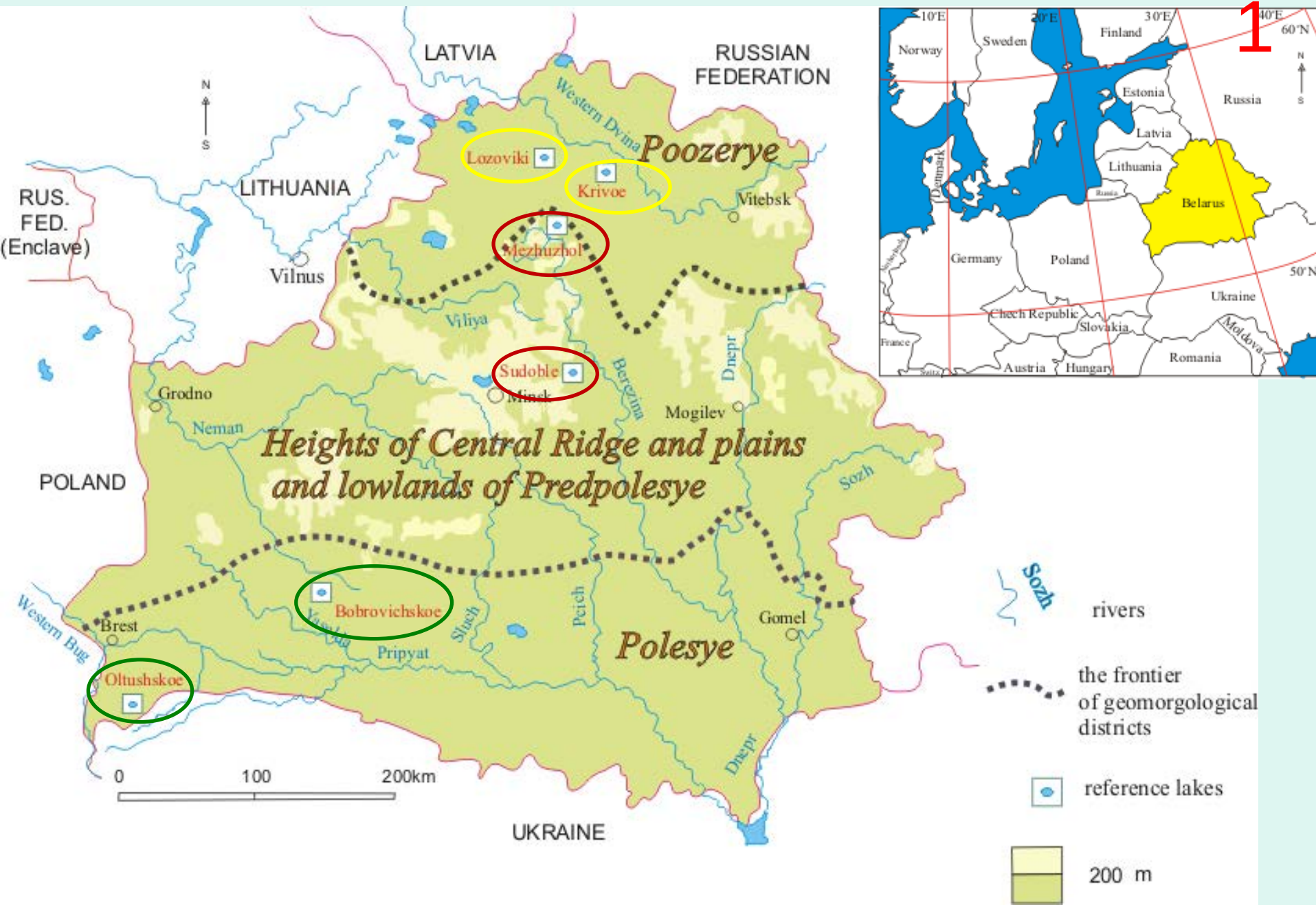


Aliaksei Novik

The development of lake sedimentation since Older Dryas in Belarus



Belarus in the context of Europe and the location of the study lakes



For research the data of the best studied reference cores of lakes were used :

Lozoviki (palynologic, radiocarbon, isotope-oxygen data),
Krivoe (palynologic, radiocarbon data),
Mezhuzhol (palynologic, radiocarbon data),
Sudoble (palynologic, radiocarbon data),
Boborovichkoe (geochemical, palynologic, radiocarbon data),
Oltushskoe (geochemical, palynologic, radiocarbon data)

At studying the history of lake development of Belarus a wide range of standard methods:

- **palynologic** (Zernitskaya ,V. P., Elovicheva, Ya. K.);
- **isotope-oxygen** (Mahnach, N. A., Zernitskaya, V. P.);
- **radiocarbon** (Mikhailov, N. D.).
- **geochemical** (Zhuhovitskaya, A. L., Onoshko, M. P.);

Type of deposits (Digerfeld at al.)	OM %	Mineral matter %	CaCO ₃ %
sandy gyttja	>15	< 80 (до 80 % SiO ₂)	≈ 5
clayey gyttja	>15	< 80 (до 10-12% Al ₂ O ₃)	≈ 5
gyttja	>50	50–80	>10
calcareous gyttja	>15	>25	<30–70
detritus gyttja	<50	>25	>30

At stratification of deposits it has been used Provisional chronostratigraphic subdivision of the Weichselian and the Flandrian in continental NWL-Europe (Mangerud at al., 1974) on the basis of the pollen and radiocarbon data (14C year BP). This scheme has insignificant differences to **Belarusian stratigraphic scale** (Zernitskaya et al., 2002)

Radiocarbon datings by organic substance have been made in radiocarbon laboratory of Institute of geological sciences NAS of Belarus (**IGSB**), and also in the Kiev radiocarbon laboratory (**Ki**), in the Vilnius radiocarbon laboratory (**Vs**), in Tartu radiocarbon laboratory (**TA**).

