Alkaline Fens (7230 habitat) conservation in Poland

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Naturalists Club Poland

LIFE11 NAT/PL/423 + LIFE13 NAT/PL/024 projects

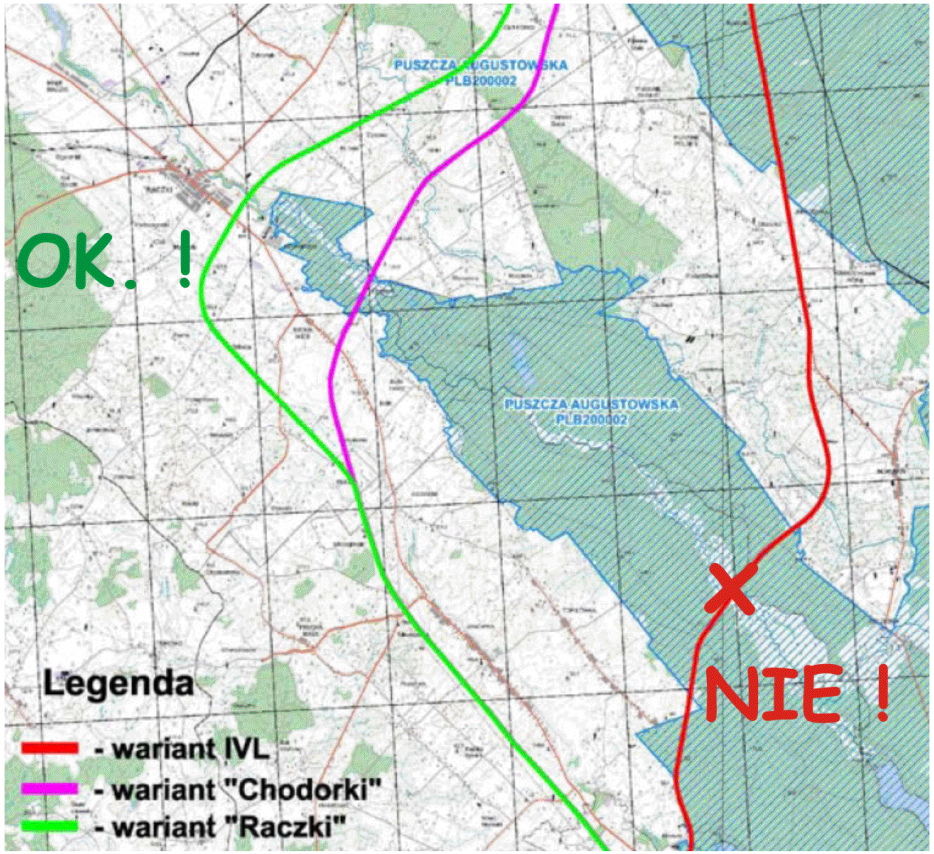
Kruszynek nature reserve, photo by R. Stańko

Łysa Góra mountain fen, photo by R. Stańko

Rospuda river valley, photo by F. Jarzombkowski

Rospuda case

Augustów bypass



- First serious Polish nature-investment conflict, win by nature and naturalists, owing to Natura 2000
- **7230 habitat !** *Famous in Polish nature conservation history*

Habitat 7230

- specific group of fens:
  - meso and meso-oligotrophic weakly acidic, neutral and alkaline,
  - fed by alkaline groundwater,
  - water flows underground from mineral base to the river,
  - accumulation of peat or tufa,
  - communities of low sedges and brown mosses

Habitat 7230

- primaveral conditions: naturally treeless;
- seminatural: natural hay meadows;
- in order to help haymaking – first drainage works

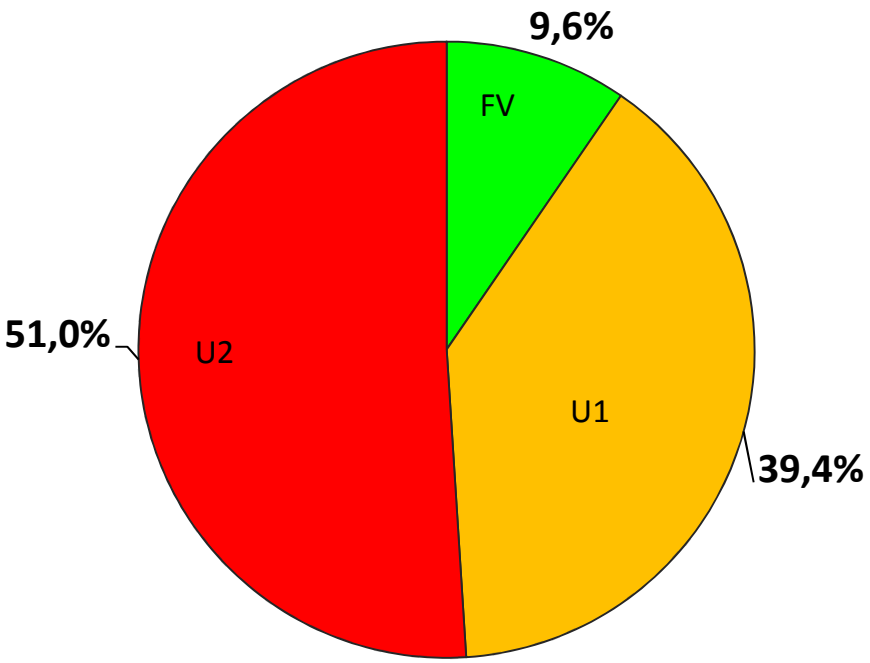
Alkaline fens (7230) in Poland

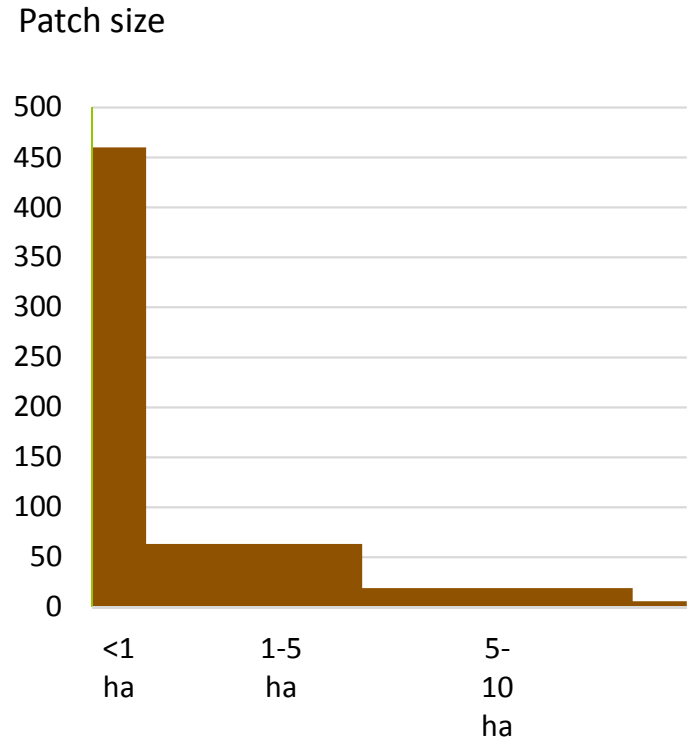
Results of a field inventory of the 7230 habitat, by the Naturalists' Club in 2008-2011.

