.

Precipitation is also a critical climate variable. However, it remains challenging to monitor across the Yukon because there are few long-term climate stations available to record rainfall, and precipitation can vary significantly across both time and space.

Historical temperature and precipitation data are provided by Environment and Climate Change Canada (ECCC). To show broad patterns across the country, ECCC produces the Canadian Gridded Temperature and Precipitation Anomalies dataset, known as CanGRD. CanGRD combines observations from climate stations and uses statistical methods to estimate conditions between stations. This makes it possible to map large-scale changes over time. However, estimates are generally more uncertain in regions such as the Yukon, where climate stations are widely spaced.

Projected temperature and precipitation changes shown in Figure 3 and Figure 5 are based on climate model data prepared by the Pacific Climate Impacts Consortium in partnership with ECCC. The projections show a range of possible future conditions under three Shared Socioeconomic Pathways (SSPs). SSPs describe different possible futures based on factors such as greenhouse gas emissions, energy use and social and economic development. They were used in the Intergovernmental Panel on Climate Change's Sixth Assessment Report. The SSPs used for Figure 4 and Figure 6 are:

- **SSP1-2.6:** In this low-emissions scenario, global carbon dioxide emissions are cut severely, reaching net zero after 2050. It imagines societies switching to more sustainable practices, with a greater focus on overall wellbeing, health and education.
- **SSP2-4.5:** This is a "middle of the road" scenario. Carbon dioxide emissions stay around current levels before starting to fall mid-century, but do not reach net zero until 2100. Socio-economic factors follow their historical trends, with no notable shifts.
- **SSP5-8.5:** This is a high-emissions scenario. Current carbon dioxide emissions roughly double by 2050. The global economy grows, but this growth is fuelled by fossil fuels and energy-intensive lifestyles.

Future climate projections are subject to uncertainty from differences among climate models, future emissions and natural climate variability. In the Yukon, the limited number of long-term climate stations also makes it more difficult to evaluate how well models represent local conditions, particularly in areas with complex terrain. The projections are therefore most useful for understanding broad regional changes rather than predicting exact conditions at a specific location.



The Government of Yukon's snow pillow (foreground) and meteorological monitoring station in Tagish (Alexandre Mischler, 2025).

What is happening

Annual temperatures in the Yukon have increased by about 2.2°C over the past 50 years. The full historical record from 1948 to 2025 shows an increase of about 0.4°C per decade (Figure 3). Projections suggest that temperatures are expected to increase by an additional average of 1.0 to 2.0°C over the next 30 years compared to recent observed levels, and by 2.0 to 4.0°C by 2100, using the SSP2-4.5 and SSP5-8.5 scenarios (Figure 4).

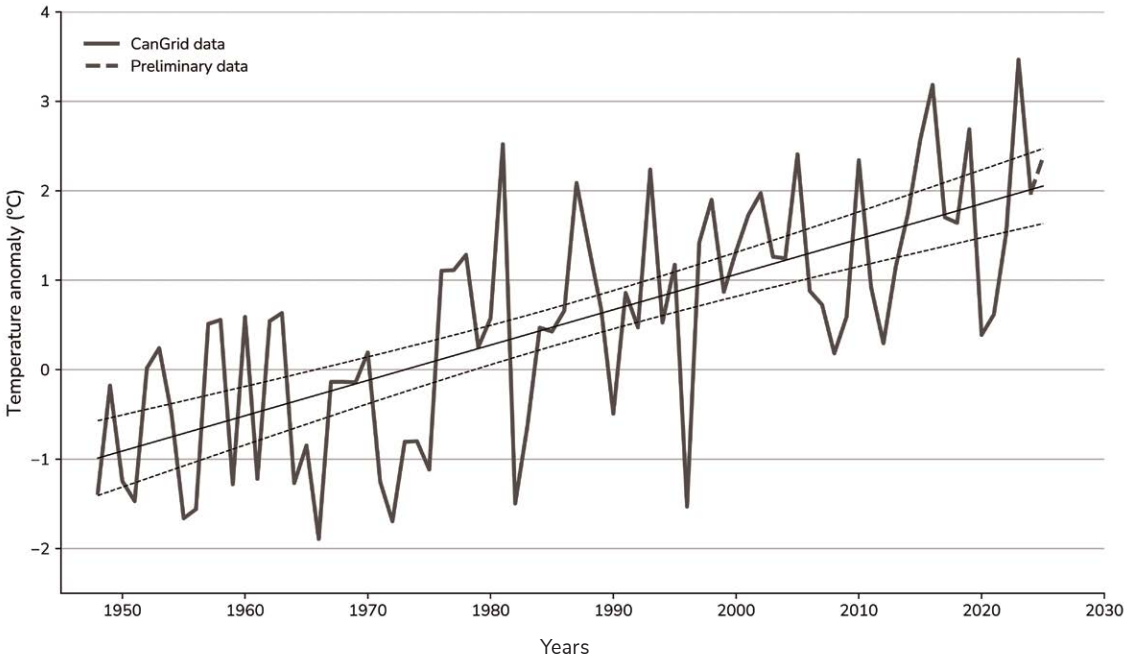


Figure 3: Yukon annual temperature anomaly, 1948 to 2025, relative to the 1961 to 1990 baseline. The trendline between 2024 and 2025 has been projected using the median of the ERA5 and ERA5-Land datasets.

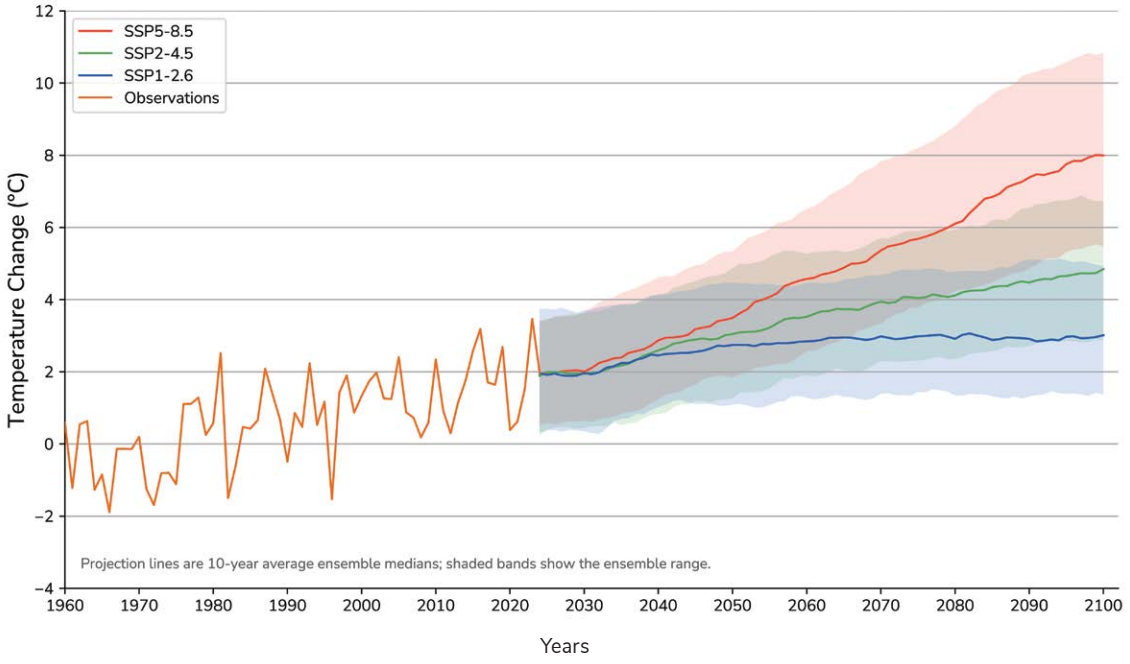


Figure 4: Yukon projected annual temperature anomaly.

Analyzing precipitation trends in the Yukon over the past 50 years shows an increase, accompanied by significant variability across both time and space. The full historical record from 1948 to 2025 shows an increase of about 2.4% per decade (Figure 5). Projections indicate a continued long-term increase in annual precipitation, with estimates suggesting a potential average increase of 15 to 20% in the next 30 years and 20 to 35% by 2100, using the SSP2-4.5 and SSP5-8.5 scenarios (Figure 6).

The Government of Yukon is collaborating with Environment and Climate Change Canada to enhance climate change indicators for the North by improving historical data quality, supporting monitoring efforts and developing guidance so these indicators can be used with confidence.

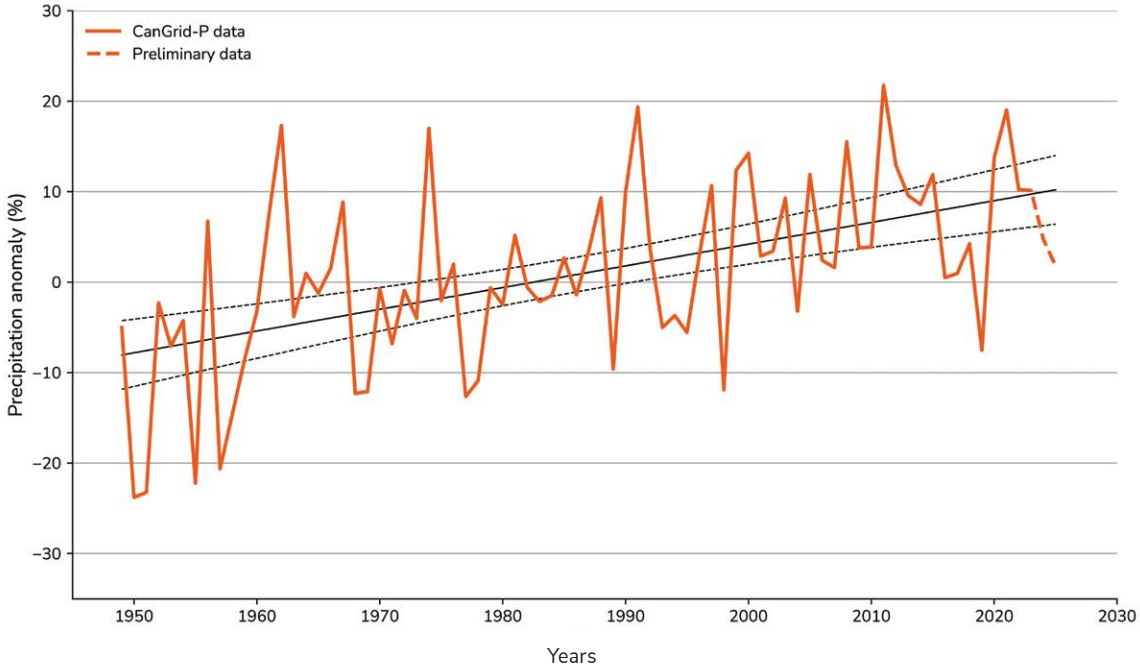


Figure 5: Yukon annual precipitation anomaly, 1948 to 2025, relative to the 1961 to 1990 baseline. The trendline (dashed) between 2022 and 2025 has been projected using the median of the ERA5, TerraClimate, CRU TS and GPCC datasets.

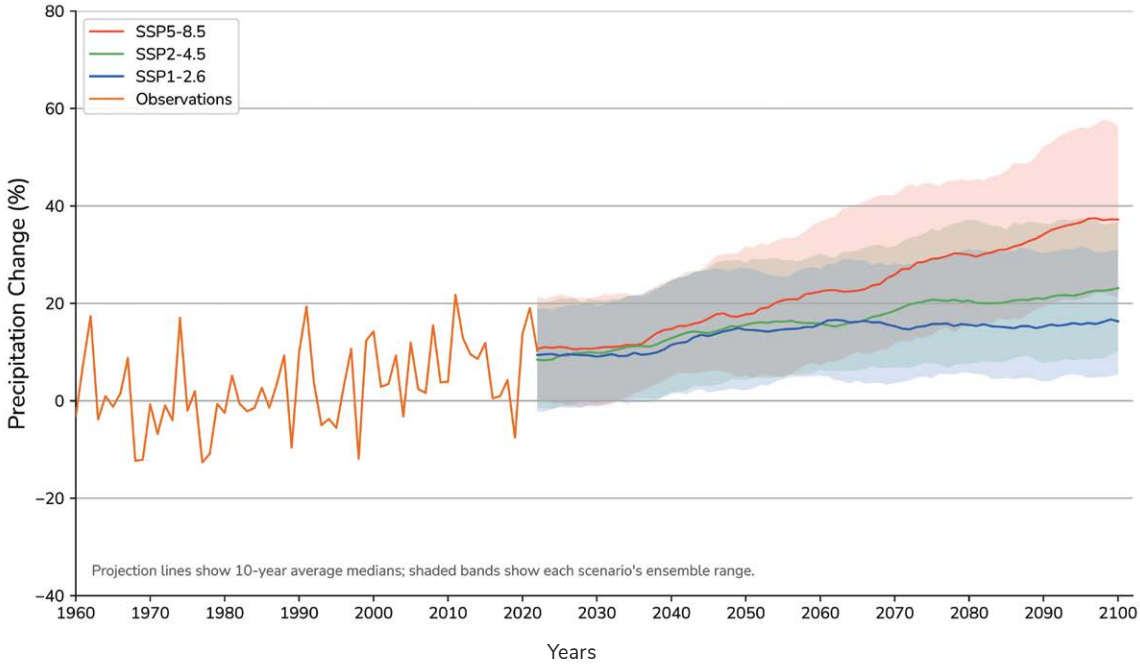


Figure 6: Yukon projected annual precipitation anomaly.

References

Abatzoglou, J.T., Dobrowski, S.Z., Parks, S.A. and Hegewisch, K.C. 2018. TerraClimate, a high-resolution global dataset of monthly climate and climatic water balance from 1958 to 2015. Scientific Data 5: 170191. Available from: **https://doi.org/10.1038/sdata.2017.191**. Accessed June 16, 2026.

ClimateData.ca. 2024. Glossary. Available from: **https://climatedata.ca/glossary/**. Accessed July 15, 2026.

ClimateData.ca. 2024. Understanding Shared Socio-economic Pathways. Available from: **https://climatedata.ca/resource/understanding-shared-socio-economic-pathways-ssps/**. Accessed June 16, 2026.

Copernicus Climate Change Service. 2017. ERA5: Fifth generation of ECMWF atmospheric reanalyses of the global climate. Copernicus Climate Change Service Climate Data Store. Available from: **https://cds.climate.copernicus.eu/**. Accessed June 16, 2026.

Environment and Climate Change Canada. 2018. Canadian Gridded Temperature and Precipitation Anomalies, CanGRD. Government of Canada. Available from: **https://open.canada.ca/data/en/dataset/3d4b68a5-13bc-48bb-ad10-801128aa6604**. Accessed June 16, 2026.

Environment and Climate Change Canada. 2024. Statistically downscaled climate scenarios and indices from CMIP6 global climate models. Government of Canada. Available from: **https://open.canada.ca/data/en/dataset/f73d6939-912a-4add-a291-c233fc5d1946**. Accessed June 16, 2026.

Harris, I., Osborn, T.J., Jones, P. and Lister, D. 2020. Version 4 of the CRU TS monthly high-resolution gridded multivariate climate dataset. Scientific Data 7: 109. Available from: **https://doi.org/10.1038/s41597-020-0453-3**. Accessed June 16, 2026.

Hersbach, H., Bell, B., Berrisford, P., Hirahara, S., Horányi, A., Muñoz-Sabater, J. and others. 2020. The ERA5 global reanalysis. Quarterly Journal of the Royal Meteorological Society 146: 1999-2049. Available from: **https://doi.org/10.1002/qj.3803**. Accessed June 16, 2026.

Muñoz-Sabater, J., Dutra, E., Agustí-Panareda, A., Albergel, C., Arduini, G., Balsamo, G. and others. 2021. ERA5-Land: a state-of-the-art global reanalysis dataset for land applications. Earth System Science Data 13: 4349-4383. Available from: **https://doi.org/10.5194/essd-13-4349-2021**. Accessed June 16, 2026.

Schneider, U., Becker, A., Finger, P., Rustemeier, E. and Ziese, M. 2020. GPCC Full Data Monthly Product Version 2020 at 0.25°: Monthly land-surface precipitation from rain gauges built on GTS-based and historical data. Global Precipitation Climatology Centre, Deutscher Wetterdienst. Available from: **https://doi.org/10.5676/DWD_GPCC/FD_M_V2020_025**. Accessed June 16, 2026.

Sobie, S.R., Ouali, D., Curry, C.L. and Zwiers, F.W. 2024. Multivariate Canadian Downscaled Climate Scenarios for CMIP6 (CanDCS-M6). Geoscience Data Journal 11: 806-824. Available from: **https://doi.org/10.1002/gdj3.257**. Accessed June 16, 2026.

Ziese, M., Becker, A., Finger, P., Meyer-Christoffer, A., Rudolf, B. and Schneider, U. 2011. GPCC First Guess Product at 1.0°: Near-real-time first guess monthly land-surface precipitation from rain gauges. Global Precipitation Climatology Centre, Deutscher Wetterdienst. Available from: **https://doi.org/10.5676/DWD_GPCC/FG_M_100**. Accessed June 16, 2026.

Greenhouse gas emissions

Significance

Greenhouse gas (GHG) emissions absorb and trap heat in the Earth's atmosphere. Their concentration in the atmosphere has increased significantly over the past several decades, which has caused the earth's average temperature to rise. Carbon dioxide (CO_2) accounts for the majority of human-caused GHG emissions; however, several other GHGs, including methane and nitrous oxide, are also released by human activity.

The Government of Yukon reports GHG emissions in kilotonnes of carbon dioxide equivalent (CO_2e) in line with guidance from the United Nations Framework Convention on Climate Change. Data on the Yukon's GHG emissions comes from two main sources:

- The National Inventory Report, which is produced annually by the Government of Canada and reports the GHG emissions of all provinces and territories.
- The Yukon's fuel tax databases, which track the total volume of fuel purchased in the Yukon based on the amount of tax paid. The Yukon Bureau of Statistics uses the databases to calculate GHG emissions from different fuel types.

GHG emissions are reported with a two-year lag, meaning 2024 emissions are published in 2026 due to the time needed to compile and analyse key data sources. Methodological updates are made periodically when calculation methods are improved.

What is happening

Since 2010, the Yukon's annual GHG emissions have increased. This is associated mainly with the expanding territorial economy (Figure 7) and population growth (Figure 8). In 2024, the Yukon's total GHG emissions were 777.3 kt CO_2e, which is a 17% increase from 2010 and a 6% increase from 2023.

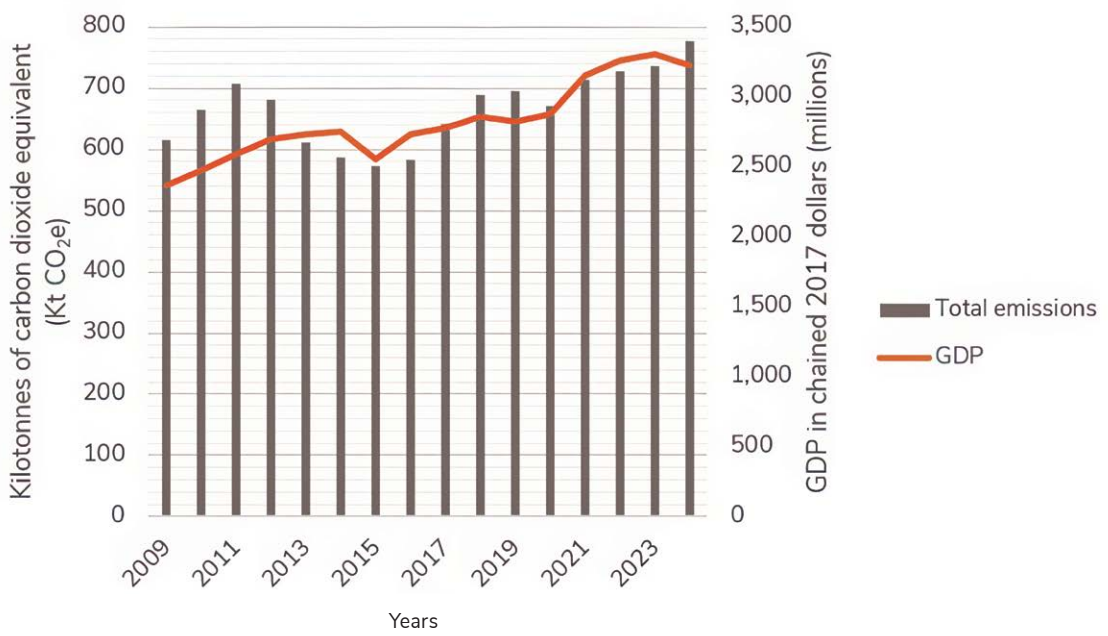


Figure 7: The Yukon's greenhouse gas emissions and gross domestic product (GDP), 2009 to 2024 (Yukon Bureau of Statistics, 2024; Statistics Canada, 2019). GDP is an estimate of the economic activity of a region.

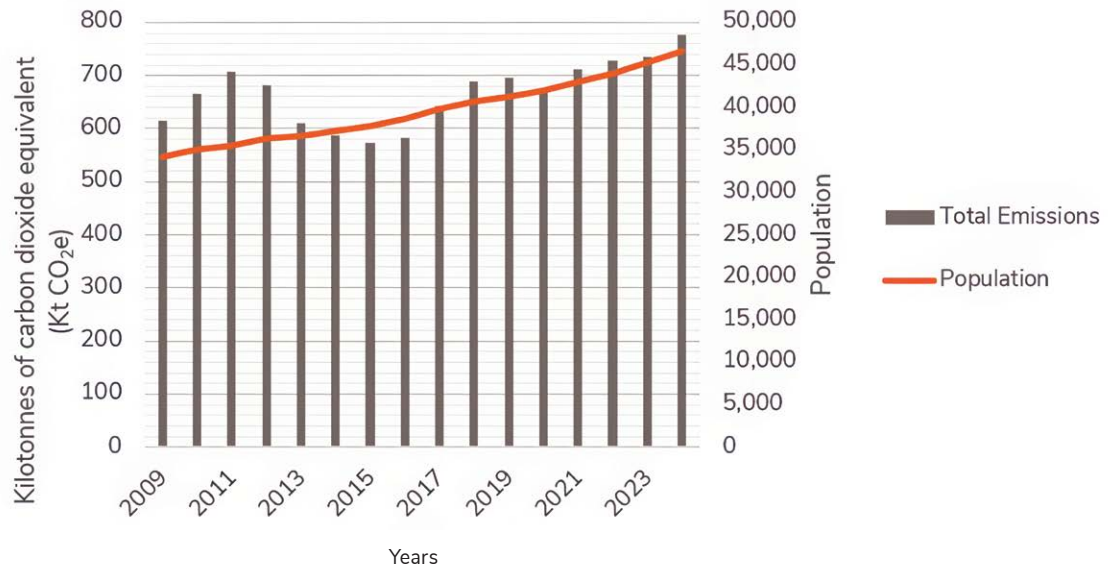


Figure 8: The Yukon's greenhouse gas emissions and population size, 2009 to 2024 (Yukon Bureau of Statistics, 2024; Statistics Canada, 2019).

Many activities contribute to GHG emissions in the Yukon. Road transportation continues to be a major source, making up 47% of 2010 emissions and 40% of 2024 emissions (Figure 9). Diesel and propane heating also produces GHGs. In 2024, heating contributed 17% to the Yukon's total emissions.