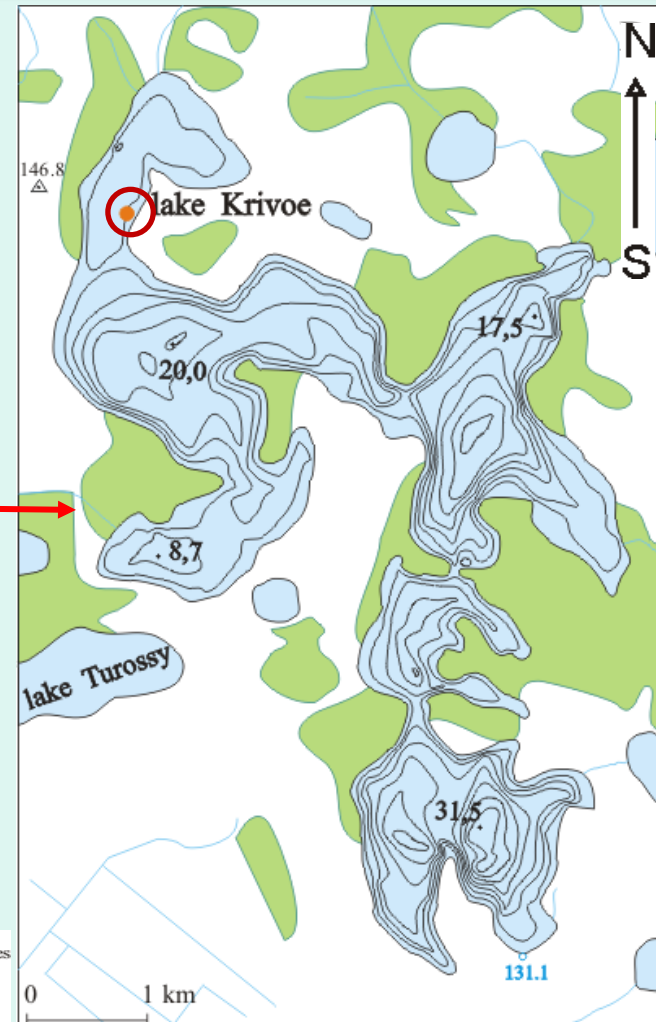
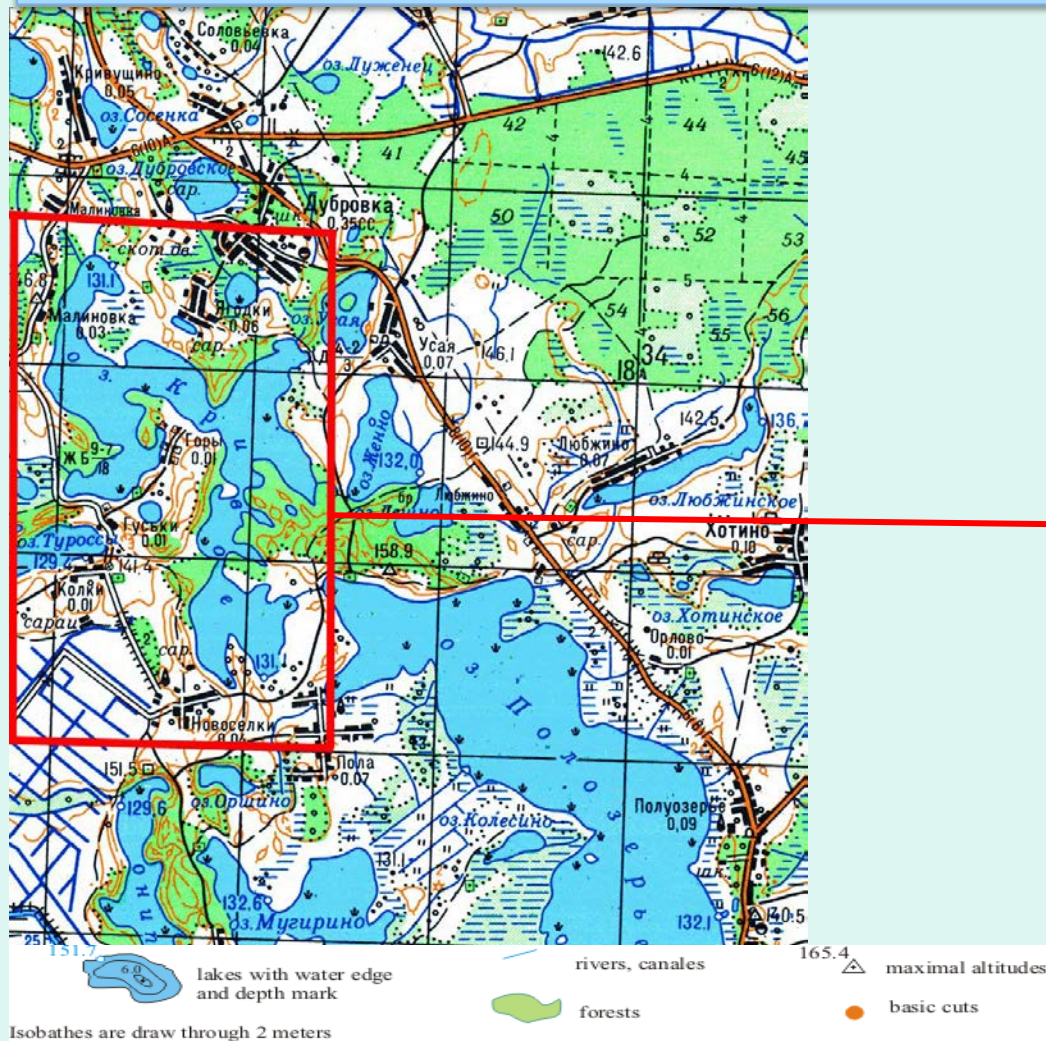
3



Lakes	Location	Area (ha)	Length (km)	Max. width (km)	Maximum depth (m)	Trans- parency (m)	Catchment area (ha)	Absolute height (m)	Trophic status	Genesis of depression	Basin
Lozoviki	55°16`N, 28°07`E	0,006	0,035	0,02	about 1	0,3	100	173,7	dystrophic	glacial	Western Dvina

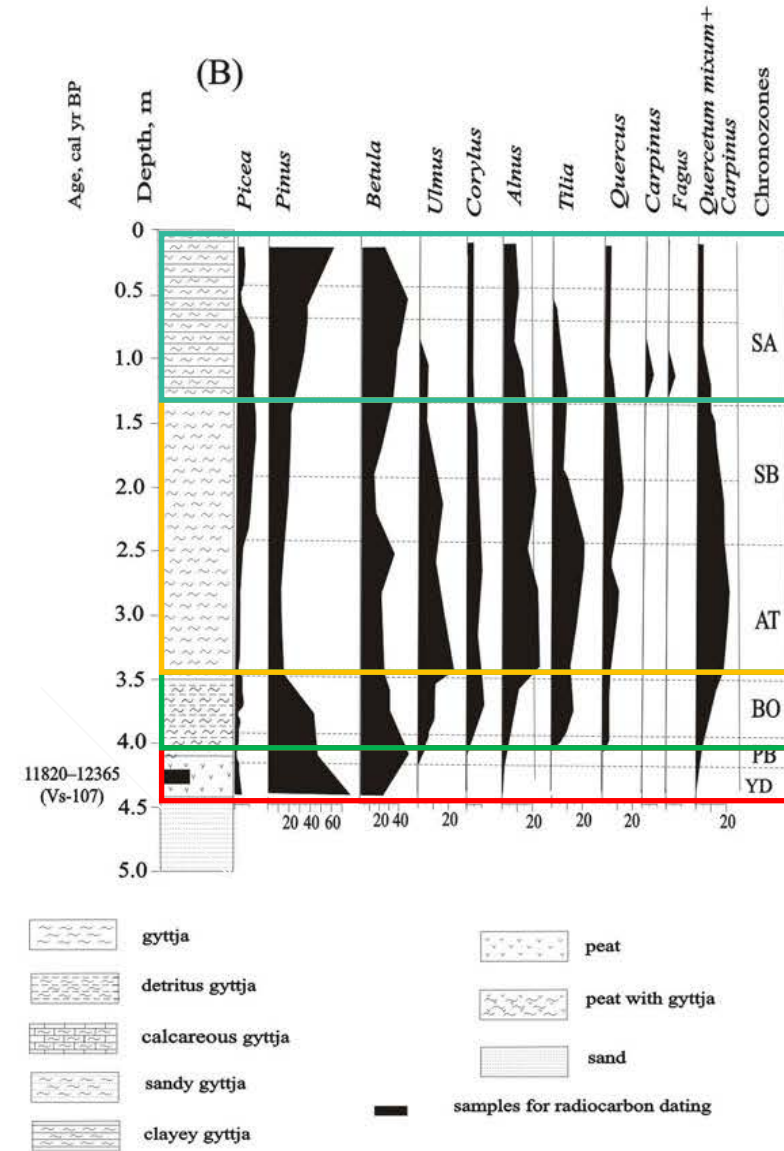
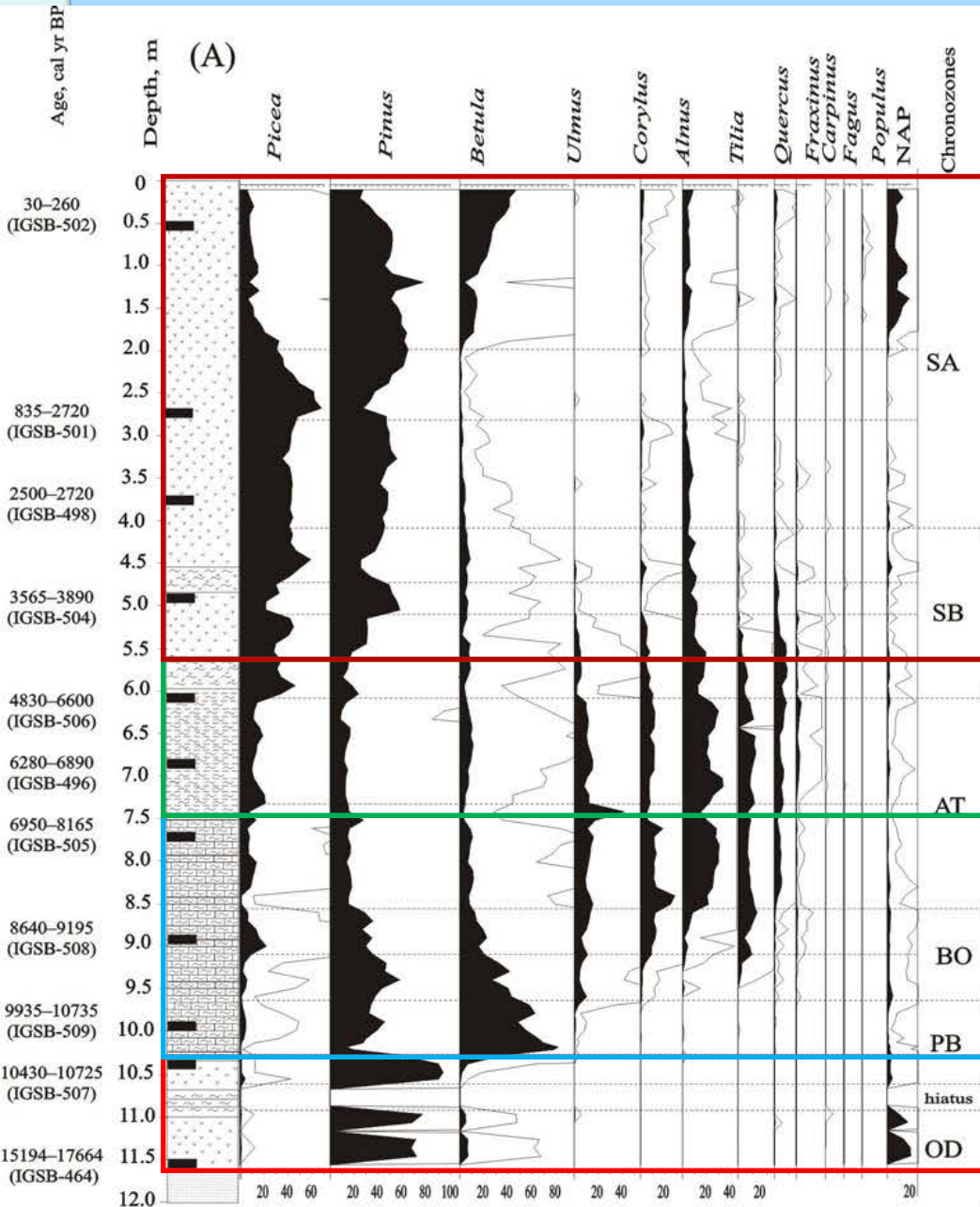
Bathymetric map and adjacent to catchment area of lake Krivoe

