BIODIVERSITY OF THE CHALK GRASSLANDS OF EASTERN UKRAINE AND THE PROBLEMS OF ITS CONSERVATION

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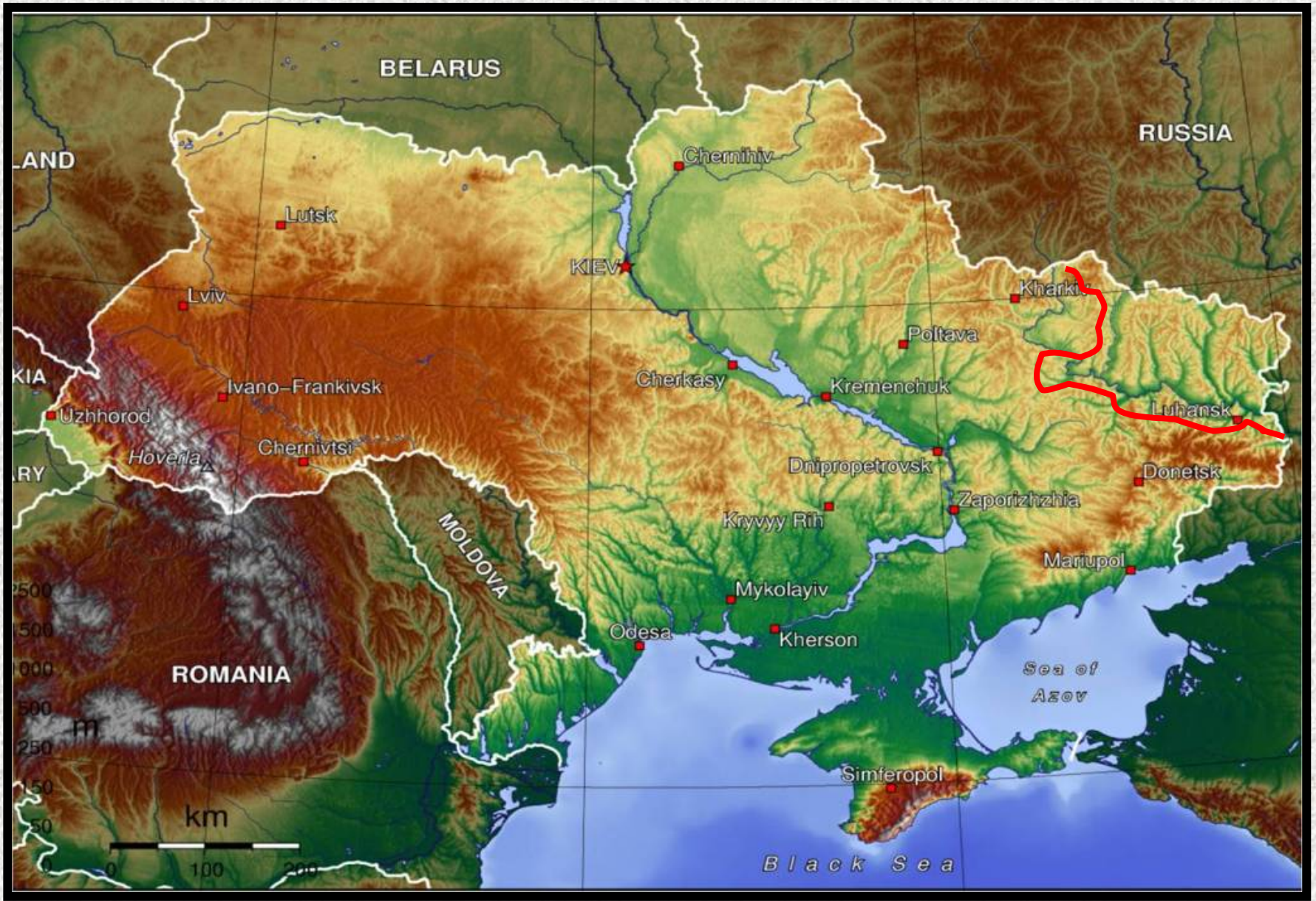
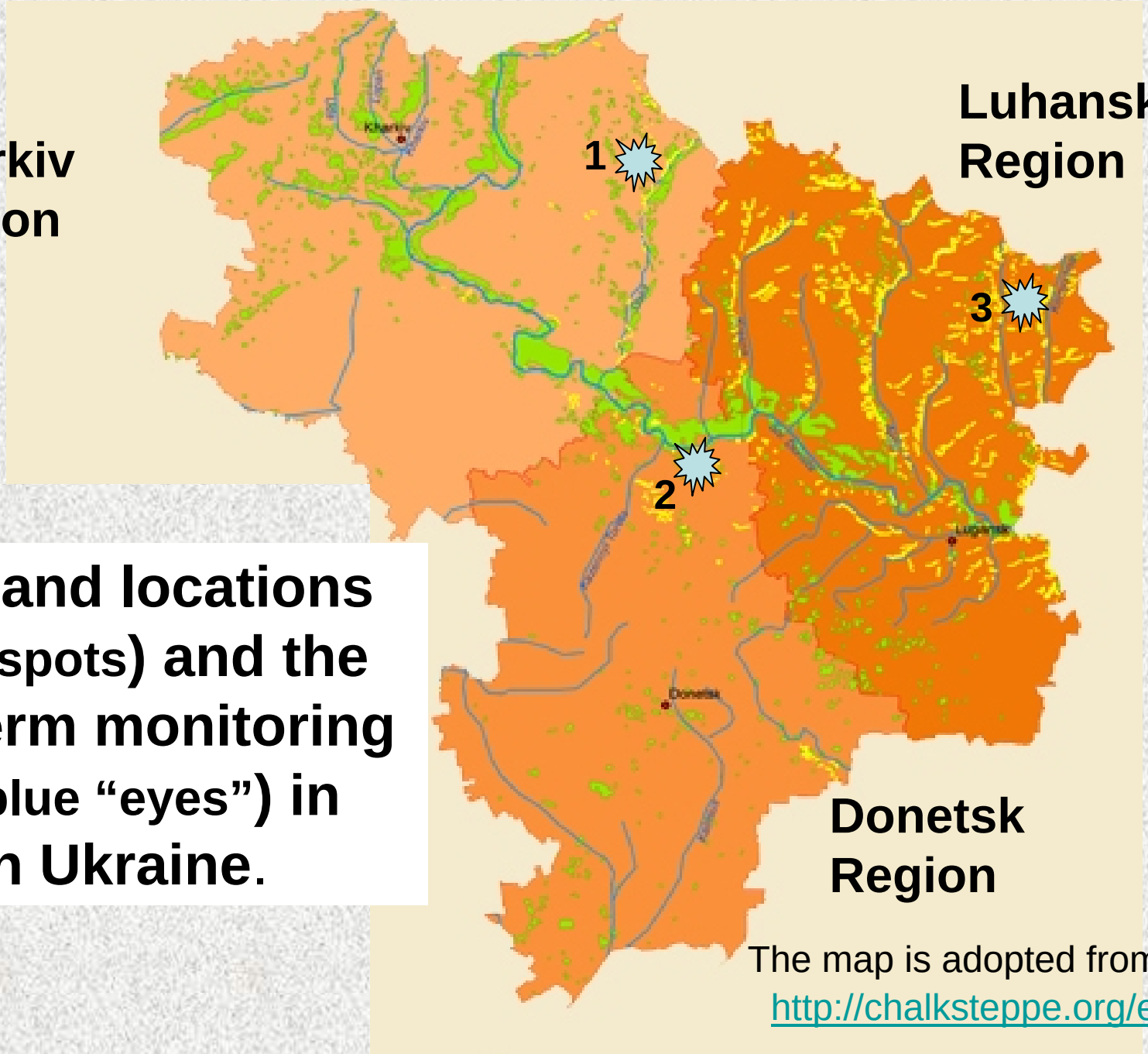
Study area. In the south of the Central Russian Upland and in the north of the Donets Ridge, chalk outcrops are located on the high right riverbanks in the Don Rive basin





