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EO and Nature protection: an EU policy perspective

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Natura 2000

Birds Directive (1979, 2009/147/CE)

Protects all wild birds occurring in the EU + regularly migrating species.

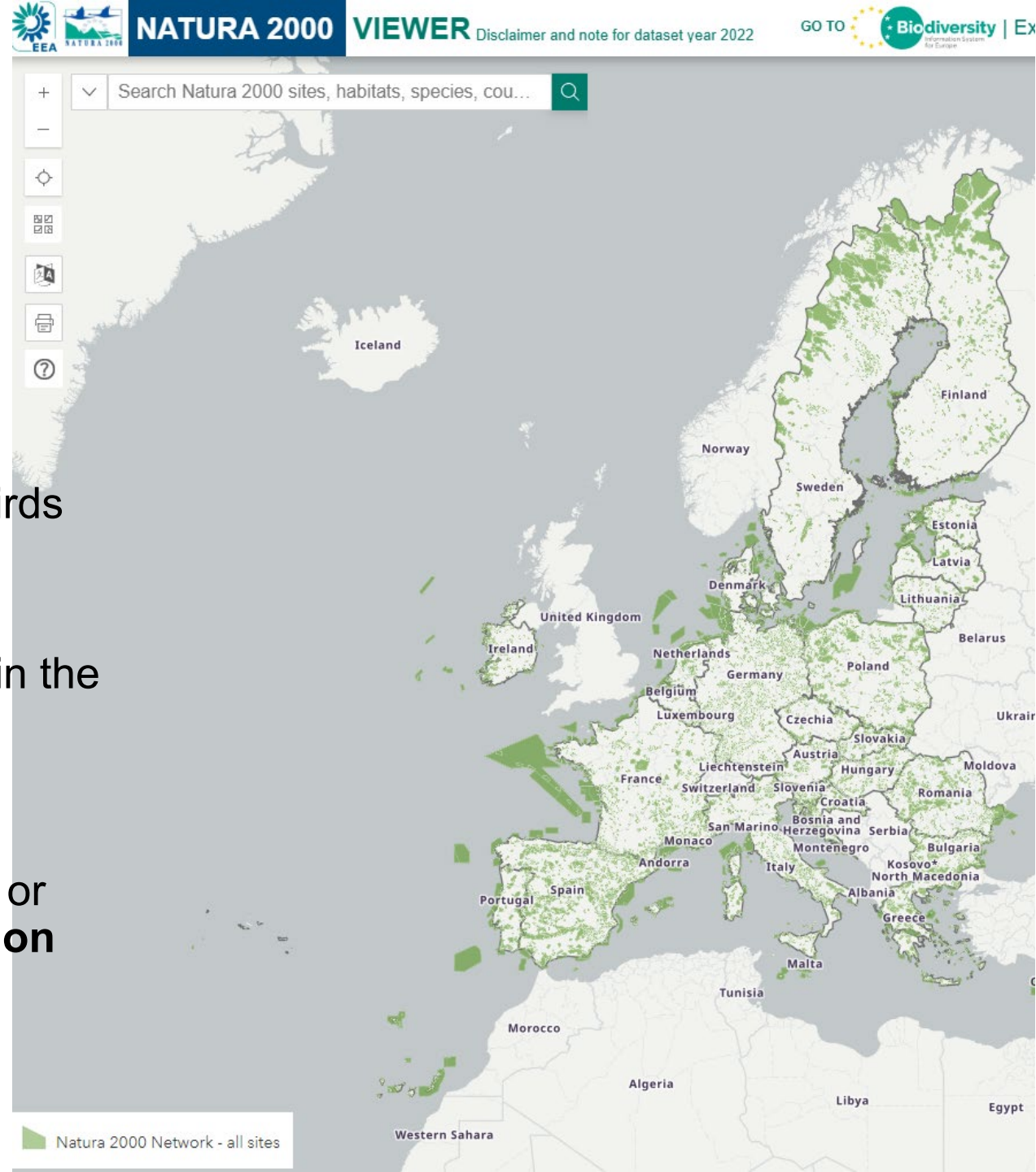
Habitats Directive (1992, 92/43/EEC)

Concerns 232 Habitats types and thousand of non-birds (fauna/flora) species.

→ The directives aim to maintenance of biodiversity in the European territory

→ Both directives requires the Member States to designate protected sites (**Natura 2000**) to maintain, or where appropriate restore, at a favorable **conservation status** habitats and species.

https://natura2000.eea.europa.eu



Nature Restoration Regulation

Restore EU's **land and sea areas**, and define conservation measures

Article 4: Terrestrial, Coastal, and Freshwater Ecosystems

Member States are required to implement restoration measures to improve and re-establish habitats listed in **Annex I of the Habitats Directive**. The targets includes:

- Art 4.1: Restoring at **least 30% of the total area** of these habitats that are not in good condition **by 2030**, with progressive increases to **60% by 2040** and **90% by 2050**.
- Art 4.4: **Re-establish annex I habitats** in areas where it does not occur
- Art 4.7: Ensuring that there is a continuous improvement in the quality and quantity of habitats for species listed in Annexes II, IV, and V of the **Habitats Directive**, as well as for wild birds covered by the **Birds Directive**.