4

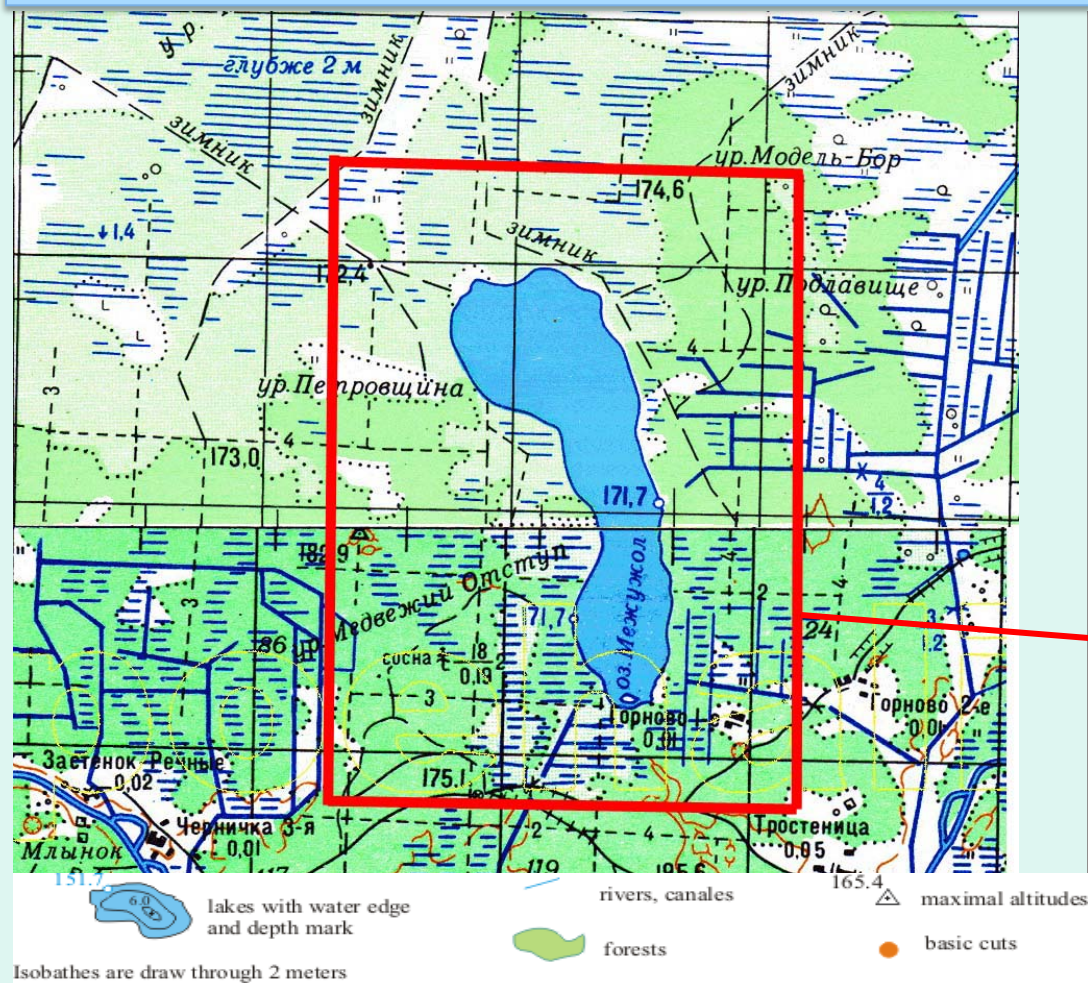


Lakes	Location	Area (ha)	Length (km)	Max. width (km)	Maximum depth (m)	Transparency (m)	Catchment area (ha)	Absolute height (m)	Trophic status	Genesis of depression	Basin
Krivoe	55°08`N, 29°04`E	450	6	1,1	31,5	6	6540	131,1	mesotrophic	glacial	Western Dvina

