

Legend 1 for Permafrost Landscapes Yakutia:

**NATURAL COMPLEXES AND THEIR CHARACTERISTICS**

Terrain type	Designation (symbol) on the map	Stratigraphic-genetic complexes	Prevailing cryogenic structures and ground ice bodies	Volumetric ice content [%] (in brackets taking into account polygonal ice wedges)	The main cryogenic processes	Latitudinal zonal						Altitudinal zonal						Intrazonal													
Marsh land, estuarine flat		Marine (m II, III, IV)	Layered, lenticular, reticulate (peat, loam, silt), massive (sand), rarely massive ice bodies and polygonal ice wedges	T 65–80 C 40–55 П 35–45	Frost cracking, thermokarst	Tundra		Taiga		Mountain and arctic deserts		Mountain tundra		Near-apical shrub areas		Mountain woodlands		Mountain taiga		Valley areas		Watershed areas									
Lower terraces (modern valleys of large rivers)		Alluvial (a IV, III – IV)	Layered, lenticular, reticulate (peat, loam, silt), massive (sand), systems of thin polygonal ice wedges	T 65–80 (70–85) C 35–65 (40–75) П 30–50	Frost cracking, thermokarst, frost heave	arctic	typical	Southern	Northern	middle				Tundra	Taiga	Mountain taiga	Tundra	Taiga	Mountain taiga												
Small valleys		Alluvial (a IV)	Layered, lenticular, reticulate (peat, loam, silt), massive (sand), systems of thin polygonal ice wedges	T 65–85 (70–90) C 35–65 (45–75) П 30–45	Frost cracking, thermokarst, frost heave									no frost here	middle			no frost here	middle												
Sand ridges on medium-altitude terraces		Alluvial (a II – III) with fragments of eolian (v III – IV)	Massive), lenticular (sand), rarely massive ground ice bodies	П 30–45	Frost cracking, thermosuffusion	CHARACTER OF PERMAFROST DISTRIBUTION																									
Depressions between ridges on medium-altitude terraces		Biogenic, alluvial (b IV, a II – III)	Layered, lenticular, reticulate (peat, loam, silt), massive (sand), systems of thin polygonal ice wedges	T 65–85 C 45–60 П 34–45	Frost cracking, thermokarst, frost heave	continuous	discontinuous	us	Islands of PF	continuous	discontinuous	us	Islands of PF	Continuous, taliks below rivers	discontinuous	us	Islands of PF	Continuous with taliks	discontinuous	us	Continuous with taliks below rivers	Continuous with taliks below lakes									
Mezh-olas'e (area between alas)		Lacustrine-alluvial, in places alluvial (la I – III, a I – III)	Layered, lenticular, reticulate, banded (peat, loam, silt), massive (sand), systems of thick polygonal ice wedges	C 35–65 (45–85) П 30–45 (40–70)	Thermokarst	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Alas area		Thermokarst deposits (t IV)	Layered, lenticular, reticulate, banded, basal ice cement (peat, loam, silt), massive (sand), systems of thin polygonal ice wedges	T 65–90 (70–95) C 35–60 (45–70) П 30–45	Frost cracking, frost heave, thermokarst																										
Ancient terraces with sand-gravel deposits		Alluvial (a N <sub>2</sub> – Q <sub>1</sub> )	Massive, crust-like (sand-gravel deposits), in places lenticular.	ПГ 25–35	Frost cracking																										
Outwash plains		Fluvioglacial (f II – III)	Massive (sand), crust-like, basal (boulder-gravel deposits with basal cement), in places lenticular, reticulate (loam, silt), thin polygonal ice wedges	C 45–65 (50–75) П 35–45 БГ 30–55	Frost cracking, thermokarst																										
Moraine areas		Glacial (g, lg, gf, II, III)	Crust-like, basal (boulder-gravel deposits with filling material), in places lenticular, reticulate (loam, silt) and polygonal ice wedges	C 45–65 (50–75) БГ 30–55	Frost cracking, thermokarst																										
