

**HEATHLANDS IN LATVIA:
VEGETATION DIVERSITY, CONSERVATION AND MANAGEMENT.**

ADAZI EXAMPLE

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**The Nordic-Baltic Apicultural Research Symposium
Nordic-Baltic Bee-Council
04. – 06. February 2011
Tartu, ESTONIA**

SOME FACTS ABOUT LATVIA

Total area: 64 000 km²

Highest point: 312 m

Relief: low plain

Climate: maritime



TWO HABITAT GROUPS WITH CONNECTED SPECIES COMMUNITIES

HABITATS FRAGILE TO ANY DISTURBANCE

DISTURBANCE DEPENDENT HABITATS

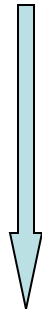
wilderness approach

regular disturbances
-natural
-anthropogenic

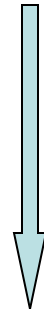
restoration
control

waste
recreation

hidrological
regime
regeneration

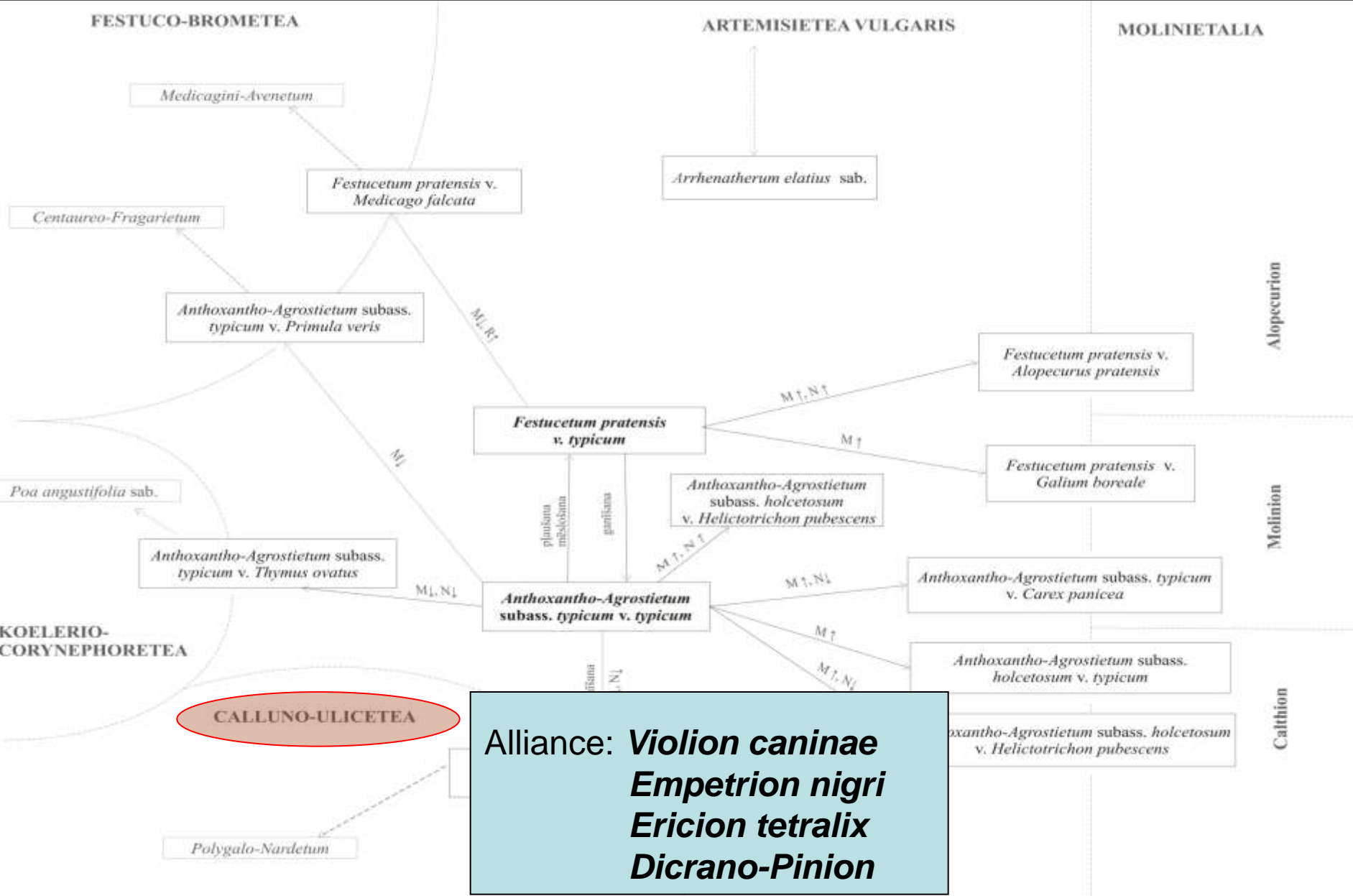


natural development – succession
general human impact – industry,
agriculture, forestry



