



**Climate Change and Impact  
Assessment**

**IAIA Special Symposium**

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# Role of Natura Assessment in climate change mitigating and adaptation with special reference to maintaining and enhancing of ecosystem services

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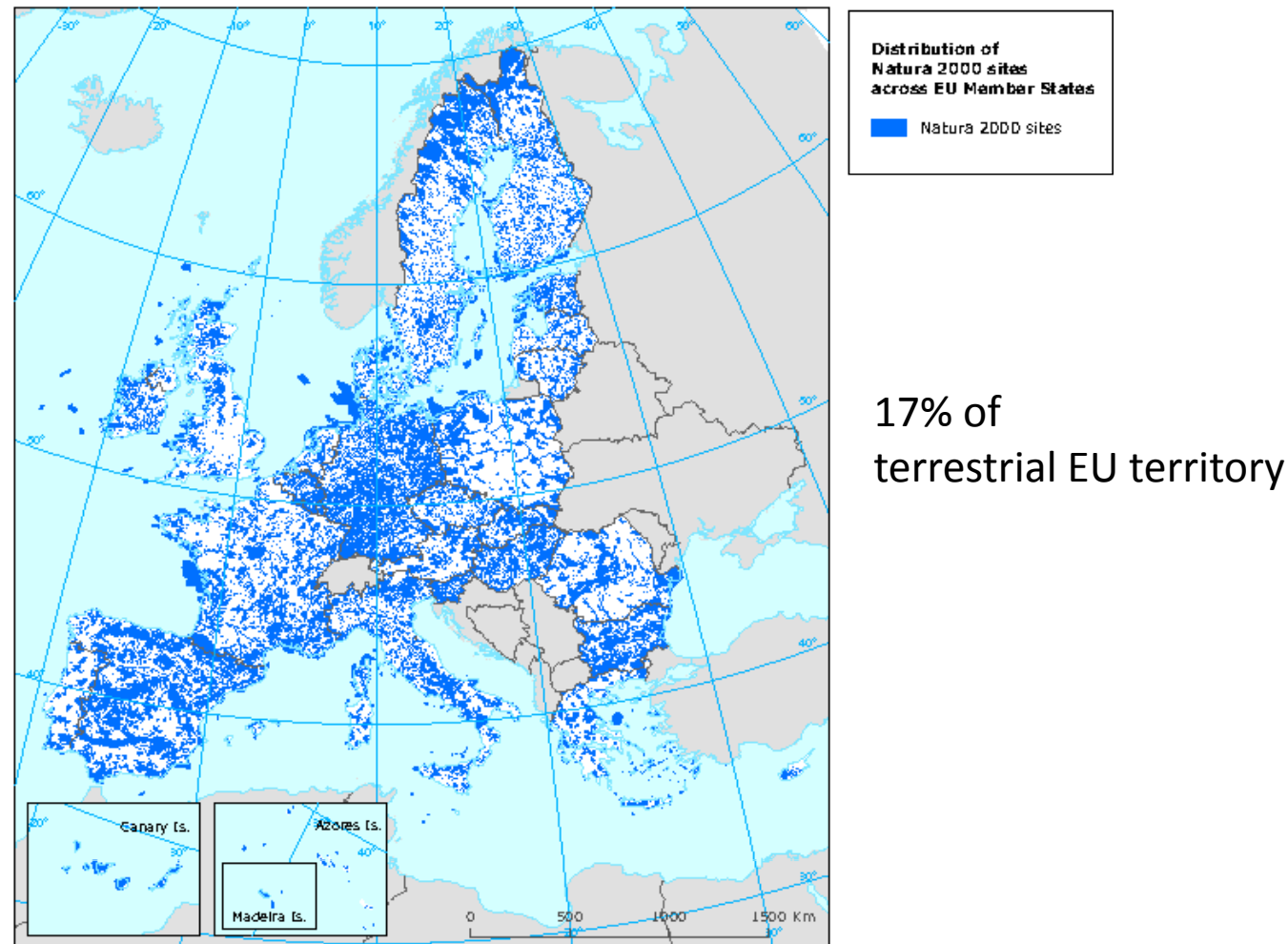
Stockholm Environment Institute

Tallinn Centre

Estonia



# Natura 2000 network, as of 21 June 2010



# Natura Assessment – strong decision making tool

- EIA – providing appropriate and sufficient information for decision making on the effects of a proposed project and the mitigation measures
- SEA – providing justification for the choice of the best alternative: “...*the reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with,...*”
- **Natura Assessment** – “*the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned*”



# EIA Directive, Art 3

The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case and in accordance with Articles 4 to 11, the direct and indirect effects of a project on the following factors:

- — human beings, fauna and flora;
- — soil, water, air, climate and the landscape;
- — material assets and the cultural heritage;
- — the interaction between the factors mentioned in the first, second and third indents.



# SEA Directive, Annex II

Characteristics of the effects and of the area likely to be affected, having regard, in particular, to:

- the probability, duration, frequency and reversibility of the effects,
- - the cumulative nature of the effects,
- - the transboundary nature of the effects,
- - the risks to human health or the environment (e.g. due to accidents),
- - the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected),
- - the value and vulnerability of the area likely to be affected due to:
  - **special natural characteristics** or cultural heritage,
  - exceeded environmental quality standards or limit values,
  - **intensive land-use**,
  - **the effects on areas or landscapes which have a recognised national, Community or international protection status.** [**Natura 2000 sites**]



