

# NECD Expert Group Meeting

Centre Borschette, Brussels, 09. April 2018

## Draft reporting template for ecosystems monitoring



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# NECD Article 9

Reporting under Article 9, further specified in Article 10 4(a) of the NEC Directive (2016/2284)

(a) by 1 July 2018 and every four years thereafter, the location of the monitoring sites and the associated indicators used for monitoring air pollution impacts and

(b) by 1 July 2019 and every four years thereafter, the monitoring data referred to in Article 9

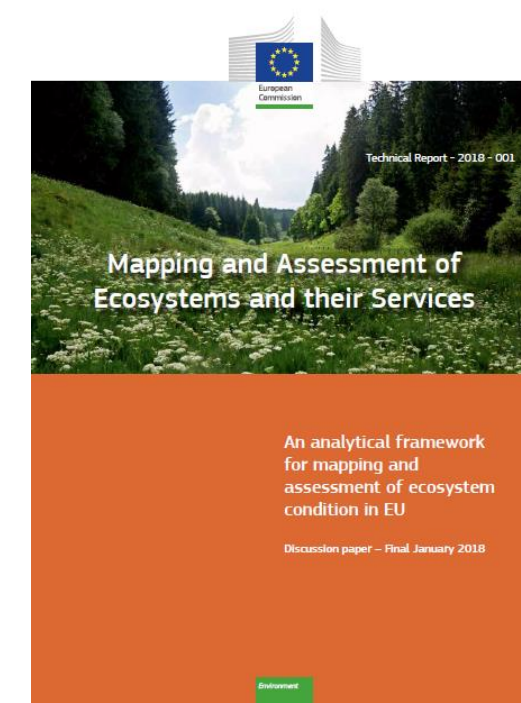


# Key questions

## What is the impact of air pollution on ecosystem condition?

Condition/State = the physical, chemical and biological condition or quality of an ecosystem at a particular point in time.

- Air pollution **impacts** on 'current' ecosystem condition
- **Change** in condition due to change in air pollution over **space and time**
- **Direct impacts** on ecosystem structure and function  
species composition and abundance, visible damage, biomass / carbon sequestration
- **Indirect impacts** on ecosystem structure and function  
soil carbon / nitrogen content, acidification / eutrophication layer, nitrate leaching

