Spatial vegetation structure of southern tundra from three sectors of Siberian Arctic

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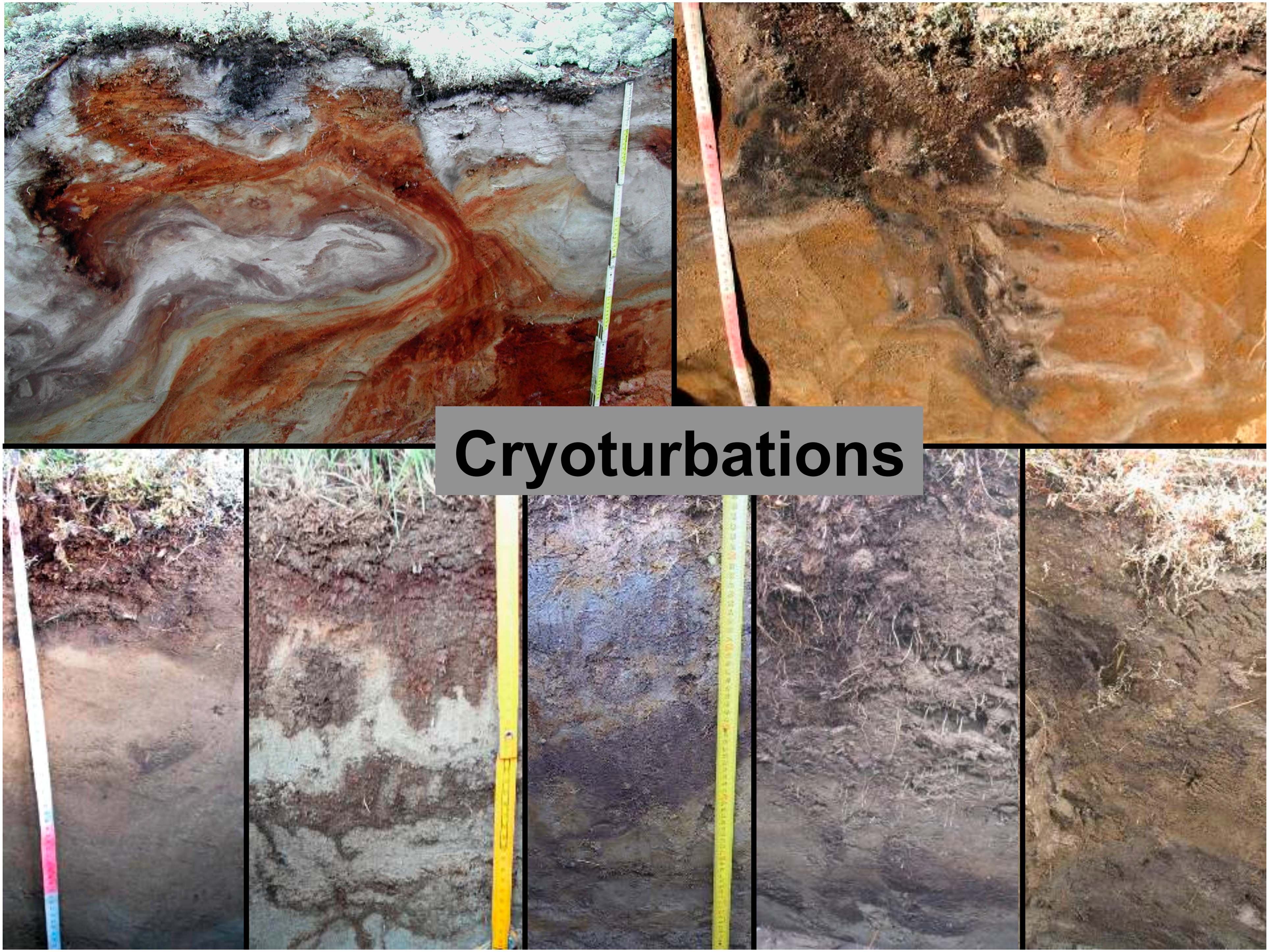
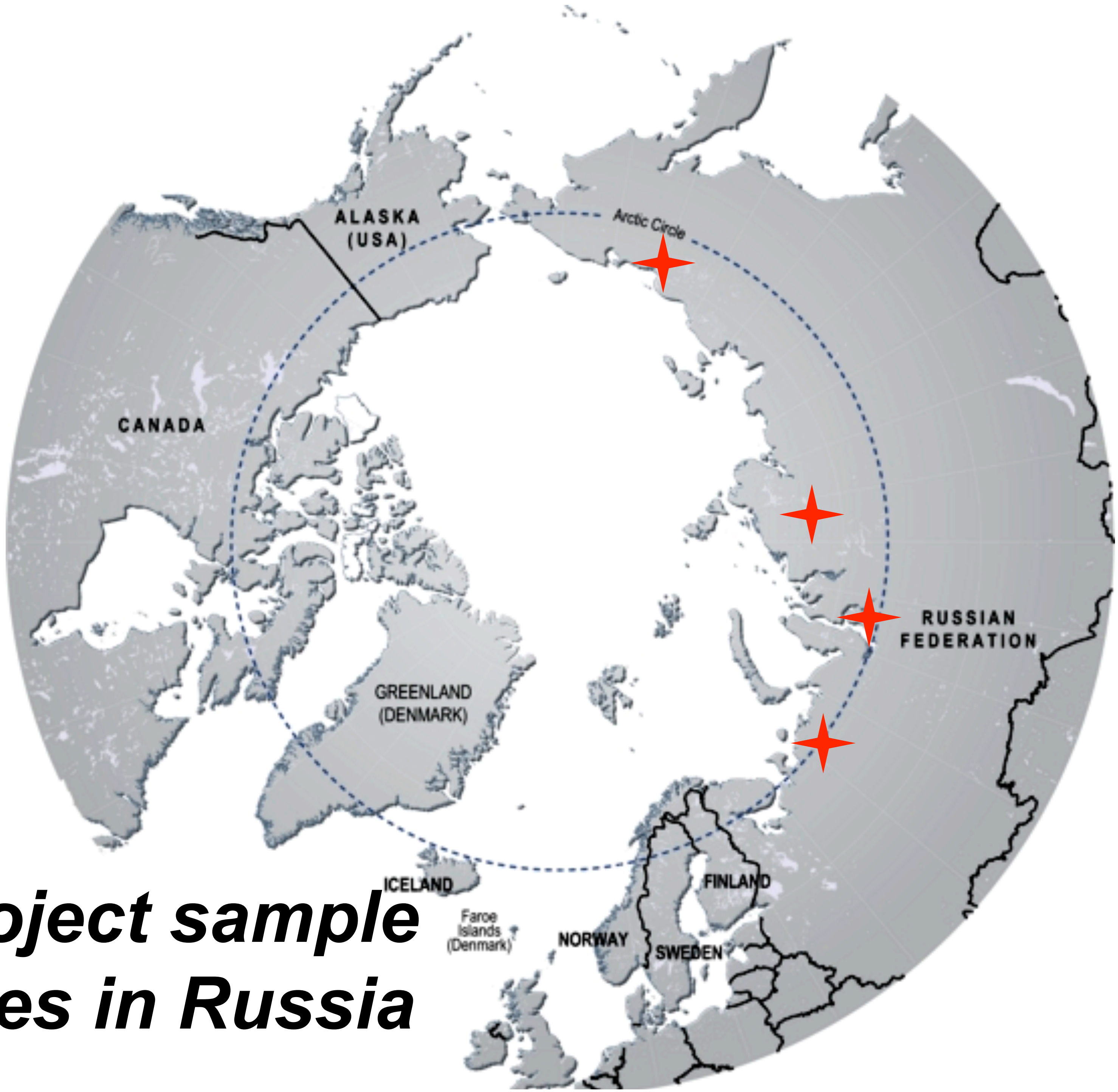
Taymir 2011

