



Assessing Citizen Science involvement in biological research

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Are researchers ready for citizen scientists participation?

The online survey “Assessing Citizen Science involvement in biological research” was conducted in 2014 February-March under the guidance of EU BON task1.5.

There were 20 questions in full survey.

The survey was aimed to **reveal trends of volunteer involvement among researchers in natural sciences**, also to explore the **readiness and motivation of researchers using or not using volunteer help** and roughly evaluate importance of citizen science for the outcomes of research.

The survey was targeted to individual researchers rather than to organizations. Researchers were contacted by EU BON partner organizations representatives, partly within these organizations, partly through various available professional networks. There were very few respondents from business sector, but given that their activities are driven from profit, volunteer involvement for others financial benefit would be unlikely.

151 researchers from 16 European countries responded to the survey, notable input from Norway, Sweden, Belgium, Estonia, United Kingdom, Bulgaria and Greece.

Are researchers ready for citizen scientists participation?

Survey „Assessing Citizen Science involvement in biological research“
EUBON (2014)

!!!

Volunteers vs citizen scientists

All researchers vs researchers involved in citizen science projects

Are researchers ready for citizen scientists participation?

Survey „Assessing Citizen Science involvement in biological research“
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*Type of institutions that are represented
in the survey:*

<i>Type of institution</i>	<i>%</i>
Academic (institute, university)	77 %
Non-governmental organization	11 %
Government agency	9 %
Business company	1 %
Other	2 %

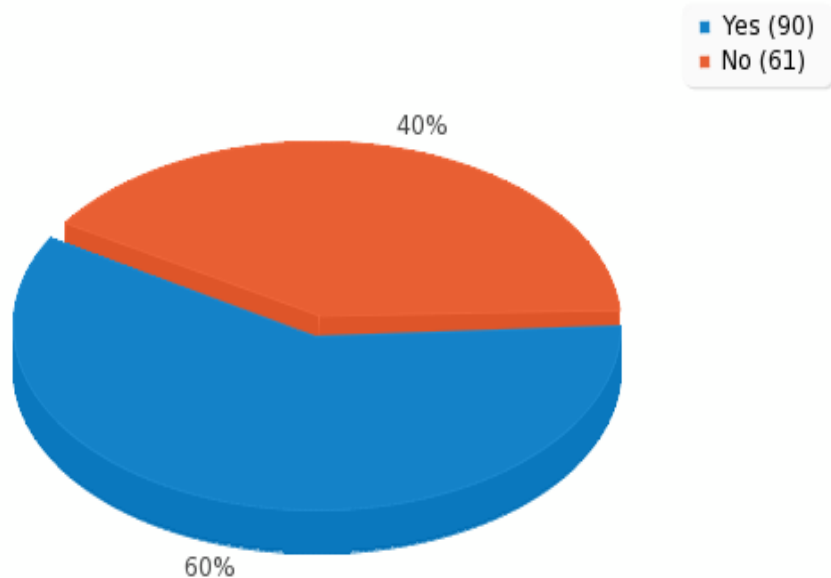
Respondents by the field of research:

<i>Field of research</i>	<i>%</i>
Ecology	51 %
Environment protection	16 %
Biosystematics	11 %
Molecular biology, microbiology, genetics	4%
Agriculture	1%
Other	17%

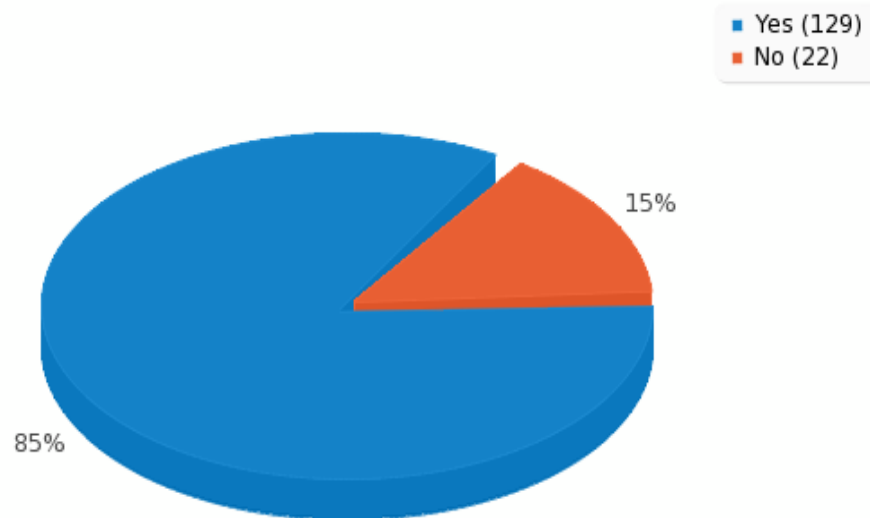
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In your research, have you used any help or data input from volunteers?



