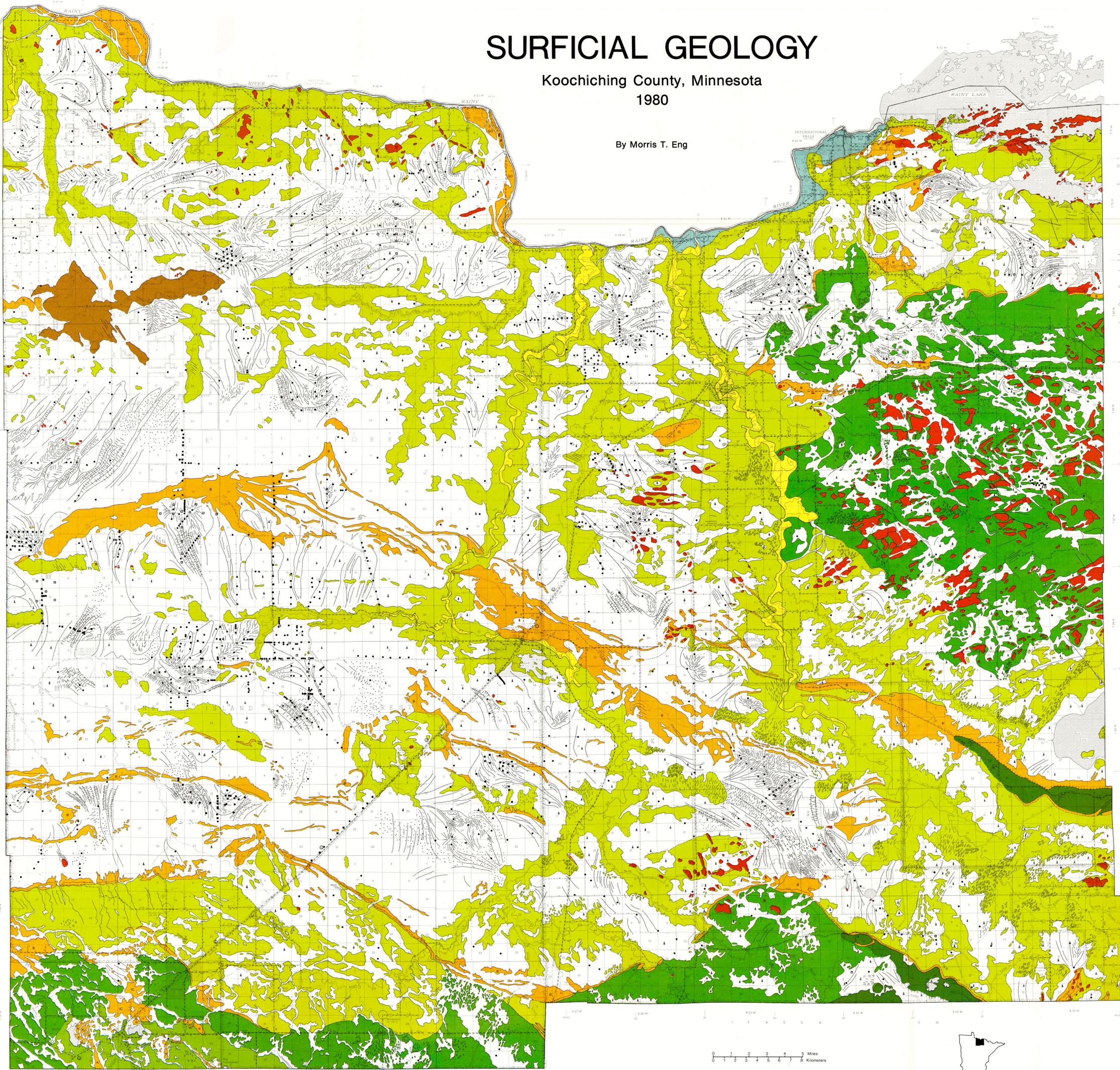


SURFICIAL GEOLOGY

Koochiching County, Minnesota
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SURFICIAL GEOLOGY