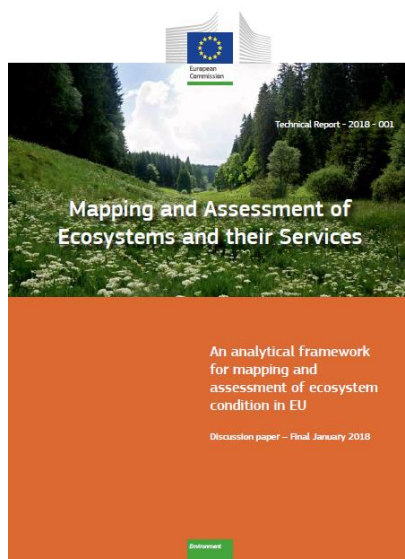
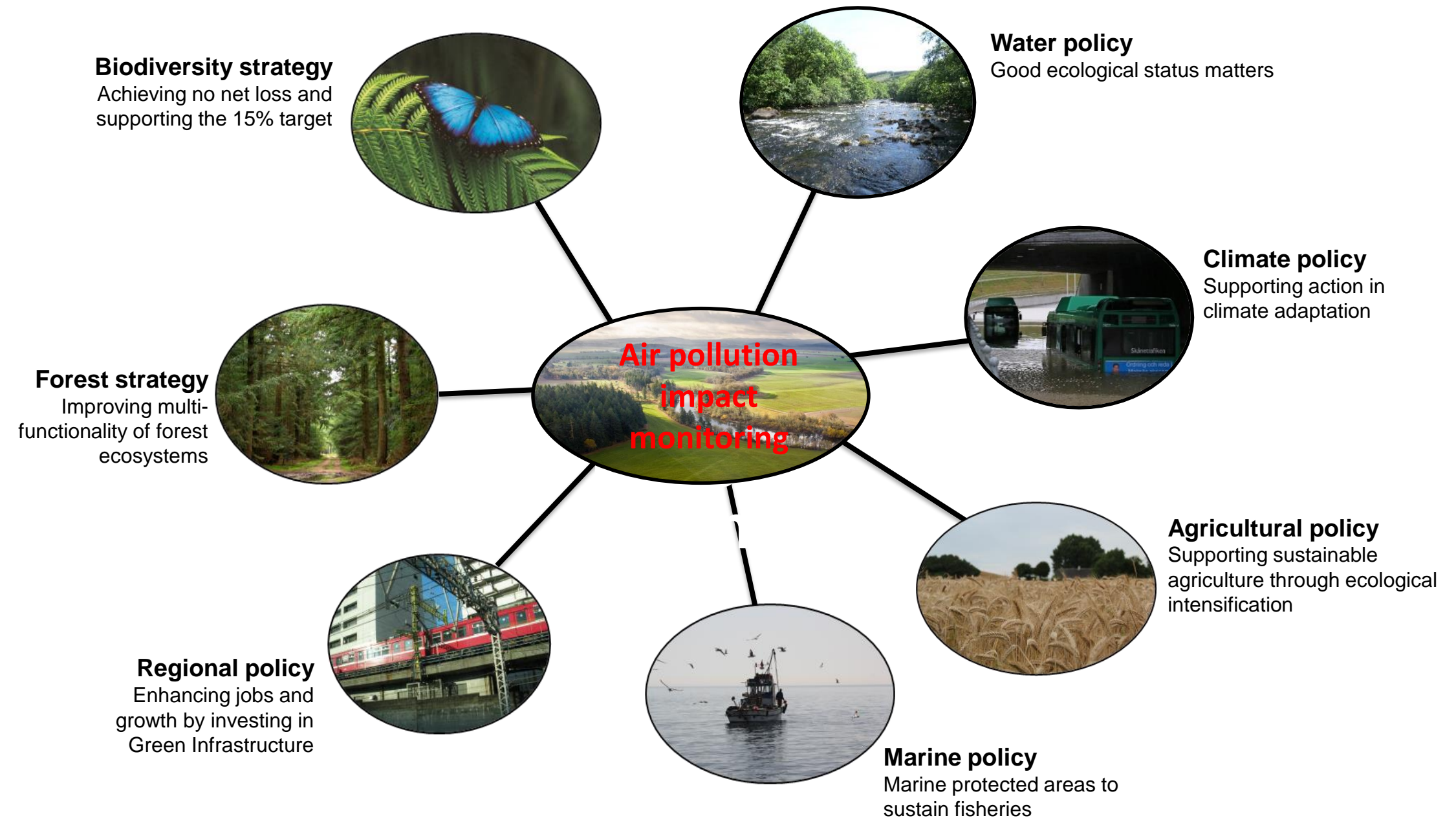
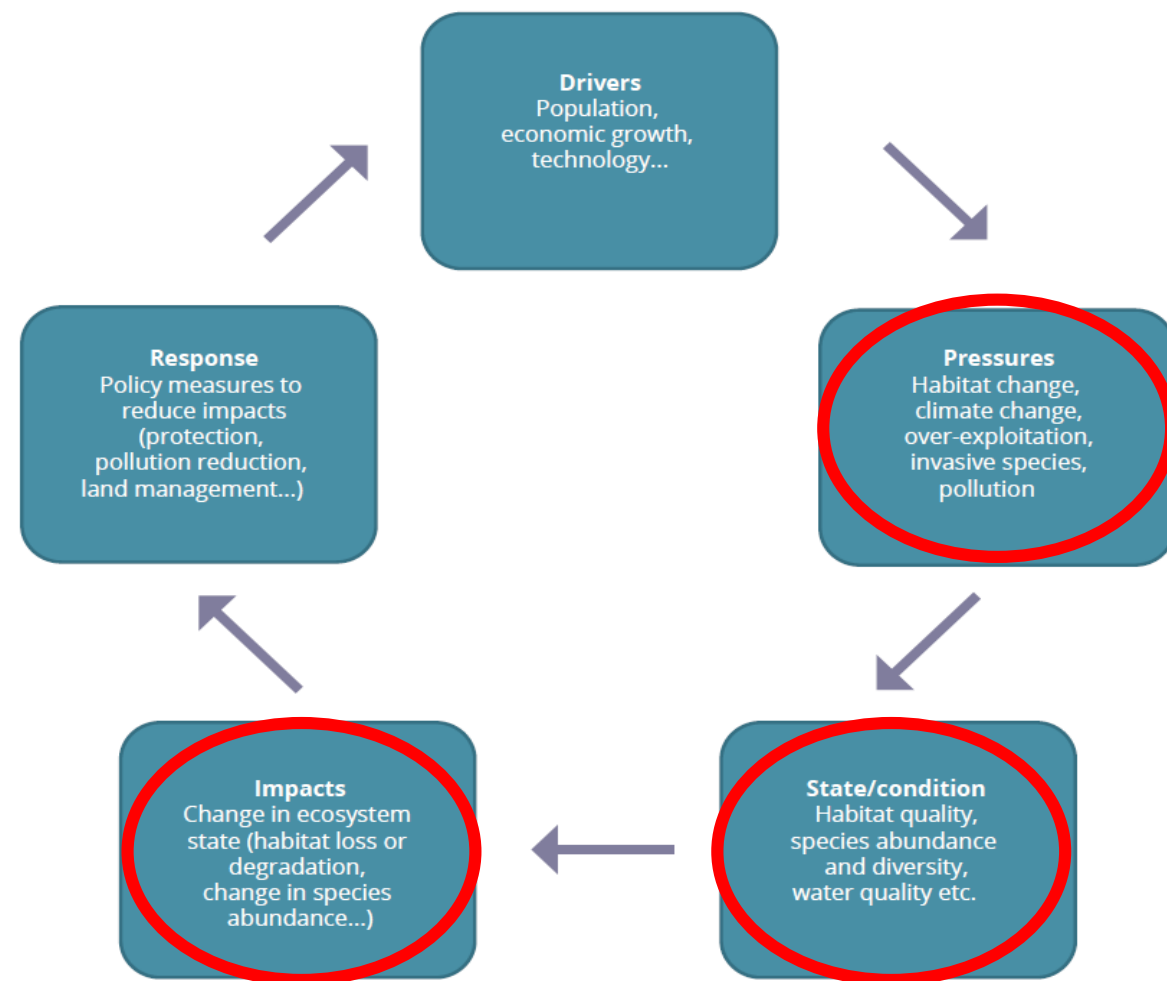


