



# Top Tips for Developing Co-creation and Community Based Environmental Monitoring (CBEM)

## *Guide for developing Co-created and CBEM Citizen Science Projects*

### **About this Guide – Introduction:**

This short guide aims to provide an introduction to Co-creation and Community Based Environmental Monitoring (CBEM) Citizen Science projects. It explains the two types of Citizen Science approach and describes how the approaches have been piloted in Scotland by The Conservation Volunteers (TCV) with the support of Scottish Natural Heritage (SNH), Scottish Government, Scottish Environmental Protection Agency (SEPA) and Forestry Commission Scotland (FCS).

### **Co-created Citizen Science**

Historically, early Citizen Science projects were largely contributory – where the planning, design and analysis of the project was normally led by professional scientists, with the citizens only becoming involved as participants who collected data to feed into the project. Co-created projects sit on the opposite end of the scale. The UK Environmental Observation Framework describes this process as one in which projects are designed collaboratively - scientists and participants or communities work together in partnership and at least some of the volunteer participants are involved in most or all steps of the scientific process.

#### **Co-created Citizen Science works well for projects that<sup>1</sup>:**

- Benefit from establishing a community-led or volunteer-led monitoring scheme. All parties have a stake in the project and the longevity of involvement provides opportunities for training and sharing of expertise. It does, though, require time and ongoing commitment.
- Involve small numbers of participants and in situations where all parties are willing to listen and adapt, so that a consensus can be reached.
- Require repeat measurements over time (and which therefore need a greater commitment from participants).
- Are targeted at a specific, locally relevant environmental problem or question.

### **Co-created Citizen Science recording with Space to Grow, Maryhill**

The Conservation Volunteers worked with the community group 'Space to Grow' in Maryhill, Glasgow to enable a group of keen volunteers to co-create and trial a suitable method of recording wildlife. The volunteers were supported to find the most suitable recording methods for their needs, interests and abilities. The various recording methods were narrowed down to using [OPAL surveys](#) to gather and record data, which was trialed and found suitable for the participants.

### **Community Based Environmental Monitoring (CBEM) Citizen Science**

Another similar approach to community led Citizen Science is CBEM. CBEM is an umbrella term for the direct involvement of local community members in monitoring, either through their participation in collaborative monitoring efforts, or by training and contracting local workers (volunteers) to carry out monitoring projects. It involves the gathering of information by local residents over a period of time.

## Community Based Environmental Monitoring (CBEM) Citizen with Friends of the River Kelvin

The Conservation Volunteers worked with the community group 'Friends of the River Kelvin' (FORK) in Hillhead, Glasgow to facilitate a Community Based Environmental Monitoring (CBEM) project. A process where concerned citizens collaborate to monitor, track and respond to issues of the local community. Together TCV and FORK created and trialled a suitable method of recording the environment and wildlife. The volunteers were supported to find the most suitable recording methods for their needs, interests and abilities. The various recording methods included FSC identification keys, Nature Detective sheets and a selection of Citizen Science mobile Apps though like the Space to Grow group the participants narrowed this down to using [OPAL surveys](#) as their preferred method to gather and record data.

### CBEM Citizen Science works best for projects that<sup>2</sup>:

- CBEM works best if it comes 'from within' a community, either initiated by them or developed through a co-created process.
- Support from a coordinating and/or enabling body such as a university or NGO is an important factor in achieving long term sustainability of a CBEM project.
- To galvanise and sustain volunteer participation CBEM must fit with the values, needs and aspirations of a community and have relevance to the life of volunteers.
- A robust *process* is essential; this should include a plan for communicating data to volunteers and community members and support to volunteers to communicate their findings to scientists and local decision makers confidently. Providing volunteers with a sense that their monitoring activity is valued and will influence decisions is critical to the sustainability of the project.

### Top tips for developing Co-creation and CBEM Projects:

- Look for links with other groups nearby. For example linking the Space to Grow and FORK groups added considerably to both groups' resources and motivation.
- Provide Citizen Science survey options but allow the groups to choose their preferred survey method.
- Keep in touch regularly and provide positive and constructive feedback; it is appreciated by the participants.
- It is important to tailor the sessions to the audience with particular groups' specific interests, their ability and surveys are applicable to their site.
- Make sure participants understand "Why?" – What will results be used for and how can they use the data for their purposes.
- Be very clear and upfront with the simplicity of the co-creation approach. Co-creation can just be about engagement, a hook into Citizen Science activities to get outdoors and meeting new people.
- It is essential that participants understand the CBEM approach. They may need support to develop from taking part in initial engagement sessions to building up confidence and skills to monitor the environment for the long term on a regular basis.
- To sustain and develop a long term CBEM projects, long term support, training and funding avenues would benefit community groups greatly.
- We found OPAL surveys to be a really valuable tool - participants found them enjoyable and accessible. It would be invaluable for projects like this if the data from the OPAL surveys could be more easily managed and manipulated to help groups to develop their own recording and monitoring projects.
- Groups would also benefit from the support of scientific expertise in data collection or an enabling body, for example a University. This would be the next step for a group like FORK; to tie them in with a University who could work with them to help them collect and manage their data.
- However, simple methods can be used effectively to track change from their monitoring results. This can be in the form of photographs, keeping a journal and/or excel sheet.
- These methods of recording data need to be suited to the group. It is important to remember that not all individuals/community groups have access to technology (internet, computer, Smartphone, etc.) thus allowing the participant the ability to write data offline on paper on a BRISC recording sheet and submit the sheet via post or upload data direct to local recording centres and/or recording data on an excel.

If you would like more information and to see our full 'Co-creation and Community Based Environmental (CBEM) Citizen Science Pilot Projects' report please contact [citizenscience-scotland@tcv.org.uk](mailto:citizenscience-scotland@tcv.org.uk)

<sup>2</sup>Riddell, K (2013). Community based Citizen Science, Learning from success in the United States and Canada.