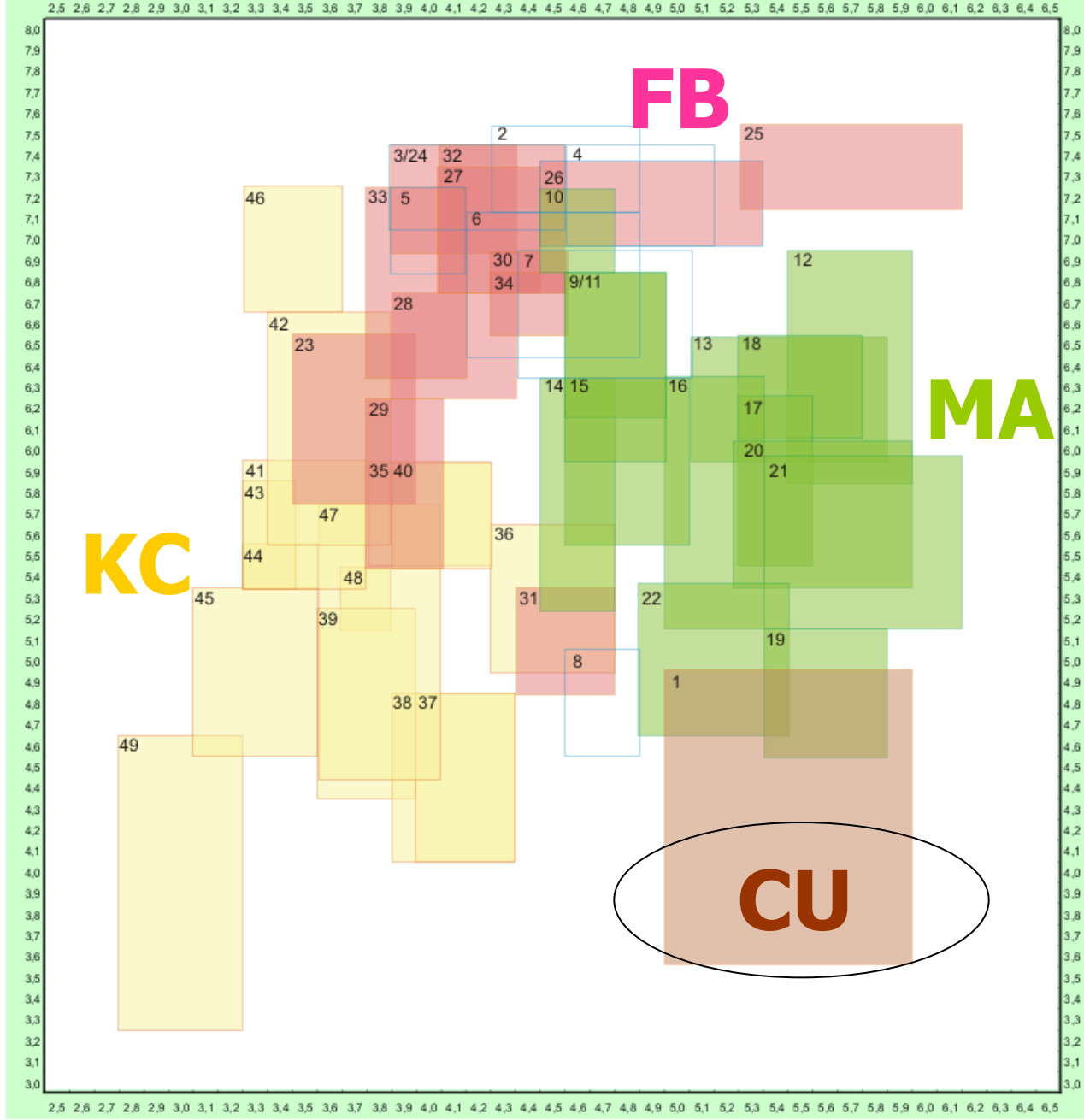
time
place
type
amount

VEGETATION DIVERSITY - CONTACT COMMUNITIES



ECOLOGY

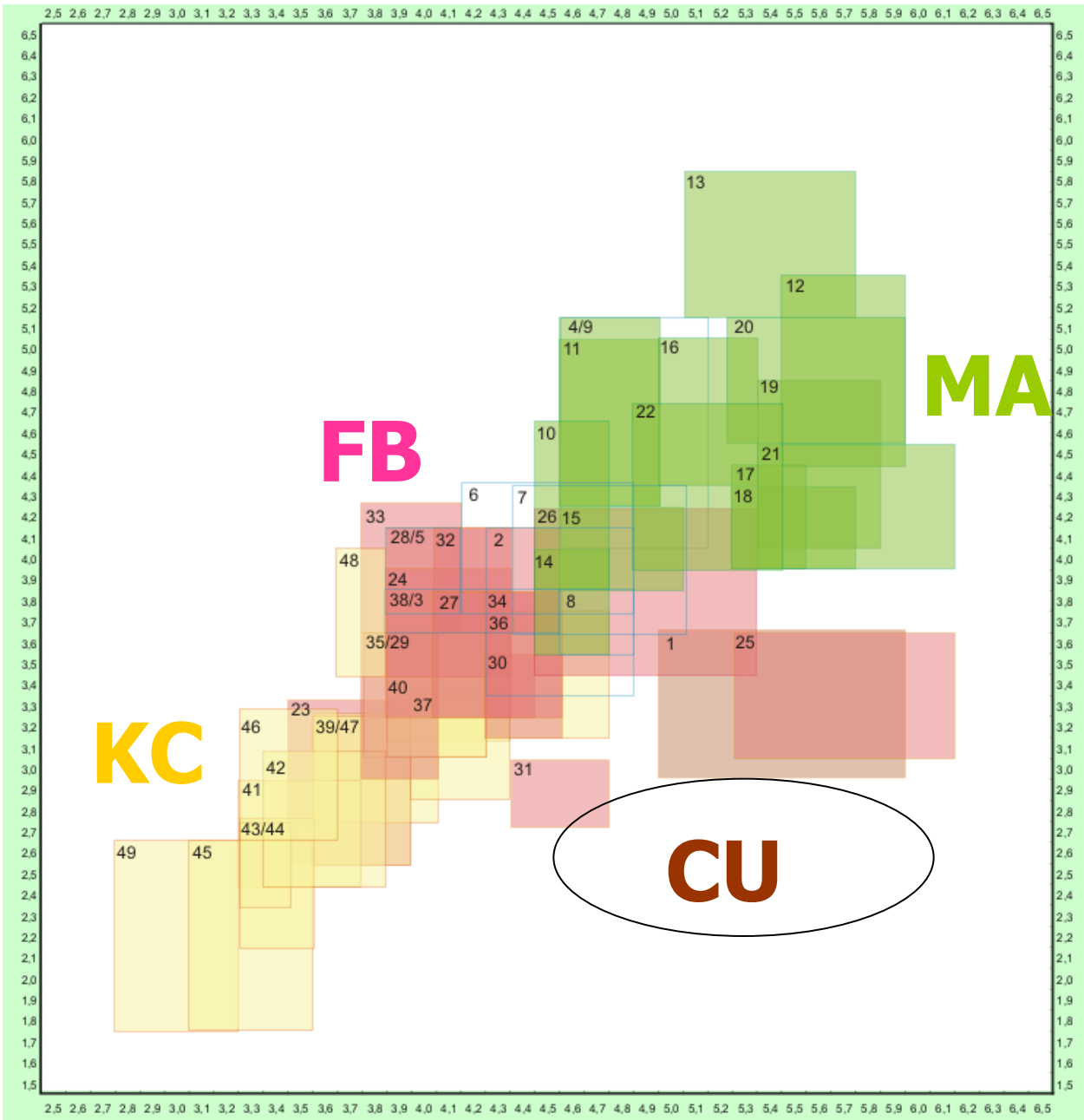
Ellenberg reaction figure



Ellenberg moisture figure

ECOLOGY

Ellenberg nitrogen figure



Ellenberg moisture figure

CONSERVATION - CONNECTED WITH DISTRIBUTION

Heathlands are disturbance dependent habitats, mainly developed in process of secondary succession.

