



Citizen Science in the Environment






















































































































































































































































































































































































About the Author

This guide was created by Lorna Oldershaw. Lorna is a trainee on TCV's Natural Communities Programme, an innovative community environmental engagement scheme funded by Heritage Lottery Fund's 'Skills for the Future'. The programme develops the capacity of communities to understand, celebrate and protect our natural heritage. For Lorna's traineeship she has been working with BTO Scotland, based at the University of Stirling. Lorna has been engaging with new audiences (such as hillwalkers, climbers and other outdoor enthusiasts), working to develop their knowledge and skills of upland wildlife and to increase biological recording throughout the uplands of Scotland.



About TCV

The Conservation Volunteers (TCV) help hundreds of thousands of people each year to reclaim local green places. Through environmental projects and a network of 2,000 community groups, they support people all across the UK to take responsibility for their own local environments. Find out more at www.tcv.org.uk.



As well as reclaiming local green places, TCV have supported more than 35,000 people to get involved in citizen science since 2012, in particular through the 'Scotland Counts' project which is delivered through a partnership between Scottish Government, SEPA, SNH and TCV. To find out more about opportunities to get involved in citizen science and conservation volunteering see <http://www.tcv.org.uk/scotland/discover/citizen-science> or contact Stevie Jarron, TCV Citizen Science Coordinator on s.jarron@tcv.org.uk

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About this Guide

This guide aims to provide a resource for the Duke of Edinburgh's Award participants and leaders, to help to increase knowledge and awareness of citizen science and the environment, and to encourage greater participation in biological recording throughout all DofE award levels. The majority of the information included in this guide focuses on citizen science projects within Scotland, although many of the organisations operate nationwide and they would welcome records from across the UK.

Development and printing of this guide formed part of the 'What's Up?' project which aims to increase wildlife recording in upland areas. The work was kindly funded by Scottish Natural Heritage and the Scottish Ornithologists' Club.



Introduction

This guide aims to give you information on a number of organisations involved in conservation of the natural environment and the various citizen science projects that they have running at present. Citizen science is a great way to learn more about the natural environment and to help contribute to the conservation of species and habitats.

Citizen science is the term used to describe public participation in scientific research. You may think the word 'science' refers only to lab coats and experiments but with citizen science this is not the case. You can take part in national surveys whilst in your garden, your local woods, on the seashore or further afield. By submitting data you will be contributing to conservation science and helping to expand our knowledge of the natural world. Information gathered by individuals like you, is helping scientists across the UK to understand the current state of the environment and where more action is needed.

Use this guide to get an idea of the projects and organisations you would like to get involved with. It is recommended that you find out more about surveys by visiting the organisation websites. Website details have been provided to direct you where to go for further information. Organisations can also be contacted for more information.

Getting involved in citizen science is easy and, as you will see in the next few pages, there are lots of projects to choose from. You could start by submitting casual sightings of anything from butterflies, dragonflies and birds, to bats, badgers or even jellyfish. You could search for glow worms at dusk, track down non-native invasive species or go on an ancient tree hunt. How about becoming a 'Wildlife Champion' on a section of the National Cycle Network or following 'Nature's Calendar', recording seasonal changes throughout the year?

In terms of how citizen science fits in with your Duke of Edinburgh's (DofE) Award, depending on the project(s) you chose, citizen science could be used to work towards either your **volunteering** or **skills** sections. In addition to these sections, carrying out citizen science while out on **expedition** is also a great way to learn about the environment you are travelling through. Choosing to do one or more recording projects would be a great **expedition aim** and as areas away from towns and cities are generally under-recorded, any records from these areas are extremely valuable. Check out the next section of this guide for more information on citizen science and your DofE award.

© Lorna Oldershaw (River Dee, Cairngorms)



Citizen Science and your DofE Award: An Overview

By taking part in citizen science you will build up skills in survey techniques and species identification. Along with building these new skills, you also have the opportunity to learn more about the natural environment and volunteer with a variety of conservation organisations.

Citizen Science as a SKILL

Citizen science provides the perfect opportunity to build up your skills over time, making it ideal for all levels of your award. You could begin at bronze with easy to identify species, one particular group of species or a specific project that runs for 3 months. As you progress through to silver and then gold, you can choose a more complex project to get involved in, you could combine projects throughout the year or get creative and design your own project to meet the criteria and timescales for your award level. Why not try designing a 'Summer of Citizen Science' project, do a 'bioblitz' of your local patch or even set up a community citizen science project such as 'A Year in your Area' challenge and see how many records you can submit!

In addition to learning identification skills, there is a lot more to learn about species and habitats. Depending on the species that interest you, you could find out more about topics such as migration, life cycles, food chains, pollination and/or ecosystems.

Citizen Science for VOLUNTEERING

Although citizen science is a new skill, you might choose to do citizen science as part of your volunteering. By working with some of the conservation organisations in this guide, you could volunteer to help out with their citizen science projects and also get involved in practical conservation work. You could then combine your citizen science volunteering with learning new skills such as wildlife photography or habitat management.

Citizen Science on your EXPEDITION

You may also choose to use citizen science during your expedition, as part of your expedition aim. You could identify and record all species from a particular species group (such as invertebrates or birds) throughout your expedition or you could try to identify the different habitats that you go through and record the different species you see, comparing results of the different habitats. You could use mobile apps to help you with identification and to record the species you see, or even to design your own 'expedition specific' survey.

Citizen Science and your DofE Award: A TCV Case Study

As detailed on the previous page, there are lots of ways you could use citizen science throughout the various stages of your DofE award. To give you an idea of how it could work for you, this is a case study of a project carried out by a Scout Group in Edinburgh as part of their skills section of their silver DofE award.

Mapping Invasive Non-Native Species

The Conservation Volunteers trialled a pilot with the 30th Inverleith (Davidson's Mains) Scout Group based in Edinburgh. The project was carried out on a nearby Local Nature Reserve (LNR), Corstorphine Hill. The Hill has issues with several invasive, non-native species (INNS), most notably Himalayan Balsam, Salmonberry and Japanese Knotweed. Edinburgh City Council's Biodiversity Unit agreed that this pilot fitted with their plans for Himalayan Balsam control that summer and the activity was approved as part of the skills section of the Scout Group's DofE Silver Award.

The Group used a large scale Ordnance Survey map of the Hill and identification sheets of the target plants and similar native plants that can often cause confusion. They made a number of site visits to the Hill, in all weathers, noting on the map where they identified the INNS. This used elements of Learning and Collecting, Natural World and Science and Technology skills.