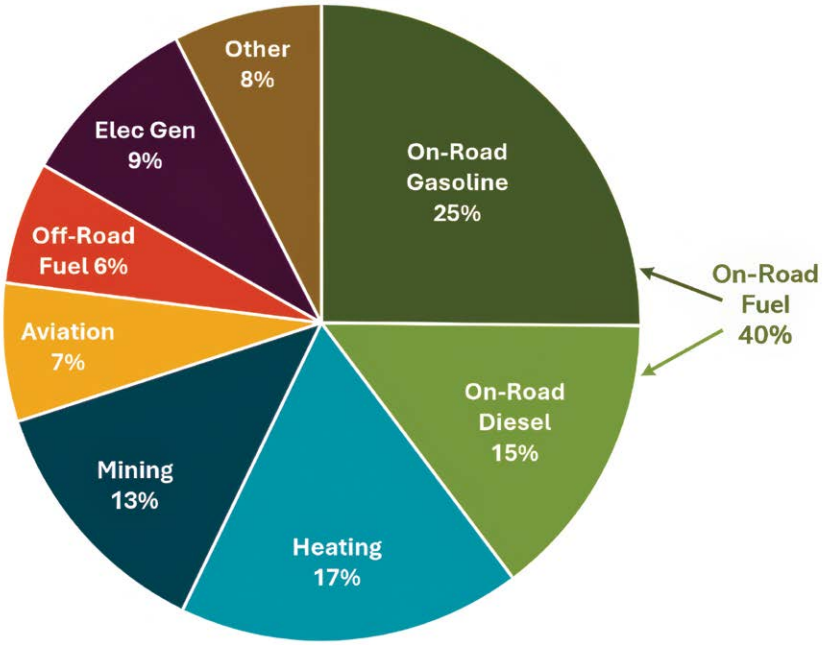


Figure 9: The Yukon's GHG emissions by category in 2024.

Some categories of GHG emissions fluctuate significantly, even within the span of a single year. Notably, between 2023 and 2024, emissions from electricity generation increased by 77%. In contrast, mining emissions decreased by 9%.

References

Statistics Canada. (2022). Table 36-10-0402-01. Gross domestic product (GDP) at basic prices, by industry, provinces and territories (x 1,000,000). Retrieved from Statistics Canada, Ottawa, Ontario, Canada.: **https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3610040201**

Yukon Bureau of Statistics. (2019). Population Report Second Quarter, 2019. Whitehorse, Yukon Canada: Yukon Bureau of Statistics. Retrieved from **https://yukon.ca/sites/default/files/ybs/populationq2_2019.pdf**

Yukon Bureau of Statistics. (2024, November). Population Report Second Quarter, 2024. Retrieved from yukon.ca: **https://yukon.ca/sites/default/files/2025-11/fin-population-report-q2-2024_r.pdf**

Yukon Bureau of Statistics. (2025). GDP by industry, (at basic prices) 2024. Retrieved from from yukon.ca: **https://yukon.ca/sites/default/files/2026-01/fin-gross-domestic-product-industry-2024.pdf**

Yukon Energy. (2024, December 4). An update on the generator at the Aishihik Generating Station. Retrieved from Yukon Energy: **https://yukonenergy.ca/about-us/news-events/an-update-on-the-generator-at-the-aishihik-generating-station**

Levels of particulate matter

Significance

Fine particulate matter ($PM_{2.5}$) are airborne particles measuring less than 2.5 microns in diameter – around 30 times smaller than the width of a human hair (Figure 10). $PM_{2.5}$ comes from a variety of both natural and human sources, including windblown dust, wildfire smoke, residential wood burning, vehicle emissions and industrial operations.

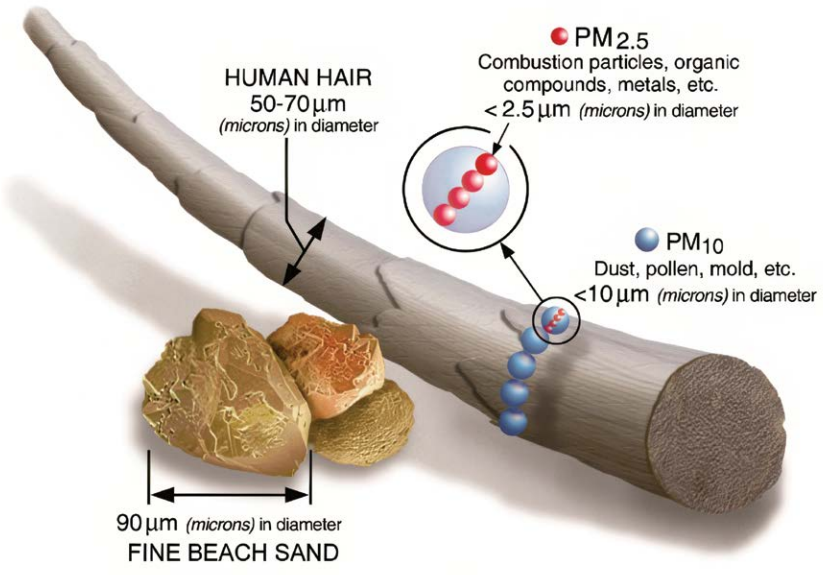


Figure 10: Size comparison of particles. Source: US EPA (2025).

$PM_{2.5}$ affects human and ecosystem health in a variety of ways. $PM_{2.5}$ is capable of penetrating deep into the lungs and entering the bloodstream. This can cause an array of health issues, including aggravated asthma, decreased lung function, heart disease and general irritation of the airway (EPA, 2022). High levels of $PM_{2.5}$ can change the nutrient and acidity balance in soil or water, reduce visibility, and function as a short-lived but powerful greenhouse gas (Climate & Clean Air Coalition, 2024).

The Government of Yukon, in partnership with Environment and Climate Change Canada, maintains a long-term air quality monitoring station to measure levels of $PM_{2.5}$ in Whitehorse. The station is part of the **National Air Pollution Surveillance (NAPS)** network. Continuous monitoring of $PM_{2.5}$ produces data on air quality in the Yukon, which can be compared to national results and allows the Government of Yukon to analyze long term data trends.

$PM_{2.5}$ levels are calculated using two statistical forms called the annual $PM_{2.5}$ metric and the 24-hour $PM_{2.5}$ metric. Once calculated, these metrics are compared to the Canadian Ambient Air Quality Standards (CAAQS), which are 8.8 micrograms per cubic metre (ug/m^3) and 27 ug/m^3, respectively.

What is happening

For the 2024 reporting period, the annual metric in Whitehorse for $PM_{2.5}$ was 5.4 ug/m^3 and the 24-hour metric for $PM_{2.5}$ was 21 ug/m^3. Both measurements fall below CAAQS thresholds, indicating that Whitehorse is meeting $PM_{2.5}$ objectives set by the **Canadian Council of Ministers of the Environment**.

Together, the 24-hour and annual datasets show a similar pattern: both metrics increased through 2021, followed by a gradual decline (Figure 11 and Figure 12). In 2024, the 24-hour and annual metrics were lower than their recent peaks but remained within the historical range and above levels observed in the earlier years of the record.

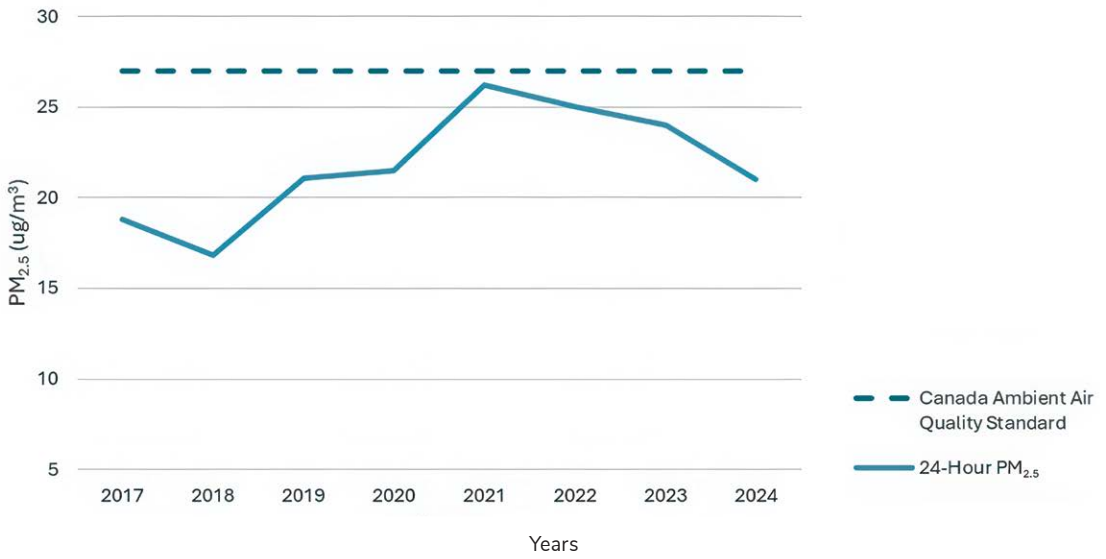


Figure 11: Average 24-hour fine particulate matter ($PM_{2.5}$) metric values in Whitehorse, 2017 to 2024.

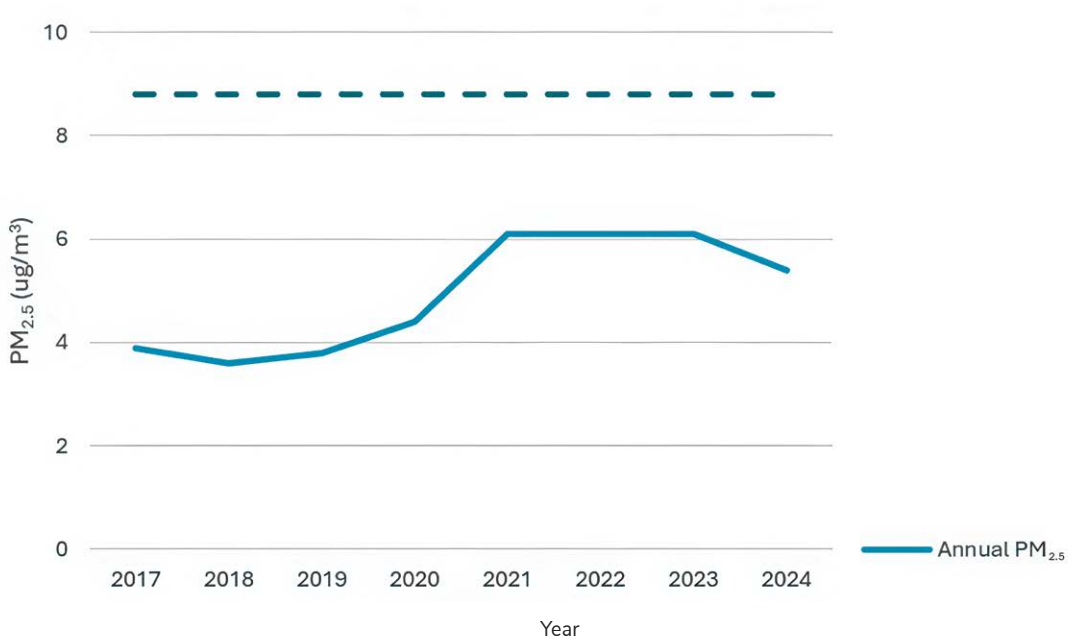


Figure 12: Annual fine particulate matter ($PM_{2.5}$) metric values in Whitehorse, 2017 to 2024.

Increased levels of $PM_{2.5}$ in July and August are a result of wildfire smoke from fires burning in British Columbia and Alberta impacting air quality in the territory (Figure 13). Smoke from wildfires across Canada and the world can travel long distances and cause sudden, short-lived increases of $PM_{2.5}$.

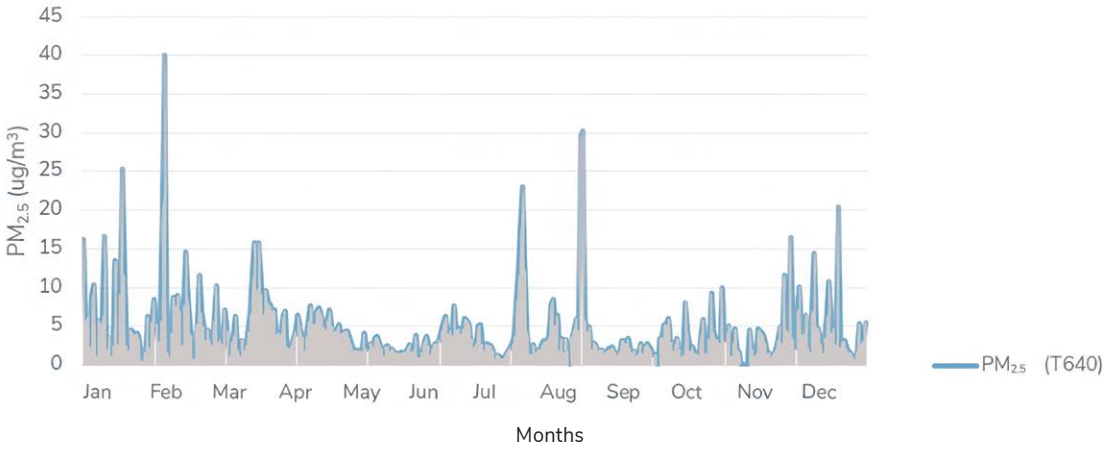


Figure 13: Daily fine particulate matter ($PM_{2.5}$) metric values in Whitehorse during 2024.

Levels of $PM_{2.5}$ are often higher in the winter due to natural atmospheric phenomena known as temperature inversions. Temperature inversions occur when air higher in the atmosphere is warmer than air closer to the ground. Inversions act like a cap on the atmosphere, preventing the dispersion of $PM_{2.5}$ away from valley bottoms, trapping the $PM_{2.5}$. In the Yukon, the two most populated communities, Whitehorse and Dawson City, are located in valleys and are often subjected to temperature inversions.

References

Canadian Council of Ministers of the Environment (CCME). 2025. Canadian Ambient Air Quality Standards Handbook. PN 1645, ISBN 978-1-77202-092-2 PDF. Available at **https://ccme.ca/en/res/caaqshandbook.pdf**. Accessed July 15, 2026.

Canadian Council of Ministers of the Environment (CCME). 2012. Guidance Document on Achievement Determination Canadian Ambient Air Quality Standards for Fine Particulate Matter and Ozone. PN 1483, ISBN 978-1-896997-91-9 PDF. CCME, Winnipeg, Manitoba, Canada.

Canadian Council of Ministers of the Environment (CCME). 2019. Ambient Air Monitoring and Quality Assurance/Quality Control Guidelines: National Air Pollution Surveillance Program. PN 1599, ISBN 978-1-77202-056-4 PDF. CCME, Winnipeg, Manitoba, Canada.

Climate & Clean Air Coalition, n.d. Black carbon. Available from: **https://www.ccacoalition.org/en/slcps/black-carbon#**

Environmental Protection Agency, 2022. Health and Environment Effects of Particulate Matter. Available from: **https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm**

Organic pollutants

Significance

Organic pollutants, such as flame retardants, plasticizers, pesticides, forever chemicals (PFAS) and polycyclic aromatic compounds, are human-made chemicals or chemicals produced through the burning of coal, oil, gas, wood, garbage, forest fires and tobacco. These chemicals can contaminate ecosystems because many of them do not break down easily and can remain in the environment for years.

Wind and water can transport these chemicals thousands of kilometres away from their original sources to remote regions such as the Arctic, where they have never been used. Many contaminants are toxic and may negatively affect various aspects of human health (e.g., development, reproduction and immune function) as well as ecosystem health. Some chemicals can also bioaccumulate, resulting in higher concentrations in top predators such as marine mammals and, ultimately, the people who rely on traditional foods.



Photo: Haze from wildfire smoke outside of Beaver Creek, 2025 (Elizabeth Barker).

Measuring organic pollutants in Arctic air over time provides important information on:

- whether concentrations are decreasing, increasing or remaining unchanged;
- where these chemicals originate from;
- how much each source region contributes; and
- how climate conditions influence transport of chemicals to the Arctic.

Air samples have been collected at the Little Fox Lake site since 2011. Initially, a passive air sampler known as a flow-through sampler was used to measure organic contaminants (see photo below). In mid-2022, this was replaced with an active air sampler, which requires electricity to pull air through sampling traps. Sampling traps are prepared at the Environment and Climate Change Canada (ECCC) laboratory in Toronto, Ontario, and shipped to the site operators at Little Fox Lake. Every 36 days, the active air sampler is turned on and collects contaminants continuously for seven days. After sampling, the traps are shipped back to the ECCC laboratory for extraction and analysis using various analytical instruments.



Photo: Passive air sampler (right) and active air sampler (left) deployed at Little Fox Lake for the monitoring of atmospheric organic pollutants (Cecilia Shin, 2023).

Once analyzed, different organic pollutants measured in the air at Little Fox Lake can be compared with those measured in the Great Lakes Basin and at Alert, Canada's high Arctic monitoring station located on the northern tip of Ellesmere Island. Long-term monitoring makes it possible to determine whether contaminant levels are increasing, decreasing, or remaining stable over time at these sites.

What is happening

Despite being a remote sub-Arctic site, concentrations of many pollutants at Little Fox Lake were found to be similar to, or even higher than, those measured in the Great Lakes region in 2024 (Figure 14 and 15), including:

- hexachlorobenzene, a banned by-product of industrial activity;
- flame retardant (TCEP);
- PCB-11, a chemical associated with paints, pigments and sealants;
- trifluoroacetic acid (TFA), a "forever chemical" created when refrigerants, pesticides and other compounds break down; and
- retene, an indicator of wood smoke, showed elevated concentrations during summer wildfire periods and again during winter when residential wood burning is more common.

This trend is interesting because we would expect the Great Lakes Basin, which is strongly influenced by nearby urban cities such as Toronto, to have higher contaminant levels than the Yukon. These results suggest that the chemicals detected at Little Fox Lake originate from distant regions, such as Asia, and are carried across the Pacific Ocean to the Yukon by air currents.

Data from air measurements collected at Little Fox Lake are used by governments to support the development of domestic and international policies and regulations aimed at reducing or eliminating the release of harmful contaminants into the environment. These actions help limit the transport of contaminants to the Arctic and reduce their accumulation in country foods, thereby helping to protect the health of northern ecosystems and communities. Additionally, long-term monitoring also helps scientists evaluate the effectiveness of chemical control measures and identify emerging contaminants of concern.

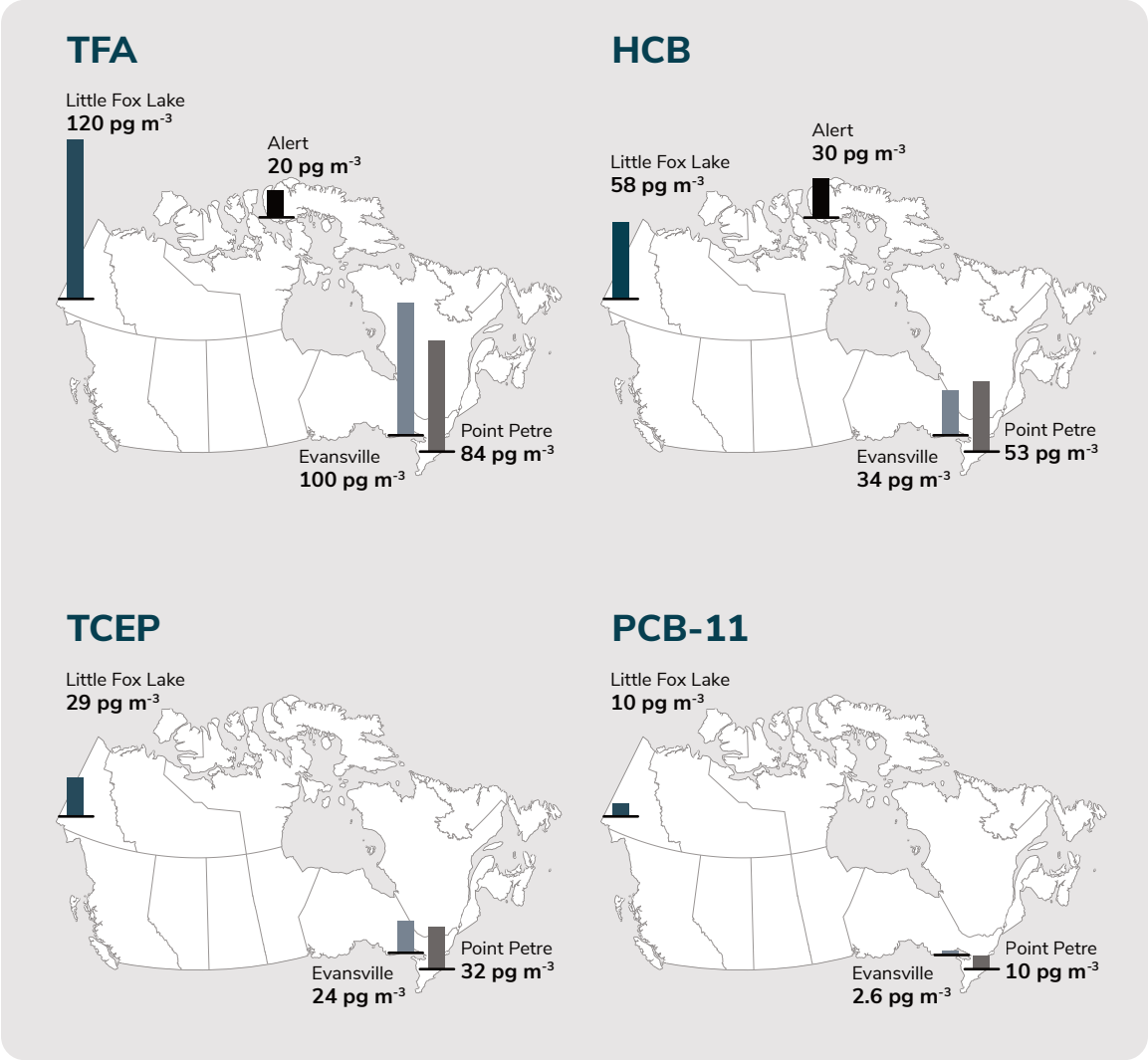


Figure 14: Levels of trifluoroacetic acid (TFA), hexachlorobenzene (HCB), flame retardant tris(2-chloroethyl) phosphate (TCEP) and PCB-11 measured in Arctic air and Great Lakes Basin air.