Cryoturbations



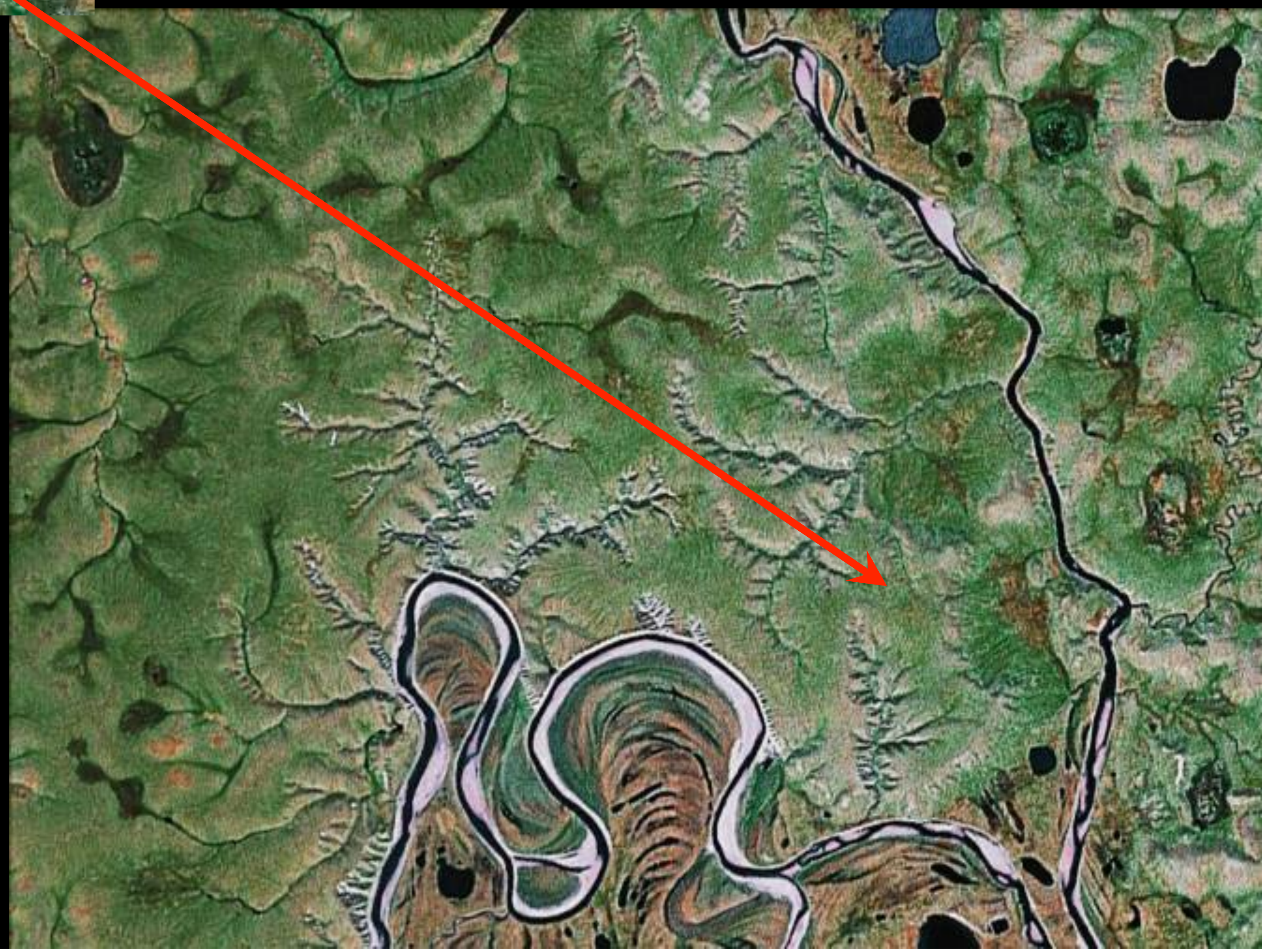


Project sample sites in Russia

Site description

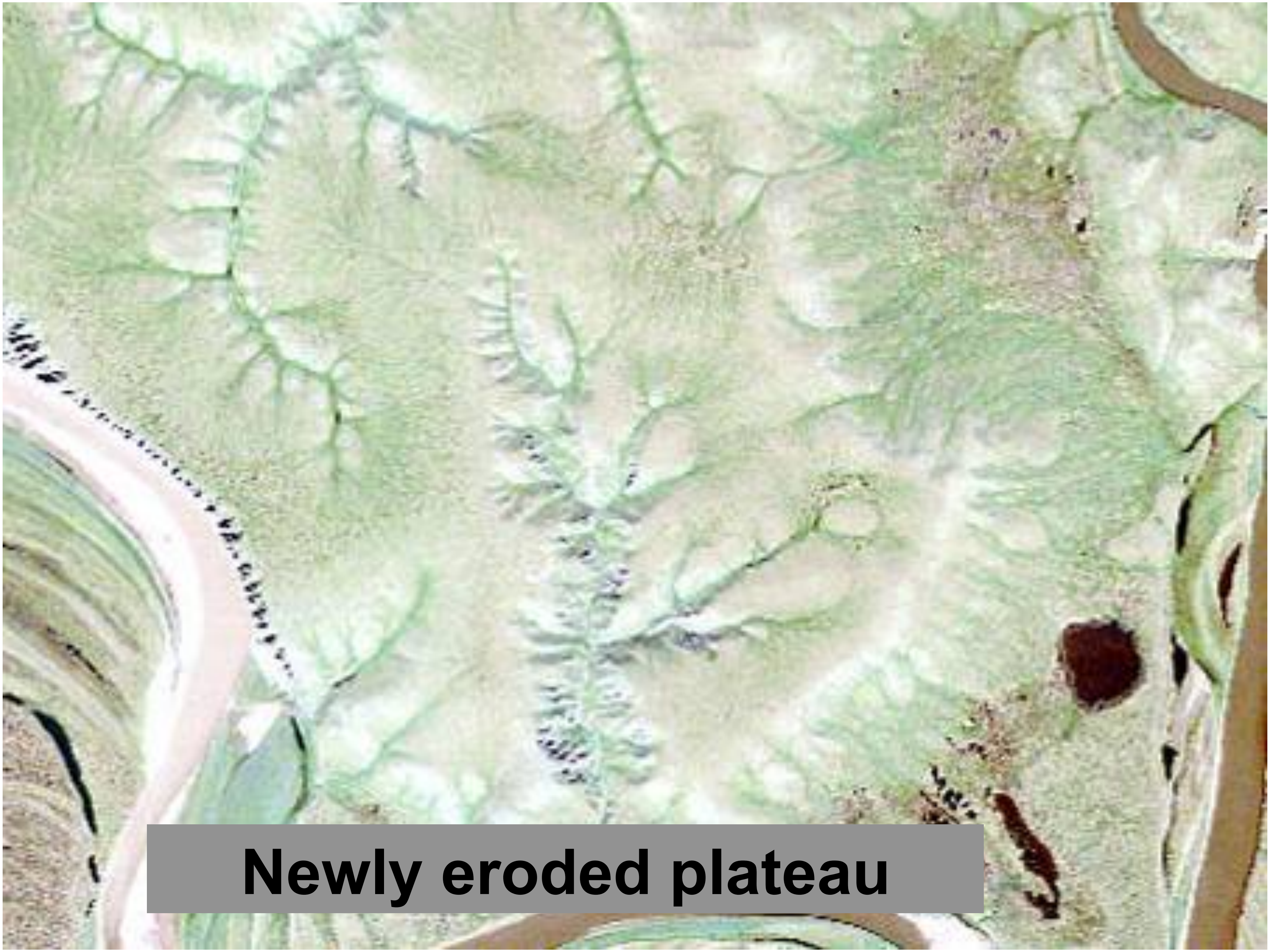
	Logata	Shalaurovo	Tazovskiy
Latitude	73°26	69°26'	67°16'
Longitude	98°22'	161°42'	78°50'
Altitude (m)	38	26	29
Relief	Drained plain	Drained plain	Drained plain
Substrate	Loam	Loam	Loam or sandy loam
Substrate origin	Marine	Eolian	Marine or fluvial
Undersoil	Soft rock	Bed rock	Sandy loam or sand

Logata
(Taymir)



Lat 73°26
Long 98°22'
Alt 38 m

5 km


Newly eroded plateau

Logata

6 VEGETATION SYNTAXA:

Shrubby grass tundra – *Pinguicula villosa, Pedicularis lapponica*

Dryas tundra – *Dryas punctata, Trisetum sibiricum, Cerastium maximum*

Palsa bog - *Polytrichum strictum, Rubus chamaemorus*

Sedge fen - *Carex stans, Comarum palustre, Carex chordorrhiza, Hierochloe pauciflora, Caltha palustris*