The maps they produced were then used to enable a strategic approach to controlling the invasive species, which were removed during a Himalayan Balsam pull, planned by Edinburgh City Council Ranger Service. Inspired by the Scout Group's efforts, nearly 70 individuals, including a local mountain bike club, Friends of Corstorphine Hill, Edinburgh Zoo and TCV Stirling and Edinburgh volunteers, gave up a day or more to tackle the Himalayan Balsam on the Hill.

This case study shows how your citizen science efforts can contribute to the skills section of your DoE and provide a good focus for partnership projects involving other groups. It also demonstrates how participating in citizen science can lead to practical action to improve the local environment.

Citizen Science & TCV

The Conservation Volunteers (TCV) have supported more than 35,000 people to get involved in citizen science since 2012, in particular through the 'Scotland Counts' project which is delivered through a partnership between Scottish Government, SEPA, SNH and TCV. The project aims to develop opportunities for people to take part in citizen science across Scotland by:

- Increasing public knowledge of Citizen Science and confidence to participate
- Facilitating community participation in Citizen Science
- Supporting learning through Citizen Science
- Engaging new audiences with Citizen Science

TCV offer a range of opportunities to get involved in citizen science and conservation volunteering. To find out more, see

<http://www.tcv.org.uk/scotland/discover/citizen-science>

or contact Stevie Jarron, TCV Citizen Science Coordinator on **s.jarron@tcv.org.uk**



© Laura White Sustrans



© Lorna Oldershaw

Recording Basics - What to record?

When taking part in citizen science, there are two main options in terms of collecting data. You can either take part in a 'formal survey' or you can collect 'casual records'.

Formal surveys are set up by conservation organisations to gather specific information to meet their requirements. The organisations will give you guidelines about their surveys, the information they are interested in, and details of how to record/submit this information to them.

Casual records are records of species that you see when you are out and about, but you are not recording as part of a 'formal' survey. This could be a single red squirrel sighting whilst walking through woodland, it could be tracks and signs from an otter along a river or it could be all the birds you see and hear in your local patch.

When you are recording wildlife in the field, there is certain information that you should always be trying to make a note of. To start with there are 4 basic elements to a good record – **Who, What, Where** and **When**. Along with this information, try to take photos. Photographs are a great way to help with identification and can be used to confirm your sighting when sent to local recorders or uploaded to websites.

Example Record

Species: Common name of the species
(Scientific if you know it)

Location: The name of where you are

Grid Reference: Ideally a 6 figure grid reference
should be given

Date: Day, Month and Year

Recorder: Your name goes here
(required when submitting data)

As you become more confident in your citizen science skills and learn more about species and recording, additional details you might record include:-

- Numbers seen
- Male/Female
- Habitat Type
- Breeding Evidence
- Stage of Development
- Weather (Wind Speed and Direction, Precipitation, Cloud Cover, Temperature)

These items are generally not expected from a casual record, but may be useful for certain organisations, or may be asked for when using mobile apps or online forms to submit data. *(Information on citizen science mobile phone apps can be found towards the back of this guide)*

Use the following pages in this guide to find out more about the citizen science projects you can get involved in. The most important thing to remember is **citizen science is fun!** Your enthusiasm and dedication is more important than your expertise, so get outside and enjoy learning more about the natural world!



© Graham Burns TCV (Bluebells)

© Lorna Oldershaw (Northern Eggar Moth)

Organisation: Amphibian and Reptile Conservation (ARC) & Amphibian & Reptile Groups (ARG-UK)

About:

ARC is a national wildlife charity committed to conserving amphibians and reptiles and saving the disappearing habitats on which they depend.

ARG-UK are a network of over 60 dedicated Amphibian and Reptile Groups (ARGs), mostly based in the UK but also from the UK Overseas Territories and the Republic of Ireland. The aim of ARGUK is to promote the conservation of our native amphibians and reptiles by supporting the work of the ARGs.

Projects:

Record Pool – This is a national web-based amphibian and reptile recording database, created as a resource to collect data throughout the UK, to enable monitoring of native populations for the purposes of conservation and ecology. Whether you've seen a toad in the back garden, an adder whilst out on a walk, or have a clipboard full of newt data from a field trip, ARC & ARG-UK encourage you to put your records in the Record Pool!

Dates: All Year Round

Data Entry: Online, Mobile App

More Details:

Record Pool <http://www.recordpool.org.uk/>

ARC <http://www.arc-trust.org/>

ARG-UK <http://www.arguk.org/>

Mobile App:

HerptileID – ID guide & record submission
(costs apply)



© Lorna Oldershaw (Common Lizard)

Organisation: Froglife

About: Froglife is a national wildlife charity committed to the conservation of amphibians and reptiles – frogs, toads, newts, snakes and lizards – and saving the habitats they depend on. Their Scottish Dragon Finder project aims to enthuse people about these amazing animals, through engaging events and practical conservation, and build a better picture of where amphibians and reptiles can be found across Scotland. Froglife will use this information to target conservation measures in the future to areas that need it the most.

Projects:

Scottish Dragon Finder – Froglife needs your sightings of amphibians and reptiles. Whether this is from your back garden, your local park or your expedition, they need as many records as possible from all across Scotland. Submit your sightings using Froglife's handy 'Dragon Finder' app, online or by email.

Dates: All Year Round

Data Entry: Mobile App, Online, Email

More Details:

Froglife Scotland <http://www.froglife.org/dragonfinder/scotland/>
Species Recording: <http://www.froglife.org/dragonfinder/app/>

Mobile App: Dragon Finder



Organisation: British Trust for Ornithology (BTO)

About: The BTO is an independent charitable research institute combining professional and citizen science aimed at using evidence of change in wildlife populations, particularly birds, to inform the public, opinion-formers and environmental policy and decision-makers. Through the efforts of volunteers participating in BTO surveys, the bird populations of the British Isles have been monitored more effectively and for longer than those of most other parts of the world. This has produced a uniquely rich and detailed body of scientific work and is helping us to understand the complex challenges facing wild birds at a time of great change in the environment.

Projects:

BirdTrack – This is an online resource which can be used to keep records of your bird sightings. You can record birds in your garden, your local area or further afield. You can submit casual records or (ideally) complete lists of all birds seen and heard through the website or the mobile app. The local and national results are available on the website for everyone to look at. Important results produced by BirdTrack include mapping migration (arrivals and departures) timings and monitoring scarce birds. You can also view and analyse your own records through specially designed features.

