



# Volunteer Species Monitoring in Europe

Dirk S. Schmeller



- Volunteers are willing to offer their time to contribute to monitoring
- Society places a high value on biodiversity,
- Governments should invest more to support and expand current monitoring initiatives.

*The EuMon project had documented 395 monitoring schemes for species, which represents a total annual cost of about €4 million, involving more than 46,000 persons devoting over 148,000 person-days/year to biodiversity monitoring activities.  
(Schmeller et al. 2009)*

# Biodiversity monitoring

## Public institutions

- Mortalities
- Population monitoring
- Ecosystem changes
- Human activities
- First data analysis

## Public

Reports

Awareness raising, training

## Collection and data center

- Data collection
- Documents
- Maps

## Scientists

- Data analysis
- Population dynamics
- Experiments

## Implementation

- Reglementations
- Conservation action plans

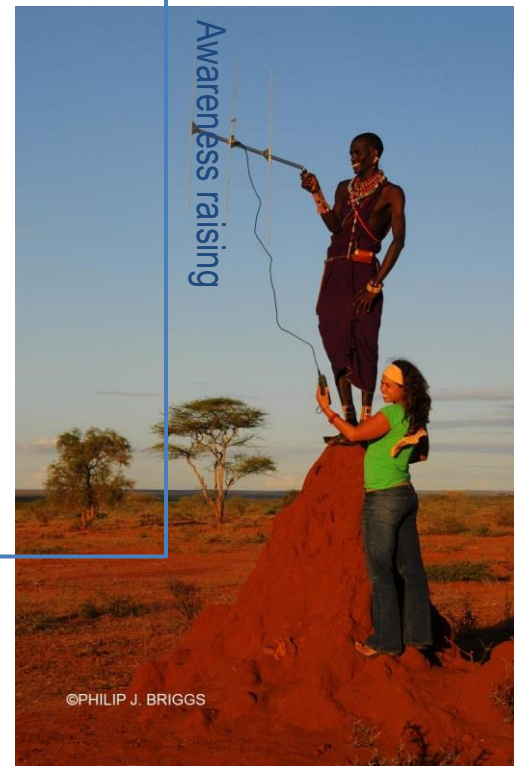
Testing

Development and improvement

Awareness raising, training

Reports

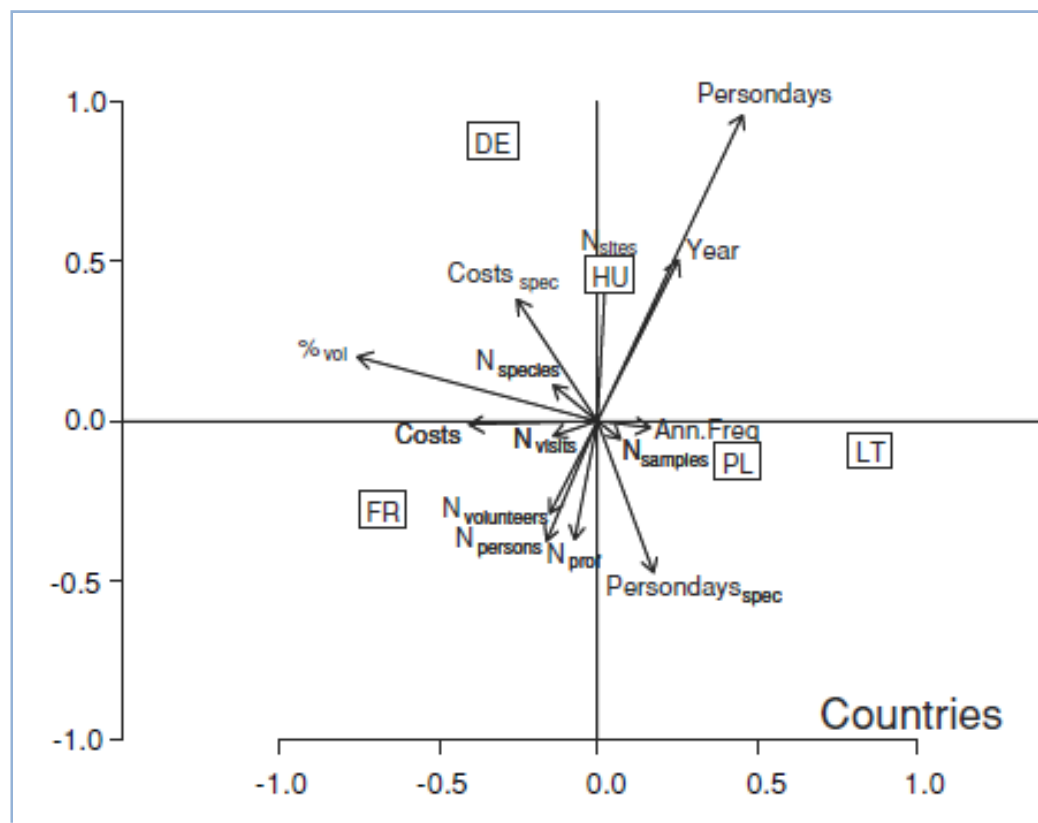
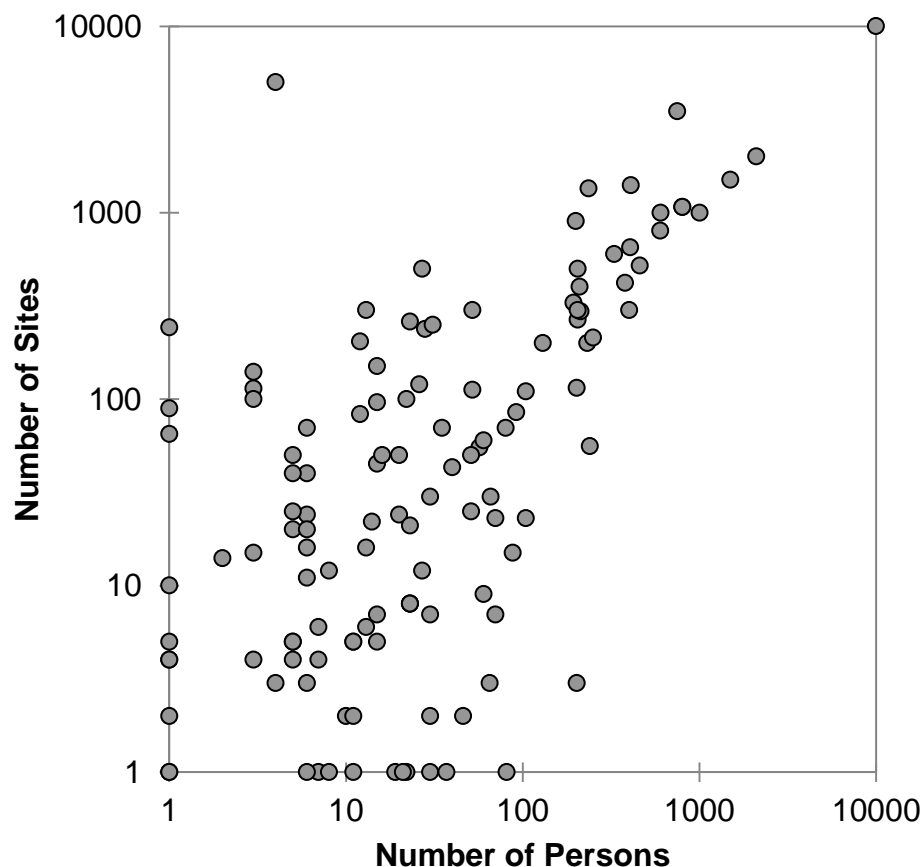
Awareness raising