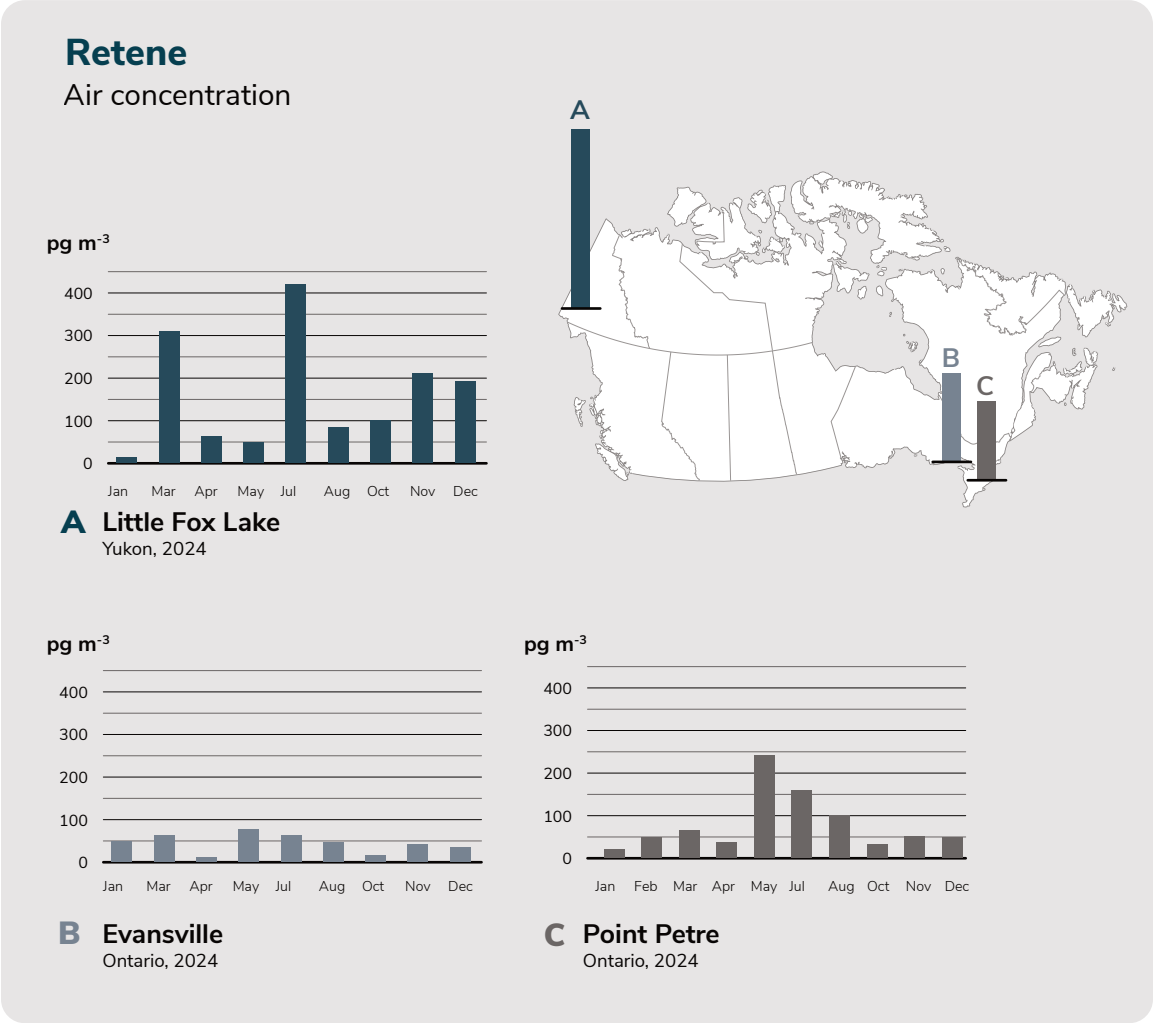


Figure 15: Concentrations of retene in air, an indicator of wood-burning emissions, measured at Little Fox Lake and in the Great Lakes Basin.

References

Wong, F., Shunthirasingham, C., Hung, H. et al., 2025. Passive Air Sampling of Highly Volatile Organic Chemicals and Chemicals of Emerging Concern in the Canadian Arctic and the Great Lakes Basin from 2015 to 2022. ACS Environmental Science and Technology Air 2, 2850-2860.

Hsu, Y., Wong, F., Hung, H., 2025. Improved sampling efficiency of volatile halomethoxybenzenes and persistent organic pollutants revels increasing concentrations in Canadian air. Environmental Science: Processes Impacts 27,2147–2158.

Yu, Y., Hung, H., Alexandrou, N., 2015. Multiyear Measurements of Flame Retardants and Organochlorine Pesticides in Air in Canada's Western Sub-Arctic. Environnemental Science and Technology 49, 8623–863.

Water

Snow accumulation

Significance

The amount of snow on the ground, or snowpack, throughout the Yukon is determined by measuring the snow depth and snow water equivalent (SWE) across a network of manual and automated snow survey stations. SWE is a measurement of the liquid water volume held within a snowpack that becomes available when melted.

SWE can have strong and unexpected influences on several hydrological and related processes. Accumulated snow is heavy and has strong insulating properties, which can influence the timing and severity of river ice breakup, accelerate the rate of permafrost melt and contribute to unstable ice conditions that make winter travel on lakes and rivers dangerous. It is important to measure SWE because it can be an important predictor of seasonal flood risk, groundwater levels and likelihood of wildfires in early summer.

Manual snow surveys are carried out at 53 locations in the Yukon, two in British Columbia and three in Alaska. Most locations have been sampled since 1980 with some records reaching as far back as 1958. Manually collected data are augmented by nine strategically located snow pillows that collect real-time snow depth and SWE data using automated instruments. Each year, new data is compared with historic records to understand trends.

What is happening

Peak SWE occurs in late March or early April in most of the territory. Of the 53 total sampling sites, 15 locations scattered throughout the Yukon reported a statistically significant increase in peak SWE. Of the sites showing statistically significant change, the greatest absolute increase in peak SWE was observed at Log Cabin (British Columbia) in the headwaters of the Southern Lakes at a rate of 22 mm (6.8%) per decade, or 151 mm more snow in an average year since the start of records in 1958. The greatest relative increase was observed at Williams Creek, near Fort Selkirk in Central Yukon, at 22% per decade, with records beginning in 1995. There are no locations reporting statistically significant decreases in peak SWE.

We use snow survey results to infer the likelihood of flood or drought conditions, predict inflows to reservoirs and gain a better understanding of the impacts of climate change in the territory. All snow survey data (point in time measurements) are available on the **Yukon Snow Survey Network** page on the Government of Yukon's open government portal, while continuous data (snow pillow and meteorological station) and survey data are available on the **Water Data Explore**r.



Photo: Hydrology technologist Alexandre Mischler conducting a snow survey on March 31, 2026 on Mt McIntyre in Whitehorse (Taylor Belansky, 2026).

References

Snow Conditions and Water Supply Bulletin - Province of British Columbia.

Available from: **https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/drought-flooding-dikes-dams/river-forecast-centre/snow-survey-water-supply-bulletin**

Snow Bulletins and Water Supply Forecasts - Yukon Territory.

Available from: **https://yukon.ca/en/snow-surveys-and-water-supply-forecasts**

Snow Bulletins and Water Supply Forecast - State of Alaska.

Available from: **https://www.nrcs.usda.gov/alaska/snow-survey**

Extreme high and low water in lakes and rivers

Significance

Monitoring river flows and lake levels is critical to understanding flood risk in the Yukon and how this risk is changing over time. Extreme high and low water levels are affected by processes such as the amount of water held in snowpacks, timing of snowmelt, the amount and phase of precipitation (rain or snow), melting glaciers, shifts in vegetation and permafrost thaw. Measuring water level and discharge helps scientists build an understanding of how these hydrological systems interact across the Yukon.

Water levels and volumes affect water quality, energy production, resource development and quality of habitat for fish and wildlife. High river flows can cause increased sedimentation and contaminant movement in river systems, as well as more intense river ice breakup conditions that increase flood potential. In contrast, low river flows can result in increased concentrations of elements, such as dissolved metals, which can positively or negatively affect aquatic ecosystems.

Water level and discharge measurements are carried out at 75 locations by Environment and Climate Change Canada through the Canada-Yukon Agreement for Hydrometric Monitoring, and at 15 additional Government of Yukon stations. Automated instruments record water level continuously. Regular manual measurements of discharge and water level allow us to produce continuous flow measurements.

What is happening

River flows

There were 53 locations analysed for minimum flow trends (Figure 16) and 66 for maximum flow trends (Figure 17). Most of these locations are on large rivers (rivers that have drainage areas greater than 1,000 km^2) in the following basins:

- Tàgé Cho / Tágà Shäw (Yukon River);
- Alsek River;
- Liard River;
- Teetł'it Gwinjik (Peel River); and
- Ch'ōdèǹjik (Porcupine River).



Photo: Klondike River (Tr'ondëk*) monitoring station viewed from downstream of the bridge; a water quality meter in hand to collect real-time water quality measurements. Water samples are collected from the bridge on the upstream side (right side in this photo) using a sampling apparatus attached to a rope (August 2024).

Minimum flows showed statistically significant increases at 44 locations over their respective periods of record, which ranged from 10 to 73 years. Of the 9 remaining locations, 7 showed positive but not statistically significant changes (Figure 16). This paints a clear picture of increasing winter base flows across the territory.

For this indicator, we have used place names as outlined in the Gazetteer of Yukon, however, we are aware that more place names exist. For example, the Yukon River basin spreads across a number of language groups and as such it has many Indigenous names beyond the two provided here. Tàgé Cho in Northern Tutchone, and Tágà Shäw in Southern Tutchone, translate to "Great River". Teetł'it Gwinjik, the Gwitch'in name for the Peel River, translates into: Teetł'it - headwaters region; Gwinjik - along the course of river, while Ch'õdèǹjik (Porcupine River) translates to "porcupine quills river."



Figure 16: Trends in minimum winter flows with a statistically significant change.

In contrast, no significant changes in maximum flows have been detected at most sampling locations (61 of 65). The only location where a significant increase in maximum flow was observed was at the Alsek River above Bates River. This is likely linked to the recession of the Kaskawulsh glacier (described further below). The White River at the Alaska Highway, Macmillan River near the mouth, and Ross River at the community of Ross River all showed statistically significant decreases in maximum flows (Figure 17).

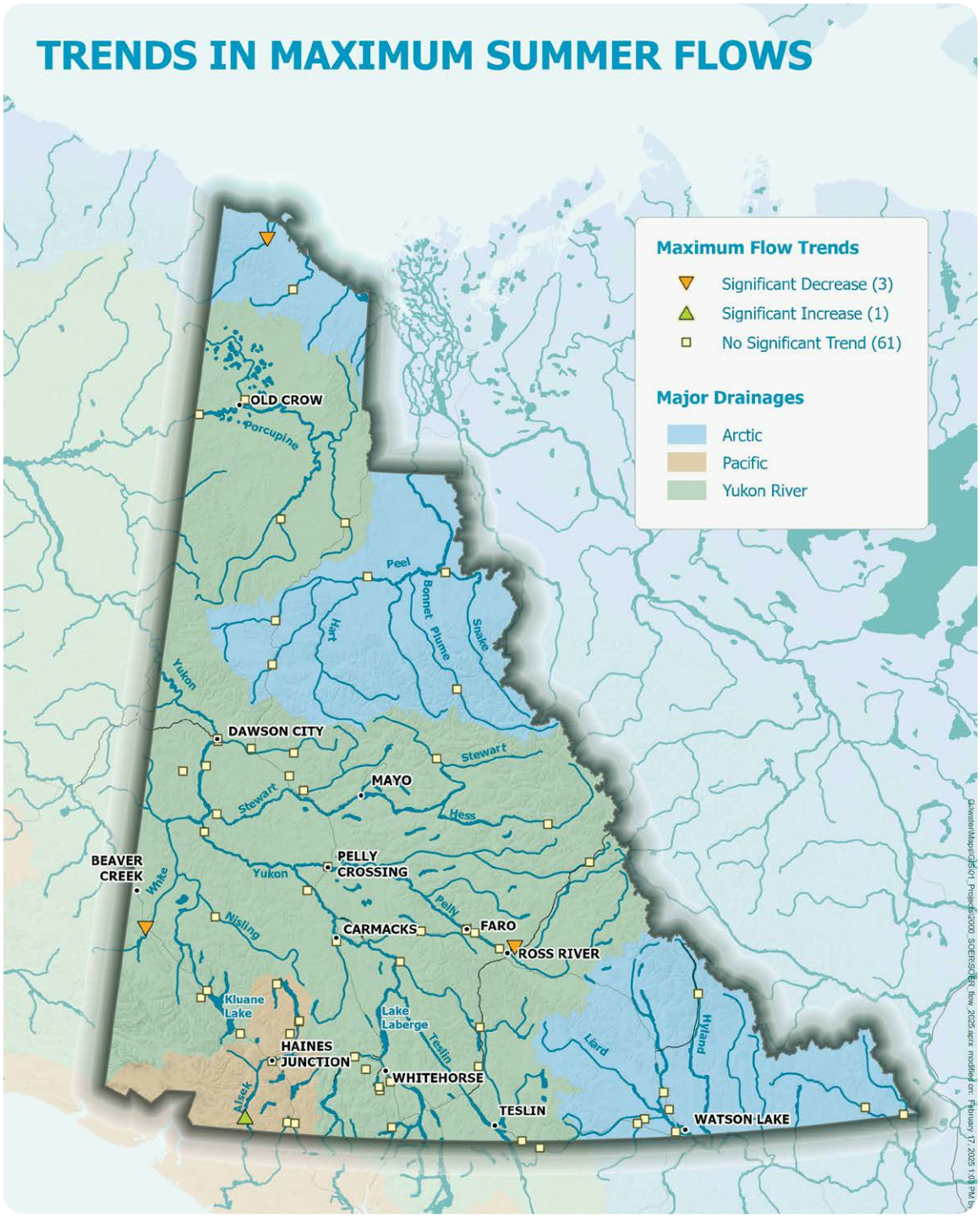


Figure 17: Trends in maximum summer flows with a statistically significant change.

Lake levels

Minimum and maximum water levels were analysed for five lakes:

- Atlin Lake;
- Bennett Lake;
- Łù'àn Mān (Kluane Lake);
- Tthechà l Mān (Sekulmun Lake); and
- Teslin Lake.



For this indicator, we have used place names as outlined in the Gazetteer of Yukon. Łù'àn Mān, the Southern Tutchone name for Kluane Lake, means "big whitefish lake," while Tthechà̀ l Män is the Southern Tutchone name for Sekulmun Lake and means "stone scraper lake."

Bennett Lake and Łù'àn Mān (Kluane Lake) showed declines in winter minimum levels, while Tthecha̋ l Mān's (Sekulmum Lake) and Teslin Lake showed slight increases in winter minimum levels.

A change in summer maximum water levels is only evident on Łù'àn Mān (Kluane Lake), with a decrease directly linked to the diversion of meltwaters from the Kaskawulsh glacier to the Alsek River drainage in 2016 owing to glacial retreat (Shugar et al. 2017). This event dramatically reduced flow into the Ä'äy Chù (Slims River), which was once the largest single contributor of flows into Łù'àn Mān (Kluane Lake). A recent study suggests that water levels will remain low in Łù'àn Mān (Kluane Lake) and Kluane River from now on (Loukili and Pomeroy 2018).

Information on water levels and flows is used in a variety of contexts ranging from water level/flow forecasting, planning for and monitoring flood conditions, adjusting flows through hydroelectric generation stations, and scientific research.

All water level and flow data is available on the Water Data Explorer, and information regarding flooding (maps, advisories and basic level/flow information) is available on the **Flood Hub**.

References

Loukili, Y. and J.W. Pomeroy, 2018. The Changing Hydrology of Lhù'àän Mān- Kluane Lake - under Past and Future Climates and Glacial Retreat. Centre for Hydrology Report No. 15. Prepared for Government of Yukon, Yukon Community Services, Infrastructure Branch, Whitehorse, Yukon, Canada.

Shugar, D., Clague, J., Best, J. et al., 2017. River piracy and drainage basin reorganization led by climate-driven glacier retreat. *Nature Geosci* 10, 37075. **https://doi.org/10.1038/ngeo2932**.

Sidney, A. 1980. Place names of the Tagish region, Southern Yukon. Yukon Native Language Project, Council for Yukon Indians. Available at: **https://ynlc.ca/wp-content/uploads/Tagish_Place_Names_Angela_Sidney_1980.pdf**

Yukon Geographical Names Program. 2022. Gazetteer of Yukon. **https://yukon.ca/en/gazetteer-yukon**

Yukon River ice breakup at Dawson City

Significance

This indicator is measured by recording the date on which the ice on the Yukon River (named Chu Kon' Dëk in the Hän language, meaning "sparkling water river") at Dawson City begins to shift and relocate. The Yukon River Ice Pool, in which local residents can place bets on the date of breakup, dates back to 1896, providing an exceptional historical dataset that can be used to measure breakup trends over time. Today, breakup time is officially measured using a wooden tripod tethered to the shore with a cable. The first movement of the ice beneath the tripod pulls on the cable and stops a clock keeping time on the riverbank.

River ice processes are evolving with climate change, affecting both the timing and intensity of breakup and the severity of ice jams. The reduced river ice season is already impacting communities in the Yukon because river ice conditions affect transportation routes in the form of both winter roads and wildlife corridors. In recent years, changing freeze-up patterns have made certifying an ice bridge to connect West Dawson and Dawson City challenging.

To support the community in preparing for floods, the Government of Yukon uses a network of monitoring stations, remote cameras, satellite imagery and models to forecast the timing and potential severity of breakup on the Yukon River at Dawson City. To better understand these changes and improve forecasting tools, the Government of Yukon is working with researchers from Yukon University to develop and strengthen breakup models for several communities, including the Yukon River at Dawson City.



Photo: Floating ice on the Yukon River, looking downstream from Dawson City (Anthony Bier, May 2026).

What is happening

Between 1896 and 1916 (the first 20 years of data collection), the average breakup date was May 10. In contrast, between 2007 and 2025 (the last 20 years of data collection), the average breakup date is May 3, a full week earlier (Figure 18). Breakup dates in late April have increased in frequency, with nine such events since 1989, compared to only two breakup events in April between 1896 and 1988. The two earliest recorded breakup events occurred in the past ten years (2016 and 2019, both on April 23).



Figure 18: Yukon River at Dawson City ice breakup date by year, 1896 to 2025.

References

Dawson City Yukon River ice pool. Available from: **https://dawsoncity.ca/yukon-river-ice-pool/**

Government of Yukon, Outdoor, Recreation and Wildlife, Yukon River Campground. Available from: **https://yukon.ca/en/outdoor-recreation-and-wildlife/camping/site/yukon-river-campground**

IODE Dawson Chapter. Dawson City River ice breakup. Available from: **https://www.iodedawson.com/**

Water quality

Significance

The Government of Yukon collaborates with Yukon First Nations, Environment and Climate Change Canada (ECCC) and Parks Canada to collect water quality samples from 15 rivers across the territory. These include the Yukon, Liard, Alsek, Klondike and Porcupine Rivers, among others. Data from these samples are available on the Government of Canada website under "**Freshwater quality monitoring: online data.**"

Water samples are collected using standardized protocols which are collected by hand from the shore, from a bridge, or through holes in the ice during winter. Samples are then sent to Vancouver where they are analyzed in ECCC-accredited laboratories. Parameters vary by site but may include dissolved oxygen, pH, turbidity, phosphorus and nitrates.

Using these variables and others, a Water Quality Index (WQI) is calculated for each monitoring location. The WQI equation was developed by the Canadian Council of Ministers of the Environment and indicates the status of water quality and the suitability of the stream to support aquatic life. It is based on the frequency and extent to which selected parameters fail to meet water quality standards for the protection of aquatic life over a consecutive 3-year period. When water quality parameters do not meet the established guidelines, the WQI of that site goes down.

Each year, ECCC calculates the WQI for a representative subset of monitoring locations (7 out of 15 in the Yukon). This contributes to the Canadian Environmental Sustainability Indicators, which report on water quality trends across Canada.



Photo: The Klondike River meets the Yukon River at Dawson City (Julien Schroder)

What is happening

Based on data from the 2022 to 2024 period, the water quality index scores for four of seven Yukon rivers with WQI calculated remained stable compared to previous years, increased for one (Alsek River), and decreased for one (Yukon River upstream of Takhini) [Table 1]. Tr'ondëk (Klondike River) has notably decreased in WQI in recent years, possibly due to increased selenium concentrations observed in late winter (February to April). This may be influenced by changing surface water-groundwater interactions due to changing permafrost, which could be mobilizing selenium from upstream sources.

Table 1: Water Quality Index (WQI) scores for Yukon monitoring stations calculated as three-year rolling averages.

EXCELLENT	95–100	Aquatic life is not threatened or impaired. Measurements never or very rarely exceed water quality guidelines.
GOOD	80–94	Aquatic life is protected with only a minor degree of threat or impairment. Measurements rarely exceed water quality guidelines and, usually, by a narrow margin.
FAIR	65–79	Aquatic life is protected, but at times may be threatened or impaired. Measurements often exceed water quality guidelines and, possibly, by a wide margin.
MARGINAL	45–64	Aquatic life frequently may be threatened or impaired. Measurements often exceed water quality guidelines by a considerable margin.
POOR	0–44	Aquatic life is threatened, impaired or even list. Measurements usually exceed water quality guidelines by a considerable margin.

Date	Klondike River upstream of Bonanza Creek	Liard River at Upper Crossing	South McQuesten River downstream of Flat Creek	Yukon River upstream of Takhini River	Ogilvie River above Engineer Creek	Alsek River above Bates River in Kluane National Park	Porcupine River above Old Crow River
2003–2005	N/A	100	N/A	N/A	N/A	N/A	N/A
2003–2005	N/A	93.6	N/A	N/A	N/A	N/A	N/A
2004–2006	N/A	93.6	N/A	N/A	N/A	N/A	N/A
2005–2007	66.8	87.2	64.4	100	N/A	N/A	N/A
2006–2008	66.4	93.6	64.3	100	N/A	N/A	N/A
2007–2009	67.4	93.6	64	100	N/A	N/A	N/A
2008–2010	74.2	87.2	70	93.6	N/A	N/A	N/A
2009–2011	74.2	85.5	69.5	93.6	N/A	N/A	N/A
2010–2012	74.2	80.6	70.1	93.6	N/A	N/A	N/A
2011–2013	74	80.6	70.4	93.6	N/A	N/A	N/A
2012–2014	73.8	N/A	70.6	93.6	N/A	N/A	N/A
2013–2015	73.7	80.6	70	93.6	N/A	N/A	N/A
2014–2016	73.7	80.6	63.8	100	N/A	N/A	N/A
2015–2017	86.6	80.5	63.7	100	N/A	N/A	N/A
2016–2018	80.1	80.6	63.5	93.6	N/A	N/A	N/A
2017–2019	80.4	80.6	64.1	93.6	72.9	87.3	70.4
2018–2019	80.2	80.6	64.1	93.6	73.2	87.6	70.3
2019–2021	80.4	74.1	70.8	100	73.5	93.4	70.3
2020–2022	60.6	72.9	82.2	87.1	67.2	87.7	75.7
2021–2023	53.4	73.2	82.1	87.1	67.8	61.6	76.1
2022–2024	53.6	73.4	81.8	73.9	67.6	88.1	76.2

In addition to selenium, thawing permafrost can release other elements into water courses. Where sulfide-bearing minerals are present, their oxidation in water can produce acidity and release iron, sulfate and other metals into groundwater and streams. Iron precipitates as orange/red, giving rise to the "rusting stream" phenomenon seen in the Yukon-Mackenzie watershed over the last several years (Skierszkan et al., 2026). The severity of the rust effects varies depending on local geology and water movement. Research, including aerial surveys to identify affected streams, is ongoing to better understand how these changes may affect aquatic ecosystems and wildlife in the Yukon.