# Ecosystem services,

## EC, September 2009

***Provisioning services supply the goods themselves, such as food, water, timber and fibre.***

***Regulating services govern climate and rainfall, water (e.g. flooding), waste, and the spread of disease.***

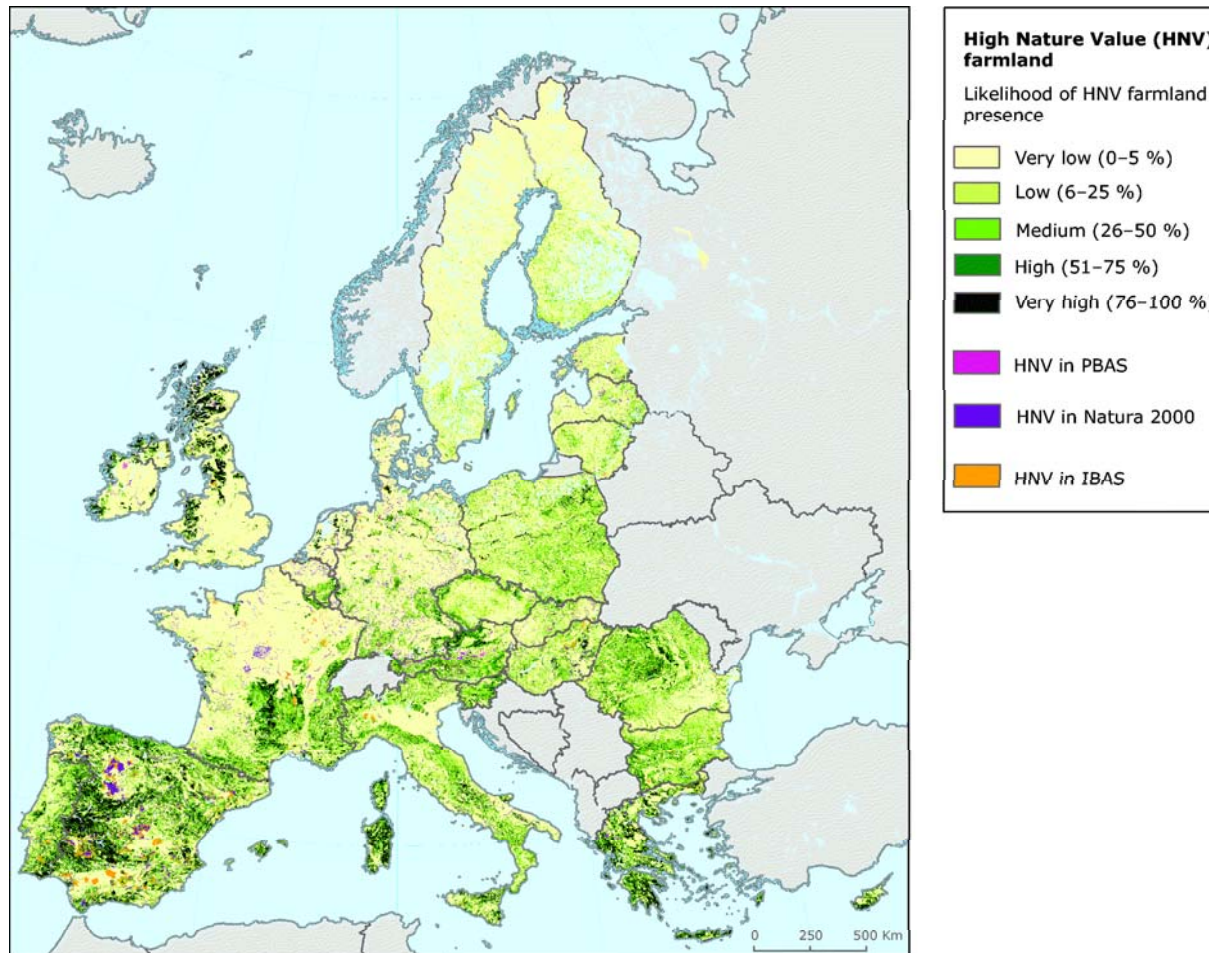
***Cultural services cover the beauty, inspiration and recreation that contribute to our spiritual welfare.***

***Supporting services include soil formation, photosynthesis and nutrient cycling, which underpin growth and production.***

- > 11% of the natural areas in the world in 2000 could be lost by 2050;
- > Almost 40% of existing agricultural land risks being turned over to intensive farming;
- > 60% of coral reefs could disappear by 2030;
- > In Europe, up to 80% of protected habitat types are under threat;
- > Human activities have multiplied extinctions of species by 50-1 000 times in the last 100 years.

According to EEA calculations, the global value of the general services from **wetlands** – such as water purification and carbon absorption – could be around €2.5 billion per year.