[http://ec.europa.eu/environment/nature/knowledge/ecosystem\\_assessment/pdf/Brochure%20MAES.pdf](http://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/pdf/Brochure%20MAES.pdf)



# Policy streamlining and integration

## DPSIR approach





# Representativeness – ecosystems

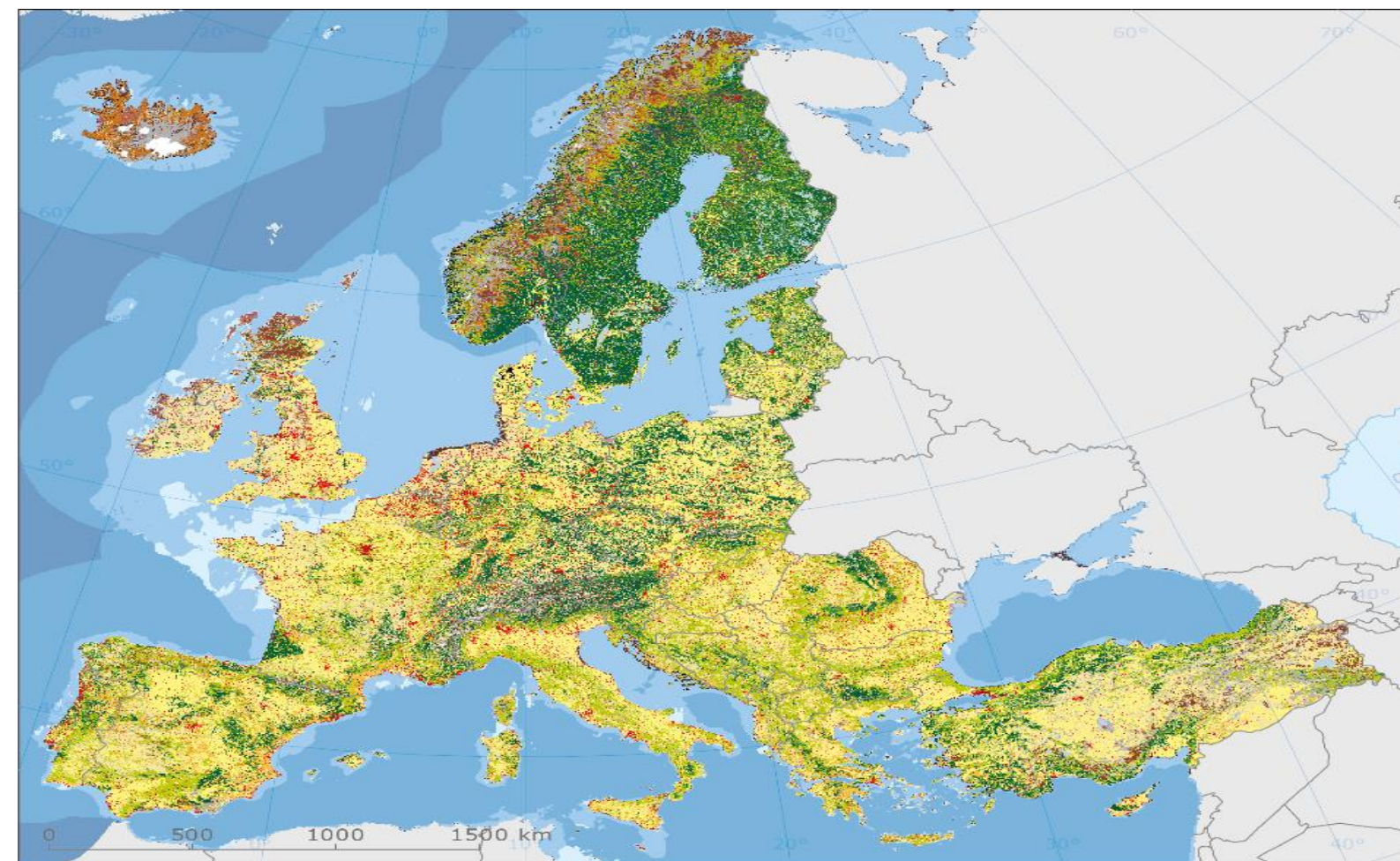
## 12 Ecosystems

- Terrestrial (7)
- freshwater (1)
- marine (4)