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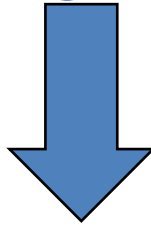
# Volunteer-based monitoring

- Large-scale monitoring only possible with volunteers
- Reduction of costs by factor 8-10



# Volunteer-based monitoring

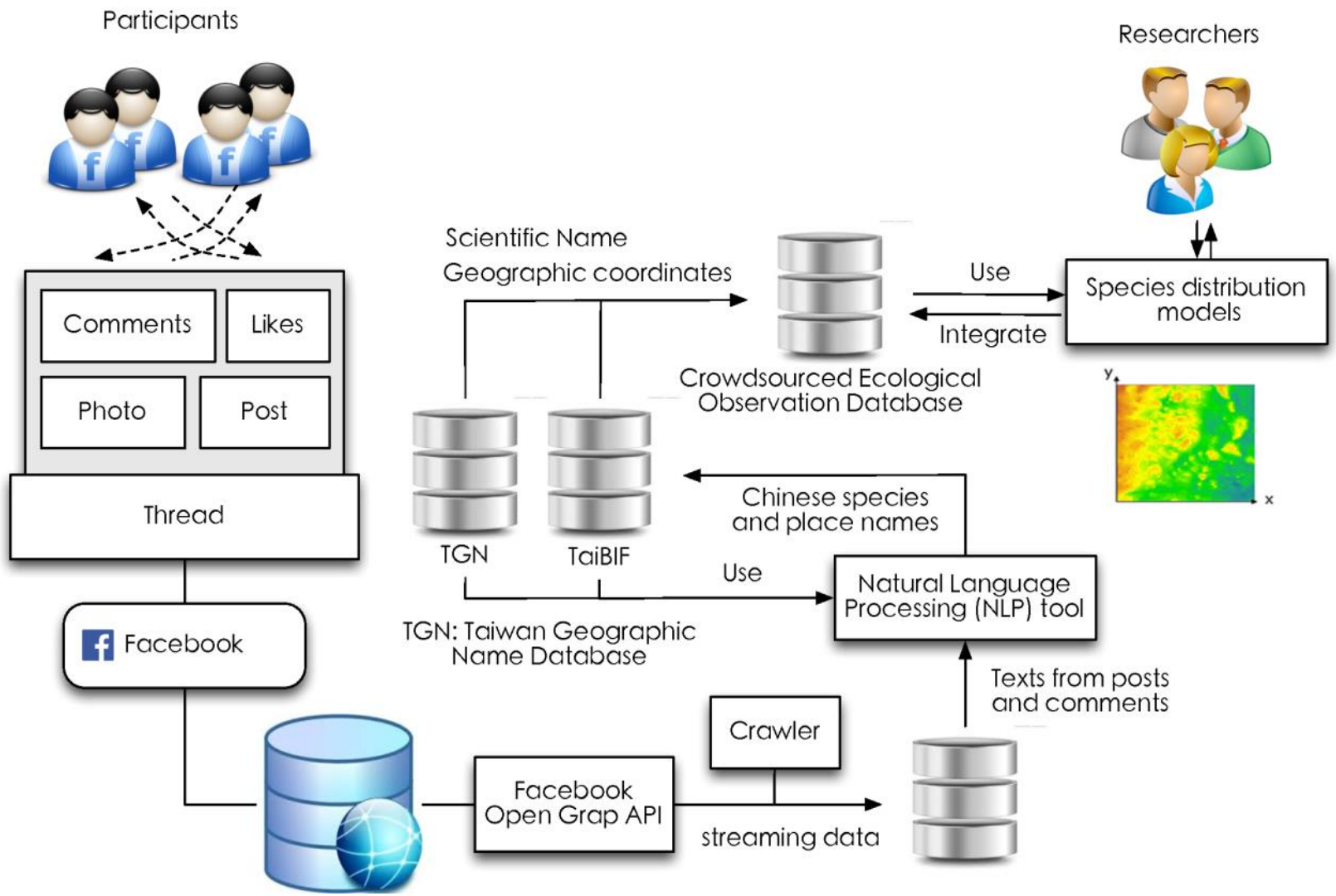
- 14% of European bird monitoring programs used random sampling designs and used advanced statistical analysis