References

Environment and Climate Change Canada. "Freshwater quality monitoring: online data" **http://aquatic.pyr.ec.gc.ca/webdataonlinenational/en/**. Accessed February 10, 2025.

Environment and Climate Change Canada. Federal Water Quality Index Scores. **https://www.canada.ca/content/dam/eccc/documents/csv/cesindicators/water-quality-canadian-rivers/2026/WQI_CSV_fed_score_2022-2024.csv**.

Environment and Climate Change Canada. "Canadian Environmental Sustainability Indicators: Water Indicators" **https://indicators-map.canada.ca/App/CESI_ICDE?GOCTemplateCulture=en-CA&gad_source=1**. Accessed February 10, 2025.

Groundwater levels in the Yukon Observation Well Network

Significance

Groundwater is the most abundant form of water in the Yukon and is a critical resource for both communities and ecosystems. Approximately 97% of Yukoners rely on groundwater as their source of potable water. Ecosystems similarly depend on groundwater, which maintains water levels, regulates temperatures and delivers nutrients to surface water bodies (lakes, ponds, streams, rivers etc.).

The Yukon Observation Well Network (YOWN) is a groundwater monitoring program operated by the Government of Yukon and is used to monitor groundwater levels and quality across the territory. Manual measurements of water level and chemistry are taken several times per year, and instruments are installed to continuously monitor levels between manual measurements.

Groundwater level monitoring strengthens our understanding of local and regional hydrogeological processes across the Yukon, including:

- recharge and discharge mechanisms, rates and timings;
- groundwater-surface water interactions, including water table responses to high surface water events; and
- responses to the effects of climate change, including permafrost degradation.

Groundwater and surface water levels and quality are intimately connected. Groundwater levels are significantly influenced by snow accumulation because a portion of melted snow infiltrates the ground and recharges aquifers. Winter flows in rivers and streams are controlled by groundwater discharge rates and tend to be higher when groundwater levels are high. The Government of Yukon's flood forecasting team considers groundwater conditions when assessing flood risk.



Photo: Government of Yukon staff installing telemetry at the Yukon Observation Well Network (YOWN) well located at Bennett Beach.

What is happening

In 2025, peak annual groundwater levels decreased in most wells (Figure 19), as did minimum annual groundwater levels (Figure 20). This is in contrast with previous years: from 2019 to 2023, groundwater levels generally increased in most wells.

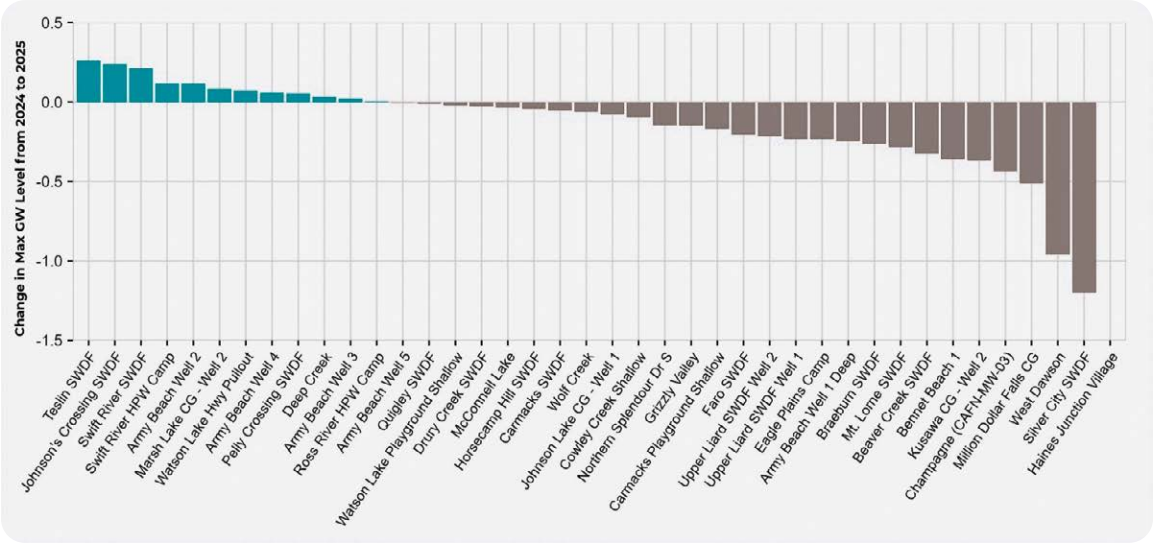


Figure 19: Change in maximum groundwater levels, 2024 to 2025.

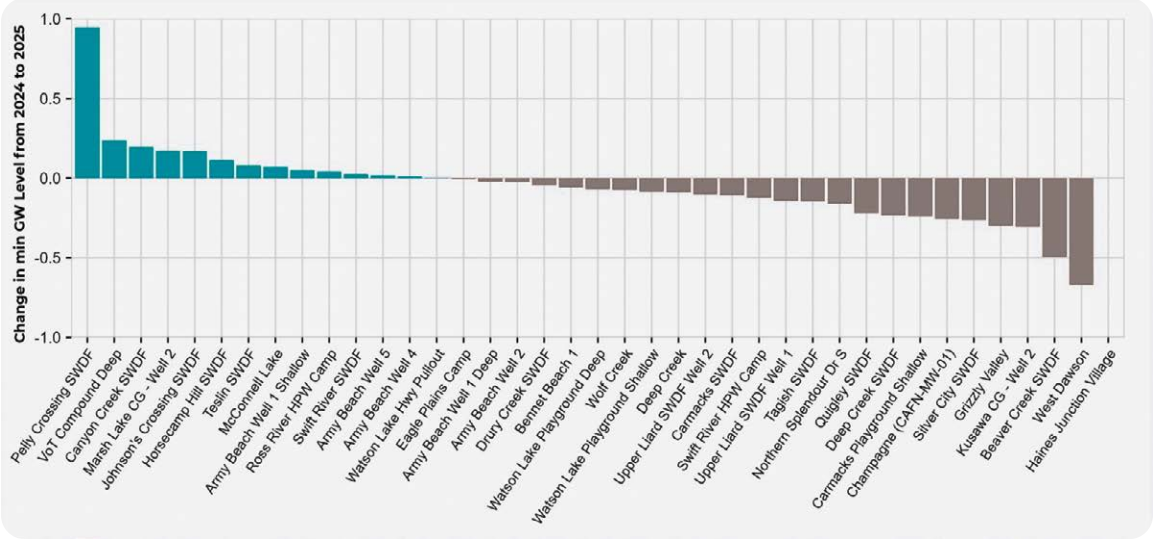


Figure 20: Change in minimum groundwater levels, 2024 to 2025.

Thirty-eight of 87 active wells in the YOWN currently have sufficient data quantity and quality for comparison of historic maximum and minimum levels with those observed in 2025. Of these wells, 8% had a higher maximum groundwater level in 2025 than in their historical record, and 18% had a lower minimum groundwater level in 2024 than any other point in their historical record (Figure 21 and Figure 22). Many of the wells that showed a historical maximum groundwater level have relatively short (i.e., less than four years) periods of records, which hinders analysis.

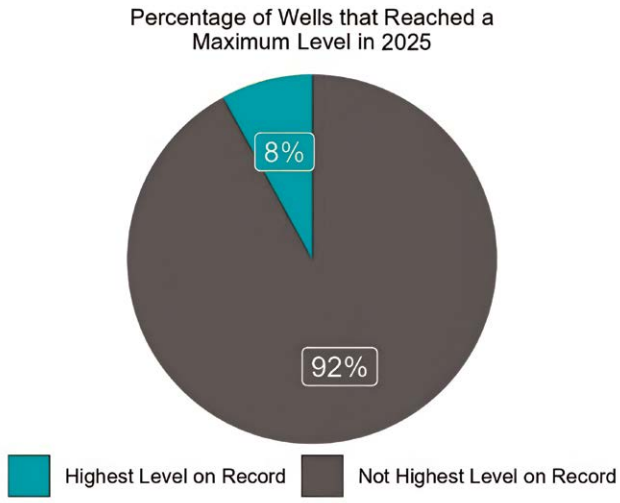


Figure 21: Percentage of wells that reached a historical maximum level in 2025.

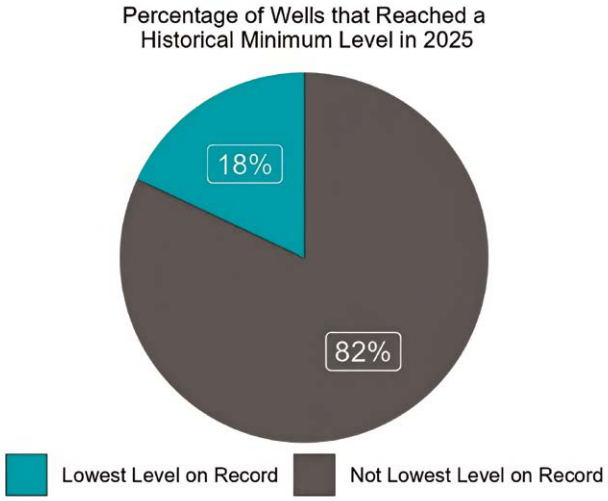


Figure 22: Percentage of wells that reached a historical minimum level in 2025.

No new monitoring wells were added to YOWN in 2025, but several project-specific boreholes were installed to enable characterization of the complex fractured bedrock aquifers around the Whitehorse Copper Belt (WCB). Telemetry systems were added to four new wells to provide real-time groundwater level information, with four more installations planned in 2026.

All continuous water level measurements from our observational network are available on the **Water Data Explorer**, along with hydrometric and meteorological data. We are gradually adding water chemistry data from YOWN wells to this platform. Borehole records for YOWN and other wells are available on the Water Data Explorer on the **Water Well Registry** page.

References

Government of Yukon. Yukon Water Data Catalogue. Available from: **https://floods.service.yukon.ca/pages/water-data**

Land

Wetlands

Significance

Healthy wetlands are essential for maintaining water flows, flood protection, purifying water, recharging and discharging groundwater and providing habitat for fish and wildlife. Wetlands support traditional subsistence and cultural activities, provide recreation opportunities for all Yukoners, and are home to a disproportionately high number of species compared to many other habitat types. Other valuable functions of wetlands include:

- slowing the flow of water, thereby reducing erosion;
- providing habitat for plants that help stabilize stream banks and shorelines;
- creating and fertilizing floodplains;
- supporting the food chain;
- storing large quantities of soil carbon;
- enhancing aesthetics; and
- serving as a rich arena for education.

The Government of Yukon recognizes five classes of wetlands as defined in the Canadian Wetlands Classification System (1997): bogs, fens, swamps, marshes and shallow open water. These classes are determined by soil, vegetation, water and other ecological characteristics.

The Government of Yukon is furthering wetlands management through the implementation of **A policy for the stewardship of Yukon's wetlands (2022**) and the **interim approach for wetland protection in the Indian River area (2020)**, as well as through decisions and guidance at territory-wide, regional and project-specific levels. The wetlands stewardship policy outlines implementation actions that support the stewardship of wetlands with the goal of ensuring the benefits of Yukon's wetlands are sustained. This includes enabling parcels of land to be designated as wetlands of special importance.

The largest concentrations of wetlands in the Yukon are located in areas underlain by continuous permafrost, particularly in northern Yukon (for example the Old Crow Flats). However, wetlands and wetland complexes are present throughout the territory.



Photo: A wetland along the Klondike Highway with a recently burned forest in the background (Julien Schroder).

What is happening

Currently, the main factor informing Government of Yukon biologists' understanding of wetland stewardship is the total area of wetlands under special designation. These designations include territorial protected areas such as parks, habitat protection areas and special management areas. Based on the wetland maps that are currently available, there are 5,813 km^2 of wetlands in existing territorial protected areas (Figure 23). This calculation does not include wetlands within federally protected areas.

Yukon First Nations and transboundary Indigenous governments and groups continue to share relevant Indigenous ways of knowing, doing and being relating to wetlands through a variety of mechanisms. These include engagement on the wetland stewardship policy, contributions on the Dawson Regional Land Use Plan, and participation in project assessments and regulatory reviews.

Through these processes, Yukon First Nations and transboundary Indigenous governments and groups have consistently raised the importance of wetlands in supporting their ability to practice and maintain their Indigenous knowledge systems, cultures and traditional ways of life. To ensure their right to undertake these traditional practices, as well as their established rights to access water in its natural state, they have consistently advocated for the protection or conservation of the Yukon's wetlands.

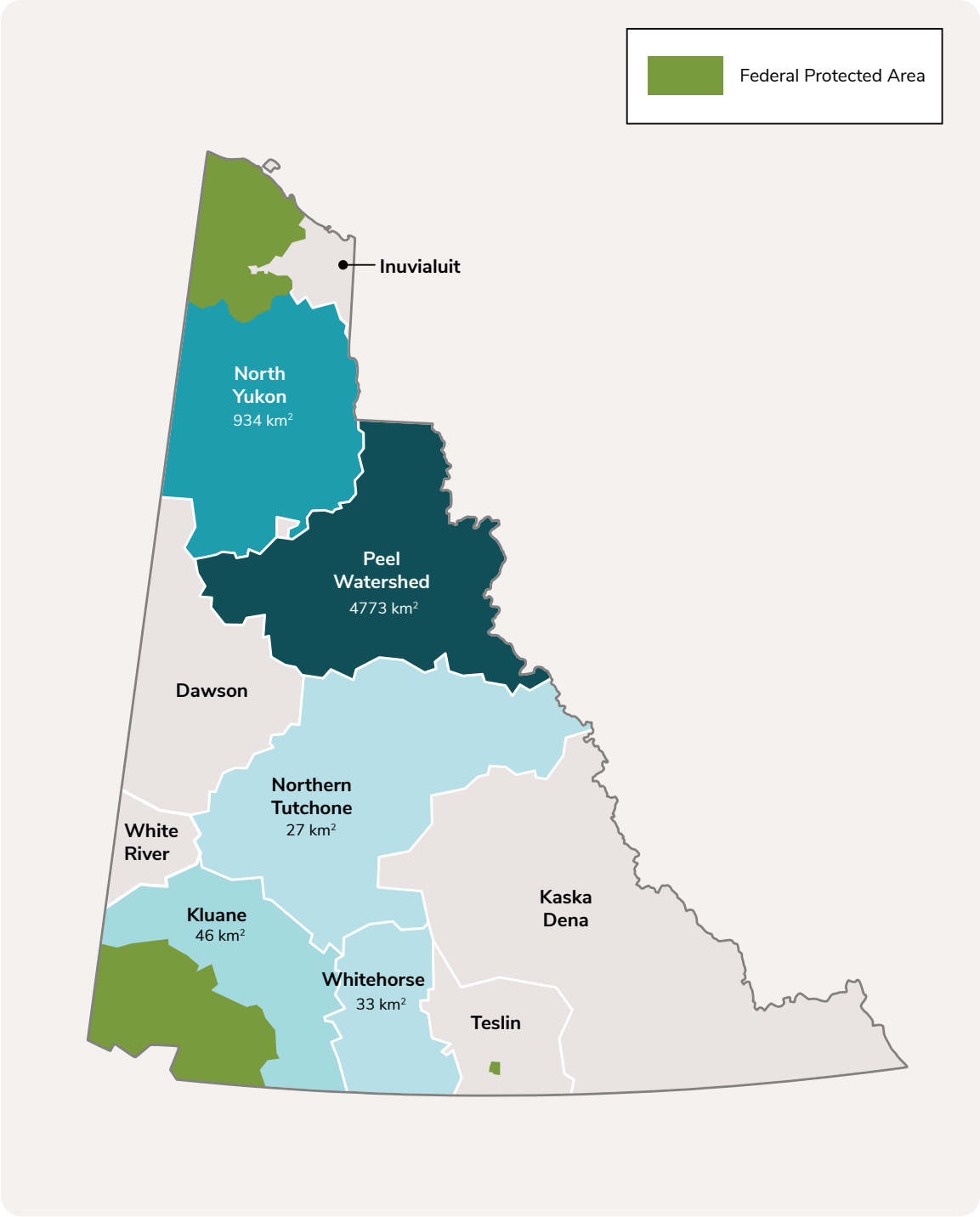


Figure 23: Map of wetland area protected under territorial designations (Territorial Parks, Habitat Protection Areas, and Special Management Areas) summarized by Land Planning Regions. Federal Protected Areas are not included in these calculations.

References

Government of Yukon. 2022. A policy for the stewardship of Yukon's wetlands. Whitehorse, Yukon. Available from: **https://yukon.ca/en/policy-stewardship-yukons-wetlands**

Whitehorse Waste Management Facility

Significance

Solid waste management is critical to mitigating environmental and public health risks. The management of waste is costly, regardless of whether it is landfilled, recycled, composted or transported outside the territory for treatment.

The Whitehorse Waste Management Facility (WMF) accepts waste from a variety of sources, including residential, industrial, commercial and construction. The facility also accepts waste from unincorporated Yukon communities through an agreement with the Government of Yukon.

The WMF tracks the source, composition and amount of waste that comes through the WMF by weighing vehicles upon entry and exit of the facility. This helps identify trends, assess effectiveness of waste management programs and policies, project future liabilities and inform future waste management initiatives. For example, landfills are a significant producer of methane, a powerful greenhouse gas. By diverting organic waste, the WMF can reduce landfill gas generation and reduce potential landfill leachate impacts to groundwater in the Yukon.



Photo: Aerated windrows at the City of Whitehorse Compost Facility

(Sperling Hansen Associates., June 2025).

What is happening

Waste tonnages continue to increase roughly in line with population growth. In 2025:

- 22,135 tonnes of waste were landfilled, including 1,156 tonnes from outside of Whitehorse. This represents an average of 569 kg per person per year in Whitehorse.
- 4,259 tonnes of organics, clean wood and woodchips were received at the City of Whitehorse's compost facility, an increase of 15% from 2024. Over 1,900 cubic yards of compost product was sold back to the community.
- 4,966 tonnes of scrap metals were shipped out for recycling, with another 4,500 tonnes slated for removal in 2026.

The City of Whitehorse strives to use this data to improve waste management practices. For example, in 2025, the City completed a landfill gas assessment to comply with new federal *Landfill Methane Regulations* and to investigate potential options for reducing methane release from the landfill. Modelling (Figure 24) shows that 579 tonnes of methane was generated in 2025, which falls below the federal threshold (664 tonnes).

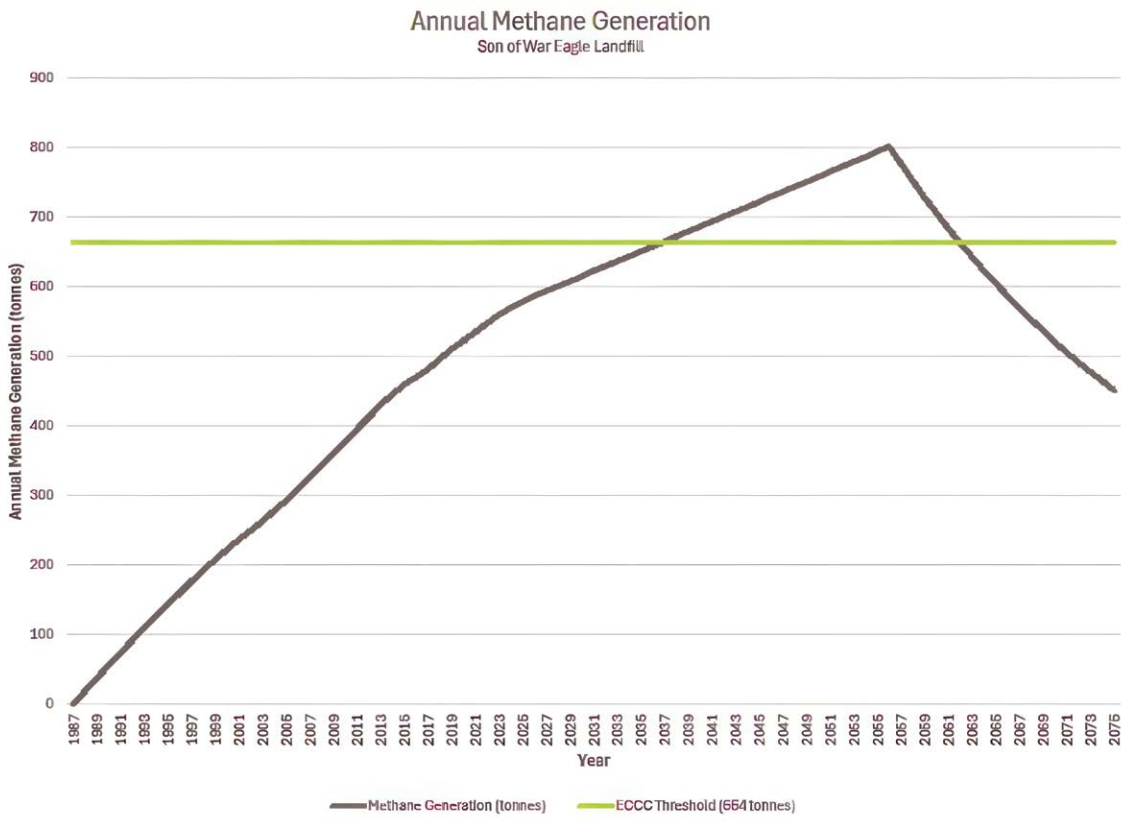


Figure 24: Annual methane generation at Son of War Eagle Landfill in Whitehorse. Modelled using Environment and Climate Change Canada (ECCC) Landfill Methane Modelling Tool Version 1.3.

References

Yukon Bureau of Statistics. 2025. Population Report, Second Quarter, 2025 [modified 2025 Nov, cited 2026 Jun 11]. Available from: **https://yukon.ca/sites/default/files/2025-11/fin-population-report-q2-2025.pdf**

Status of Parks and Conserved Areas

Significance

This indicator identifies the total area of lands and waters in the Yukon that are reported as protected areas or other effective area-based conservation measures (OECMs). These are areas that meet a globally agreed upon standard that ensures the long-term conservation of biodiversity. In OECMs, all activities that have the potential to impact biodiversity are prohibited, managed and/or controlled. All jurisdictions in Canada report protected areas and OECMs to the Canadian Protected and Conserved Areas Database (CPCAD) using the same standard.

Protecting and conserving parts of the land base provides a foundation for protecting biodiversity and ecological and cultural heritage. Robust networks of protected and conserved areas safeguard wild species, support climate change adaptation, mitigation and resiliency, and protect essential ecosystem services.

Many protected and conserved areas in the Yukon were first recognized as special management areas in First Nation Final Agreements. Protected areas are now being identified through the regional land use planning process and other negotiated agreements. The Yukon has several types of protected areas, including national parks and reserves, national wildlife areas, territorial parks, habitat protection areas, traditional conservation areas and special management areas.

Protected and conserved areas are planned and managed by considering Indigenous Knowledge, local knowledge and scientific knowledge separately and together. Protected and conserved areas include culturally important sites in addition to those areas important for biodiversity conservation.

What is happening

In 2025, the Yukon added 50 km^2 to its reported protected and conserved areas. Total protected and conserved areas now total 101,760 km^2, which is 21.1% of the Yukon's lands and waters (Figure 25).

In 2025, the Government of Yukon reported its first interim OECM: Tatchun Lake Recreation Park. This designation recognizes the fact that this park is not just a place to recreate, but there are also important cultural and ecological values being conserved within its boundaries.