5

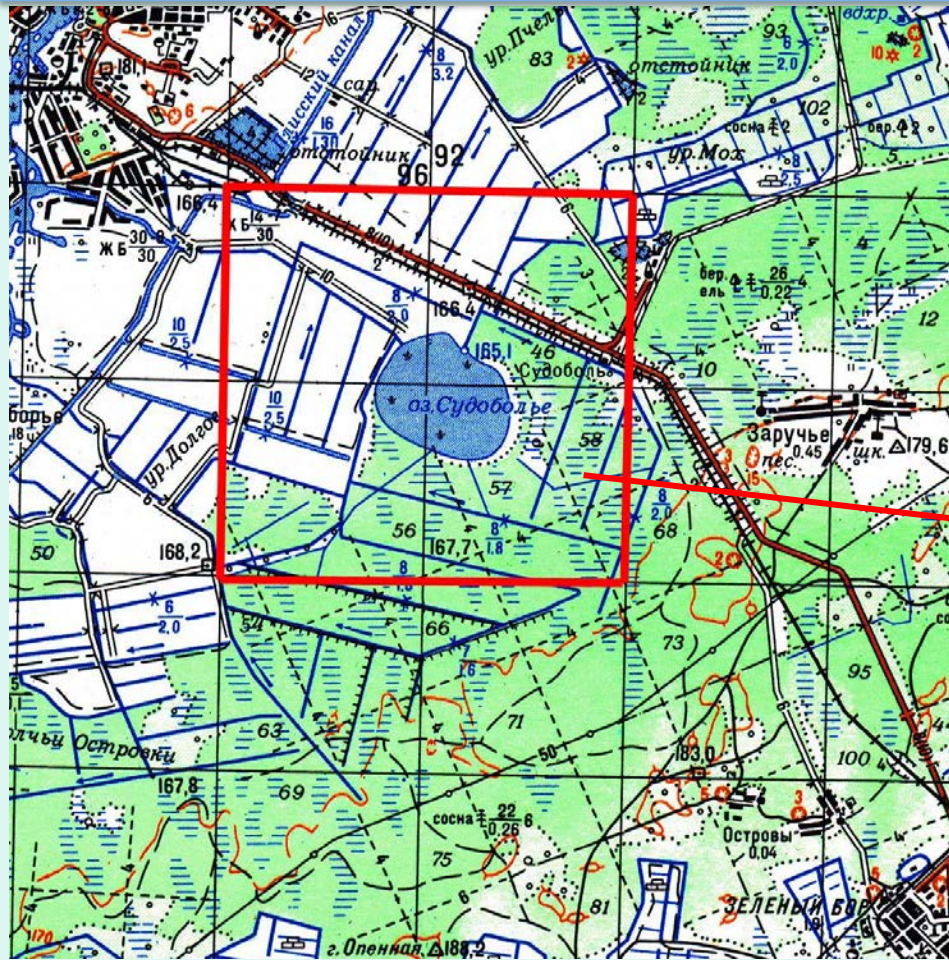


Bathymetric map and adjacent to catchment area of 6 lake Mezhezhol



Lakes	Location	Area (ha)	Length (km)	Max. width (km)	Maximum depth (m)	Trans- parency (m)	Catchment area (ha)	Absolute height (m)	Trophic status	Genesis of depression	Basin
Mezhuzhol	55°00`N, 28°04`E	290	3,9	1,05	3	3	5340	171,7	high-eutrophic	residual	Dnieper

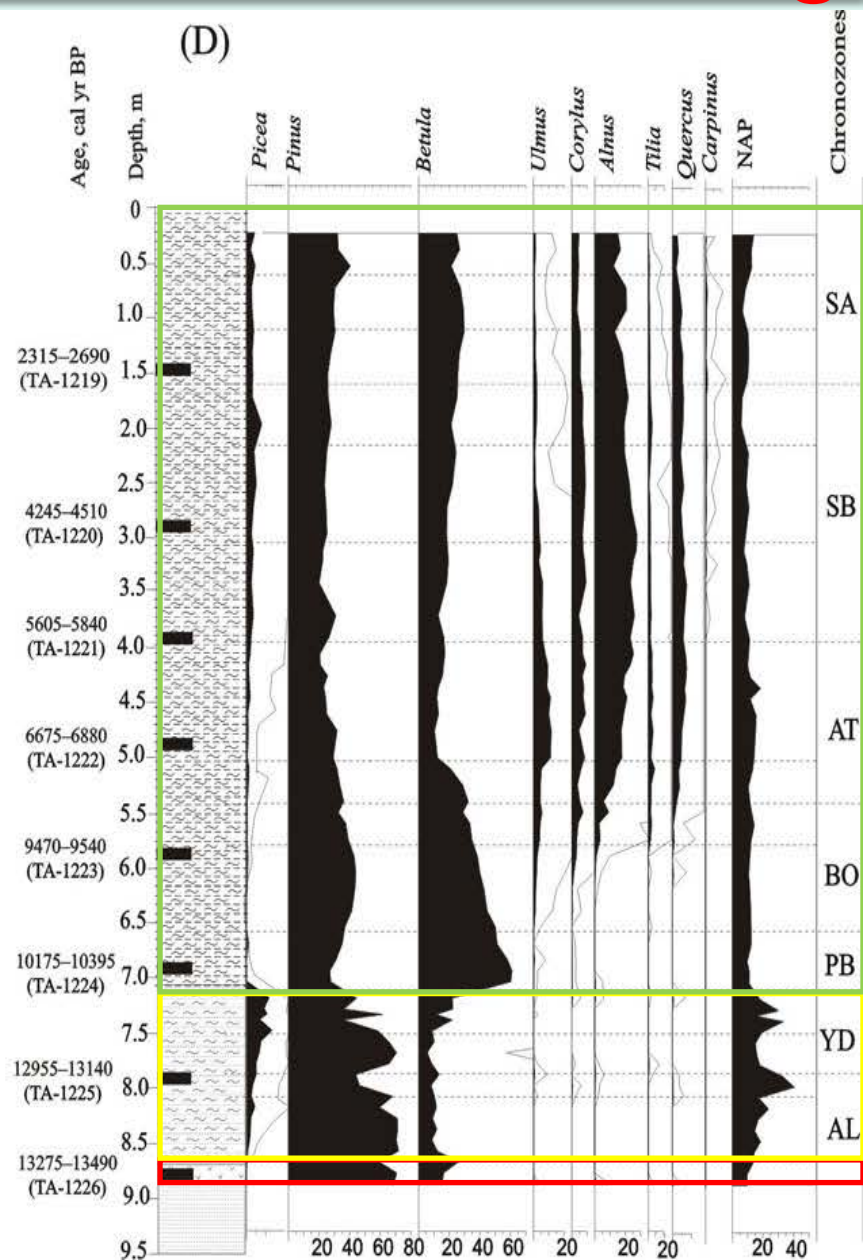
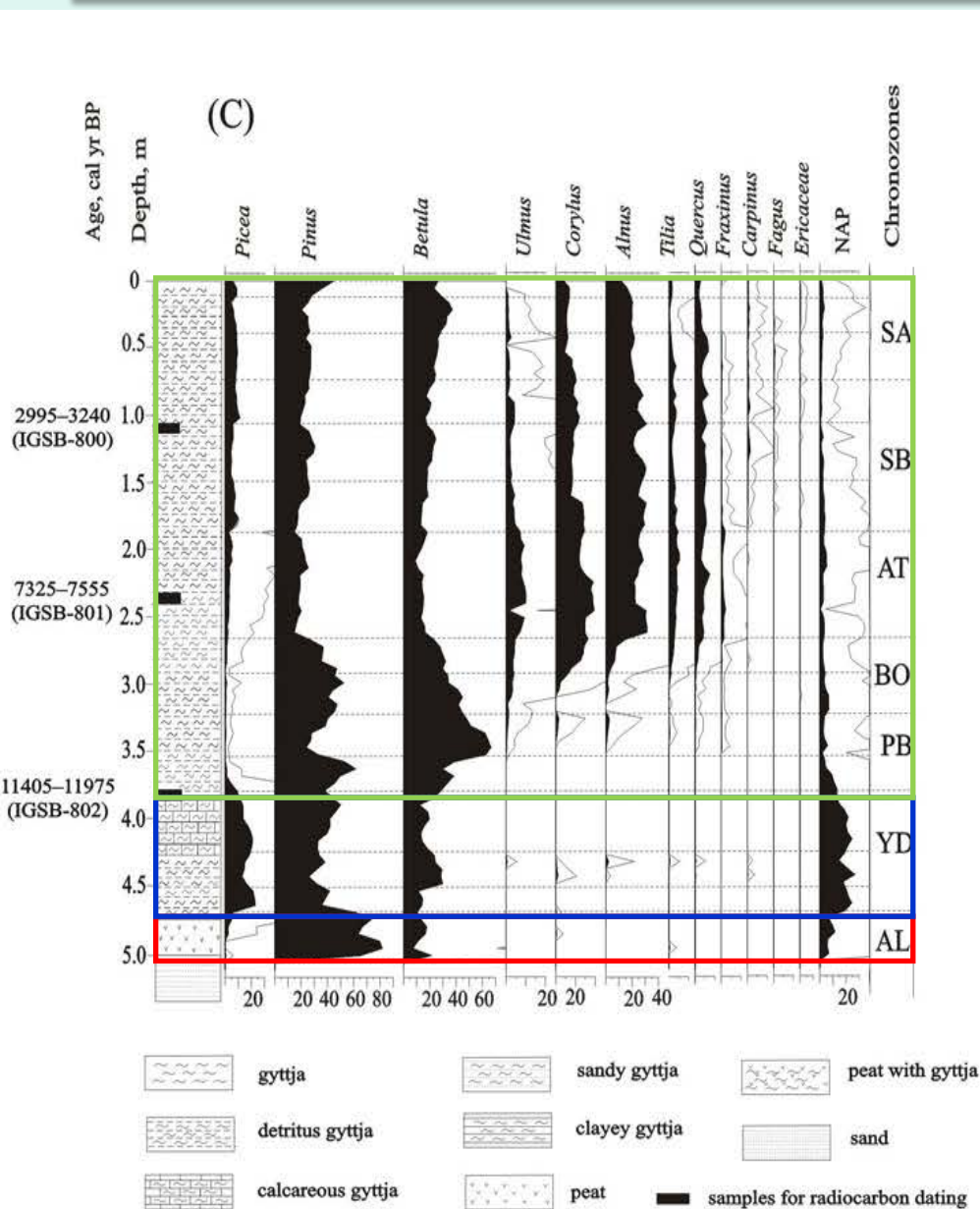
Bathymetric map and adjacent to catchment area of lake Sudoble 7



