



HNV Grasslands – why they are important for European biodiversity

Peter Veen

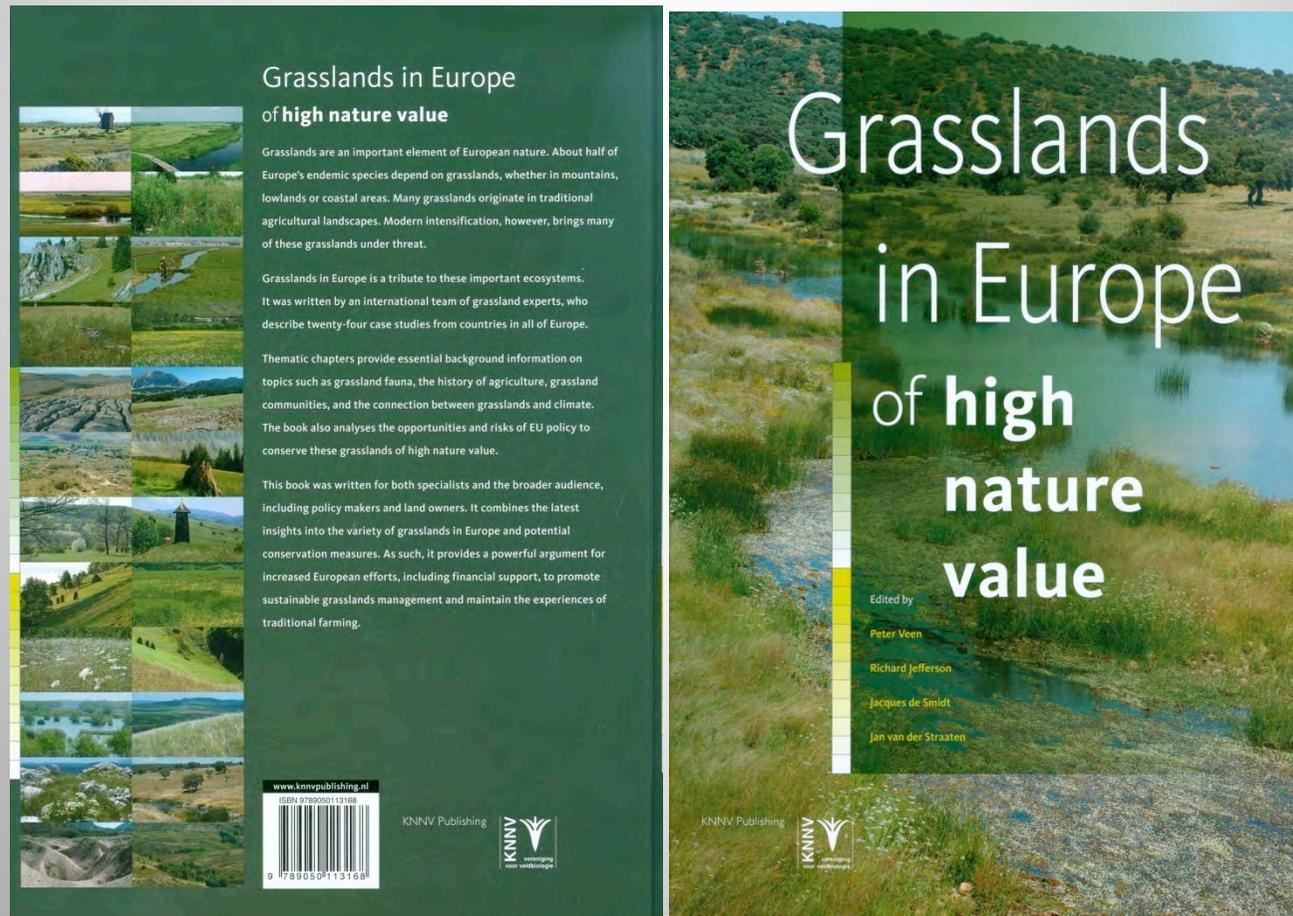
**Royal Dutch Society for Nature
Conservation / Veen Ecology**