Records of upland birds are particularly valuable, so if your expedition takes you through some of the more remote parts of Scotland your sightings would be very useful. Guidance on the highest priority species for recording can be found on the 'What's Up?' website.

Dates: All Year Round

Data Entry: Online, Mobile App

More Details:

BTO <http://www.bto.org/>
 BTO Scotland www.bto.org/scotland
 BirdTrack www.birdtrack.net
 What's Up? www.bto.org/whats-up

Mobile App: BirdTrack





Organisation: British Dragonfly Society

About: The British Dragonfly Society promotes and encourages the study and conservation of dragonflies and damselflies and their natural habitats. There are 23 species of dragonfly and damselfly found in Scotland with three of these not found elsewhere in the UK. Several of these species have recently moved into Scotland from the south, but others with more specialist requirements are threatened by loss of habitat.

Projects:

Ponds Near You? – Monitor your local pond for six common species

Dragonflies and Damselflies in Scotland – Your dragonfly sightings are needed from throughout Scotland

Dates: Adults in flight May – September (months vary depending on species - see online ID guides for more details)

Data Entry: Online

More Details:

Find out more about the British Dragonfly Society and their work at www.british-dragonflies.org.uk

For species identification guides and recording information visit <http://www.british-dragonflies.org.uk/content/scottish-dragonfly-leaflets>

Online Submissions <http://www.british-dragonflies.org.uk/content/simple-data-entry>



Organisation: Buglife

About: Buglife is the only organisation in Europe devoted to the conservation of all invertebrates. They are actively working to save Britain's rarest little animals, everything from bees to beetles, worms to woodlice and jumping spiders to jellyfish. There are more than 40,000 invertebrate species in the UK, and many of these are under threat. Invertebrates underpin life on earth and without them the world's ecosystems would collapse. Buglife's aim is to halt the extinction of invertebrate species and to achieve sustainable populations of invertebrates.

Projects:

Scottish Glow Worm Survey – Buglife are asking you to submit your glow worm sightings to help them map their distribution. Glow worms appear to be widely distributed in the UK, with records from the south of England up to the very north of Scotland, however there have been very few Scottish records in recent years. Are they still glowing in the glens or are they glowing, glowing, gone?

Scottish Seashell Survey – The next time you visit the beach, take along a copy of the Scottish Seashell Survey sheet and the Seashell ID Guide (available online) and take a note of the seashells and living creatures you find. Rocky, sheltered beaches, with gravel or sand tend to support the widest range of creatures, but just about any section of the coast could have some exciting finds.

Dates:

Scottish Glow Worm Survey – Evenings (from 10pm to midnight) in May to September
Scottish Seashell Survey – All Year Round

Data Entry: Online

More Details:

Buglife <https://www.buglife.org.uk/>

Buglife Scotland <https://www.buglife.org.uk/local/buglife-scotland>

Scottish Glow Worm Survey
<https://www.buglife.org.uk/activities-for-you/wildlife-surveys/scottish-glow-worm-survey>

Seashell Survey <https://www.buglife.org.uk/seashell-survey>



Organisation: Bumblebee Conservation Trust (BBCT)

About: BBCT was established because of serious concerns about the 'plight of the bumblebee'. In the last 80 years our bumblebee populations have crashed. Two species have become nationally extinct and several others have declined dramatically. There are 25 different species of bumblebee in the UK and BBCT is working to support the conservation of all these species.

Projects:

BeeWatch – BBCT needs your help to map the distribution of bumblebees, especially the rarer species or bees in less visited areas. To take part all you need to do is take a digital photograph of the bumblebee, record your location and date and upload this to the BeeWatch website. On the website you can try to identify the species and an expert will get back to you to confirm if you have guessed correctly! There are hints and tips on the website for photographing bumblebees and an online training tool to help with your bumblebee identification. BBCT also has weatherproof ID guides available to purchase for £2.50.

BeeWalk – This is a national recording scheme to monitor the abundance of bumblebees across the UK. The survey would be impossible without volunteers, who identify and count the bumblebees they see on an hour's walk each month from March to October.

Anyone can become a BeeWalker – all you need is a spare hour or so every month to walk a fixed route of about a mile (you choose where it goes), and send BBCT your sightings. It's essential that the route is fixed to allow direct comparisons of bumblebee population trends over time. BBCT will help as much as possible with identification – they've got ID resources online and on paper, or you can photograph your mystery species and upload them to the BeeWatch site or to the BBCT forum where you'll also find a community of fellow bumblebee enthusiasts.

Dates:

BeeWatch: All Year Round

BeeWalk: March to October

Data Entry: Online, Paper Forms

More Details:

BeeWatch <http://bumblebeeconservation.org/get-involved/surveys/beewatch/>
BeeWalk <http://bumblebeeconservation.org/get-involved/surveys/beewalk/>



Organisation: Butterfly Conservation

About: Butterfly Conservation aims to conserve butterflies and moths, as well as the habitats on which they depend. Although a third of the UK in terms of land area, Scotland has less than one-tenth of the population, so ensuring butterflies and moths are well-recorded can present quite a challenge, for this reason your sightings are extremely valuable.

Projects:

Butterflies for the New Millennium (BNM) – This is Butterfly Conservation's general butterfly recording scheme. It covers the whole British Isles and it assesses the distribution of each butterfly species. Anyone can submit records of sightings, whether from back gardens or mountain tops. There are two approaches that can be taken:

- a) Casual recording - Recording wherever butterflies are seen.
- b) Site-based recording – For repeated visits to a particular site (e.g. garden, nature reserve, local park). The site should be visited (in good weather) at least 4 times in the season (preferably in early May, mid-June, mid-July and the second half of August, to catch the flight periods of all possible species).

Big Butterfly Count – The Big Butterfly Count is a nationwide survey aimed at helping assess the health of our environment. Simply count butterflies for 15 minutes during bright (preferably sunny) weather during the three week survey period. This time of year has been chosen because most butterflies are at the adult stage of their lifecycle, so are more likely to be seen. Records are welcome from anywhere: from parks, school grounds and gardens, to fields and forests. You can submit separate records for different dates, and for different places that you visit and remember that your count is useful even if you do not see any butterflies or moths.

Postcard Surveys – Butterfly Conservation regularly run postcard surveys to find out about changes in distribution of particular species of butterfly across Scotland. Check the website to find out the current postcard species.

