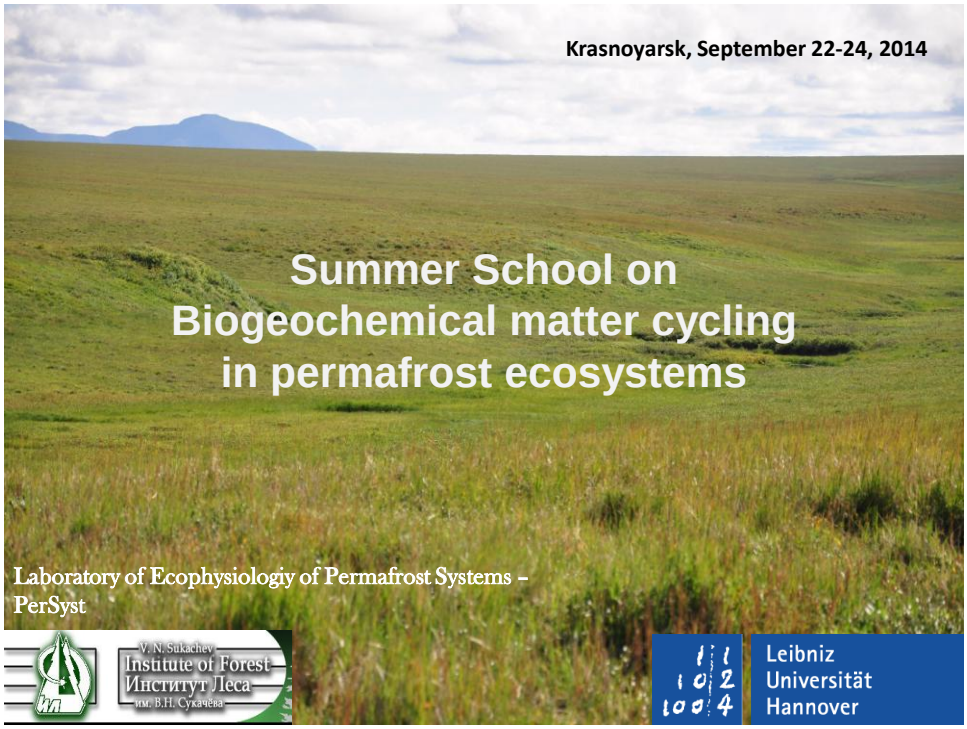
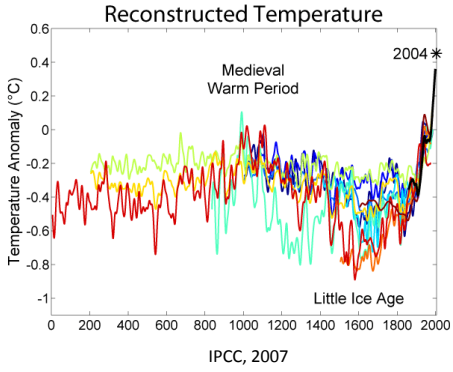
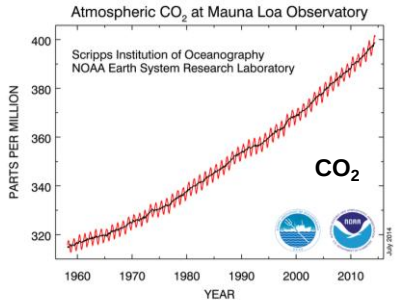


Why to study permafrost ecosystems?

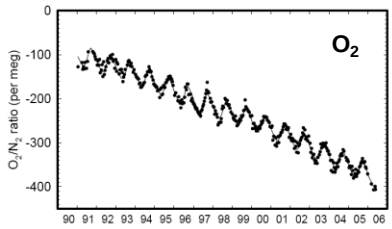


IPCC, 2007

Emission of greenhouse gases leads to a positive temperature anomaly

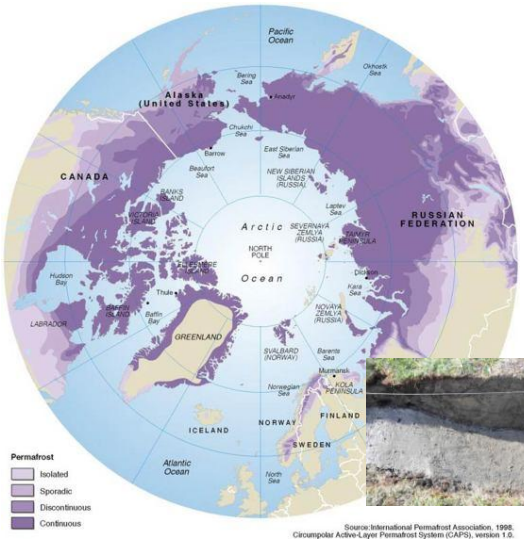


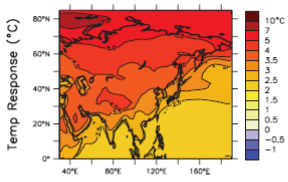
Earth System Research Laboratory, 2014

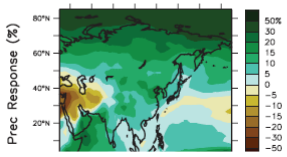


Scripps Institution of Oceanography, 2014

Permafrost soils: Distribution and Climate Change







IPCC, 2007
Regional Climate Projections

Frozen soils in circumpolar regions

Permafrost soils

= Gelisols (USDA Soil Taxonomy)

= Cryosols (WRB of FAO)