Would you use volunteer help/data input in the future? (All respondents)



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Field	N	Actual engagement of volunteers	Willingness to engage volunteers in future
Agriculture	2	50%	50 %
Biosystematics	16	56%	63 %
Ecology	76	59%	90 %
Environment protection	25	76%	92 %
Molecular biology	6	17%	83 %
Other	25	56%	84 %

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Type of institution	N	Actual engagement of volunteers	Willingness to engage volunteers in future
Academic	119	55%	84 %
NGO	16	94%	100 %
Government agency	14	71%	86 %

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Reasons for engaging citizen scientists	Reasons for NOT engaging citizen scientists
<i>Need to increase amount and variety of data (48% of respondents)</i>	<i>There are enough resources to do the research with professionals only (13%)</i>
<i>Educational aspect is important for 17%</i>	<i>Engaging volunteers takes too big effort (12%),</i>
<i>Sometimes the volunteer data is the only data source for research</i>	<i>There are no capable volunteers (10%)</i>
	<i>Research topic is too specific or work too demanding to engage citizen scientists</i>
	<i>Concern about data quality</i>

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Respondents rated the data provided by volunteers:
high – 15 %, **satisfactory – 78 %**, **low - 7 %**.

52% of researchers who engaged volunteers also use **public portals** for data collecting.

Most of the volunteers contribute to the research by (species) **occurrence recording** (36%) and **assistive fieldwork** (31%).

Volunteers were also involved via crowdsourcing activities, like **digitization**. Some respondents also reported more complex involvement as designing study or doing laboratory analysis.

What next?

What have we learned?

There is potential to have more researchers use citizen science (volunteers) help

Why is it good? (Why is citizen science good?)

There are some fields of research which have more potential for growth in using citizen science help.

Ecology (59% vs 90%), molecular biology (17% vs 83%, but only 6 respondents)

In general researchers are satisfied with citizen science data quality.

