**AI & Conservation  
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**Photography provided by WWF-Canada**

* [Barren-ground caribou (*Rangifer tarandus groenlandicus*) Churchill, Manitoba.JPG](https://files.bas.ac.uk/photo/AI-for-Conservation/Photography/Barren-ground%20caribou%20(Rangifer%20tarandus%20groenlandicus)%20Churchill,%20Manitoba%20(Credit%20David%20McGreachy%20+%20WWF-Canada).JPG)   
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* [Bull barren-ground caribou (*Rangifer tarandus groenlandicus*) from the Qamanirjuaq herd, Nunavut.jpeg](https://files.bas.ac.uk/photo/AI-for-Conservation/Photography/Bull%20barren-ground%20caribou%20(Rangifer%20tarandus%20groenlandicus)%20from%20the%20Qamanirjuaq%20herd,%20Nunavut%20(Credit%20John%20Marriott%20+%20WWF-Canada).jpg)   
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* [A herd of Barren-ground caribou (*Rangifer tarandus groenlandicus*) move through a snowy landscape, Wapusk National Park, Manitoba Canada.jpg](https://files.bas.ac.uk/photo/AI-for-Conservation/Photography/A%20herd%20of%20Barren-ground%20caribou%20move%20through%20a%20snowy%20landscape,%20Wapusk%20National%20Park,%20Manitoba%20Canada%20(Credit%20Peter%20Ewins%20+%20WWF-Canada).jpg)  
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**Photography provided by the Government of Nunavut**

All photos were taken on the south coast of Victoria Islands around October early November 2023.

* [A small cabin on a frozen lake on the south coast of the Victoria Islands.jpg](https://files.bas.ac.uk/photo/AI-for-Conservation/Photography/A%20small%20cabin%20on%20a%20frozen%20lake%20on%20the%20south%20coast%20of%20the%20Victoria%20Islands%20(Credit%20Terry%20Milton%20+%20Government%20of%20Nunavut).jpg)  
  © Terry Milton / Government of Nunavut  
  *A small cabin stands isolated on a frozen lake on the south coast of the Victoria Islands, surrounded by snow-covered tundra and ice ridges.*
* [Snow-dusted tundra meets a vast frozen lake on the south coast of the Victoria Islands.jpg](https://files.bas.ac.uk/photo/AI-for-Conservation/Photography/Snow-dusted%20tundra%20meets%20a%20vast%20frozen%20lake%20on%20the%20south%20coast%20of%20the%20Victoria%20Islands%20(Credit%20Terry%20Milton%20+%20Government%20of%20Nunavut).jpg)  
  © Terry Milton / Government of Nunavut *Snow-dusted tundra meets a vast frozen lake, with windblown patterns marking the icy surface.*
* [A frozen lake surface bordered by snowy tundra on the south coast of the Victoria Islands.jpg](https://files.bas.ac.uk/photo/AI-for-Conservation/Photography/A%20frozen%20lake%20surface%20bordered%20by%20snowy%20tundra%20on%20the%20south%20coast%20of%20the%20Victoria%20Islands%20(Credit%20Terry%20Milton%20+%20Government%20of%20Nunavut).jpg)  
  © Terry Milton / Government of Nunavut   
  Wind-swept snow streaks across a smooth, frozen lake surface bordered by snowy tundra.

**Figures from the research paper**

Dr Ellen Bowler et al., *‘AI sea ice forecasts for Arctic conservation: A case study predicting the timing of caribou sea ice migrations’* is published in Ecological Solutions and Evidence, [https://doi.org/10.1002/2688-8319.70034](https://urldefense.com/v3/__https:/doi.org/10.1002/2688-8319.70034__;!!N11eV2iwtfs!px8R64g5wCfmlEOv9Qo39Dtf-Tc4HY9Fe2aV7Lhav7MXTIGpRkW3ypAwERSxBix1WRxp5tjA8Ubg%24)   
  
This caption information may be edited, and is shared for context:

* **GPS collared caribou migrating across sea ice.mp4***GPS collared caribou migrating across sea ice in the Coronation Gulf during the autumn freeze up. Tracks overlaid on 25km OSI-SAF sea ice concentration data. We can see the caribou wait on the south coast of Victoria Island for the sea ice to reach safe levels for crossing. Using IceNet we can predict when the ice will form, and therefore give early-warning of when the caribou are likely to begin their migration.*
* **Icenet-10percent-migrate-map-2022.png**  
  *An example IceNet early-warning map which can be used for decision-making. We show the date at which 10% of caribou would be expected to start migrating, based on past observations. Dots show real-time locations of tracked caribou on 17 October initialisation date. In this example, even though the caribou are gathered at the coast the ice is not expected to start reaching safe crossing levels for another 2-3 weeks. Conservationists can use these data streams to inform icebreaking vessel operators of high-risk times and regions for caribou in the upcoming weeks.*
* **Graphical-abstract.png***This case study explores how new AI-driven sea ice forecasts can support Arctic wildlife conservation. Focusing on the waterways south of Victoria Island (Nunavut, Canada), we show that predicting freeze-up dates could help anticipate Dolphin and Union caribou sea ice crossing times weeks in advance. This early-warning system could support management of ice-breaking vessel impacts, helping to protect critical crossing routes for the herd and, more broadly, offers practical insights and a framework for applying AI forecasting tools to conservation and management decision-making.*