

3rd Pan-European Days on Environmental Education for Sustainability – Barcelona, 1-2 October 2015

Roundtable session:

“Citizen Science: Connecting Environmental Education to Management and Research”

Chairperson:

Daniel Marco, Head of Industrial Promotion at the Directorate General for Telecommunications and Information Society.

Panellists:

Ornitho.cat: Gabriel Gargallo, General Coordinator of the Catalan Ornithological Institute.

Bioblitz: Dacha Atienza, Head of Science at the Natural History Museum in Barcelona.

Smart Citizen: Tomás Diez, Director of Fab Lab Barcelona at the Institute for Advanced Architecture of Catalonia.

Objective:

To involve citizens in social innovation projects and environmental issues through the use of ICTs. In doing so, we hope to:

- Bring projects closer to citizens through the use of technology.
- Involve citizens in projects to improve environmental education.
- Promote collaborative work between experts, scientists and citizens.

ORNITHO.CAT

This is a web portal and app for collecting data on birds, butterflies, amphibians, arthropods and some mammals in order to create a vast database.

Birdwatchers who enter data on the ornitho.cat portal send information on the bird species they spot, the location and date of the sighting, any other species they observe while watching a particular species, the length of the observation period, the number of birds observed and some contextual information.

There are more than 80,000 birdwatchers across Europe and in 2014 alone there were 50 million sightings, 500,000 of which took place in Catalonia. 1,650 complete lists of sightings are submitted in Catalonia every day.

The data collected on this portal are helpful for:

- Carrying out phenological monitoring in order to measure climate change.
- Observing changes in habitat use.
- Assessing the spread of introduced species.
- Creating a new, real-time map of nesting birds in Catalonia.
- Creating an abundance index map at local and global level.
- Barcelona Provincial Council, which uses the portal data for spatial planning.
- Creating maps of the risks associated with wind energy.
- Creating bird forecasting models that make it possible to predict where a particular species can be spotted more easily. This information has proved very useful for the programme *Tocats de l'Ala*, which is shown on the channel TV3.
- Using the data at continental level: Catalonia is conducting a European project to create a common bird observation portal for the whole continent (www.eurobirdportal.org), in which 30 different countries are taking part.

BioBlitzBCN

"Blitz" is a German word that translates as "flash" or "bolt". BioBlitzBCN is a biological survey that takes place over a short period of time.

Those who sign up for BioBlitzBCN assemble in a public space in Barcelona for 24 hours over two days to undertake a project related to the study of a particular plant or animal species. Groups of volunteers and specialists take part in each project and field laboratory analyses are carried out. This hands-on field study and the contact with experts in the subject are essentially what motivate the volunteers.

The first BioBlitzBCN was held in 2010 and since then the event has been organized every year. Ninety people took part in 2010, and that number soared to 881 in 2015. This latest BioBlitzBCN featured 63 scientific itineraries, 13 related activities and a session for naturalist associations in which they talked about their projects.

There is also a BioBlitz for school groups, but spaces are limited to 300 a year.

The objectives of BioBlitzBCN are:

- To connect citizens with organizations that work with nature.
- To encourage citizens to participate in more projects of this type that allow them to work alongside scientific experts on the same project.
- To discover and gain in-depth knowledge about the nature on our doorstep.
- To familiarize citizens with science and teach them about the working methods of scientists when they conduct field studies.

At the end of each project, participants are asked to assess the impact of the project. The aim is to evaluate whether the citizens who sign up for these types of activity do so to broaden their knowledge of nature or simply out of curiosity.

Smart Cities Fab Lab

Today, we live in a standardized world in which citizens have become consumers and cities have turned into centres for importing goods and exporting waste.

A Fab Lab is a digital community centre for producing things digitally. There are more than 450 worldwide.

The Institute for Advanced Architecture of Catalonia became Barcelona's first Fab Lab and is a unique example in Europe. The aim of the Fab Lab is to produce goods locally by exchanging data with the rest of the world. The role played by the public is vital, since smart cities can only be created with smart citizens and public awareness.

Two projects have been launched in Barcelona with citizen involvement: one on air pollution control and another on intelligent beehives.

Fab Lab + Smart Cities = Internet + digital manufacturing = a shift in the role of production around the world. The aim is not to find solutions but to encourage citizens to participate in creating tools that allow solutions to emerge.

Conclusions:

A number of points were raised during the debate between the speakers:

- They concluded that the information collected could be of interest to similar groups and that synergies could be created.
- It is important to bear in mind that the data may be skewed, since there is more interest in spotting certain species than others, so it is important to use techniques to model the data collected.
- It is also important to consider how schools can get involved and participate in these projects.
- The speakers highlighted the fact that these projects promote and democratize the environment and science.