Watershed areas		Eluvial, eluvial-deluvial (e, ed), bedrock	Layered, lenticular (loam, silt) massive (sand), crust-like and basal ice cement (coarse-clastic deposits), fracture ice (bedrock)	C 35–55 П 30–50 ГО 25–45	Frost cracking																										
Near-watershed areas, slowly drained		Biogenic, eluvial, (b IV, e, ed)	Layered, lenticular, reticulated (peat, loam, silt) massive (sand), systems of thin polygonal ice wedges	T 65–85 (70–90) C 45–65 П 30–45	Therokarst, frost heave																										
Slopes		Complex of slope deposits (ds, dc, c) bedrock	Layered, lenticular (loam, silt) massive (sand), crust-like, basal ice cement, "goltsovy" ice (coarse-clastic deposits), fracture ice (bedrock)	C 30–65 П 30–50 ГО 30–50	Frost creep, solifluction, frost cracking, kurums (rock streams rock fields)																										
Mountain apical		Bedrock, eluvial, eluvial-deluvial (e, ed)	Fracture ice (bedrock), basal, crust-like, reticulate, "goltsovy" ice (coarse-clastic deposits)	ГО 25–45	Frost weathering, frost sorting																										
Flat mountain apical		Eluvial, eluvial-deluvial (e, ed), bedrock	Layered, lenticular, crust-like (loam with crushed stones) massive (sand with crushed stones), basal, reticulate, "goltsovy" ice (coarse-clastic deposits), fracture ice (bedrock)	Сщ 25–45 Пщ 25–35 ГО 25–45	Frost weathering, frost sorting																										
Flat mountain apical, slowly drained		Biogenic, eluvial (b IV, e)	Layered, lenticular, reticulate (peat, loam, silt), massive (sand), systems of thin polygonal ice wedges	T 75–90 (80–95) C 45–65 П 30–40	Thermokarst, frost heave																										
Mountain slopes		Complex of slope deposits (c, dc, ds), bedrock	Layered, lenticular, crust-like (loam with crushed stones), massive (sand with crushed stones) basal, reticulate, "goltsovy" ice (coarse-clastic deposits), fracture ice (bedrock)	Сщ 30–70 Пщ 25–45 ГО 25–65	Frost weathering, kurums, solifluction, frost creep																										
Piedmont outwash plains		Fluvio-glacial (f II – III)	Massive (sand), crust-like, basal (boulder-gravel deposits with filling material), in places lenticular (loam, silt) and thin polygonal ice wedges	No data	Frost cracking, thermokarst																										
Piedmont moraine areas		Glacial (g III)	Crust-like, basal (boulder-gravel deposits with filling material), in places lenticular, reticulate (loam, silt) and systems of thick polygonal ice wedges	No data	Frost cracking, thermokarst																										
Mountain valley terraces		Lacustrine-alluvial (la III)	Layered, lenticular, reticulate, banded (peat, loam, silt) massive (sand), systems of thick polygonal ice wedges	T 65–80 (70–95) C 50–70 (65–80) ПГ 25–35	Thermokarst																										
Glacial valleys		Glacial (g III)	Lenticular, crust-like, massive (boulder-gravel deposits with filling material)	БГ 25–40	Frost cracking, thermokarst,																										
Mountain valleys		Alluvial (a IV)	Layered, lenticular, reticulate, (peat, loam, silt) massive, crust-like, in places thin polygonal ice wedges (sand-gravel deposits)	T 65–90 (70–95) C 45–65 (50–75) ПГ 25–45	Frost cracking, thermokarst, frost heave																										

Signatures in the column "Volumetric ice content":  
T – clay, C – loam, silt, П – sand, ПГ – sand-gravel deposits, ГО3 – "goltsovoy" deposit (coarse-clastic deposits with ice filling), Сщ – loam, silt with crushed stones, Пщ – sand with crushed stones

In cells are given as numerator the ground temperature at the annual zero amplitude and as denominator the active layer thickness (in brackets in each cases the prevailing values);  
Signatures CTC – seasonally thawing layer, CMC – seasonally freezing layer; нет сведений – no data