

An aerial photograph showing a vast landscape of thermokarst lakes. The terrain is a mosaic of dark, irregularly shaped water bodies of various sizes, separated by thin, light-colored ridges of soil and vegetation. The lakes have a slightly murky, brownish-blue color. The overall pattern is highly irregular and fragmented. The text "Permafrost Landforms in Northern Canada" is overlaid in the upper center in a white serif font with a black outline. The text "Thermokarst lakes, Banks Island, NWT" is overlaid in the lower center in a white serif font with a black outline.

# Permafrost Landforms in Northern Canada

Thermokarst lakes, Banks Island, NWT



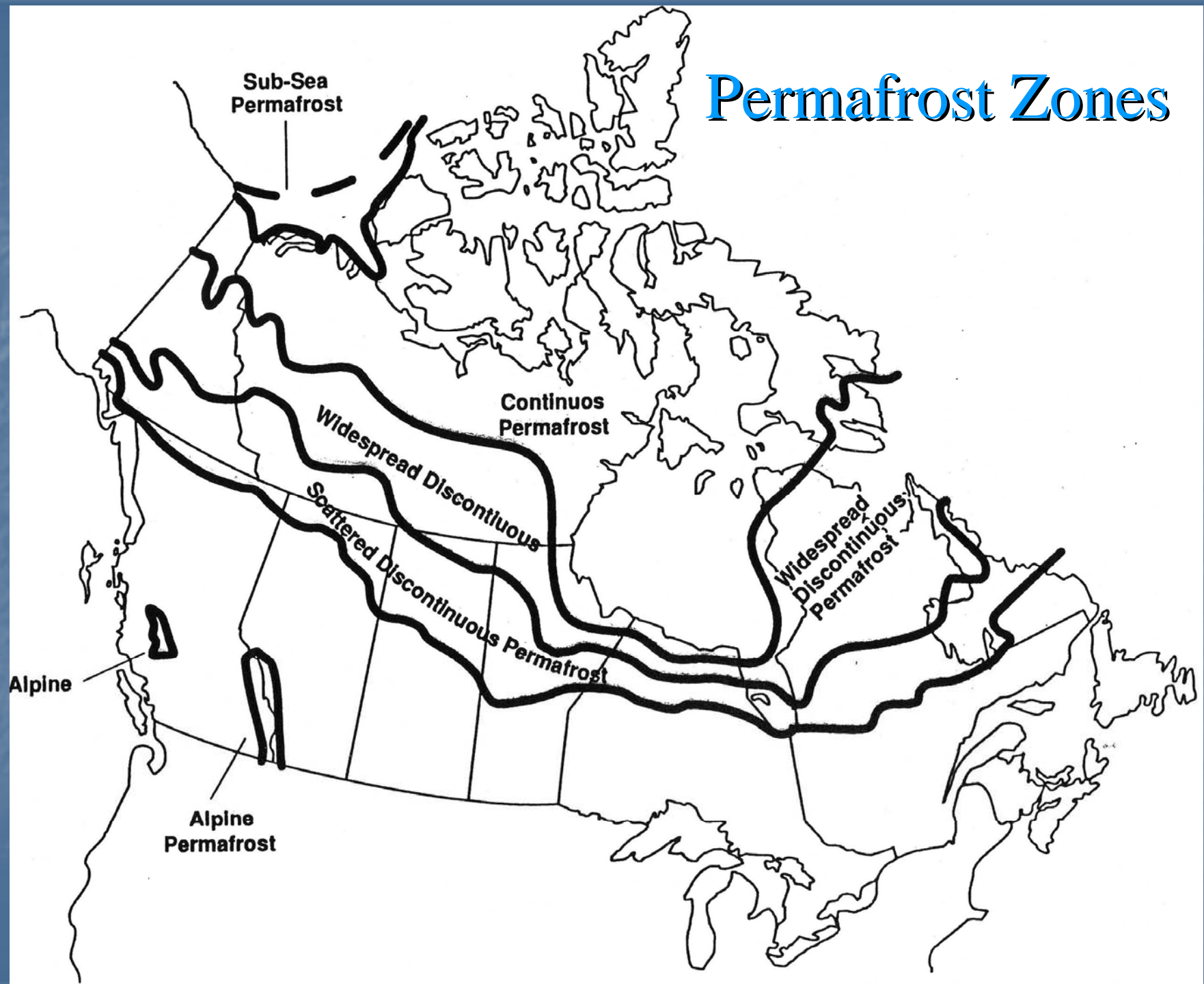
# What is Permafrost ?