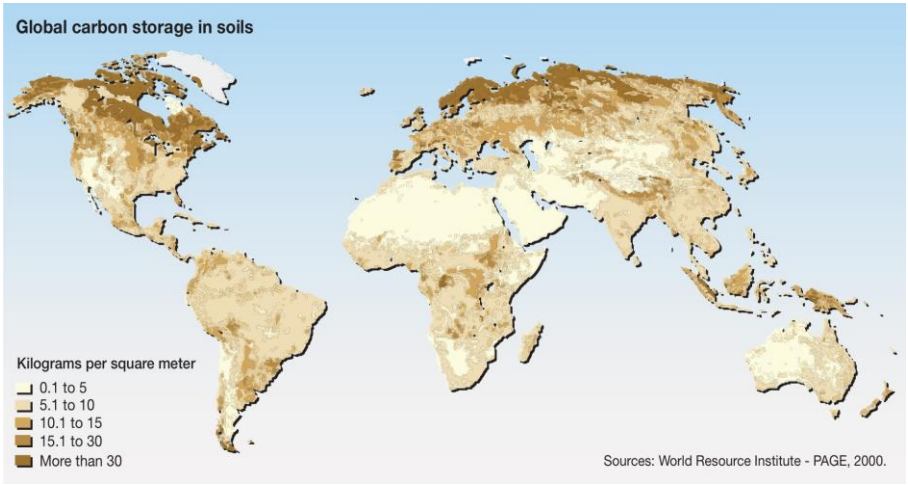
Active layer

- Thaws seasonally
- Shows signs of cryoturbation
- Regularly is anaerobic

Permafrost soil definition

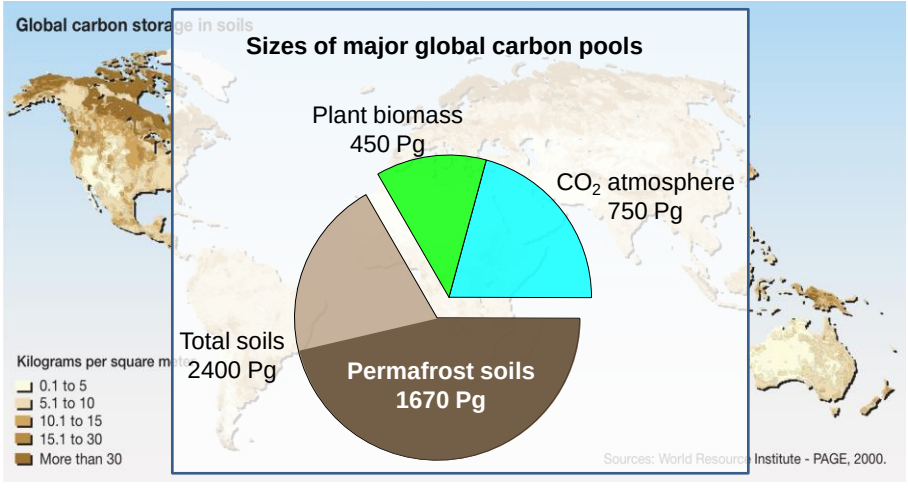
- Soil temperature <0°C within 2 consecutive years
- Active layer thickness <100 cm, or
- Acitve layer thickness <200 cm if there are signs of cryoturbation

Global Carbon storage



Permafrost-affected soils show the highest carbon density of all soils worldwide

Global Carbon storage



Small changes in the size of the carbon pool within permafrost soils strongly affect the size of the atmospheric CO_2 pool

22 September 2014

Program

September 22

09.00-09.10	**REGISTRATION**	
09.10-09.30	**GUGGENBERGER G.** "Overview and rationale of the summer school"	Big conference hall
09.30-10.30	**KORETS M.** "GIS and remote sensing techniques to infer landscape vegetation patterns and processes"	Big conference hall
10.30-11.00	Coffee-break	Big conference hall
11.00-12.00	**GUGGENBERGER G.** "Permafrost soils and their organic carbon storage"	Big conference hall
12.00-13.00	**IM S.** "Analysis and modeling of water balance of permafrost regions"	Big conference hall
13.00-14.30	Lunch	
14.30-15.30	**KRIVOBOKOV L.** "Methods of field surveys of vegetation structure, biomass analysis and floristic composition"	Big conference hall
15.30-16.30	**RYZHKOVA V.** "Vegetation of permafrost ecosystems: use of GIS and remote sensing for classification and mapping"	Big conference hall
16.30-17.00	Coffee break	
17.00-18.00	**KHARUK V. "**Consequences of climate change on forestry in northern latitude ecosystems"	Big conference hall
18.00	Dinner (for students from St. Petersburg and Hannover)	

22 September 2014

Program

September 23

09.00-10.00	**MIKUTTA R.** "Transformation and stabilization of organic matter in permafrost soils"	Big conference hall
10.00-12.30	Working groups (incl. coffee)	Big conference hall
12.30-13.30	Lunch	
13.30-14.30	**EVGRAFOVA S.** "Fate of organic matter in permafrost soils: microbial transformation"	Big conference hall
14.30–19.00	City tour	
19.00	Summer school dinner	

September 24

09.00-10.00	**SHIBISTOVA O.** "Carbon exchange between soil and atmosphere in permafrost ecosystems"	Big conference hall
10.00-11.00	**PROKUSHKIN A.** "Controls of dissolved inorganic and organic carbon discharge from permafrost ecosystems"	Big conference hall
11.00-12.30	Working groups (incl. coffee)	Big conference hall
12.30-14.00	Lunch	
15.00-19.00	"Stolby" natural reserve tour	