Erosiopytes – *Descurainia sophoides, Taraxacum taimirense*

Eriophorum fen – *Eriophorum shceuchzeri, E. polystachyon, Dupontia fisheri*

Shrubby grass tundra

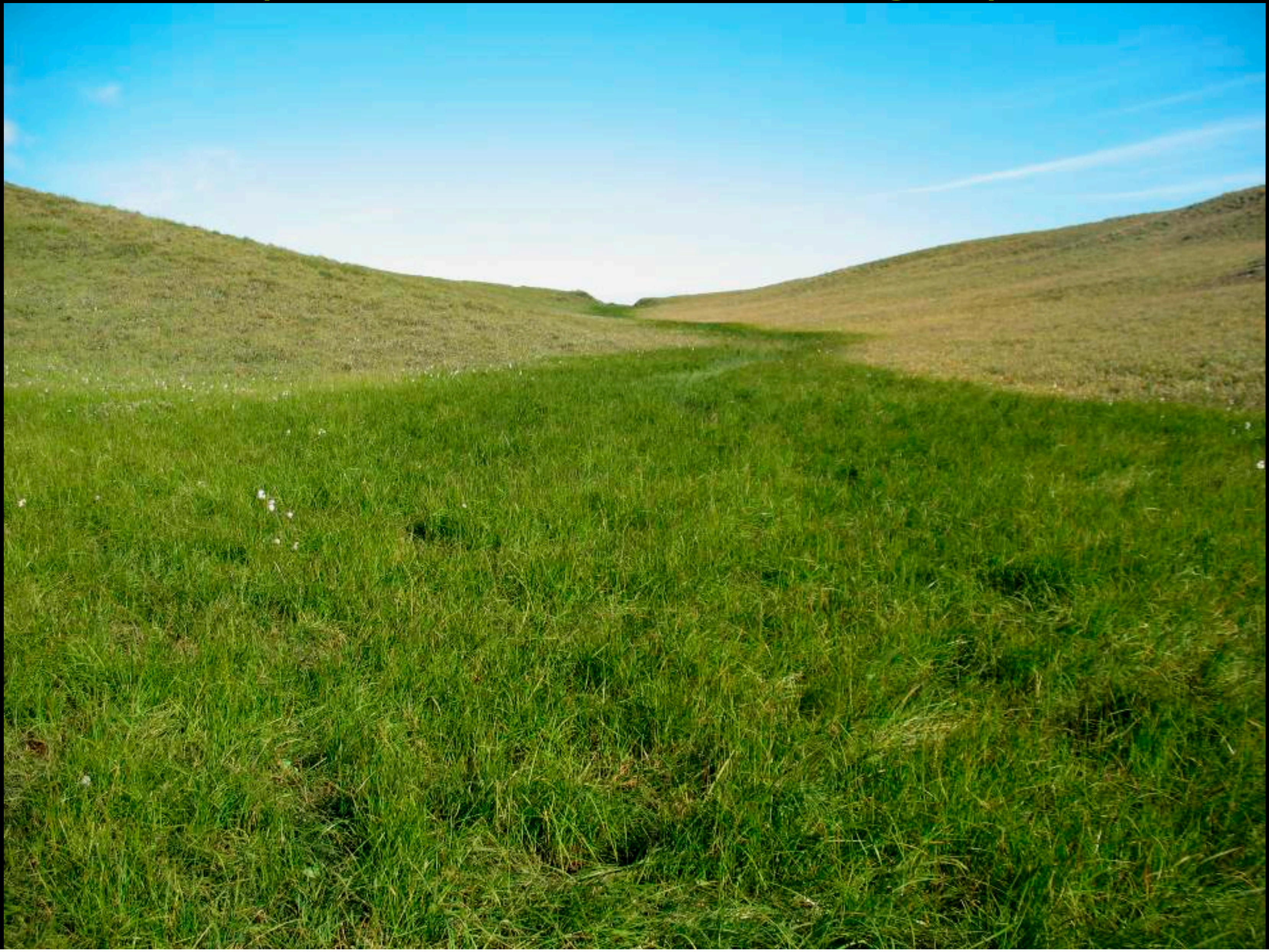
(*Loiseleuria-Vaccinietea*)

Dryas tundra

(*Loiseleuria-Vaccinietea*)

Eriophorum fen

(*Scheuchzerio-Caricetea nigrae*)



Eriophorum fen

(*Scheuchzerio-Caricetea nigrae*)