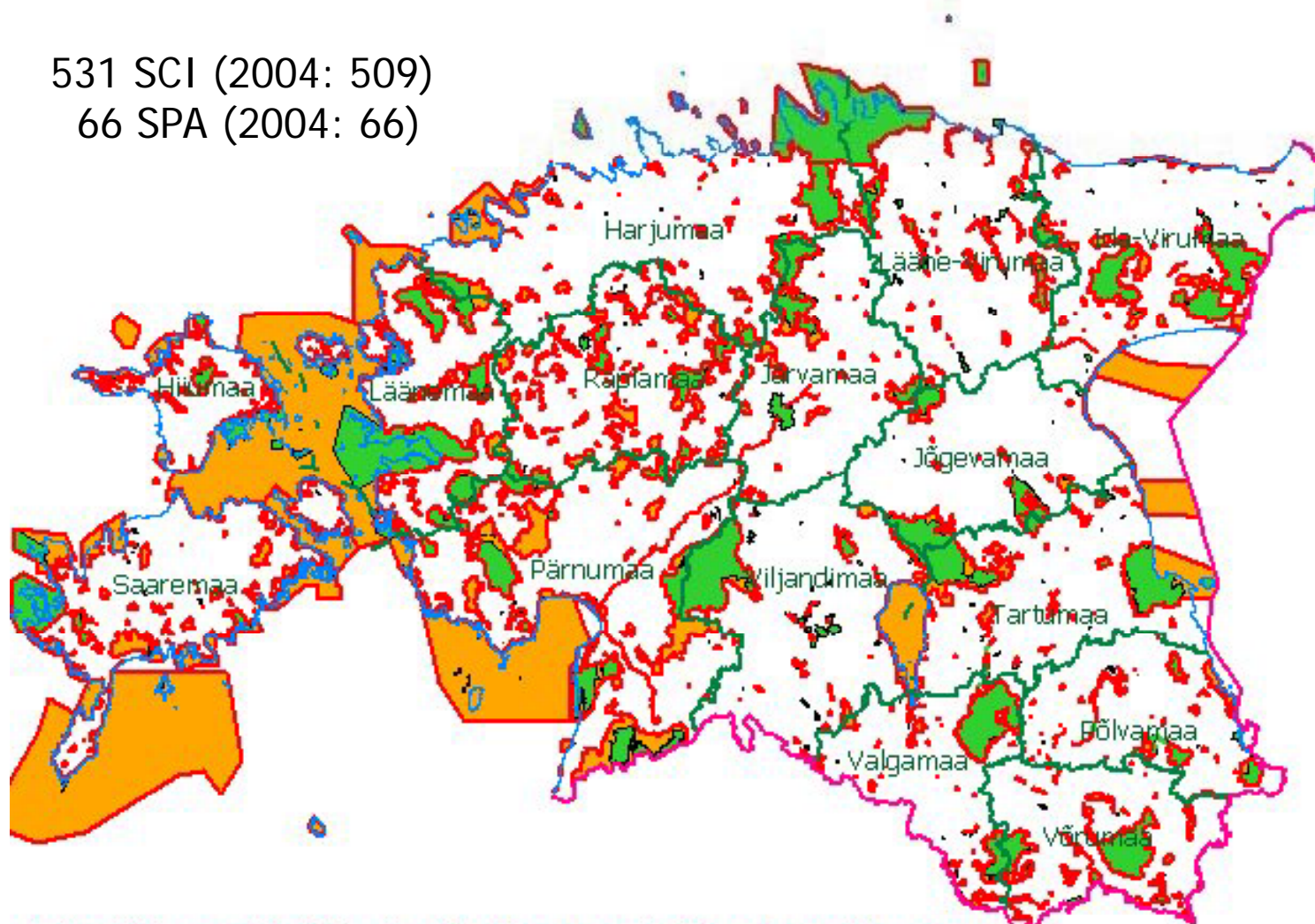
# High Nature Value Farmland, not in Natura 2000 network



