

Restoration of semi-natural grasslands in Poland

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Regional Workshop in Germany, 18/5/2011



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Land utilization in Poland

- Inland waters
- Arable land
- Grassland
- Forest
- Buildings
- Industry

Semi-natural grasslands in Poland

- half of 45 types of grassland in Poland is of semi-natural character
- important part of high nature value farmland
- cover 1692600 ha – 10.5% of total AUA
- have o big impact on biodiversity



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Most important types of semi-natural grassland in Poland

- 1340 inland salty meadows, pastures, rushes (*Glauco-Puccinellietalia*)
- 6120 thermophilous inland psammophilous grassland (*Koelerion glaucae*)
- 6210 xerothermic grass communities (*Festuco-Brometea*)
- 6230 abundant in flowers mountain and lowland grassland (*Nardion*)
- 6410 Molinia litter meadows (*Molinion coeruleae*)
- 6440 alluvial meadows (*Cnidion dubii*)
- 6510 extensively used lowland and mountain meadows (*Arrhenatherion*)
- 6520 extensively used mountain hay meadows (*Polygono-Trisetion*)



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Status of selected types of semi-natural grassland in Poland

	Surface area (ha)	Trends	Protection score
• 1340 <i>Glauco-Puccinellietalia</i>	1000	↓	U2
• 6120 <i>Koelerion glaucae</i>	5000	↓	U2
• 6210 <i>Festuco-Brometea</i>	xx	↓	U2
• 6230 <i>Nardion</i>	xx	↓	U2
• 6410 <i>Molinion coerulae</i>	xx	xx	U2
• 6440 <i>Cnidion dubii</i>	3100	↓	U1
• 6510 <i>Arrhenatherion</i>	700000	↓	U1
• 6520 <i>Polygono-Trisetion</i>	110000	xx	U1

U2 – insufficient protection; U1 – poor protection; ↓ - fall; xx – lack of data

Source: Report for EC, 2007



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Reasons for the decline of semi-natural grassland area in Poland

- abandonment of extensive grazing and cutting

in 2000-2008 area covered by meadows in Poland declined from 8.0% to 7.8% and that of pastures - from 4.4% to 2.3% of total AUA

abandoned grassland area reached the level of 768205 ha – 4.8% AUA

- afforestation

in 2000-2008 area covered by forests increased from 29.0% to 30.4%

- intensification of agricultural production

land reclamation – drainage (increase in 2000-2008 from 37.7% to 39.8%)

- non-agricultural land use (urbanisation)

Source: GUS, 2010



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Reasons for the decline of semi-natural grassland area in Poland

	Priority scale (1-highest; 5-lowest)
land/farm abandonment	1.32a
low productivity	2.47b
lack of agricultural policy	2.94c
intensification	3.34c
disadvantageous management	4.92d
LSD _{0.05}	0.403

Source: own investigations acc. to questionnaires from stakeholders (n=38)

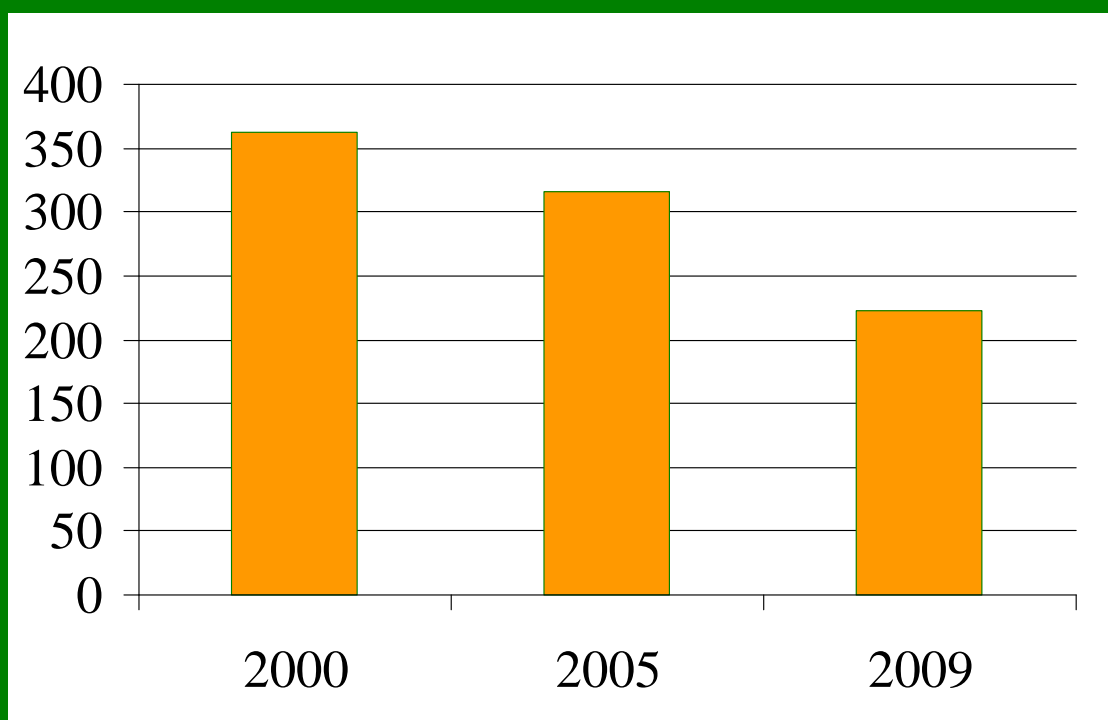


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Number of sheep in Poland (in thousand)