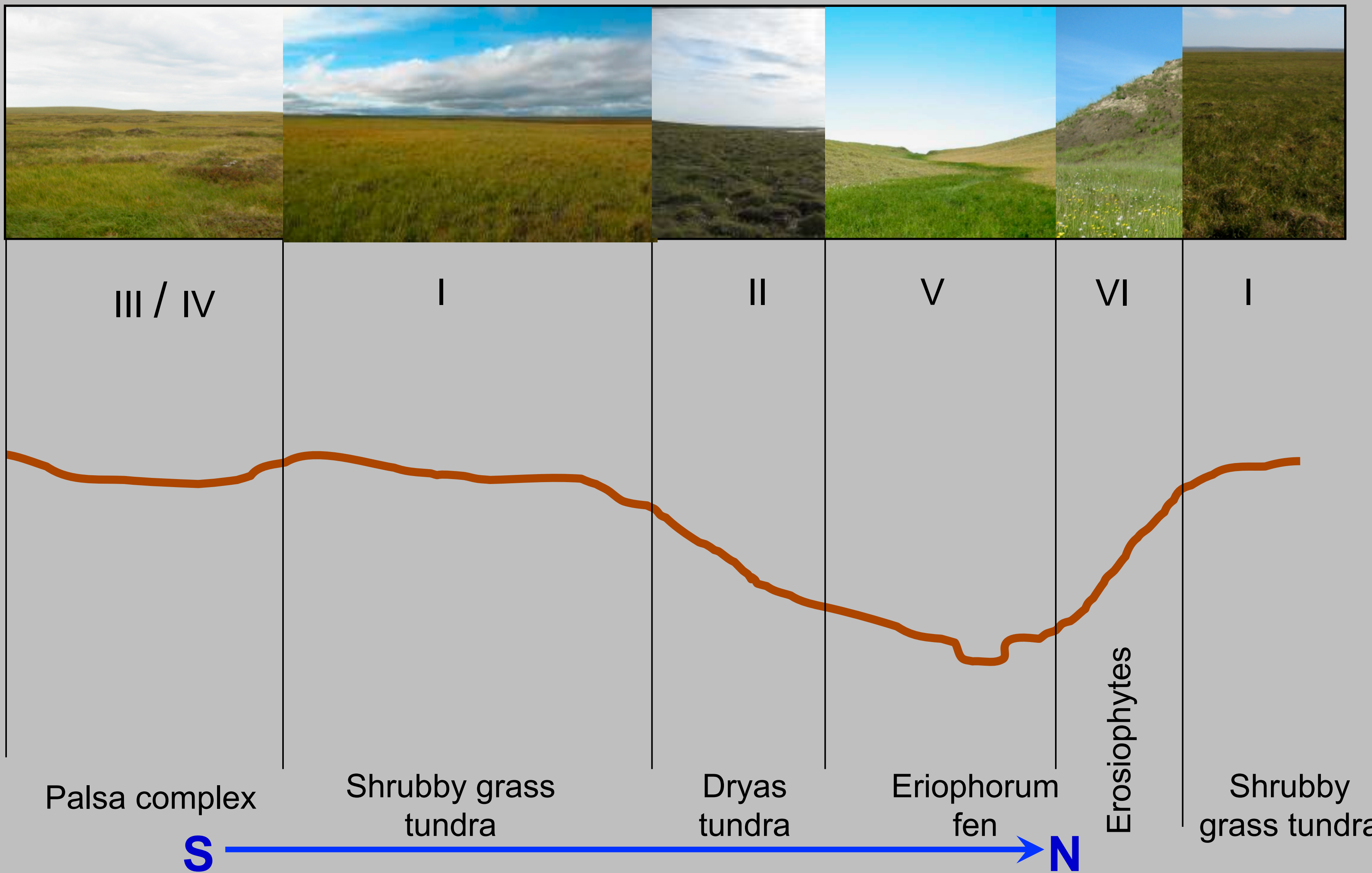
Erosiophytes

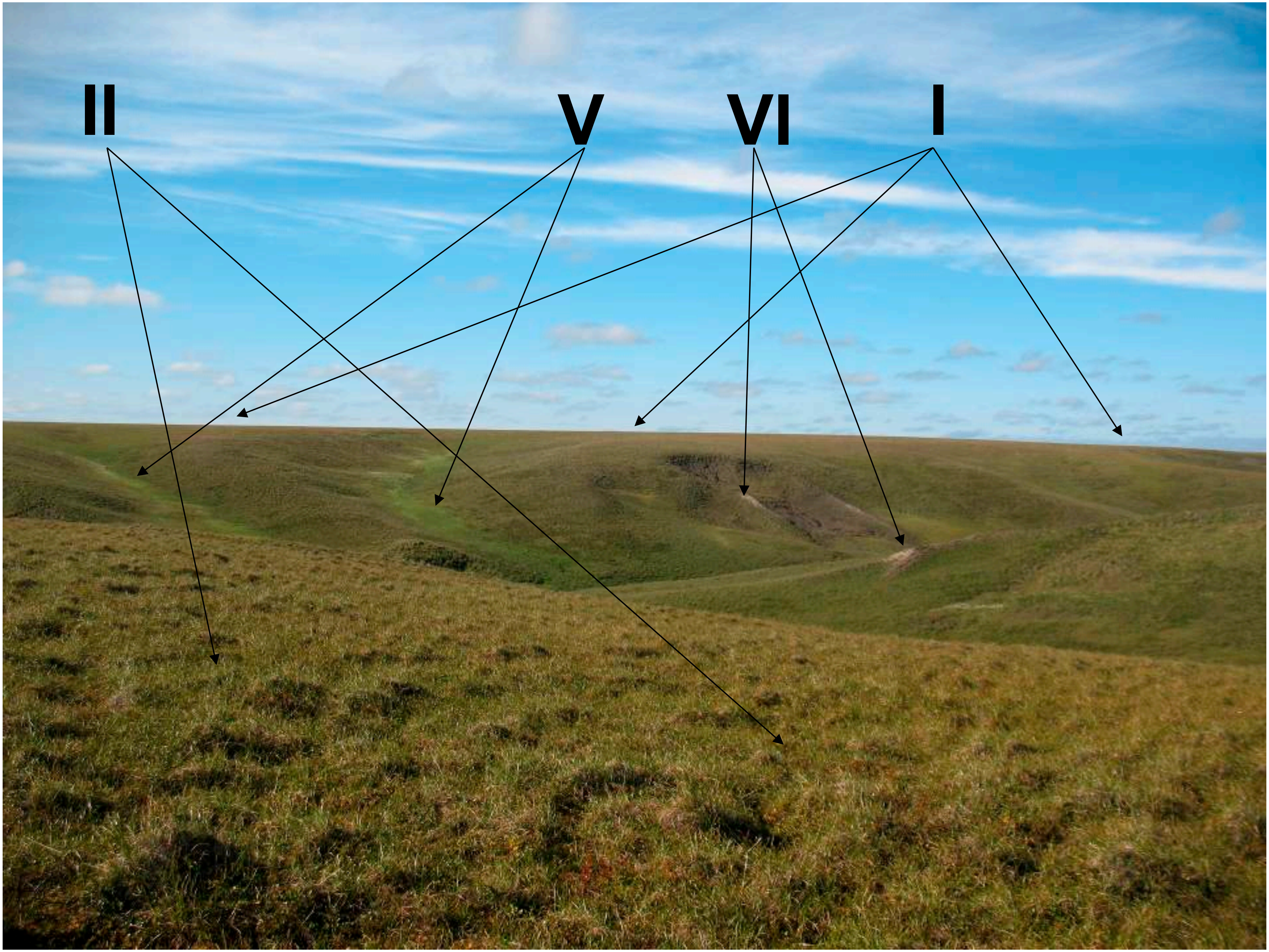
(?)

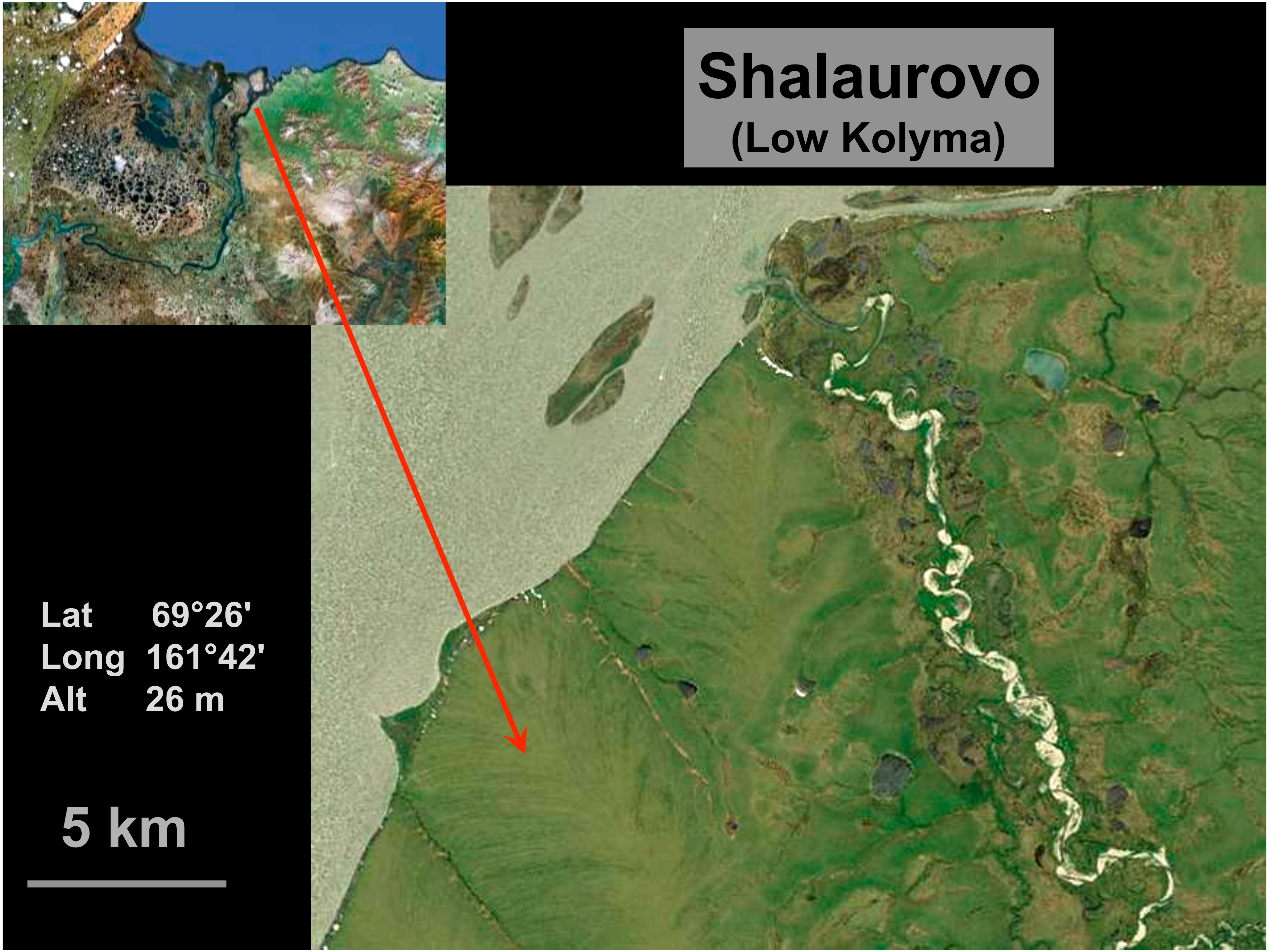
Polygonal palsa bog (*Oxycocco-Sphagnetea)*

+ Sedge fens (*Scheuchzerio-Caricetea nigrae*)

