Monitoring dragonflies in Europe: why?

- To detect changes in species occurrence, due to environmental issues, climate change, etc.
- To enable conservation efforts in time
- To provide a tool for European policy makers: the EC is asking for good biodiversity indicators
- To focus on the importance of dragonflies as indicators for freshwater quality

2 most important links: Natura2000 and SEBI-indicators

Monitoring Natura 2000 species

- Every Member State has to report every 6 years to EC — monitoring data are needed
- Only selected group of species
  - Often very localised or rare species
  - Often difficult to monitor (detectability, low numbers, very few localities …)
- Harmonisation between countries is needed

Monitoring Natura 2000 species

- Who takes the lead/initiatives?
  - No recommendations from EC
  - Each country for its own? > problems comparing data between countries
  - So: recommendations should come from this group of dragonfly specialists

SEBI

- SEBI: Streamlining European Biodiversity Indicators
- Started in 2005
- Aim: to develop a European set of biodiversity indicators for the 2020 biodiversity targets.
- Build on current initiatives and available data to avoid duplication of efforts.

Criteria for SEBI-indicators

- Scientific sound method
- Sensitive
- Affordable monitoring, available and routinely collected data
- Spatial and temporal coverage of data
- Measure progress towards target
- Policy relevance
- Broad acceptance
SEBI indicators

- 26 specific indicators
- 1 deals with abundance & distribution of species

### Headline indicator

Trends in the abundance and distribution of selected species

1. Abundance and distribution of selected species
   a. Birds
   b. Butterflies

### SEBI 2010 specific indicator

Existing abundance & distribution indicators

- Grassland butterfly indicator

Existing abundance & distribution indicators

- Common bird indicator

Hibernating bats: prototype indicator since 2013

Dragonflies?

- Important addition to birds, butterflies and bats
- Indicators for freshwater habitat quality!
- Highly mobile, so fast reaction

Two options

- **Abundance monitoring** (trends in population size)
  - needed: standardised counts on fixed locations
  - potentially powerful trends, but sufficient data only available in a few countries
  - feasible for a few species of Habitat Directive?

- **Distribution monitoring** (trends in no. of occupied sites)
  - needed: ‘opportunistic’ observations collected without standardised protocol, analysed with occupancy models
  - less powerful trends, but data available in much more countries

Pilot 2012-2013

- Supranational trend for *Calopteryx splendens* using occupancy models
- 5 countries with many opportunistic data: Ireland, Great Britain, France, Belgium & Netherlands
Lessons learnt

- It can be done!
- Data is needed from at least some hundreds of 1 km squares, with a fair number of replicated visits within years and between years.
- It is a lot of work to combine data from different datasets, especially when more countries are joining (and no funding available).
- Pragmatic approach necessary:
  - one contact person per country/region
  - each country/region should take care of some basic conversions before contributing data.

2013: Inventory of new (potential) participants

- Questionnaire sent to contacts in 25 countries/regions: which data do you have and are you interested in joining?
- Example of requested data format: can you make the basic conversions?
  - 7 countries/regions (2 new) have reacted positively and are able to join.
  - 5 are positive, but no ‘green light’ yet.
  - 4 are positive, but obstacles remain.
  - 2 are not able to cooperate.
  - 7 have not reacted (yet).

Main obstacles...

Obstacles for participation

- Data are often (co-)owned by governments or national dragonfly associations: decision making takes a lot of time.
  - only a problem at the start?
- The amount of data is limited in a lot of countries.
- We ask to contribute a lot of detailed data, without any form of payment/reward.
  - exact point locations of all species necessary for calculation of detection chances.

Quote:

"...we are always ready to cooperate and help, but are a bit reluctant to give away basically the whole database. Even more so as there is practically no incentive for us, just a thank you line in the article. [...] at the end of the day we are trying to survive as a company and our database is an important part of our portfolio."

Can we solve these obstacles?
Questions

- Which conditions should we agree on before making a start?
  - how to gain trust from data owners?
  - who can use the data and for what purposes?
  - who is making decisions?
  - authorship of potential papers?
  - how to deal with potential funding possibilities in the future?
  - how to update data regularly?
  - ...

Questions

- Which easy-to-reach goals should we focus on in the beginning?
  - just a small start with only 7 countries/regions, enabling more countries to join later?
  - start with a small selection of common & wide-spread species?
  - low-profile publishing of first results on a website?

We should learn from EBCC (birds) and BCE (butterflies)!