

Research Bulletin

NWT Cumulative Impact Monitoring Program

Monitoring Traffic Intensity Along the Tibbitt-to-Contwoyto Winter Road During the 2026 Winter Season: A Successful Pilot Study

Summary

In winter of 2026, the Government of the Northwest Territories' Cumulative Impact Monitoring Program and Wildlife Management Division worked with the Tibbitt-to-Contwoyto Winter Road Joint Venture to test a new way of measuring traffic along the winter road. The goal was to collect traffic volume data and make the data available to researchers studying barren-ground caribou.

Why is This Important?

Barren-ground caribou are known to avoid roads and may be less likely to cross them. This behaviour can be influenced by several factors, such as noise, traffic levels, and physical barriers. As new road projects are being considered in the Northwest Territories, it is important to understand what is causing these changes in caribou movement.

What Did We Do?

We installed 10 vehicle counters along the winter road just before it opened in 2026. These counters recorded the number of vehicles travelling in both directions, by hour.

- 5 counters were placed between the start of the road and the Gahcho Kué spur road
- 2 counters were placed between that junction and the Ekati and Diavik mine sites
- 3 counters deployed along the Gahcho Kué spur road

Counters were installed at narrow portages to improve detection. Most counters collected data for 4 weeks, while the counter at the start of the road ran for the full 7-week season.

What Did We Find?

The pilot study was successful and showed that this approach can provide useful traffic data. Results (Figure 1) show that traffic was highest on the main road before the Gahcho Kué junction. After the split, traffic volumes were roughly divided between the main road (toward Ekati and Diavik) and the spur road (toward Gahcho Kué).

Some gaps in the data occurred due to wind and moisture affecting the counters. These issues can be reduced in future deployments.



For More Information

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Severson, J. P., Johnson, H. E., & Vosburgh, T. C. (2023). Effects of vehicle traffic on space use and road crossings of caribou in the Arctic. *Ecological Applications*, 33(8). <https://doi.org/10.1002/eap.2923>

Smith, A., & Johnson, C. (2023). Why didn't the caribou (*Rangifer tarandus groenlandicus*) cross the winter road? The effect of industrial traffic on the road-crossing decisions of caribou. *Biodiversity and Conservation*, 32, 1–17. <https://doi.org/10.1007/s10531-023-02637-4>

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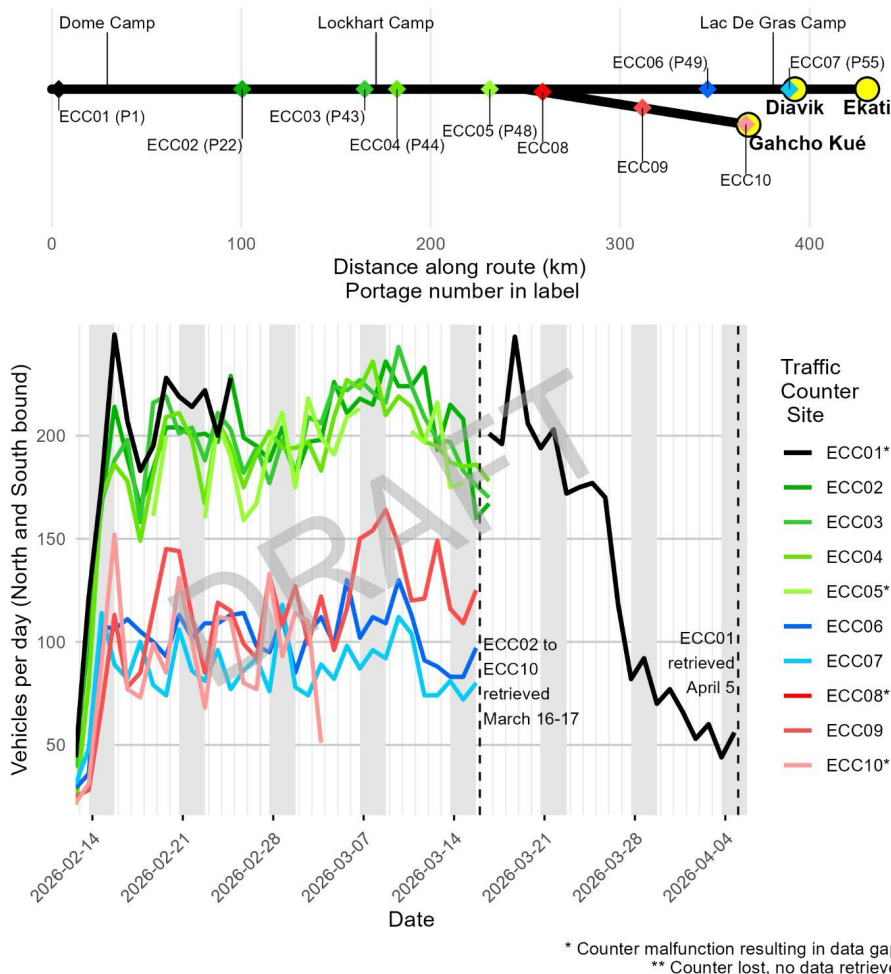


Figure 1: Traffic counter locations and preliminary daily vehicle volumes along the Tibbitt-to-Contwoyto Winter Road during the 2026 Season.

What Does This Mean?

Project results help improve the understanding of cumulative impacts on barren-ground caribou by measuring traffic on the winter road. Cumulative impacts can happen when many different stressors—like roads, mines, and other human activities—add up over time and affect caribou. In future movement modeling analyses, adding traffic data will help to explore how one of these stressors contributes to the overall impact on caribou behaviour. This leads to a more complete understanding of how development across the landscape may be influencing caribou and may contribute to future resource management decisions.

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