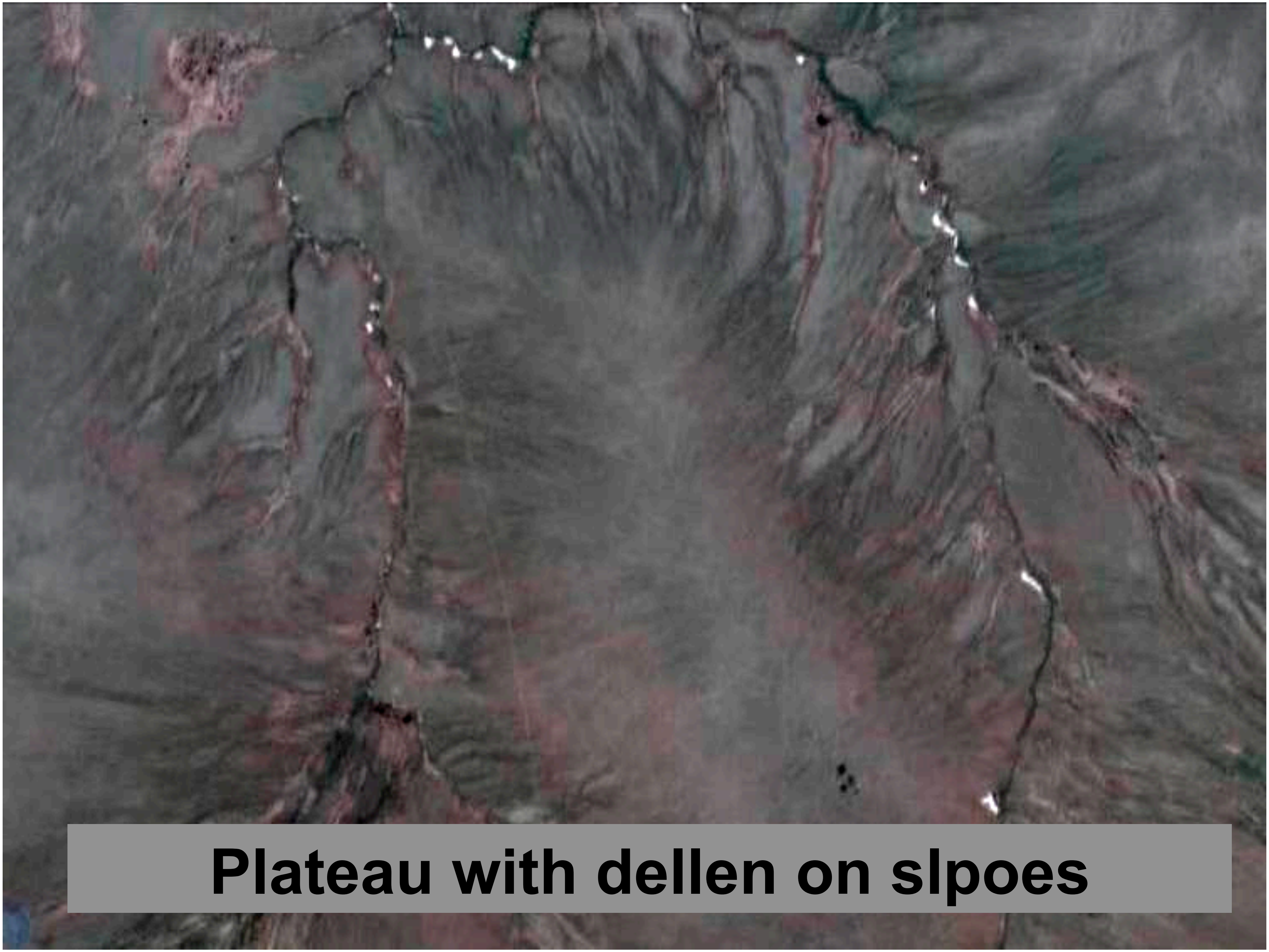
Main land cover types in Logata site




II
V
VI
I



Shalaurovo
(Low Kolyma)
Lat 69°26'
Long 161°42'
Alt 26 m
5 km



Plateau with dellen on slpoes

SHALAUROVO

6 VEGETATION SYNTAXA:

Shrubby tussock tundra - *Eriophorum vaginatum, Tomentypnum nitens, Aulacomnium palustre, Eriophorum polystachyon*

Shrubby grass tundra - *Bistorta elliptica, Aconogonon tripterocarpum, Rhytidium rugosum, Anemonastrum sibiricum, Hedysarum hedysaroides, Claytonia acutifolia*

Palsa bog - *Polytrichum strictum, Rubus chamaemorus*

Sedge fen - *Carex stans, Comarum palustre, Salix fuscescens, Pedicularis sudetica, Hierochloe pauciflora, Sphagnum squarrosum, Caltha palustris*

Willow community - *Warnstorfia sp., Calamagrostis langsdorffii, Aconitum productum*

Horsetail community - *Bistorta vivipara, Equisetum arvense, Carex lachenalii, Trisetum spicatum, Polemonium boreale, Salix reticulata, Salix lanata, Poa paucispicula, Stellaria irrigua*

Shrubby tussock tundra

(*Loiseleuria-Vaccinietea*)

Shrubby grass tundra

(*Loiseleuria-Vaccinietea*)

Willow communities (*Loiseleuria-Vaccinietea?*)

+ Sedge fens (*Scheuchzerio-Caricetea nigrae*)