Dates: Spring – Autumn (varies depending on flight periods) (Big Butterfly Count happens for 3 weeks in July/Aug check website for specific dates)

Data Entry:

Butterflies for the New Millennium – Paper Forms, Mobile App
Big Butterfly Count – Online, Mobile App
Postcard Surveys – Online, Postcard

More Details:

Butterfly Conservation Scotland <http://butterfly-conservation.org/842/scotland.html>
Butterflies for the New Millennium <http://butterfly-conservation.org/111/butterflies-for-the-new-millennium.html>
Big Butterfly Count <http://www.bigbutterflycount.org/>
Current Postcard Survey <http://butterfly-conservation.org/2199/scottish-speckled-wood-survey.html>
Volunteer Handbook <http://butterfly-conservation.org/files/volunteer-handbook-2014-fully-revised-april14.pdf>

Mobile App: iRecord Butterflies & Big Butterfly Count



Organisation: Bat Conservation Trust (BCT)

About: The BCT is the only organisation solely devoted to the conservation of bats and bat habitat. Bats are unique and play a vital role in our environment but during the last century bat populations have suffered severe declines. The BCT are working to secure the future of bats in our ever changing world by tackling the threats to bats, from persecution to loss of roosts and changing land use.

Projects:

Big Bat Map – Record your bat sightings from your garden, your local park or when out on expedition. Use the interactive bat map to find local bat hotspots and get hints and tips on where bats might be found.

National Bat Monitoring Programme (NBMP) – Range of survey options with or without bat detectors:

Surveys without detectors

Sunset /sunrise survey (the aim is to locate / verify bat roosts) – This survey is ideal for you if you don't have previous bat-surveying experience, and it helps BCT to identify new roosts. It is also a perfect opportunity to get together with family/friends and introduce them to exploring and discovering bats and other wildlife in your local area. Chose to do either sunrise or sunset, or why not do both!

Roost counts – Help BCT to monitor how different bat species are faring across the UK by taking part in the Roost Count. All you need to do is to count bats emerging from the roosts on two or more evenings during the summer. (For this survey you need to know of a bat roost and have permission to stand outside at sunset and count bats).

Surveys with detectors (suitable for Scotland)

Field survey – Use your bat detecting skills to carry out a field survey. For this survey, you are asked to design and walk a triangular route in a 1km square, that BCT randomly allocate to you, on two evenings in July. You will use a bat detector to record noctule, serotine, common pipistrelle and soprano pipistrelle bat activity (the species that you are more likely to encounter depends on where you live in the UK).

Waterways survey – Help BCT find out how Daubenton's bat populations are doing by taking part in the Waterway Survey. For this survey, you walk a route along a 1km stretch of water randomly allocated to you (this will always be close to where you live) on two evenings during August. You record Daubenton's bat activity using a bat detector to listen to the bats and a torch to spot them flying over the water.

Dates:

Big Bat Map – All Year Round

Sunset/Sunrise Surveys – June/July/August

Roost counts – June (additional counts in July for some species)

Field Survey – July (pre-survey visit June)

Waterways survey – August (pre-survey visit July)

Data Entry: Online, Paper Forms

More Details:

Bat Conservation Trust <http://www.bats.org.uk/index.php>

Big Bat Map <http://www.bigbatmap.org/>

National Bat Monitoring Programme Surveys <http://nbmp.bats.org.uk/Surveys.aspx>

Organisation: Mammal Society

About: The Mammal Society is a science-led charity promoting mammal conservation. They are leading efforts to collect and share information on mammals, encouraging research to learn more about mammal ecology and distribution, and contributing meaningfully to efforts to conserve them.

Projects:

National Mammal Atlas Project (NMAP) – The Mammal Society aims to produce the first atlas in over 20 years to present vital new baseline distribution data, which will be continually updated through ongoing monitoring. Due to low population densities in Scotland, there are fewer mammal records in this region. Send in your sightings whenever you see a mammal or mammal field signs to help fill the gaps on their maps!

CATlas – The Mammal Society is working to develop an atlas of domestic and feral cats across the UK with an aim to produce more recent estimates of distribution, and potentially abundance. Data for Scotland is crucial due to the threat to the Wildcat population found here.

Dates: All Year Round

Data Entry: Online or Mobile App

More Details:

The Mammal Society <http://www.mammal.org.uk/>
Mammal Atlas <http://www.mammal.org.uk/nmap>
CATlas <http://www.mammal.org.uk/catlas>

Mobile App: Mammal Tracker



Organisation: Saving Scotland's Red Squirrels

About: Saving Scotland's Red Squirrels (SSRS), led by the Scottish Wildlife Trust, is a partnership project to stop the decline of Scotland's core red squirrel populations. Only around 121,000 red squirrels are left in Scotland today and without sustained action, the red squirrel could become extinct on mainland Scotland.

Projects:

Squirrel Distribution Records – SSRS need to continue to record squirrel distributions right across Scotland, so you can help by keeping your eyes peeled for both red and grey squirrels and report your sightings online. This information will be recorded on the Scottish Squirrel Database, which is the national database that underpins much of the Red Squirrel Conservation Strategy.

Volunteer Surveyors – SSRS need volunteers to help complete targeted spring surveys to detect squirrels in areas where it is important to have current knowledge. Volunteers may be asked to look after some squirrel feeder-box hair-traps to provide presence/absence records of both red and grey species or undertake early morning squirrel counts to provide evidence of changing numbers. The surveys contribute not only to the SSRS project, but also help to inform government agencies' on the most appropriate long-term approach for red squirrel conservation.

Dates: Casual Sightings All Year Round / Surveys Spring (Autumn in specific areas)

Data Entry: Online

More Details:

Saving Scotland's Red Squirrels <http://www.scottishsquirrels.org.uk/>

Report a squirrel sighting

<http://scottishwildlifetrust.org.uk/what-we-do/scotlands-red-squirrels/squirrel-sightings/>

To find out more about surveying, contact your local project officer
http://scottishsquirrels.org.uk/info/contact_us_confirmation/



Organisation: Scottish Badgers (Over 18's Only)

About: Scottish Badgers are a small charity with the aim to promote, study and conserve badgers. They are devoted to the protection of Scotland's badgers, their setts and natural habitats.

Projects:

General - Scottish Badgers offer training in survey techniques, badger behaviour, forestry and agricultural operations and scenes of crime. Surveying and volunteering can be tailored to you. You can get involved in surveying your local area for badgers, attend Badger Blitz's or carry out small research projects.