# Natura 2000 sites in Estonia

531 SCI (2004: 509)

66 SPA (2004: 66)

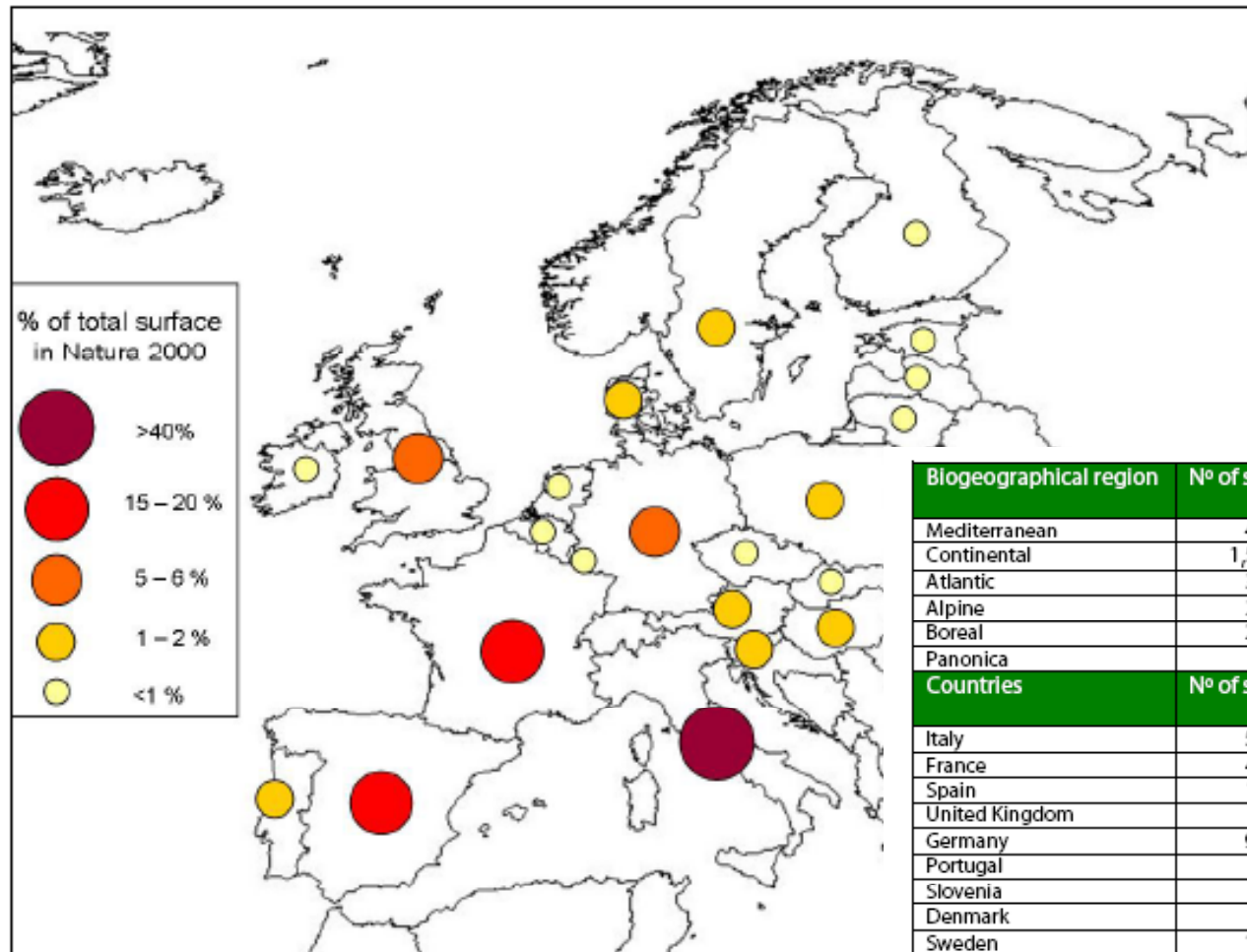


Autoriõigused kaitstud - Keskkonnaministeerium; Maa-amet

Sites to be added: MARINE SPAs and SCIs



## 6210 – semi-natural dry grasslands



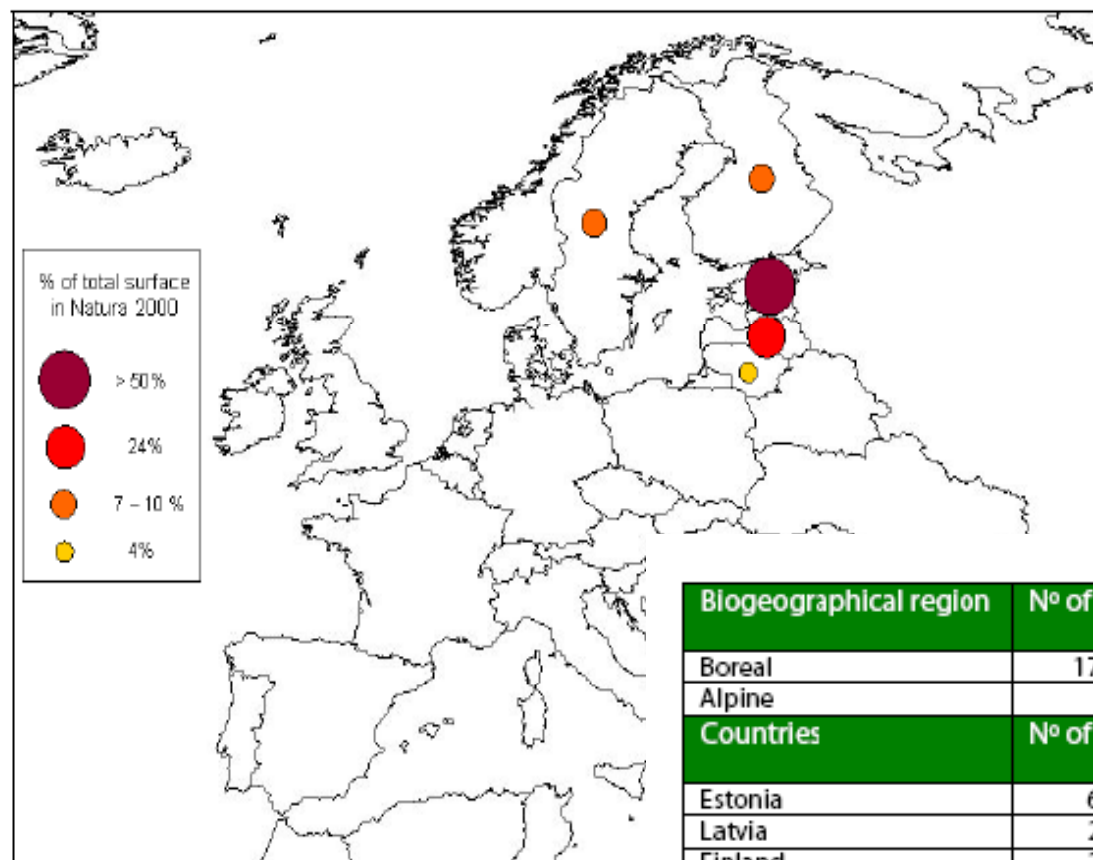
Percentage distribution of the total surface of dry grasslands in Natura 2000

Some MS have more  
responsibility  
for some habitats

Biogeographical region	Nº of sites	Estimated surface in Natura 2000 (ha)	% of total surface in Natura 2000
Mediterranean	460	261,998	43.96
Continental	1,538	148,558	24.93
Atlantic	328	90,058	15.11
Alpine	284	76,973	12.91
Boreal	277	10,064	1.69
Panonica	80	8,322	1.40
Countries	Nº of sites	Estimated surface in Natura 2000 (ha)	% of total surface in Natura 2000
Italy	576	256,115	42.96
France	423	104,641	17.54
Spain	170	97,897	16.42
United Kingdom	62	33,419	5.60
Germany	924	31,079	5.24
Portugal	9	9,676	1.62
Slovenia	14	7,970	1.33
Denmark	79	7,371	1.23
Sweden	164	6,800	1.14
Austria	44	6,781	1.13
Hungary	52	6,608	1.10
Poland	37	6,227	1.04
Estonia	79	5,518	0.92
Czech Republic	57	4,812	0.82
Slovakia	82	4,261	0.71
Ireland	33	3,335	0.56
Latvia	25	1,336	0.22
Belgium	72	1,126	0.19
Finland	25	458	0.08
Lithuania	20	228	0.04
Luxemburg	15	227	0.04
Netherlands	5	87	0.02
<b>TOTAL</b>	<b>2,967</b>	<b>595,973</b>	<b>100</b>

Note: According to the national list of habitats included in the 92/43/CE EU Directive (Habitats Directive), Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (\*important orchid sites) are also present in Bulgaria and Romania.

