European Red List of Habitats

A Red List assessment of all terrestrial, freshwater and benthic marine habitats in the EU28, EU28+ and neighbouring seas
European Red List of Habitats

A project funded by DG(Environment) managed by John Janssen (Alterra), Ana Nieto & Mariana Garcia (IUCN), Tom Haynes & Natalie Sanders (NatureBureau), Susan Gubbay & John Rodwell with over 300 expert contributors from across Europe to help inform and underpin the EU2020 Biodiversity Strategy and the commitment to habitat sustainability, recovery and restoration
European Red List of Habitats covers the EU28, EU28+ (Iceland, Switzerland, Norway & the Balkan countries), the Baltic Sea, North East Atlantic, northern Mediterranean Sea & Black Sea
# European Red List of Habitats

Red List of Habitats Criteria & Categories

(after IUCN 2013 and the Red List Feasibility Study)

## A. Reduction in quantity **

<table>
<thead>
<tr>
<th></th>
<th>CR</th>
<th>EN</th>
<th>VU</th>
<th>NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over the past 50 years</td>
<td>≥ 80%</td>
<td>≥ 50%</td>
<td>≥ 30%</td>
<td>25-30%</td>
</tr>
</tbody>
</table>

## B. Restricted geographic distribution

<table>
<thead>
<tr>
<th>Range</th>
<th>CR</th>
<th>EN</th>
<th>VU</th>
<th>NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>AND Declining or threatened</td>
<td>≤ 2,000 km²</td>
<td>≤ 20,000 km²</td>
<td>≤ 50,000 km²</td>
<td>close to VU</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Area (10x10 grids)</th>
<th>CR</th>
<th>EN</th>
<th>VU</th>
<th>NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>AND Declining or threatened</td>
<td>≤ 2</td>
<td>≤ 20</td>
<td>≤ 50</td>
<td>close to VU</td>
</tr>
</tbody>
</table>

## C/D. Reduction in quality

<table>
<thead>
<tr>
<th>Reduction in abiotic and/or biotic quality over the last 50 years</th>
<th>CR</th>
<th>EN</th>
<th>VU</th>
<th>NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe decline</td>
<td>intermediate decline</td>
<td>slight decline</td>
<td>close to VU</td>
<td></td>
</tr>
</tbody>
</table>
European Red List of Habitats

233 natural and semi-natural terrestrial habitats

257 benthic marine habitats

Typology based on EUNIS-3 (terrestrial) or EUNIS-4 (marine) with modifications
European Red List of Habitats

233 natural and semi-natural terrestrial habitats

257 benthic marine habitats

Typology based on EUNIS-3 (terrestrial) or EUNIS-4 (marine) with modifications

for each habitat, data were provided by territorial experts in each country or regional sea...

... and assessments coordinated by an expert group and independently reviewed
Terrestrial & Freshwater Habitats

233 natural and semi-natural habitats

Coastal (30 habitats)
Freshwaters (26)
Mires & bogs (13)
Grasslands (53)
Heath & scrub (38)
Forests (42)
Sparsely vegetated habitats (31)
Overall results reveal 37% habitats threatened (in top 3 threat categories) in EU28, 32% in EU28+.
## Terrestrial & Freshwater Habitats

233 natural and semi-natural habitats

<table>
<thead>
<tr>
<th>Habitat Type</th>
<th>Percentage</th>
<th>Semi-Natural Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mires &amp; bogs (13)</td>
<td>84%</td>
<td>54%</td>
</tr>
<tr>
<td>Grasslands (53)</td>
<td>53%</td>
<td>49%</td>
</tr>
<tr>
<td>Freshwaters (26)</td>
<td>46%</td>
<td>38%</td>
</tr>
<tr>
<td>Coastal (30)</td>
<td>45%</td>
<td>43%</td>
</tr>
<tr>
<td>Forests (42)</td>
<td>29%</td>
<td>24%</td>
</tr>
<tr>
<td>Heath &amp; scrub (38)</td>
<td>17%</td>
<td>16%</td>
</tr>
<tr>
<td>Sparsely vegetated habitats (31)</td>
<td>10%</td>
<td>10%</td>
</tr>
</tbody>
</table>
Terrestrial & Freshwater Habitats

