

PEDON 08

SITE INFORMATION

This pedon is found at Galbraith Lake, Alaska. About 8.5 inches precipitation, mainly rain, with about 40 inches snow annually. The growing season is very short, and evapotranspiration is very low, so even though precipitation is limited, the soils are very wet if they have permafrost beneath. Soils of uplands in the Atigun River Valley near are glacial outwash covered by loess that contains a small amount of volcanic ash from the Aleutian Islands. There are eolian sand dunes on the SE side of the lake. Rocks are sorted and rounded medium-grained sandstone, conglomerate, limestone, shale, and their meta equivalents. Vegetation is Arctic tundra - dominantly cotton grass and tussock sedge, with dwarf birch, dryas, and dwarf willows.

LANDFORM

1.5% slope, E aspect. Very gently sloping outwash terrace at 2671 ft.

HILLSLOPE POSITION



SOIL MOISTURE AND TEMPERATURE REGIMES

Ustic soil moisture, gelic soil temperature.

SOIL PIT INFORMATION

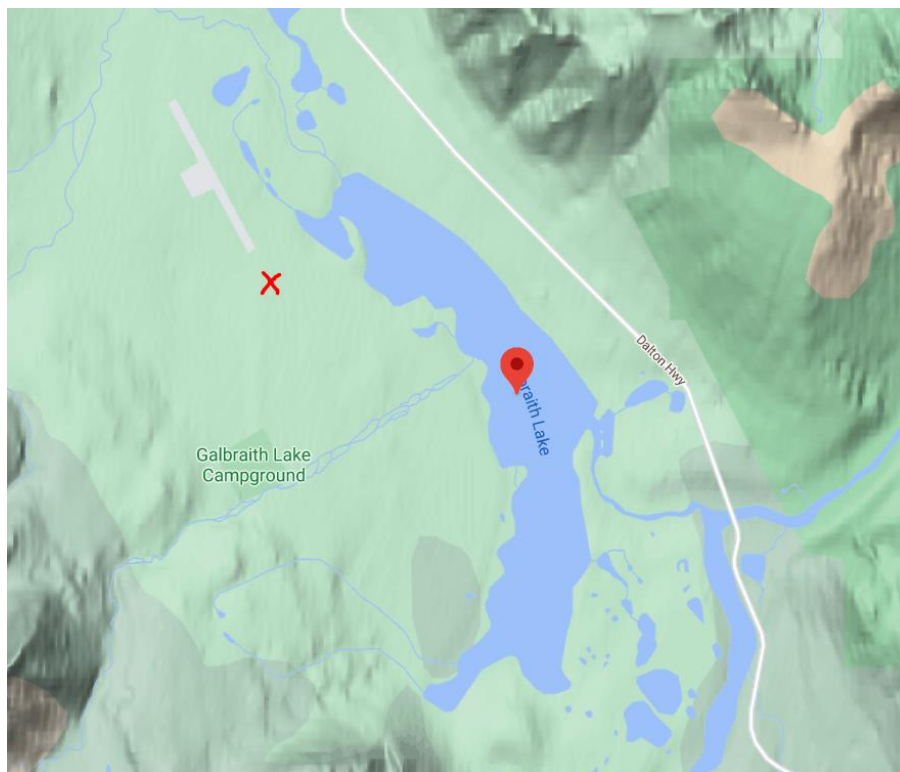
There are no clay films. Rock fragments are dominantly well-rounded cobbles. There was 5% ice lenses in horizon 4 when sampled because the active layer was still thawing. The dominant component of horizon 3 makes up 80% of the volume, and the dominant component of the 4th horizon makes up 65% of the volume. The soil stays reduced and frozen (-2°C) at 102 cm and below for 2 or more consecutive years, and contains about 70% ice, which causes very thin cryogenic (not pedogenic) platy structure to form there. Microbes are active down to -4°C , and there are extreme reducing conditions, which is why some of the organic matter in the permafrost is converted to methane. The first two horizons have a mucky modifier on the texture class. There is some thin platy cryogenic structure and banded or vesicular soil fabric caused by ice lens formation in the 3rd and 4th horizons. The sand is dominantly coarse size, with lots of very coarse and medium sands. Boundaries of the 3rd and 4th horizon are wavy, irregular, and broken.

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CHARACTERIZATION DATA

Horizon	OC %	Base Sat %	pH (water)	CaCO ₃ equiv	% visible carbonates	Rubbed fiber (%)	Ash content (%)
1	15.0	65	5	-	-	25	15
2	8.27	90	6.5	-	-	-	3
3	6.05	95	6.7	-	-	-	1
4	1.02	100	6.9	2	-	-	-
5	0.81	100	7.0	1	-	-	-
6	1.37	100	7.1	3	-	-	-