"Habitat Action Plan for alkaline fens (habitat 7230)"

present area - ca. 15.000 ha (app. 900 localities) of former 35.000 ha
ca. 7500 ha still with typical vegettaion

Present conservation status



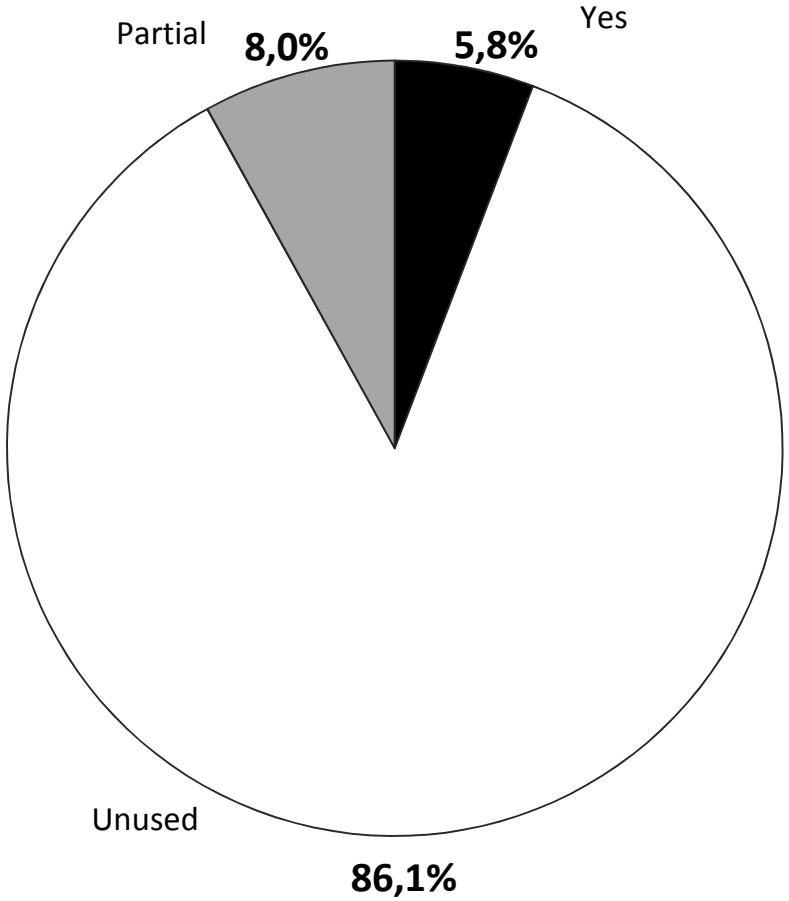


Size & Ownership problems:

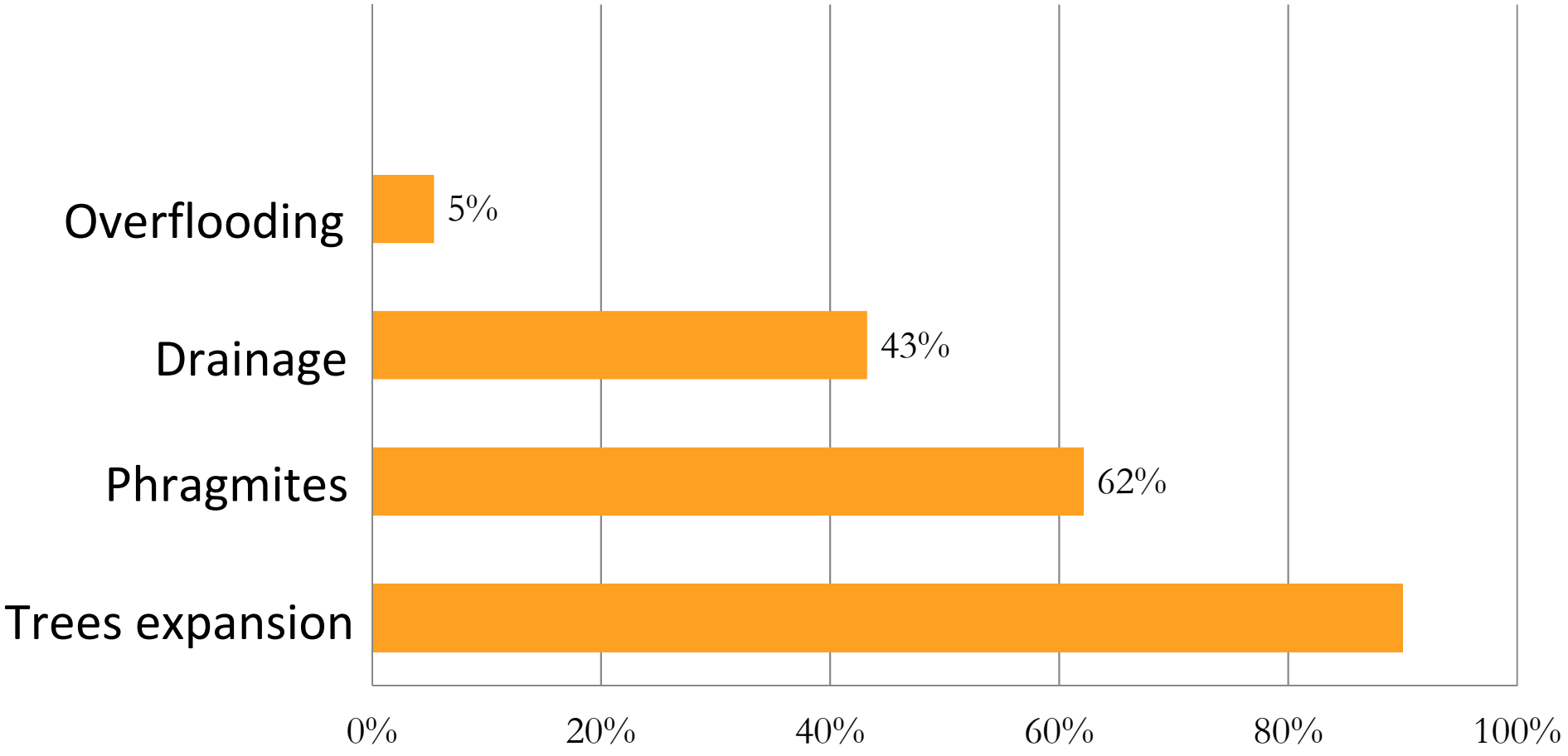
Present conservation status

Region	Conservation status						Summary
	FV		U1		U2		
	No.	%	No.	%	No.	%	
Young-glacial landscape	40	9	184	43	205	48	429
Old-glacial landscape	2	1	88	55	70	44	160
Highlands	5	9	30	55	20	36	55
Mountains	32	15	104	50	73	35	209
Summary	79	9	406	48	368	43	853

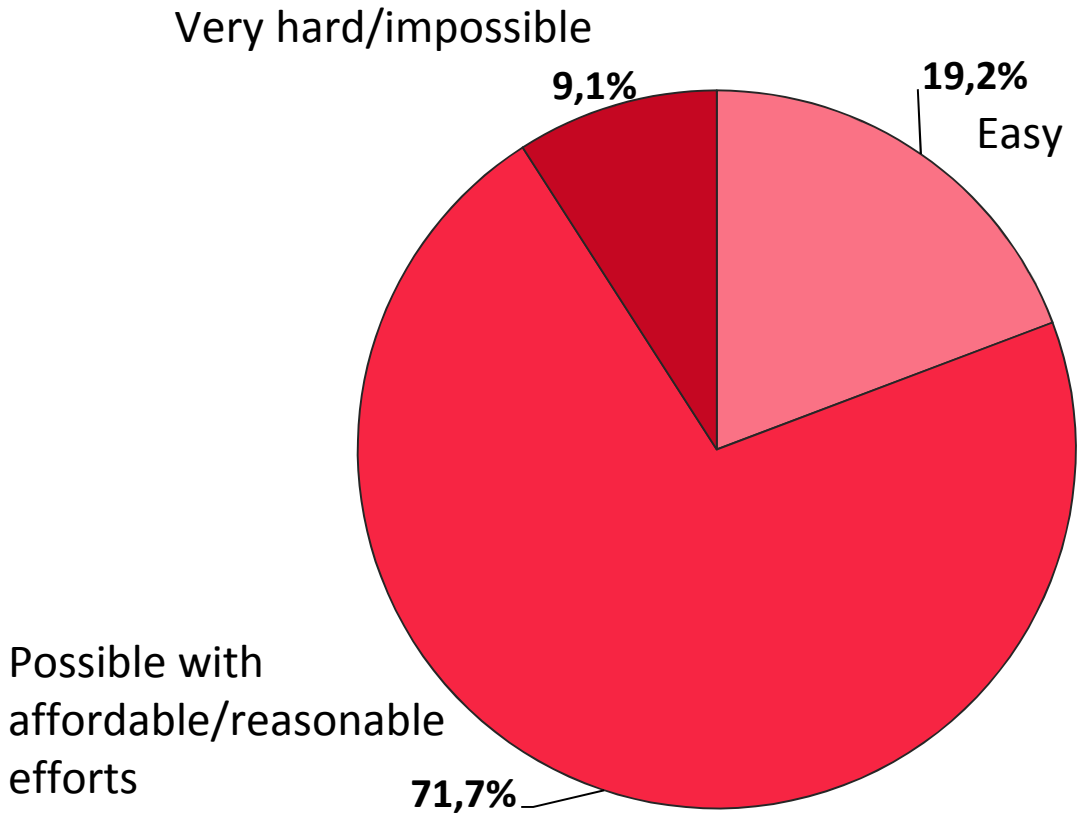
Present use (grazing/mowing)