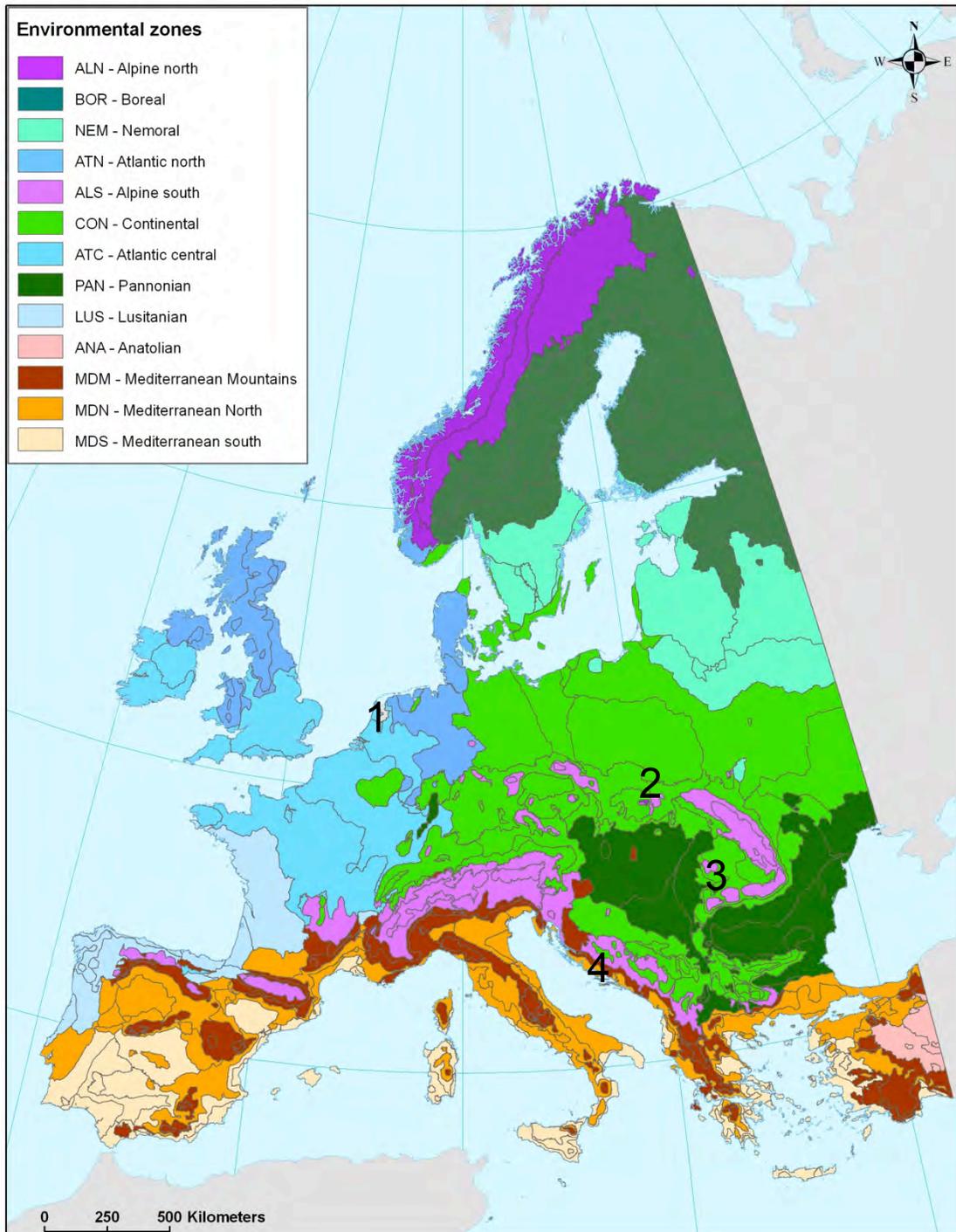
Conference Sibiu September 2010

Content of presentation

- 1. Four examples of HNV grasslands in Europe**
- 2. Classification and mapping of HNV grasslands within an European landscape context**
- 3. Conservation and management options with special attention to counteract the impacts of climate change**
- 4. Some final conclusions**

1. Four examples of HNV grasslands in Europe





Location of examples on the Map Environmental Zones in Europe

(Source map: Metzger
et al)