Main usage of geospatial/EO information Habitats directive

Article 4: MS must identify in their territory Habitats to protect in Natura 2000

→ Opportunity to separate habitats mapping from degradation monitoring

Article 17: MS must report on their protected habitats and species **conservation status**, occurring in their whole territory (including outside Natura 2000).

Resource intensive, sometimes not complete

Article 6.2 (compliance): MS take steps to avoid degradations in Natura 2000 sites. The Commission is interested in detecting signs of degradation.

For grasslands intensification and abandonment are the main pressures leading to the grasslands degradations.

Habitats conservation status

Parameters

Range	• Refers to the geographic extent where the habitat occurs. • Criteria: range is stable or increasing.
Area	• The overall surface area occupied by the habitat within its natural range. • Criteria: area is stable or increasing.
Structures and functions	• Assesses the qualitative state of the habitat: vegetation composition, ecological conditions (hydrology, substrate), and overall functionality. • Includes the availability of elements necessary for long-term survival. • Criteria: ecological functions are maintained, with no major pressures.
Future prospects	• Considers trends for the above parameters, as well as threats and conservation measures. • Criteria: integrated evaluation of factors influencing conservation in the medium or long term.

Overall conservation status

FV	Favourable ('green')
U1	Unfavourable – Inadequate ('amber')
U2	Unfavourable - Bad ('red')
XX	Unknown (insufficient information to make an assessment)

Habitat assessments at Member State level

Choose a period, a group and then a country. Optionally, further refine your query by selecting one of the available biogeographical regions for that country.

Period... 2013-2018 | **Group...** Bogs, mires & fens | **Country...** France | **Bio-region...** All bioregions | Filter

Note: Rows in italic shows data not taken into account when performing the assessments (marginal presence, occasional, extinct prior HD, information, etc)

Legend: FV Favourable | XX Unknown | U1 Unfavourable-Inadequate | U2 Unfavourable-Bad

Current selection: 2013-2018, Bogs, mires & fens, France, All bioregions.