PEAT AND MINERAL UNITS

- PEAT — organic soil of peatlands, consisting of partially decomposed plant matter.
- ALLUVIUM — well-sorted material deposited by post-glacial streams.
- OFF-SHORE SAND — gently undulating sand plains and dunes consisting of fine sand that was deposited into the littoral zone of Glacial Lake Agassiz by the retreating ice front of the St. Louis sublobe and subsequently reworked by lake currents and eolian processes.
- LAKE BOTTOM SEDIMENT — a very gently undulating lacustrine plain of light buff to light brown laminations of silt, clay, or fine sand that was deposited in deep water during an early phase of Glacial Lake Agassiz. Surface boulders and pebbles are notably lacking.
- LAKEWASHED GROUND MORAINE — a gently undulating till plain composed of light gray to buff material that was deposited by the St. Louis sublobe and subsequently smoothed by wave action of Glacial Lake Agassiz. The till plain may be capped by a veneer of silt or fine sand; other surface areas contain scattered boulders and pebbles.
- GROUND MORAINE — a gently undulating till plain composed of light gray to buff, calcareous material that was deposited by the St. Louis sublobe but was not inundated by Glacial Lake Agassiz.
- END MORAINE — a series of rolling, recessional moraines composed of light gray to buff, calcareous till deposited by the St. Louis sublobe. Large erratic boulders and stony surfaces are common.
- MORAINE OVERLAP — a series of rolling recessional moraines composed of light reddish to brownish, non-calcareous, sandy, bouldery till deposited by the Rainy lobe overlapped by a light gray to buff, calcareous, silty till deposited by the St. Louis sublobe. Surface boulders and pebbles are quite common.
- ROCK — rock exposures or landforms that reflect bedrock at a shallow depth.
- SAND AND GRAVEL DEPOSITS
 - K KAME — a prominent hill or series of hills composed of sand and gravel deposited by water flowing into crevasses or holes in the ice near the front of the glacier.
 - E ESKER — a ridge of sand and gravel deposited in the channel of a former glacial stream flowing within or under the ice.
 - IC ICE CONTACT — undifferentiated gravel deposited in contact with melting glacial ice.
 - ICE CONTACT SLOPE — a steep slope marking the interface of till against glacial ice.
 - GO GLACIAL OUTWASH — a broad, flat, or gently sloping plain composed of well-sorted sand and gravel that was transported and deposited by glacial meltwater streams beyond the front of the glacier.
 - B BEACH — a low, essentially continuous ridge of sand and gravel marking a shoreline of Glacial Lake Agassiz.

MINERAL PATTERNS

-  Patterns related to glaciation that are apparent on the surface.
-  Represents the areal extent and subsequent modification of the above pattern.
-  Rills formed by surface drainage to a lowered level of Glacial Lake Agassiz.
-  Trace of a wavecut shoreline or an indistinct geologic boundary.
-  Fractures or lineations in the bedrock that are apparent on the surface.

PEATLAND PATTERNS

-  WATER TRACK — flow of drainage within a peatland.
-  RIBBED FEN — a water track feature in which there is a pattern of low ridges (strings) alternating with narrow depressions (farks) at right angles to the slope.
-  TEARDROP ISLAND — a small tree or brush island located within a fen.
-  RAISED BOG — a dome-shaped feature that develops as a result of an accumulation of sphagnum moss. The surface pattern is often expressed by lines of black spruce radiating outward from a central point or axis.
-  OVOID ISLAND — a type of raised bog that is delimited by a water track, resulting in an ovoid shape.
-  Peatland with a stagnant, wet or open water environment.

▲ A heavily forested peatland area.

PEAT OBSERVATION SITES

- DNR observation site.
- DNR sample site with laboratory data.
- DNR sample site with additional DOE laboratory data.
- IRRRB (Iron Range Resources and Rehabilitation Board) site.
- Heinselman site.

Minnesota Peat Inventory Project
Minnesota Department of Natural Resources
Division of Minerals

