

# Land of No Trees

Imagine over 5 million square miles of a very flat landscape. Imagine this landscape to be bitter cold with constant wind. Imagine this landscape to be covered with snow during long, dark winters. Imagine short summers when the snow melts and a burst of life appears. Wildflowers grow and migrating animals return to raise their young. **Do not** imagine any trees living here because there aren't any.

You have imagined the Arctic tundra. The word *tundra* comes from the Finnish word *tunguri* and the Lappish word *tundra*. It means "land of no trees."

What makes the tundra so unique is its permafrost. Permafrost is permanently frozen earth. There are two layers to permafrost: **the active layer** and **the inactive layer**. The active layer is the layer that melts during the summer and supports plant life. The inactive layer does not melt. It remains frozen season after season, year after year.

You would certainly freeze on the tundra if you were not prepared for very harsh conditions. The tundra is a natural freezer. The bodies of mammoths, thousands of years old, have been found in the frozen soil of Siberia. 45 million year old tree stumps have also been found on Axel Heiberg Island in the Arctic Circle.

The active layer of the tundra is constantly freezing and melting with the seasons. It expands and contracts as water freezes and melts, freezes and melts. When water freezes in the soil, the soil expands and causes rocks to crumble and break. The rocks rise to the surface and create a polygon pattern.

## **Find Out For Yourself...**

Check out what happens to waterlogged soil when it freezes.

1. Fill a plastic container with two cups of soil and one cup of water.
2. Mark the height of the mixture with a permanent marker.
3. Freeze the mixture and see what happens. Record your results here.

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4. Try this experiment again with two cups of water. Try putting in some small rocks and record their movement.

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