SITE IMAGES



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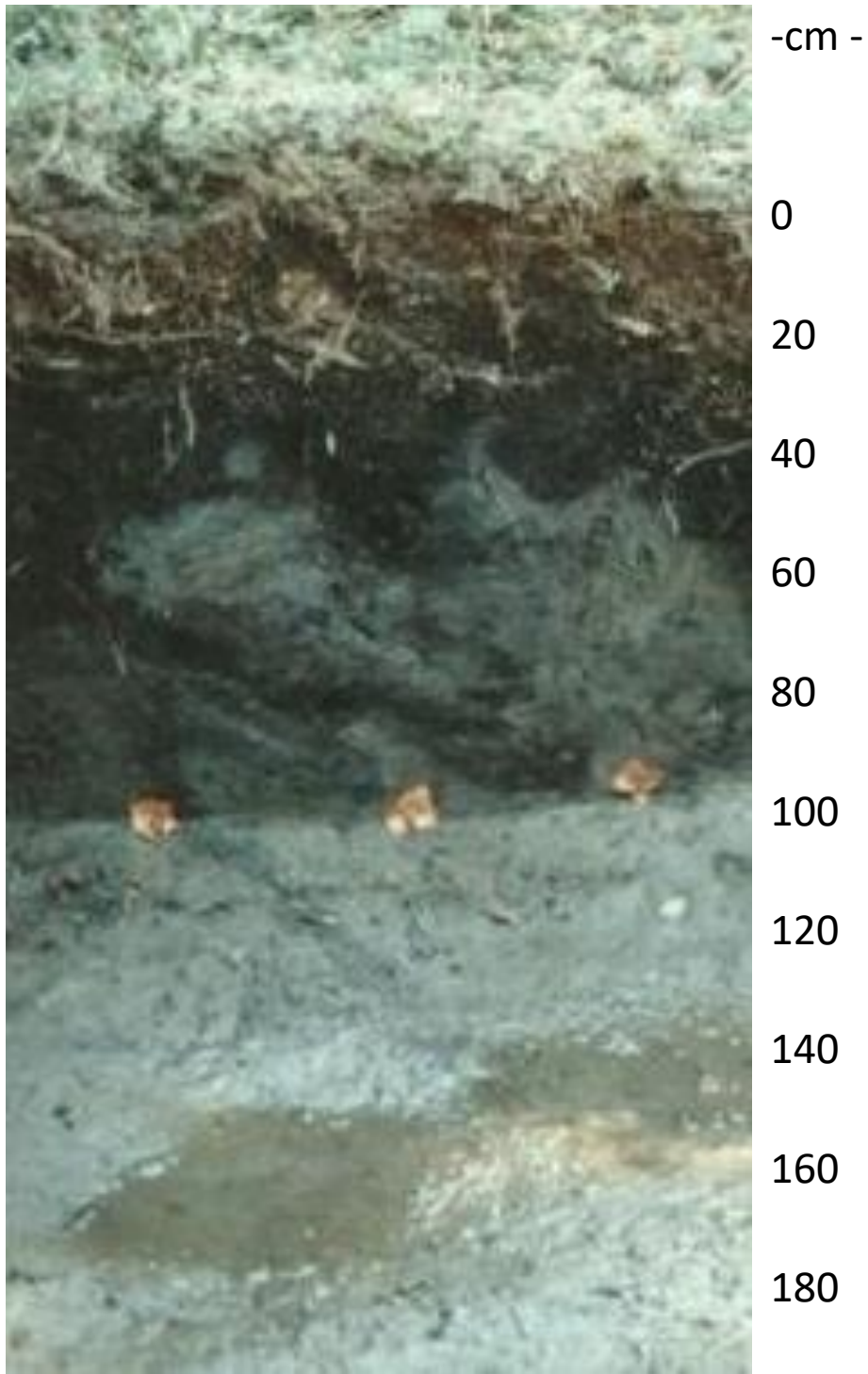


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PEDON IMAGE



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2. Soil Profile Characteristics

Hydraulic Conductivity (10)		Loading Rate at 75 cm (5)	Effective Soil Depth (5)	Water Retention Difference (5)	Soil Wetness Class (5)
Surface (5) ___ High ___ Mod. ___ Low	Limiting Layer (5) ___ High ___ Mod. ___ Low	___ gpd/ft ² (3) Ref: (2) ___	___ V. shallow (<25 cm) ___ Shallow (25 to 49 cm) ___ Mod. deep (50 to 99 cm) ___ Deep (100 to 149 cm) ___ Very deep (≥150 cm)	___ Very low (< 7.5 cm) ___ Low (7.5 to < 15 cm) ___ Mod. (15 to < 22.5 cm) ___ High (≥ 22.5 cm)	___ (> 150 cm) ___ (100 to 150 cm) ___ (50 to 99 cm) ___ (25 to 49 cm) ___ (< 25 cm)

Score: _____

3. Site Characteristics

Parent Material (GIVEN)	Landform (GIVEN)	Slope (GIVEN)	Slope Profile (5)	Surface Runoff (5)	Eros. Pot. (5)
LOESS OVER GLACIAL TILL	OUTWASH TERRACE	1.5%	___ Summit ___ Shoulder ___ Backslope ___ Foothlope ___ Toeslope ___ None	___ Ponded ___ Very slow ___ Slow ___ Medium ___ Rapid ___ Very rapid	___ Very Low ___ Low ___ Medium ___ High ___ Very High

Score: _____

4. Soil Classification

Epipedon (5)	Subsurface horizons and/or diagnostic features (5 each)	Order (10)	Suborder (10)	Great Group (10)

Score: _____

5. Interpretations

Houses with Basements (3)	Septic Tank Abs. Fields (3)	Local Roads and Streets (3)	Corn (3)	Hopyards (3)	Created Wetlands (3)
___ Slight ___ Moderate ___ Severe	___ Slight ___ Moderate ___ Severe	___ Slight ___ Moderate ___ Severe	___ Slight ___ Moderate ___ Severe	___ Slight ___ Moderate ___ Severe	___ Slight ___ Moderate ___ Severe
Reason # (2): _____	Reason # (2): _____	Reason (2): _____	Reason (2): _____	Reason (2): _____	Reason (2): _____

Score: _____