In June 2025, Chasàn Chùa Territorial Park was designated as a Natural Environment Park under the *Parks and Land Certainty Act*. A portion of this park was reported as an interim protected area. Management planning will identify the full breadth of what can be reported in the future.

Finally, in Land Management Units 2, 8 and 9 identified in the Peel Watershed Regional Land Use Plan, further mineral claims were relinquished, which allowed these parcels to be reported to CPCAD.

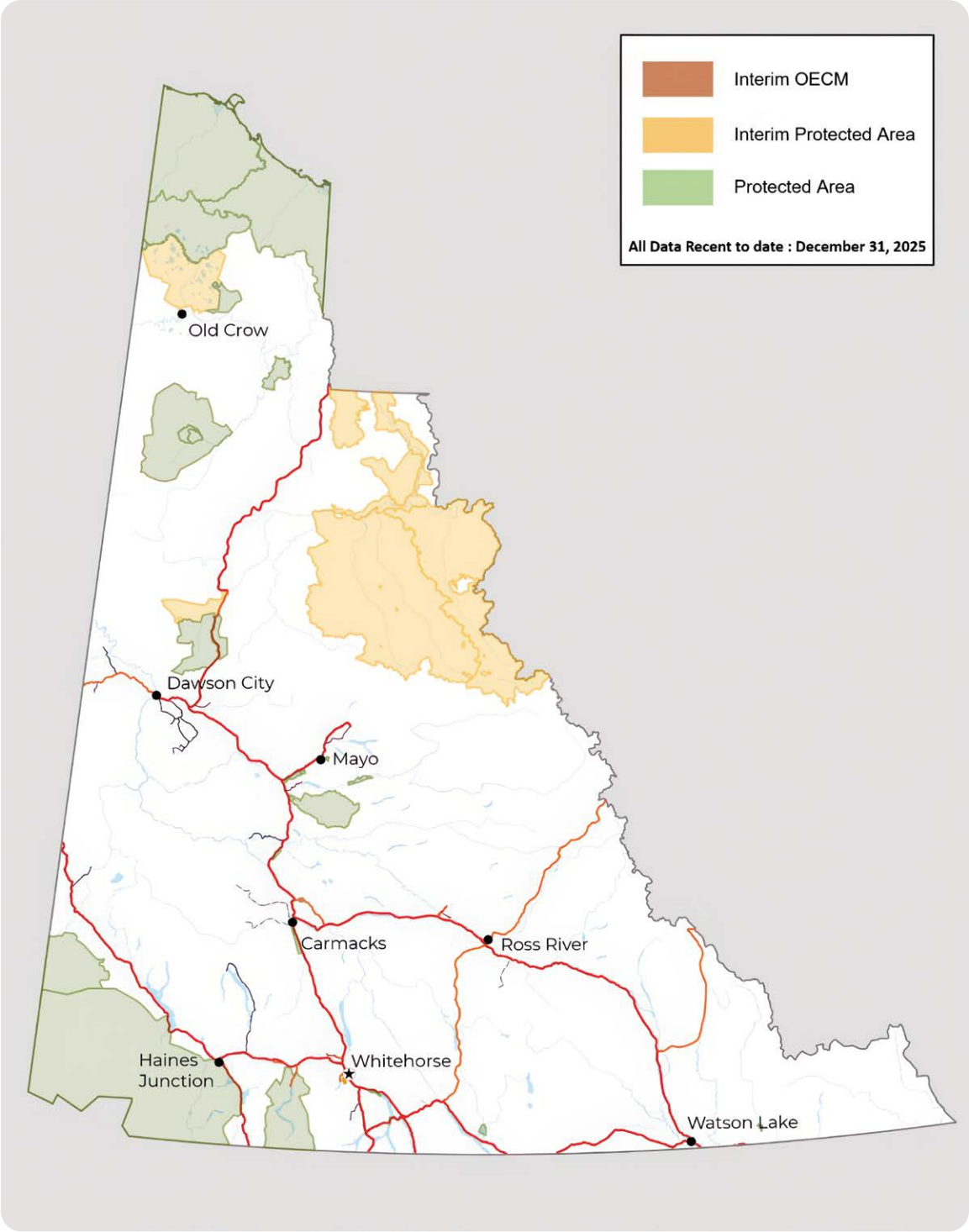


Figure 25: Reported protected areas and other effective area-based conservation measures (OECMs) in the Yukon as of 2025.



The North Klondike Valley in Tombstone Territorial Park (Julien Schroder).



A powerline runs through a recently burned forest near the Klondike Highway (Julien Schroder).

Forest health

Significance

The Yukon is home to approximately 28.1 million hectares of boreal forest. Forests are a critical natural resource that provide services including climate regulation, water and air filtration and carbon storage. Forested habitat provides resources for both humans and wildlife and presents opportunities for recreation and spiritual connection.

Forest health is measured using numerous indicators, which fall into two categories:

- **Biotic factors:** Living disturbances that include native and invasive insects and diseases, such as aspen serpentine leafminer and willow leaf rust.
- **Abiotic factors:** Non-living disturbances caused by weather or natural disasters, such as landslides, flooding and wildfire.

Declines in forest health are generally due to a combination of biotic and abiotic factors. To remain aware of existing and emerging threats to Yukon forests, the Government of Yukon began implementing a risk-based approach to monitoring forest health in line with the **National Forest Pest Strategy** in 2009. The objectives of the approach are:

- to provide a Yukon-wide overview of forest health issues;
- to focus monitoring activities on high-risk forest health agents in high-value forest regions; and
- to contribute to the National Forest Pest Strategy goals, including detection and monitoring of forest pests and proactive measures to better characterize forest pest risk.

There are five Forest Monitoring Zones (FMZs) in the Yukon (Figure 26). Between 2009 and 2023, the location of annual surveys was rotated to ensure all FMZs were consistently monitored. This provided data on how the health of each FMZ changed over time.

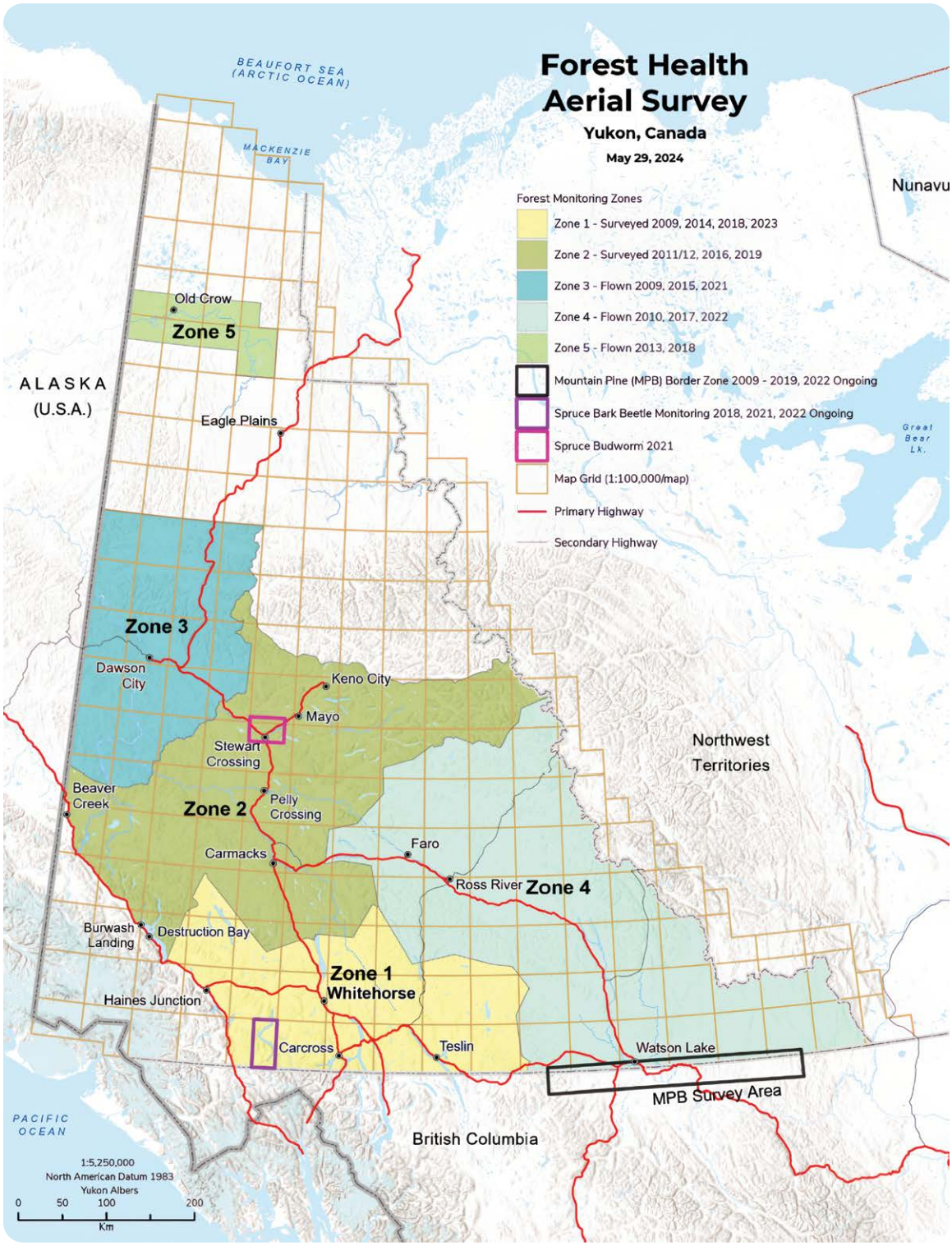


Figure 26: Yukon Forest Health aerial surveys by year, 2009 to 2023.

Monitoring consists of aerial surveys combined with ground field checks. During aerial surveys, foresters map the location and severity of all visible forest health disturbances. This produces an estimate of the total area affected by each disturbance. Ground field checks validate aerial observations and provide detailed insight into insect population trends and other indicators. Together, these are

cost-effective methods for monitoring large areas of forest and meeting national requirements for the Forest Health Network. An additional advantage is that similar methods are used by British Columbia, ensuring continuity across shared borders.

What is happening

Changes in forest health caused by biotic and abiotic factors vary between regions and years; for specifics on the latest forest health trends, refer to previous **Forest Health Reports** and **State of the Environment Reports**.

At the time of the last forest health monitoring session in 2023, widespread aspen decline was an ongoing concern across the Yukon. Aspen decline refers to mortality or damage to forests due to multiple causes, including drought, multi-year defoliation by pest species and stem damage by fungi or insects. In the future, the warming climate and an increase in the severity of extreme weather events could further decrease the health of aspen stands and other tree species.

In addition to the aerial survey monitoring of the forest health zones, the Government of Yukon undertakes special projects. One example is the proactive monitoring of mountain pine beetle in northern British Columbia. This is accomplished via aerial surveys of a border zone consisting of high hazard lodgepole pine that extends 25 km into British Columbia. This activity was triggered by a risk analysis in 2013 which indicated the potential for entry into the Yukon via this corridor should climate become more favorable for the species. To date, the mountain pine beetle has not been detected in this region.

References

2022 Yukon Forest Health Report. Yukon Energy, Mines and Resources. Forest Management Branch. Available from: **https://yukon.ca/en/2022-yukon-forest-health-report**

British Columbia Ministry of Forests, Lands and Mines and Canadian Forest Service. 2000. Available from: **https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/forests**

Forest Health Brochures featuring main pests and pathogens of Yukon. Available from: **https://yukon.ca/en/science-and-natural-resources/forests/learn-about-forest-pests-and-diseases**

Canadian Council of Forest Ministers [Internet]. 2022. Forest Pest Working Group. Available from: **https://www.ccfm.org/**

Garbutt, R. 2013. Yukon Forest Health Report. 2013. Yukon Energy Mines and Resources. Forest Management Branch. Available from: **https://emrlibrary.gov.yk.ca/forestry/forest_health/2013.pdf**

Government of Canada, Natural Resources Canada [Internet]. National forest pest strategy [Revised 2020 July 07]. Available from: **https://www.ccfm.org/releases/national-forest-pest-strategy-pest-risk-analysis-framework-users-guide-2/**.

Yukon Forestry Handbook. 2017. Yukon Energy, Mines and Resources. Forest Management Branch. Available from: **https://yukon.ca/en/yukon-forestry-handbook**

Fish and wildlife

Emerging wildlife health threats

Significance

Yukon wildlife are facing new and intensified pressures related to environmental change and other factors such as disease. Multiple health threats acting together can diminish an individual's productivity or survival, which reduces the resilience of wildlife populations.

Health threats to wildlife come from a variety of sources. Emerging infectious diseases can be transferred from domestic animals to wildlife populations or may be related to human intervention via host or parasite translocations (Daszak et al, 2000). Additionally, abiotic health hazards (e.g., rising ambient temperatures, changes in air and water quality, extreme weather events, pollution) may also directly affect wildlife health and wellbeing (Acevedo-Whitehouse et al, 2009, Greening, 2025) and can result in increased susceptibility to pathogens such as parasites, viruses or bacteria (Fagre et al, 2025).

The Government of Yukon monitors the presence and distribution of several emerging infectious diseases threatening Yukon wildlife in collaboration with internal and external partners. Data generated from this process is used to inform risk assessments and decision making related to wildlife health.

What is happening

The Government of Yukon leads surveillance for pathogens in Yukon wildlife, including the four outlined below. Although each of the following health concerns pose risks to wildlife, the likelihood of humans contracting zoonoses (diseases from animals) remains low in the Yukon.



Photo: Wood bison (Catilin Willier).

Chronic Wasting Disease (CWD)

Chronic Wasting Disease (CWD) is a fatal neurodegenerative disease affecting the deer family (Cervidae) and is found in both free-ranging and captive populations (Bartz et al 2024). CWD is currently found in free-ranging wildlife in 37 U.S. states and 5 Canadian provinces. Since 2006, 740 cervids have been tested for CWD in the Yukon: 292 elk, 264 mule deer, 117 caribou (76 mountain caribou and 41 migratory caribou), 65 moose and 2 wood bison (Figure 27). All results were negative for CWD.

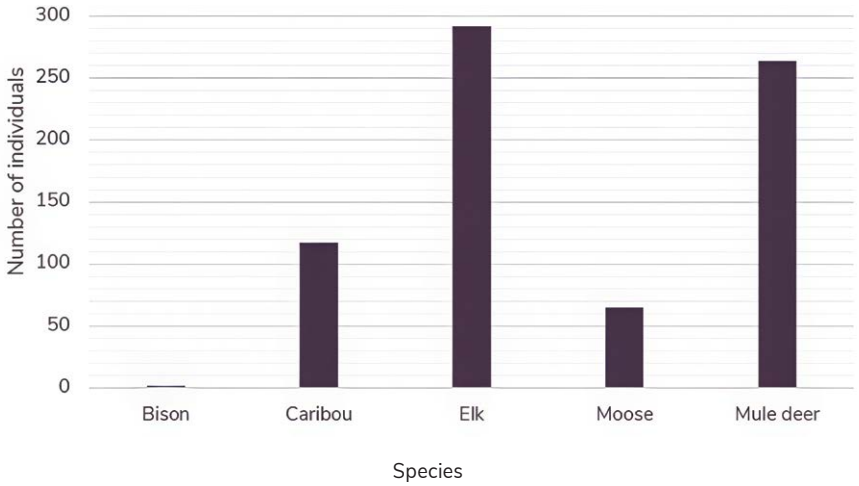


Figure 27: Number of individuals tested for Chronic Wasting Disease (CWD) in the Yukon since 2006, per species.

Mycoplasma ovipneumoniae (M. ovi)

The bacteria *Mycoplasma ovipneumoniae* (M. ovi) is implicated in fatal outbreaks of pneumonia in wild sheep (Besser et al 2013) and mountain goats (Wolff et al 2019) in North America. In 2015, the Government of Yukon began testing wild sheep and mountain goats in the Yukon for M. ovi. Since 2015, over 1,000 wild sheep and mountain goats have been tested, and all results have been negative (Figure 28).

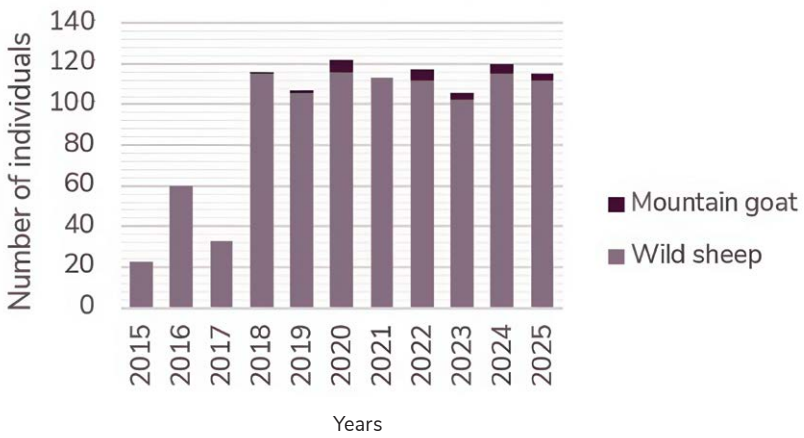


Figure 28: Number of wild sheep and mountain goats tested in the Yukon for *Mycoplasma ovipneumoniae* (M. ovi), 2015 to 2025.

White-nose Syndrome (WNS) fungus

White-nose Syndrome (WNS) is a devastating fungal disease that has killed millions of hibernating bats in North America since 2006. WNS spread rapidly from a single New York site in 2006 to over 40 U.S. states and 9 Canadian provinces (including Alberta and British Columbia).

Little brown bats are listed as an endangered species in the federal *Species at Risk Act*, in part due to mortality from WNS. In 2025, 102 little brown bats from 7 southern Yukon colonies and guano (accumulated, dried excrements of bats) from 6 southern Yukon colonies were tested for WNS (Figure 29). All results were negative.



The bacteria Mycoplasma ovipneumoniae can cause pneumonia in wild mountain goats (Carrie McClelland).

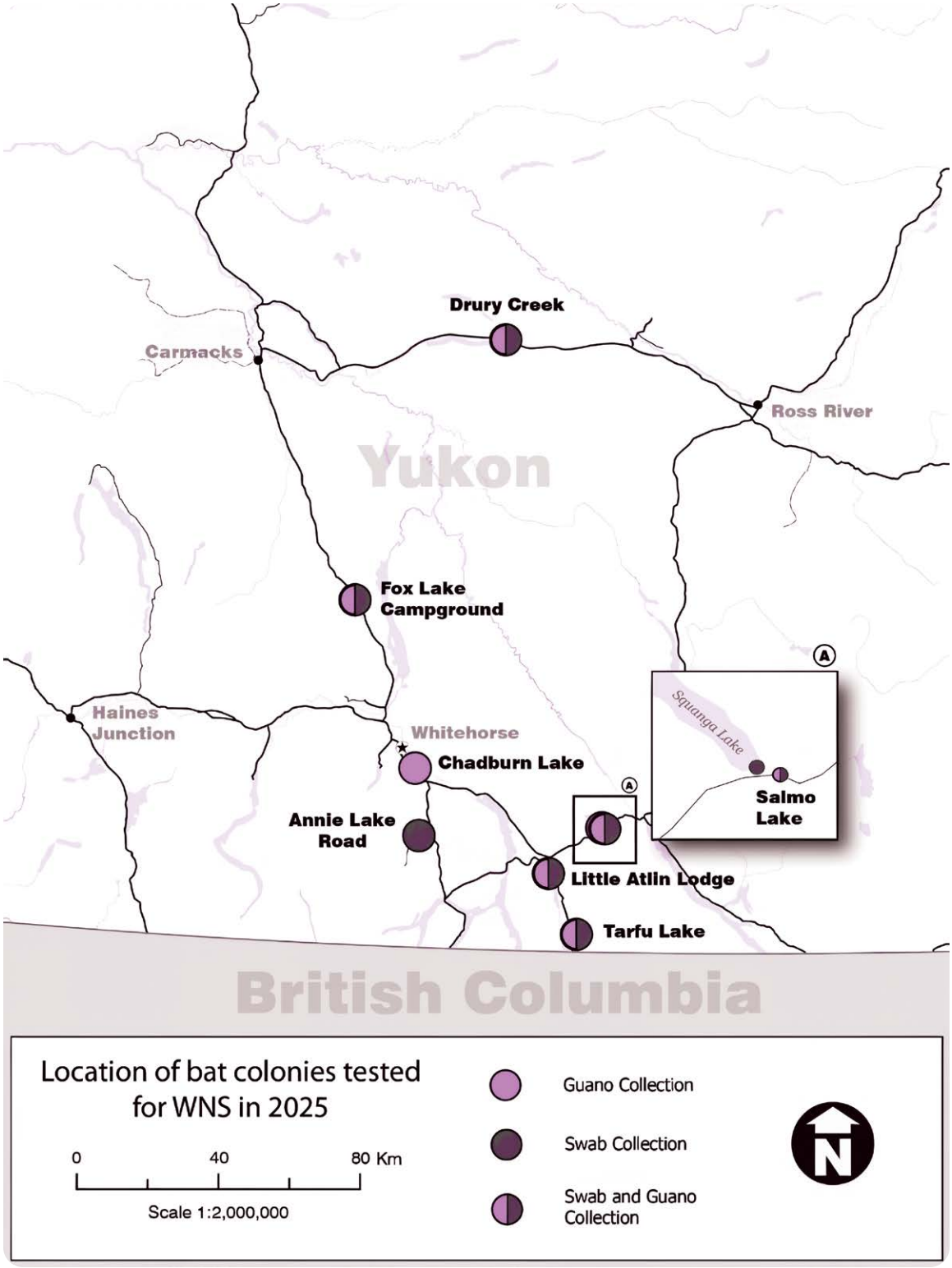


Figure 29: Locations in the southern Yukon where guano and swab samples were collected for White-nose Syndrome (WNS) testing in 2025.

Ticks

Winter tick (*Dermacentor albipictus*) can have severe health impacts on wildlife, particularly moose. Winter tick distribution and occurrence have been studied in the Yukon since 2011. This ongoing project helps to assess the impact of this parasite on Yukon wildlife (Table 2).

Other tick species affecting pets and humans can also be introduced into the Yukon by people or pets returning from travel outside the territory. The Government of Yukon partners with **eTick**, a public platform for tick identification and population monitoring in Canada, to identify ticks found by the public and provide follow up recommendations.

Table 2: Cervid hides examined for winter ticks between 2011 and 2025.

Species	**Number of hides sampled**	**% hides found with winter ticks (actual number)**
Mule deer	171	49% (83)
Moose	127	3.9% (5)
Elk	177	64% (114)
Caribou	76	1.3% (1)

References

Acevedo-Whitehouse K, Duffus ALJ. Effects of environmental change on wildlife health. Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences. 2009 November 27; 364 (1534): 3429–3438. **https://doi.org/10.1098/rstb.2009.0128**

Baeten LA, Powers BE, Jewell JE, Spraker TR, Miller MW. A natural case of chronic wasting disease in a free-ranging moose (Alces alces shirasi). Journal of Wildlife Disease. 2007 Apr;43(2):309-14. doi: 10.7589/0090-3558-43.2.309. PMID: 17495319.