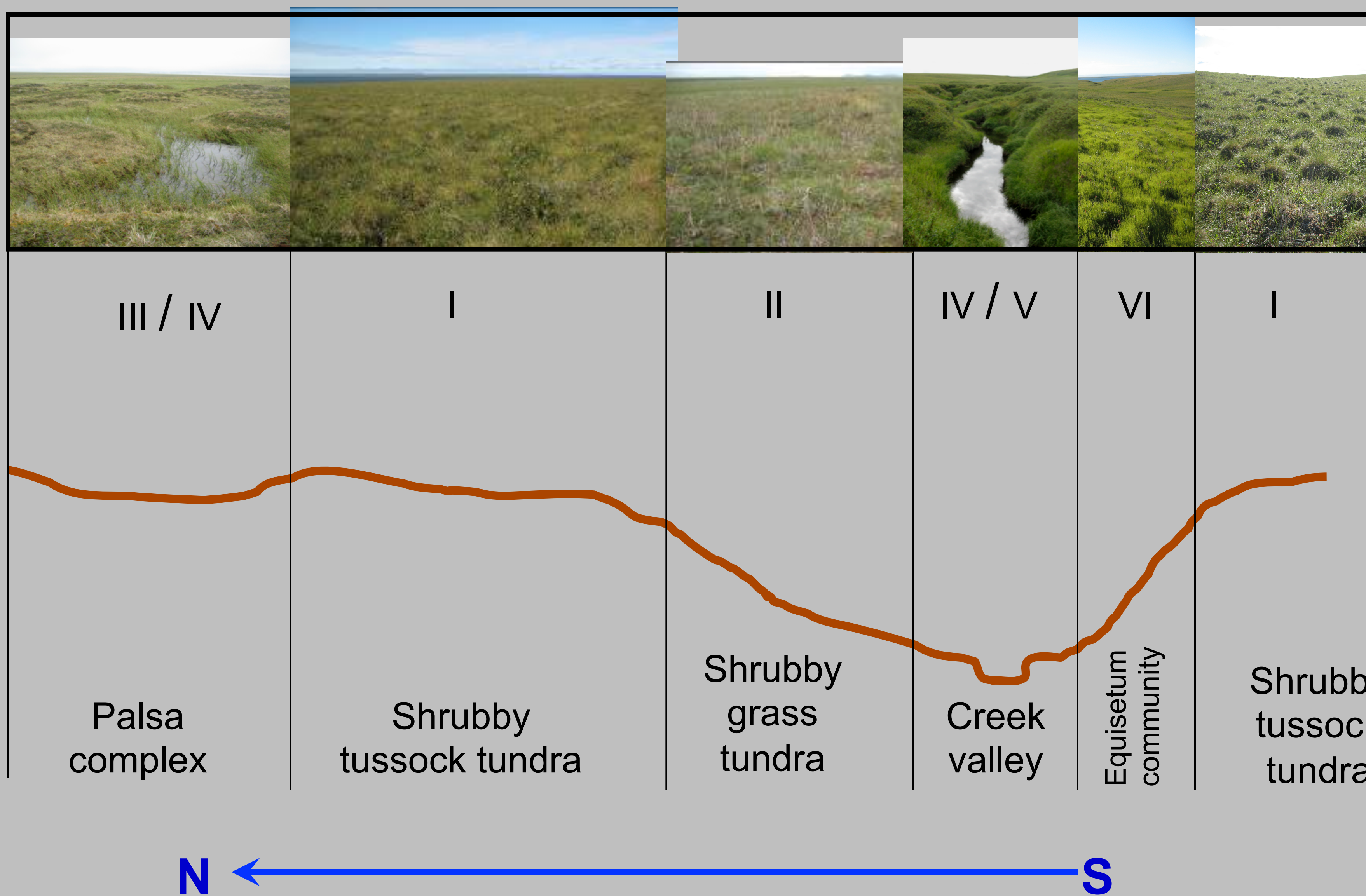
Horsetail communities

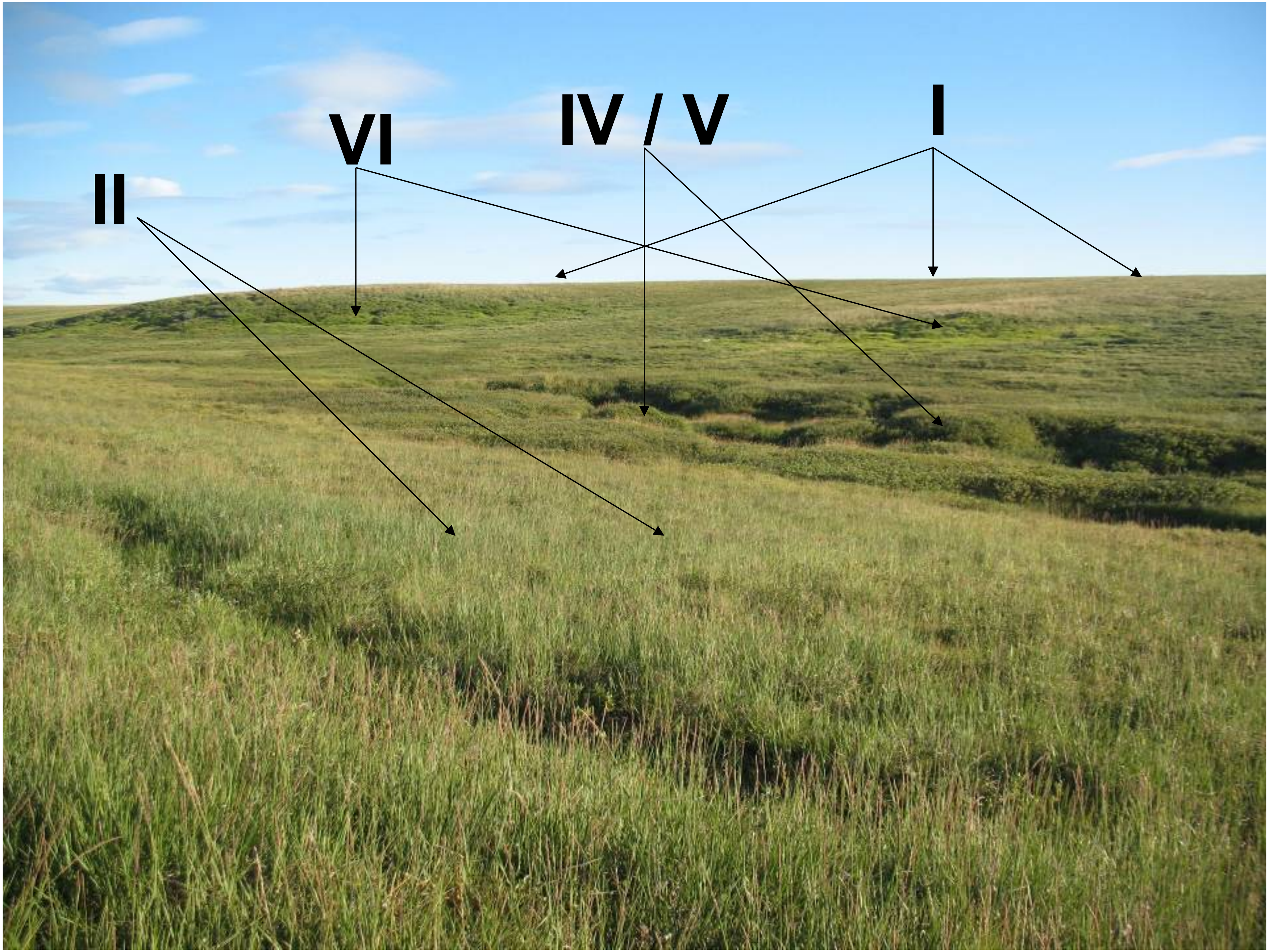
(*Salicetea herbaceae*)

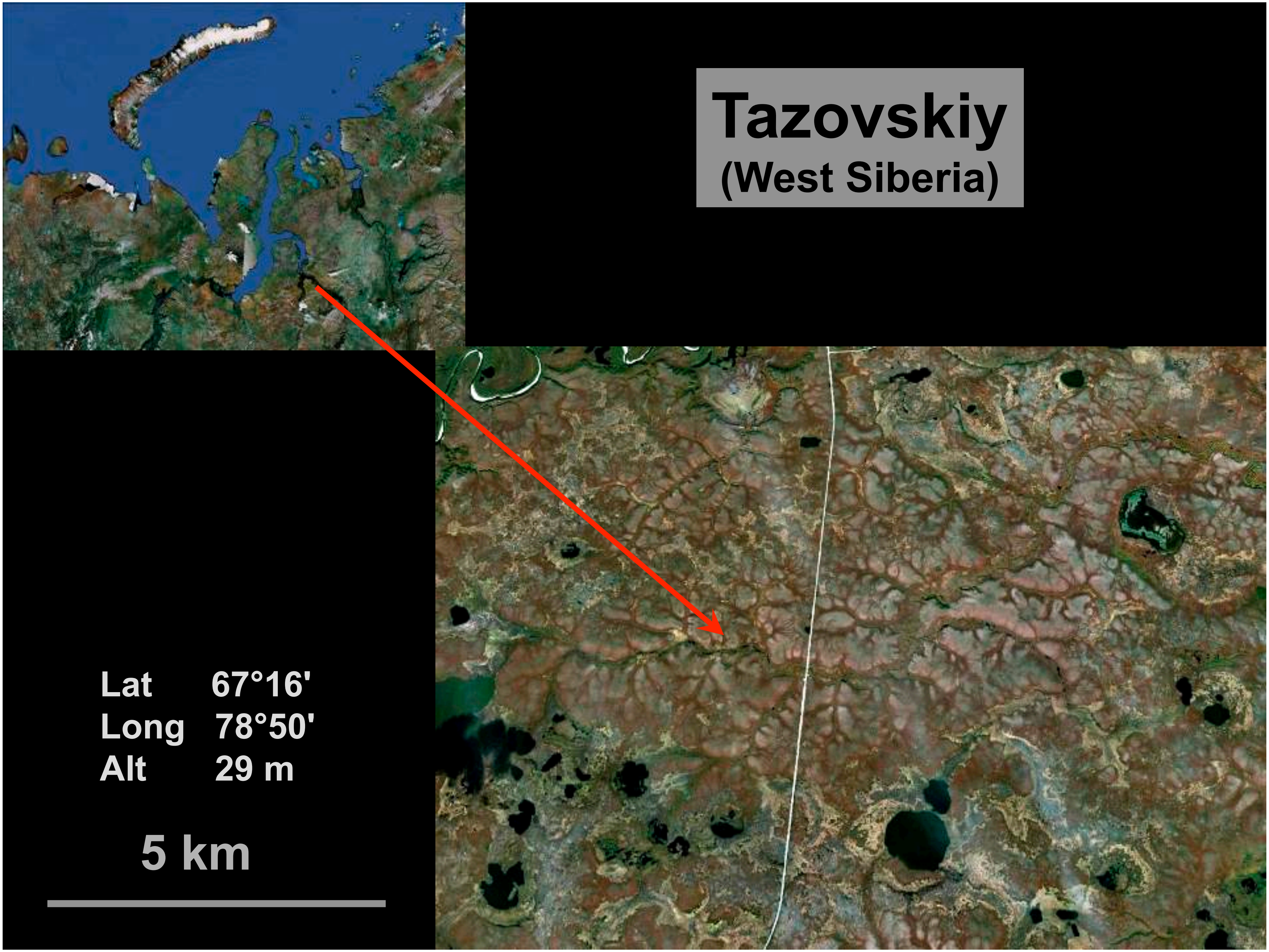
Polygonal palsa bog (*Oxycocco-Sphagnetea)*

