Parks Canada Parcs Canada

Pingos of Tuktoyaktuk – A Natural Site of Canadian Significance

Cover photo:
Numbering well over 1,000
in the Canadian North, the
majority of pingos are located
on the Tuktoyaktuk Peninsula

QS 7056-060-EE-A1

Les rapports sur les réserves projetées pour des parcs nationaux sont également publiés en français.

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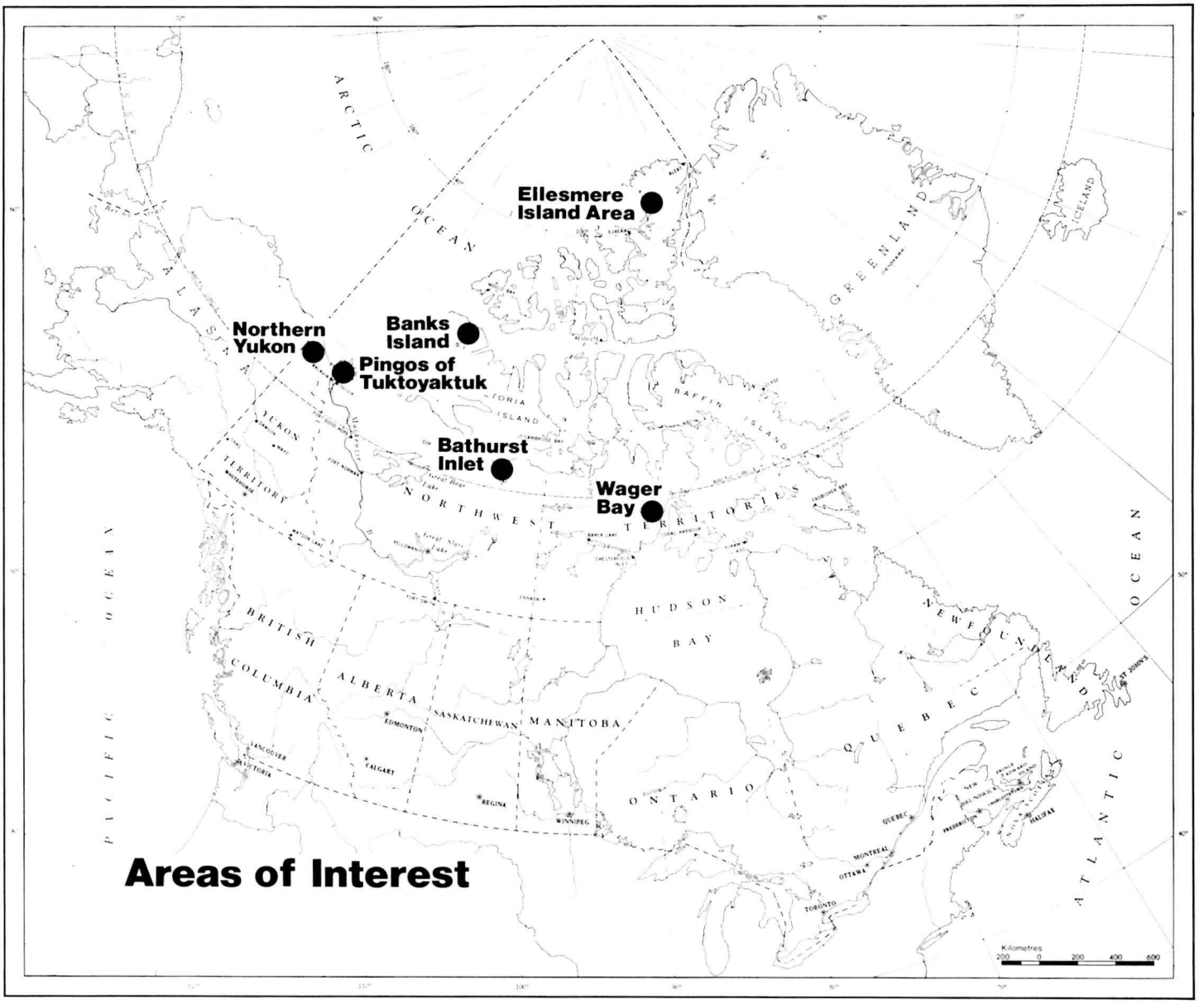
Introduction

Natural Sites of Canadian Significance are sites which have been identified for preservation in a natural state and are considered to be outstanding, exceptional, unique or rare. They are special places which should be protected as a part of the heritage of all Canadians, now and in the future. The identification and protection of our important natural heritage sites cannot await or accommodate the advances of competing land uses. Action is required while the opportunities exist if the heritage of the past is to be passed on to the future.