- volunteer involvement is actually compatible with good monitoring practices



# Enjoy Moths



# Enjoy Moths

Thread 『暮光之城』— 蛾類世界 About Events Photos Files

**Hsinhsin Pao**  
20120906政大

Observation Provider: Hsinhsin Pao

Observation date & location: 20120906政大 (20120906 Cheng-Da, which means Cheng-Da means National Cheng-Chi University)

Post section

Photo: A proof of occurrence

Species Identifier: Susan Huang

Species name: 閃光苔蛾幼蟲 (A larva of *Chrysaeglia magnifica*)

Comment section

Like · Comment · Follow Post · Share · September 8, 2012 at 11:41pm

5 people like this.

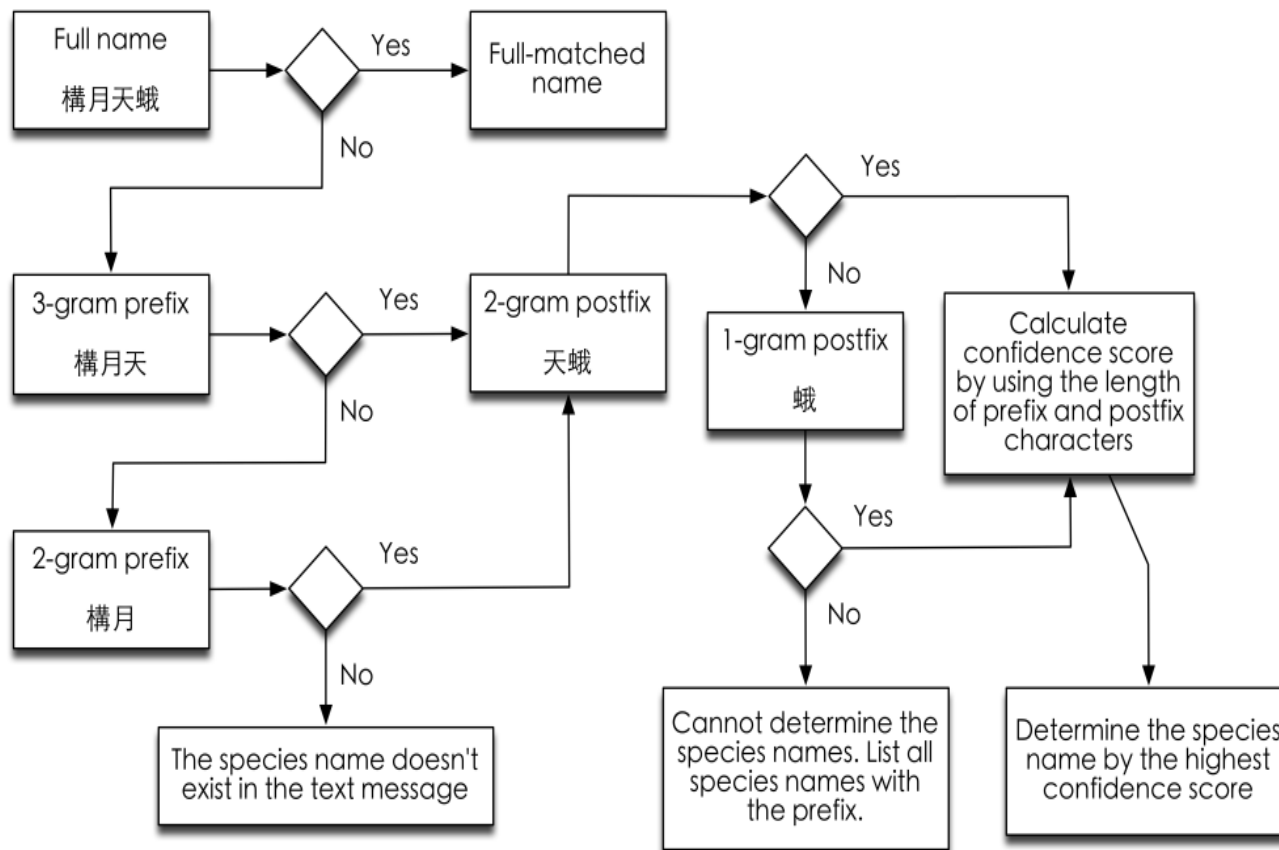
**Susan Huang** 閃光苔蛾幼蟲  
September 9, 2012 at 11:31pm · Like · 2