# Estonia has bigger responsibility for alluvial meadows



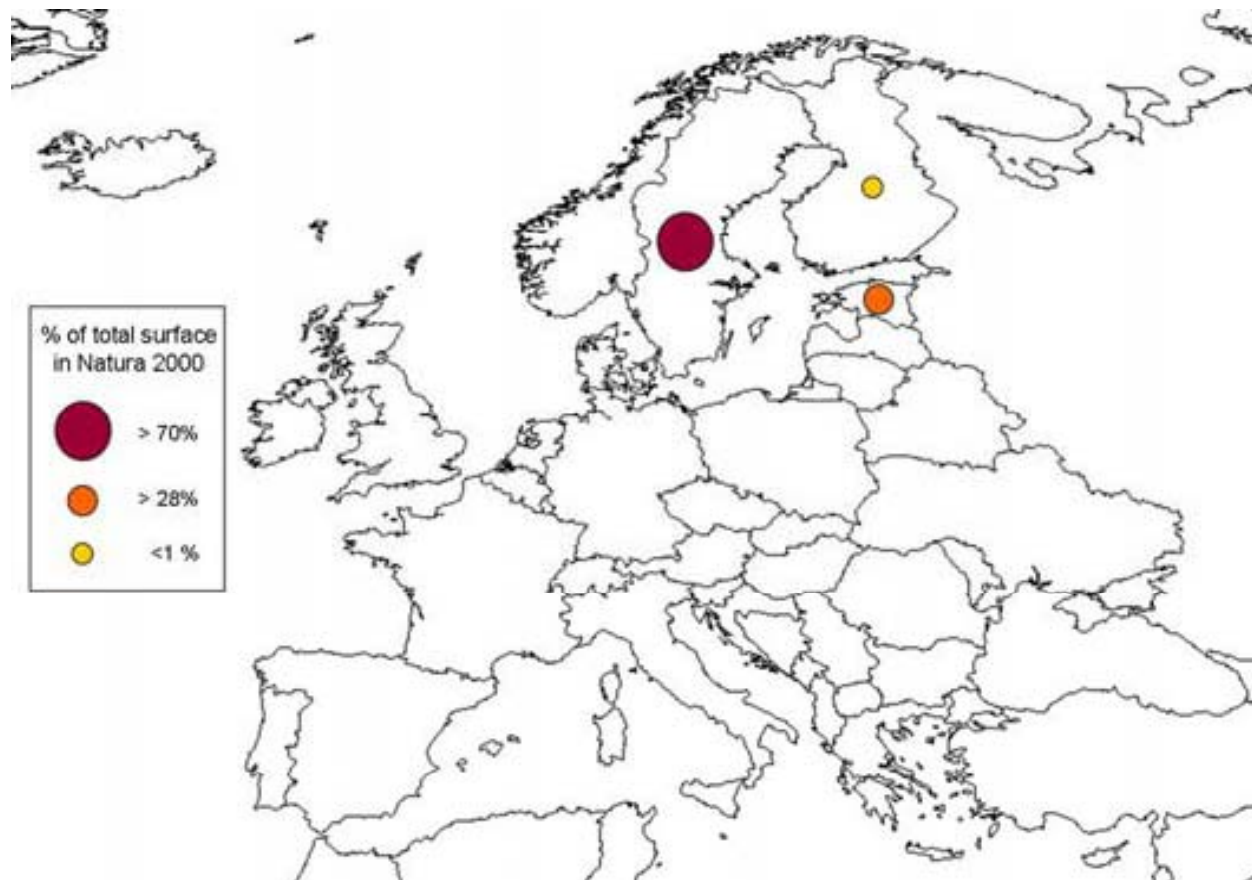
6450 alluvial meadows

Percentage distribution of the total surface of Boreal alluvial meadows in Natura 2000 sites

Biogeographical region	Nº of sites	Estimated surface in Natura 2000 (ha)	% of total surface in Natura 2000
Boreal	174	27,922	99.5
Alpine	6	144	0.5
Countries	Nº of sites	Estimated surface in Natura 2000 (ha)	% of total surface in Natura 2000
Estonia	67	15,348	54.7
Latvia	26	6,659	23.7
Finland	29	2,839	10.1
Sweden	45	2,169	7.7
Liathuania	13	1,051	3.7
<b>TOTAL</b>	<b>180</b>	<b>28,066</b>	<b>100</b>

# Sweden, Estonia and Finland are the only MS responsible for alvars

Priority habitat type \*6280 – Nordic alvars



Code	HABITAT TYPE	General status of conservation
1110	Veealused liivamadalad	Favourable
1130	Jõgede lehtersuudmed	Favourable
1140	Liivased ja mudased pagurannad	Favourable
1150	*Rannikulõukad	Favourable
1160	Laiad madalad lahed	Favourable
1170	Karid	Favourable
1210	Esmased rannavallid	Favourable
1220	Püsitaimestuga kivirannad	Favourable
1230	Merele avatud pankrannad	Favourable
1310	Soolakulised muda- ja liivarannad	Favourable
1620	Väikesaared ning laiud	Favourable
1630	*Rannaniidud	Insufficient and degrading
1640	Püsitaimestuga liivarannad	Favourable
2110	Eelluited	Favourable
2120	Valged luited	Favourable
2130	*Hallid luited	Favourable
2140	*Rusked luited kukemarjaga	Unknown
2180	Metsastunud luited	Favourable
2190	Luidetevahelised niisked nõod	Favourable
2320	Kuivad liivanõmmed kanarbiku ja kukeimarjaga	Unknown
2330	Liivikud	Insufficient and degrading
3110	Liiva-alade vähetoitelised järved	Unfavourable and degrading
3130	Vähe- kuni kesктоitelised mõõdukalt kareda veega järved	Unfavourable and degrading
3140	Vähe- kuni kesктоitelised kalgiveelised järved	Unfavourable and degrading
3150	Looduslikult rohketoitelised järved	Insufficient and degrading

5130	Kadastikud	Favourable
6210	Kuivad niidud lubjarikkal mullal (*orhideede kasvukohad)	Insufficient and degrading
6270	*Liigirikkad niidud lubjavaesel mullal	Insufficient and degrading
6280	*Lood (alvarid)	Insufficient and degrading
6410	Sinihelmikakooslused	Favourable
6430	Niiskuslembesed kõrgrohustud	Favourable
6450	Lamminiidud	Insufficient and degrading
6510	Aas-rebasesaba ja ürt-punanupuga niidud	Favourable
6530	*Puisniidud	Insufficient
7110	*Rabad	Insufficient and degrading
7120	Rikutud, kuid taastumisvõimelised rabad	Insufficient
7140	Säärde- ja õõtsiksood	Insufficient and degrading
7150	Nokkheinakooslused	Insufficient and degrading
7160	Allikad ja allikasood	Insufficient and degrading
7210	*Lubjarikkad madal-sood läänemõõkrohuga	Unfavourable and degrading
7220	*Nõrglubja-allikad	Unknown
7230	*Liigirikkad madal-sood	Unfavourable
8210	Lubjakivipaljandid	Favourable
8220	Liivakivipaljandid	Favourable
8240	*Plaatlood	Insufficient
8310	Koopad	Favourable
9010	*Vanad loodusmetsad	Unfavourable
9020	*Vanad laialehised metsad	Unfavourable
9050	Rohunditerikkad kuusikud	Insufficient