The area of heathlands has diminished rapidly (up to 80 %) during the 20th century all over the Europe owing mainly to management abandonment.

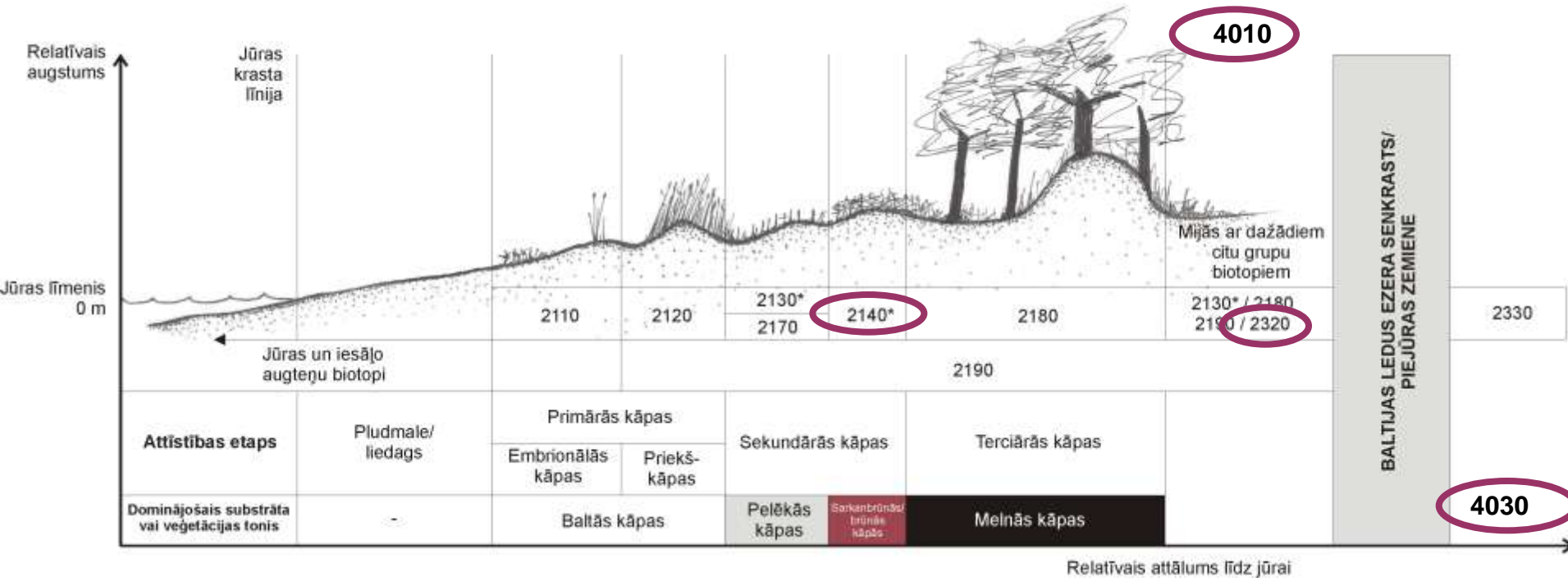
DECALCYFIED FIXED DUNES WITH <i>EMPETRUM NIGRUM</i>	2140*
DRY SAND HEATH WITH <i>CALLUNA</i> AND <i>EMPETRUM NIGRUM</i>	2320
NORTHERN ATLANTIC WET HEATH WITH <i>ERICA TETRALIX</i>	4010
EUROPEAN DRY HEATH	4030

