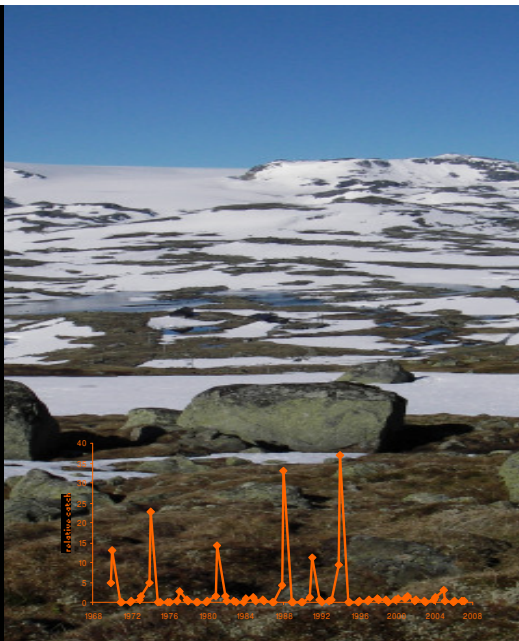


# BioMAT

## EuMon tool to support species and habitat monitoring

Erik Framstad, NINA



EuMon – EU-wide monitoring methods and systems of surveillance for species and habitats of Community interest – EuMon Conference: 28.-30. January 2008

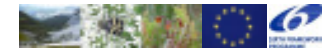


# EuMon biodiversity monitoring and assessment tool: BioMAT

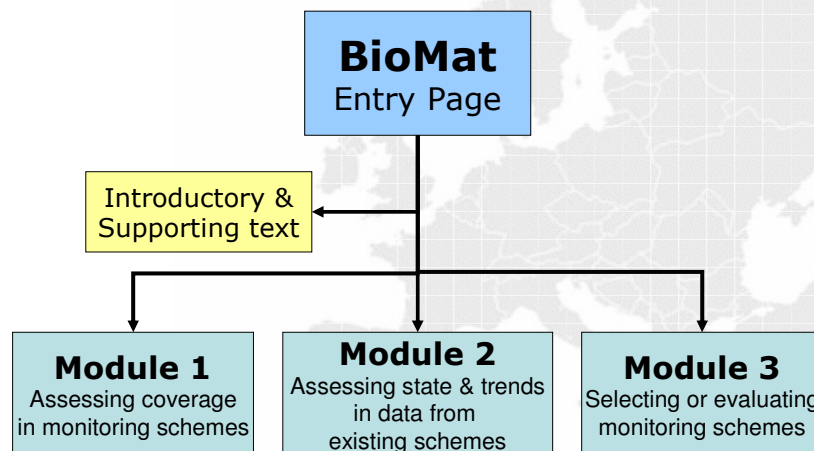
- Integrate EuMon results on biodiversity assessment & monitoring
- Provide results on issues like
  - What kind of species and habitat monitoring is done in Europe?
  - How can we best assess state & trends in data from existing schemes?
  - What's the best generic approach to monitoring, given various objectives and constraints?



EuMon – EU-wide monitoring methods and systems of surveillance for species and habitats of Community interest – EuMon Conference: 28.-30. January 2008



## BioMAT main structure



EuMon – EU-wide monitoring methods and systems of surveillance for species and habitats of Community interest – EuMon Conference: 28.-30. January 2008



**Monitoring species and habitats is essential to assess state and trends in biodiversity**

EuMon's BioMAT allows

- Assessment of coverage of monitoring schemes
- Assessment of state and trends from monitoring data
- Design and evaluation of monitoring schemes

See also [Introduction to monitoring and BioMAT's approach & coverage](#)

## EUMon BioMAT

### The EUMon Integrated Biodiversity Monitoring & Assessment Tool



EU-wide monitoring methods and systems of surveillance for species and habitats of Community interest

# Introductory & supporting texts

- Key items
  - what's covered
  - basic approach
  - *policy relevance*
- Supporting text
  - what's biodiversity
  - what's monitoring
  - environmental pressures
  - surrogate indicators
  - aggregated indicators
  - glossary
  - reference documents
  - brief description of the EUMon project

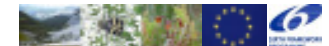


## EuMon policy relevance & support

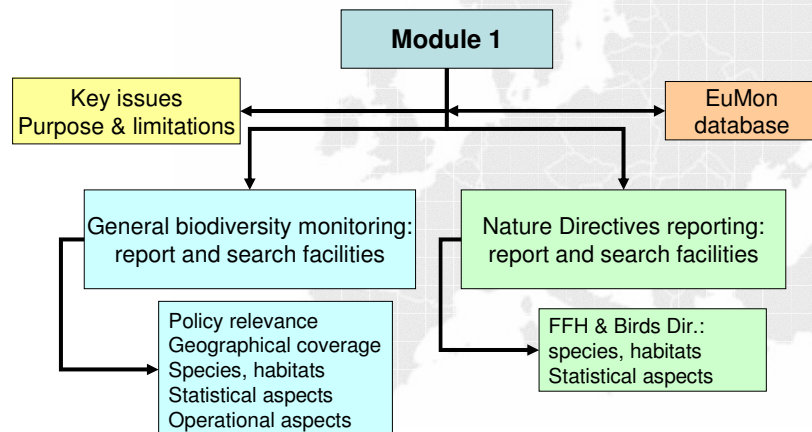
Monitoring of species and habitats is a priority area in many national and international biodiversity conservation strategies and legislation. EuMon and its BioMAT tool are especially relevant for the **Habitats and Birds Directives** and their reporting requirements.