- “perennially frozen ground”
- Temperature remains below  $0^{\circ}\text{C}$  for at least 2 consecutive years

Gjoa Haven, Nunavut



# Permafrost Zones



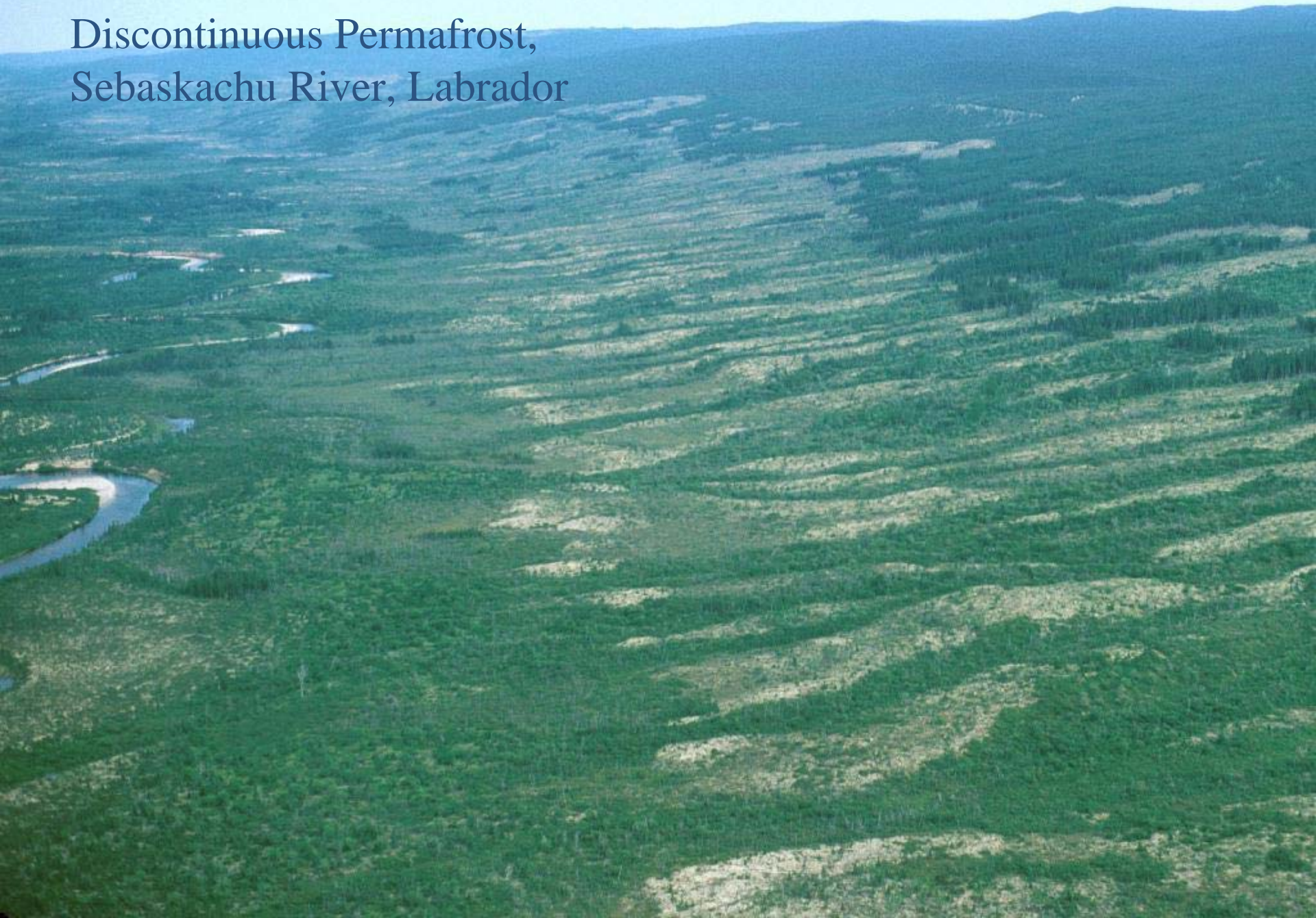


# Alpine Permafrost, Plateau Mountain, Alberta





# Discontinuous Permafrost, Sebaskachu River, Labrador







# Active Layer

■ seasonally frozen and thawed



# Freezing Processes

Ice Lens, Banks Island NWT



# Frost Heaving





# Involution







# Stone Stripes





# Terracettes, MacDougall Pass NWT





# Ice Wedges



Mayo YT



## Ice Wedge Casts

- Ice wedge melts
- sediment falls into the cavity, preserving the form
- indicate that permafrost once was present