Chalk land locations (yellow spots) and the long-term monitoring sites (blue "eyes") in Eastern Ukraine.

The map is adopted from http://chalksteppe.org/en/

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National Nature Park ***Dvorichanskyi*** (Kharkiv Region)

Quadrocopter,
photo: A.Typikov

*Department of the Ukrainian Steppe Reserve "**Kreidova Flora**"* (Donetsk Region)

Quadrocopter,
photo: A.Typikov

Botanical preserve of local importance

"***Kreidiani Vidslonennia***"
(Luhansk Region)

photo: N. Polchaninova

Chalky cliffs and monolithic blocks

Regional Landscape Park
"Kramatorskyi" (Donetsk Region)

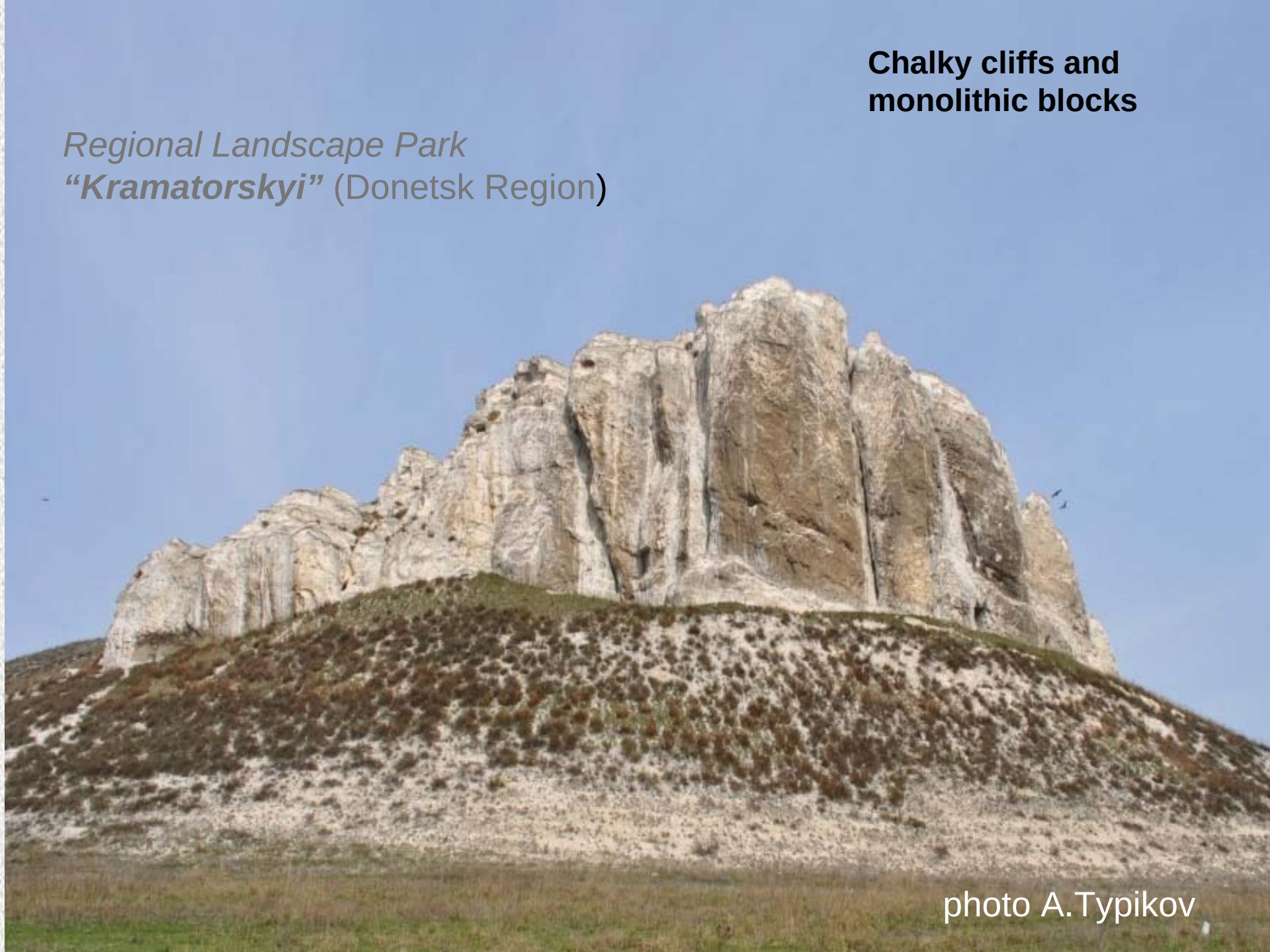
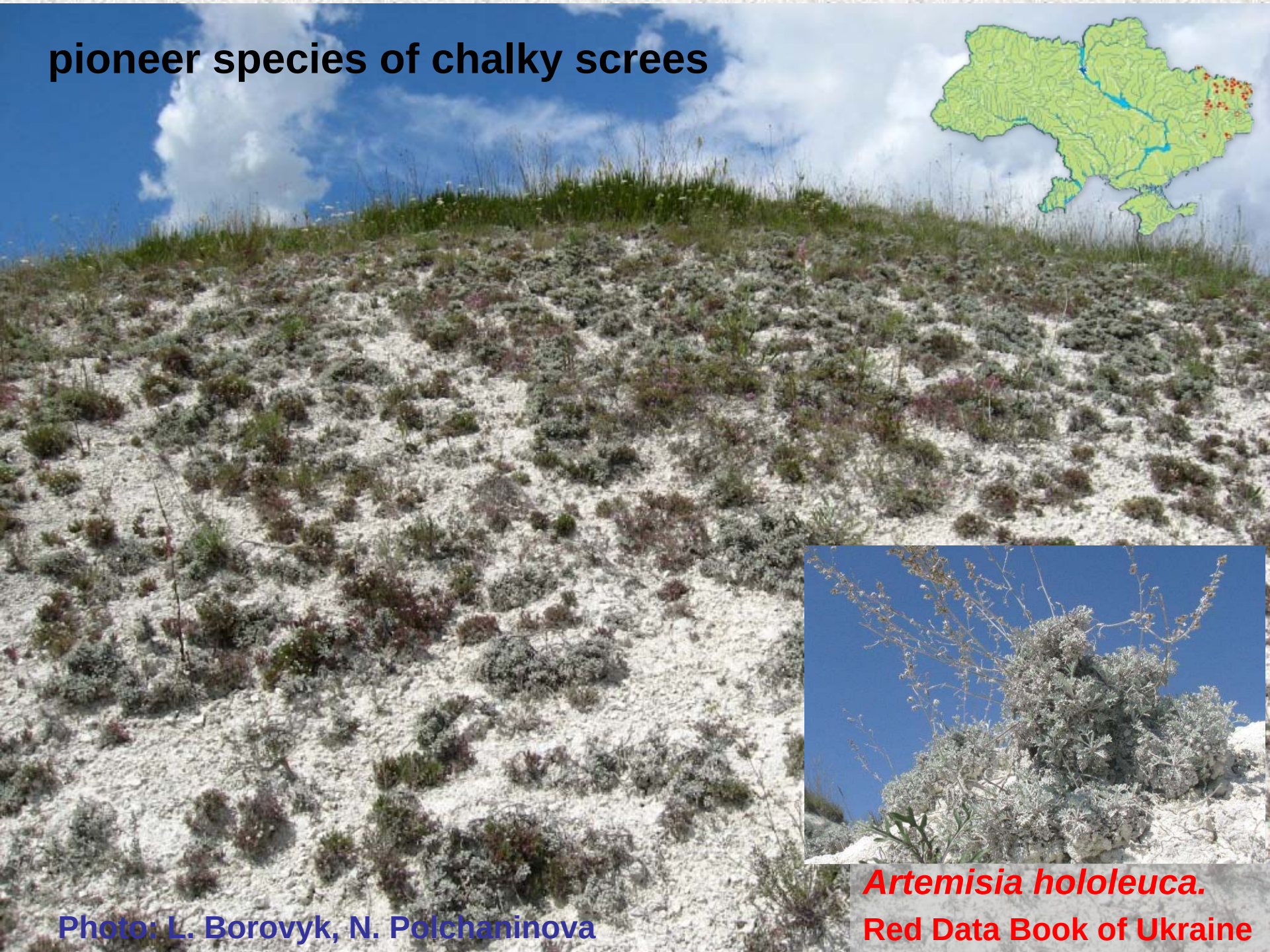