Lakes	Location	Area (ha)	Length (km)	Max. width (km)	Maximum depth (m)	Transparency (m)	Catchment area (ha)	Absolute height (m)	Trophic status	Genesis of depression	Basin
Sudoble	54°03`N, 28°24`E	152	1,5	1,08	6	0,6	2200	165,1	high-eutrophic	termokarst	Dnieper

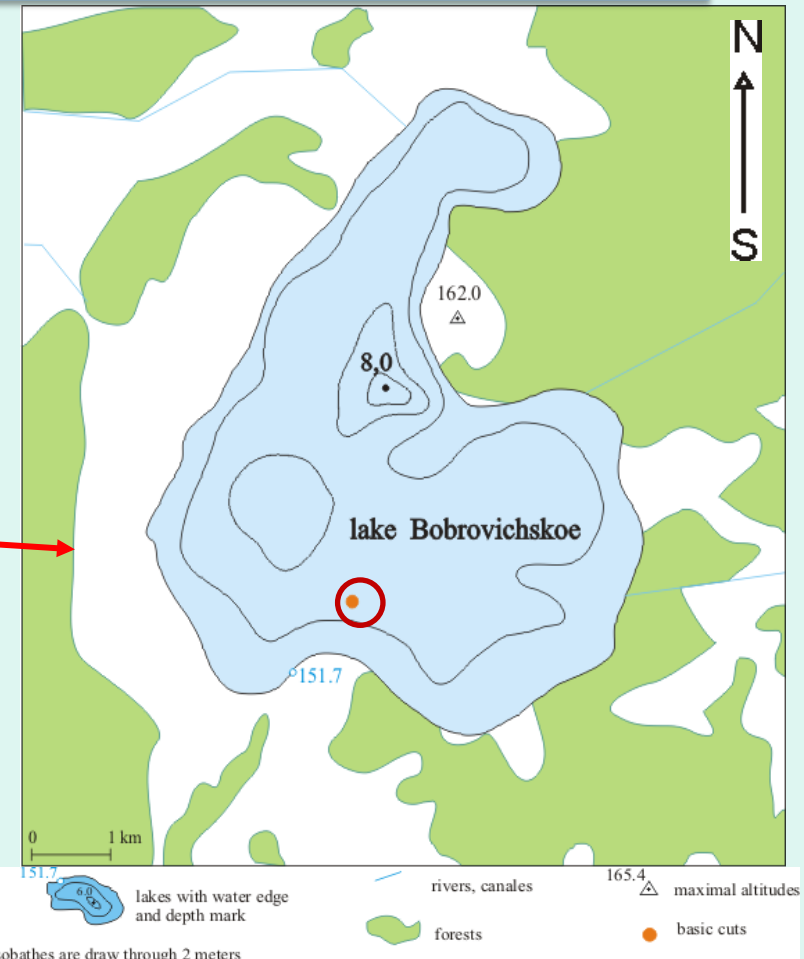
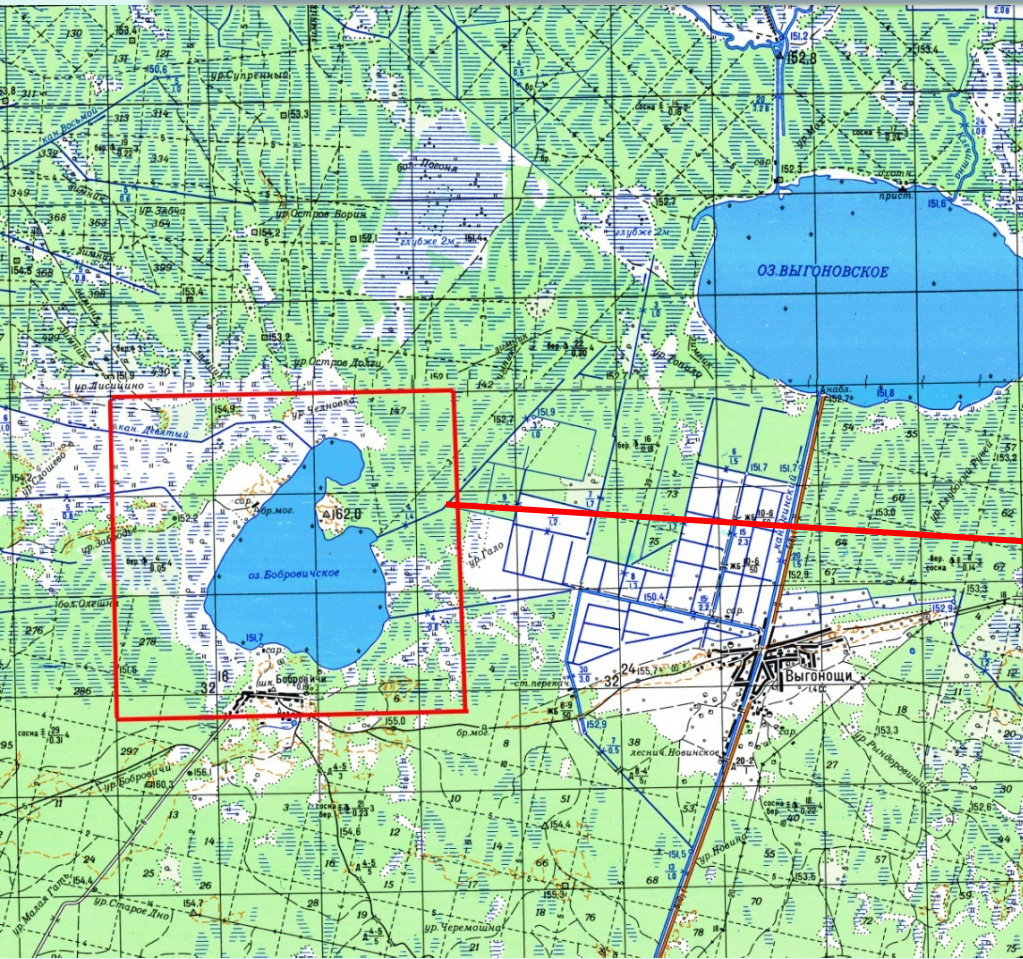
Litostratigraphy and percentage pollen diagrams in lakes Mezhuhol (C) and Sudoble (D)