## Ca. 50 Habitats

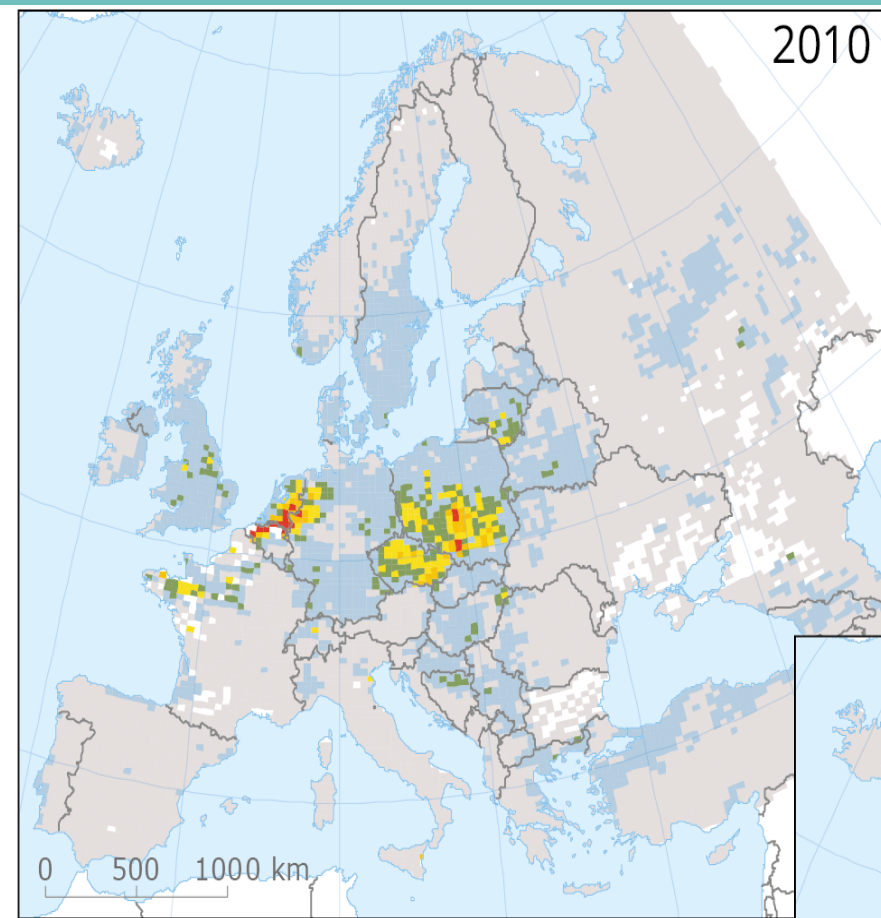
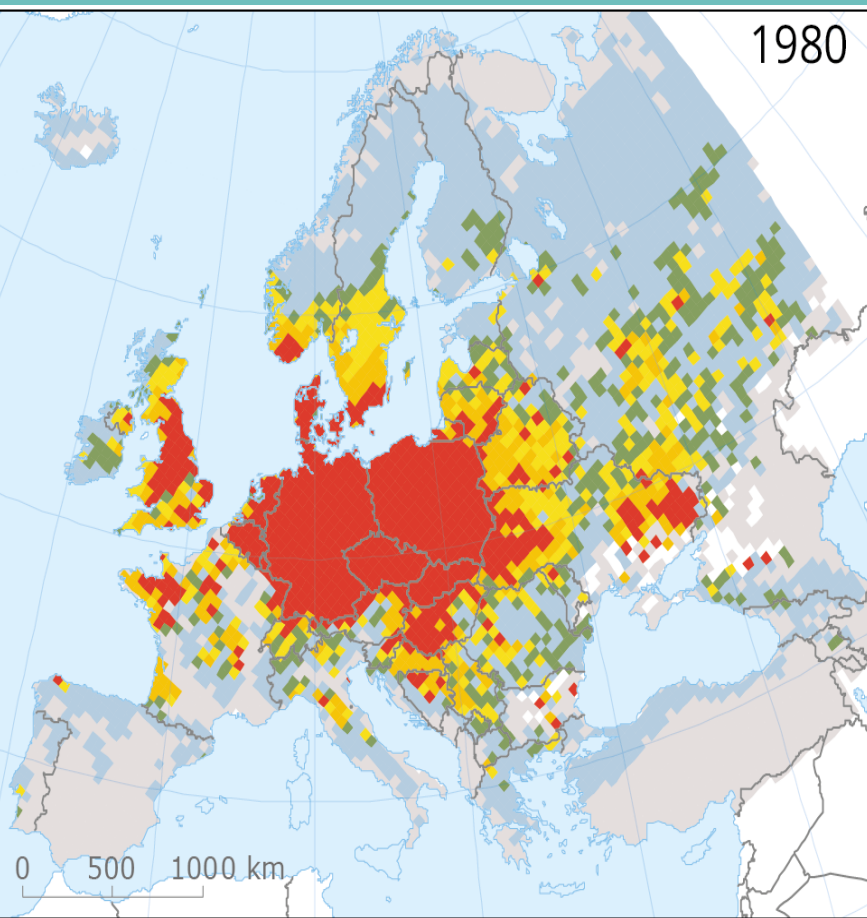
- Terrestrial (>40)
- freshwater (3)
- marine (>15)

