Ice Wedge Polygons

Microrelief patterns on the surface of the ground, known as tundra polygons or ice wedge polygons, are features associated with permafrost. The distinctive geometric patterns are caused by vertical ice wedges that gradually drive the ground apart. The ice wedges grow as thaw water seeps into cracks in the ground and freezes. As the ice wedges grow, they exert pressure on the surrounding soil, pushing it upward and forming vast networks of polygons. Viewed from above, they resemble the patterning of a turtle shell. Ice wedge polygon networks are widespread in areas of continuous permafrost, such as Arctic North America and Siberia.

Aerial photographs of a tilled, rain-soaked field as well as a cross-section of soil from a geological survey conducted in Shikaoi demonstrate distinct patterning with similarities to tundra fields in Alaska. Their discovery suggests permafrost was once more widespread in the Tokachi-Shikaoi area, including over parts of the Tokachi Plain. Today, the permafrost in the region is limited to patches in the mountains around Lake Shikaribetsu. Its retreat is evidence of how the climate has changed since the last ice age.