SPECIES		General status of conservation
<i>Aeshna viridis</i>	rohe-tondihobu	Unknown
<i>Agrimonia pilosa</i>	karvane	Favourable
<i>Angelica palustris</i>	emaputk	Insufficient
<i>Aspius aspius</i>	tõugjas	Insufficient
<i>Astacus astacus</i>	jõevähk	Insufficient but improving
<i>Boros schneideri</i>	männiselane	Insufficient
<i>Bufo calamita</i>	kõre	Insufficient
<i>Bufo viridis</i>	rohe-kärnkonn	Unfavourable and degrading
<i>Buxbaumia viridis</i>	roheline hiidkuper	Unfavourable
<i>Canis lupus</i>	hunt	Favourable
<i>Castor fiber</i>	kobras	Favourable
<i>Cinna latifolia</i>	laialehine nestik	Insufficient but improving
<i>Cladonia subgenus cladina</i>	põdrsamblikud	Favourable
<i>Cobitis taenia</i>	hink	Unknown
<i>Coenonympha hero</i>	vareskaera-aasasilmik	Insufficient but improving
<i>Coregonus albula</i>	rääbis	Unfavourable and degrading
<i>Coregonus lavaretus</i>	siig	Unfavourable
<i>Cottus gobio</i>	völdas	Unknown
<i>Cucujus cinnaberinus</i>	väike-punalamesklane	Insufficient
<i>Cypripedium calceolus</i>	kaunis kuldking	Insufficient
<i>Dianthus arenarius arenarius</i>	nõmmnelk	Insufficient
<i>Dichelyma capillaceum</i>	juus-kiilsirbik	Insufficient

<i>Lacerta agilis</i>	kivisisalik	Insufficient
<i>Lampetra fluviatilis</i>	jõesilm	Insufficient
<i>Lepus timidus</i>	valgejänes	Favourable
<i>Leucobryum glaucum</i>	harilik valvik	Favourable
<i>Leucorrhinia albifrons</i>	valgelaup-rabakiil	Favourable
<i>Leucorrhinia caudalis</i>	hännak-rabakiil	Insufficient
<i>Leucorrhinia pectoralis</i>	suur-rabakiil	Insufficient
<i>Ligularia sibirica</i>	harilik kobarpea	Insufficient but improving
<i>Liparis loeselii</i>	soohilakas	Insufficient
<i>Lopinga achine</i>	sõõrsilmik	Insufficient
<i>Lutra lutra</i>	saarmas	Favourable
<i>Lycaena dispar</i>	suur-kuldtiib	Unknown
<i>Lycopodium spp</i>	kollad	Favourable
<i>Lynx lynx</i>	ilves	Favourable
<i>Maculinea arion</i>	tähnrik-sinitiib	Unknown
<i>Margaritifera margaritifera</i>	ebapärlikarp	Unfavourable and degrading
<i>Martes martes</i>	metsnugis	Favourable
<i>Misgurnus fossilis</i>	vingerjas	Insufficient and degrading
<i>Moehringia lateriflora</i>	ida-võsalill	Favourable
<i>Muscardinus avellanarius</i>	pähklinäpp	Unknown
<i>Mustela lutreola</i>	euroopa naarits	Unfavourable but improving
<i>Mustela putorius</i>	tuhkur	Favourable
<i>Myotis brandtii</i>	tõmmulendlane	Unknown
<i>Myotis dasycneme</i>	tiigilendlane	Unfavourable
<i>Myotis daubentonii</i>	veelendlane	Favourable