Ecosystem type	EUNIS Level 1
Cropland	I Regularly or recently cultivated <b>agricultural</b> , horticultural and domestic habitats
Grassland	E <b>Grasslands</b> and land dominated by forbs, mosses or lichens
Forest and other woodland	G Woodland, <b>forest</b> and other wooded land
Heathland and shrub	F <b>Heathland</b> , scrub and tundra
Sparsely vegetated land	H Inland unvegetated or sparsely vegetated habitats B <b>Coastal</b> habitats
Wetlands	D Mires, bogs and fens
Rivers and lakes	C Inland surface waters



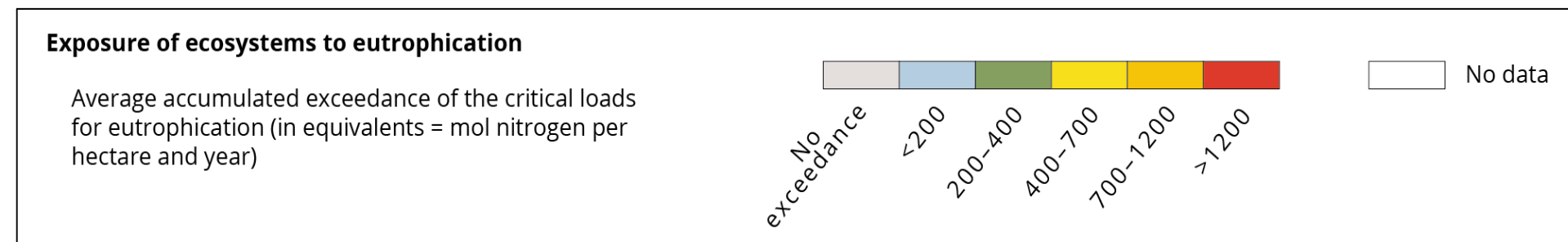
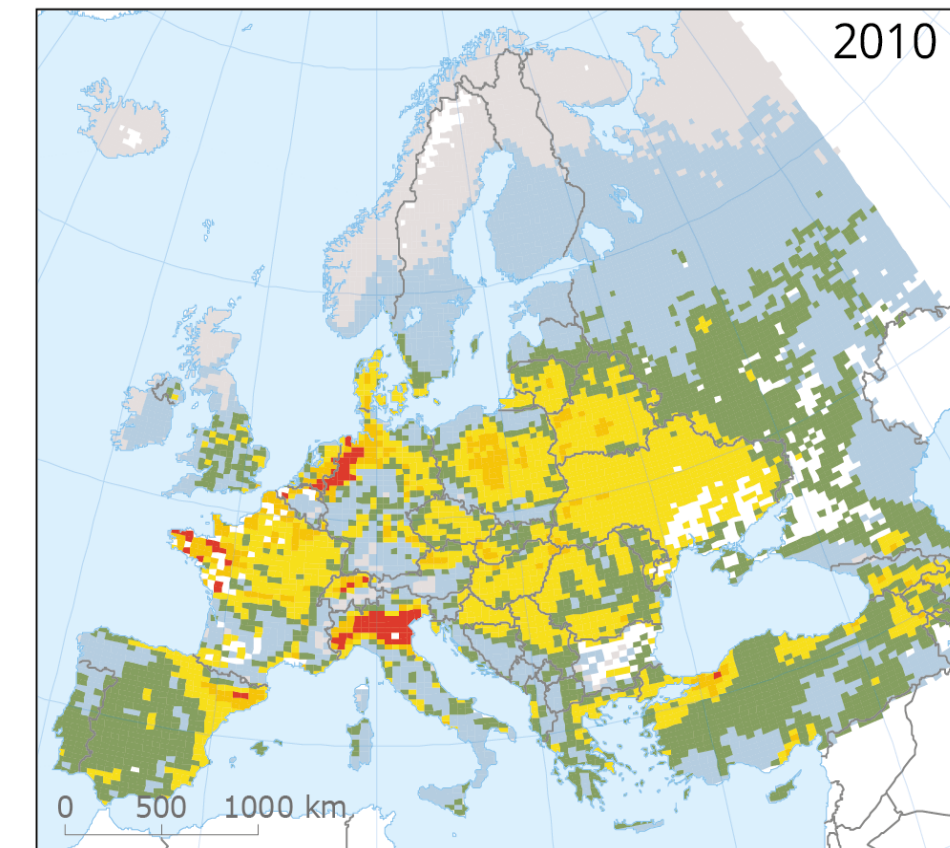
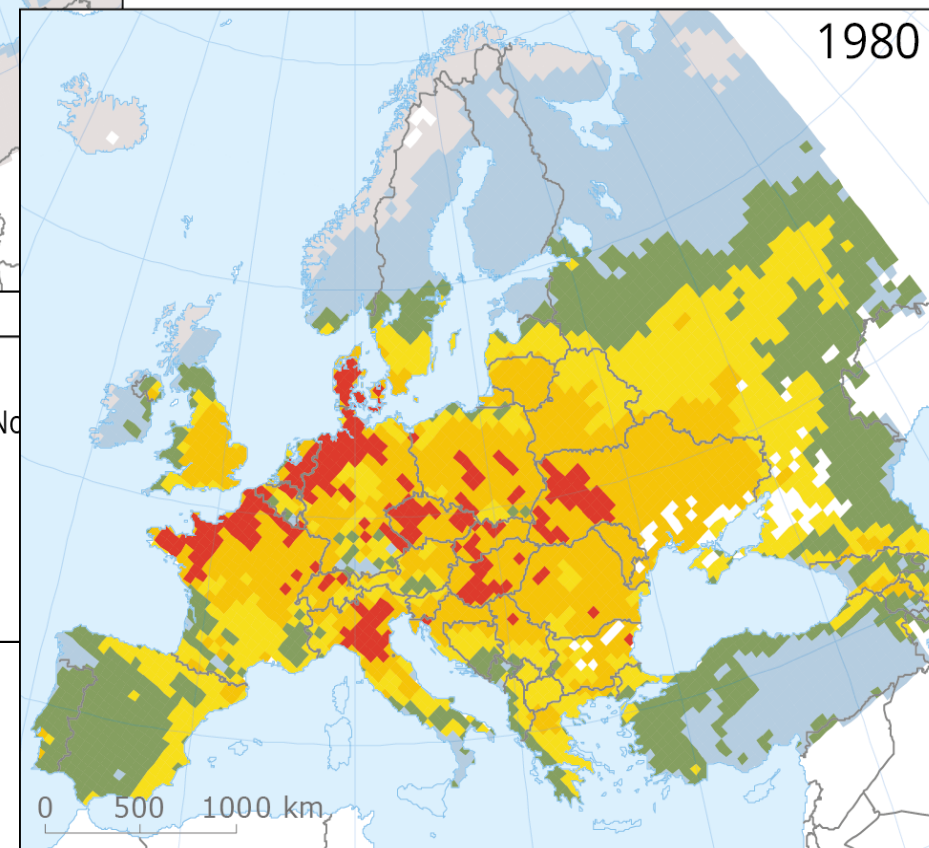
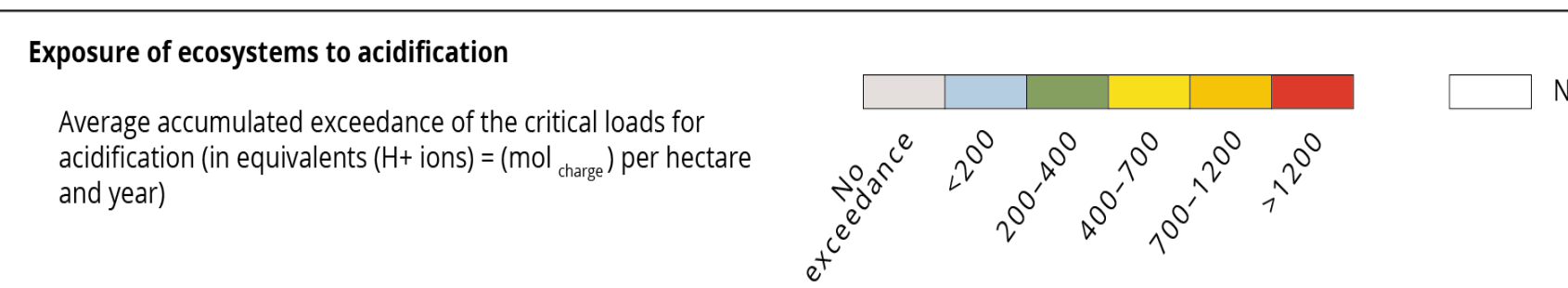