Sett Monitoring Volunteer (membership required for insurance) - Scottish Badgers are looking for volunteers to monitor badger setts in their local area and provide 3 monthly reports on their local sett/s. The time commitment is minimal and will include visiting a local badger sett (or a few if so desired!) and monitoring the area to avoid potential disturbance. This is a great opportunity to learn more about badger behaviour and to potentially eliminate badger crime.

Dates: All Year Round

Data Entry: Paper Forms, Email

More Details:

Scottish Badgers <http://www.scottishbadgers.org.uk/index.asp>

Sett Monitoring Volunteer <http://www.scottishbadgers.org.uk/volunteer.asp>

Email developmentofficer@scottishbadgers.org.uk



Organisation: Plantlife Scotland

About: Plantlife is the organisation that is speaking up for our wild flowers, plants and fungi. From the open spaces of our nature reserves to the corridors of government, Plantlife are working to raise their profile, to celebrate their beauty, and to protect their future.

Plantlife Scotland's work is focused on six special habitats that are particularly important here. Scotland is home to many of our most beautiful and significant wild flowers and plants. That is why the work of Plantlife Scotland is so important – and why they carry out conservation and outreach work across the whole of Scotland. With the help of volunteers they are able to carry out crucial surveying and monitoring out in the field.

Projects:

First Steps (Skills project, no submission of records required) – Plantlife Scotland has created a series of free handy cards (available online or from your DoFE contact) which provide an easy introduction to some of our common wild plants. The cards highlight 14 familiar habitats and some of the typical plants that can be found in them. Discover and explore different places and see what's growing there. This is a great way to get to know wild flowers and learn a bit about the different species found in various habitats.

National Plant Monitoring Scheme (NPMS) – Plantlife has joined up with the Centre for Ecology and Hydrology (CEH), the Botanical Society of the Britain and Ireland (BSBI) and the Joint Nature Conservation Committee (JNCC) to develop a new annual plant survey. The survey works by volunteers recording species in plots of differing habitats in a 1km grid square. The survey can be done at 3 different levels - volunteers can select the level that best suits their current knowledge and progress up the levels over time. Volunteers refer to a list of species for the first 2 levels. The final level allows you to record all the species found within a plot.

Dates: Spring to Autumn

Data Entry: Online (NPMS Project Only)

More Details:

Plantlife Scotland <http://www.plantlife.org.uk/scotland>

First Steps

http://www.plantlife.org.uk/scotland/things_to_do_in_scotland/activities_in_scotland/firststeps/

National Plant Monitoring Scheme <http://www.brc.ac.uk/npms/content/welcome>



Organisation: Woodland Trust

About: Scotland's trees and woods are amazing. From the stunning remnants of Caledonian Pine Forest to the amazing Atlantic Oakwood's of the West Coast. The Woodland Trust want to protect the woods that we have, encourage others to create new woods by planting trees, and also restore ancient woodland where possible. The Woodland Trust cares for and manages 80 woods in Scotland covering 8,500 hectares including nationally and internationally important woodland sites as well as urban and community woodland.

Projects:

Nature's Calendar – This survey collects thousands of records of natural seasonal events such as tree budburst, leaf fall, emergence of butterflies and the movements of migratory birds. Phenology is the science of recording natural, regularly occurring, events and this is the longest running phenological website in the UK. This survey is easy to get involved in, with lots of online resources and live results. This survey has two recording seasons – Spring and Autumn.

Ancient Tree Hunt – This is a simple survey to identify and record ancient trees, helping to map the UK's valuable ancient trees. Anyone can record ancient trees and upload photos and descriptions to the website. There are also great resources online to help with surveying, including how to identify an ancient tree in hugs! A good survey if you are roaming the hills and forests of Scotland.

Track-a-tree – A sister project of Nature's Calendar, 'Track-a-Tree' aims to record the spring phenology, or seasonal timing of individual woodland trees and flowering plants that make up the woodland understorey or ground flora. The scheme will follow these woodland trees over several years. They are looking for more volunteers to track trees and woodland flowering plants in spring 2015. As a recorder you will 1) visit your chosen trees weekly if possible, 2) monitor your trees from before budburst through to leafing. You will conduct two stages of recording (selecting your trees and completing site information; and re-visiting these trees throughout spring to record their phenology and the flowering of some key woodland plant species beneath them).

Dates:

Nature's Calendar – Spring (January – June) /Autumn (July – December)

Ancient Tree Hunt – All Year Round

Track-a-Tree – Spring

Data Entry: Online

More Details:

Woodland Trust <http://www.woodlandtrust.org.uk/>

Woodland Trust Scotland

<http://www.woodlandtrust.org.uk/our-story/where-we-work/scotland/>

Nature's Calendar <http://www.naturescalendar.org.uk/>

Ancient Tree Hunt <http://www.ancient-tree-hunt.org.uk/>

Track-a-tree <http://trackatree.bio.ed.ac.uk/>



Multi-taxa Surveys

Organisation: Marine Conservation Society (MCS)

About: In Scotland, as well as the rest of the UK, MCS is the voice for everyone who loves the sea. They are working to secure a future for our living seas, and to save our threatened marine wildlife before it is lost forever. Our seas are under immense pressure: too many fish are being taken out, too much rubbish is being thrown in and too little is being done to protect our precious marine wildlife and vital fish stocks. The Marine Conservation Society champions the need for marine wildlife protection, sustainable fisheries and clean seas and beaches.

Projects:

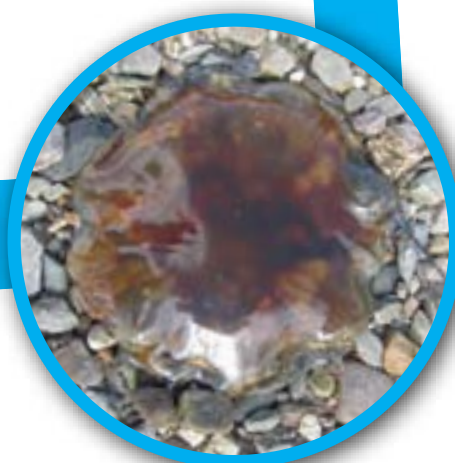
Wildlife Sightings – MCS is interested in hearing about your sightings of a number of different marine species in UK and Irish waters. MCS would like your help recording jellyfish strandings on UK beaches and jellyfish swarms in our seas. They would also like to know about any basking sharks or marine turtles that you see. If you visit the seaside, regularly walk along beaches, are a Beachwatch volunteer, dive or sail, you can help! There are identification guides and more information on their website.