1 Netherlands





Golden Plover



Black-tailed Godwit

2 Czech Rep





Epipactis pal



Colias myrmidone

3 Romania





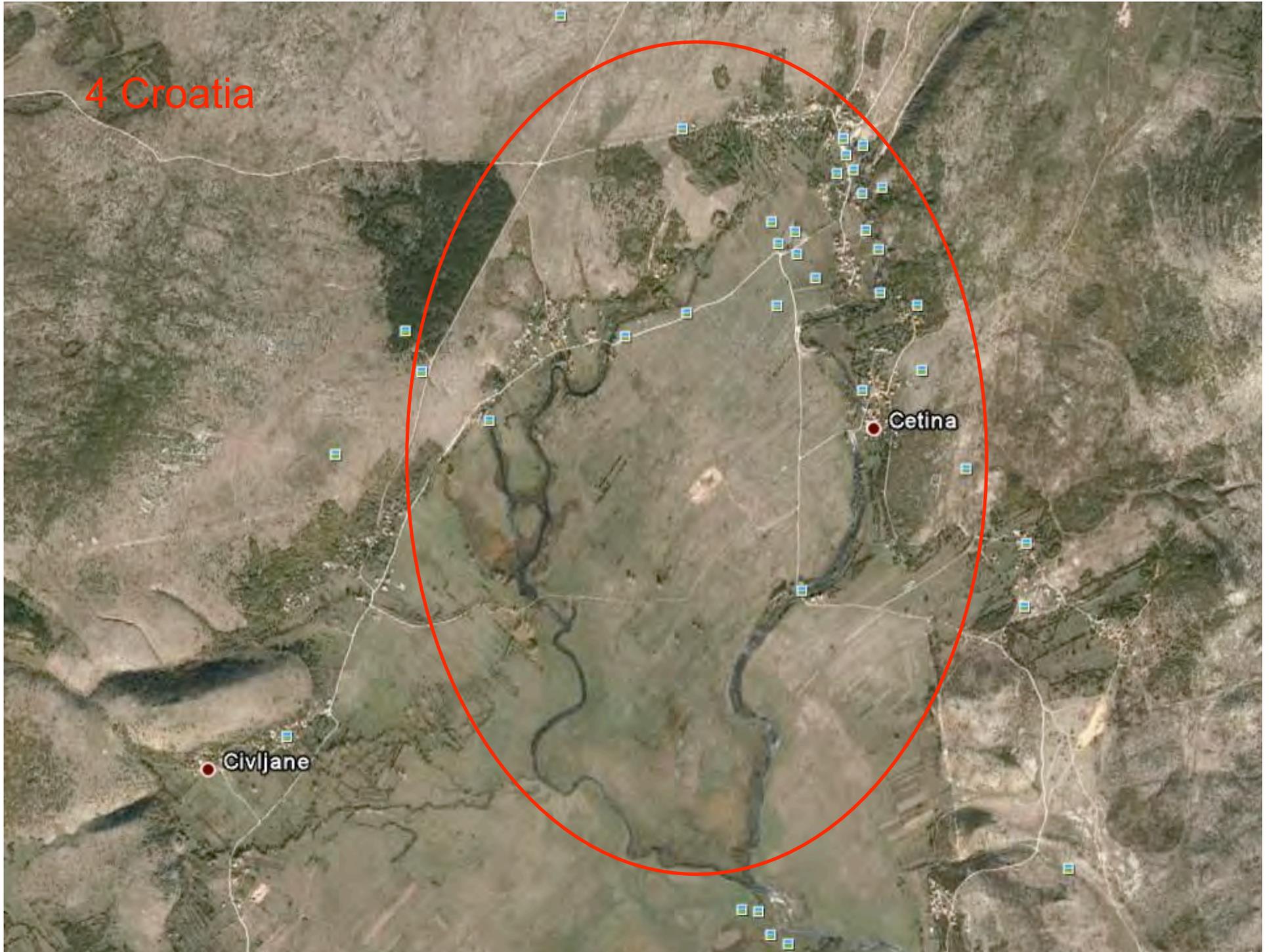
Centaurea pseudo-nepesina

Campanula cervicaria

4 Croatia

Civiljane

Cetina



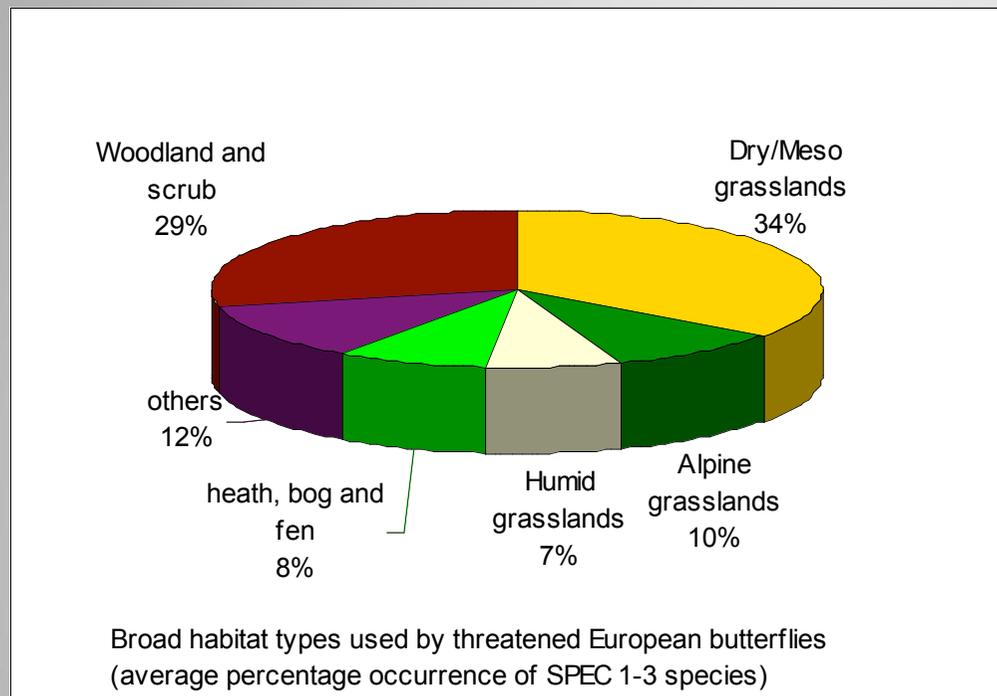




Scilla litardierei

Lathyrus pannonicus

Threatened Butterflies and dry/mesic grasslands



Source: Council of Europe, 1999. Red Data Book on European Butterflies (Rhopalocera)

Out of the 71 most threatened European Butterflies species (on a total of 576 European species), **51 % are linked to grasslands habitats**, and more specifically, 34% to dry/mesic grasslands habitats.

Source: ETC-BD

Main conclusions from national case-studies

- **HNV Grasslands are the backbone of *traditional* agricultural landscapes in Europe (section 2 of this presentation)**
- **We propose to *classify* the HNV grasslands as a part of these agricultural landscapes with integration of flora- and fauna-aspects (section 2 of this presentation)**
- **On the base of this landscape approach, management options for reducing climate change impacts need attention (section 3 of this presentation)**

Shifting functions of traditional agricultural landscapes in future

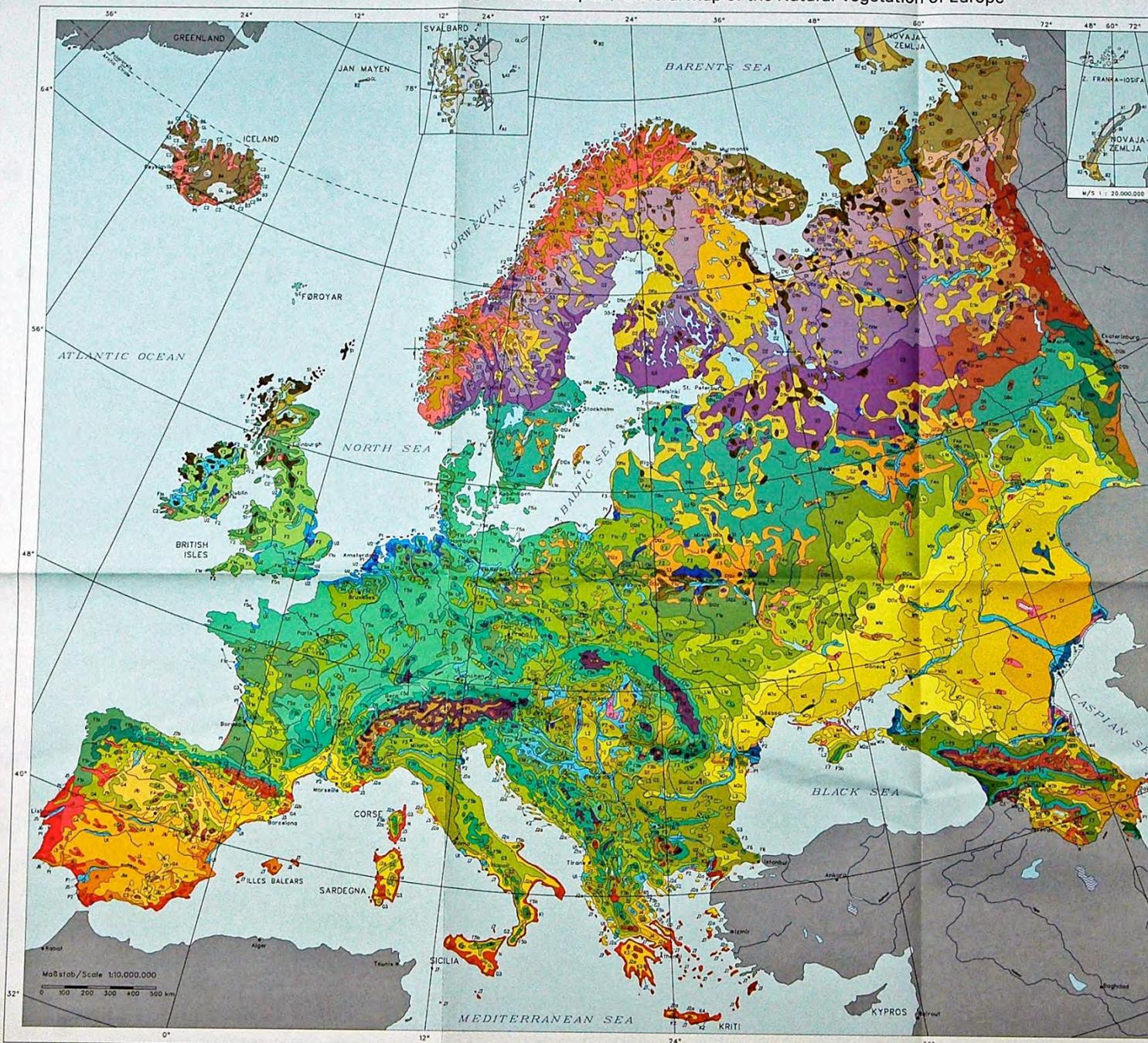


Nature conservation
Touristic activities on farms
Scenic value of landscape
Regional certified products
Direct selling to consumers
Water retention function

Subsistence farming
Low input farming systems
Subsidies important part of farmers income
Mixed farming types
Non-certified products

2. Classification and mapping of HNV grasslands within an European landscape context

Übersichtskarte der natürlichen Vegetation Europas / General Map of the Natural Vegetation of Europe