# Representativeness – pollution patterns



## Pollution gradients

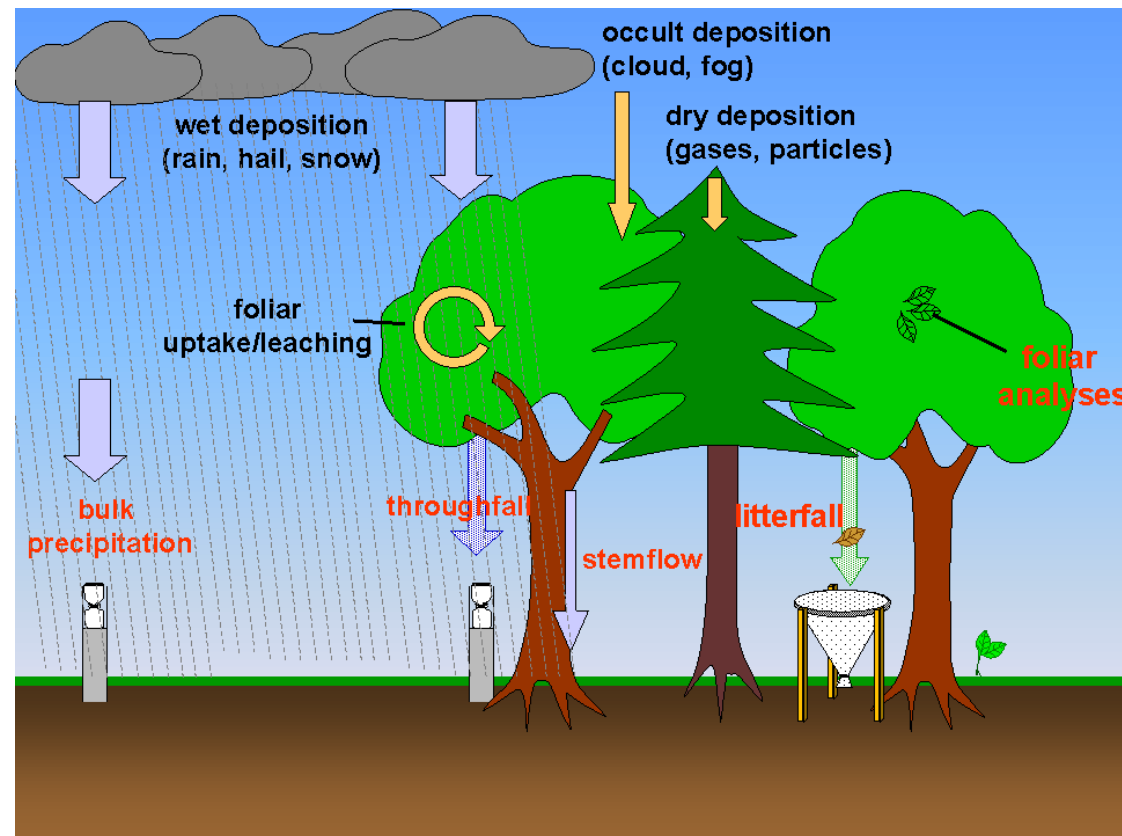
- acidification
- eutrophication
- ozone



Coordination Centre for Effects (UNECE) in EEA CSI005  
<http://www.eea.europa.eu/data-and-maps/indicators/exposure-of-ecosystems-to-acidification-3/assessment>



# 'Harmonisation' of different monitoring concepts



<https://www.wsl.ch/en/projects/biogeochemical-cycling-and-ground-vegetation.html>



<https://www.ffpri.affrc.go.jp/labs/dfse/Photo/Domestic.html>

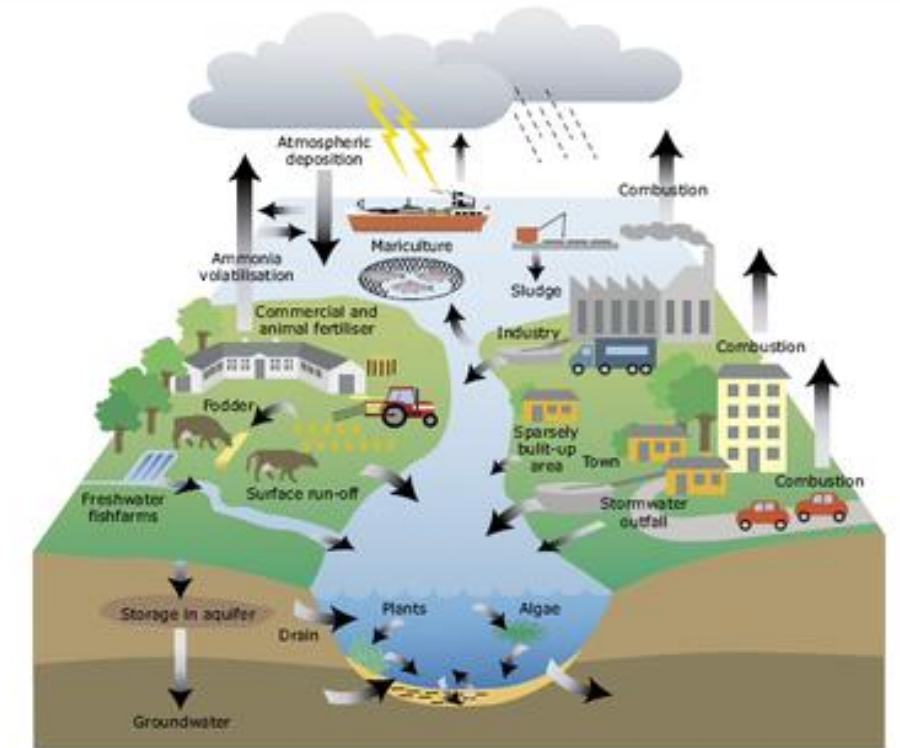
Forest

Water

- Acidification
- Eutrophication
- Ozone impact
- Carbon

Vegetation  
and soil

Grassland



<https://www.eea.europa.eu/themes/water/water-pollution/figures-and-maps/sources-of-pollution/view>



