

### **Compiling Principles**

As basic units for the landscape mapping were selected:

Type of terrain (terrain type, site type) and

Type of landscapes (landscape type)

### ***Terrain type***

The leading factors in the formation of this unit are relief and lithological (cryolithological) characteristics of rocks acting on a broad climatic background.

Terrain type as a landscape complex is formed under the influence of regional as well bioclimatic factors.

### ***Regional factors.***

Under uniform bioclimatic conditions the cryogenic component of the terrain type varies significantly depending on historical-genetic and geologic and geomorphologic features of the territory.

For example:

**Table 1.5**

### ***Rock temperature variations at the depth of zero annual amplitude for dominant site types of regions adjacent to the Lena-Vilyu area.***

Terrain type	Landscape type	Region	Rock temperature [°C]	Data source
Lake-marsh	Southern tundra	3 <sup>rd</sup> marine plain	-4.3 ÷ -4.6	Landscapes..., (1983)
		2 <sup>rd</sup> – 1 <sup>st</sup> marine plain	-3.2 ÷ -5.0	
Upland	Middle taiga	Lena-Amga-sandstone-region	-0.5 ÷ -2.4	Bosikov et al., (1985)
		Lena-Amga-limestone-karst region	0.0 ÷ -0.2	
Upland plain, apical	Mountain woodland	Aldan Region, erosion-denudation plain	0.0 ÷ -2.0/ 0.0 ÷ 1.5	Shats et al., (1987)
		Sivaglin Region, basement strata series	0.0 ÷ -0.5/ 0.0 ÷ 2.0	

### ***Used terms and their translation:***

тип местности - terrain type, site type  
тип ландшафта - type of landscape  
подтип ландшафта - subtype of landscape  
род ландшафта - genus (family) of landscape  
мерзлотно-ландшафтная провинция - province of permafrost landscapes

Boundaries of **landscape types and subtypes** are determined by the respective types of soils and vegetation resulting from the ratio of heat and moisture. The content of these landscape units is conditioned by hydroclimatic factors – radiative index of dryness, hydrothermal coefficient according to Selininov, the sum of active temperatures etc., as well as the productivity of the biota, its phytomass. The **genus of landscape** reflects the character of permafrost distribution – continuous, discontinuous, islands.

The **province of permafrost-landscapes** represents a succession of regional complexes. This term is used as basis unit for the mapping. The permafrost-landscape province is characterized by a complex of typological complexes - of terrain types and landscape types (subtypes, families) that are caused by geologic-geomorphologic and bioclimatic peculiarities within the territory.

### Legend to the map

Legend to the map has two sections. The first show the relationship between considered by us two categories of typological complexes and their cryogenic components – ice content of deposits, temperature at the depth of zero annual amplitude, thickness of seasonally thawing and seasonally freezing layer. This section of the legend is given in a tabular form.

**Table 1.9**      **Schematic diagram showing the construction of the legend-table**

<p>Geological-geomorphologic factor /Bioclimatic factor</p>	<p>Groups of landscape types (latitudinal-zonal types)</p> <p>↓</p> <p>∨</p> <p>Landscape type ( Taiga)</p> <p>↓</p> <p>∨</p> <p>Subtype of Landscape (middle Taiga)</p> <p>↓</p> <p>∨</p> <p>Genus of landscape (continuous permafrost)</p>
<p>Terrain type (stratigraphic-genetic complex)— prevailing cryogenic structures and massive ice — volume ice content of deposits — prevailing geocryological processes</p>	<p>↓</p> <p>∨</p> <p>Temperature of permafrost ,</p> <p>—&gt;</p> <p>Thickness of the active layer (seasonally thawing or seasonally freezing layer)</p>

The second section is devoted to the permafrost-landscape regionalization. The systematization of provinces is made according to the scheme:

***Region /Country — Group of provinces — Province.***

For the comfort of systematization of natural conditions provinces within the Region are combined in groups, for example provinces of northern Taiga with continuous permafrost, or provinces with prevailing of natural complexes of the mountain-tundra with continuous permafrost etc.

In addition, concrete characteristics of natural complexes and identified causal interconnections are reflected in the cadastre of permafrost landscape.