Map of
(Potential)
Natural
Vegetation of
Europe

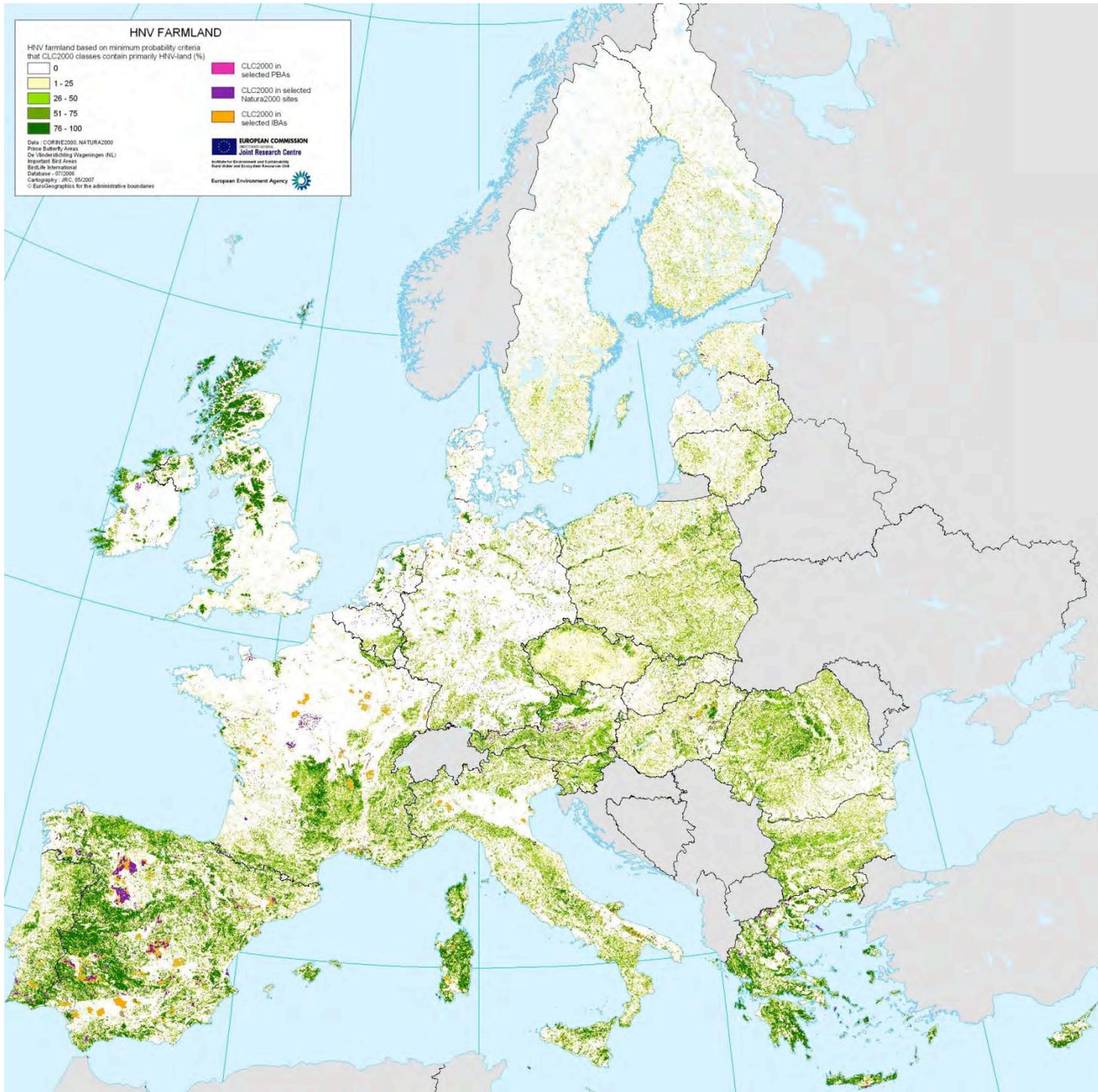
(Source:
Bohn et al,
2003)

Bearbeitung / Compiled by:
U. Bohn, Bundesamt für Naturschutz, Bonn, und / and
G.D. Katarina, Botanisches Institut Komarov / Komarov
Botanical Institute, St. Petersburg

Grundlage / Source:
Karte der natürlichen Vegetation Europas / Map of the Natural
Vegetation of Europe, Maßstab / Scale 1 : 2 500 000, Internationales
Autoren-Team / International team of authors, 2000
Gesamtkoordination / General coordination: U. Bohn, Bonn, R. Neuhäusel, Praha/Prague

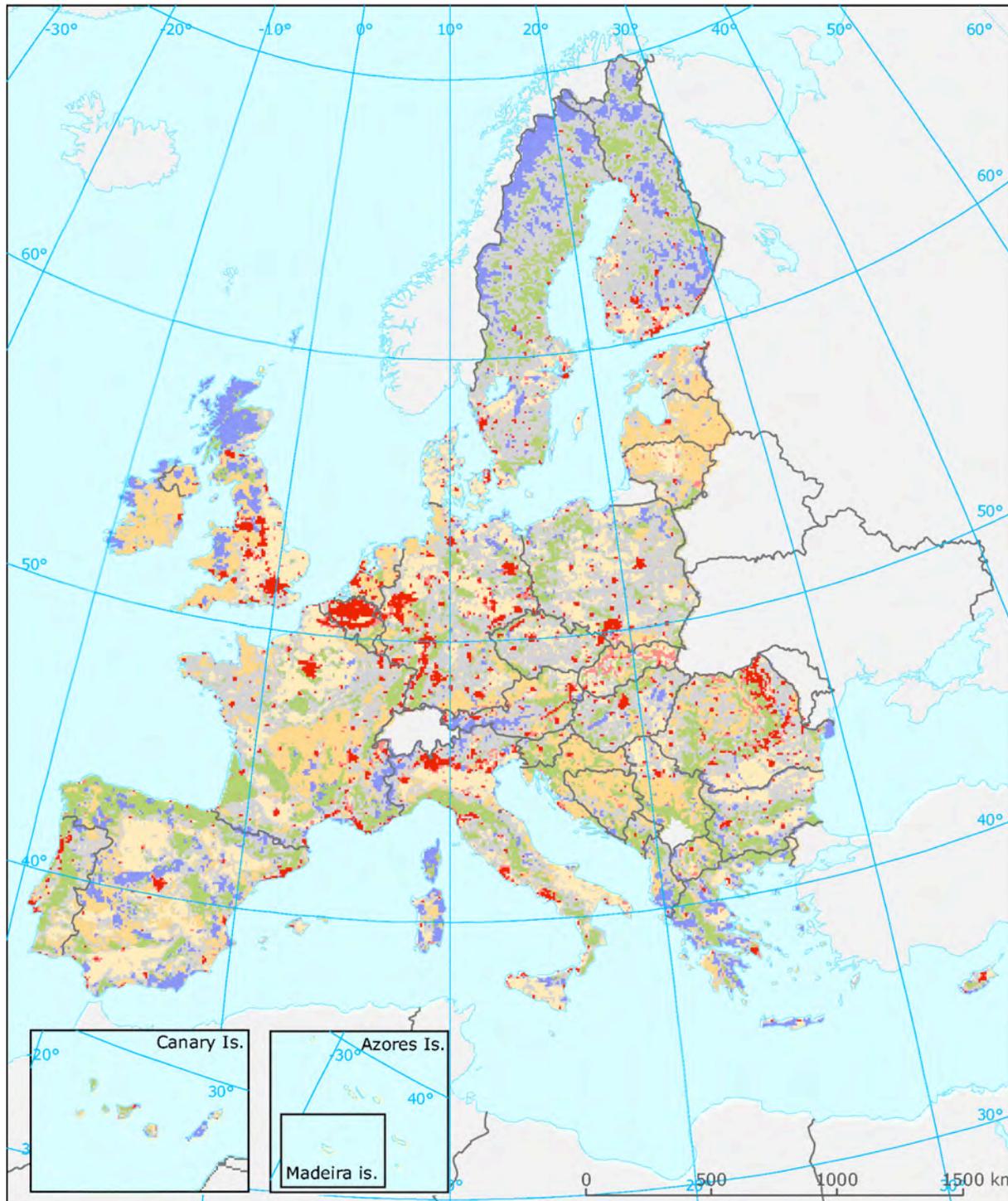
Kartographie / Cartography: E. Poppinghaus, Bonn
Digitalisierung / Digitizing: Bonn für Digitale Datenerfassung & Landschaftsplanung, Weifrod Riedelbach
GIS: S. Roßcher, H. Weber, Bundesamt für Naturschutz, Bonn