Threats


Overflooding
5%
Drainage
43%
Phragmites
62%
Trees expansion
0%
20%
40%
60%
80%
100%

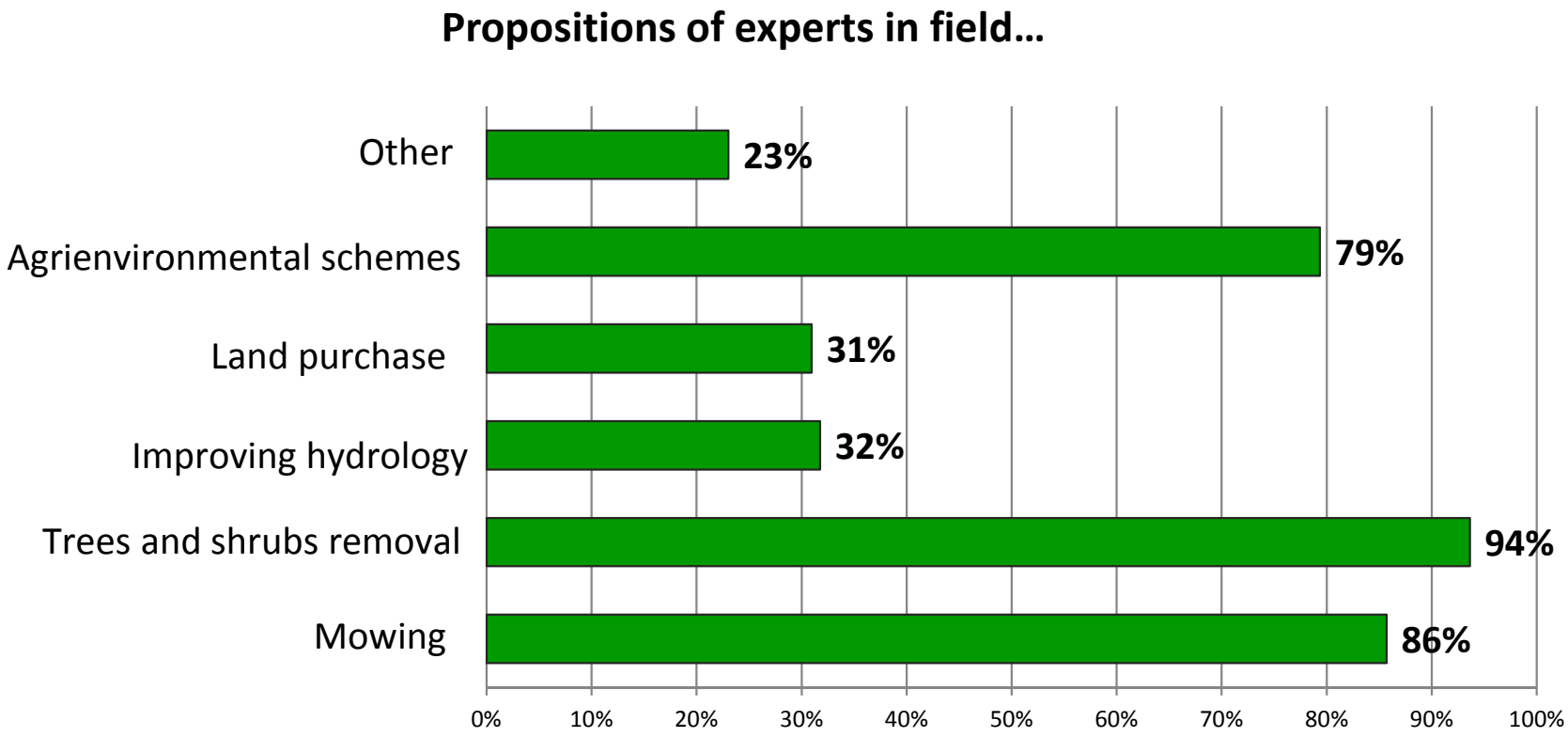
Restoration possibilities



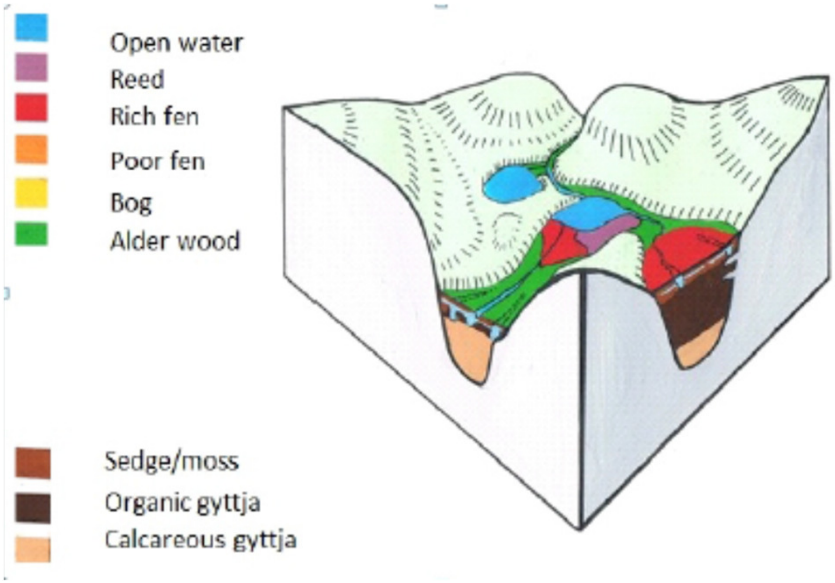
It is only the assessment of the vegetation restoration possibilities

Does not mean restoration of processes & function !