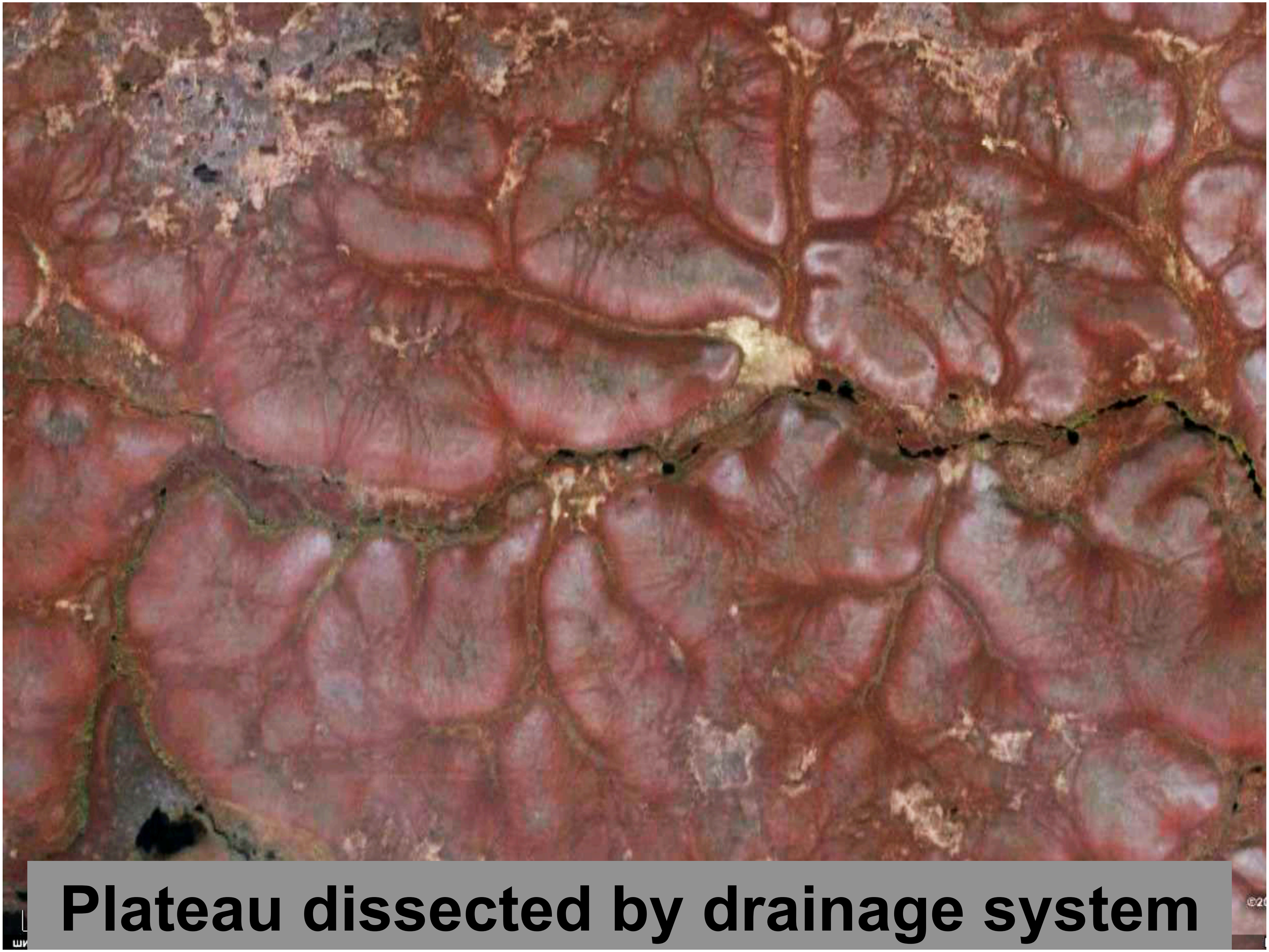
+ Sedge fens (*Scheuchzerio-Caricetea nigrae*)

Main land cover types in Shalaurovo site




VI
IV / V
I
II


Tazovskiy
(West Siberia)
Lat 67°16'
Long 78°50'
Alt 29 m
5 km



Plateau dissected by drainage system

TAZOVSKIY

7 VEGETATION SYNTAXA:

Shrubby lichen tundra - *Carex globularis, Pedicularis labradorica, Cladonia stellaris*

“Spotty” tundra - *Alectoria nigricans, A. ochroleuca, Flavocetraria cucullata, Carex glacialis*

“Ernik” - *Pleurozium schreberi*

Palsa bog - *Polytrichum strictum, Rubus chamaemorus*

Sedge fen - *Carex stans, C. rostrata, Comarum palustre*

Willow community - *Aconitum baicalense, Salix lanata*

Wet grassland - *Calamagrostis langsdorffii, Polemonium boreale*

Shrubby lichen tundra

(*Loiseleuria-Vaccinietea*)

“Spotty” tundra

(*Loiseleuria-Vaccinietea*)

"Ernik"

(*Loiseleuria-Vaccinietea*)

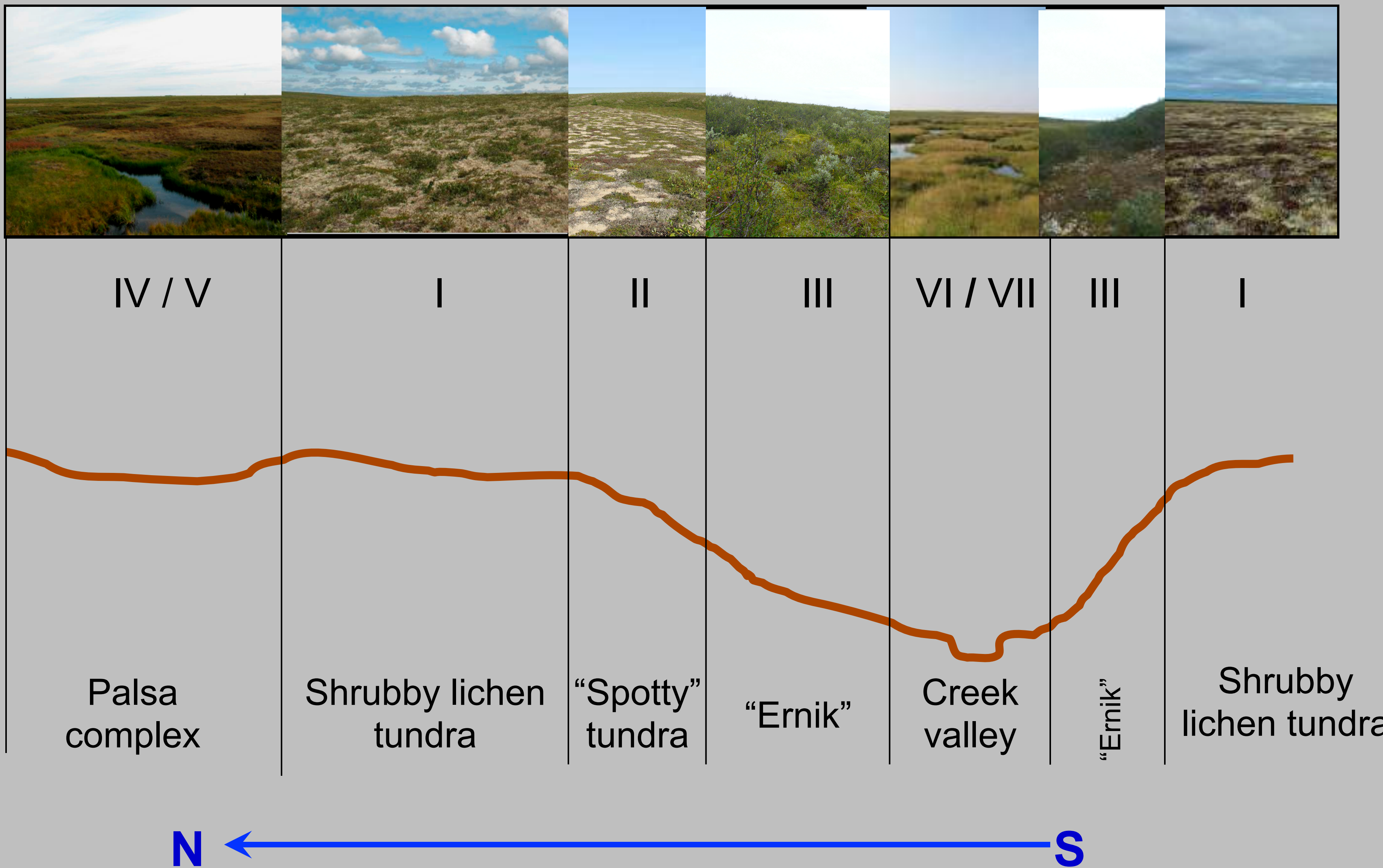
Polygonal palsa bog (*Oxycocco-Sphagnetea)*