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Bundesamt für Naturschutz / Federal Agency for Nature
Conservation, Bonn 2000



Global position of HNV areas based on CORINE Land Use Cover interpretation

(Source: EU JRC)



Dominant land cover types 2000

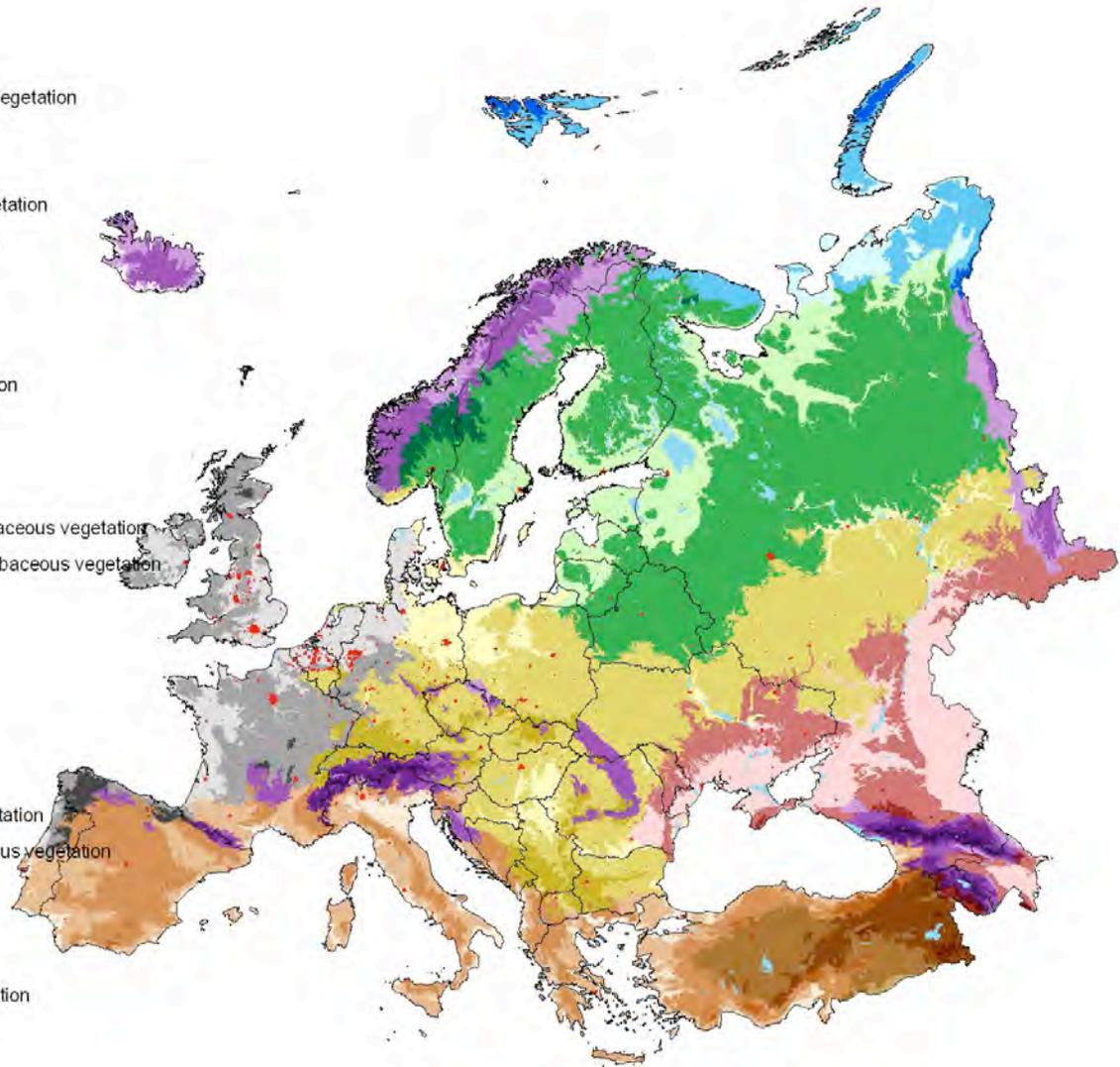
- Artificial dominance
- Dispersed urban areas
- Broad pattern intensive agriculture
- Rural mosaic and pasture landscape
- Forestead landscape
- Open semi-natural or natural landscape
- Composite landscape
- No data

Landscapes of Europe

(source: EEA)

Legend

- Kl. Arctic lowland, dominantly rocks with shrubs/herbaceous vegetation
- Kh. Arctic hills, dominantly rock with shrubs/herbaceous vegetation
- Km. Arctic mountains, dominantly rocks with open spaces
- Bl. Boreal lowland, dominantly sediment with forest
- Bh. Boreal hills, dominantly sediments with forest
- Bm. Boreal mountains dominantly sediments with shrubs/herbaceous vegetation
- Al. Atlantic lowland, dominantly sediments with arable land
- Ah. Atlantic hills, dominantly rocks with arable land and pastures
- Am. Atlantic mountains, dominantly rocks with shrubs/herbaceous vegetation
- Zl. Alpine lowlands, dominantly sediments with shrubs/herb. vegetation
- Zh. Alpine hills, dominantly sediments with shrubs/herb. vegetation
- Zm. Alpine mountains, dominantly rocks with forest
- Zn. Alpine high mountains, dominantly rocks with forest
- Za. Alpine high mountains, dominantly rocks with shrubs/herb. vegetation
- Ml. Mediterranean lowland, dominantly sediment with arable land
- Mh. Mediterranean hills, dominantly rocks with arable land
- Mm. Mediterranean mountains, dominantly rocks with forest
- Mn. Mediterranean high mountains, dominantly rocks with shrubs/herbaceous vegetation
- Ma. Mediterranean alpine mountains, dominantly rocks with shrubs/herbaceous vegetation
- Cl. Continental lowland, dominantly sediment with arable land
- Ch. Continental hills, dominantly sediments with arable land
- Cm. Continental mountains, dominantly rocks with forest
- Cn. Continental high mountains, dominantly rocks with forest
- Th. Anatolian hills, dominantly rocks with open spaces
- Tm. Anatolian mountains, dominantly rock with arable land
- Tn. Anatolian high mountains, dominantly rocks with shrubs/herb. vegetation
- Ta. Anatolian alpine mountains, dominantly rocks with shrubs/herbaceous vegetation
- Sl. Steppic lowland, dominantly sediments with arable land
- Sh. Steppic hills, dominantly sediments with arable land
- Sm. Steppic mountains, dominantly sediments with arable land
- Sn. Steppic high mountains, dominantly rocks with shrubs/herb. vegetation
- URBAN. Artificial landscapes
- FLATS. Intertidal flats
- WATER. Waterbodies
- No data