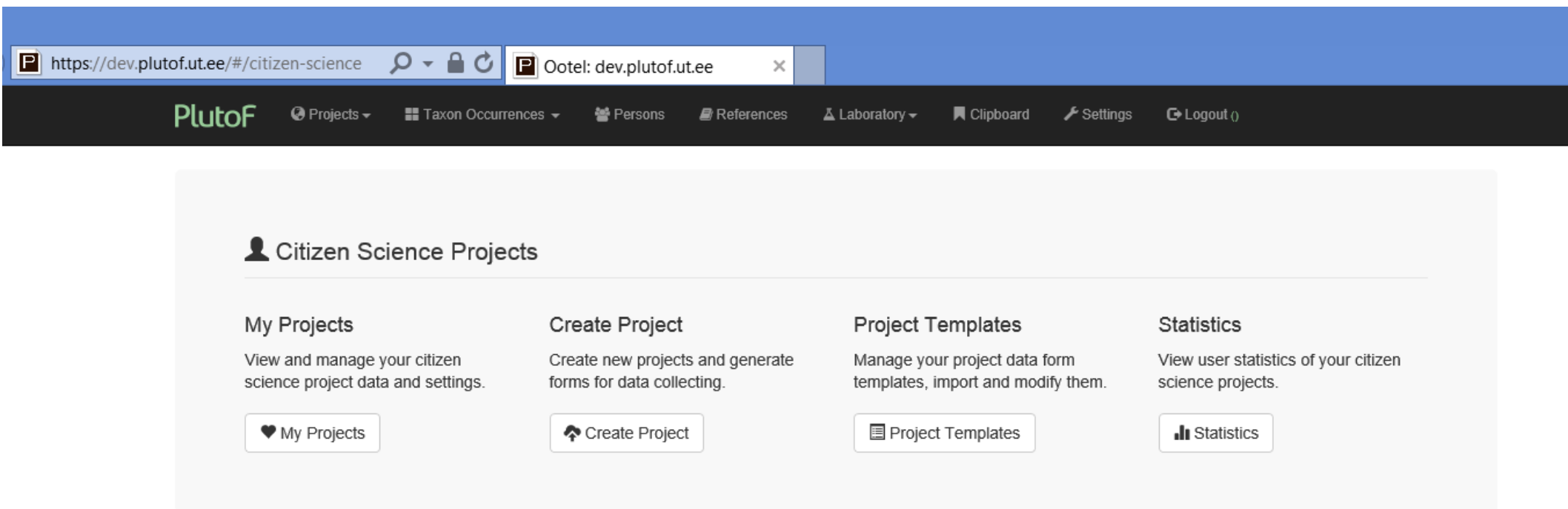


What next?

What can we do to realize the potential?

Identify the bottlenecks,
provide tools, guides, information,
best practise descriptions,
training,
involve institutes, universities to participate in ECSA.

Tools to design data collection forms and publish online



The screenshot shows a web browser window with the URL `https://dev.plutof.ut.ee/#/citizen-science`. The browser tabs include "Ootel: dev.plutof.ut.ee". The application header features the "PlutoF" logo and a navigation menu with items: "Projects", "Taxon Occurrences", "Persons", "References", "Laboratory", "Clipboard", "Settings", and "Logout".

The main content area is titled "Citizen Science Projects" and contains four columns of options:

- My Projects**: View and manage your citizen science project data and settings. Includes a button "My Projects".
- Create Project**: Create new projects and generate forms for data collecting. Includes a button "Create Project".
- Project Templates**: Manage your project data form templates, import and modify them. Includes a button "Project Templates".
- Statistics**: View user statistics of your citizen science projects. Includes a button "Statistics".

Tools to design data collection forms and publish online

PlutoF [Projects](#) [Taxon Occurrences](#) [Persons](#) [References](#) [Laboratory](#) [Clipboard](#) [Settings](#) [Logout \(vrunnel\)](#)

New Project [Bookmark](#) [Info](#) [Reset](#) [Back](#)

Project info

Title
Toads and frogs on roads of Estonia

Type
Observation

Image
[Upload Image](#)

Language
Type to find...

Start date
Start date

End date
Start date

Description *
Enter text

Project URL
frogs_and_toads [Copy](#)

Area

[Select countries](#) [Select from map](#)