Bartz JC, Benavente R, Caughey B, Christensen S, Herbst A, Hoover EA, Mathiason CK, McKenzie D, Morales R, Schwabenlander MD, Walsh DP, The NC1209: North American Interdisciplinary Chronic Wasting Disease Research Consortium Members. Chronic Wasting Disease: State of the Science. Pathogens. 2024 Feb 2;13(2):138. doi: 10.3390/pathogens13020138. PMID: 38392876; PMCID: PMC10892334.

Besser TE, Frances Cassirer E, Highland MA, Wolff P, Justice-Allen A, Mansfield K, Davis MA, Foreyt W. Bighorn sheep pneumonia: sorting out the cause of a polymicrobial disease. Preventive Veterinary Medicine. 2013 Feb 1; 108(2-3):85-93. doi: 10.1016/j.prevetmed.2012.11.018. Epub 2012 Dec 17. Erratum in: Preventive Veterinary Medicine. 2013 May 1;109(3-4):185. PMID: 23253148.

Chronic Wasting Disease Alliance. 2018. Chronic Wasting Disease (CWD) found in a captive reindeer in Northern Illinois. Available from **https://cwd-info.org/il-chronic-wasting-disease-cwd-found-in-a-captive-reindeer-in-northern-illinois** [accessed 26 April 2026].

Daszak P, Cunningham AA, Hyatt AD. Emerging infectious diseases of wildlifethreats to biodiversity and human health. Science. 2000 Jan 21;287(5452):443-9. doi: 10.1126/science.287.5452.443. Erratum in: Science 2000 Mar 10;287(5459):1756. PMID: 10642539.

Fagre AC, Becker DJ, Pulscher LA, Simonis MC, Duncan CG. Understanding Climate Change Threats to Vertebrate Wildlife by Studying Ecoimmunology Across Biological Scales. Integrative and Comparative Biology. 2025. 65(6), 1755-1771.

Government of British Columbia. 2025, November 26. Chronic Wasting Disease. **https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/wildlife/wildlife-conservation/wildlife-health/chronic-wasting-disease** [accessed 26 April 2026].

Greening SS, Pascarosa LR, Munster AL, Gagne RB, Ellis JC. Climate change as a wildlife health threat: a scoping review. BMC Veterinary Research. 2025 Feb 8;21(1):60. doi: 10.1186/s12917-025-04516-2. PMID: 39923082; PMCID: PMC11806627

Spraker TR, Miller MW, Williams ES, Getzy DM, Adrian WJ, Schoonveld GG, Spowart RA, O'Rourke KI, Miller JM, Merz PA. Spongiform encephalopathy in free-ranging mule deer (Odocoileus hemionus), white-tailed deer (Odocoileus virginianus) and Rocky Mountain elk (Cervus elaphus nelsoni) in northcentral Colorado. Journal of Wildlife Disease. 1997 Jan;33(1):1-6. doi: 10.7589/0090-3558-33.1.1. PMID: 9027685.

Westcott JR, Bowden JJ, Savage J, Doody KM. Rapid Northward Expansion of the Blacklegged Tick, Ixodes scapularis, in Response to Climate Change. Global Change Biology. 2025 Nov;31(11):e70591. doi: 10.1111/gcb.70591. PMID: 41195696; PMCID: PMC12590538.

Williams ES, Young S. Chronic wasting disease of captive mule deer: a spongiform encephalopathy. Journal of Wildlife Disease. 1980 Jan;16(1):89-98. doi: 10.7589/0090-3558-16.1.89. PMID: 7373730.

Williams ES, Young S. Spongiform encephalopathy of Rocky Mountain elk. Journal of Wildlife Disease. 1982 Oct;18(4):465-71. doi: 10.7589/0090-3558-18.4.465. PMID: 7154220.

Wolff PL, Blanchong JA, Nelson DD, Plummer PJ, McAdoo C, Cox M, Besser TE, Muñoz-Gutiérrez J, Anderson CA. Detection of *Mycoplasma ovipneumoniae* in Pneumonic Mountain Goat (Oreamnos americanus) Kids. Journal of Wildlife Disease. 2019 Jan;55(1):206-212. doi: 10.7589/2018-02-052. Epub 2018 Aug 30. PMID: 30161017.



Oxeye daisy quickly establishes large, persistent populations in roadsides and open meadows, where it competes with native species (Dennison Bohmer).

Presence of introduced species

Significance

Introduced species are organisms that arrive in an area due to human activity. These species may be brought to the Yukon either intentionally or accidentally. Many introduced species that arrive in the Yukon are poorly suited to the harsh environmental conditions and cannot establish a permanent presence in the wild. However, some have spread quickly through the territory, causing displacement of native species, interference with human activities, or otherwise harming the environment and economy. Introduced species that have the potential to spread aggressively and cause harm are referred to as invasive species.

The Government of Yukon tracks the presence and abundance of all species known to occur in the Yukon, including introduced species. Species are only considered established in the territory when there is reliable evidence of a self-sustaining population.

The Government of Yukon compiles and verifies information from a variety of sources, including targeted surveys, museum collections and public observations. Using a methodology developed by NatureServe, introduced species are assigned invasiveness rankings based on factors such as their ability to spread, establish, and affect native ecosystems. Rankings range from insignificant to high invasive potential and help identify species that may pose a threat if left unmanaged.

Despite ongoing monitoring efforts, large areas of the Yukon remain under-surveyed. As a result, current knowledge of the distribution and impacts of introduced species is incomplete, and additional species may be present but undetected.

What is happening

A total of 152 introduced species are present in the Yukon as of 2025. This represents less than 2% of the 8,837 species that are confirmed to occur in the territory. In the 2020 Wild Species Report, more than 3,000 species not native to Canada were identified as present in the country, representing more than 6% of all species included in the report.

Most exotic species in the Yukon are plants or invertebrates (Figure 30), with only a handful of confirmed species from other groups. One new species of beetle (Toadflax short-winged flower beetle; *Brachypterolus pulicarius*) was confirmed to be present in the territory, and one species of plant (Common plantain; *Plantago major*) is now thought to be native to the territory, based on historical observations and genetic data.

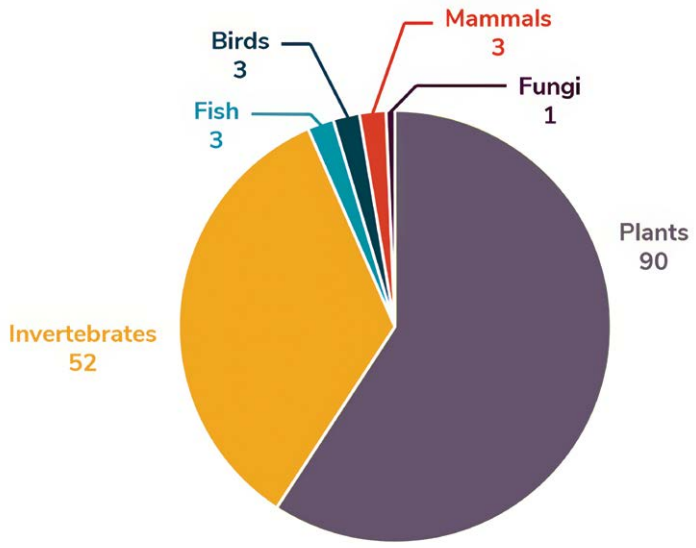


Figure 30: Breakdown of introduced species in the Yukon by broad taxonomic group.

A total of 17 introduced species were assessed as having a high invasiveness rating. This list includes oxeye daisy (*Leucanthemum vulgare*), which spreads quickly into roadsides and meadows and can outcompete native plants for resources, and amphibian chytrid fungus (*Batrachochytrium dendrobatidis*), which is a significant threat to amphibians in Canada. Most other introduced species in the Yukon are thought to have an insignificant to low risk of becoming invasive.

Work is underway to mitigate the impacts of invasive species in the Yukon. In 2025, the Government of Yukon worked with Environment and Climate Change Canada and Teslin Tlingit Council to survey and control established populations of introduced plant species in the Nisutlin Delta National Wildlife Area. The Government of Yukon also provides funding and logistical support to the Yukon Invasive Species Council (YISC) to promote awareness of invasive species in the Yukon, coordinate weed pulls of established populations and develop materials related to identification and management of invasive species.

References

Canadian Endangered Species Conservation Council. 2022. Wild Species 2020: The General Status of Species in Canada. National General Status Working Group: 172 pp.

COSEWIC. 2012. COSEWIC assessment and status report on the Western Toad Anaxyrus boreas in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiv + 71 pp. (**https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/western-toad-2012.html**).

Gordon, D., Francis, B. A. 2026. Nisutlin Delta National Wildlife Area invasive species monitoring and management. Yukon Fish and Wildlife Branch Report MR-26-01, Whitehorse, Yukon, Canada.

Morse L.E., J.M. Randall, N. Benton, R. Hiebert, and S. Lu. 2004. An Invasive Species Assessment Protocol: Evaluating Non-Native Plants for Their Impact on Biodiversity. Version 1. NatureServe, Arlington, Virginia.

Fish and wildlife population status and trends

Caribou population levels

Significance

Caribou are central to Yukon ecosystems and Indigenous cultures and rely on distinct seasonal habitats for different activities throughout the year (calving, breeding, winter foraging, and migration). Many herds span the Yukon, British Columbia (BC), Alaska and Northwest Territories (NWT), requiring coordinated co-management approaches grounded in both Indigenous Knowledge and western science.

The Government of Yukon conducts extensive monitoring across herds using aerial composition surveys, mark resight and photocensus population surveys, camera arrays and GPS satellite collars to track population size, habitat use, movement, survival and calving. This work is supported by partnerships with Indigenous governments and groups, Renewable Resources Councils, BC/Alaska/NWT agencies, and co-management boards. In recent years, monitoring protocols have placed an increased emphasis on integrating Indigenous Knowledge and cumulative effects assessment.



Photo: Mountain caribou (Aaron Barker)

What is happening

Caribou population trends vary widely across the territory – many Northern Mountain herds remain relatively stable, while the migratory herds (Porcupine, Fortymile and Nelchina) have declined substantially in recent years (Figure 31). Monitoring of abundance, adult survival and calf recruitment continues to inform the Government of Yukon's management responses.

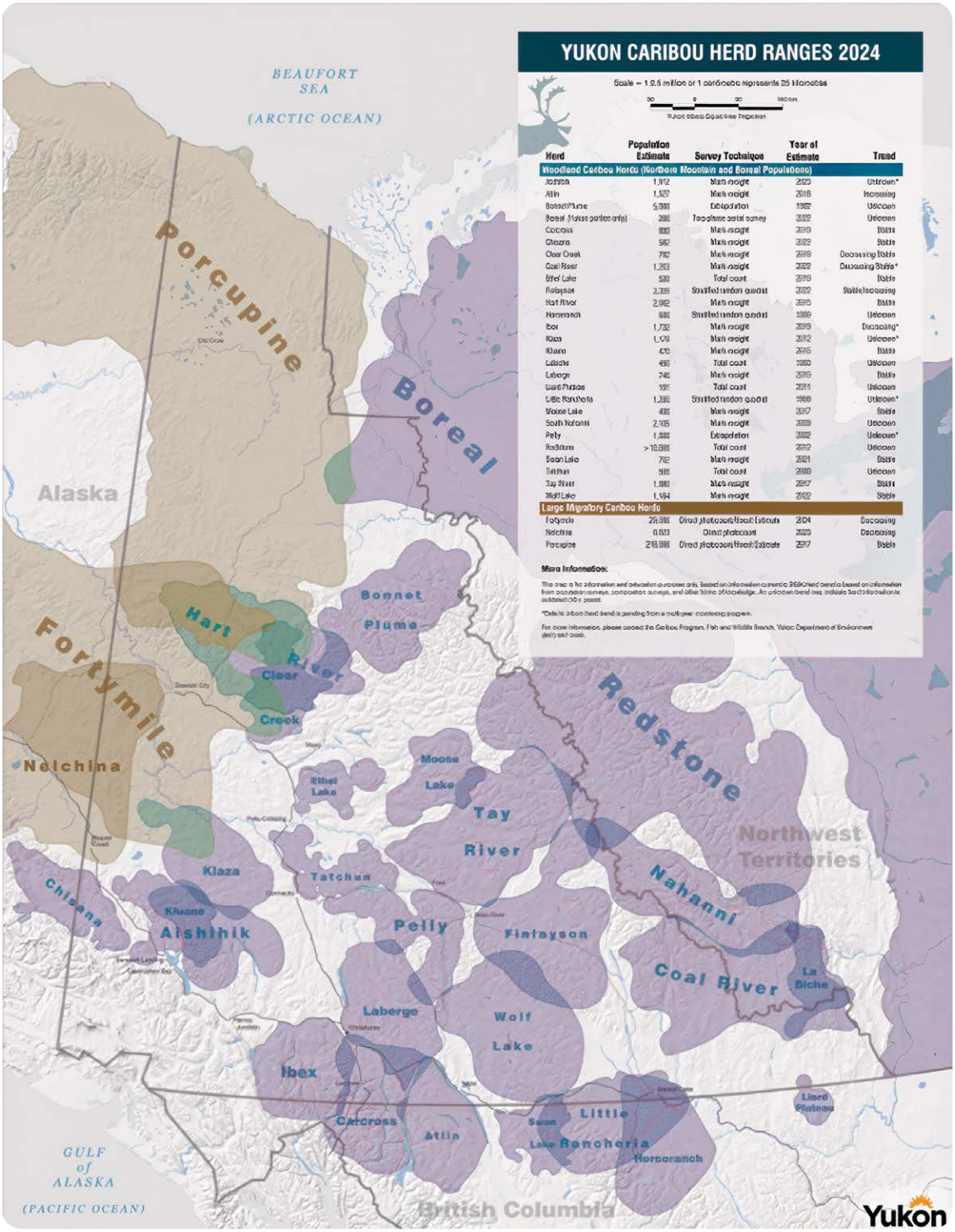


Figure 31: Map and population estimates of all caribou herds with ranges in the Yukon. Available at: **yukon.ca/en/yukon-caribou-herd-ranges-map-2024**

Both migratory and Northern Mountain caribou are showing shifts in distribution and seasonal movements, likely influenced by climate-driven changes (e.g., shrub expansion, fire-related loss of lichen forage, insect harassment), grazing pressures and continued expansion and densification of human development. These changes increase the importance of key habitats such as the Arctic National Wildlife Refuge for calving and summer ranges for the Porcupine herd and require ongoing research to understand habitat limitations.

Cumulative effects from climate change and human activities (e.g., development, habitat fragmentation, harvest) are a growing concern across both Northern Mountain and migratory herds, driving the development of new tools and approaches to assess and manage long-term impacts.

For more information on caribou, visit the **Barren-ground Caribou** and **Woodland Caribou pages** on Yukon.ca.

References

Porcupine Caribou Knowledge Hub. 2026. Available from: **https://www.canadianmountainnetwork.ca/research/knowledge-hubs/ecological-change-andlivelihoods-in-the-porcupine-caribou-summer-range**



Snowshoe hare with a white winter coat (Amy Law).

Density of snowshoe hares

Significance

Snowshoe hares (*Lepus americanus*) are a keystone species in Yukon's boreal forest. Hare abundance strongly influences populations of predators such as Canada lynx (*Lynx canadensis*) as well as other furbearers and birds of prey (Figure 32). Changes in snowshoe hare abundance also affect other prey species and influence food security, harvesting and trapping opportunities for Yukon residents and First Nations.

Hare populations naturally fluctuate in a 9 to 11-year cycle, creating changes throughout the boreal food web. Climate change may be altering these cycles through changes in snow conditions, habitat, wildfire regimes, and predator-prey relationships. Because hare abundance reflects broader changes in the boreal ecosystem, it is an important indicator of environmental change.

The Community Ecological Monitoring Program (CEMP) has monitored snowshoe hares and their predators near Haines Junction since 1973 and at additional Yukon locations since 2005. These long-term data provide one of the longest records of hare population dynamics in North America and help track ecological responses to climate change.

In partnership with Dän Keyi Renewable Resource Council and Kluane First Nation, the CEMP partners have been conducting trials using camera traps to monitor much of the boreal food web at Kluane Lake as means of reducing the need to use snow tracking and some other traditional monitoring methods. years of camera trapping data have been collected and analyzed.

What is happening

Snowshoe hare densities in the Kluane region peaked 2017 and then reached a trough 2021 to 2023 (Figure 33). Populations are now rapidly increasing from a cyclic low and are expected to reach another peak in 2026 or 2027. This means that hares, their predators and other species in the food web, are quickly becoming more plentiful in western Yukon. Typically, populations of hare predators lag by 1 to 2 years and there are signs that lynx and wolf populations have begun to rise in response to hare densities.

Hare population cycles typically move across the Yukon from west to east, with peaks occurring first in the Kluane region and reaching eastern Yukon 1 to 2 years later. Current monitoring indicates that the hare population in the Kluane area is rising at rates not seen since 1980 (Figure 33). The current cyclic peak in hare abundance in Kluane represents a "super peak". Local observations and Indigenous Knowledge also confirm that hare density in some parts of the Yukon is at numbers not seen in at least 50 to 60 years.

The magnitude and duration of the current population increase remain uncertain. Continued monitoring will help improve understanding of its effects on predators, other wildlife species, and the broader boreal food web.

For more information on snowshoe hares, visit the **Snowshoe Hare** page on Yukon.ca.

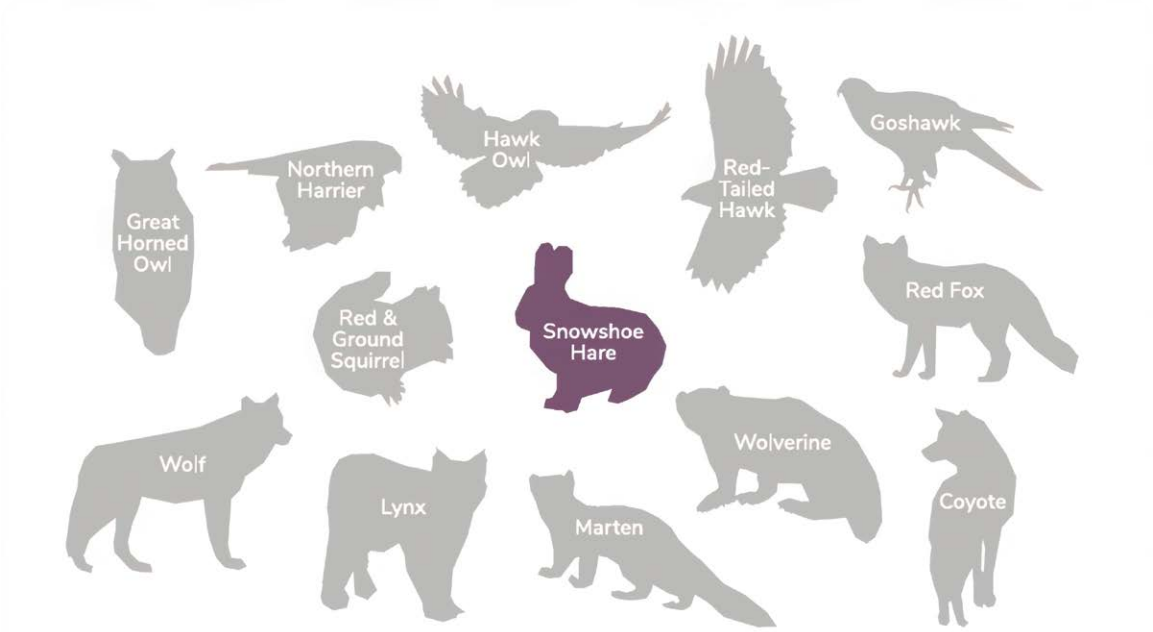


Figure 32: Primary predators of snowshoe hares in the Yukon.

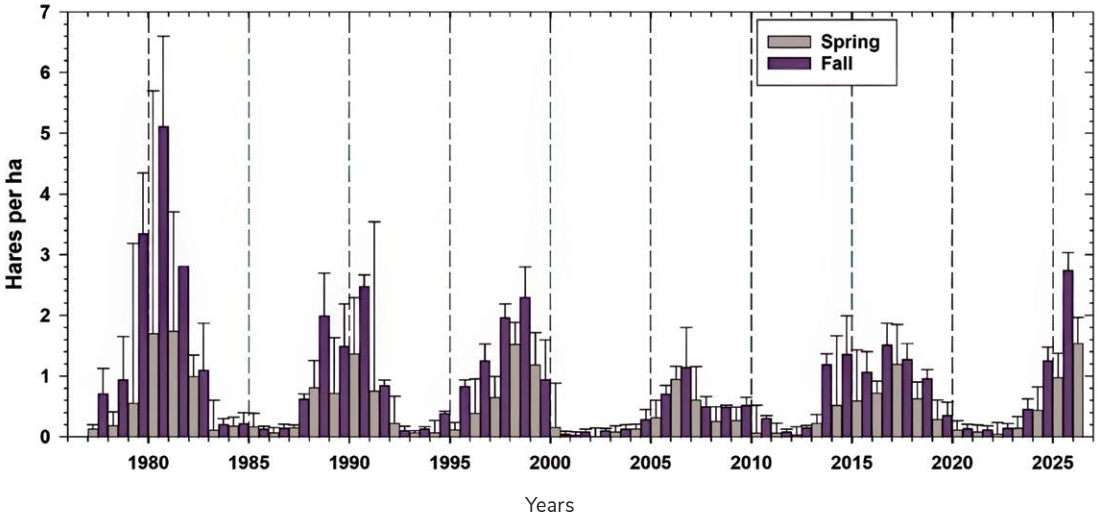


Figure 33: Spring and fall densities (number per hectare) of snowshoe hares at Kluane based on capture-mark-recapture analysis of live-trapped animals.

References

Kennah JL, Peers MJL, Vander Wal E, Majchrzak YN, Menzies AK, Studd EK, Boonstra R, Humphries MM, Jung TS, Kenney AJ, Krebs CJ, Boutin S. 2023. Coat colour mismatch improves survival of a keystone boreal herbivore: energetic advantages exceed lost camouflage. Ecology 104(2): e3882.

Kenney AJ, Boutin S, Jung TS, Murray DL, Johnson N, Krebs CJ. 2024. Motion-sensitive cameras track population abundance change in a boreal mammal community in southwestern Yukon. Journal of Wildlife Management 88(4): e22564.

Krebs CJ, Boutin S, Boonstra R, Murray DL, Jung TS, Gilbert S, O'Donoghue M, Kukka PM, Taylor SD, Drummond R, Morgan T, Kenney AJ. 2023. Long-term monitoring in the boreal forest reveals high spatio-temporal variability among primary ecosystem constituents. Frontiers in Ecology and Evolution 11: fevo.2023.1187222.

Majchrzak YN, Peers MJL, Studd EK, Menzies AK, Walker PD, Shiratsuru S, Boonstra R, Humphries MM, Jung TS, Kenney AJ, Krebs CJ, Murray DL, Boutin S. 2022. Interactive effects of resource limitation and predation on snowshoe hare population cycles. Ecology Letters 25(4): 981–991.

Miller HA, Gobin J, Boudreau MR, Horne L, Scholl LE, Seguin JL, Sonnega S, Krebs CJ, Boonstra R, Kenney A, Jung TS, Boutin S, Murray DL. 2024. Cyclic dynamics drive summer movement ecology of snowshoe hares (*Lepus americanus*). Frontiers in Ecology and Evolution 12: 1419245.