Of course, there are many, many different natural features in Canada which have important scientific value as well as high potential for public interest and appreciation. Parks Canada has been working to identify sites containing these natural features. One of the sites identified in the Arctic is the pingos of Tuktoyaktuk. It could be protected as a National Landmark.

In addition to this small site, Parks Canada has identified five large Natural Areas of Canadian Significance, considered to be representative of different Arctic landscapes. These areas are also worthy of consideration for new parks. They are:

1. Bathurst Inlet
2. Wager Bay
3. Northern Yukon
4. Banks Island
5. Ellesmere and Axel Heiberg Islands


Ellesmere Island Area
Banks Island
Northern Yukon
Pingos of Tuktoyaktuk
Bathurst Inlet
Wager Bay
Areas of Interest
ARCTIC OCEAN
PACIFIC OCEAN
ATLANTIC OCEAN
ALASKA
GREENLAND
ICELAND
YUKON TERRITORY
NORTHWEST TERRITORIES
VICTORIA ISLAND
BAFFIN ISLAND
HUDSON BAY
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
QUEBEC
NEWFOUNDLAND
VANCOUVER
VICTORIA
EDMONTON
CALGARY
REGINA
WINNIPEG
TORONTO
OTTAWA
MONTREAL
QUEBEC
HALIFAX
ST JOHN'S
Kilometres
200 0 200 400 600

The Site

The landscape around Tuktoyaktuk is one of the most unusual in Canada. Vast areas of lake-strewn tundra create a terrain that would be monotonously flat but for the presence of hundreds of ice hills called "pingos" (from the Eskimo word pingujjaluit, "the things which thrust upwards"). Rising abruptly out of the tundra, these hills consist of massive earth-covered cores of ice. They are a unique northern phenomenon and, as such, deserve protection.

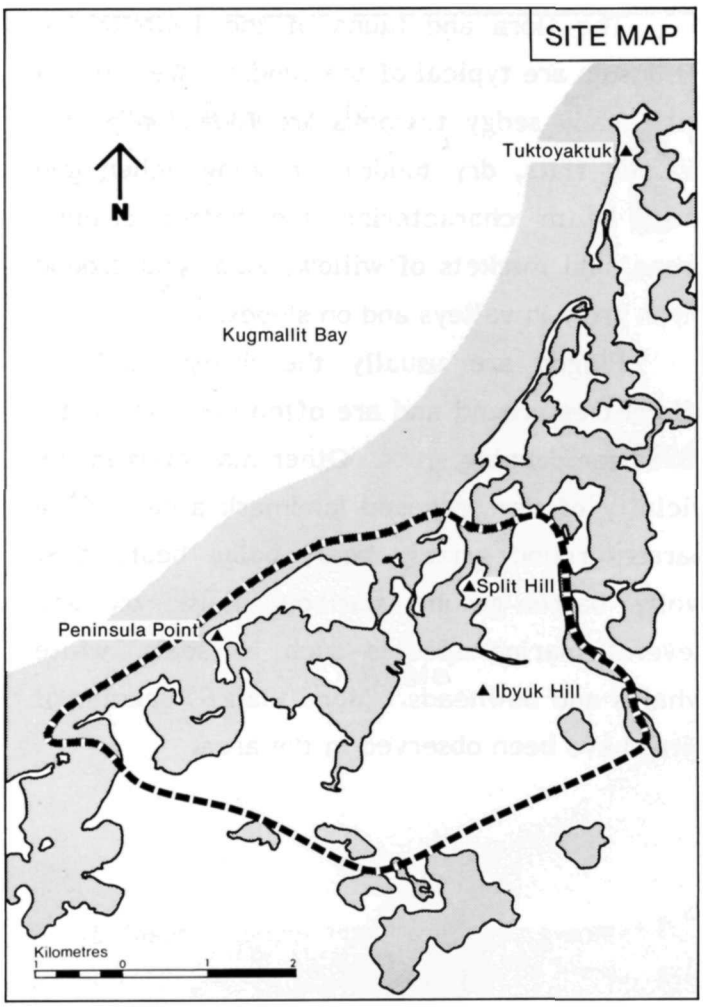
Situated six kilometres (about four miles) from the village of Tuktoyaktuk, on the old Pleistocene delta of the Mackenzie River, is Ibyuk Hill, the largest example of a pingo in Canada. This pingo and its immediate surroundings truly represent the pingo phenomenon. Compared with the five large Natural Areas of Canadian Significance, this Natural Site of Canadian Significance is very small, 12.8 km^2 (five square miles), half of which is water. As a National Landmark, Ibyuk Hill would be a small protected site containing a unique phenomenon of international significance, important for study and appreciation, but not for outdoor recreation activities.