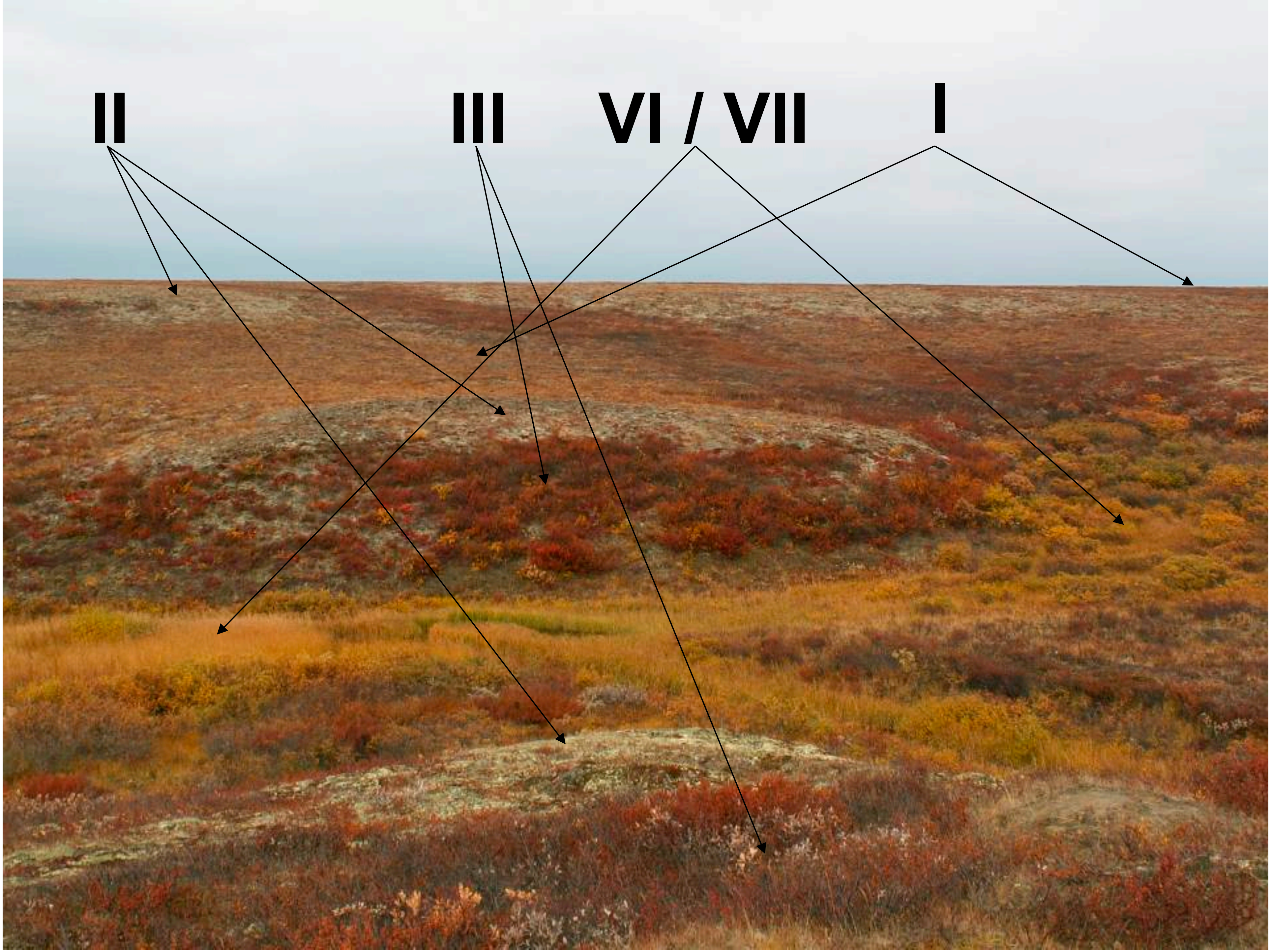
+ Sedge fens (*Scheuchzerio-Caricetea nigrae*)

Willow communities (*Mulgedio-Aconitetea*)

+ wet grasslands (*Phragmito-Magnocaricetea?*)

Main land cover types in Tazovskiy site

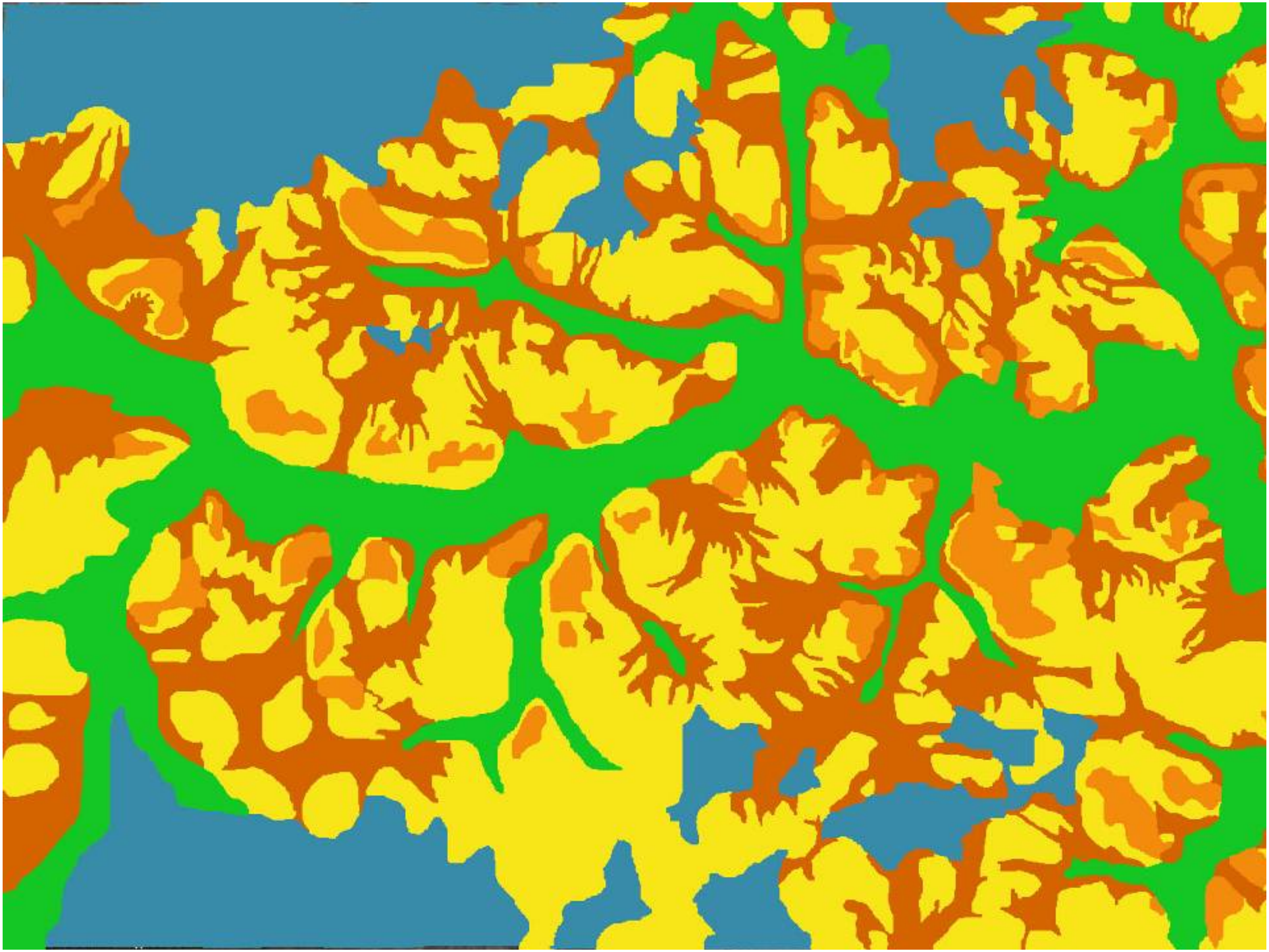



II
III
VI / VII
I

CONCLUSION

Vegetation diversity and spatial structure mainly depends on:

- **longitude (history?);**
- **origin and composition of substrate;**
- **relief structure;**
- **erosion intensity.**




Thank you
for your attention