<http://www.npl.co.uk/news/novel-analysis-of-air-quality-data-reveals-pollution-sources>

European Environment Agency



# Template structure

Current benchmark for parameters: ICP Forest, ICP Water, WFD, ICP Vegetation

1. **Reporting on sites** includes the information for the location of the site and its representativeness in terms of location, ecosystem type and pollution;
2. **Vegetation and Soil** includes the specific information for the site, vegetation and soil
3. **Terrestrial ecosystems – solid phase** includes the parameters for monitoring impacts on vegetation and soil matrix;
4. **Terrestrial ecosystems – liquid phase** includes parameters for measuring deposition and soil water contents;
5. **Ozone (O<sub>3</sub>), air quality, carbon flux** includes monitoring of atmospheric concentrations of pollutants and impact of ozone on vegetation;
6. **Freshwater ecosystems** includes the parameters for monitoring chemical and biological condition of freshwater ecosystems.

→ Please remind that terrestrial sites **don't have to cover** all parameters (level 2-5) but should be consistent within each level (tiered multi-level approach such as ICP forest level 1, level II)



# (1) Reporting on Sites (Art. 10 (4a)) → 01 July 2018

Variable Class	Variable	Unit
Site identification	Country code	ISO-2 code
	Site code national	Numerical code (plot ID)
	Site name	Text
	European code	EEA code (integer)
	Monitoring network name	Text
Site location	Longitude	Geographic coordinates > 3 decimals
	Latitude	Geographic coordinates > 3 decimals
Site description (representativeness)	Ecosystem type	MAES code
	EUNIS class	EUNIS habitat code
	Site status	Text
	Biogeographic region	Name
	Pollution class Acidification (optional)	Number 0, 1, 2, 3
	Pollution class Eutrophication (optional)	Number 0, 1, 2, 3
	Pollution class Ozone (optional)	Number 0, 1, 2, 3
Reference protocols	Compliance with existing monitoring manuals	Text (Name of the reporting scheme)

# Templates – special issues

## Template (2) Vegetation and Soil Characterisation

- **Impact indicator on vegetation → in Template (1) 2018?**

Species monitoring, indicator species for eutrophication, acidification (Braun Blanquet, Ellenberg numbers) etc.

- **Management** (current and change since last report)

- **Soil characterisation and sampling depths**

only aggregated information for soil is listed at the moment

Reporting data from 2019 onwards will imply full list of physical and chemical soil parameters for each soil layer



# ROD reporting on sites 01 July 2018

<http://rod.eionet.europa.eu/obligations/767>

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OverviewLegislationParametersHistory

Reporting obligation for: National Emission Ceiling Directive (NECD) - Network of impact monitoring sites


Operations

Title	National Emission Ceiling Directive (NECD) - Network of impact monitoring sites
Description	According to Article 9, Member States shall report by 1 July 2018 and every four years thereafter the location of the monitoring sites and the associated indicators used for monitoring air pollution impacts to the European Commission and the EEA. Delivery process is managed by EEA
Legislative instrument title	<a href="#">Revised NEC Directive</a>
Reporting dates and guidelines	
National reporting coordinators	
National reporting contacts	
Reporting frequency	Every 48 months
Next report due	01/07/2018
Date comments	
Report to	<a href="#">European Commission, Directorate General Environment</a>
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European Environment Agency  
Kgs. Nytorv 6, DK-1050 Copenhagen K, Denmark - Phone: +45 3336 7100

# ROD reporting on data 01 July 2019

<http://rod.eionet.europa.eu/obligations/768>

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Overview | Legislation | History

Reporting obligation for: National Emission Ceiling Directive (NECD) - Impact monitoring data

Operations

Title	National Emission Ceiling Directive (NECD) - Impact monitoring data
Description	According to Article 9, shall Member States report by 1 July 2019 and every for years thereafter, data for sites representative of their freshwater, natural and semi-natural habitats and ecosystem types that ensure the monitoring of negative impacts of air pollutants on ecosystems (taking a cost-effective and risk-based approach). Member States shall report to the European Commission and the EEA. Delivery process is managed by EEA
Legislative instrument title	<a href="#">Revised NEC Directive</a>
Reporting dates and guidelines	
National reporting coordinators	
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**Thank you very much  
for  
your attention**



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**Ecosystem Assessment:** <http://biodiversity.europa.eu/maes>