8



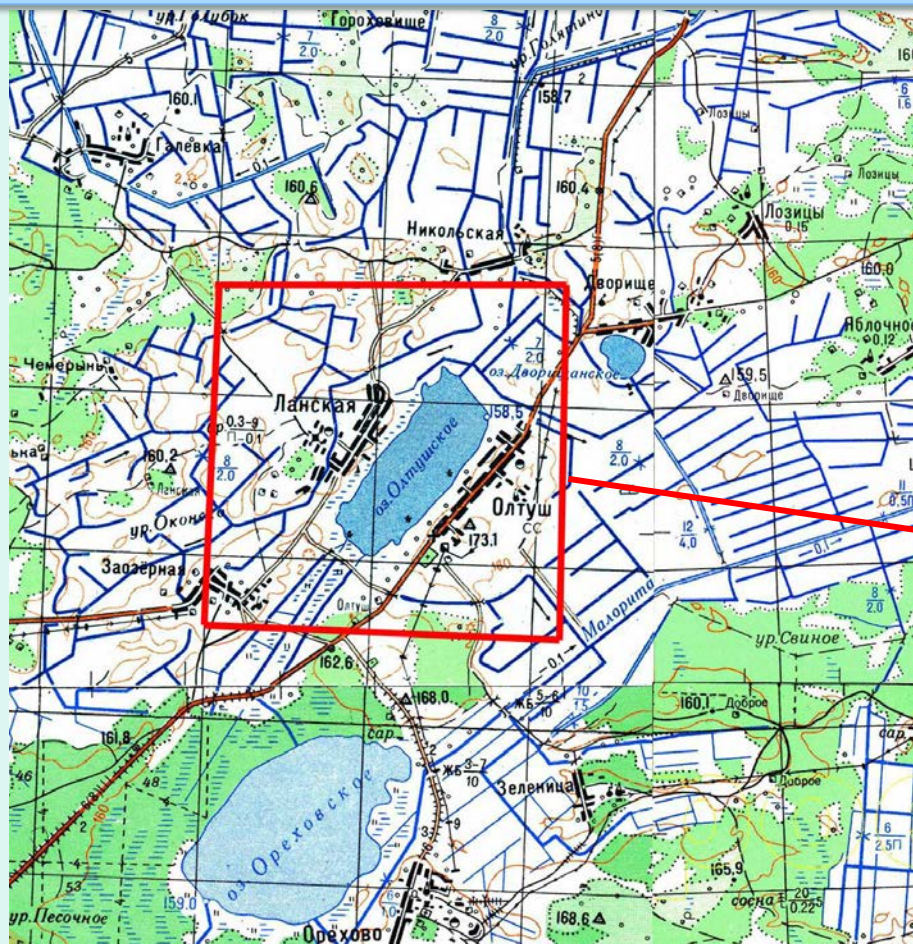
Bathymetric map and adjacent to catchment area of lakes Boborovichskoe

9



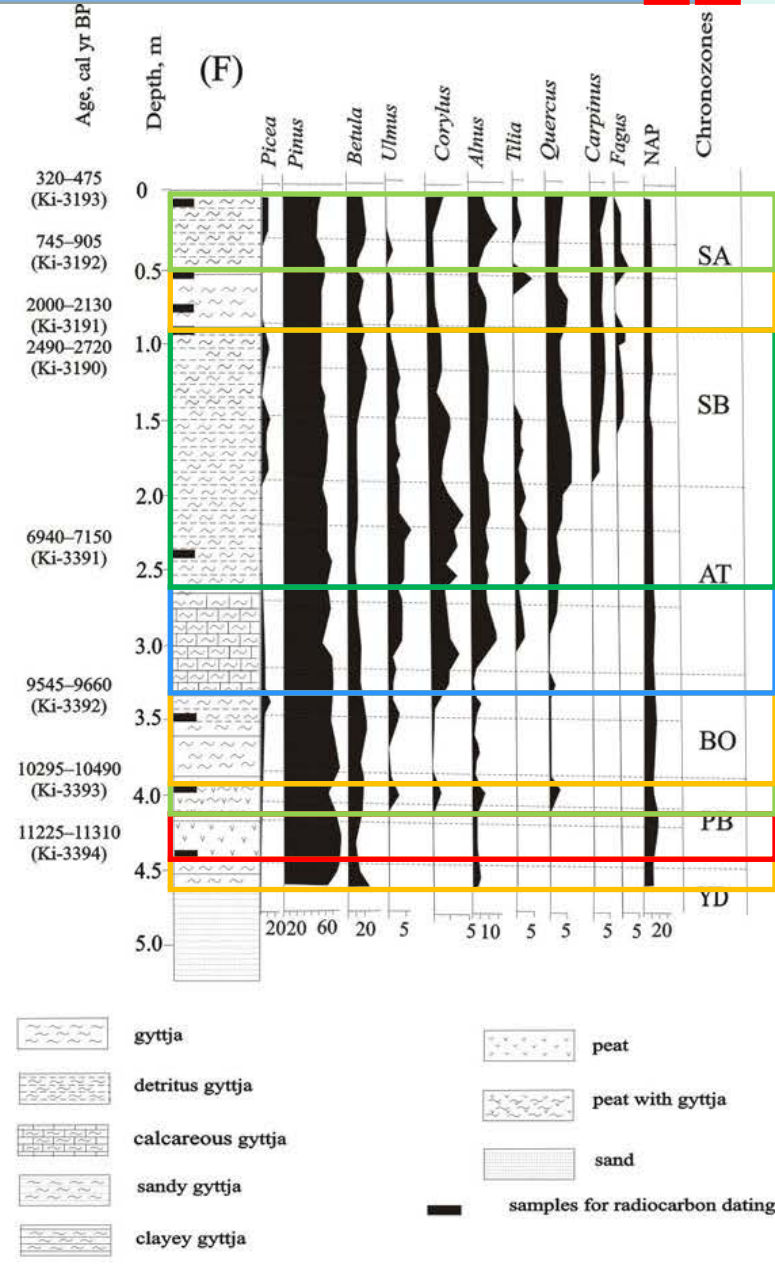
Lakes	Location	Area (ha)	Length (km)	Max. width (km)	Maximum depth (m)	Transparency (m)	Catchment area (ha)	Absolute height (m)	Trophic status	Genesis of depression	Basin
Bobrovichskoe	52°37'N, 25°47'E	947	4,9	3,3	8	0,4	7920	151,7	eutrophic	karst	Nieman