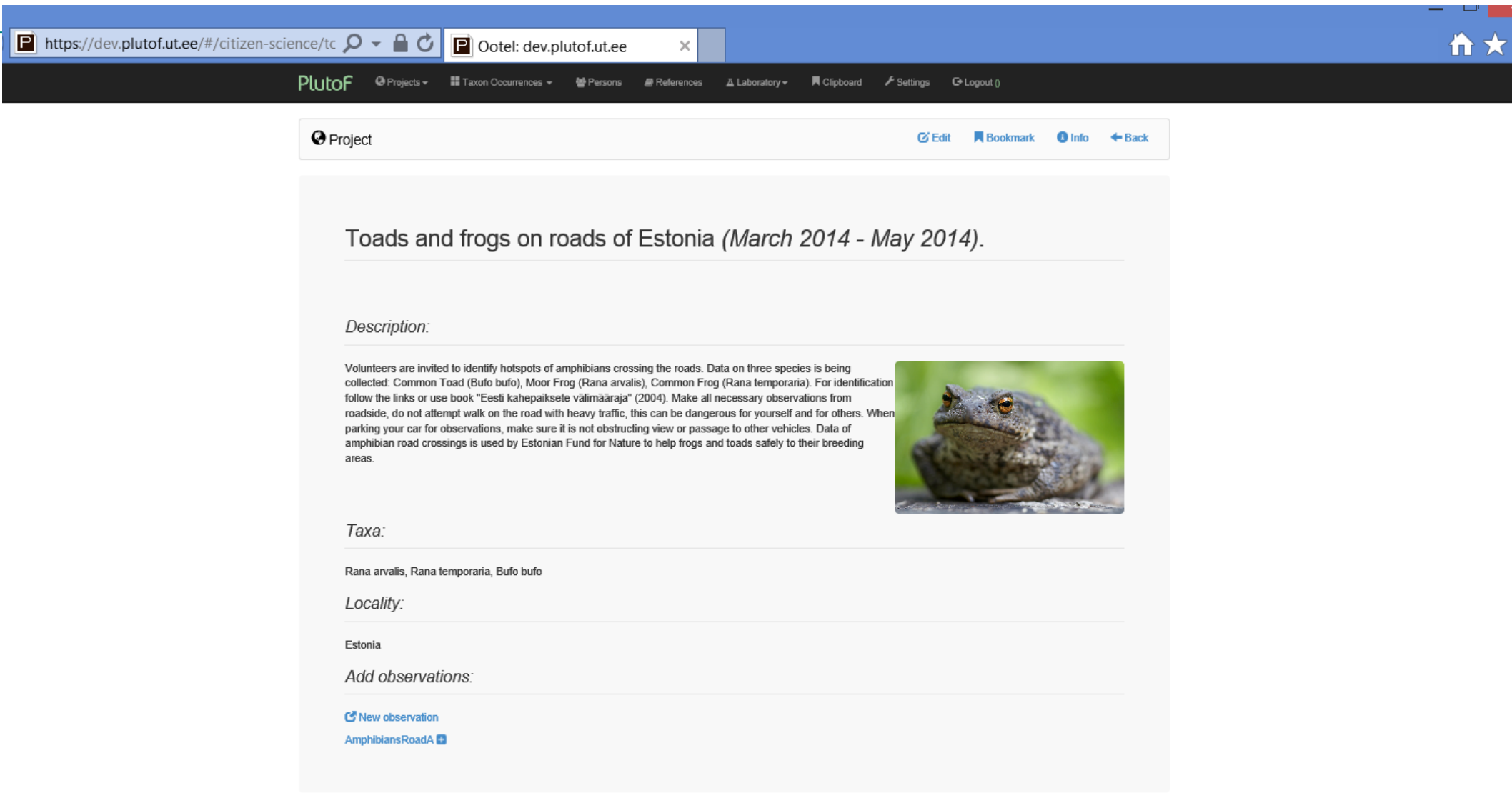
Country
Estonia [Add](#)

0 Countries

Associated forms

[Create form](#)

Tools to design data collection forms and publish online



<https://dev.plutof.ut.ee/#/citizen-science/tc>


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Toads and frogs on roads of Estonia (*March 2014 - May 2014*).

Description:

Volunteers are invited to identify hotspots of amphibians crossing the roads. Data on three species is being collected: Common Toad (*Bufo bufo*), Moor Frog (*Rana arvalis*), Common Frog (*Rana temporaria*). For identification follow the links or use book "Eesti kahepaiksete välimääraja" (2004). Make all necessary observations from roadside, do not attempt walk on the road with heavy traffic, this can be dangerous for yourself and for others. When parking your car for observations, make sure it is not obstructing view or passage to other vehicles. Data of amphibian road crossings is used by Estonian Fund for Nature to help frogs and toads safely to their breeding areas.