Oli MK, Kenney AJ, Boonstra R, Boutin S, Murray DL, Jung TS, Hines JE, Krebs CJ. (2026) Demographic mechanisms of snowshoe hare population cycles in Yukon, Canada. Journal of Animal Ecology 95(1): 21–38.

Oli MK, Kenney AJ, Boonstra R, Boutin S, Murray DL, Peers MJL, Gilbert BS, Jung TS, Chaudhary V, Hines JE, Krebs CJ. (2023) Does coat colour influence survival? A test in a cyclic population of snowshoe hares (*Lepus americanus*). Proceedings of the Royal Society B 290(1996): 20221421

Peers MJL, Majchrzak YN, Menzies AK, Studd EK, Bastille-Rousseau G, Boonstra R, Humphries MM, Jung TS, Kenney AJ, Krebs CJ, Murray DL, Boutin S. 2020. Climate change increases predation risk for a boreal forest keystone species. Nature Climate Change 10: 1149–1153.

Sustainability of lake trout fisheries

Significance

Lake trout are one of the Yukon's top freshwater predators and a highly valued species for subsistence and recreational fisheries. Monitoring the status of lake trout populations is an important indicator of the overall health of the Yukon's freshwater systems. This is in part due to requirements of the lake trout's life cycle and unique ecology, including its need for a cold, well-oxygenated and clean habitat, availability of prey fish, its slow growth rate and its long lifespan. Changes observed in the status of a lake trout population may indicate that the Yukon's freshwater systems are susceptible to over-harvest or are undergoing changes related to climate or habitat.

Lake trout populations are assessed under a 10-year plan developed in 2023, which prioritizes populations of concern, as well as those that are of high management value or are subject to elevated harvest pressure (Figure 34). The Department of Environment uses data from these surveys, together with estimates of recreational angling pressure, to evaluate trends in population status and determine whether current regulatory measures are sufficient to support sustainable populations under present and future harvest pressures.

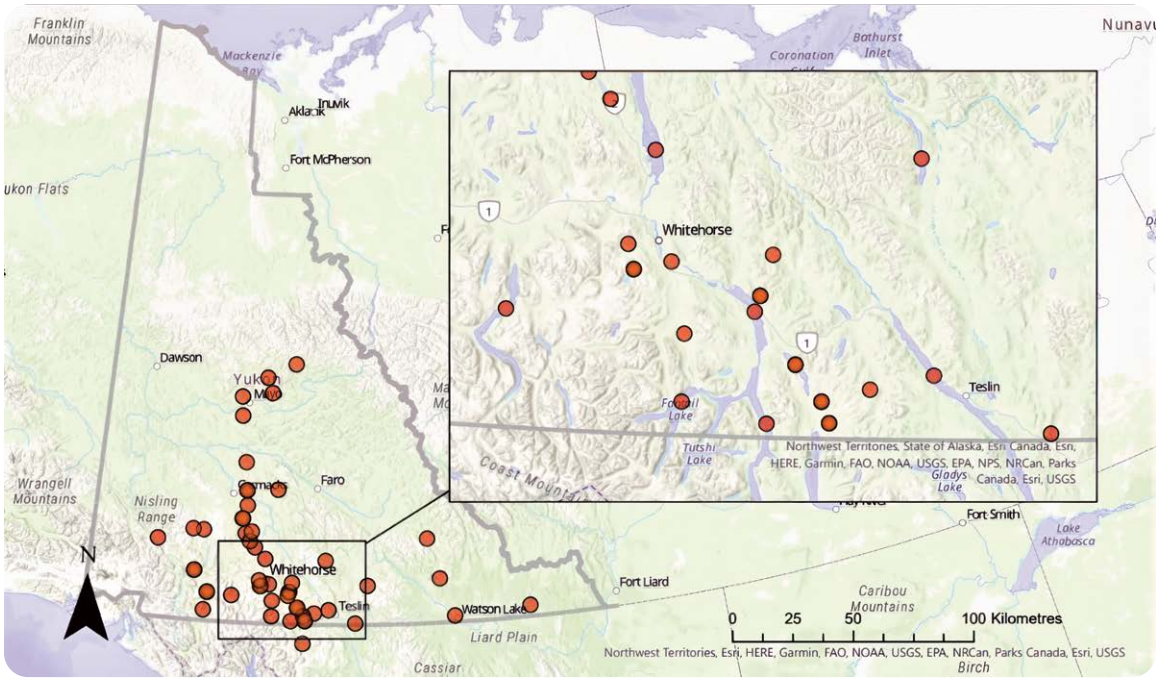


Figure 34: Locations of all lake trout population assessments conducted by the Department of Environment between 2010 and 2023.

What is happening

In 2025, the Department of Environment worked with the Little Salmon Carmacks First Nation to assess Frenchman Lake to determine the status of its lake trout population, which has been closed to retention since 2014, to prevent fisheries collapse. For more information on the status, see the **results of the 2025 Frenchman Lake survey** on the Government of Yukon's open government portal.

For more information on lake trout, visit the **Lake Trout** page on Yukon.ca.



Photo: Measuring lake trout (Cameron Sinclair).

References

Lake Trout Monitoring Program: **https://yukon.ca/en/outdoor-recreation-and-wildlife/fishing-and-boating/learn-about-lake-trout-and-lake-whitefish-monitoring-program**

Sinclair, C. L. & M. R. Brown. 2026. Growth Modelling and Catch-Curve Residual Analysis of Lake Trout: Yukon's Southern Lakes System (SR-26-05). Government of Yukon, Whitehorse, Yukon, Canada. Available from: **env-growth-modelling-catch-curve-residual-analysis-lake-trout-southern-lakes-system-report.pdf**

Sinclair, C.L., and P. Savage. 2023. Lake Trout and Lake Whitefish Monitoring Program: 10-year adaptive monitoring strategy (2023-2032), (SR-23-14). Government of Yukon, Whitehorse, Yukon, Canada. Available from: **Lake Trout and Lake Whitefish Monitoring Program 10-year Adaptive Monitoring Strategy - Full report.pdf**

Number of spawning Chinook salmon

Significance

Yukon River Chinook salmon complete an annual freshwater migration of up to 3,100 km – the longest salmon migration in the world. Spawning and rearing take place throughout the Yukon River drainage, including in over 100 documented streams in Canada (Brown et al. 2017). All Canadian-origin Yukon River Chinook salmon are assigned to 1 of 12 Conservation Units (CU) (Figure 35), each of which represent genetically and ecologically unique spawning populations (DFO 2005).

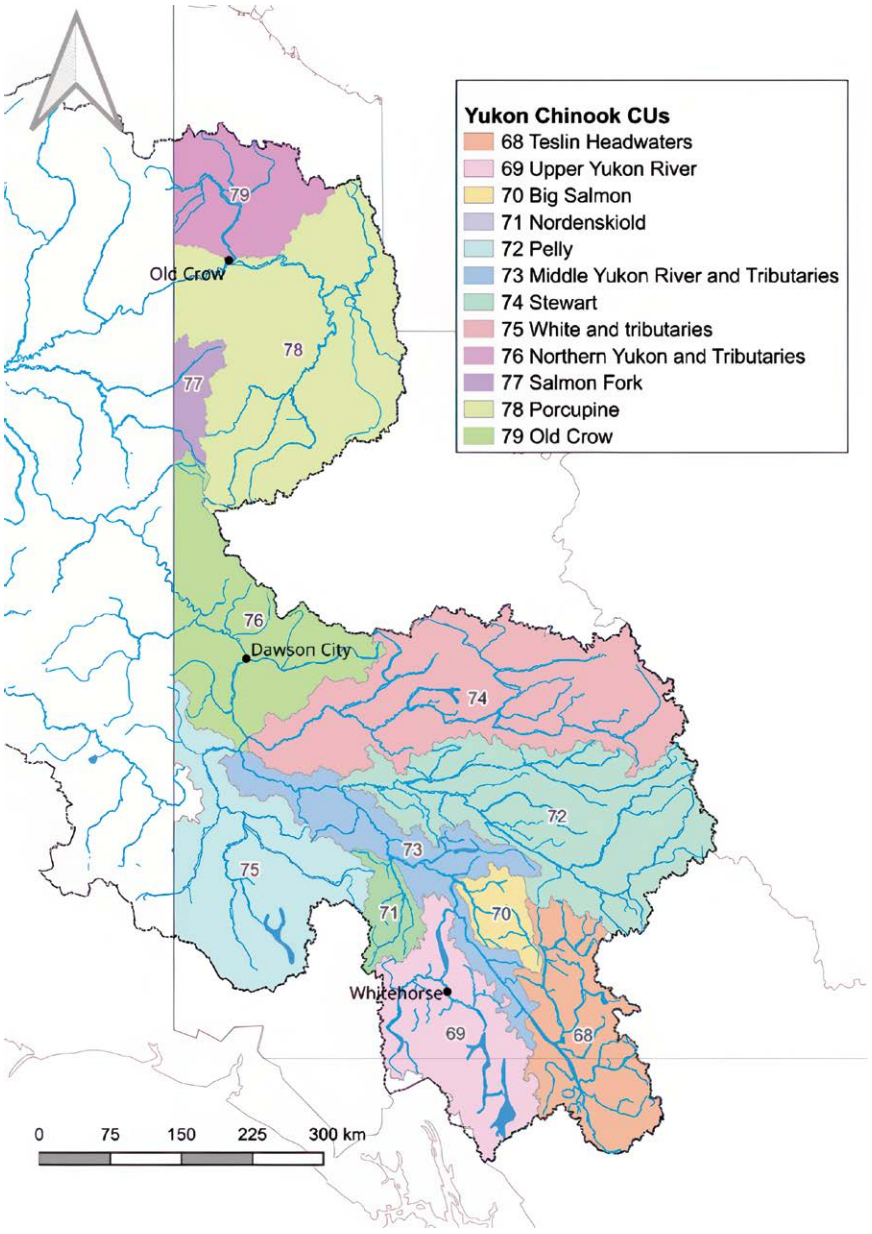


Figure 35: Conservation Units (CU) for Canadian-origin Yukon River Chinook salmon. CUs 68 to 76 belong to the Yukon Chinook Stock Management Unit and CUs 77 to 79 belong to the Porcupine Chinook Stock Management Unit.

After spawning, the carcasses of Chinook salmon feed a variety of wildlife, and their remains fertilize the boreal forest with nutrients carried all the way from the ocean. The salmon migration cycle supports the diverse ecology of the Yukon and is an integral component of Yukon First Nations history, diet and culture.

What is happening

Assessment of the biological status of the 12 CUs in 2024 resulted in the assignment of 7 CUs from the Yukon Chinook Stock Management Unit (SMU) and 2 CUs from the Porcupine Chinook SMU to the "red status zone", indicating low spawning abundance and distribution. Red status zone CUs that continue to face fishing and habitat degradation pressures have an increased probability of extirpation.

In 2025, an estimated 24,205 Chinook salmon entered the Canadian Yukon River drainage to spawn, with 24,868 returning to the Yukon Chinook SMU and 337 in the Porcupine Chinook SMU (Figure 36). The total run size in 2025 was among the lowest on record and continues a five-year trend of severely depressed returns (Figure 36). Due to these low returns, in 2024, Fisheries and Oceans Canada and the Alaska Department of Fish and Game agreed to a seven-year suspension on Chinook salmon harvest on the mainstem Yukon River and Canadian tributaries. As part of this agreement, both governments set a rebuilding target of 71,000 Chinook salmon, to be measured at the U.S./Canada border.

For more information on Chinook salmon, visit the **Chinook Salmon** page on Yukon.ca.

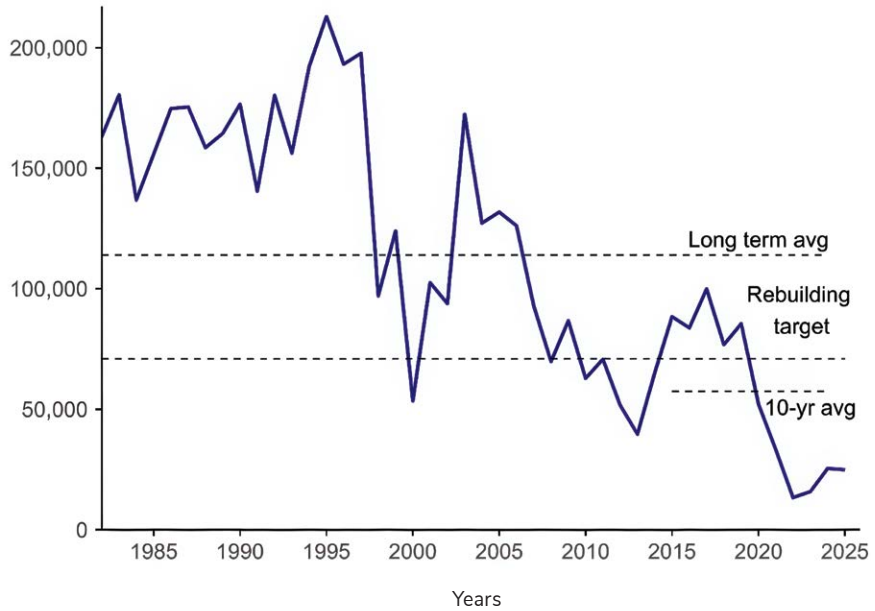


Figure 36: Total run size of Canadian-origin Yukon River Chinook salmon returning to the Yukon Chinook Stock Management Unit (Figure 35) from 1982 to 2025. Dashed lines represent the 10-year average (2015 to 2024; 57,418); the long term averages (1982 to 2024; 113,961); and a rebuilding target (71,000). (DFO 2024)

References

Brown, R.J., Von Finster, A., Henszey, R.J., and Eiler, J.H. 2017. Catalog of Chinook Salmon Spawning Areas in Yukon River Basin in Canada and United States. Journal of Fish and Wildlife Management 8(2): 558–586.

DFO. 2005. Canada's Policy for Conservation of Wild Pacific Salmon.

DFO. 2024. Agreement of April 1, 2024 regarding Canadian-origin Yukon River Chinook Salmon for 2024 through 2030. **https://www.pac.dfo-mpo.gc.ca/fm-gp/salmon-saumon/yukon-chinook-agreement-quinnat-accord/index-eng.html**

Pestal, G., MacDonald, B.L., Grant, S.C.H., and Holt, C.A. 2023. State of the Salmon: Rapid status assessment approach for Pacific salmon under Canada's Wild Salmon Policy. Canadian Technical Report of Fisheries and Aquatic Sciences.

Trumpeter swan population monitoring

Significance

Trumpeter swans are a familiar sight in the southern Yukon in the spring, especially around the outlets of Marsh, Tagish and Teslin lakes. These areas are critical spring migration staging sites where trumpeter swans and other waterfowl stop to refuel on their trip north to breeding areas. M'Clintock Bay on Marsh Lake has been identified as a Key Biodiversity Area (KBA) and can support 1.55% of the global population of trumpeter swans during their spring migration.

The Government of Yukon has been collaborating with the Canadian Wildlife Service to conduct annual April counts of migrating trumpeter and tundra swans at the Swan Haven Interpretive Centre in M'Clintock Bay since 2000. The daily counts are used to generate information about how and when swans are using the stopover site. Only a handful of tundra swans are present at M'Clintock Bay in April, so the count data presented here include both tundra and trumpeter swan numbers.



Photo: Trumpeter swans (Adam Skrutkowski).

What is happening

Trumpeter swans are a conservation success story. Until 1978, trumpeter swans were listed as an Endangered Species by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Conservation efforts and surveys of trumpeter swan breeding grounds in northern Canada and Alaska have determined that the species was no longer at risk (COSEWIC 2011). Trumpeter swan populations have rebounded in Canada and are now above North American Waterfowl Management Plan population objectives (NAWMP 2024)

In 2025, the peak daily swan count at the Swan Haven Interpretive Center was 1,067 birds on April 19 (Figure 37). This number is above the long-term average of 876 swans for April 19. The peak of swan migration was slightly later in 2025 compared to the 26-year average date of April 18. Swan migration is highly variable and the number and timing of birds stopping at M'Clintock Bay depends on ice and weather conditions (Figure 38). Over the long term the date of peak swan migration is shifting slightly earlier in April.

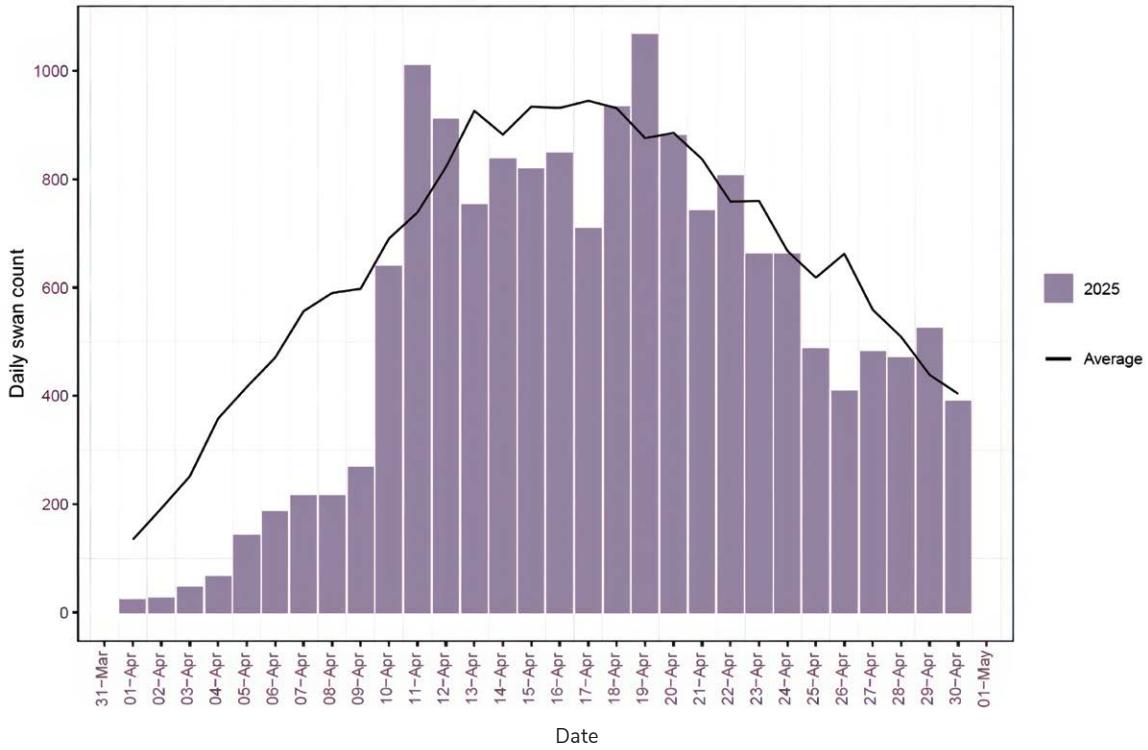


Figure 37: Daily swan count at Swan Haven Interpretive Centre in M'Clintock Bay, Yukon, April 2025. Bars represent the daily swan count and the black line shows the average daily count for all prior years (2000 to 2024). Created by Margaret Campbell, Canadian Wildlife Service, Environment and Climate Change Canada.

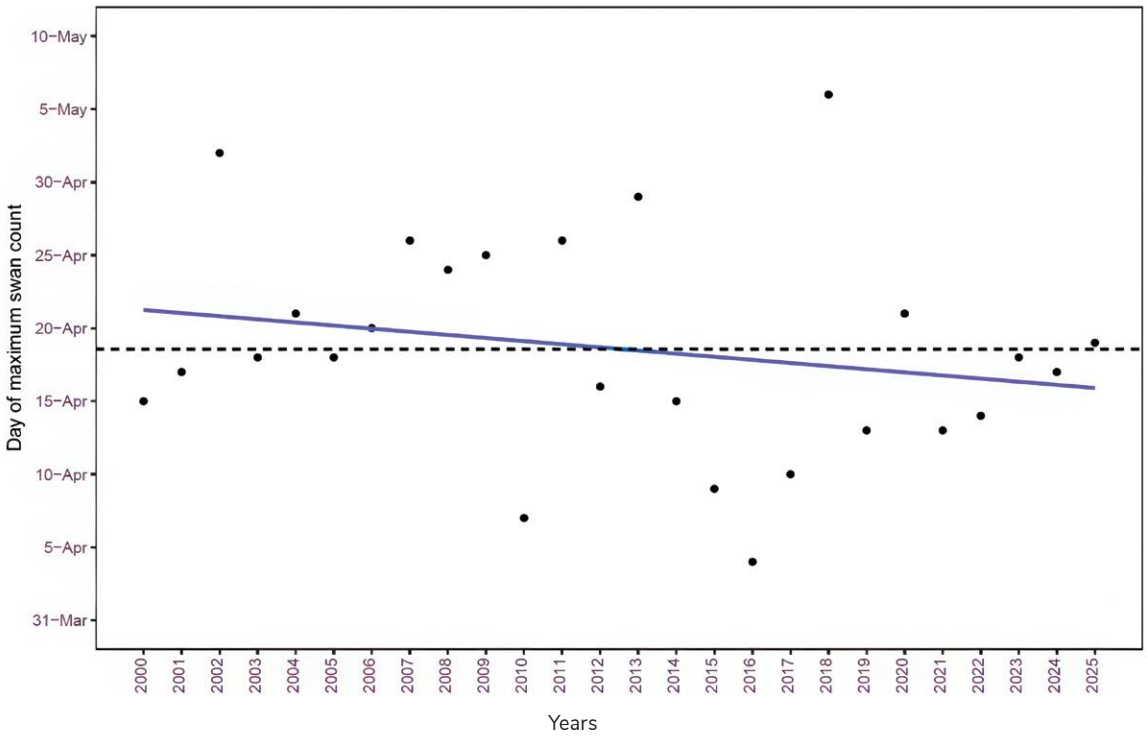


Figure 38: Day of peak swan count at Swan Haven Interpretive Centre in M'Clintock Bay, Yukon, 2000 to 2025. The dotted black line is the average date of peak swan over all years, April 18. Years with earlier dates of peak swan use fall below the line and years with later peak use are above the line. The blue line shows the trend in change peak use peak swan use is trending slightly earlier than the past but varies based on ice and weather conditions.

References

Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2011. Canadian Wildlife Species at Risk. Environment Canada, Gatineau, Quebec, Canada.

KBA Canada. 2022. Site Profile: M'Clintock Bay to Lewes River Marsh. Accessed: 2026-05-08. Available from: **https://kbacanada.org/site/?SiteCode=YK016**

Biodiversity

Significance

Biodiversity refers to the complete variety of all living organisms in an area, including animals, plants, fungi, bacteria and the genetic diversity within these species. Understanding and conserving the full diversity of life is important for managing and maintaining intact ecosystems that provide many valuable services to Yukoners, such as clean drinking water, healthy wildlife populations and enjoyment of the natural landscapes we call home. Additionally, healthy and diverse ecosystems help to mitigate damage from extreme weather and natural disasters, including wildfires, floods and erosion.

What is happening

The Government of Yukon collects, manages and distributes information on the presence and abundance of all species known to occur in the Yukon. Following an international methodology developed by NatureServe, the Government of Yukon also assesses the conservation status ranking of Yukon species, which provides a measure of how secure or at risk that species may be in the territory.