Bathymetric map and adjacent to catchment area of lakes Oltuchskoe 10



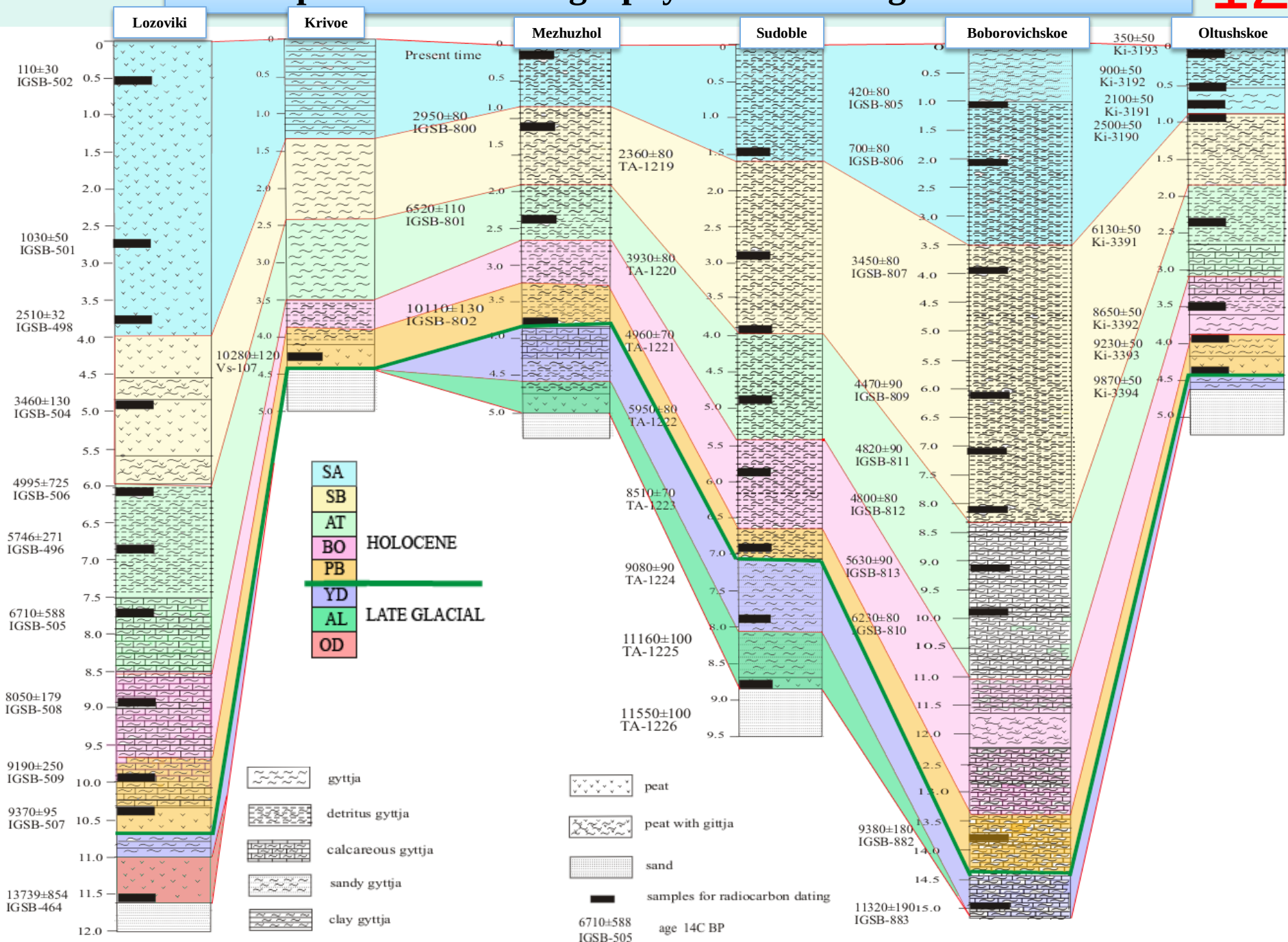
Lakes	Location	Area (ha)	Length (km)	Max. width (km)	Maximum depth (m)	Trans- parency (m)	Catchment area (ha)	Absolute height (m)	Trophic status	Genesis of depression	Basin
Oltushskoe	51°41`N, 23°57`E	220	2,6	1,0	3,1	0,8	30200	158,5	eutrophic	karst	Western Bug

11



Comparative lithostratigraphy of the investigated sediments

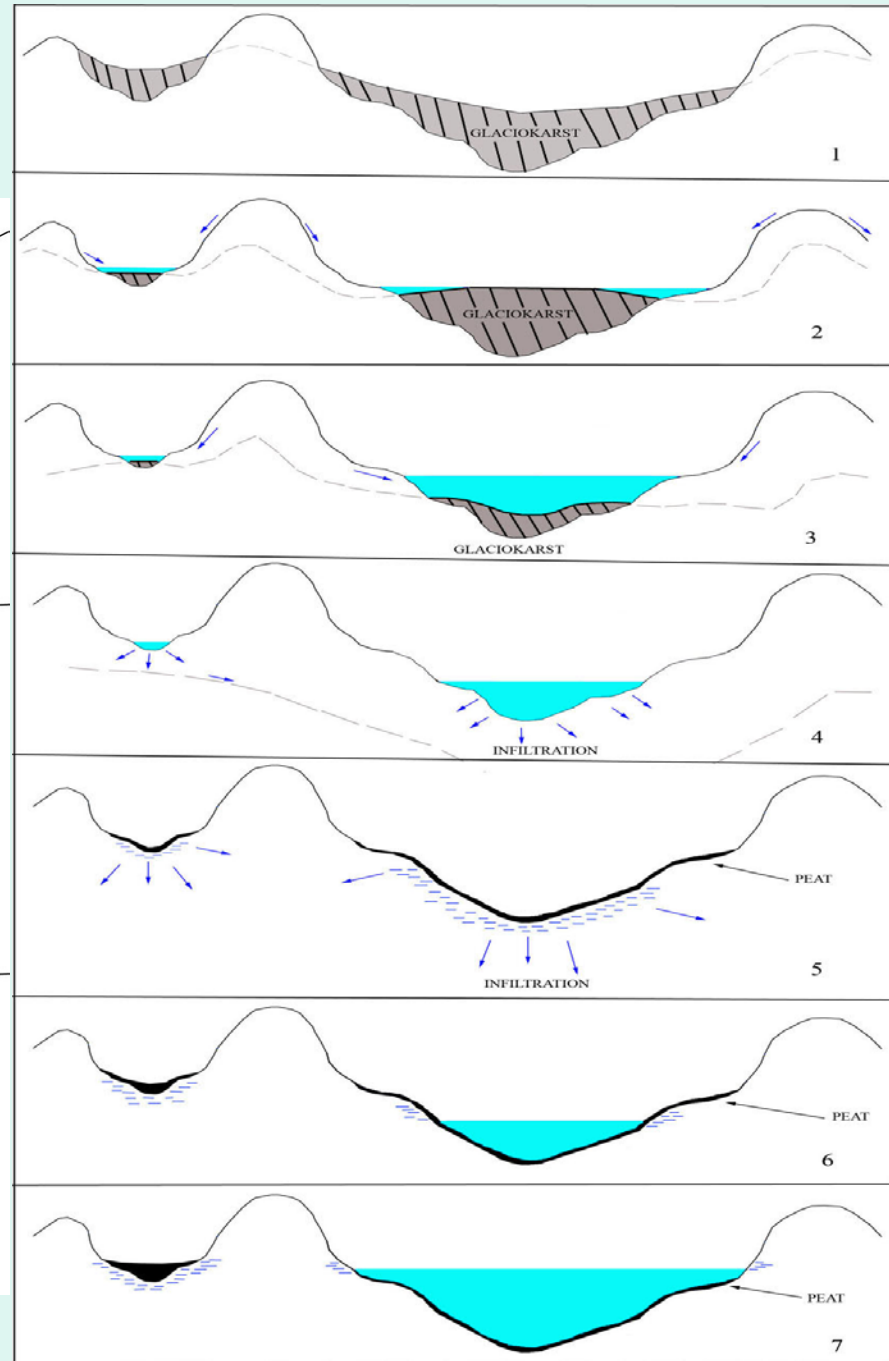
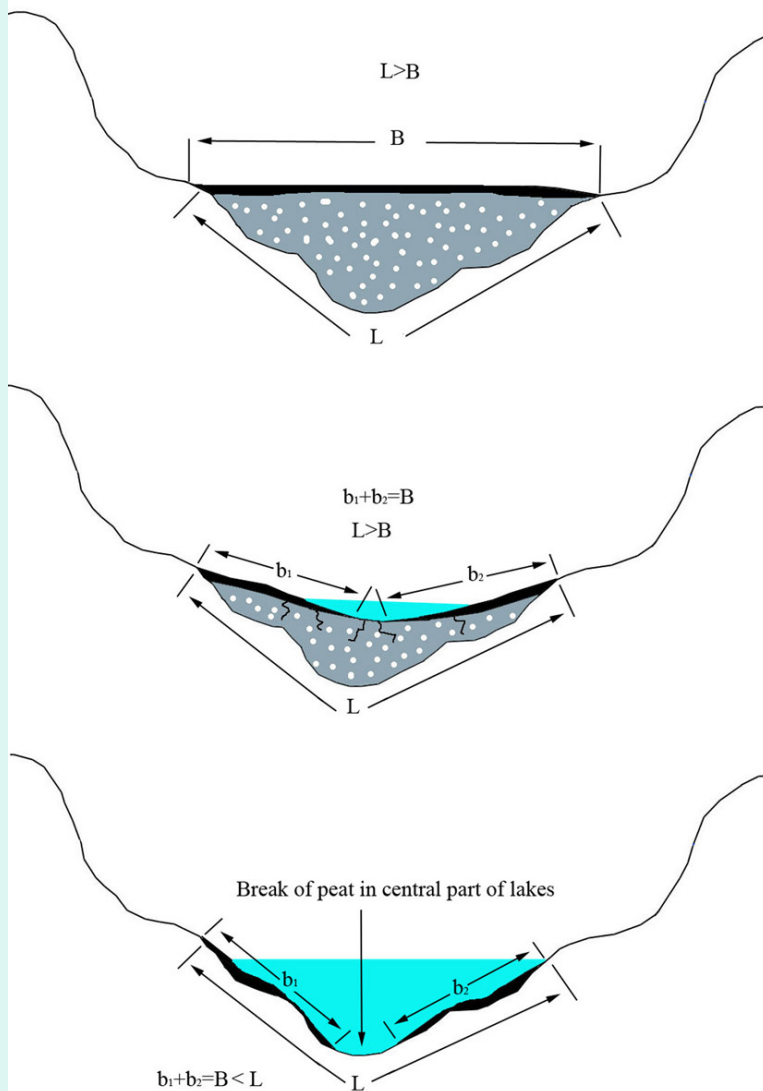
12