233 natural and semi-natural habitats

- Mires & bogs (13) 84%/54%
- Grasslands (53) 53%/49%
- Freshwaters (26) 46%/38%
- Coastal (30) 45%/43%
- Forests (42) 29%/24%
- Heath & scrub (38) 17%/16%
- Sparsely vegetated habitats (31) 10%/10%

Mires & bogs in EU28 (n=13)

- Critically Endangered: 8%
- Endangered: 8%
- Vulnerable: 7%
- Near Threatened: 23%
- Least Concern: 54%
Marine Habitats

257 benthic marine habitats covering four marine regions
Marine Habitats

Baltic Sea (61 habitats)

North-East Atlantic (86)

Mediterranean (47)

Black Sea (63)
Marine Habitats

19% of marine habitats are threatened (top 3 threat categories) in EU28, 18% in EU28+

All EU28 habitats (n=247)

- Critically Endangered: 1%
- Endangered: 9%
- Vulnerable: 9%
- Near Threatened: 12%
- Least Concern: 20%
- Data Deficient: 49%

All EU28+ habitats (n=257)

- Critically Endangered: 7%
- Endangered: 10%
- Vulnerable: 11%
- Near Threatened: 18%
- Least Concern: 53%
- Data Deficient: 1%
Marine Habitats

Mediterranean (47) 32%/30%

North-East Atlantic (86) 23%/23%

Black Sea (63) 13%/10%

Baltic Sea (61) 8%/8%
Marine Habitats

North-East Atlantic

For EU28 and EU28+ (n=86)

- CR: 1%
- EN: 12%
- VU: 10%
- NT: 9%
- LC: 8%
- DD: 60%

EU28 habitats, excluding Data Deficient (n=34)

- CR: 3%
- EN: 29%
- VU: 27%
- NT: 24%
- LC: 17%
Outputs of the Red List

Two publications (hard copy & pdfs)
Outputs of the Red List

Assessment fact sheets for 490 habitats (pdfs with much data on habitat definition, characteristic species, distribution, threats, conservation measures)
Outputs of the Red List

Assessment fact sheets for 490 habitats (pdfs)

Images (jpegs, 2 per habitat, showing ecology/landscape)
Outputs of the Red List

Assessment fact sheets for 490 habitats (pdfs)

Images (jpegs)

Distribution maps (GIS shape files with data source details)
Outputs of the Red List

Assessment fact sheets for 490 habitats (pdfs)

Images (jpegs)

Distribution maps (GIS shape files)

Territorial data (Excel spreadsheets)
## Outputs of the Red List

### Comparison between Red List assessment and Conservation Status assessment for equivalent Annex 1 habitats

<table>
<thead>
<tr>
<th>Annex 1 habitat code</th>
<th>Article 17 assessment (overall conservation status)</th>
<th>Red List assessment preliminary</th>
<th>Red List habitat code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ALP</td>
<td>ATL</td>
<td>BLS</td>
</tr>
<tr>
<td>6510</td>
<td>U2</td>
<td>U2</td>
<td>FV</td>
</tr>
<tr>
<td>6520</td>
<td>U2</td>
<td>U2</td>
<td></td>
</tr>
<tr>
<td>6530</td>
<td>U2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9070</td>
<td></td>
<td>U2</td>
<td></td>
</tr>
<tr>
<td>6540</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6280</td>
<td></td>
<td></td>
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<tr>
<td>62C0</td>
<td>U1</td>
<td>U1</td>
<td>U1</td>
</tr>
<tr>
<td>62D0</td>
<td>U1</td>
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</table>

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European Commission
Applications of the Red List