# Conservation status of species and habitats in 2007 (national report)

## SPECIES

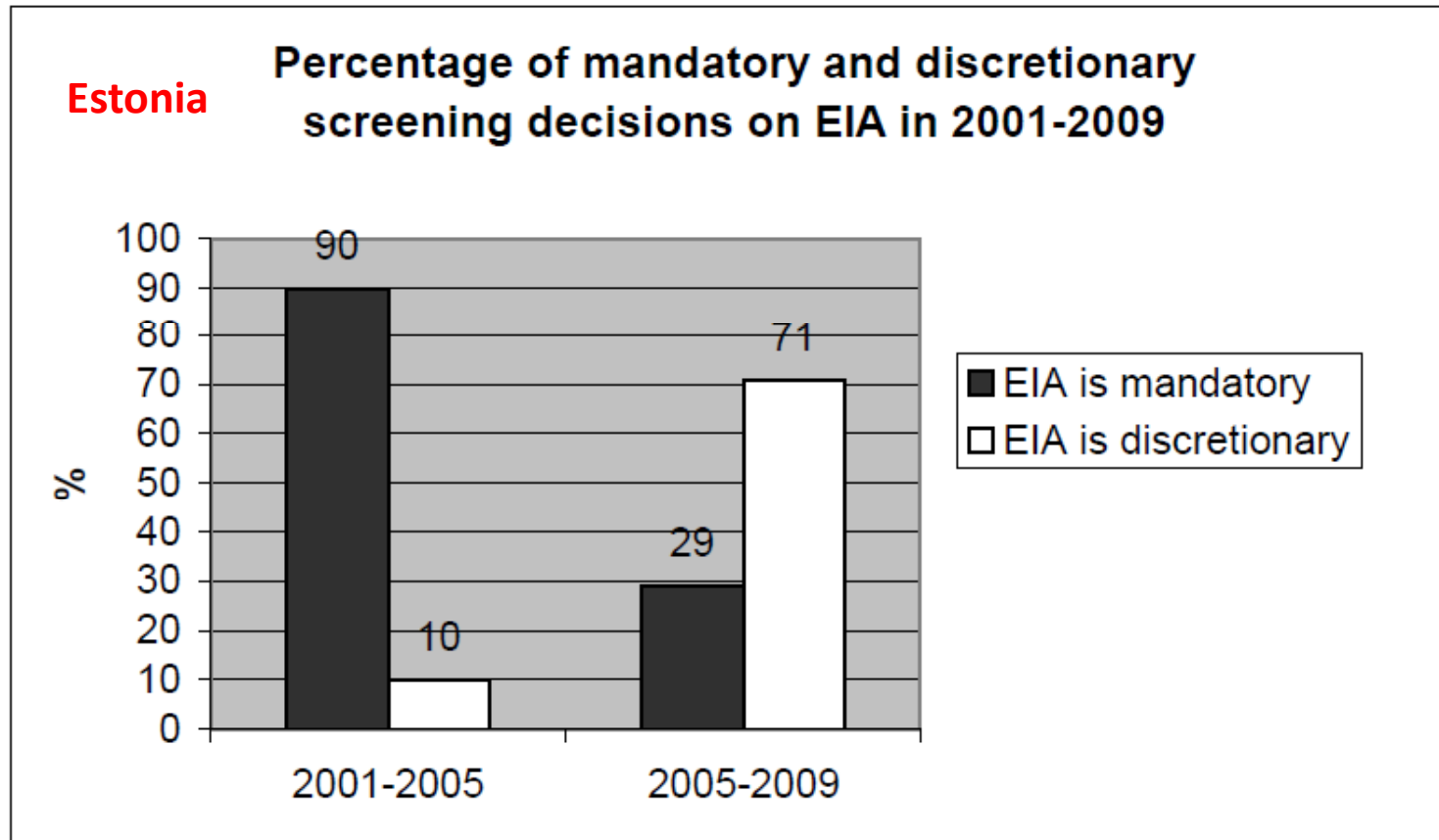
Unknown	26	26,8
Favourable	23	23,7
Insufficient	41	42,3
Unfavourable	7	7,2
	<b>97</b>	<b>100</b>

## HABITATS

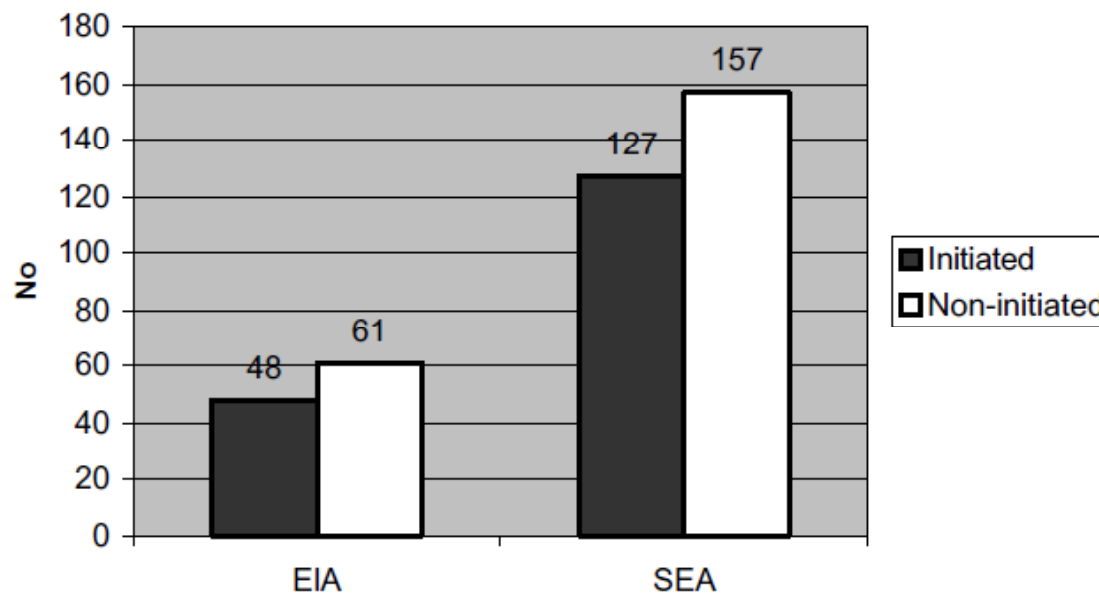
25	41,7	Favourable
19	31,7	Insufficient
9	15,0	Unfavourable
7	11,7	Unknown
<b>60</b>	<b>100</b>	<b>%</b>