DISTRIBUTION OF HEATH HABITATS TOWARDS INLAND

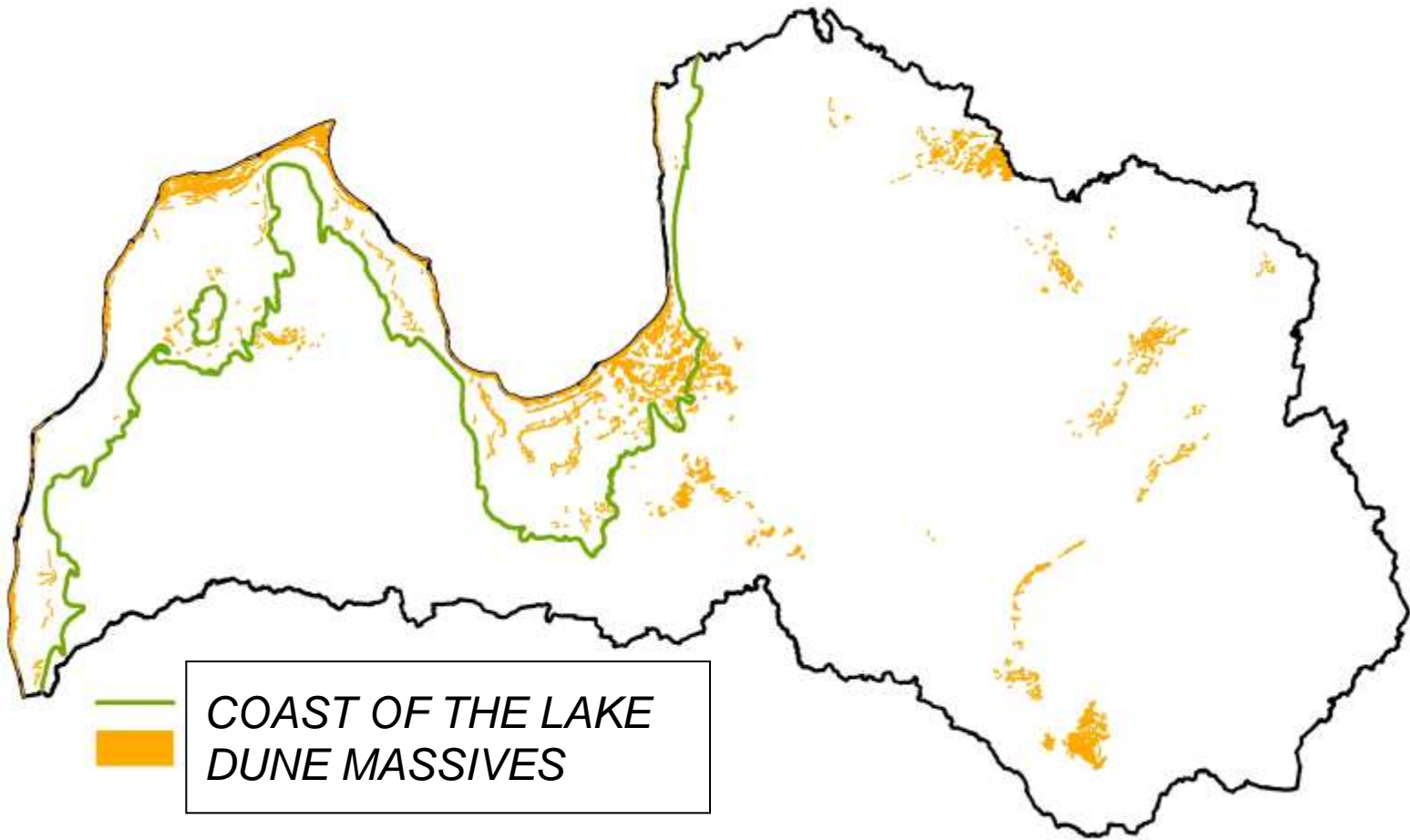


- "HEATH" HABITAT

! IN DETAILS – MANUAL OF EUROPE UNION IMPORTANCE HABITATS, 2010, LATVIAN FUND FOR NATURE



BALTIC ICE LAKE



— COAST OF THE LAKE
■ DUNE MASSIVES

DECALCYFIED FIXED DUNES WITH *EMPETRUM NIGRUM*, 2140*



**DRY SAND HEATH WITH *CALLUNA* AND
EMPETRUM NIGRUM, 2320**



NORTHERN ATLANTIC WET HEATH WITH *ERICA TETRALIX*, 4010