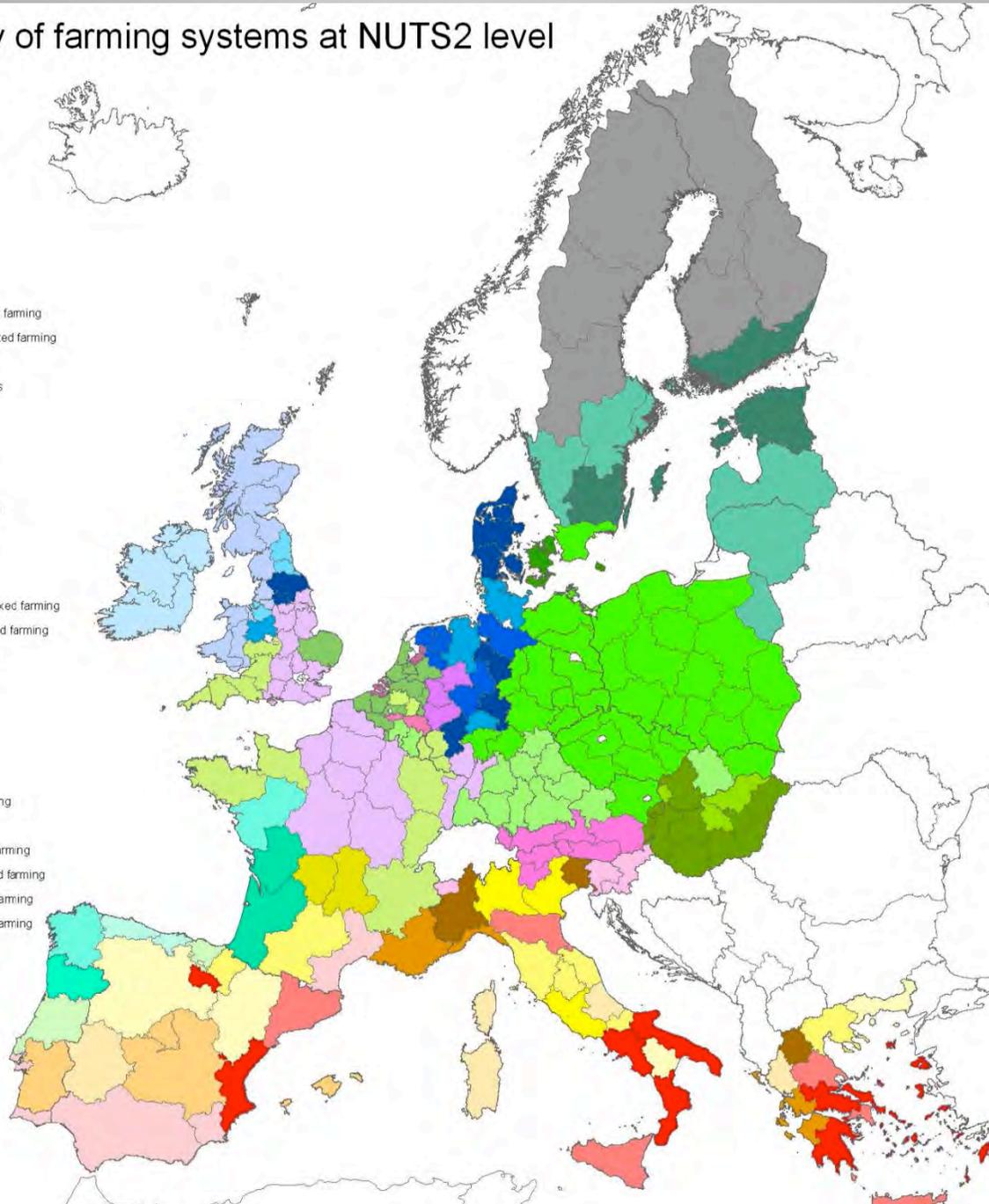
Landscapes in Europe

(Source LANMAP2)

A typology of farming systems at NUTS2 level

legend

- Boreal dispersed mixed farming
- Nemoral dairy-based farming
- Nemoral cereal-based mixed farming
- N. Atlantic cereal-based mixed farming
- N. Atlantic intensive dairy
- N. Atlantic medium int. dairy
- N. Atlantic extensive sheep
- Atlantic grassland farming
- Atlantic extensive beef and dairy
- C. Atlantic intensive cereal-based mixed farming
- C. Atlantic medium int. cereal-based mixed farming
- C. Atlantic intensive arable farming
- C. Atlantic medium-int. specialized crops
- C. Atlantic intensive dairy
- C. Atlantic medium-int. dairy
- C. Atlantic intensive beef and dairy
- Continental intensive mixed farming
- Continental cereal-based mixed farming
- Continental dairy-dominated farming
- S. Alpine intensive dairy
- S. Alpine extensive dairy
- Pannonian medium int. cereal-based mixed farming
- Pannonian extensive cereal-based mixed farming
- Lusitanian cereal-based mixed farming
- Lusitanian extensive specialized crops
- Lusitanian dairy-based farming
- Lusitanian beef and dairy
- Lusitanian sheep and goats
- Massif Central grassland farming
- Medit. Mount. cereal-based mixed farming
- Medit. Mount. - specialized crops
- N. Med. intensive cereal-based mixed farming
- N. Med. medium-int. cereal-based mixed farming
- N. Med. extensive cereal-based mixed farming
- S. Med. extensive cereal-based mixed farming
- Med. intensive specialized crops
- Med. medium-int. specialized crops
- Med. extensive specialized crops
- Med. sheep and goats
- no significant agriculture



(Source:
Seamless
project)