Conservation measures proposals…

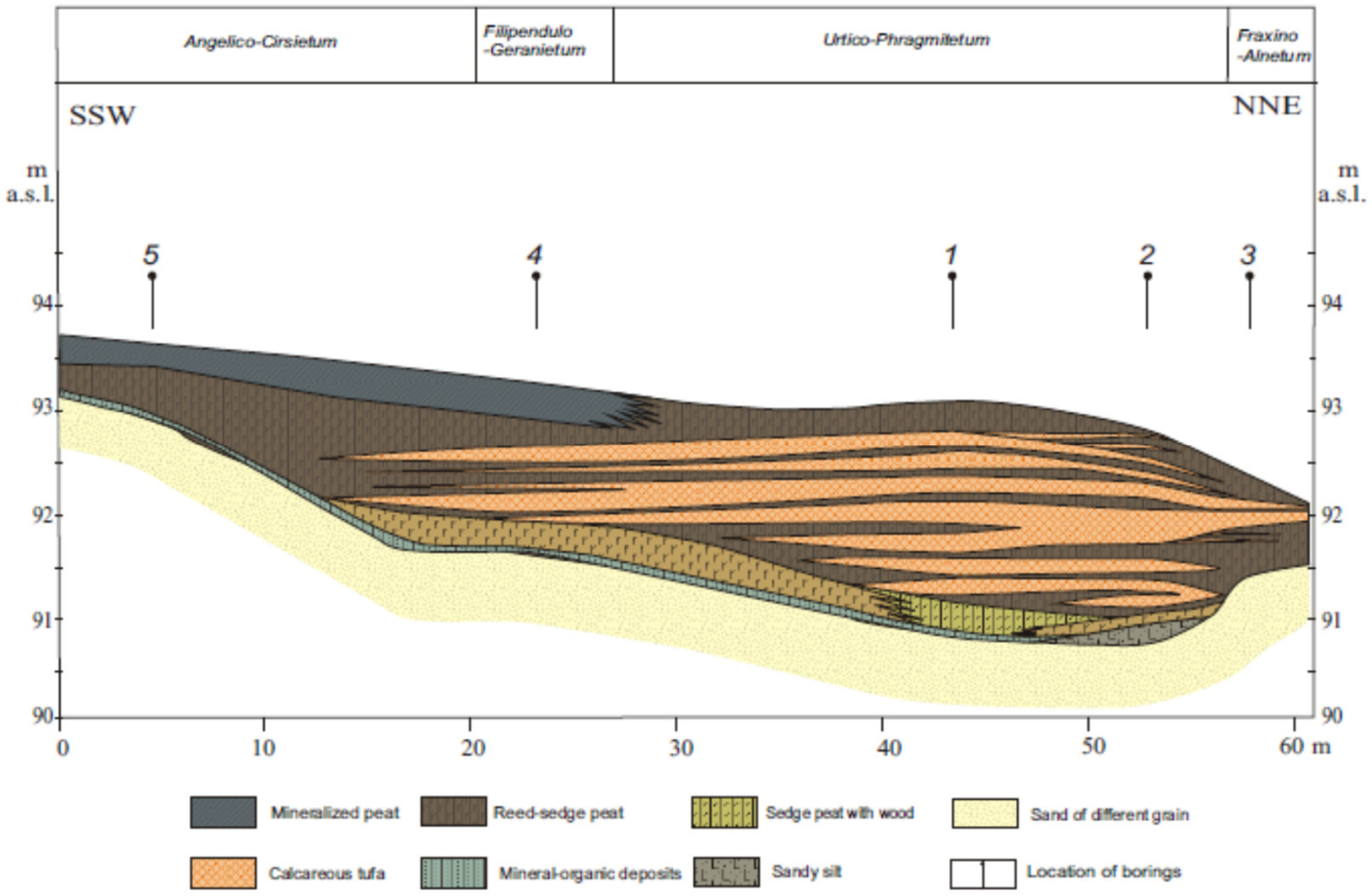


Position in landscape



source: Loeb et al. 2015

Geology

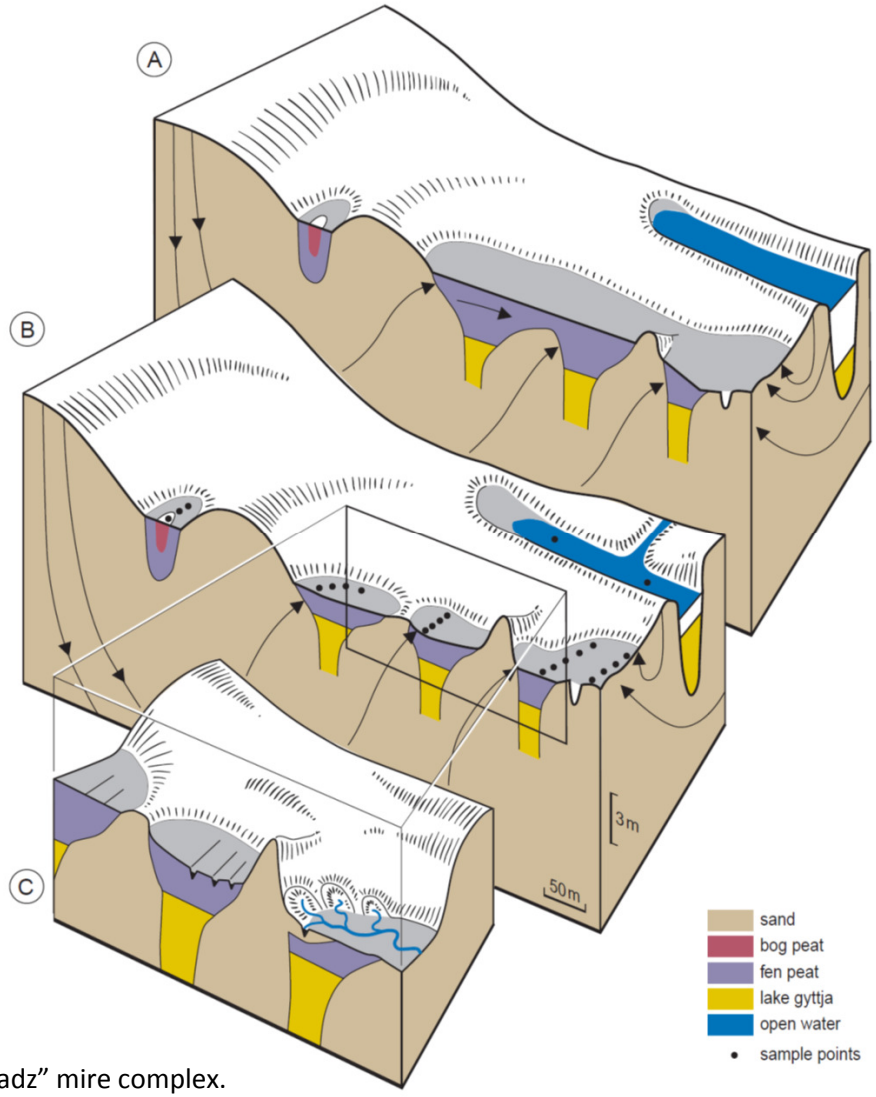


Sometimes complicated…

Source: Dobrowolski, Mazurek & Osadowski 2015

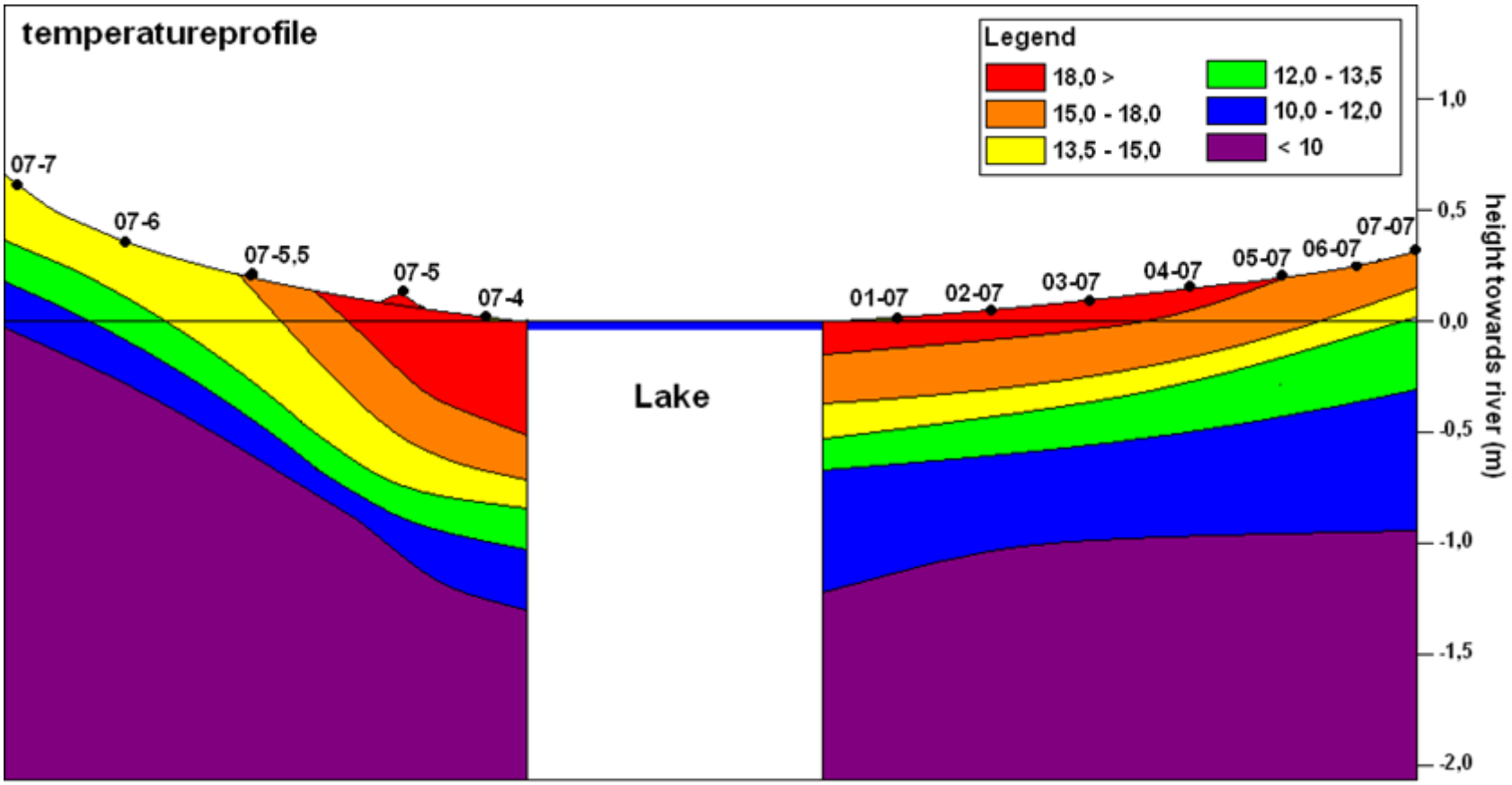
Ecohydrology