Member States reports

Habitat	Region	Range (km²)				Area (km²)								Structure and functions (km²)					Future prospects				Overall assessment						Distribution area(km²)		
		Surface	Status (% MS)	Trend	FRR	Min	Max	Best value	Type est.	Method	Status (% MS)	Trend	FRA	Good	Not good	Not known	Status	Trend	Range prosp.	Area prosp.	S & f prosp.	Status	Curr. CS	Curr. CS trend	Prev. CS	Prev. CS trend	Status Nat. of ch.	CS trend Nat. of ch.	Distrib.	Method	% MS
7110 - Active raised bogs	ALP	15600	22.44	=	≈	1	10	N/A	estimate	c	0.11	=	≈	1 - 6	1 - 4	1 - 10	U1	x	unk	poor	poor	U1	U1	=	U1	=	noChange	noChange	11700	a	26.59
7110 - Active raised bogs	ATL	15000	11.29	=	>	50	100	N/A	estimate	c	26.28	-	>	5 - 20	25 - 50	25 - 50	U2	x	good	poor	unk	U2	U2	x	U2	-	noChange	noChange	15100	a	18.06
7110 - Active raised bogs	CON	23600	19.30	=	x	36	60	N/A	estimate	d	32.28	x	>	N/A - N/A	N/A - N/A	36 - 60	FV	+	poor	poor	poor	U1	U1	=	U1	-	noChange	noChange	19300	a	28.81
7110 - Active raised bogs	MED	2000	23.53	=	x	1	9	N/A	estimate	c	78	-	x	1 - 9	1 - 9	1 - 9	U1	u	good	poor	poor	U2	U2	-	U2	-	noChange	noChange	900	a	15
7120 - Degraded raised bogs still ca...	ALP	5100	24.47	=	x	1	10	N/A	estimate	d	1.30	x	x	N/A - N/A	1 - 10	1 - 10	U1	x	poor	poor	poor	U1	U1	x	U1	=	noChange	noChange	3700	b	26.43
7120 - Degraded raised bogs still ca...	ATL	11000	7.73	=	x	10	50	N/A	estimate	c	4.37	=	≈	10 - 25	10 - 25	10 - 25	U1	x	poor	poor	bad	U2	U2	=	U2	-	noChange	noChange	10800	b	13.06
7120 - Degraded raised bogs still ca...	CON	12500	9.21	-	≈	22.40	26	N/A	estimate	c	11.72	u	<	N/A - N/A	22.40 - 26	N/A - N/A	U2	+	unk	unk	good	FV	U2	x	U2	=	noChange	noChange	11300	b	15.80
7120 - Degraded raised bogs still ca...	*MED*	*N/A*	*0*	*N/A*	*N/*	*N/A*	*N/A*	*N/A*		*N/A*	*0*	*N*	*N/*	*N/A - N/A*	*N/A - N/A*	*N/A - N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N*	*N/A*	*N/A*	*noChange*	*noChange*	*N/A*	*b*	*0*
7130 - Blanket bog (*active only)	ATL	100	0.06	=	≈	0.06	0.06	N/A	estimate	d	0	=	≈	0.05 - 0.05	N/A - N/A	0.05 - 0.05	FV	x	unk	unk	unk	XX	FV	=	FV	N/A	N/A	N/A	100	a	0.08
7140 - Transition mires and quaking ...	ALP	9500	4.18	=	≈	1	10	N/A	estimate	d	0.03	u	>	1 - 5	1 - 2	1 - 10	U1	x	good	unk	unk	XX	U1	x	U2	=	noChange	noChange	7800	b	4.80
7140 - Transition mires and quaking ...	ATL	11818.25	4.33	=	>	1.65	5.70	N/A	minimum	c	1.76	-	>>	N/A - N/A	N/A - N/A	N/A - N/A	U2	x	unk	bad	poor	U2	U2	-	U2	=	noChange	noChange	12100	b	7.98
7140 - Transition mires and quaking ...	CON	23200	6.34	=	≈	13.53	23.70	N/A	estimate	c	0.48	=	x	N/A - N/A	N/A - N/A	13.53 - 23.70	U1	-	poor	poor	poor	U1	U1	-	U1	-	noChange	noChange	18800	b	8.73
7140 - Transition mires and quaking ...	*MED*	*N/A*	*0*	*N/A*	*N/*	*N/A*	*N/A*	*N/A*		*N/A*	*0*	*N*	*N/*	*N/A - N/A*	*N/A - N/A*	*N/A - N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N*	*N/A*	*N/A*	*noChange*	*noChange*	*N/A*	*b*	*0*
7150 - Depressions on peat substrat...	ALP	1400	7.26	=	≈	1	1	N/A	estimate	d	0.48	=	≈	N/A - 0.10	N/A - 0.05	N/A - 0.50	U1	x	good	unk	unk	XX	U1	=	U1	=	noChange	noChange	1200	b	12.77
7150 - Depressions on peat substrat...	ATL	16600	11.18	x	>	N/A	N/A	22	minimum	c	28.81	x	x	21.30 - 21.30	0.40 - 0.40	0.30 - 0.30	U1	x	unk	unk	unk	XX	U1	x	U2	-	noChange	noChange	14900	b	15.54
7150 - Depressions on peat substrat...	CON	12300	18.85	=	≈	8	12	N/A	estimate	d	6.21	-	>	N/A - N/A	N/A - N/A	8 - 12	XX	x	poor	poor	poor	U1	U1	x	U2	-	knowledge	knowledge	10300	b	26.55
7150 - Depressions on peat substrat...	*MED*	*N/A*	*0*	*N/A*	*N/*	*N/A*	*N/A*	*N/A*		*N/A*	*0*	*N*	*N/*	*N/A - N/A*	*N/A - N/A*	*N/A - N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N*	*N/A*	*N/A*	*noChange*	*noChange*	*N/A*	*b*	*0*
7210 - Calcareous fens with Cladium...	ALP	4500	28.18	=	>	N/A	11.60	11.60	estimate	c	75.16	-	>	N/A - N/A	N/A - N/A	11.60 - 11.60	XX	-	bad	bad	bad	U2	U2	-	U1	-	noInfo	noChange	2300	a	26.44
7210 - Calcareous fens with Cladium...	ATL	17000	32.79	=	≈	200	500	N/A	estimate	c	81.50	=	<	100 - 300	100 - 200	100 - 200	FV	x	good	good	poor	U1	U1	=	U1	=	noChange	noChange	16700	a	42.82

Monitoring Annex I habitats

EU Grassland Watch: first attempt to go beyond CLMS specifications (EP funded project, EEA+JRC are partners), for **natural/semi-natural** grasslands

→ Continuous monitoring from 1994 to now, yearly updates

→ Indicators of intensification/abandonment (most important pressure on grassland biodiversity) + last mile application

→ Need for community building with Member States experts: appropriation + co-creation

EU Wetland Watch: Similar approach for wetlands

→ methodology: start from policy needs, define wetlands typical pressures and their proxies

→ Work led by JRC Knowledge Centre on Earth Observation (KCEO)

In situ information are essential!

First objective: Training / Validation

Not enough in-situ data ready to be used

Second objective: combine EO with in-situ data (in particular on species) to better assess conservation status

In situ data: 2 Horizon projects

Biodiversity Meets Data (BMD), KO 4/03/2025

Answer the question: can we create an EU-wide IT platform, for biologists collecting in-situ data, offering data hosting, data processing (imagery, sound, eDNA, etc), and data sharing?

→ Support biodiversity experts, but also EU projects (LIFE, Horizon), national projects, etc.

→ Encourage normalisation (data cube, normalised taxonomy), and good practices

→ Simplify data exchange (and access for Cal/Val), and encourage cross-domain research

BioDiMoBot: KO 5/02/2025 – Robotic solution, long time drifting solution (days/weeks/months), collecting water biodiversity + water properties (physical and chemical) – on-board pre-processing, data transfer to BMD

→ in-situ data intensification

Thank you

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