photo A.Typikov


“Kreidiani Vidslonennia”
Chalky screes
photo: N. Polchaninova


Dvorichanskyi Park
Partly overgrown chalky slopes
photo V.Kletenkin

pioneer species of chalky screes

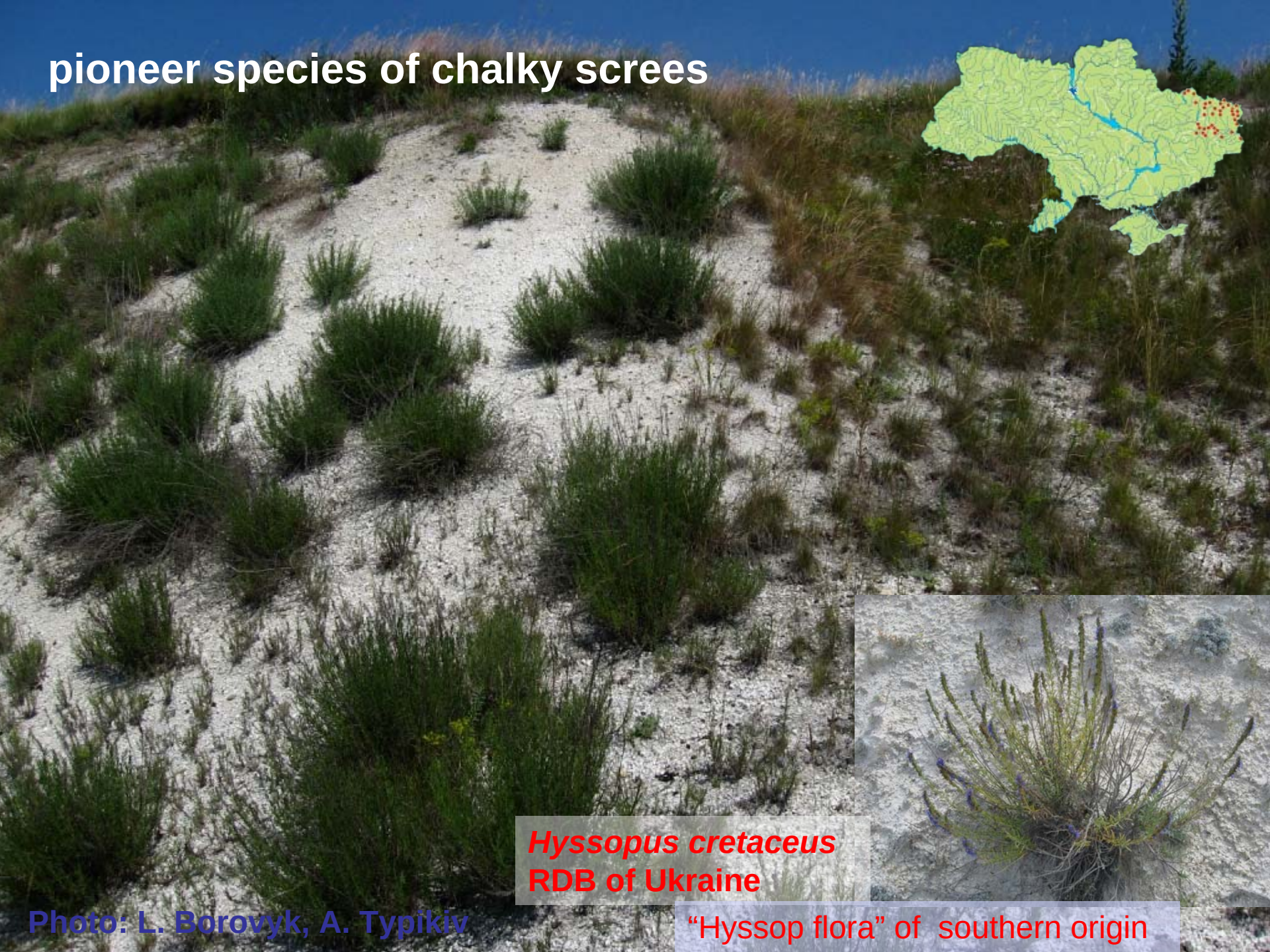


Artemisia hololeuca.