Write a comment...

The number of likes

Identification Date: Sept. 9, 2012

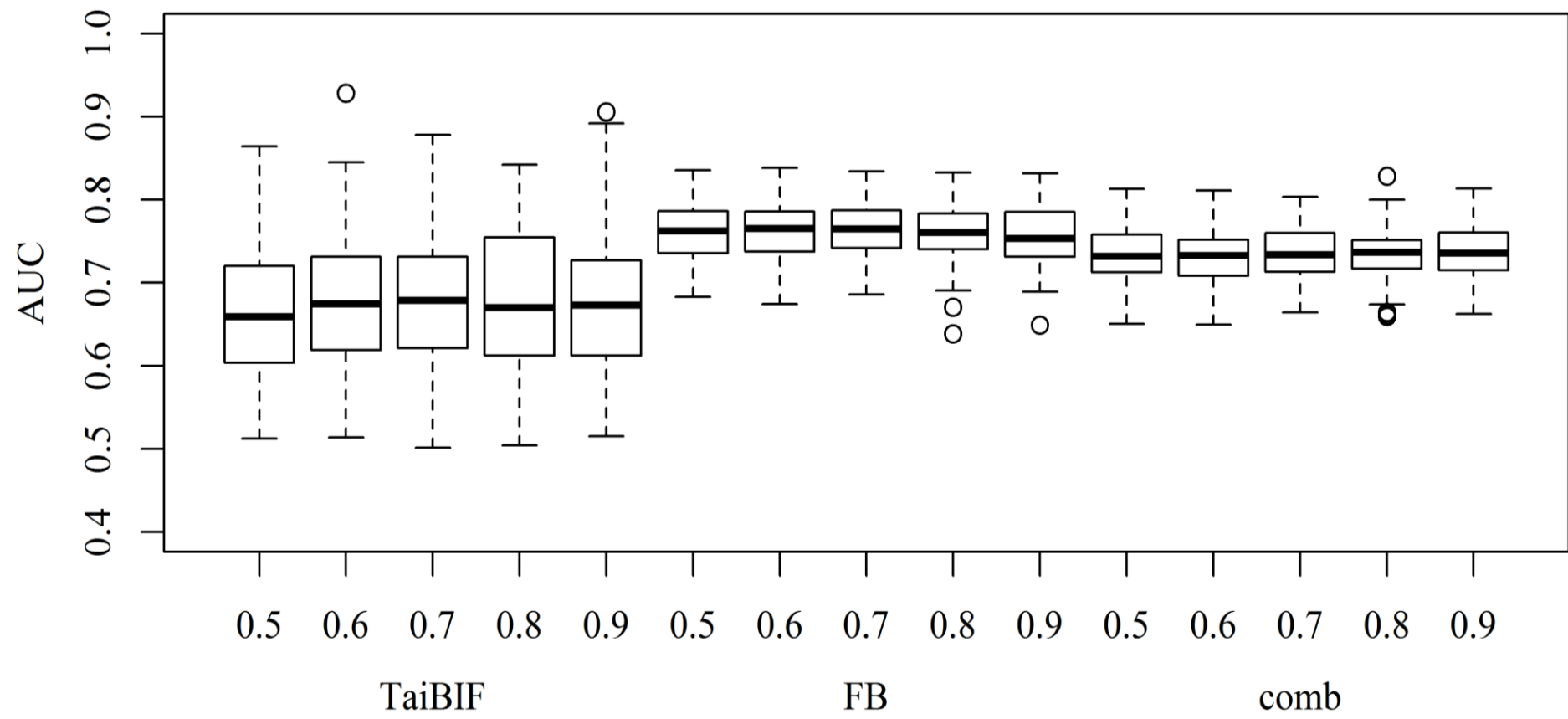