Red List assessments for all natural and semi-natural terrestrial, freshwater and benthic marine habitats in EU28, EU28+ and neighbouring seas

Coastal (30)
Freshwaters (26)
Mires & bogs (13)
Dry & wet pastures & meadows, steppes, alpine grasslands & tall herb vegetation (53)
Applications of the Red List

Red List assessments for all natural and semi-natural terrestrial, freshwater and benthic marine habitats in EU28, EU28+ and neighbouring seas

Standardised typology, assessment methodology and territorial data for member states to complement the pan-European situation with their own
Applications of the Red List

Terrestrial EU28 (n=228)
37% threatened

- Critically Endangered: 2%
- Endangered: 5%
- Vulnerable: 11%
- Near Threatened: 24%
- Least Concern: 46%
- Data Deficient: 12%

Terrestrial UK (n=95)
40% threatened

- Critically Endangered: 4%
- Endangered: 11%
- Vulnerable: 29%
- Near Threatened: 15%
- Least Concern: 46%
- Data Deficient: 5%

The European Commission

Applications of the Red List

The intensity of threat often varies across Europe.

Wet meadows are endangered overall but much more threatened in some countries than others.
Applications of the Red List

The intensity of threat often varies across Europe

Wet meadows are endangered overall but much more threatened in some countries than others
The intensity of threat often varies across Europe.

Wet meadows are endangered overall but much more threatened in some countries than others.
Applications of the Red List

Many different pressures threaten terrestrial & freshwater habitats (threat typology from Article 17)
Applications of the Red List

Many different pressures threaten terrestrial & freshwater habitats and their impacts vary in different habitats.
Many different pressures threaten terrestrial & freshwater habitats and their impacts vary in different habitats but we can now make the extent of these threats spatially explicit.
Applications of the Red List

but we can now make the extent of these threats spatially explicit

Total nitrogen input to grasslands (from Erhard M., Teller A., Maes J. et al. (2016)
Applications of the Red List

but we can now make the extent of these threats spatially explicit

Total nitrogen input to grasslands (from Erhard M., Teller A., Maes J. et al. (2016)

and the distribution of Mountain hay meadows, threatened by agricultural intensification.
Main pressures on marine habitats are common across the regional seas.

- Pollution
- Biological resource use
- Natural system modification
- Urbanisation

Percentage of habitats affected by pressure:

- North East Atlantic
- Mediterranean
- Black Sea
- Baltic Sea
Applications of the Red List

North-East Atlantic

Highest percentage of threatened habitats in the circalittoral zone ...
Applications of the Red List

North-East Atlantic

Highest percentage of threatened habitats in the circalittoral zone ...

and the kinds of threats vary in different zones
Applications of the Red List

Combining habitat assessments at landscape scale

Chalkland scarps of southern England
Applications of the Red List

Combining habitat assessments at landscape scale

Vulnerable
E1.2a Semi-dry calcareous grassland
E1.1d Cryptogam and annual-dominated vegetation on calcareous and ultramafic rock outcrops

Least Concern
G1.6a Fagus woodland on non-acid soils
G3.9a Taxus baccata woodland
G5.2a Thermophile woodland fringe on base-rich soils
F3.1e Temperate and submediterranean thorn scrub
F3.1a Temperate and submediterranean Juniperus scrub
To help meet restoration goals under Target 2 in the EU 2020 Biodiversity Strategy, the Red List can:

- indicate which habitats most urgently need restoration
- highlight which threats must be alleviated
- estimate time frame for restoration or recovery
- list indicators of recovery

Applications of the Red List
Applications of the Red List

To help meet restoration goals for terrestrial habitats:

Traditionally-grown arable crops with rich and colourful annuals assessed as Endangered across Europe as a whole.
Applications of the Red List

To help meet restoration goals for terrestrial habitats:

Traditionally-grown arable crops with rich and colourful annuals assessed as Endangered across Europe as a whole.