Red Data Book of Ukraine

Photo: L. Borovyk, N. Polchaninova

pioneer species of chalky screes



Hyssopus cretaceus
RDB of Ukraine

Photo: L. Borovyk, A. Typikiv

“Hyssop flora” of southern origin

pioneer species of chalky screes

“Hyssop flora”, Thymus cretaceus

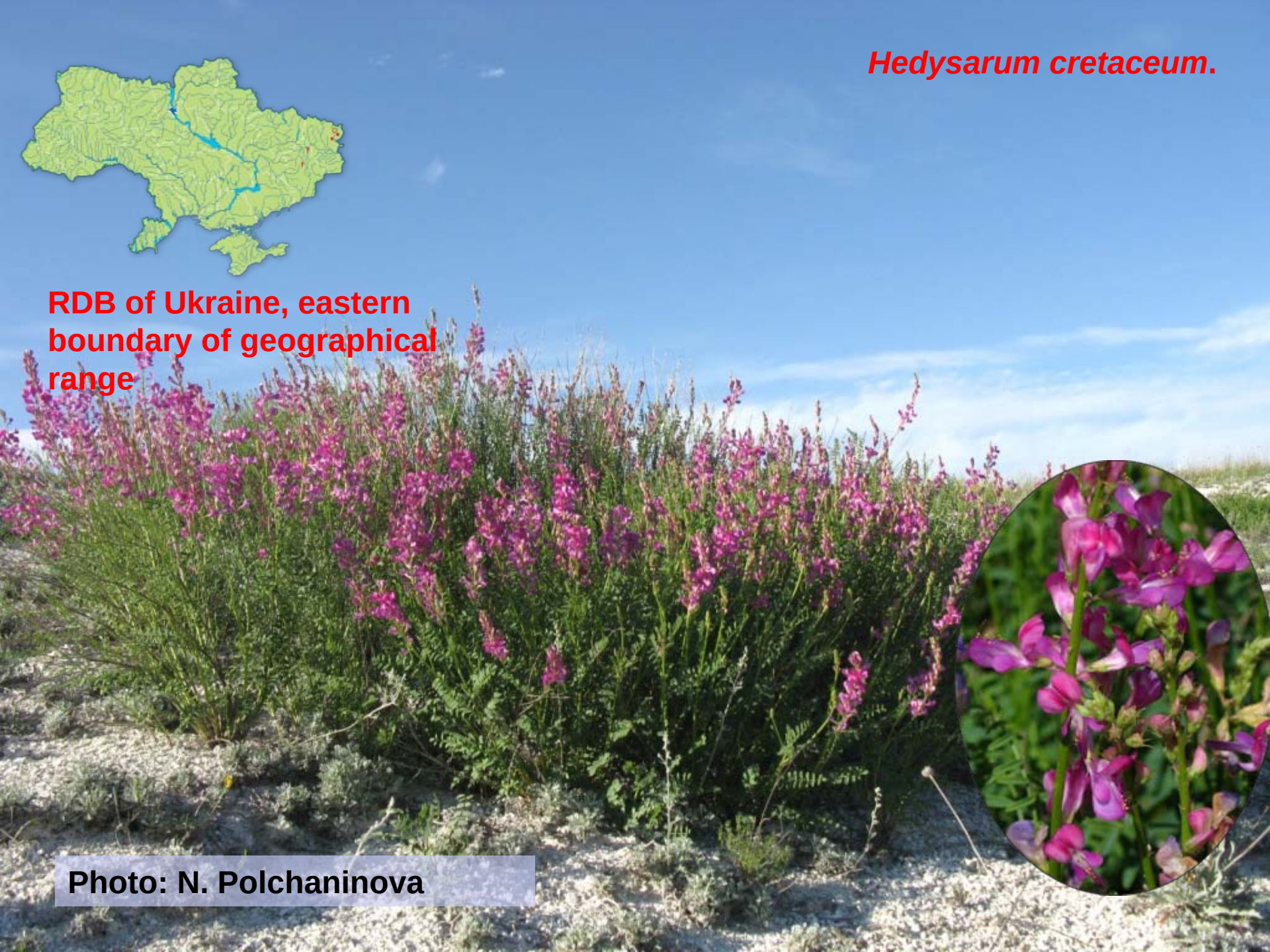
Photo: L. Borovyk

“Lower Alpine” planta

Androsace koso-poljanskii

RDB of Ukraine

Agriades pyrenaicus ergane (monophageous Androsace-related subspecies**,** endemic of the Central Russian Upland, south-west boundary of the range


Hedysarum cretaceum.
RDB of Ukraine, eastern boundary of geographical range
Photo: N. Polchaninova

Further overgrowing stages: *Hedisarum grandiflorum*, *Polygala cretacea.*
Photo: N. Polchaninova