Water supply can be determined by history, transformations / alterations in the landscape scale…



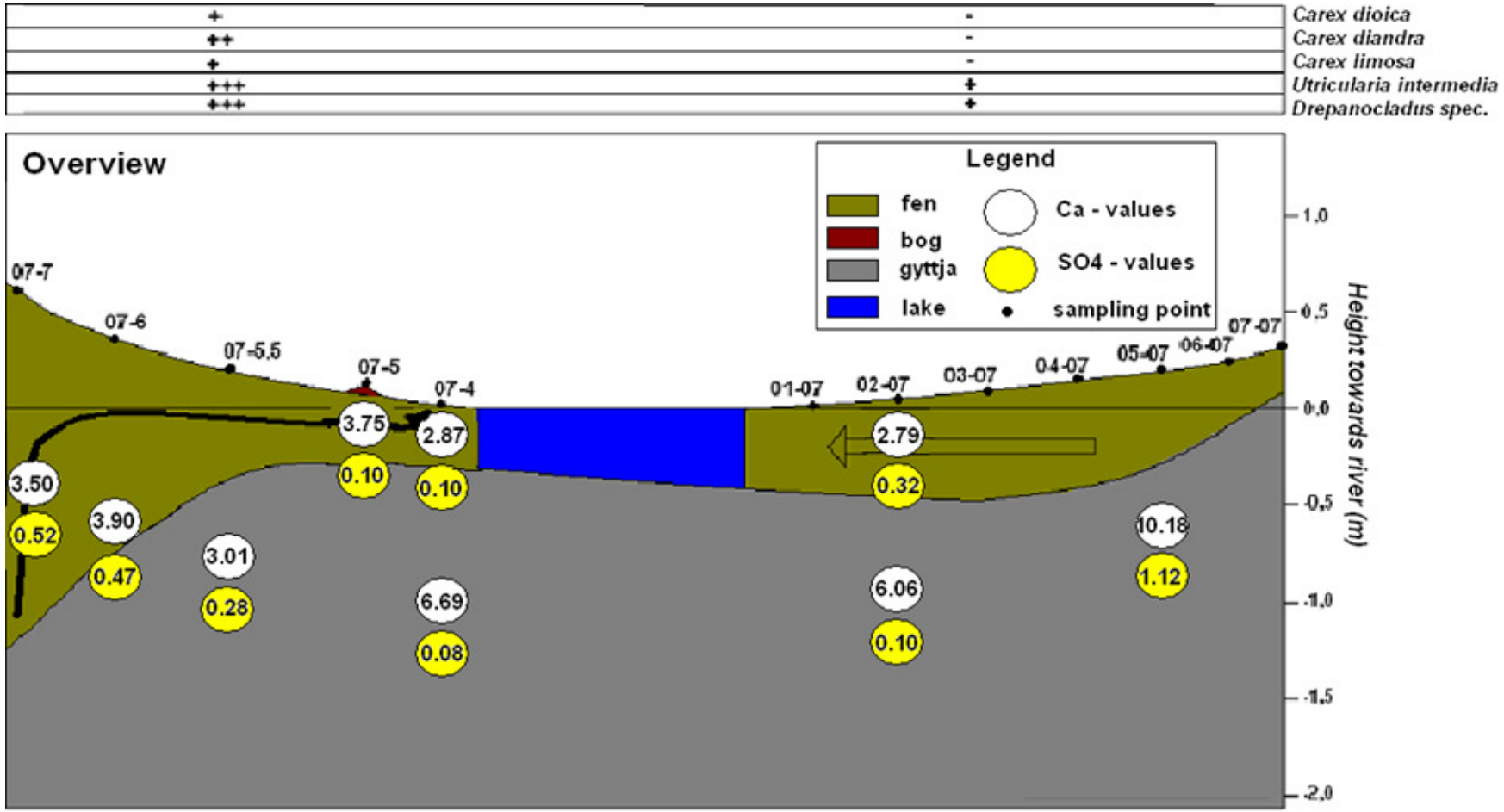
Transformation of ecological conditions in the "Miradz" mire complex. A – original situation (reconstructed). B & C – present situation at different spacial scales (after Grootjans & van Diggelen 2009).