-with *Erica tetralix*
-without *Erica tetralix*

EUROPEAN DRY HEATH, 4030

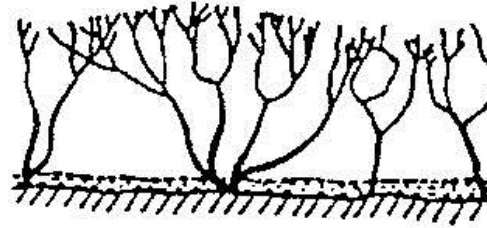


HEATHER GROWTH PHASES

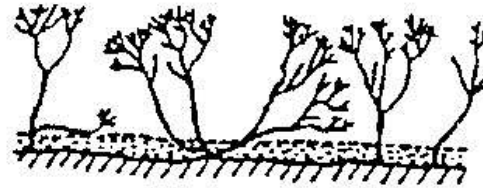
Pioneer phase



Building phase



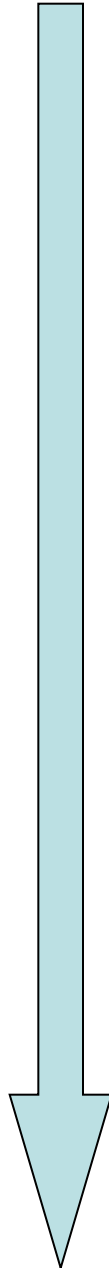
Mature phase



Degenerate phase



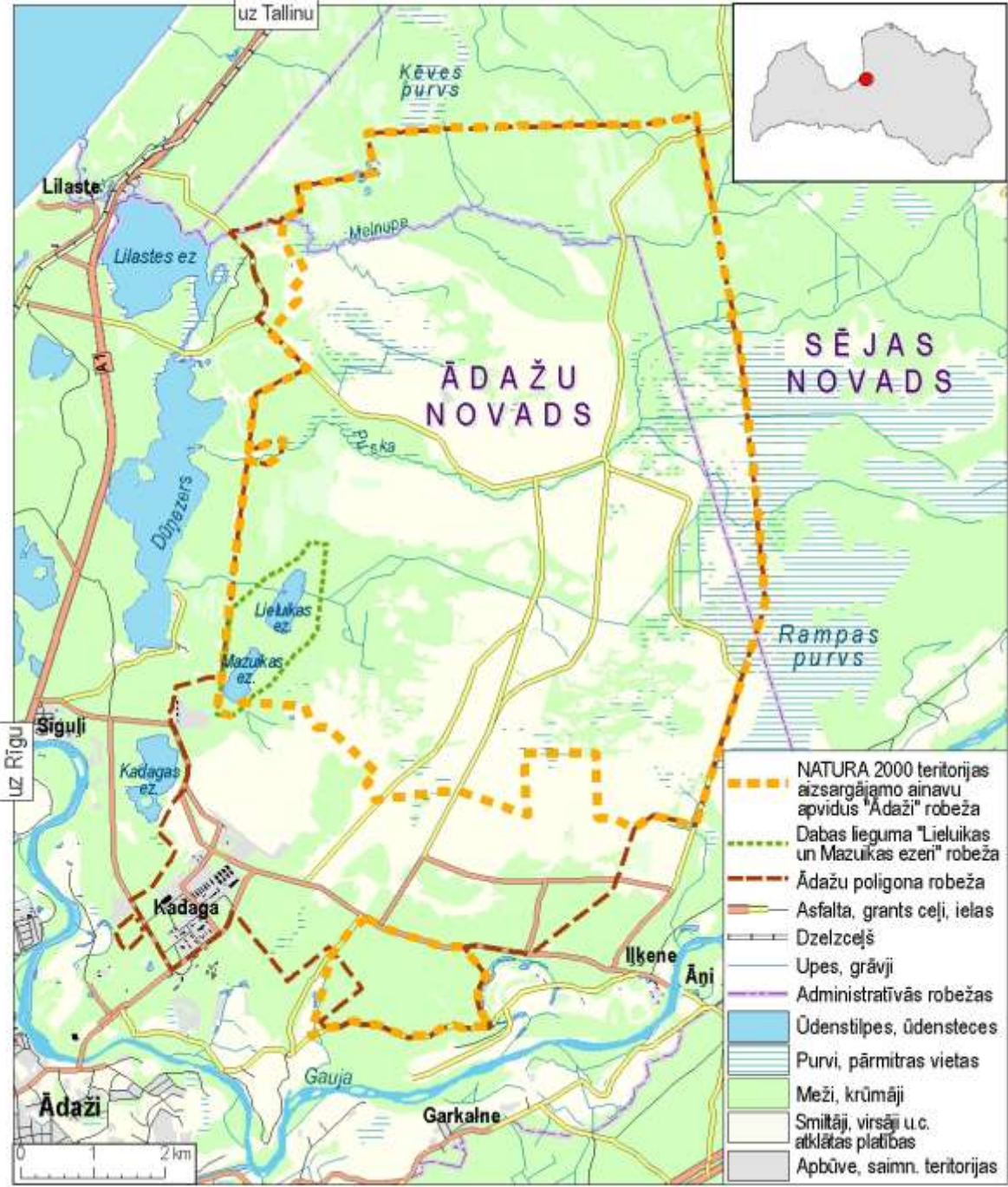
Dead heather



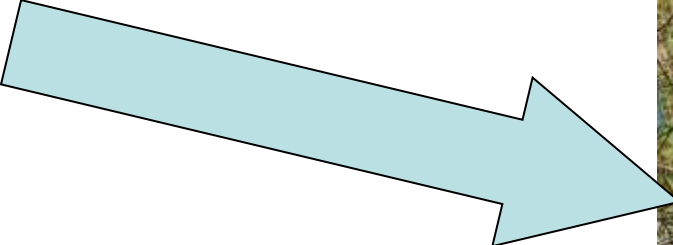
species
nutrients

ADAZI MILITARY TRAINING AREA