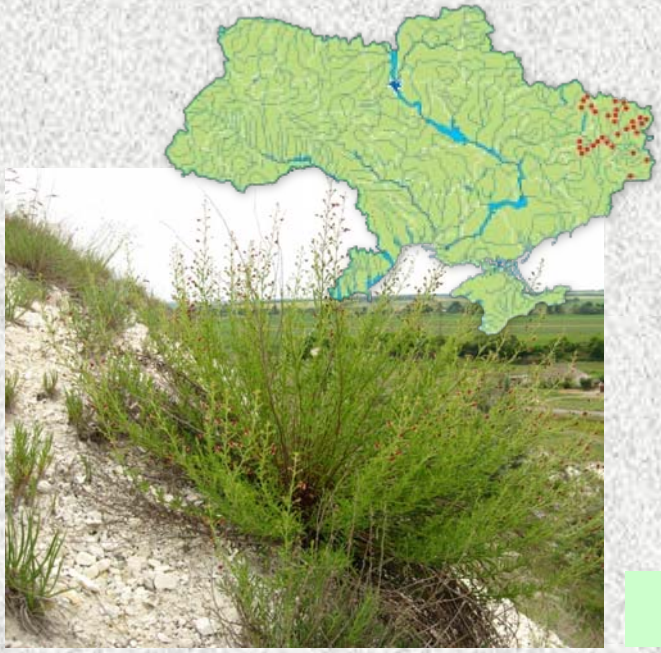
Further overgrowing stages: *Polygala cretacea., Onosma tanaitica, Stipa spp.* Photo: N. Polchaninova

Linum ukrainicum

Photo: S. Limanskii, V. Renkin


Heliantenum cretaceum
RDB of Ukraine
Photo: S. Limanskij

Being distributed in the forb-bunchgrass steppes, the *Crambe tataria* becomes a narrow chalky roadside specialist. Dvorichanskyi Park, photo: V. Ronkin



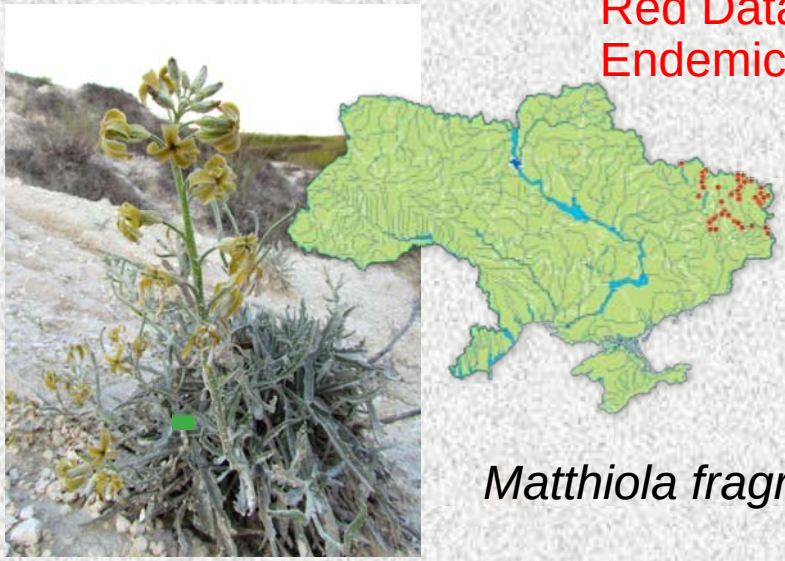
Silene cretacea

Rare species

Scrophularia cetaccea

Bern Convention– 3
European Red List – 11
Red Data Book, Ukraine – 26
Endemics of the Don River basin – 14

Artemisia salsoloides



58 obligate and facultative chalk associated plants

Matthiola fragrans,

Red Data Book of Russia

714 insect species have been recorded from the abovementioned monitoring sites

Euphydrjas aurinia

Photo E. Karolinskyi

Dorcadion equestre

Photo V. Kletenkin

Rare species but not chalk grassland specialists

Spider fauna

Left Bank Ukraine **721** species

Eastern Ukraine - **582** species

Calcareous lands **184** species

Chalk grasslands – **106** species

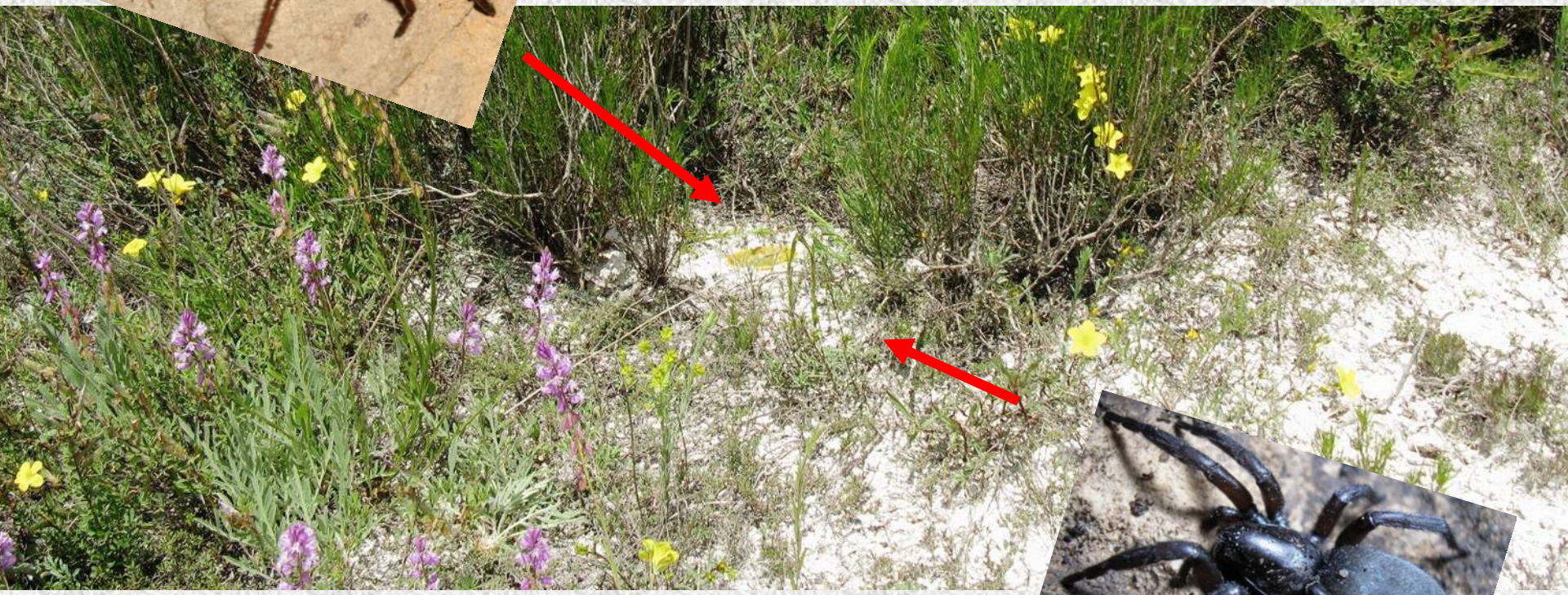
Spider species richness in the different steppe types in Left Bank Ukraine