Ecohydrology



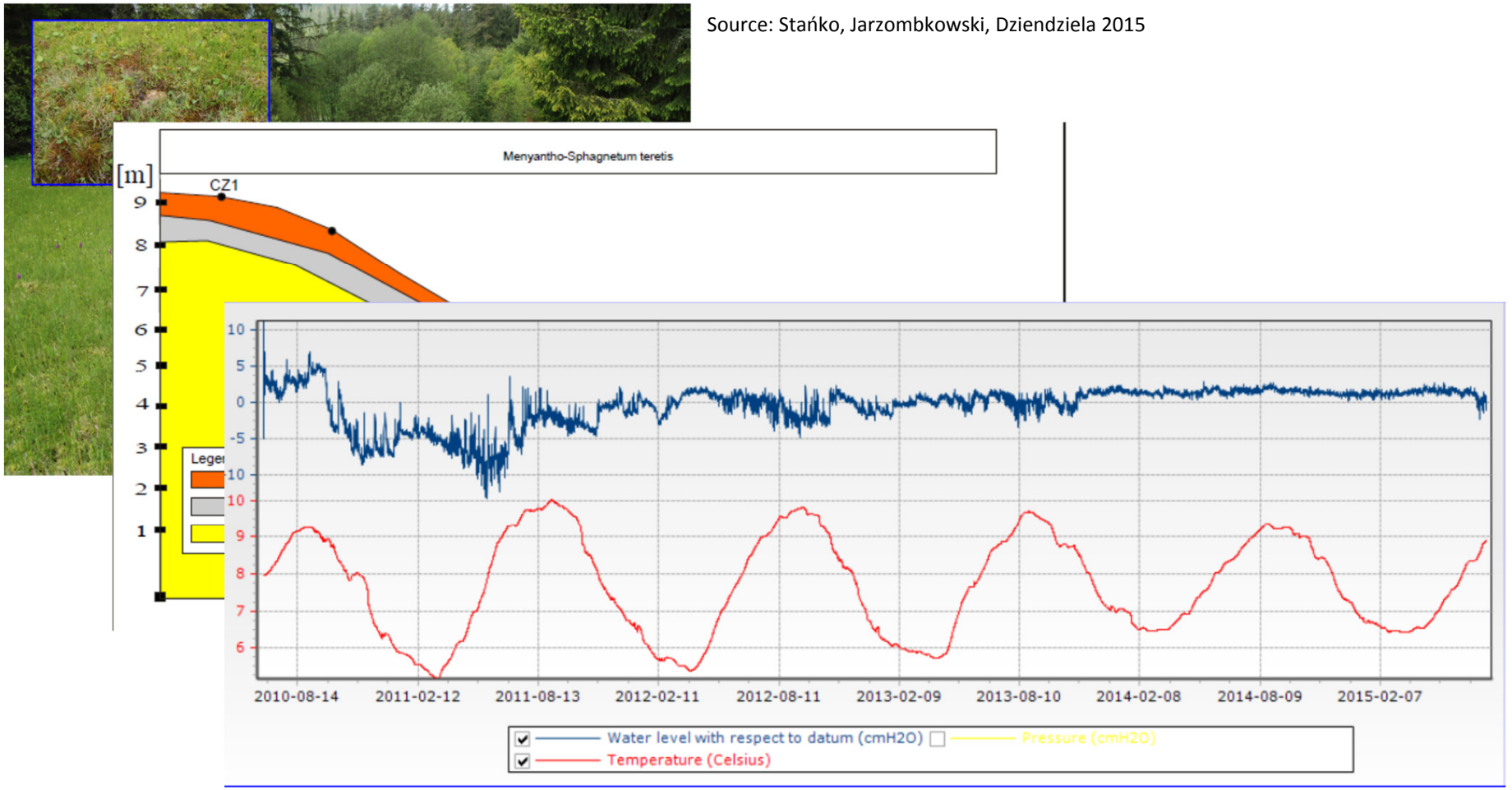
From: Grootjans, Wolejki & Stańko 2015

Ecohydrology



From: Grootjans, Wolejki & Stańko 2015

Ecohydrology



Source: Stańko, Jarzombkowski, Dziendziela 2015

Habitat 7230 - characteristics

- even very small abnormalities cause the development of forest communities;
- acceleration of natural processes due to human activity;
- progressive intensification of use - the loss of naturalness;
- all alkaline fens in Poland more or less altered;
- important details not easy to recognise – „one-view assessment” oftenly wrong!

The main problem

The fen once degraded – must be probably always actively conserved

No tools for successful restoration of the whole system functioning

Problems

- drainage to use mowing machines (instead of manual)
- high habitat sensitivity → fast alternation
- lack of dynamic monitoring → delayed response to threats
- lack of proper knowledge → improper conservation measures
- lack of „substantive monitoring”/scientific control of implementation of agrienvironmental schemes
- we must think in groundwater basin scale → distant (geographically and in time) event may have a substantial impact on today’s conservation status → difficulties in designation of conservation measures

To mow or not to mow?

Fens in Biebrza National Park - Important also for birds

To mow or not to mow?


Biological Conservation 167 (2013) 292–297

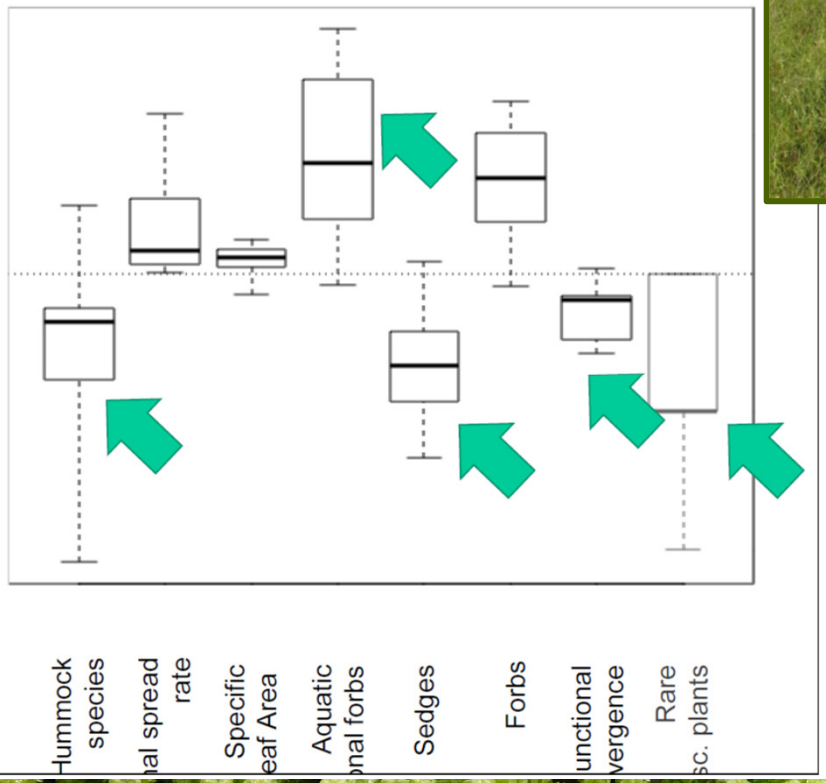
Contents lists available at ScienceDirect

Biological Conservation

journal homepage: www.elsevier.com/locate/biocon

Conservation management in fens: Do large tracked mowers impact functional plant diversity?

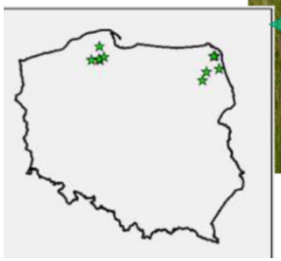
Wiktor Kotowski [a,*], Ewa Jabłońska [a], Helena Bartoszuk [b]

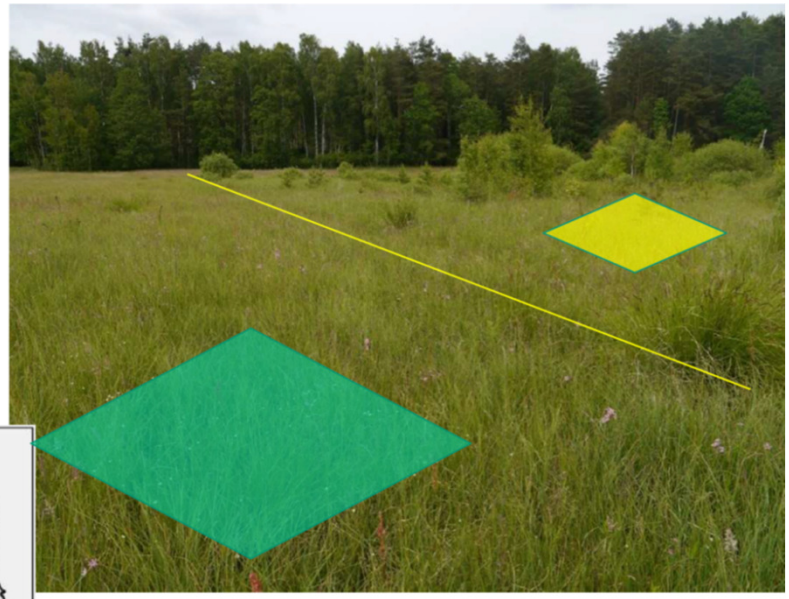


- Mowing = decreasing hummock and hummock-species
- Maintain treeless
- Ok. for birds
- But reduce plants biodiversity

To mow or not to mow?