What is a pingo?

A pingo is a cone-shaped hill that consists of a massive core of ice covered by a thin layer of soil. The pingos of the Tuktoyaktuk Peninsula occur mostly in depressions that were formerly lake basins. Over half the pingos on the Tuktoyaktuk Peninsula are completely or almost surrounded by water. The remainder are surrounded by poorly drained tundra or tundra polygons.

The Mackenzie pingos are the result of powerful forces of underground ice encroaching on sub-permafrost saturated ground. As the ice expanded, it created pressure which forced the confined water upward where it froze to form a pingo core.

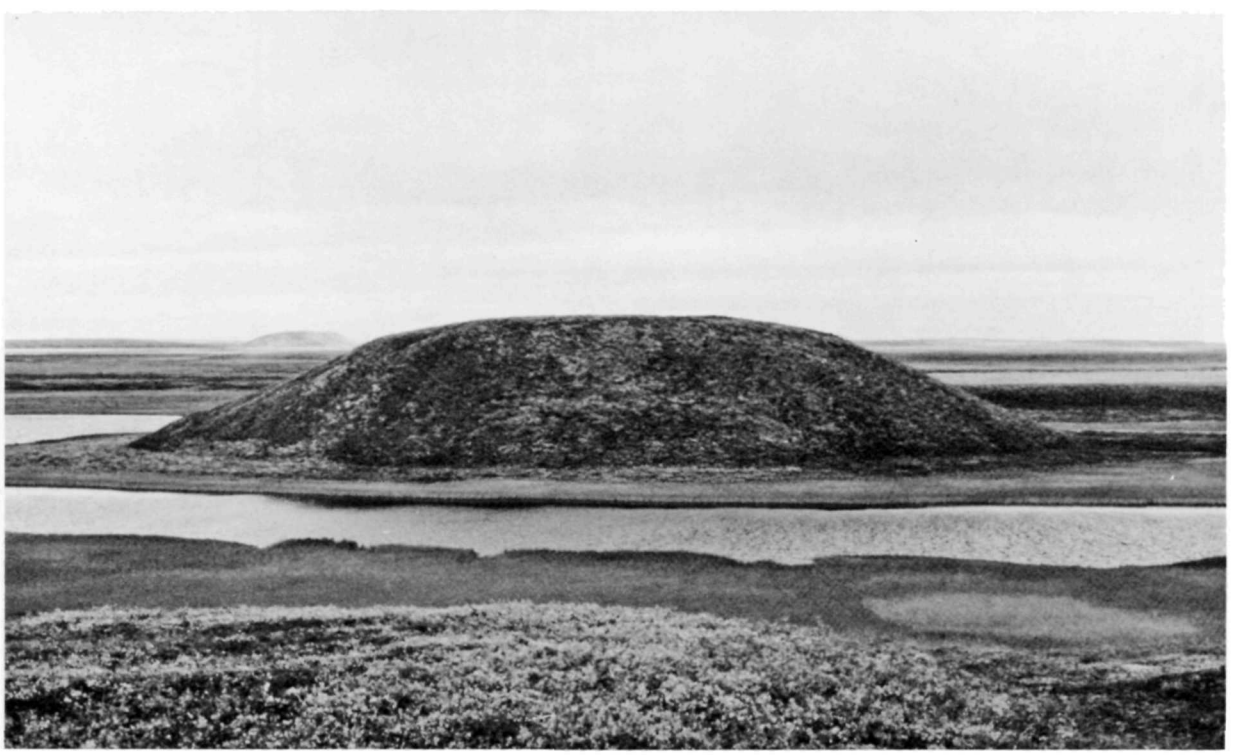
Pingos are extremely fragile land forms. If the protective layer of soil blanketing a pingo is fractured or eroded away, the ice core inside becomes exposed to the penetrating heat of the summer sun. In time the supporting ice column will melt away, leaving only a dish-shaped depression where the hill used to be.