families	Steppe type									
	chalk		limestone		granite		forb-bunchgrass		total	
Theridiidae	12	12,0%	11	7,5%	12	9,4%	20	10,6%	22	9,6%
Linyphiidae	5	5,0%	10	6,3%	10	7,8%	27	14,3%	28	12,3%
Araneidae	10	10,0%	11	7,5%	7	5,5%	13	6,9%	15	6,6%
Lycosidae	14	14,0%	13	10,0%	12	9,4%	19	10,1%	21	9,2%
Gnaphosidae	17	17,0%	22	21,3%	27	21,1%	25	13,2%	41	18,0%
Thomisidae	11	11,0%	14	11,3%	14	10,9%	17	9,0%	18	7,9%
Salticidae	11	11,0%	19	17,5%	16	12,5%	29	15,3%	36	15,8%
Others	20	20,0%	20	18,8%	30	23,4%	39	20,6%	47	20,6%
Total	106	100%	120	100%	128	100%	189	100%	228	100%

An example of species with different geographical ranges which meet in the chalk grasslands (Kharkiv Region)

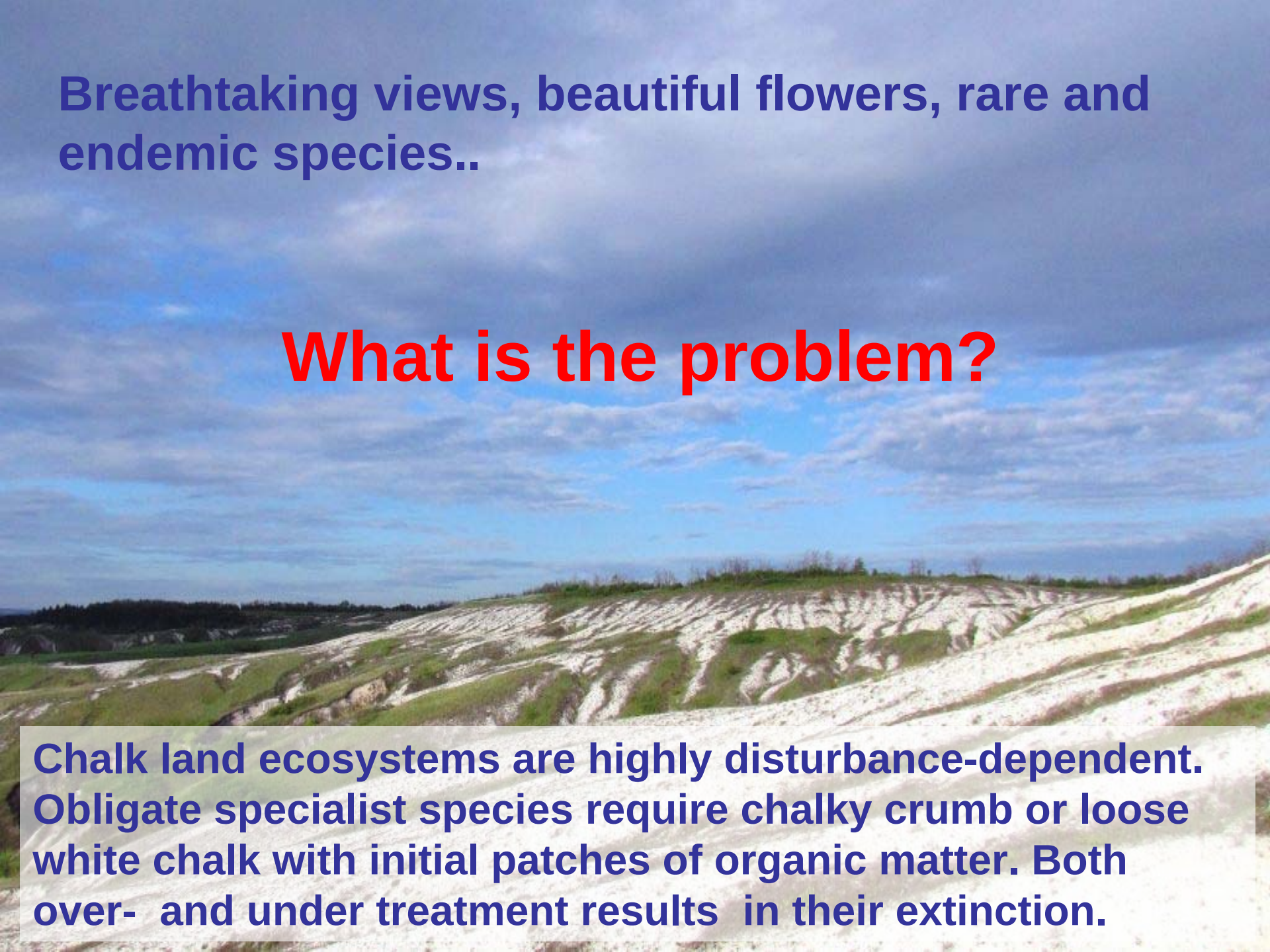
Gnaphosa lugubris

West-Central Palaearctic



Gnaphosa Itaurica

Eastern Ancient Mediterranean.



Breathtaking views, beautiful flowers, rare and endemic species..

What is the problem?

Chalk land ecosystems are highly disturbance-dependent. Obligate specialist species require chalky crumb or loose white chalk with initial patches of organic matter. Both over- and under treatment results in their extinction.