Main data sources for these maps

- **CORINE Landcover maps**
- **European Environmental Zones**
- **Elevation (GTOP30)**
- **Soil (FAO/Unesco Database and European Soil Data Base)**
- **Data from Farm Accountancy Data Network (FADN)**
- **Additional data**

In future: Map of European *HNV landscapes*

- **Based on a typology of functional „grassland habitat units“ within a framework of European agricultural landscapes:**
- **Agricultural landscapes classified within climatic zones and focussed on diversity in historical and present land use**
- **Components of these grassland habitat units (databases on European level available):**
 - **Grassland vegetations according European standards**
 - **Functional groups of grassland birds**
 - **Functional groups of grassland butterflies**
 - **Functional groups of mammals**

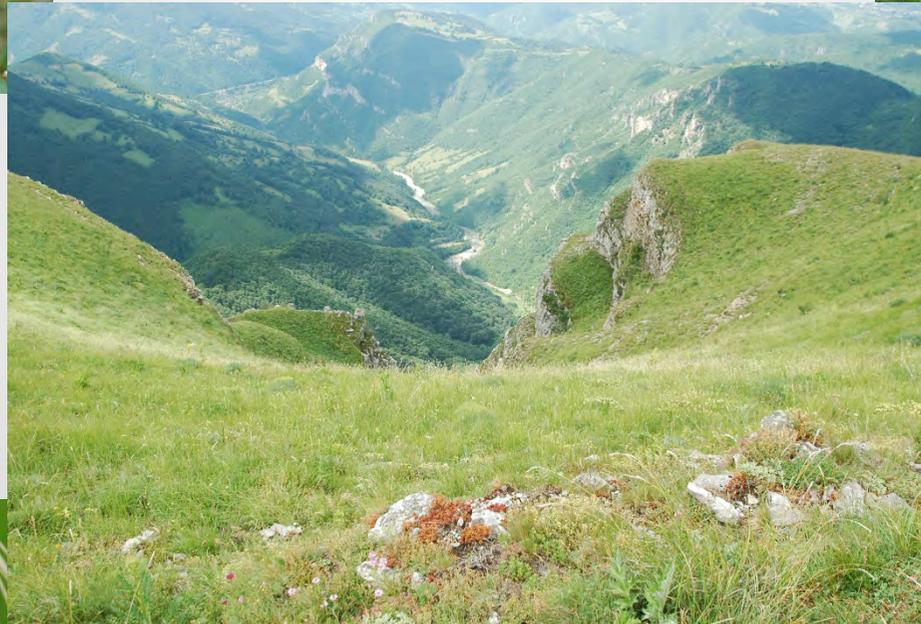
Example of a grassland habitat unit in Bulgaria



Lasiommata maera



Jurinea mollis



Vrachanski Karst grasslands
(*Festuca-Brometalia* type)