Restoration will depend on incentives for low-input arable agriculture or set-aside with sowing of regionally appropriate seed-mixtures and monitoring quite speedy appearance of native annual plants without nutrient-demanding weeds.
Applications of the Red List

To help meet restoration goals for marine habitats:

Seagrass beds and Posidonia beds are threatened across Europe with particular habitat types being Vulnerable, Endangered or Critically Endangered.
The most threatened terrestrial & freshwater habitats are:

- Mires & bogs (13)
- Grasslands (53)
Terrestrial & Freshwater Habitats

The most threatened terrestrial & freshwater habitats are:

Mires & bogs (13)
Grasslands (53)
Freshwaters (26)

For EU28 (n=26):
- Endangered: 8%
- Vulnerable: 11%
- Near Threatened: 23%
- Least Concern: 35%
- Data Deficient: 8%

For EU28+ (n=26):
- Endangered: 12%
- Vulnerable: 11%
- Near Threatened: 27%
- Least Concern: 27%
- Data Deficient: 23%
Terrestrial & Freshwater Habitats

The most threatened terrestrial & freshwater habitats are

Mires & bogs (13)
Grasslands (53)
Freshwaters (26)
Coastal habitats (30)
Terrestrial & Freshwater Habitats

Less threatened terrestrial & freshwater habitats are

Forests (42)
Terrestrial & Freshwater Habitats

Less threatened terrestrial & freshwater habitats are

Forests (42)
Heath & scrub (38)
Terrestrial & Freshwater Habitats

Less threatened terrestrial & freshwater habitats are

Forests (42)
Heath & scrub (38)
Sparsely vegetated habitats (31)
Low proportion of Data Deficiency, highest proportion of threatened habitats in the circalittoral zone.
Marine Habitats

Mediterranean Sea

EU28 (n=47)

EU28+ (n=47)
Marine Habitats

Mediterranean Sea (excluding Data Deficient habitats)

- 233 natural and semi-natural habitats
  - Coastal (30)
  - Freshwaters (26)
  - Mires & bogs (13)
  - Dry & wet pastures & meadows, steppes, alpine grasslands & tall herb vegetation (53)
Marine Habitats

Black Sea
High proportion of habitats were Data Deficient but, for habitats with sufficient data, the majority were threatened.

EU28 (n=53)

- CR: 2%
- EN: 9%
- VU: 2%
- NT: 2%
- LC: 2%
- DD: 83%

EU28+ (n=63)

- CR: 2%
- EN: 3%
- VU: 5%
- NT: 2%
- LC: 3%
- DD: 85%
Marine Habitats

Black Sea excluding Data Deficient

a) EU 28 Mediolittoral (n=3)
   - CR: 33%
   - VU: 67%

b) EU 28 Infra-littoral (n=3)
   - EN: 33%
   - NT: 67%

c) EU 28 Circalittoral (n=3)
   - LC: 33%
   - VU: 34%
## Applications of the Red List

<table>
<thead>
<tr>
<th>MSFD Pressures</th>
<th>Type</th>
<th>Habitat Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical disturbance to seabed</td>
<td>Change</td>
<td>Baltic Sea - Kelp communities on Baltic infralittoral coarse sediment/shell gravel</td>
</tr>
<tr>
<td>(temporary or reversible)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical loss (due to permanent</td>
<td>Inputs</td>
<td>Mediterranean Sea - Communities of Mediterranean upper mediolittoral rock</td>
</tr>
<tr>
<td>change of seabed substrate or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>morphology and to extraction of</td>
<td>Extraction</td>
<td>Black Sea - Mussel beds in the Pontic infralittoral zone</td>
</tr>
<tr>
<td>seabed substrate)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes to hydrological Conditions</td>
<td>Change</td>
<td>North East Atlantic - Submerged fucoids, green or red seaweeds on low salinity Atlantic infralittoral rock</td>
</tr>
</tbody>
</table>