Traditional chalk land use – grazing and quarries.

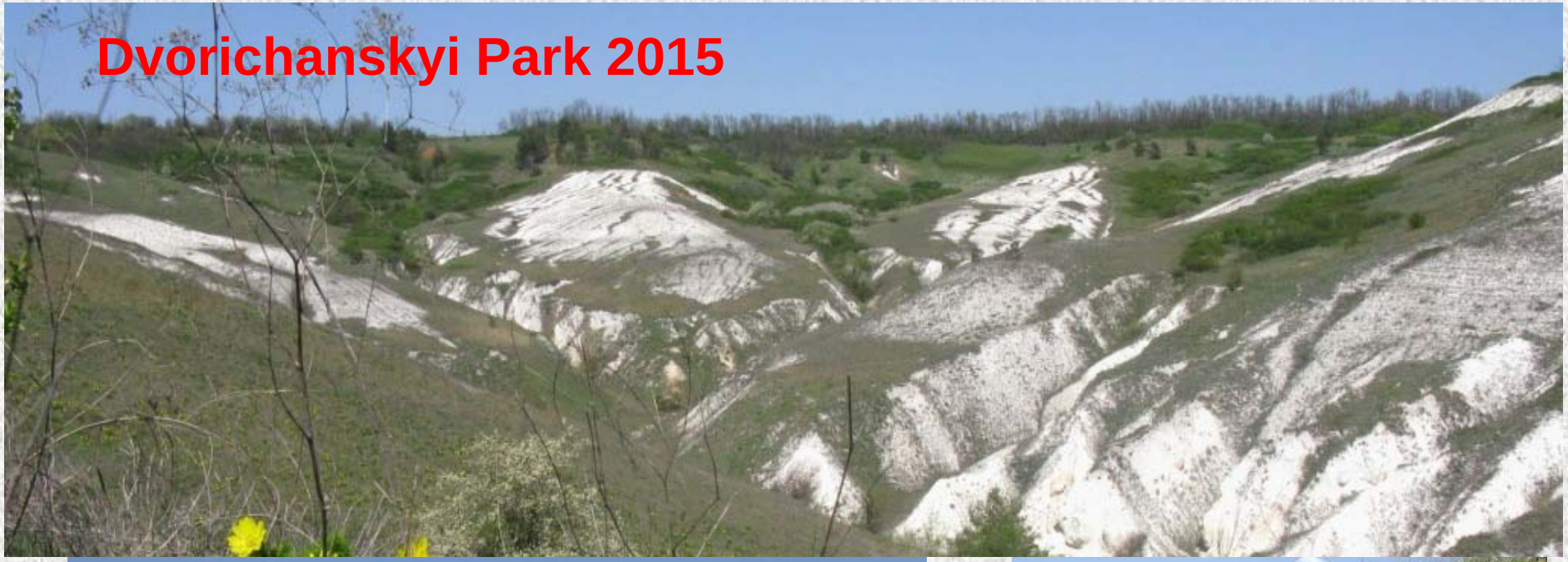

1990
Kreidova Flora
2002
2012
Photo: S. Limanskij

Kreidova Flora 2000

Pine seeds germinate on the former cattle path ways


Kreidova Flora
Natural seed pool of the *Pinus silvestris var. cretacea* is a source of afforestetion

Dvorichanskyi Park 2015



Kreidiani Vidslonennia

Encroachment of an invasive species, *Ulmus pumila* . PhotoÑ L.Borovyk

Who is to blame and what is to be done?

There were no practice of a nature-friendly use of chalk lands in Ukraine. Up to mid 1990s, they suffered from overgrazing, man caused afforestation and quarrying, now they are mainly abandoned. The challenging tasks ahead are to choose appropriate disturbance in order to maintain chalky habitats: moderate cattle + sheep grazing and/or prescribed patched burning.

Our friendly team

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Larisa Borovyk


Thank you for your atte-e-e-ntion!