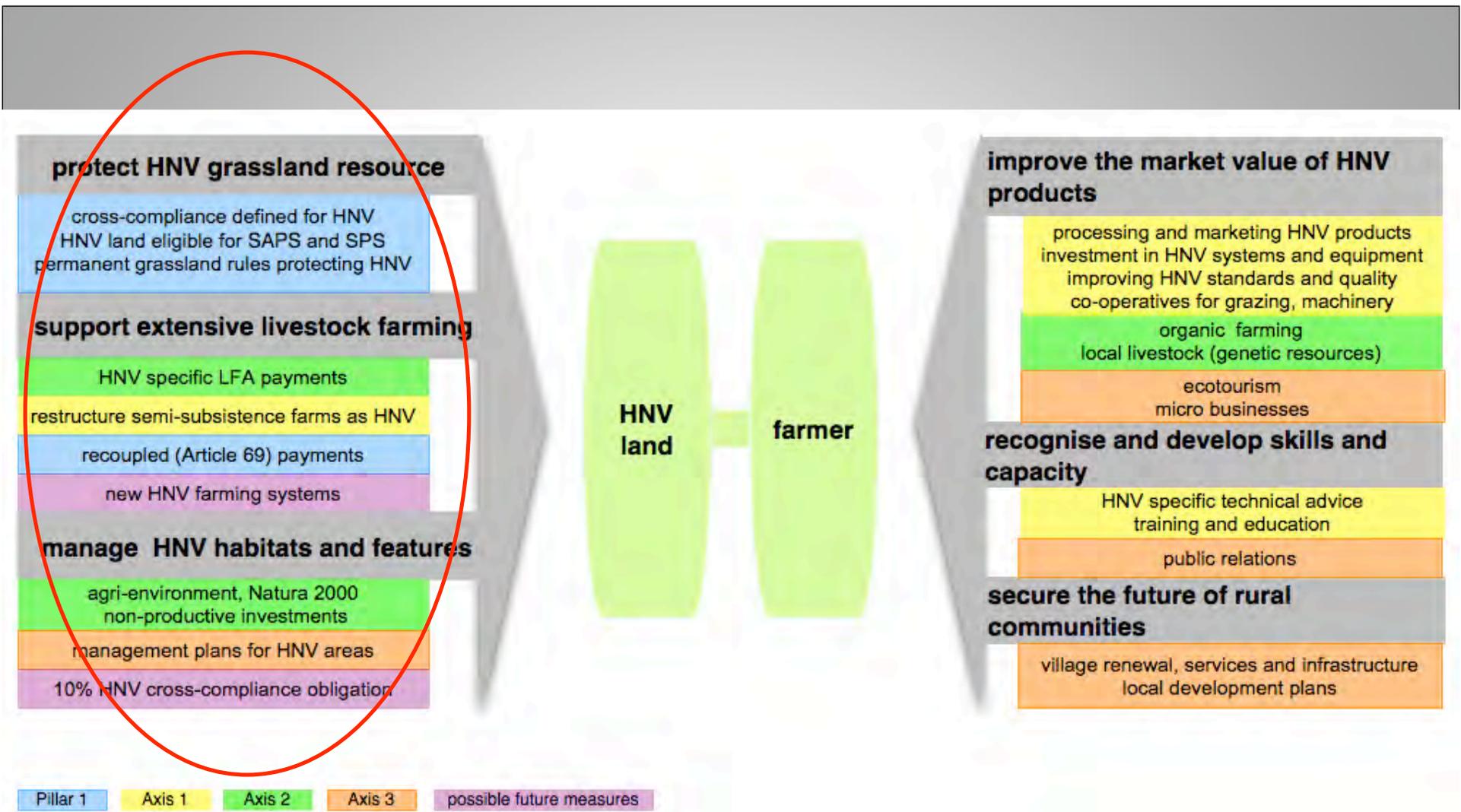


Metriopectera spec



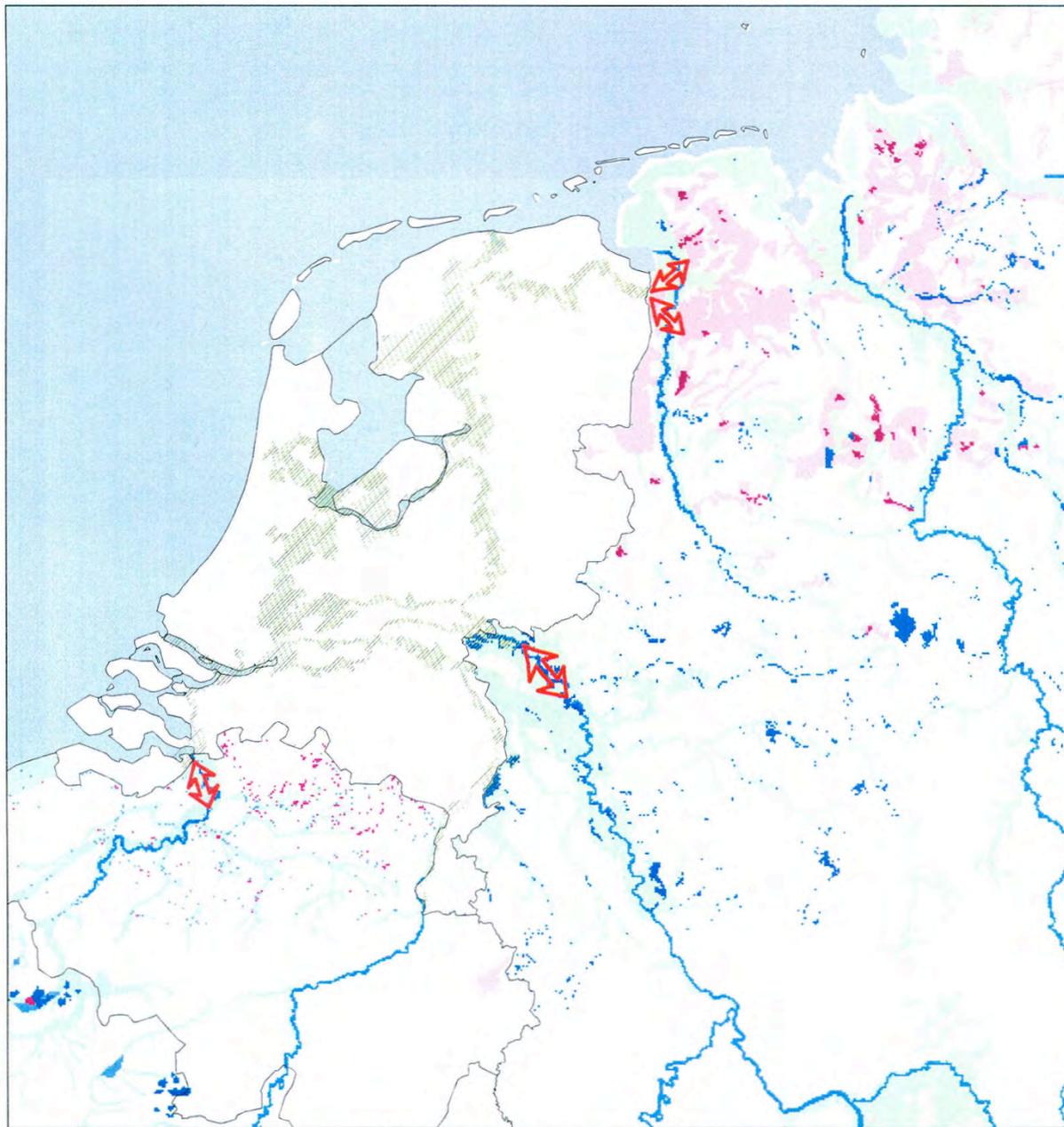
Emberiza citrinella

3. Conservation and management options with special attention to counteract the impacts of climate change



The idea of “*new HNV farming systems*” within a farmer-centred framework of support for HNV grasslands

(Source: Keenleyside and Oppermann in Grasslands in Europe)



Climate-corridor for wetlands in NW-Europe (partly): a need to develop new farming systems in Europe

(Source: PBL/WUR, 2010)

New HNV farming systems to counteract climate change

**linking
and
extension
of natural
areas**

**Increase of
heterogeneity
of habitats
and
landscapes**

**Improvement
conditions
and space for
natural
processes**

Development of adaptation strategies of grassland types over Europe by working out different dispersion models for selected species and spatial consequences

(Source: PBL/WUR, 2010 modified)

4. Some final conclusions

- **The diversity in HNV grasslands has to be classified on an European level by taking into account grassland communities of flora and fauna. This community approach is missing at this moment.**
- **The development of an European landscape classification based on „grassland habitat units“ can help the EU to define important HNV grassland landscapes in EU Member States.**
- **For counteracting climate change impacts it is needed to develop European grassland corridors as soon as possible.**

Common Monitoring and Evaluation System
for the National Rural Development Program (NRDP) for Romania

Quality indicating grassland species in Romania



(Source: DLG-NL)

An example of grassland monitoring

Montane (400-1300 m)

7. Arrhenatherion (400-800 m)

33. Arrhenatherum elatius

Height: 50-150 cm.

Flowering period: June-July.

Flowers: Inflorescence with a fairly well-branched nearly diffuse panicle. Spikelets with 2(-5) florets. Glumes are unequal. Lemma of male floret with a long dorsal awn.

Habitus: Loosely tufted perennials.

Growing place: Nutrient rich soils.

Abundant grassland species on mowing sites.



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34. Geranium pratense

Height: 30-60 cm.

Flowering period: June-July.

Flowers: Blue to violet-blue.

Habitus: Leaves are strongly divided > 5/6 to base through 7-9 lobes.

Glandular hairs over the whole plants.

Growing place: Slightly wet and moderate acid to moderate calcareous soils.



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35. Pimpinella major

Height: 40-100 cm.

Flowering period: June-September.

Flowers: "umbellifer" outlook with compound umbels and characteristic fruits; these fruits are important for identification of the species.

Habitus: Perennials with pinnate leaves with ovate, serrate lobes. Stem hollow and erect growing sometimes to 2 m.

Growing place: Nutrient rich soils like clay and loam with good water supply.



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36. Leucanthemum vulgare

Height: 30-70 cm.

Flowering period: May-September.

Flowers: White in composite style.

Habitus: Stems erect to ascending. Upper leaves deeply serrate and the lower leaves obovate-spathulate in cuneate base.

Growing place: Nutrient rich soils on mowed lands.



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FARMLAND BIRDS ACROSS THE WORLD



Edited by
Wouter van der Weijden • Paul Terwan • Adriaan Guldemond

Grasslands in Europe of high nature value

Edited by

Peter Veen

Richard Jefferson

Jacques de Smidt

Jan van der Straaten

KNNV Publishing



Ordering these book in the conference hall

Thank you for attention!!!

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