Dates: All Year Round

Data Entry: Online (photos emailed)

More Details:

MCS Scotland <http://www.mcsuk.org/scotland>
Wildlife Sightings <http://www.mcsuk.org/sightings>



© Lorna Oldershaw (Jellyfish)

Organisation: Open Air Laboratories (OPAL)

About: The OPAL network is a UK-wide citizen science initiative that allows you to get hands-on with nature, whatever your age, background or level of ability. They develop activities and resources, including their national surveys, which allow you to get closer to your local environment while collecting important scientific data. They also arrange and take part in nature events and workshops around the country.

OPAL is running surveys across the UK to learn more about the state of our environment, and they'd like everyone to get involved. The surveys explore the health of our soils and trees, the quality of our air and water, the distribution of invertebrates, and the importance of hedges. They provide easy-to-follow survey instructions, straightforward ID guides and support from their community scientists across the UK. Your contribution is important in helping scientists build up a picture of the UK's natural environment.

Projects: (For each project you can download resources from the OPAL website)

Bugs Count – Record bugs in any area and look out for the six 'Species Quest' bugs in particular. Recordings can be uploaded online anonymously, by logging in or by posting the findings. You can use a postcode, nearest town or by selecting an area on the map to locate findings.

Tree Health – Trees are home to thousands of insects, birds and mammals and produce much of the oxygen we breathe. Imported pests and diseases threaten to wipe out whole species of trees across the UK. This survey allows citizen scientists to play a real part in early detection of some of these threats and also to provide valuable information on the general health of our trees.

Soil and Earthworm Survey – Earthworms are extremely important and play a vital role in recycling plant nutrients and aerating the soil. By taking part in this survey you'll help improve our knowledge of earthworms and the soils they live in - something we know surprisingly little about.

Air Survey – We can learn much about air quality from the species that live nearby. The OPAL air survey is studying lichens found on trees and also looking for tar spot fungus on sycamore leaves. Both can tell us a great deal about local air quality.

Biodiversity Survey – Biodiversity is life: the variety of all life on Earth. As well as acting as boundaries and barriers, hedges are important habitats for a wide variety of animals and plants. By taking part in this survey you can find out more about hedges in your local area and the biodiversity they support.

Water Survey - Freshwater is vital to life on Earth. Clean water is essential for human health and is important for people to drink and grow food. We can assess how healthy a lake or pond is by identifying the animals and plants that are living in and around it. By taking part in the OPAL water survey you will help to identify water quality and where pollution is a problem.

Dates: All Year Round (depending on project)

Data Entry: Online, Mobile App (Tree Health & Bugs Count Only)

More Details:

OPAL <http://www.opalexplornature.org/>

OPAL Surveys <http://www.opalexplornature.org/surveys>

Mobile App: Tree Health & Bugs Count





Organisation: Sustrans Scotland (Over 18's Only)

About: Sustrans Scotland is working to enable people in Scotland to travel by foot, bike or public transport for more of their everyday journeys. Sustrans Scotland works closely with communities, the Scottish Government, local authorities and other partners to ensure that the people of Scotland have access to a network of safe walking and cycling routes. They are currently working on the 'Greener Greenways' project, a 3-year biodiversity monitoring project which aims to create eight habitat management plans for the traffic-free areas of the National Cycle Network. This project will enable Sustrans Scotland to audit, preserve and promote biodiversity on the National Cycle Network.

Projects:

Wildlife Champion – As a Wildlife Champion, you will be allocated a specific section of your local greenway (off-road, traffic-free section of the Network) and will be responsible for monitoring its biodiversity and promoting it to the local community. You will collect wildlife data in the local area and contribute to habitat management. Monthly species specific survey training is provided for species such as bumblebees, bats, wildflowers and amphibians, enabling volunteers to carry out these more detailed surveys on their patch.

The focus for 2015 will be Clackmannanshire, East Lothian and Midlothian as well as continuing with areas in Glasgow, West Dunbartonshire, Renfrewshire, West Lothian, Lanarkshire and North Ayrshire. Contact Sustrans Scotland for enquiries about your area.

Dates: All Year Round

Data Entry: Paper Forms, Email

More Details:

Sustrans Scotland <http://www.sustrans.org.uk/scotland>

Wildlife Champion Role

<http://www.sustrans.org.uk/volunteer/our-volunteers/wildlife-champions>

Email Volunteer Co-ordinator laura.white@sustrans.org.uk



Organisation: iRecord

(Partnership between Biodiverse IT, the Biological Records Centre and the National Biodiversity Network)

About: The goal of iRecord is to make it easier for wildlife sightings to be collated, checked by experts and made available to support research and decision-making at local and national levels.

Projects:

iRecord is a website for sharing wildlife observations, including associated photos. You can register quickly and for free. Once you've registered, you can add your own biological records for other to see, and you can see what has been recorded by others. Your data will be kept secure and will be regularly backed up. Automatic checks will be applied to your observations to help spot potential errors, and experts can review your sightings. All wildlife sightings for non-sensitive species are shared with other users and will be made available to National Recording Schemes, Local Record Centres and Vice County Recorders (VCRs).

Dates: All Year Round

Data Entry: Online

More Details: <http://www.brc.ac.uk/irecord/home>

Organisation: WildlifeLog

About: The idea behind WildlifeLog is simple - it allows you to record all the wildlife you see, wherever you are - and yet it is so much more than just that!

WildlifeLog enables you to:

- Keep a permanent record of what you see
- View your sightings on maps and graphs, and also view the sightings of your friends
- Download, print and complete wildlife spotting ticklists; create new ticklists and contribute to existing ones
- Share your sightings with friends through WildlifeLog, Facebook and email
- Chat with your friends and other members of WildlifeLog to discuss your sightings and get expert advice
- Create unique projects with your friends / school / organisation and / or the wider community
- Contribute to scientific research and help wildlife conservation.

Projects: Create your own or add to projects through the website.

Dates: All year round

Data Entry: Online

More Details: WildlifeLog <http://www.wildlifelog.org/>

Organisation: National Trust for Scotland (NTS)

About: The National Trust for Scotland is an independent charity set up for the preservation and conservation of natural and human heritage that is significant to Scotland and the world. They look after some of Scotland's finest landscapes and wildlife, including land in the heart of both of Scotland's National Parks, seven National Nature Reserves, 27 sites designated as of European importance for nature conservation and 46 sites of national importance. They also care for over 400 Islands and over 400 miles of footpath – footpaths that you may walk on during your expeditions.

