

# (Re)Building Canada's First Indigenous-Led Research Station by Jennifer Korosi, Dieter Cazon, William Quinton



Figure 1: Dehcho community members and researchers gather for the grand re-opening of the Scotty Creek Research Station. Photo credit: Łíídlıı Kúé First Nation

The Scotty Creek Research Station (SCRS) is a world-class climate research hub located 50 km south of Fort Simpson, in the Dehcho region of the southwest Northwest Territories, Canada. The station has hosted researchers and students since its establishment in 1999, and helped reveal how permafrost thaw is transforming the lands and waters of one of the most rapidly warming regions on Earth. Over the years, the SCRS also distinguished itself as a nexus for collaboration between western scientists and Dene traditional knowledge holders. This culminated in the transition of the SCRS into an Indigenous-led research station in 2022, the first of its kind in Canada, when the Łíídlıı Kúé First Nation assumed ownership. This milestone was marked by a community gathering at the SCRS to celebrate the transfer of the station lease to LKFN. This included a barbeque hosted by the community, a fire-feeding ceremony led by a community elder and drummers, and on-the-land tours and activities. The station burned to the ground only a few months later in a late-season wildfire. In August, 2024, less than two years after the fire, Dehcho community members and SCRS researchers and students once again gathered together to celebrate the station reopening (Figure 1).

## Tracing the path from seasonal field camp to world-class Indigenous-led research station

The SCRS is an all-season field research station and a place for Indigenous community members and researchers to share knowledge and experiences on climate change. It is located in the headwaters of the Scotty Creek basin, which drains 152 km<sup>2</sup> of boreal peatlands underlain by discontinuous permafrost. Long-term monitoring first began in the Scotty Creek basin in 1999, mostly focused on cold regions hydrology. The camp was upgraded to an all-season research station in 2003. Research and monitoring at the SCRS since 1999 documented the transformation of large areas of the watershed from forest-covered permafrost peat plateaus into permafrost-free wetlands (Figure 2). In 2008, permafrost thaw forced the relocation of the initial camp established in 1999 to a camp at First Lake. In 2012, permafrost thaw again

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forced the decommissioning of the camp at First Lake, replacing it with the new station at nearby Goose Lake. Since that time, the SCRS has steadily developed its state-of-the-art research and educational infrastructure, including heated structures, stable AC power, sanitation systems, docks for floatplanes and boats, climate stations, and over 5 kilometers of boardwalk. Research activities also expanded steadily to include interdisciplinary investigations into permafrost thaw, land cover change, water quality, forest fires, groundwater, and greenhouse gas emissions (Figure 3). The Scotty Creek basin has been designated as a “Super Site” by NASA for their Arctic Boreal Vulnerability Experiment (ABOVE).



*Figure 2 – A drunken forest near the Scotty Creek Research Station. The thawing of permafrost results in ground subsidence, leading to a conversion of forest into wetland. Photo credit: Josh Thienpont, York University*

The Indigenous communities of the Dehcho are closely linked to the land that they rely on for food and water, and for spiritual and cultural well-being. The SCRS is located in Treaty 11 territory, which according to Dene oral history was a peace and friendship treaty between sovereign nations. In 1973, N.W.T. Supreme Court Justice William Morrow rejected the argument that Treaty 11 extinguished Dene rights to the land in a landmark decision. The current negotiation process between the Crown and the Dehcho First Nations began in 1999, just as the first instruments were being installed in the Scotty Creek basin. The Dehcho Agreement is still being negotiated today.

A community of practice developed between researchers and Dehcho community members which would place collaboration at the heart of SCRS activities. In 2017, the SCRS and Dehcho First Nations organized the first field course at Scotty Creek offered to both Dehcho high school students and university students. The course has been offered (almost) annually since, fusing traditional knowledge and western science and nurturing the next generation of collaborators. Research questions and grant applications have increasingly become co-developed by university researchers and Dehcho communities. The official transformation of the SCRS into a flagship for scientific-Indigenous collaboration occurred in 2022 when Łíídlıı Kúé First Nation took on the leadership of the station. LKFN also implemented a new scientific research licensing process for the SCRS at this time, as one of several initiatives to exercise their Indigenous rights to manage their traditional lands and resources in accordance with Article 26 of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

## Rebuilding the Scotty Creek Research Station

The October 2022 fire caused an estimated \$2 million in damage to the station, and five out of nine buildings were lost (Figure 4). LKFN recognizes the SCRS as a key investment in the knowledge economy of the Dehcho and worked closely with partners to rebuild the station as quickly as possible. There was also recognition among the SCRS partners that the fire offered a unique opportunity to leverage the extensive long-term, interdisciplinary datasets available from the station to generate unprecedented insights into the impacts of wildfire on discontinuous permafrost peatlands. With funds raised through donations, including support from the Woodwell Climate Research Centre, as well as territorial and federal funding and a fire insurance payout, the SCRS was rebuilt by the summer of 2024 with some



Figure 3 – Examples of research activities at the Scotty Creek Research Station: (top left) Wilfrid Laurier graduate students set down GEORUNNER landscape mats to create a trail to First Lake; (top right) Researchers and community members watch the drone flying above camp; (bottom left) Wilfrid Laurier graduate students install a local weather station; (bottom right) A York University graduate student collects lake water samples. Photo credit: William Quinton, Wilfrid Laurier University, and Josh Thienpont, York University.

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notable changes (Figure 5). Peter Cazon, the LKFN land guardian for the SCRS, applied his experience as a forest fire fighter to design a firebreak and sprinkler system around the camp. A new harbour was also built to incorporate more Dene culture into the station.

The SCRS is now fully re-opened and operational, and once again collecting data on the impacts of fire and climate change on the land and water. On August 22, 2024, 21 LKFN community members gathered with SCRS researchers at the station for the Grand Reopening, which included a water ceremony, barbecue, and a tour of the newly rebuilt facilities. Another 17 members from the Samba K’e First nation also tried to attend, but the charter aircraft sent to their community was unable to land due to bad weather. A camera person was invited to film footage of the event for a documentary on the SCRS that was commissioned by LKFN. The field course will resume in February 2025.



*Figure 4 – The Scotty Creek Research Station after it burned down in a wildfire. Photo credit: Mason Dominico, Wilfrid Laurier University*



*Figure 5 – Drone imagery of the station infrastructure captured prior to the fire, and after the post-fire station rebuild. Images taken by Mason Dominico, Wilfrid Laurier University.*