Source: GUS, 2010



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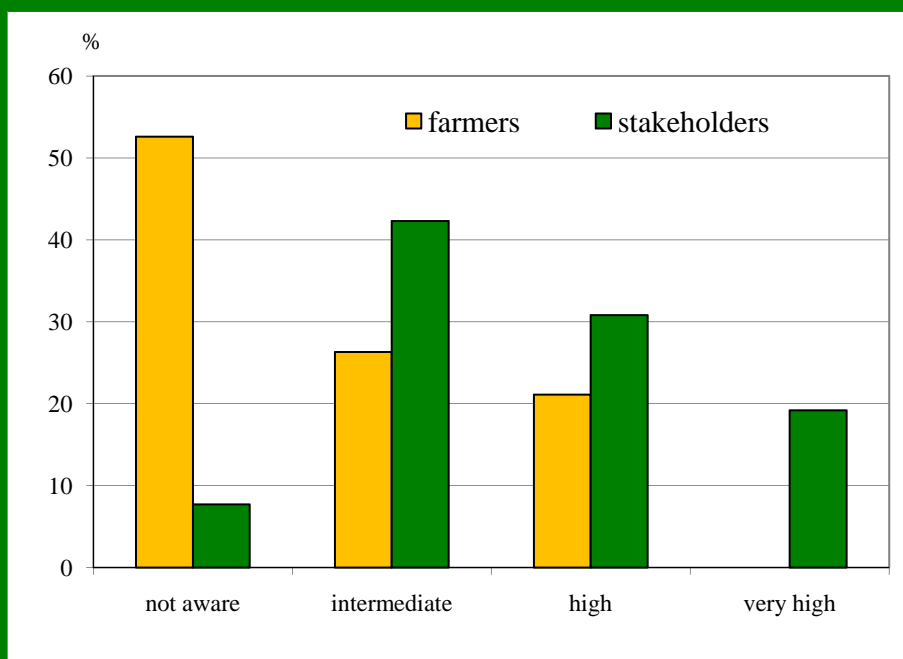
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Undesirable plant succession of grassland communities



Ecological importance of semi-natural grassland in Poland



Source: own investigations acc. to questionnaires from farmers (n=63) and stakeholders (n=38)

Methods of maintenance and restoration of semi-natural grassland in Poland

- extensive utilization of grassland by grazing and cutting
from 2004 implementation of national agri-environmental funding schemes
in 2004-2006 AE funding schemes on NATURA 2000 areas reached 214196 ha (4.54% AUA) and outside NATURA 2000 areas 53313 ha - 1.13% AUA
- re-naturalization of grassland by rewetting and oligotrophication
most common used to increase biodiversity in ecosystems in wet sites
- re-introduction of species using propagation materials from donor sites



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Extensive grazing



Sudety Mountains



Odra valley



Carpathian Mountains



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Extensive use of lowland meadows



more than 30 000 ha
(60% of habitats) in the
Biebrza Valley require
mowing

typical stacks of hay
in Narew valley

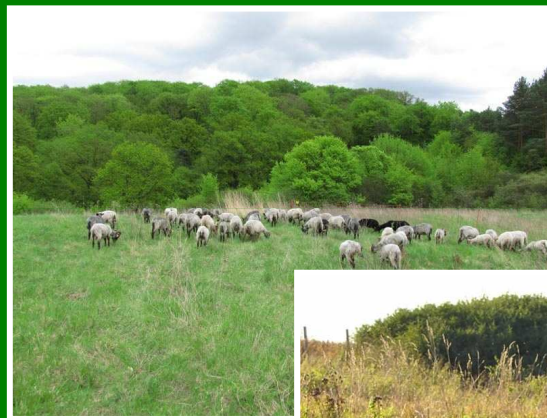
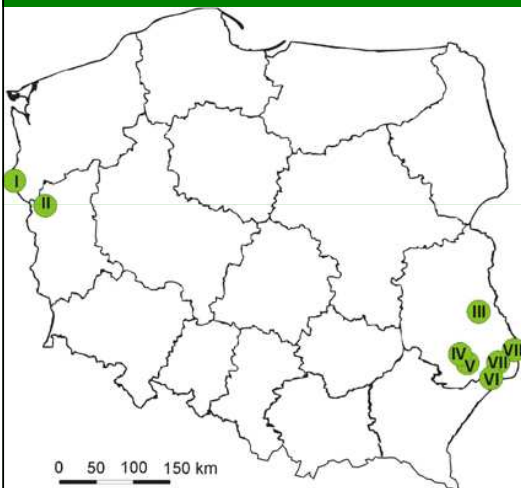