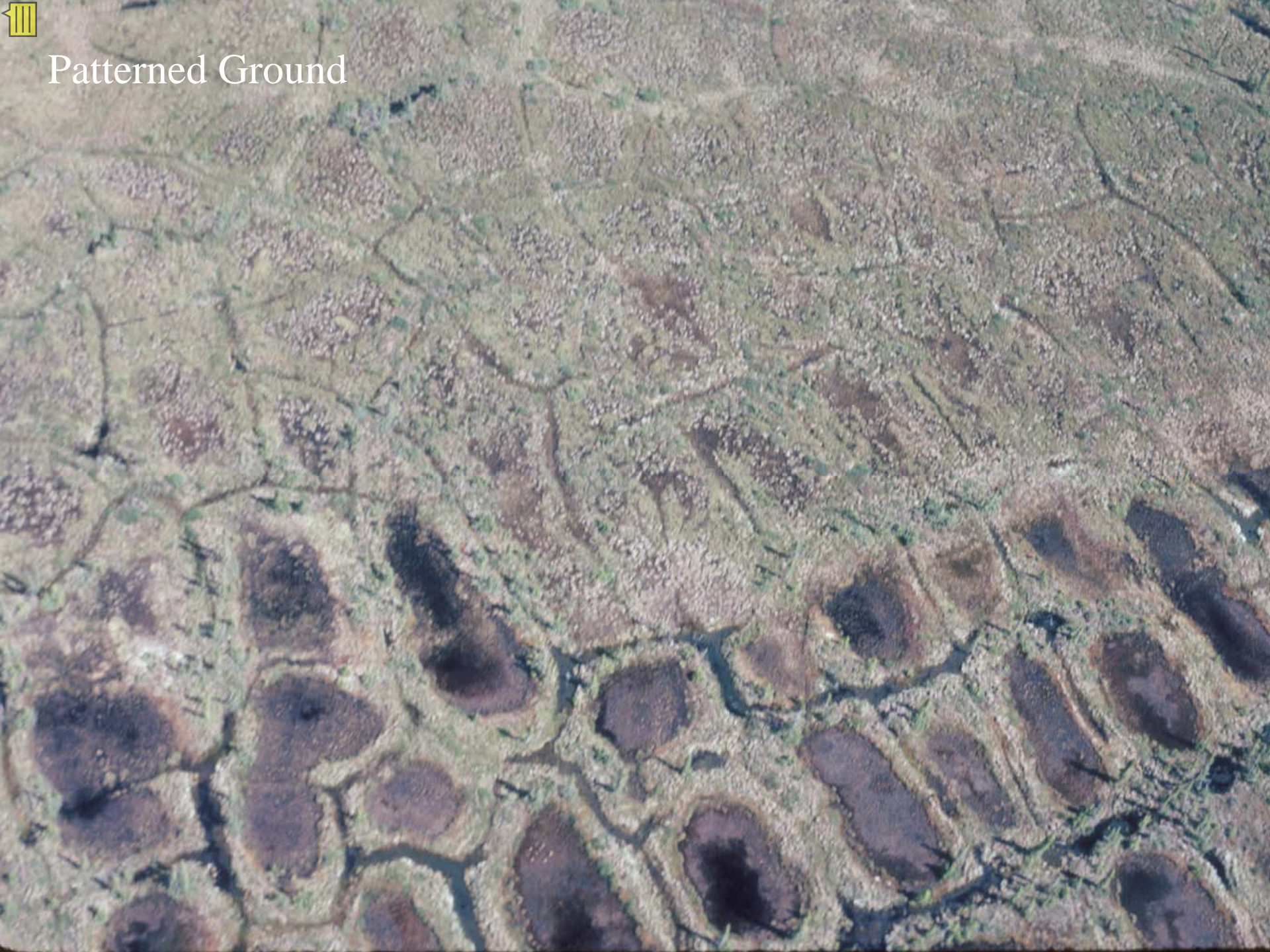
# Patterned Ground





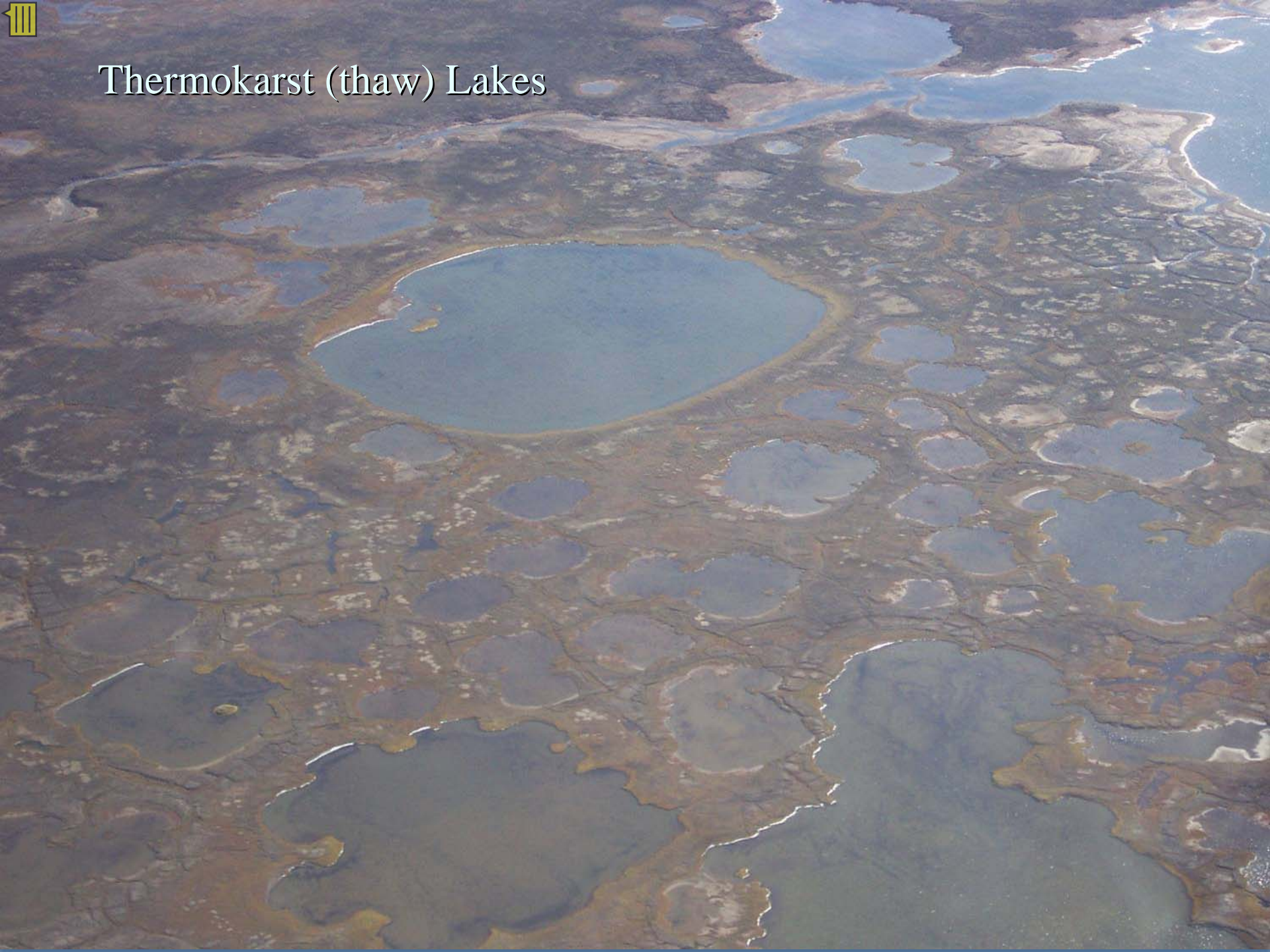


# Patterned Ground





# Thermokarst (thaw) Lakes





**Thermokarst Lakes, Mackenzie Delta**





# Slope Failures in Permafrost



Mackenzie River









# Pingo, Tuktoyaktuk







Adaptations to live in  
permafrost areas ....









# Questions ...

- How would a change in climate affect these landforms?
- How can people adjust to living with permafrost?