Ibyuk Hill

The Ibyuk Hill Pingo is 900 m (985 yards) around its base and, although only 40 m (131 feet) high, seems to tower over the surrounding low-lying tundra. The deeply-fissured earth surface of the pingo is 14 m (46 feet) thick and is a combination of sand, silt and clay. In summer, a crater-like hollow in the summit contains a small lake which measures five metres by eight metres and is about one metre deep (16'x26'x3').

Pingos are low hills that protrude from the tundra



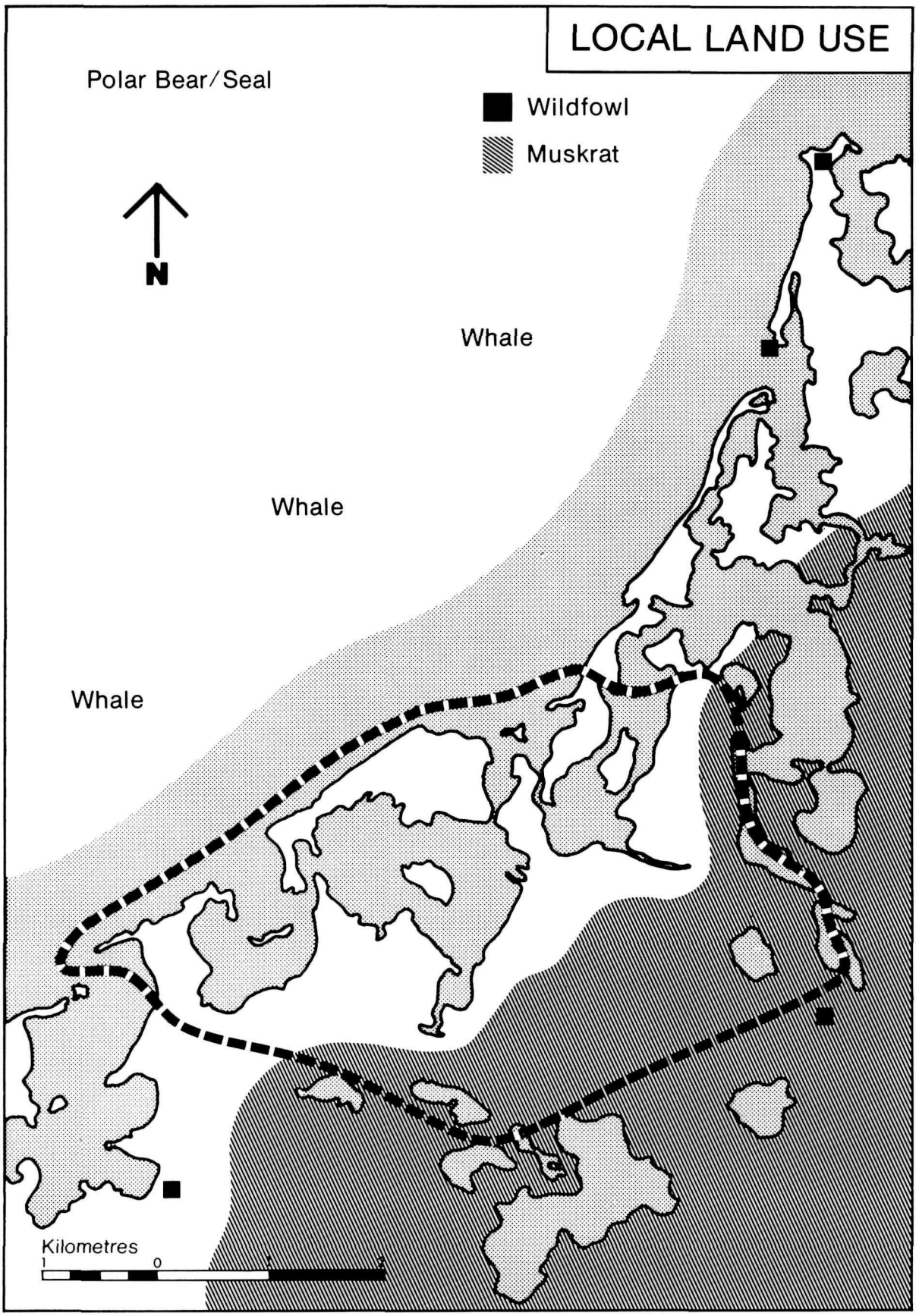
The Land

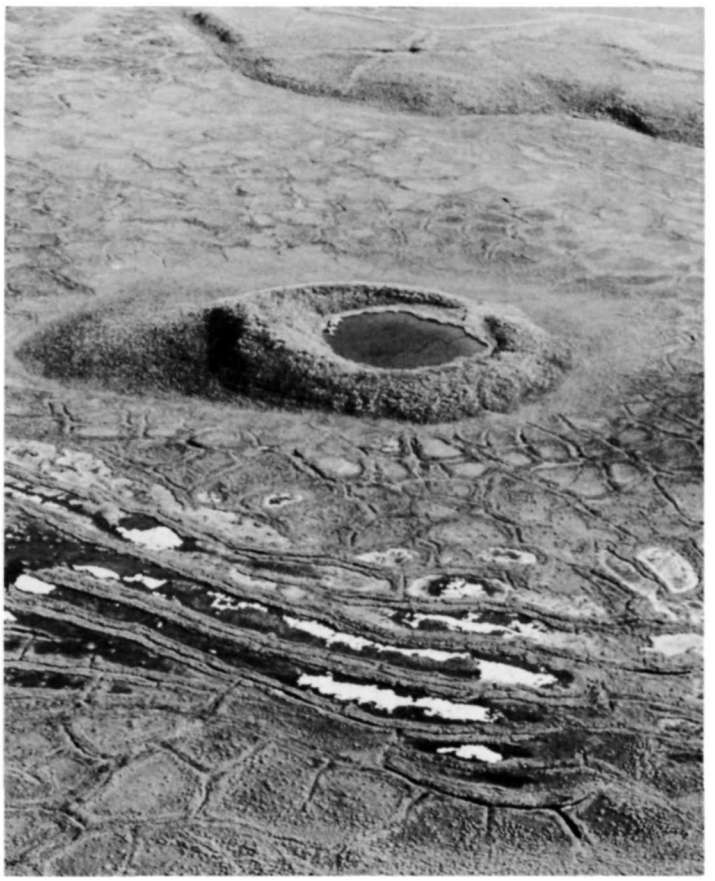
During the last Ice Age, the entire Tuktoyaktuk Peninsula was glaciated, and is now a low-lying tundra region rarely rising more than 60 m (197 feet) above sea level. Odd-shaped dunes fashioned by strong prevailing winds and irregular polygons are significant natural features.

The flora and fauna of the Tuktoyaktuk Peninsula are typical of the tundra. Wet tundra with many sedgy tussocks are found on poorly drained flats, dry tundra including lichen and moss heath characterize the better drained areas, and thickets of willow, alder and ground birch grow in valleys and on slopes.