7857 ha



**MILITARY TRAINING
AREA SINCE 1930-ties**



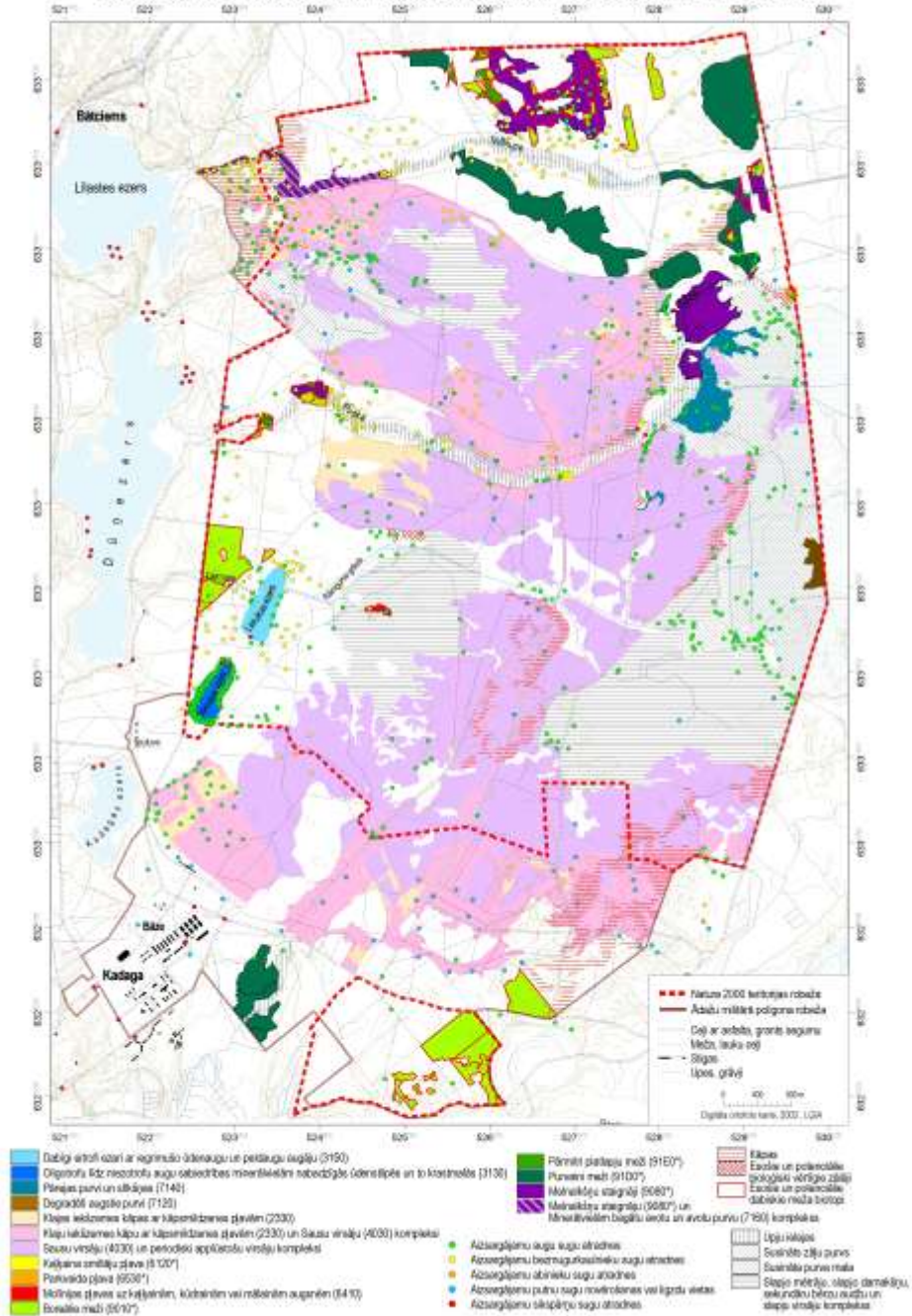
“VALUE” MAP

109 protected species
7 protected habitats

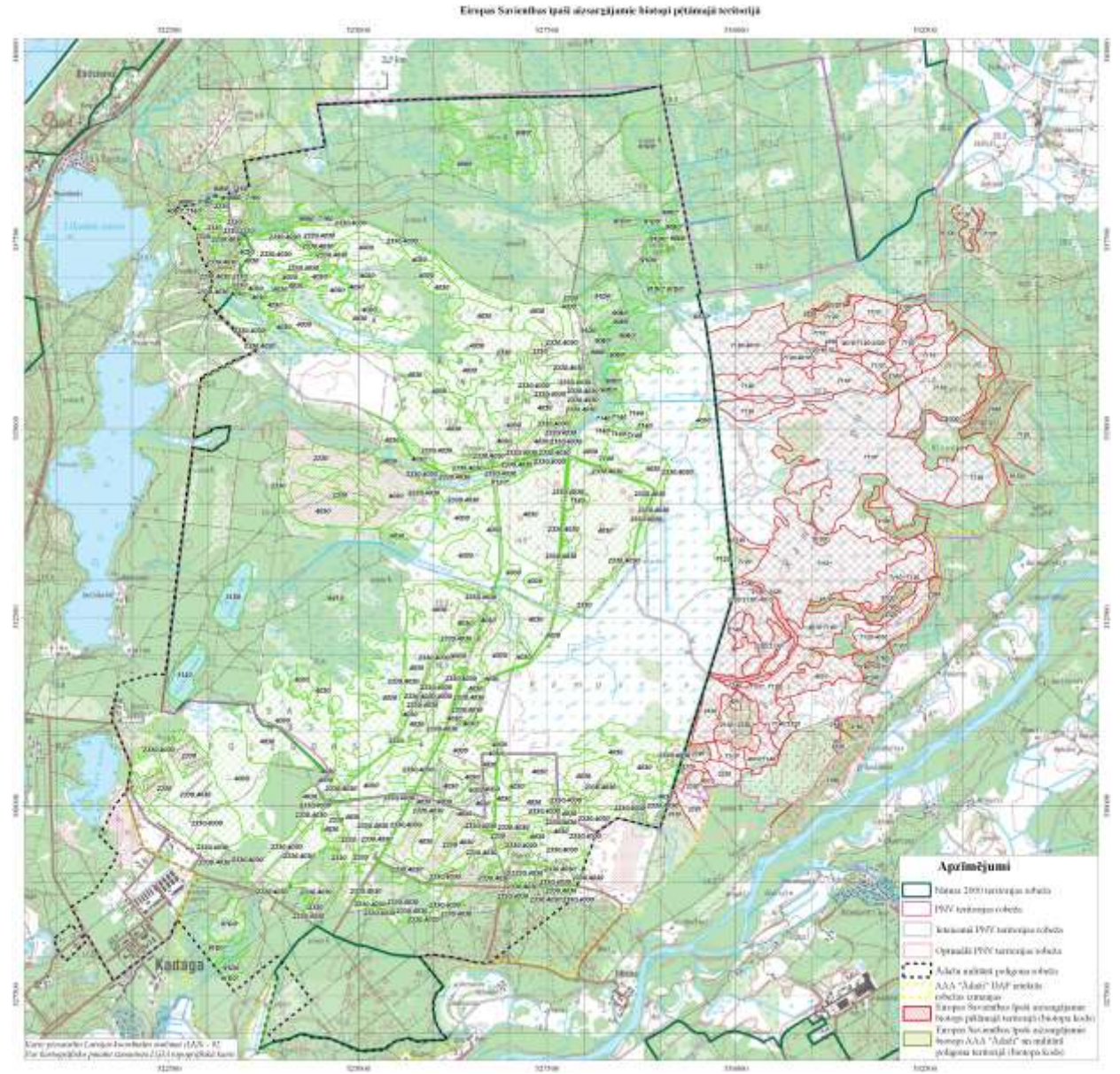
TWO HABITAT GROUPS
WITH CONNECTED
SPECIES COMMUNITIES

- Disturbance dependent habitats
- Habitats fragile to any disturbance

7. pielikums. Retie, īpaši aizsargājami biotopi un bioloģiskajai daudzveidībai nozīmīgas teritorijas