Taxa:

Rana arvalis, Rana temporaria, Bufo bufo

Locality:

Estonia

Add observations:

[New observation](#)
[AmphibiansRoadA](#)

Best practice cases, data flows

Mobile Apps to support and encourage public sighting reports

App advantages

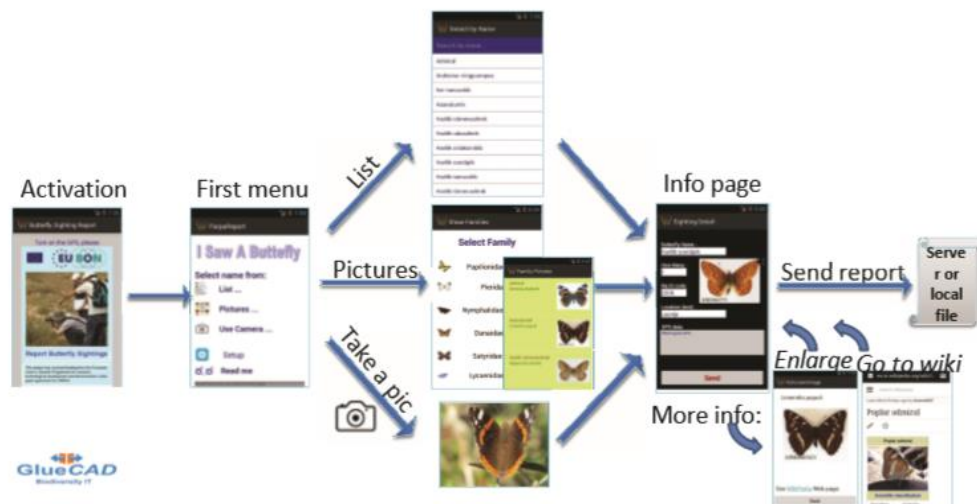
- Attractive, especially among young people
- Offer advanced technologies to collect and communicate data in the field
- Convenient high-end IT tools to enhance data-accuracy and spatial precision
- Ease of use promotes rapid reporting of observations
- Cost effectiveness of development

App for butterfly sighting reports: Prototype (GlueCAD)

- Provides public-based reporting tools of opportunistic observations to PlutoF web-portal:
- User may chose to report using a) name-list, b) family-grouped pictures, c) Shoot & Send picture.
- Device-based data recorded: date and time, GPS coordinates, accuracy, altitude, user info.
- Web-based additional info: Temperature, Cloudiness, wind-speed, humidity
- Direct http post to PlutoF database

What is it good for?


- Support CS-groups lacking IT solutions or Web facilities
- Can provide biodiversity education and public engagement (schools, urban areas)
- Facilitate data mobilisation through and into EU BON CS-portal



This project has received funding from the European Union's Seventh Programme for research, technological development and demonstration under grant agreement No 308454



Directories to existing platforms, tools


Data mobilization helpdesk and training facility of the EU BON

Home
Training events
Data mobilization toolkit
Events
EU BON portal
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CS tools repository

« November »

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30						

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- AirProbe




Category: monitoring

Description:

The system used to investigate toxic gas pollution. A portable device (SensorBox) can measure the presence of some toxic gasses with a few low cost sensors. Then, an Android smartphone can show the measurements in real time thanks to a dedicated app (AirProbe). The system is being tested at the moment but soon both the SensorBox and AirProbe will be available for volunteers.

Open Source: yes

Taxa: Ecology
- Anymals+Plants



Category: data collection, management, data analysis, identification

Description:


An application running on Android that is linked directly to the databases of the Global Biodiversity Information Facility (GBIF). The mobile application enables recovery of data already available in the GBIF for a geographical area delimited by the user. It displays the species that have been spotted in the area, the observations made, and further data from Wikipedia.

Mobile app: Yes

Open Source: yes

Scale: World

Taxa: All
- BirdTrack



Category: data collection, data sharing, data analysis, monitoring

Description:

A tool to register data on migration movements and distributions of birds throughout Britain and Ireland. It provides facilities for observers to store and manage their own personal records as well as using these to support species conservation.

Mobile app: Yes

Scale: UK, Europe


Taxa: Birds, Dragonflies
- Citizen Science central

Category: management

Description:

CSC offers practitioners a variety of resources to assist with program planning, initiation, development, and evaluation. Toolkit resources are arranged in a step-by-step framework, and supported by a section featuring real-world case studies and citizen science projects.

Taxa:
- CitSci



Description:

Tools and resources to help user to customize scientific

Mobile app: Yes

Thank you!