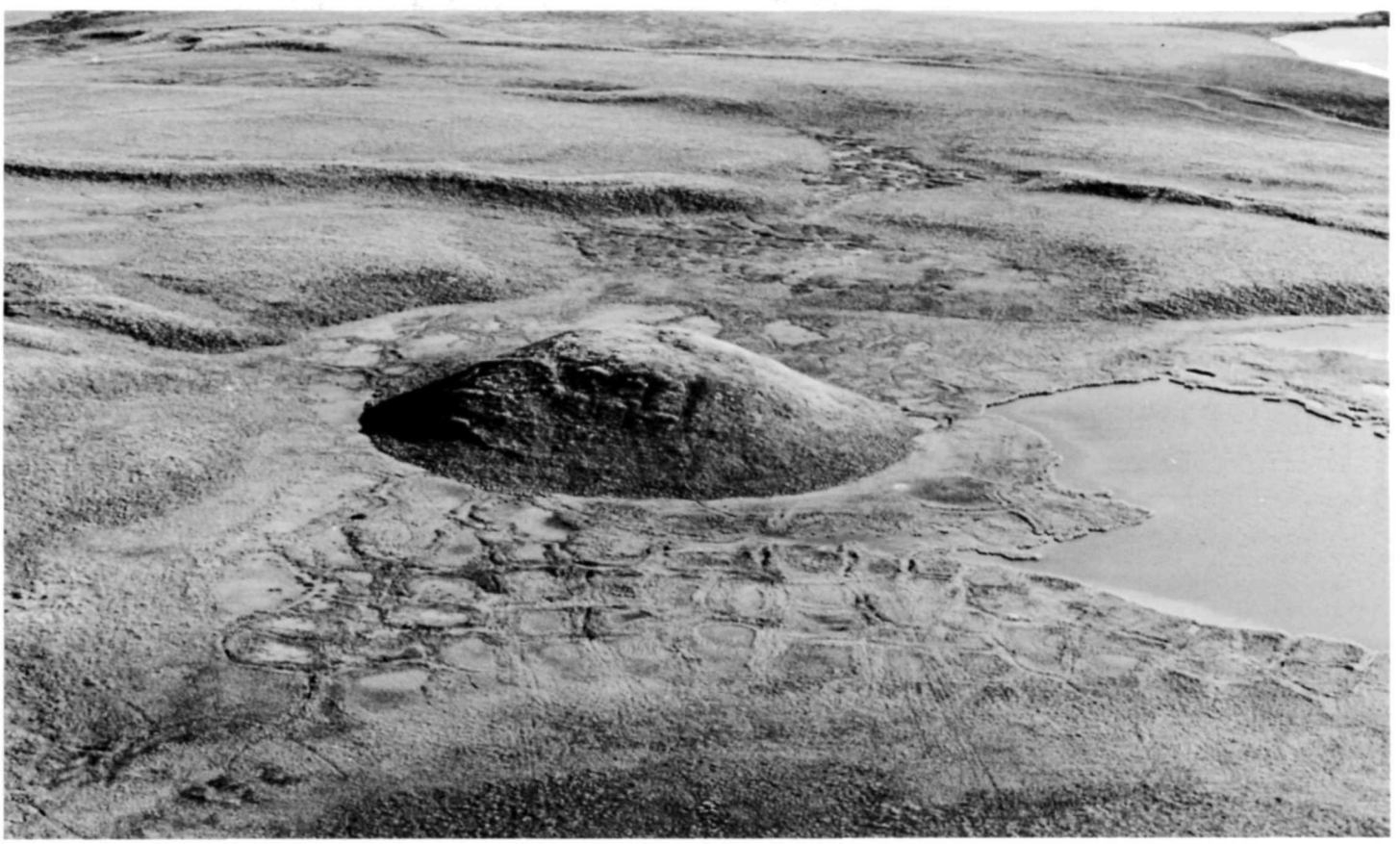
Pingos are usually the driest land for kilometres around and are often used by Arctic foxes for denning sites. Other mammals in the vicinity of the proposed landmark area include barren-ground grizzly bear, polar bear, grey wolf, barren-ground caribou, musk ox and several marine species such as seals, white whales and bowheads. More than 65 species of birds have been observed in the area.

Pingos form in lake beds in areas of permafrost


LOCAL LAND USE
Polar Bear/Seal
Wildfowl
Muskrat
N
Whale
Whale
Whale
Kilometres
1
0
1
2



A pingo National Landmark would be the first National Landmark in Canada



If you would like to receive or contribute information on any of the six areas or to comment on their establishment as parks, please write to Parks Canada at one of the following addresses:

Director,
Parks Canada Prairie Region,
114 Garry Street,
WINNIPEG R3G 1G1
Manitoba.

or

Director,
National Parks Branch,
Parks Canada,
400 Laurier Avenue, West,
OTTAWA K1A 0H4
Ontario.