There are currently 8,837 species known to occur in the Yukon (Table 3). The majority (56%) of known Yukon species are represented by insects, with plants (13%) and lichens (7%) representing the next largest groups.

There are 4510 Yukon species assigned a NatureServe status rank of data deficient, which indicates there is not enough known about these species in the Yukon to confidently assess their distribution or abundance. 2,807 species are ranked as apparently secure or secure, indicating that they are widespread in the Yukon and face no significant known threats. There are 1,100 species ranked as imperilled or vulnerable, indicating that these species are limited in distribution, abundance, or have some evidence of recent declines or threats. 119 species are ranked as critically imperilled in Yukon, indicating that they are known from only a few locations in a small geographic area, and that the overall population of these species in the Yukon is likely small and vulnerable to extirpation.

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assesses the status of Canadian species and determines whether species are at risk nationally and are listed under **Schedule 1** of the *Species at Risk Act* (SARA).

To access species data in the Yukon, visit the **How to find species data** page at Yukon.ca.

To find out more about species at risk in the Yukon, visit the **Yukon Species at Risk** page on Yukon.ca.

Table 3: Number of species in the Yukon by broad taxonomic group.

Taxonomic group	Number of species
Insects	4,915
Vascular plants	1,194
Lichens	620
Spiders and mites	614
Mosses and liverworts	538
Fungi	446
Birds	245
Other invertebrates	127
Mammals	72
Fishes	37
Other (bacteria, algae, etc.)	25
Amphibians	4
Total	**8,837**

References

Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2026. Assessment results and news briefings available from: **https://cosewic.ca/index.php/en/**

NatureServe Conservation Status Categories. NatureServe. Arlington, VA. Accessed 2025. Available online at: **https://www.natureserve.org/nsexplorer/about-the-data/statuses/conservation-status-categories**

Species conservation and biodiversity research, Yukon Conservation Data Centre. Government of Yukon. 2026. General species data and contact information: **https://yukon.ca/en/biodiversity**

Caribou mercury levels

Significance

Heavy metals such as mercury can persist in the environment and have serious health implications for wildlife and people, especially those who depend on traditional foods (Environment and Climate Change Canada 2016). Although mercury is a naturally occurring element in the Yukon, wind and water transport additional industrially produced mercury from its location of origin to the North, where it settles due to the colder climate. This is concerning for wildlife such as caribou, which feeds on lichens that can directly absorb mercury and other airborne contaminants.

Mercury has been measured in the Porcupine caribou herd since 1990 and continues to be monitored under the Northern Contaminant Program's Contaminants in Arctic Caribou Project. This project aims to determine if these populations are healthy (in terms of contaminant loads) and whether they remain a safe and nutritious food choice for northerners. Typically, samples are collected in partnership with hunters, who submit tissues from caribou that are being harvested for food. The samples are transported to Whitehorse, where mercury is measured at the Yukon Research Institute.

Data from this project was part of the body of evidence considered by the United Nations Environmental Program in creating the Minamata Convention. This global agreement came into force in 2017 and limits the amount of mercury pollution put into our environment.

What is happening

No samples were collected from the Porcupine caribou in 2025 due to herd migration changes. In 2024, samples were collected from 27 Porcupine caribou and tested for mercury contamination. Average mercury concentrations in fall-collected samples were highest in the kidneys (1.61 µg/g dry weight), moderate in the liver (0.37 µg /g dry weight) and lowest in the muscles (0.04 µg/g dry weight), where it tends not to accumulate.

Over the long term, caribou kidneys show a slight increase in mercury concentrations (Figure 39). However, this increase is very small and is likely part of the naturally occurring cycle of mercury in caribou. Annual changes in mercury levels in Porcupine caribou likely reflect differences in atmospheric mercury levels, as well as changes in the environment (e.g., temperature, precipitation and wind) that affect how mercury moves from the air to caribou.

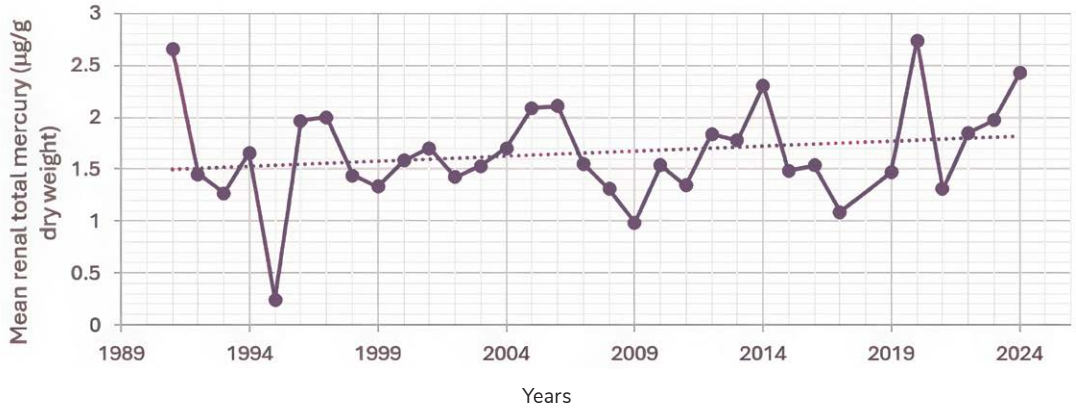


Figure 39: Mercury concentrations in fall-collected Porcupine caribou kidneys over time.

Robert Bruce, Vuntut Gwitchin First Nation Elder, remembered his elders telling him that in the future, the world would warm up, and the caribou would not thrive; they would be sick. He thought that maybe that could have something to do with contaminants like mercury. He said that with climate change, the winds change and that the caribou always move into the wind. If the wind changes, he said it could alter their migration patterns and that might affect their exposure to contaminants (Interview completed on February 1, 2023).

Meat (muscle) from Yukon caribou remains a healthy food choice, as heavy metals are present only in extremely low concentrations. Consumption of kidney and liver meat from Yukon caribou should be restricted depending on the herd (e.g., a maximum of 25 kidneys or 12 entire livers from the Porcupine herd per person per year).

References

Environment and Climate Change Canada. 2016. Canadian Mercury Science Assessment. Available from: **https://www.canada.ca/en/environment-climate-change/services/pollutants/mercury-environment/science-assessment-summary-key-results.html**

Gamberg, M., and A. Wilcox. 2006. M-14 Arctic Caribou Contaminant Monitoring Program.

NCP Synopsis Report 2025-2026. Northern Contaminants Program.

United Nations Environmental Programme (UNEP). 2021. Minamata Convention on Mercury. Available from: **https://minamataconvention.org/en**



Lesser scaup (Cameron Eckert)

Monitoring breeding waterfowl

Significance

In the summer, the Yukon is home to more than 30 species of breeding waterfowl and provides critical staging areas for birds migrating in the spring and fall. Monitoring waterfowl presence and abundance provides the Government of Yukon with a good indication of the ecological health of an area, as waterfowl depend on wetland areas for food, nesting areas and cover from predators. Specifically, the Government of Yukon collects information about waterfowl using two species of diving duck (lesser scaup and greater scaup) and one species of dabbling duck (mallard).

Lesser scaup and greater scaup are diving duck species that are counted together because they are nearly impossible to distinguish during aerial surveys. Diving ducks generally nest closest to the water's edge and dive to find food.

Mallards are one of the most abundant and recognizable dabbling duck species in Canada. Mallards generally feed on the surface of ponds but can also tip upside down to consume submerged vegetation and aquatic insects. This species is hunted throughout Canada and the United States.

Waterfowl populations are monitored annually using fixed wing aircraft surveys as part of the North America Waterfowl Breeding Population and Habitat Survey (WBPHS), which has been ongoing since 1955. In the Yukon, the U.S. Fish and Wildlife Service flies these surveys in Old Crow Flats. The Old Crow Flats is the Yukon's largest wetland (12,122 km^2) and an important habitat for waterfowl. It is a globally significant Ramsar wetland that is almost free of development. It is an important hunting, trapping and cultural area for the Vuntut Gwitchin First Nation.

What is happening

Overall, waterfowl populations in Old Crow Flats are stable but there is annual variation for most species. For the 2025 surveys, many lakes were either totally or partially covered in ice, which had not been observed in the previous seven years of surveys.

Scaup are in decline across North America; the combined estimate for scaup in the traditional survey area (western North America) was 3.68 ± 0.2 million (count ± standard error), which is 10% less than the 2024 estimate and 25% lower than the long-term average of 4.94 million (USFWS 2025).

At Old Crow Flats (strata 12 WBPHS), the long-term trend for combined lesser and greater scaup is stable. In 2025, the combined scaup population estimate was 33,969 ± 13,148, which is 35% higher than the estimate from the last survey in 2024. This is 104% below the long-term average (Figure 40).

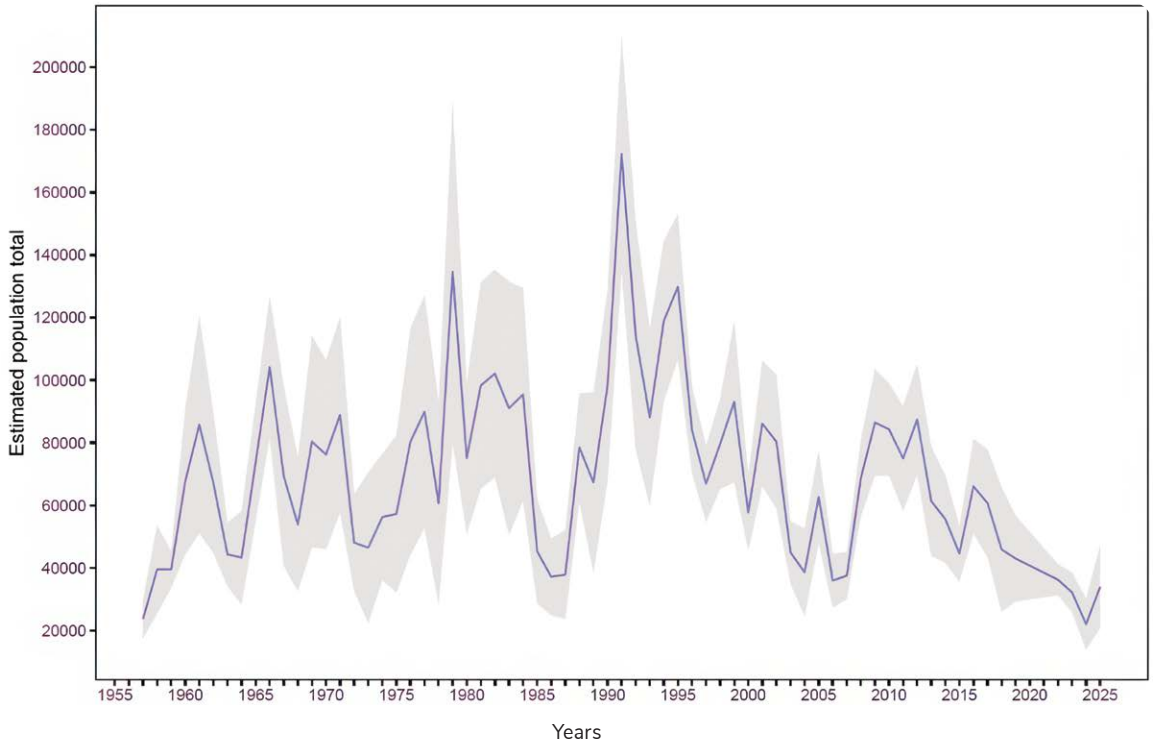


Figure 40: Population estimates (blue line) with standard errors (grey shading) for combined greater scaup and lesser scaup at Old Crow Flats, Yukon. Created by Margaret Campbell, Canadian Wildlife Service, Environment and Climate Change Canada, data source USFWS Traditional Area Stratum Estimates, strata 12. **https://iris.fws.gov/APPS/ServCat/Reference/Profile/140698**

Estimated mallard abundance for western North America was 6.55 ± 0.26 million, which was 1% below the 2024 estimate and 17% below the long-term average of 7.9 ± 0.04 million for the entire traditional survey area (USFWS 2025).

The 2025 mallard population estimate was 4,246 ± 949, which is 50% less than the estimate from the last survey in 2024. This is 123% below the long-term average (Figure 41). Despite this short-term population decrease, the long-term trend for mallards is still increasing at Old Crow Flats (strata 12 WBPHS).

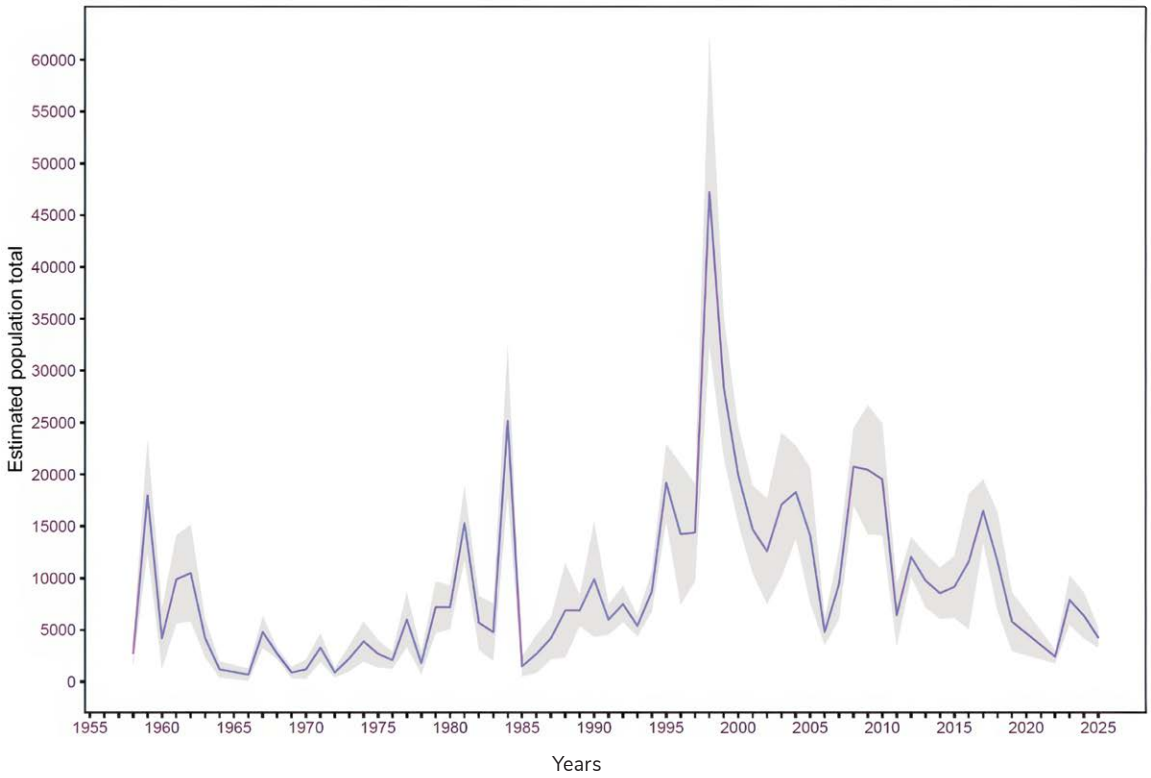


Figure 41: Population estimates (blue line) with standard errors (grey shading) for mallard at Old Crow Flats, Yukon. Created by Margaret Campbell – Canadian Wildlife Service Environment and Climate Change Canada, data source USFWS Traditional Area Stratum Estimates, strata 12. **https://iris.fws.gov/APPS/ServCat/Reference/Profile/140698**

References

Canadian Wildlife Service Waterfowl Technical Committee. 2025. Population Status of Migratory Game Birds in Canada: 2025. CWS Migratory Birds Regulatory Report Number 61. **https://www.canada.ca/en/environment-climate-change/services/migratory-game-bird-hunting/consultation-process-regulations/report-series/population-status-2025.html**

North American Wetlands Conservation Council (Canada). 2024. North American Waterfowl Management Plan. **https://nawmp.wetlandnetwork.ca/publications/**

U.S. Fish and Wildlife Service. 2025. Waterfowl population status, 2025. U.S. Department of the Interior, Washington, D.C. USA. **https://www.fws.gov/carp/carp/carp/sites/default/files/documents/2025-09/waterfowl-population-status-report-2025.pdf**

Waterfowl Breeding Population and Habitat Survey Data. 1955-2025. **https://iris.fws.gov/APPS/ServCat/Reference/Profile/140698**

One Health indicator – Intersection of human and animal health

Significance

Zoonotic diseases are infections that can be transmitted between animals and humans. Yukoners live near to and interact frequently with animals, making it important to monitor and understand zoonotic disease risks.

The Department of Environment uses a One Health approach, a concept recognizing that the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent (OHHLEP, 2022). A One Health approach means that staff collaborate across disciplines, sharing information and problem-solving with partners in the Department of Health and Social Services, the Chief Medical Officer of Health, and external partners on issues impacting both human and animal health in the Yukon.

The Department of Environment conducts regular surveillance for two important zoonotic diseases that could impact animals and humans in the Yukon: rabies and highly pathogenic avian influenza.

Rabies

Rabies is a viral disease that can affect all mammals. In Canada, foxes, raccoons and bats carry the rabies virus. Vaccination against rabies is an important protective measure that is available for domestic animals, some wildlife and people who regularly interact with potential carrier species. If an unvaccinated person is infected, immediate medical treatment is required. Untreated rabies is almost always fatal for both humans and animals.

Rabies surveillance information is used to understand infection risk for wild animals and to inform human health risk assessments when a person is exposed to a potentially infected animal.

Highly pathogenic avian influenza

Avian influenza, also known as avian flu or bird flu, is caused by infection with an avian influenza virus. Wild birds are the natural carriers of avian influenza viruses.

Some strains of avian influenza viruses are known to cause especially severe illness in domestic poultry; these strains are referred to as highly pathogenic avian influenza (HPAI) viruses. HPAI viruses may also infect and cause serious illness in pets, livestock, wild mammals and, rarely, humans.

The Government of Yukon conducts surveillance for avian influenza in the Yukon in partnership with Environment and Climate Change Canada.

What is happening

Rabies

Between 2009 and 2025, the Government of Yukon tested 1,073 wildlife samples for rabies (Andrew et al., 2025) (Figure 42). All tests have been negative. Between 2011 and 2025, 12 domestic dogs were tested for rabies, and all tests were negative.

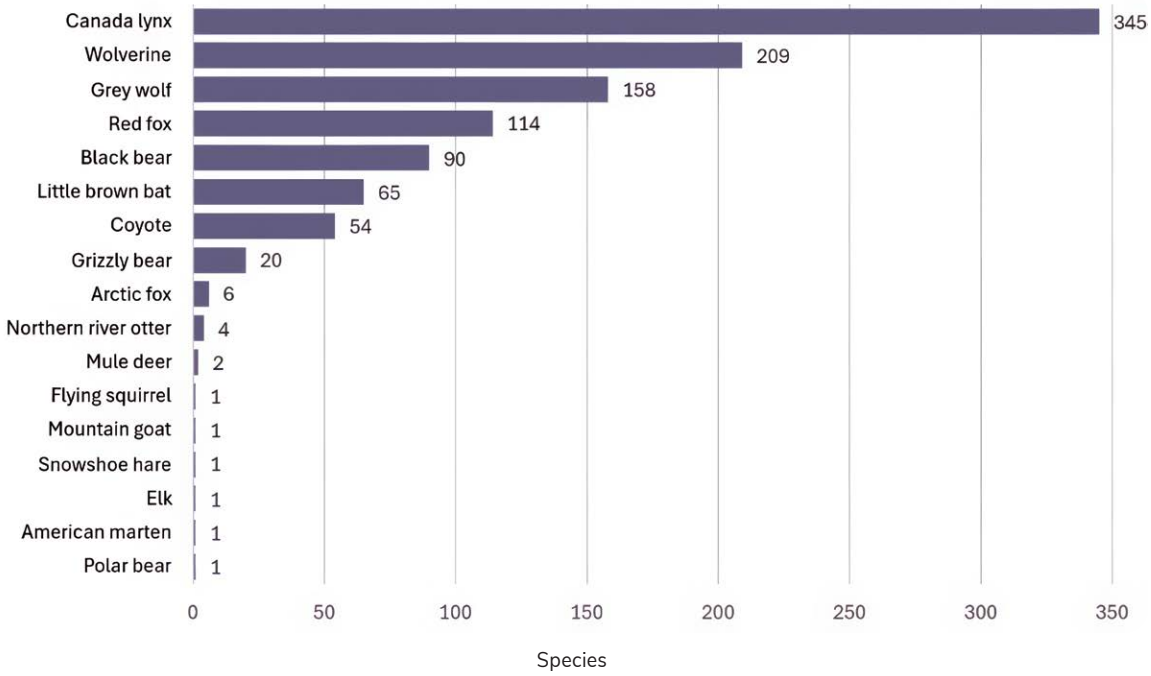


Figure 42: Count of samples from Yukon wildlife species tested for rabies between 2009 and 2025 by the Government of Yukon.

Although rabies has not been identified in animals in the Yukon since 1973 (Vanderkop et al., 2020), it has been identified in the Northwest Territories as recently as 2023. Surveillance and managing potential rabies exposures remains important to managing infection risk and protecting public health.

Highly pathogenic avian influenza

A current global outbreak of avian influenza is ongoing, with cases continuing to be detected in both domestic and wild birds and some mammals across Canada.

Since April 2022, 8 samples from Yukon wildlife were confirmed positive for HPAI and another 2 samples are preliminary positives. It is expected that cases of HPAI will continue to be detected, with higher risk during wild bird migration. Surveillance results are available on the **Avian influenza in the Yukon** page on Yukon.ca.

The Department of Environment's Animal Health and Protection Branch collaborates with the Agriculture Branch to protect Yukon livestock from the avian influenza virus and with the Chief Medical Officer of Health to assess the risk of avian influenza for people in the Yukon.

References

Andrew, Cassandra & Henaff, Maud & Fehlner-Gardiner, Christine & Thang, Cin & Knowles, M. & Jung, Thomas & Harms, Jane. (2025). Where have all the rabies cases gone? Results of rabies virus surveillance in wildlife in the Yukon, Canada. Arctic Science. 11. 1-7. 10.1139/as-2024-0034.

One Health High-Level Expert Panel (OHHLEP); Adisasmito WB, Almuhairi S, Behravesh CB, Bilivogui P, Bukachi SA, Casas N, Cediel Becerra N, Charron DF, Chaudhary A, Ciacci Zanella JR, Cunningham AA, Dar O, Debnath N, Dungu B, Farag E, Gao GF, Hayman DTS, Khaitsa M, Koopmans MPG, Machalaba C, Mackenzie JS, Markotter W, Mettenleiter TC, Morand S, Smolenskiy V, Zhou L. One Health: A new definition for a sustainable and healthy future. PLoS Pathog. 2022 Jun 23;18(6):e1010537. doi: 10.1371/journal.ppat.1010537. PMID: 35737670; PMCID: PMC9223325.

Vanderkop, M., Gregory, D.J., Merchant, P., Kandola, K., Elkin, B., Kostiuk, D., et al. 2020. Canada's north. In Taking the bite out of rabies, the evolution of rabies management in Canada. Edited by D.J. Gregory and R.R. Tinline. University of Toronto Press. pp. 211–252.





Yukon