Projects:

General – The NTS are interested in all biodiversity on their properties and would welcome records from DofE participants. There are opportunities to use your volunteer commitment to help with the management of wildlife and its habitats on NTS properties or to carry out a specific survey of wildlife. Even if you are unable to volunteer regularly at an NTS property (because many are in very remote locations) many of you will pass through NTS land and properties on DofE expeditions. Why not use your citizen science skills to record what you see on your expedition and pass on your records to the countryside rangers or the countryside & nature conservation team at the NTS head office. Remember to record the species, location name, a grid reference and the date. Photographs can also help to confirm records.

Dates: All Year Round

Data Entry: Email

More Details:

NTS Website <http://www.nts.org.uk/Home/>

NTS Properties <http://www.nts.org.uk/Visits/List/>

Nature Conservation Department <http://www.nts.org.uk/Wildlife/Contactus/>



Organisation: iSpot

(Partnership between The Open University and The Open Science Laboratories)

About: iSpot is a website that aims to help anyone identify anything in nature. People upload their observations of wildlife, help each other identify it, then share and discuss what they've seen.

Projects: The main recording aspect of iSpot is casual recording. You can use iSpot to upload your wildlife sightings and to keep a log of what you've seen and where. iSpot can also be used to help with identification of species - if you upload a photograph of the species the online community will help to identify it. You can also use iSpot to get more information on what to spot, where to see it, and how to identify it. The "explore communities" section has eight iSpot wildlife groups that you may be interested in.

iSpot also has a list of projects that you can contribute to or why not try setting up your own project? A project is a way of creating a publicly available collection of observations based on criteria such as location or species group. You could create a project to try and answer a specific question you have about wildlife in a particular region, or maybe you'd like to use a project to share a specific collection of observations from your local area or your expedition?

Dates: All Year Round

Data Entry: Online, Mobile App

More Details: <http://www.ispotnature.org/communities/uk-and-ireland>

Mobile App: iSpot



Citizen Science Phone Apps

Mobile phone apps are a great way to record your wildlife sightings whilst out and about. Citizen science related phone apps usually include handy identification guides, photos, descriptions and possible confusion species, making identification easier. The phone apps also enable you to submit sightings direct from your mobile. Most phone apps use GPS to identify your location – this may need to be switched on in your phone settings. You do not need a network signal for GPS to work, which means most apps can be used even when you do not have reception on your phone.

Some of the apps below are linked to organisations mentioned in the previous pages, others are stand alone surveys. There are also a couple of apps which can be used to design your own survey. As with previous information, check out the survey/app websites for more information.

Mobile App: Dragon Finder

The Dragon Finder app can be used to report sightings of reptiles and amphibians to Froglife as part of their Scottish Dragon Finder project. You can use the app to identify species, to report sightings and find out more about each of the species. The app includes information on frogs, toads, snakes, lizards, newts and turtles/terrapins.

More Info: <http://www.froglife.org/dragonfinder/app/>

Mobile App: Herptile Id (RecordPool) – Costs apply

The Herptile Id app will help you identify the amphibians and reptiles of the British Isles. Herptile Id is an easy to use but comprehensive field guide. All native species and introduced species are covered. You can keep a log of reptile and amphibian sightings and take photographs using the app. Reptile and amphibian sightings provide important conservation information and this can be sent in real time to the ARG-UK Record Pool database automatically from the app. The information will be used to help conservation of our native species.

More Info: <http://www.isoperla.co.uk/HerptileIdiPhone.html>

Mobile App: BirdTrack

This app works in conjunction with the main BirdTrack website. The app can be used to collect casual records and/or lists of birds which can then be uploaded to BirdTrack online. To connect with the BirdTrack database users MUST first have a BirdTrack account (free) - visit the website to register. Records can be collected offline, and then verified and uploaded later. Features included in the app include GPS integration, recent local species & hotspot viewers, and personal lists and targets.

More Info: <http://www.bto.org/volunteer-surveys/birdtrack/taking-part/birdtrack-apps>

Mobile App: Beefriendly

Beefriendly is a citizen science project aiming to help build an understanding of which plants are most attractive to insects. The project gathers data from your garden, from plants that are in full bloom, throughout the summer season (June to end September). Insects to be recorded include beetles, bees, wasps, butterflies, moths and flies. The app can be used to submit records, to create a graph of your results and to identify which plants are most popular or which type of insect certain plants attract.

More Info: <http://eu.earthwatch.org/scientific-research/special-initiatives/bee-friend-your-garden>

Mobile App: Big Butterfly Count

This app supports the Butterfly Conservation's 'Big Butterfly Count', which takes place during July and August. You can use the mobile app to identify and record the butterflies you see whilst taking part in the survey.

More Info: <http://www.bigbutterflycount.org/about>

Mobile App: iRecord Butterflies

The iRecord Butterflies app helps you to identify the butterflies that you see, but also uses your sightings to help save butterflies. Sightings will be stored within the "iRecord" website and passed onto the "Butterflies for the New Millennium" national recording scheme run by the charity Butterfly Conservation. The app includes a comprehensive ID guide and you can use the app to record single species sightings or to record all the butterflies you see during a walk/survey of a site.

More Info: <http://www.brc.ac.uk/article/irecord-butterflies-mobile-app>

Mobile App: iRecord Ladybirds

The iRecord Ladybirds app includes information and photos to help you identify ladybirds on the move. You can gather data, take photos and get a GPS location – this information can then be uploaded when you have a data connection available. It's never been easier to record ladybirds! Records from the mobile app will be stored on the iRecord website and contribute to the UK Ladybird Survey.

More Info: <http://www.ladybird-survey.org/recording.aspx>

Mobile App: OPAL Bugs Count

The OPAL Bugs Count app contains information on common groups of invertebrates found in the UK. You can use it to help work out the type of bug you are looking at and discover interesting facts and identification tips. You can also use the app to submit your sightings of the six 'Species Quest' bugs. This app is part of the main OPAL Bugs Count Survey.

More Info: <http://www.bugscount.org/bugs-app>



Mobile App: Mammal Tracker

The aim of the Mammal Tracker app is to collect data on the presence of mammals. Mammal Tracker will help you identify which mammal species (or mammal tracks/signs) you have seen with photos, descriptions, sounds and annotated images of those that are often easily confused, as well as making it easy to submit the record to the Mammal Society. You can also visit the Mammal Tracker website to see all submitted records.