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Conservation and restoration of xerothermic grasslands in Poland – theory and practice (LIFE+ project)



implemented by
Naturalists' Club and
Regional Directorate of
Environmental Protection
in Lublin (2010-2013)



Source: Barańska et al., 2010



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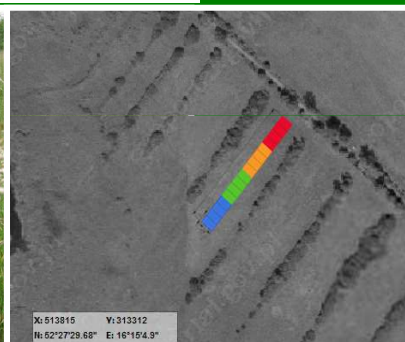
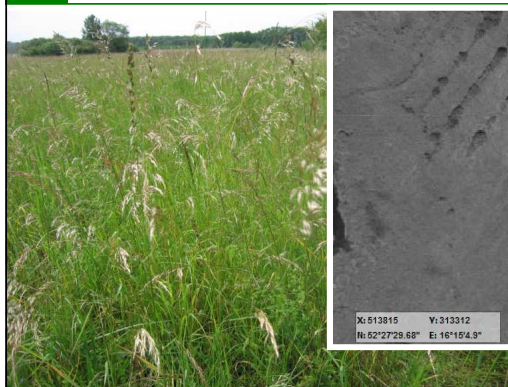


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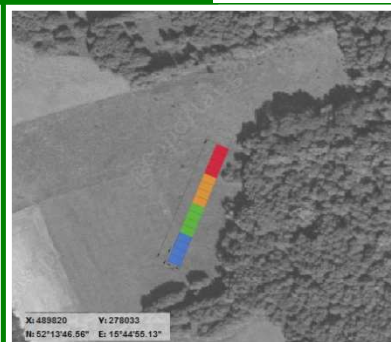
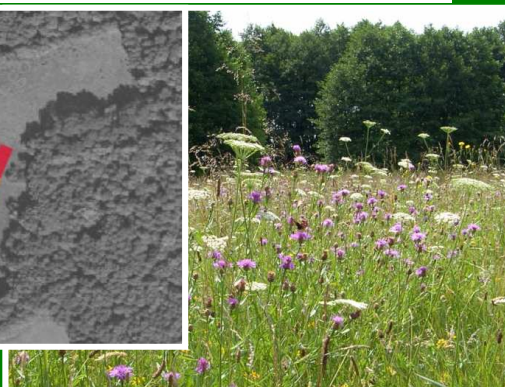
Re-introduction of species using propagation material from donor sites - SALVERE project in Poland

Donor sites

Arrhenatherion



Molinion



Harvesting methods

Green hay



On-site-threshing



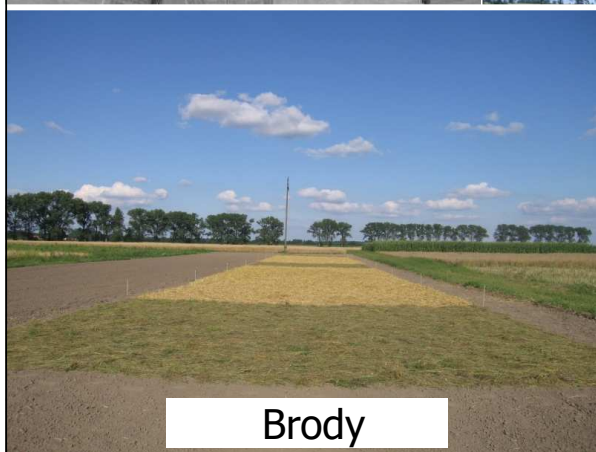
HH seed stripper



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Establishment of *Arrhenatherion* community on experimental and demonstration trials (August 2009)



Brody



Głuponie



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Restoration of *Molinion* community on experimental trial (August 2009)



Zgierzynka (degraded meadow)



Green hay



Seed stripper



OST

First results (2010)

	Arrhenatherion			Molinion		
	GH	OST1	SS1	GH	OST1	SS1
Total number of species	16.3	21.3	20.3	18.3	16.7	15.7
Number of target species	7.7	10.0	9.0	7.3	6.3	5.3
Total transmission rate (%)	21.5	30.6	28.5	20.3	17.5	14.7
Transmission rate of target species (%)	27.5	36.9	32.1	30.4	26.3	22.1

Final remarks

- The near-natural grassland restoration has already started in Poland.
- Restoration of semi-natural grassland using shrubs cutting, grazing and mowing, or changing site conditions need long time for desirable plant succession. For faster effect of this process, re-introduction of species is often necessary.
- Salvere project is one of the ways to promote pro-ecological restoration of semi-natural grassland in Poland.
- Using improved harvesting method and techniques on semi-natural donor meadows, it is possible to obtain seeds for species rich grassland restoration on degraded areas.
- The use of site-specific seed mixtures for road- and landscape construction will also have an important impact on the establishment of high nature value areas and promotion of biodiversity.
- The high interest of stakeholders shows that this kind of restoration will be developed.



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