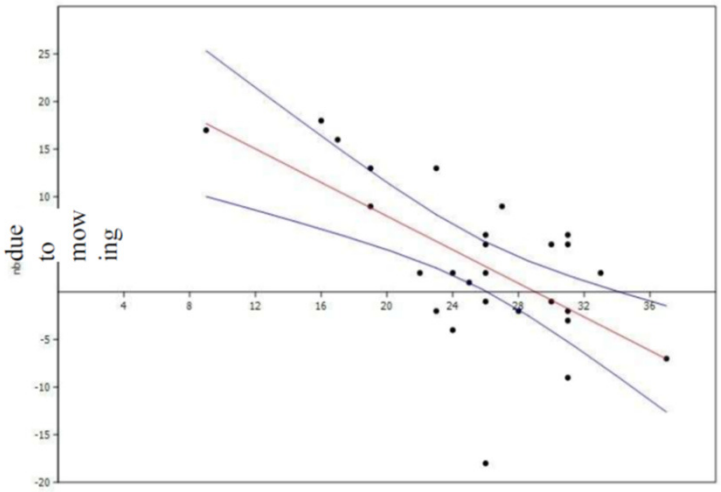
- 27 pairs of plots 4x4 m
- 10 fens
- along the borders between manager/long unmanaged





Study by Łukasz Kozub, in prep.

Mowing „levels" biodiversity



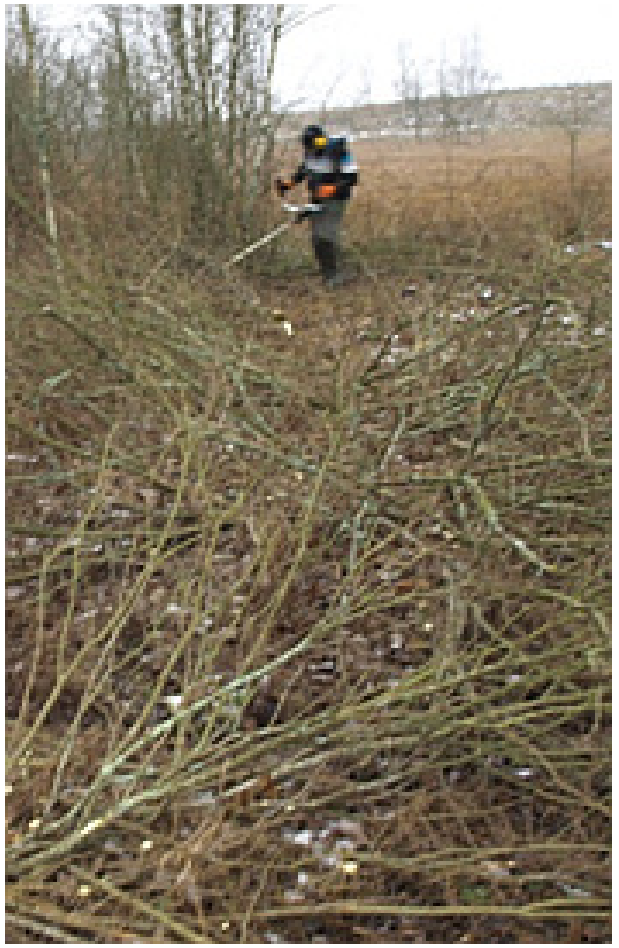
Species numer on unmown plots

Mowing improves bad vegetation, but makes good vegetation worse

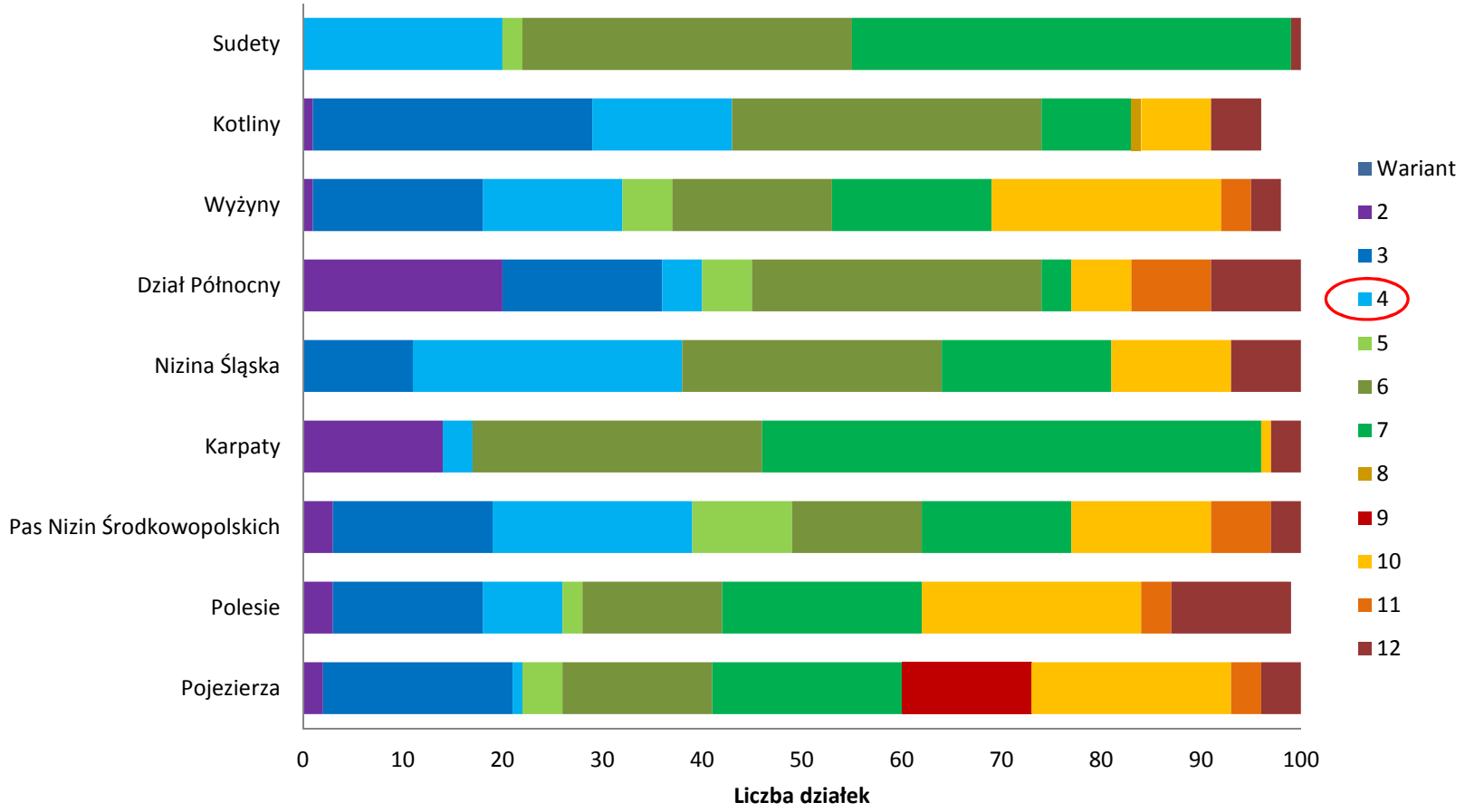
More optimistic?