# Enjoy Moths



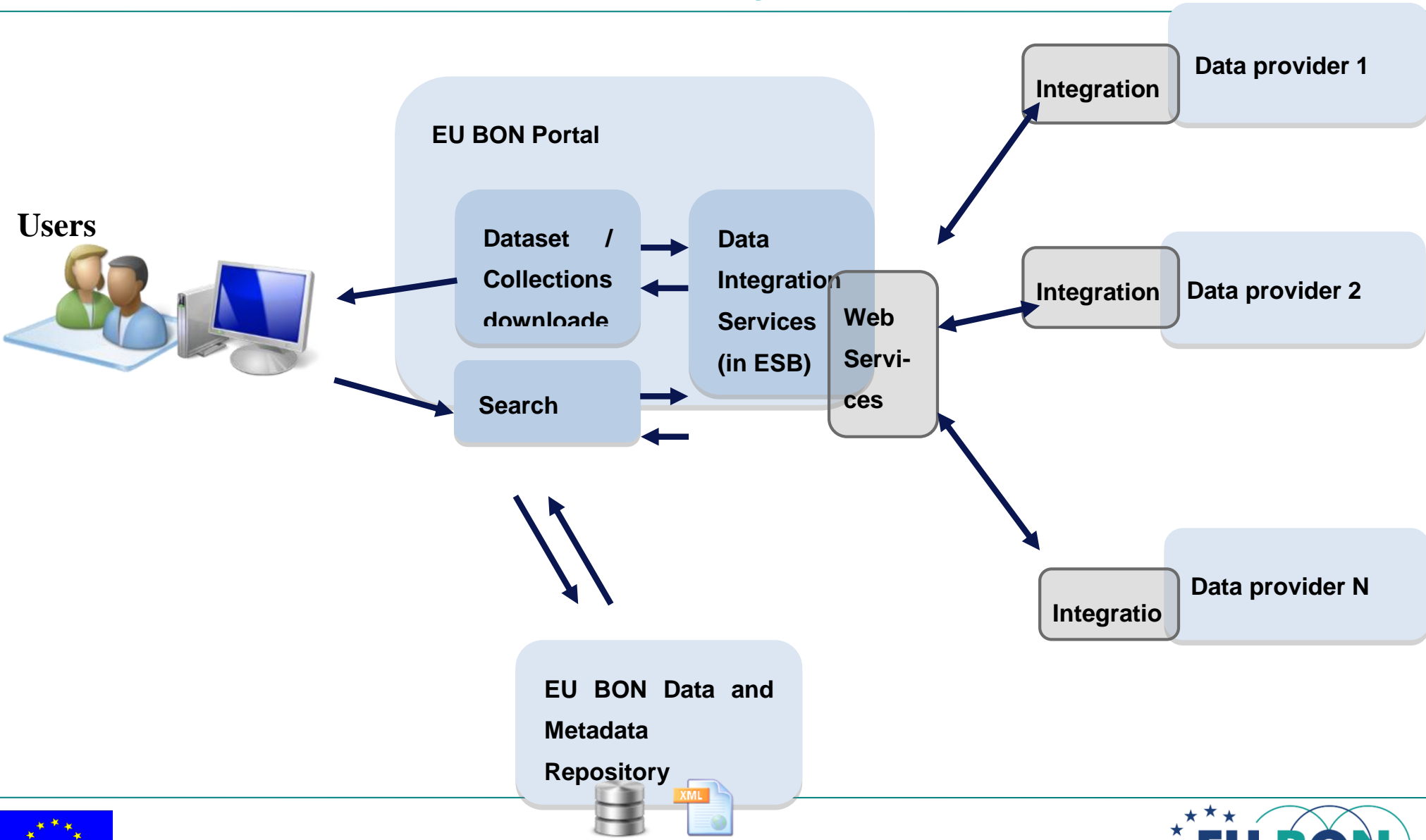
◇ Check whether the string is matched in the text message of a Facebook thread?