ENLARGEMENT



HEATHLAND COMPLEX IN ADAZI, 2320 & 4010



© Daiga Brakmane

MOWING AND/OR GRAZING



AFTER MOWING



DUE TO MOWING / GRAZING

—————→ ***RAMETS*, WITHOUT ANY GENETICAL CHANGES**



CONTROLLED BURNING OF HEATH

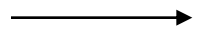




AFTER BURNING



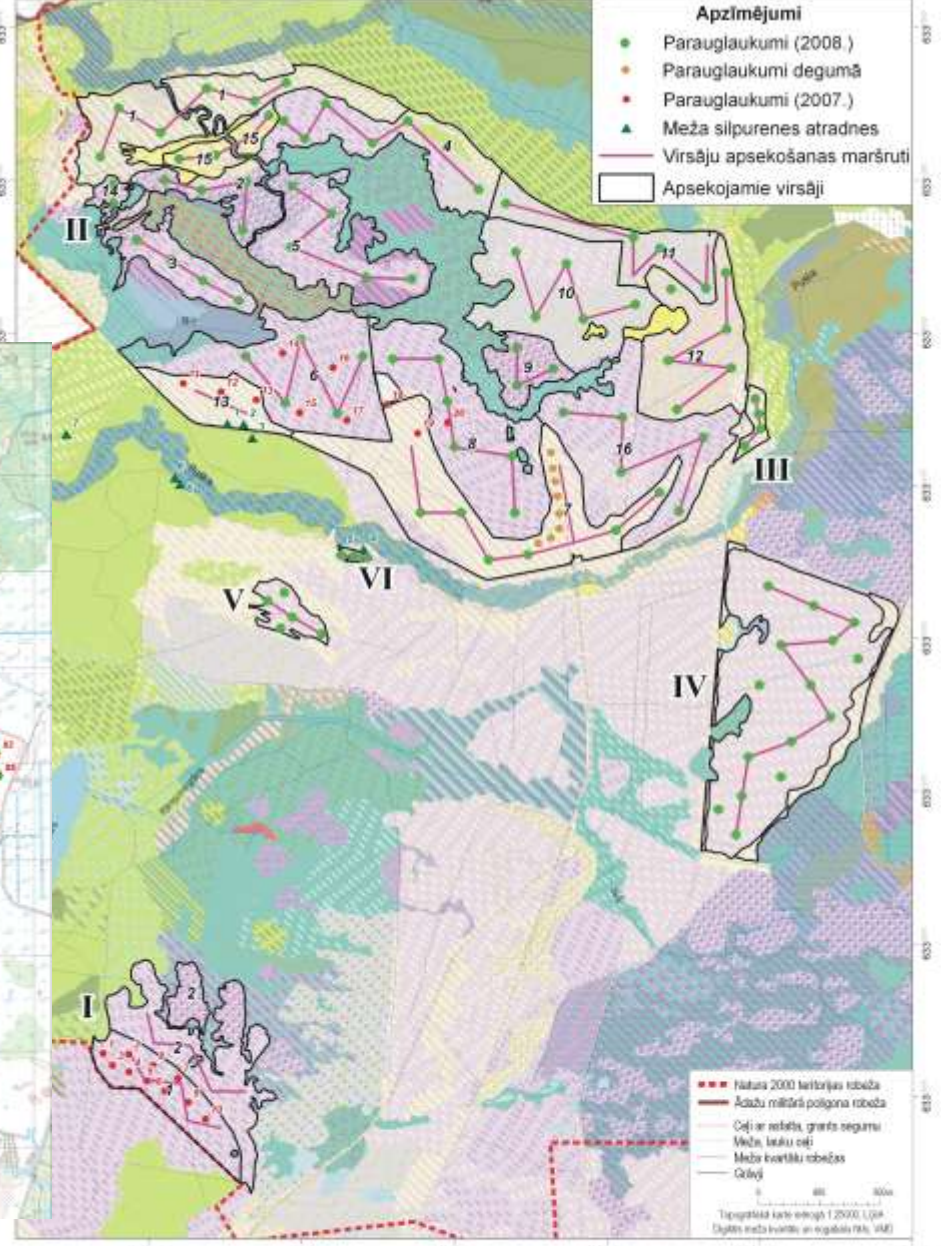
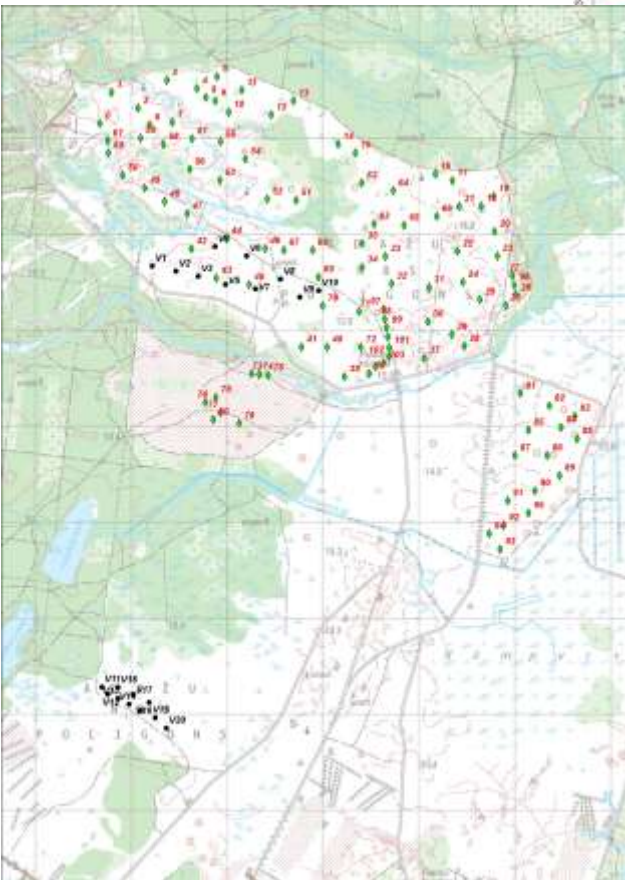
DUE TO BURNING