Despite the problems, the situation is not totally hopeless

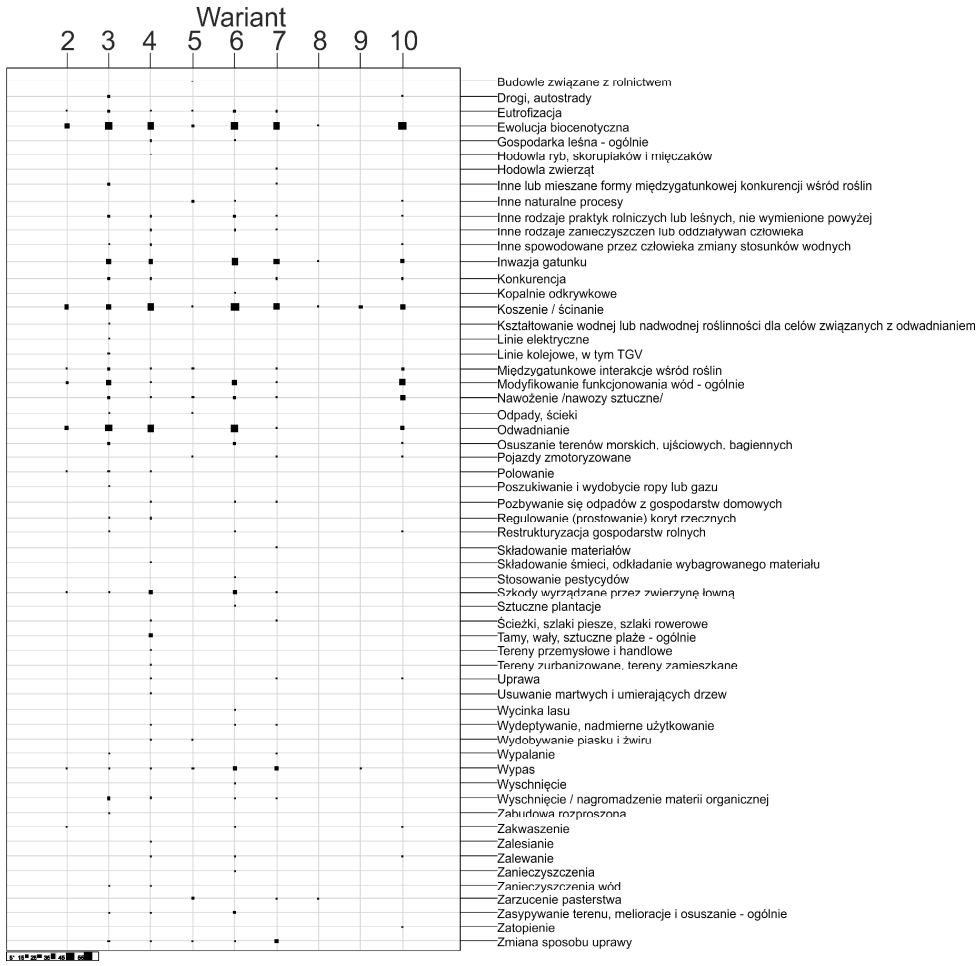
We still try to do something…



Agrienvironmental schemes 2007-2013



Agrienvironmental schemes 2007-2013



The most important adverse effects are associated with:

- no measures application -> continuation of overgrowing
- drainage;
- improper mowing

Agrienvironmental schemes 2007-2013

- Expansive species can be only partly eliminated because of late mowing time. For example elimination of *Phragmites australis* (the most popular expansive species in alkaline fens) is possible in the time of blooming – in Poland at the end of June;
- Actual constraints of agrienvironmental scheme do not make it possible to counteract water regime aberrations – one of the most frequent endangerments within peatlands;
- The agrienvironmental activities should be modified to effectively constrict the most popular threats and pressures: expansive species and negative water regime changes;

Partially improved in 2014-2020 scheme, but new problems expected…

LIFE projects

The strategic objective of the projects is to stop degradation and to improve and maintain the favourable conservation status of alkaline fens (habitat 7230) in 57 Natura 2000 sites by:

- Inhibition of excessive runoff and increase groundwater levels in the alkaline fens,
- Halting biodiversity decline due to the expansion of peat species characteristic for habitats with a lower moisture content such as grasses, trees and shrubs,
- Dissemination of conservation methods based on good conservation plans and management plans based on solid, scientific basis
- Promoting the extensive use of this habitat by inviting the owners to join agrienvironmental schemes.

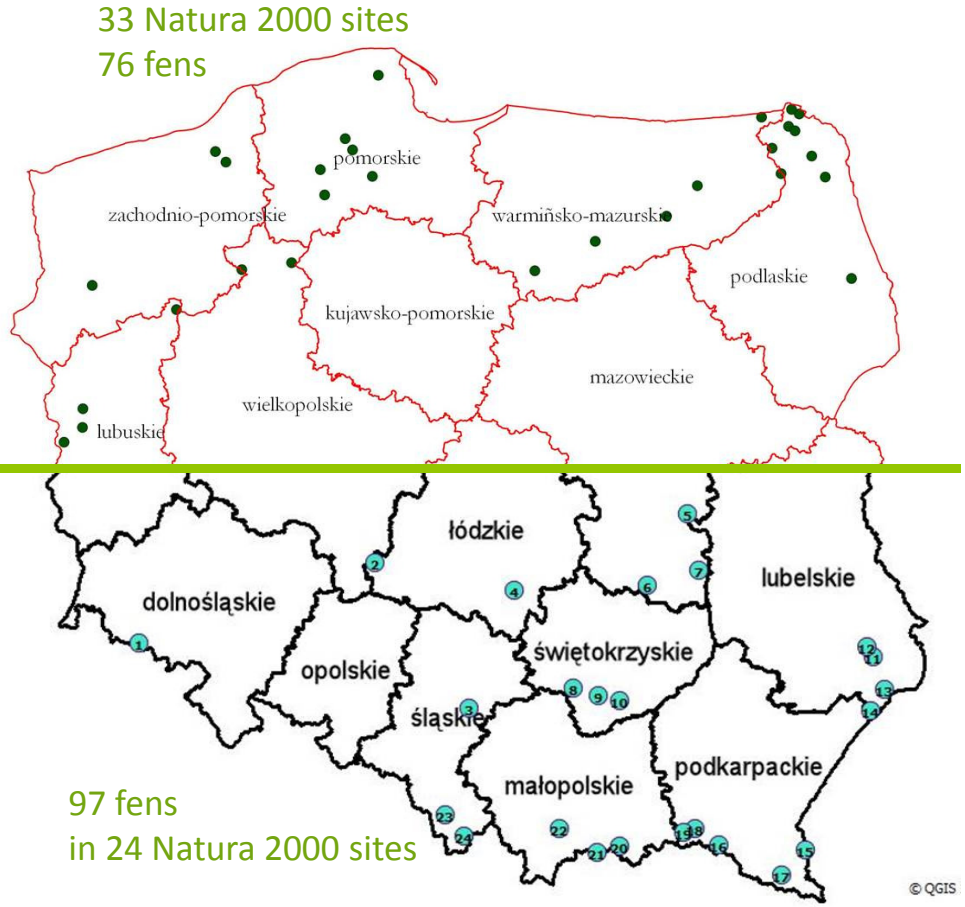
LIFE projects

LIFE11 NAT/PL/423

09.2012 – 03.2017

LIFE13 NAT/PL/024

09.2014 – 06.2018



LIFE projects

Objective = to maintain a favourable conservation status or improve the condition of the most valuable areas of 7230 habitat,

30% of national habitat surface; 50% of Liparis loeseli resources, 90% of Saxifraga hirculus resources.

LIFE projects

- reduce the excessive outflow and increase the level of ground water in alkaline fens – by blocking the ditches present on the fens and their surroundings,
- hinder the process of mineralization and eutrophication of the surface layer, slow down the process of decreasing of biological diversity, caused by expansion of species associated with habitats of lower humidity – by restoring the extensive mowing,

LIFE projects

- dissemination of knowledge about proper methods of conservation of alkaline fens based on good management plans prepared on the basis of solid scientific grounds, with special emphasis of hydro-ecological aspects,
- buyout of the most valuable and at the same time endangered fragments of alkaline fens – and creating nature reserves on purchased land with operating management plans.

Concrete actions

- Ditches blocking (ca 220 points)
- Trees removing (ca 190 ha)
- Mowing – preparation for future AE schemes (ca 310 ha)
- Beaver’s overflooding prevention
- Saxifraha hirculus planting & reintroduction (12 populations)

Preparatory / complementary actions

- Management planning (incl. new 5 protected areas proposals)
- Monitoring
- Land purchase (ca 100 ha)
- Knowledge dissemination, workshops, networking, Best Practice Handbook
- Dissemination of idea of CO_2 storage by fens

LIFE projects

- We are in the middle of projects just after first conservation actions (mowing/trees removal/blocking ditches)

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http://alkfens.kp.org.pl/

Thank you
for your attention