BioMat provides tools tailored to the reporting requirements of Member States that generate overviews of relevant monitoring schemes, their taxonomic and spatial coverage, pressures monitored, and other characteristics that give indication of the quality of monitoring results and resources required. The output of these tools can be exported for inclusion in reports for the Directives. These tools are implemented in the module [Assessment of coverage of monitoring schemes](#). This module is also relevant for the **European Biodiversity Strategy** and especially the **2010 target** by allowing the generation of user-defined overviews on coverage and gaps in taxonomic groups monitored across Europe and in Member States, and on resources allocated to the monitoring of particular groups. BioMAT further provides support to these policies by providing guidance for the [Design and evaluation of monitoring schemes](#) and the [Assessment of states and trends from monitoring data](#).

Beyond the BioMAT tools, EuMon is relevant for the **Habitats and Birds Directives**, the **European Environmental Action Plan**, and the **European Biodiversity Strategy** by providing an overview of gaps in the coverage of habitats and species of the Annexes of the Directives in the **Natura2000 network** ([Gaps in monitoring and the Natura2000 networks](#)) and by providing methodological guidelines for the improvement of the existing network ([Methods for reserve site selection](#)). It further supports these policies with an improved method for [Assessing National responsibilities](#) for the conservation of habitats and species, which includes an assessment of selected taxa.



# Module 1 Assessing coverage in monitoring schemes

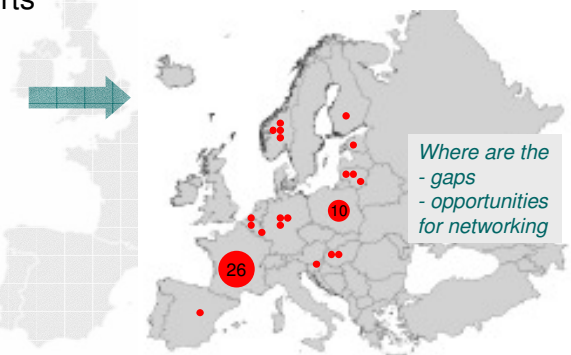


# Module 1: Assessing coverage of monitoring via database

## From the database

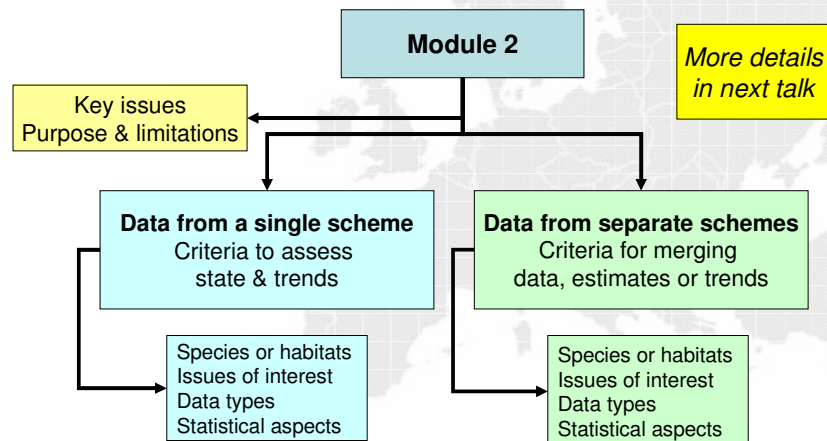
- Pre-packaged reports
- Search by criteria
  - species, habitats
  - policy relevance
  - geography
  - statistical aspects
  - operational aspects
  - and more

Number of bird monitoring schemes started before 1991

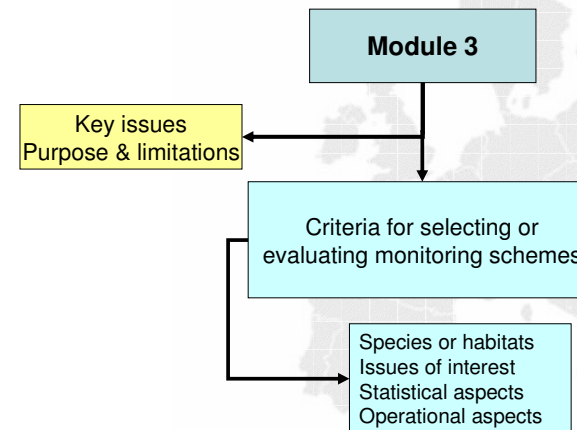




## Module 2 Assessing state & trends in existing data



## Module 3 Selecting or evaluating monitoring schemes



## Module 3: How should we design monitoring to achieve what we want?

### Monitoring objectives & constraints

- species or habitats
- issues of interest
- response time & sensitivity
- resources & expertise



### Want to monitor

- trends in abundance for passerine birds in country
- 80% chance to discover 30% change over 10 yrs with 95% confidence
- have 3 scientists, limited money



### Recommendations

- apply stratified random or regular sampling for focal area
- for  $\geq 200$  sample sites, need positive obs at  $\geq 50$  sites
- mobilise and train volunteers: need  $\geq 2$  per site
- see [examples](#), [deliverables](#), & [references](#) for details

## Issues of interest – types of data

### Species

- distribution
- abundance

### Habitats

- amount
- distribution: types, size, spatial pattern
- quality

### Species

- presence/absence
- numbers

### Habitats

- area, no. of patches
- area, no., spatial attributes, per type
- various attributes

⇒ *Issues of interest must be addressed by the right attributes*

# BioMAT types of output

- Comparisons of evaluated scheme to distribution in EuMon's database
- Key recommendations on analysis or monitoring approaches
- Explanatory text
- Best practice examples
- References, web sites



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