***GAMETS*, FROM SEEDS, GENETICAL RENOVATION AND NUTRIENTS OFF**



MONITORING



Stāvējoši bērzi	Sausi virsāji	Bērzu sausiešu meži	Smaržīgie meži
Upe	Periodiski paplašināmi virsāji	Apļu sausiešu meži	Lozintini
Bebraines	Slāpji virsāji	Priedu sausiešu meži	Kuhvītes pļavas un ganības
Augstie purvi	Smilšņi	Jauktu koku sausu meži	Rūbešlīde biotopi un apbīde
Pārejas purvi	Kāpu pļavas	Melnbērzu slāpji meži	
Zemie purvi	Atsevišķas pļavas	Priedu slāpji meži	
Nodrāji	Vīkašas pļavas	Egļu slāpji meži	
Krūmiņi	Pļavas un ganības apgabalos un mēreni auglīgos apgabalos	Bērzu slāpji meži	
Augsti grābju pļavas	Mēreni auglīgas pļavas vaiļā un mēreni mitrums režīmā	Jauktu koku slāpji meži	
			Čer LIFE projekta laikā
			Pļau LIFE projekta laikā
			Sausu virsāju un smilšņu kompleksus ar kāpu pļavu iestiprināšanu
			Sausu virsāju un smilšņu iestiprināšanu
			Sausu virsāju un smilšņu kompleksus

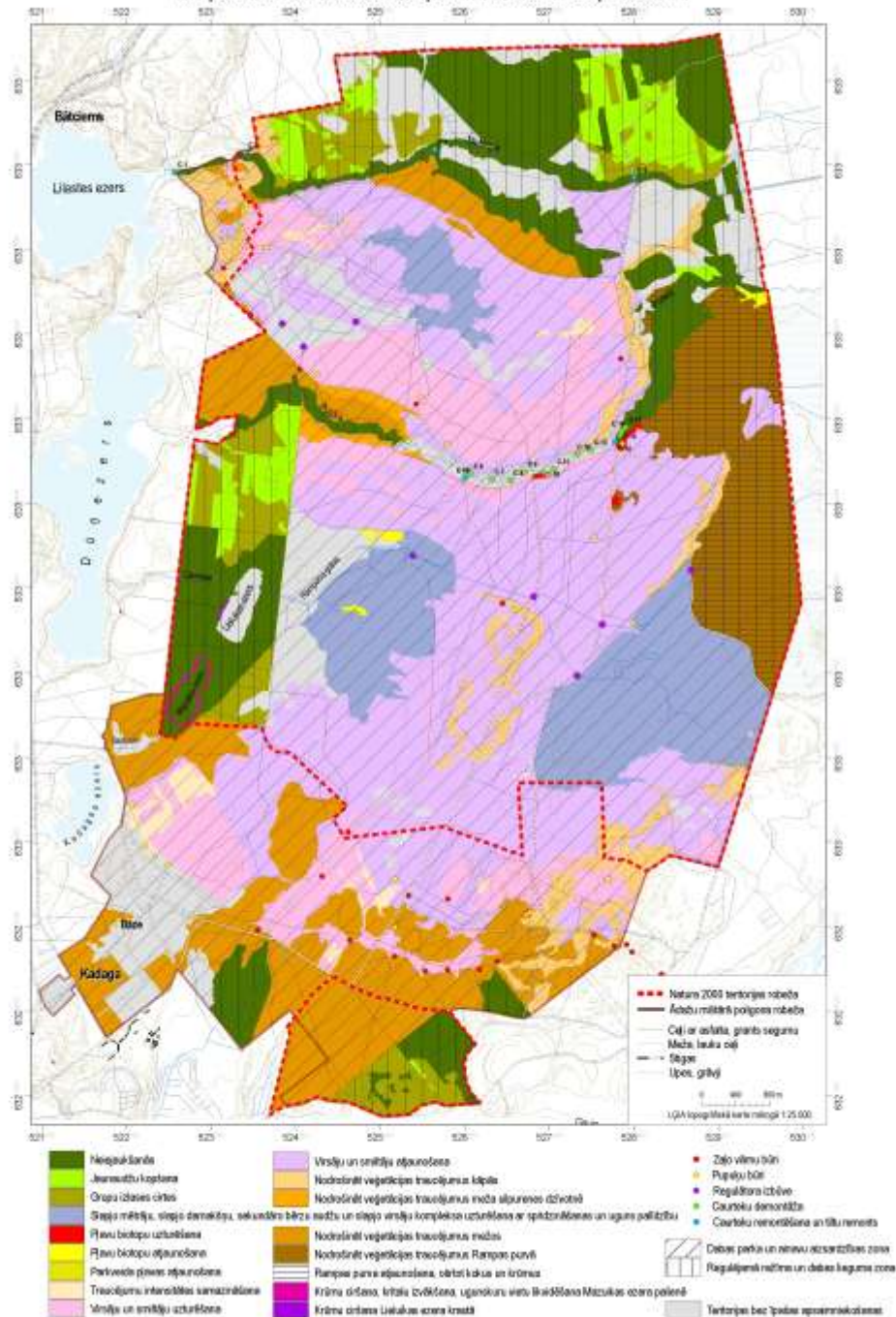
PLANNING

We use certain military exercises as the main management activities

Where and when it is not possible, we use “classic” management activities:

- tree cutting
- moving meadows and heath and
- controlled burning

10. pielikums. Ieteicamie apsaimniekošanas pasākumi



Photos

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Pēteris Lakovskis

Liene Auniņa

Ilze Rēriha

Maps, schemes

Pēteris Lakovskis

Baiba Strazdiņa

Rūta Sniedze

Daiga Brakmane





Thank You!