Prevailing type of Belarusian lakes sediments during the late-glacial time 13

Chronozones	District, lake					
	Northern		Central		Southern	
	Lozoviki	Krivoe	Mezhuzhol	Sudoble	Bobrovichskoe	Oltushskoe
SA	peat	clayey gyttja	detr. gyttja	detr. gyttja	gyttja detr. gyttja	detr. gyttja gyttja
SB	peat	gyttja	detr. gyttja	detr. gyttja	detr. gyttja	detr. gyttja
AT	detr. gyttja calc. gyttja	gyttja gyttja	detr. gyttja detr. gyttja	detr. gyttja detr. gyttja	calc. gyttja calc. gyttja	detr. gyttja calc. gyttja
BO	calc. gyttja	detr. gyttja	detr. gyttja	detr. gyttja	calc. gyttja peat calc. gyttja	calc. gyttja detr. gyttja gyttja
PB	calc. gyttja peat	detr. gyttja	detr. gyttja	detr. gyttja	calc. gyttja	peat
YD	sandy gyttja	peat sand	calc. gyttja detr. gyttja	sandy gyttja	calc. gyttja	clayey gyttja
AL	sandy gyttja	sand	peat	sandy gyttja peat	calc. gyttja	sand
OD-BÖ	peat sand	sand	sand	sand	-	sand

The formation of superglacial peat

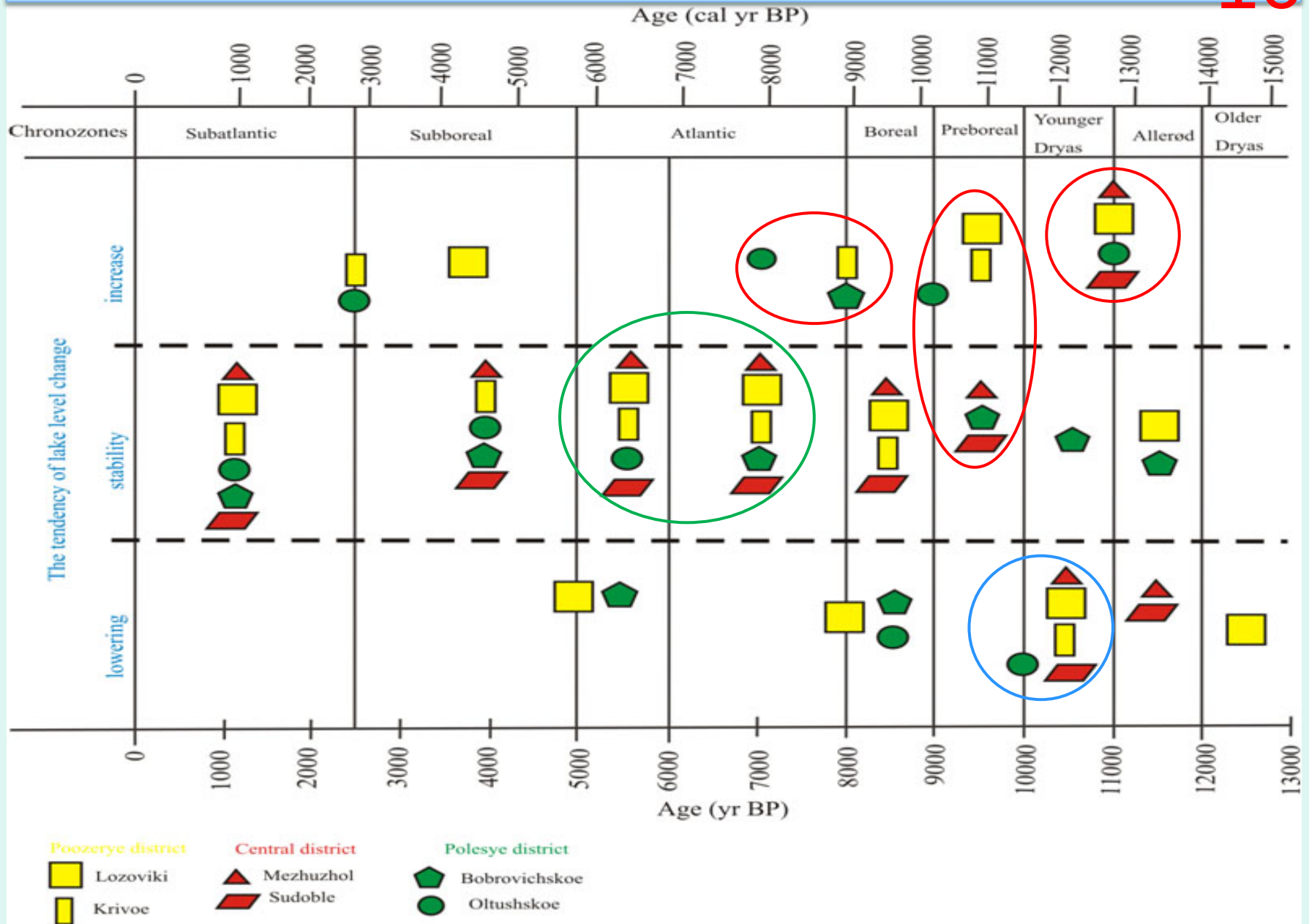


Prevailing type of Belarusian lakes sediments during the late-glacial time 15

Chronozones	District, lake					
	Northern		Central		Southern	
	Lozoviki	Krivoe	Mezhuzhol	Sudoble	Bobrovichskoe	Oltushskoe
SA	peat	clayey gyttja	detr. gyttja	detr. gyttja	gyttja detr. gyttja	detr. gyttja gyttja
SB	peat	gyttja	detr. gyttja	detr. gyttja	detr. gyttja	detr. gyttja
AT	detr. gyttja calc. gyttja	gyttja gyttja	detr. gyttja detr. gyttja	detr. gyttja detr. gyttja	calc. gyttja calc. gyttja	detr. gyttja calc. gyttja
BO	calc. gyttja	detr. gyttja	detr. gyttja	detr. gyttja	calc. gyttja peat calc. gyttja	calc. gyttja detr. gyttja gyttja
PB	calc. gyttja peat	detr. gyttja	detr. gyttja	detr. gyttja	calc. gyttja	peat
YD	sandy gyttja	peat sand	calc. gyttja detr. gyttja	sandy gyttja	calc. gyttja	clayey gyttja
AL	sandy gyttja	sand	peat	sandy gyttja peat	calc. gyttja	sand
OD-BÖ	peat sand	sand	sand	sand	-	sand

Reconstruction of changes of lake-levels during the postglacial period

16



Thanks for your attention

