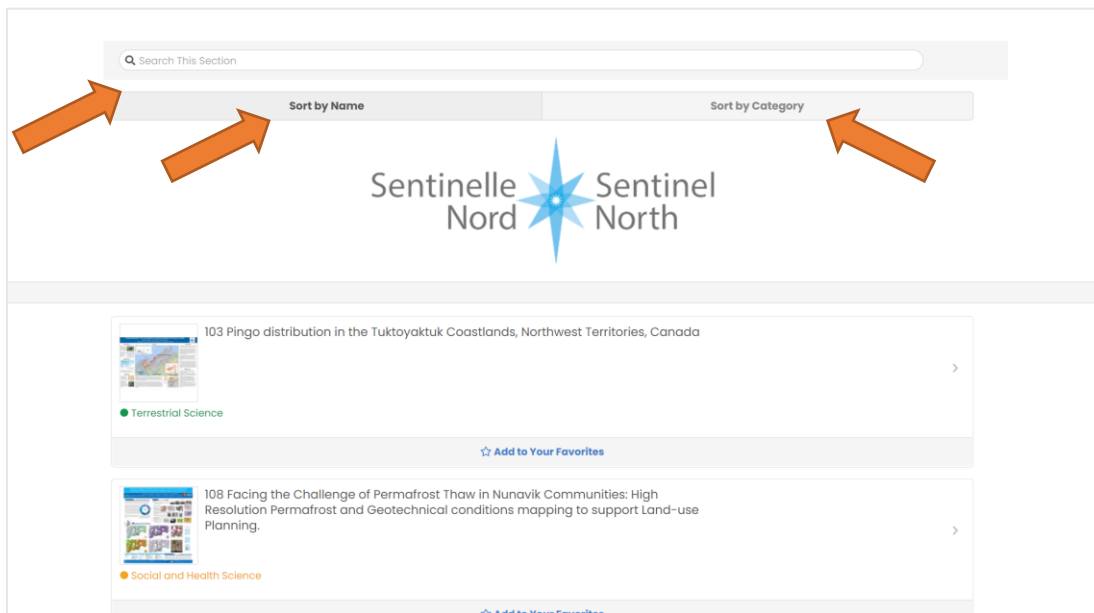


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ABOUT

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Pingos are an integral part of the permafrost landscape of the Tuktoyaktuk Coastlands, southern Beaufort Sea coast, western Arctic Canada, which is also affected by on-going sea-level rise. Mackay (1979) mapped ~1450 pingos in the region from aerial photographs. Via open-data desktop geobrowsers using very-high resolution digital elevation data and colour satellite imagery, we mapped nearly 2820 pingo-like features in the region and confirmed over 2350 pingos. This area contains the highest concentration of pingos (average of 0.15 km⁻²) in North America, about 5% of which are in a state of collapse.

Pingos reside in an area of about 18,500 km². Occuring at elevations from sea level to about 60 m asl, only ~5% are situated on the modern Mackenzie Delta. Most are within the Tuktoyaktuk Coastlands where glacial and postglacial sediments veneer Pleistocene interglacial sands. Pingos are most concentrated within the Low Involved Hills, Kugmallit Plain, and Tununuk Low Hills, where Holocene thermokarst lacustrine basins are most abundant.

Unlike pingos of the Arctic Coastal Plain, Alaska, many pingos of the Tuktoyaktuk Coastlands are situated near the modern coastline as result of on-going relative sea-level rise. Through coastal erosion, many lakes containing Holocene-age pingos now drain directly into, or are connected to, the Beaufort Sea. Though lake drainage can initiate pingo growth, coastal erosion is a rapid mechanism for pingo degradation. Thus, the rate of pingo loss along the coast likely exceeds that of pingo formation.

Our georeferenced database improves the geological context for pingos in the Tuktoyaktuk Peninsula region. The catalogue of pingos, collapsed forms and other pingo-like forms provides a means to assess associated morphologies, and to monitor responses associated with changes in climate and the coastal zone.

Mackay, J. R. (1979). Pingos of the Tuktoyaktuk Peninsula Area, Northwest Territories. *Géographie physique et Quaternaire*, 33: 3-61.

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