More Info: http://www.mammal.org.uk/mammal_tracker

Mobile App: Leafwatch (Conker Tree Science)

Help to track the spread of the Miner Moth in the UK using the Leaf Watch App. Submit records for conker trees (Horse-chestnut trees) near you, showing damaged or undamaged trees in your area. You submit records by taking photos of the leaves and giving it a 'damage rating', confirming your location and recording what you see under the tree.

More Info: <http://leafwatch.naturelocator.org/>

Mobile App: OPAL Tree Health

The OPAL Tree Health App is part of the main OPAL Tree Health survey. The app is mainly focused on identifying pests and diseases on Oak, Ash and Horse-chestnut trees and it includes information and photographs to help you do this. It also includes the OPAL tree guide, which has pictures of 22 of the most common trees in Britain to help you identify tree species.

More Info: <http://www.bugscount.org/tree-health-app>

Mobile App: Plant Tracker (Invasives)

Help to combat the spread of invasive, non-native plant species across the UK using the PlantTracker app. Invasive non-native species are spreading across the UK, in some cases displacing native species and affecting the ecology of many vulnerable habitats. Using this app will help to build a comprehensive picture of the location of these invasive non-native plant species and contribute to tackling the problem. The app includes a list of species to look out for, photographs to help with identification along with background information about each species.

More Info: <http://planttracker.naturelocator.org/>

Mobile App: Aqua Invaders (Invasives)

AquaInvaders aims to collect data on freshwater invasive species within the UK. Some of the species featured in the app present a major threat to the biodiversity of the UK's aquatic habitats. Your sightings will help to build a better picture of what's happening in our rivers, lochs, canals and other water courses. The app includes a list of species to look out for, photographs to help with identification along with background information about each species.

More Info: <http://naturelocator.org/aquainvaders.html>

Mobile App: Sealife Tracker (Invasives)

The Sealife Tracker project aims to collect much needed data on both invasive and climate change indicator marine species around the UK coastline. Your sightings will help to build a better picture of what's happening in our oceans. You don't have to be a diver or snorkeller to take part, the app features many species that you're just as likely to find in rockpools and on the shoreline. The app includes a list of species to look out for, photographs to help with identification along with background information about each species.

More Info: <http://naturelocator.org/sealife.html>

Mobile App: iSpot (currently Android only)

With the iSpot app you can upload observations including photographs to the website. You can check names of species and look at iSpot keys to help you identify your species. You can also see other people's observations and receive comments or species identifications by online users. The iSpot app is an add-on to the main iSpot website.

More Info: <http://www.ispotnature.org/help-app-android>

Mobile App: Record Wildlife

The Record Wildlife app is like having a notebook on your phone. When you find a species you want to record, you can take a photo, write some notes and the app will automatically get the OS Grid Reference, date and time for you. The data is then saved on the app and you can email the information on to whoever you like (for your own records, your DofE leader or relevant county recorders). This is an ideal app for designing your own project/deciding what you want to record and a great tool for expedition trips.

More Info: <http://www.recordwildlife.co.uk/>

Mobile App: FieldtripGB

Fieldtrip GB is a mobile mapping and data collection app. It is a more technical app which could be used to design your own project and/or used to record field trips/expeditions. The app includes high quality maps which you can view both on and offline. You can capture simple data and export this data for use in other software. You can take photos and tag them with locations and you can also record your route using GPS. There is also a custom data form which allows you to design forms to your specific requirements – ideal for expedition trips.

More Info: <http://fieldtripgb.blogs.edina.ac.uk/>



Other Sources of Information

The projects and organisations listed in this guide will help you to choose citizen science projects that you would like to get involved in. Along with the organisations detailed, there is also a range of other ways to find out more about citizen science and get involved in existing local projects.

Biological Recording in Scotland (BRISC)

BRISC is a charitable organisation that encourages and supports biological recording in Scotland. They promote the gathering of data in order to increase public awareness of biodiversity and to contribute to the conservation of species and habitats throughout Scotland. They promote good practice in biological recording and support all national recording schemes in Scotland. The BRISC website includes information and resources to get involved in biological recording as well as links to national societies and recording schemes.

BRISC Website <http://www.brisec.org.uk/index.php>

Biological Records Centre (BRC)

BRC works with the voluntary recording community throughout Britain and Ireland and is the national custodian of data on the distribution of wildlife of the British Isles. The data is held on the National Biodiversity Network (NBN) Gateway and is searchable by members of the public. The BRC website also includes information on citizen science, including mobile apps that they have been involved in developing.

BRC Website <http://www.brc.ac.uk/>

National Biodiversity Network (NBN Gateway) <http://nbn.org.uk/>



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'Friends of' Groups

In a number of places voluntary 'Friends of' groups have been set up to help conserve, enhance and promote a particular area. These groups are usually run with support from local ranger services. Examples include 'Friends of Glen Nevis' and 'Friends of Plean Country Park'. You can ask your local ranger service about 'Friends of' groups or search for them on the internet.

Local Nature Reserves

Local nature reserves are usually managed by the Local Council's Ranger Service or by charities such as the Scottish Wildlife Trust, RSPB or Woodland Trust. If you are interested in getting involved in monitoring work or practical work on a specific site then contact the organisation responsible for managing the reserve for more information.

Local Records Centres

Record centres are the focal point for recording local wildlife and they regularly run training and surveys that local people can join in with. You can send local record centres your sightings and they will update national databases. Contact your local centre to find out about local surveys and training and to check what format your records need to be submitted in. The link below shows a map of the Local Records Centres in Scotland.

Local Records Centres Map

<http://www.brisce.org.uk/lrc/LRCs%20in%20Scotland%20January%202010.pdf>

Scotland's Environment Web (SEWeb)

This website is a central resource for all things to do with Scotland's environment. It brings together information on organisations involved in the protection and improvement of Scotland's environment. On the website you can find out more about the state of Scotland's environment, you can use the project finder for information on monitoring or practical projects to get involved in, or access the toolkit for freely available resources to use as part of your citizen science project.

SEWeb Website

<http://www.environment.scotland.gov.uk/>



amphibian and reptile
conservation



ARG UK
Amphibian
and Reptile
Groups of the
United Kingdom



Bat Conservation Trust



Plantlife





For more information contact:



The Conservation Volunteers Scotland
Balallan House
24 Allan Park
Stirling
FK8 2QG

<http://www.tcv.org.uk/scotland>