# Enjoy Moths



# Server options



# Volunteer-based monitoring

- Quality of volunteer data is determined by survey design, analytical methodology, and communication skills of coordination
- Volunteers have a naturalist knowledge as good or even better than that of scientists (especially when trained!)
- Involvement of public in conservation

- Advantages

- Cost effective
- High sampling effort
- Large spatial coverage
- Public involvement
  - local knowledge, awareness raising
- Faster turn-around times
  - (1-2 years vs 3-9 scientific schemes (Danielsen 2010))

- Caveats

- Training incurs costs
- Higher between-observer bias
- Higher flux of persons
- Coordination could be difficult
- Not all regions of the world can be covered



# Thank you for your attention

Nature Conservation 2: 41–57 (2012)  
doi: 10.3897/natureconservation.2.3644  
<http://www.pensoft.net/natureconservation>

RESEARCH ARTICLE

## Bird-monitoring in Europe – a first step towards best practices, motivations and challenges

Dirk S. Schmeller

A peer-reviewed open-access journal  
**Nature**

*Diversity* 2010, 2, 1130-1145; doi:10.3390/d2091130

OPEN ACCESS

*diversity*

ISSN 1424-2818

[www.mdpi.com/journal/diversity](http://www.mdpi.com/journal/diversity)

Article

## Cultural Diversity Issues in Biodiversity Monitoring—Cases of

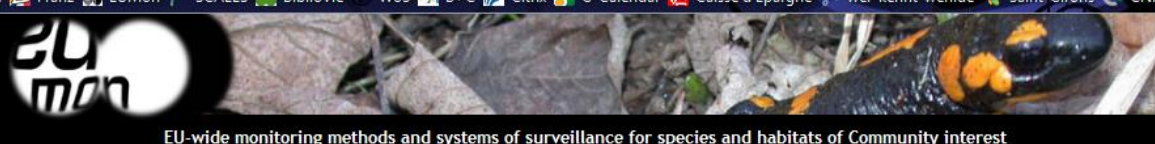
*Conservation Biology*

eumon.ckff.si/biomat/1.5.1.php

Contributed to **BiMAT**

## Advantages of Monitoring in

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## BiMAT The EuMon integrated Biodiversity Monitoring & Assessment Tool

← BioMAT > Background info > Volunteers in monitoring

### Participatory Monitoring Networks: Volunteering for biodiversity monitoring

Monitoring of species and habitat requires the participation of a large number of people that far outstrip the capacity of professional scientists. Even if there were sufficient numbers of skilled professionals to cover large geographical areas in high enough numbers during peak monitoring periods, the financial costs would be too high. Significant numbers of volunteer naturalists are needed to contribute to the wide range of activities connected to the collection and analysis of biodiversity.

As well as contributing their skill and time volunteers are important as they support monitoring organisations through subscriptions and donations. They also represent a core of citizens who are committed to contributing to nature conservation and management. There is a great deal of variation in the amount and types of volunteer monitoring and the organisations in which it takes place. These organisations are defined as Participatory Monitoring Networks (PMNs), a broad term that includes a host of very different arrangements and involves collaboration between a range of nature specialists, both professional and amateur.



Additional EuMon results

- Approaches and best practice for participatory monitoring networks