*MoE 2007*

# Mandatory vs discretionary screening decisions



# Practice - more screening decisions in SEA

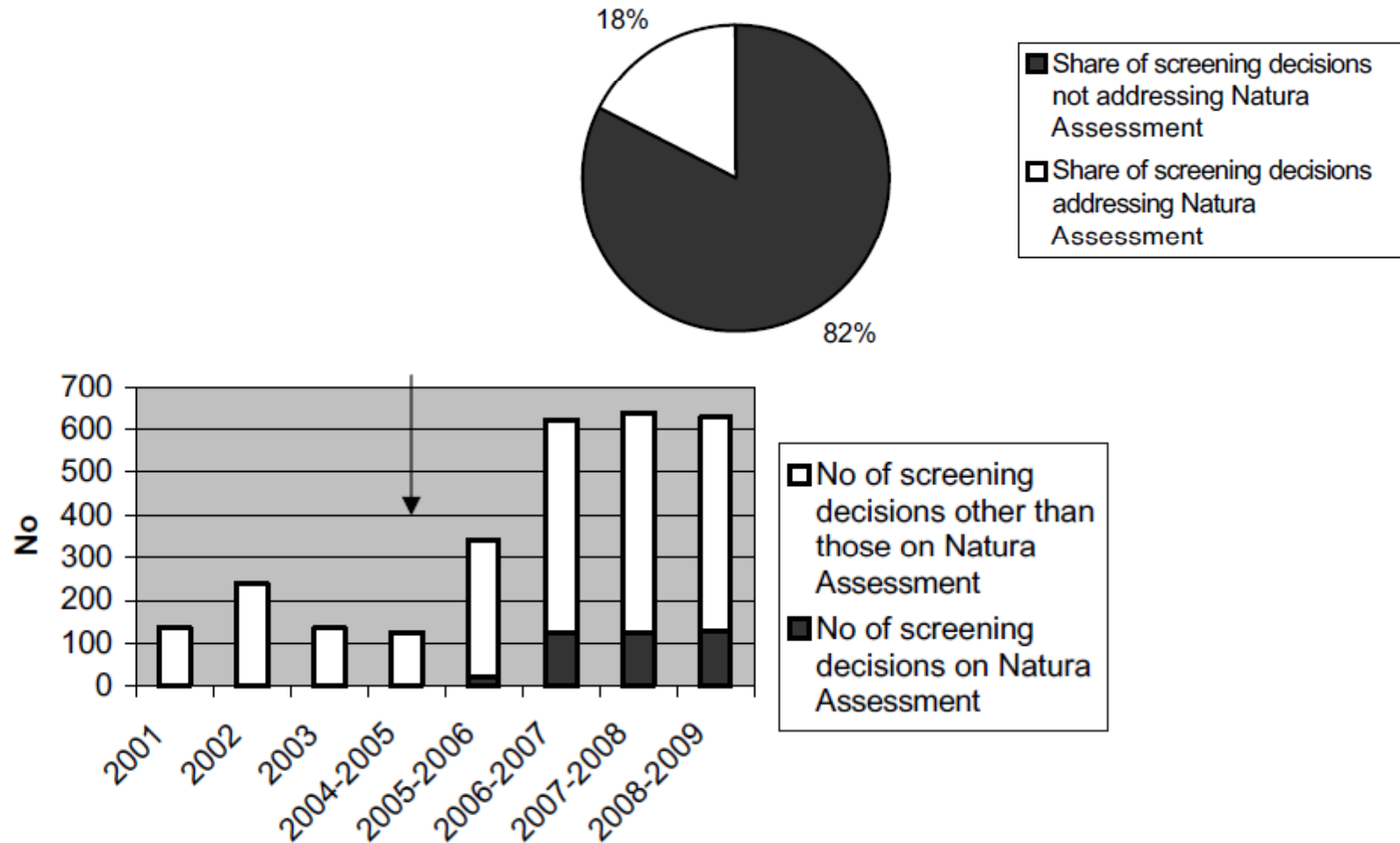


Number of screening decisions on EIA/SEA addressing the Natura Assessment notified in 2005–2009 (n = 394).

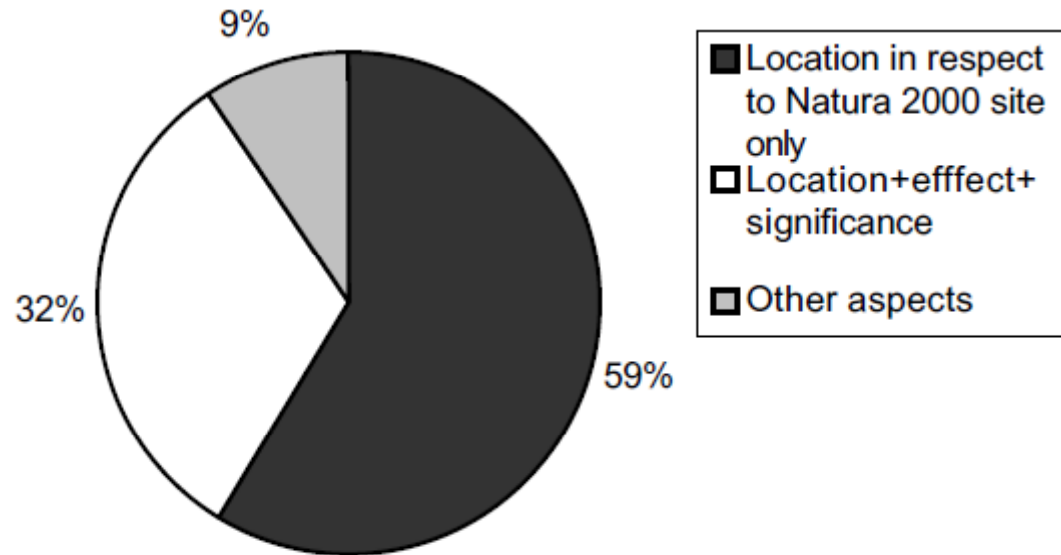
Peterson *et al.*, 2010. *JEAPM*



# Practice – only every 6th screening decision addresses effects on Natura site



# Practice – locational aspects considered mainly



Percentage of screening decisions on EIA/SEA addressing different aspects of screening questions of the Natura Assessment (n = 394).

Peterson *et al.*, 2010. *JEAPM*

# Conclusions

- Natura Assessment a strong tool of impact assessment (legally strong on decision making)
- Still, in practice screening decisions are overlooking impacts on Natura 2000 sites, and important aspects of impacts. Locational aspects, effects and their significance need to be considered altogether
- Responsibility of certain MS to maintain favourable conservation status of certain habitat types and species of EU importance need to be considered in Natura Assessment, especially in screening (significance)



# Recommendations

- EU-wide responsibility for favourable conservation status of certain habitats by a MS needs to be acknowledged also in Natura Assessment
- More agricultural land could be designated as important habitats for species and providers of ecosystem services in Natura 2000 network. Natura sites are part of Green Infrastructure. CAP subsidies should support them.
- Natura 2000 sites provide ecosystem services and perform buffers for climate change mitigation and adaptation for species and ecosystems and thus for the people as well.
- Natura Assessment a legally strong tool of impact assessment, and could be utilised more strongly in promoting ecosystem services



# Thank you for your attention!



6530\* Wooded meadow