Scotland's environment

Gateway to everything you need to know about Scotland's environment

Scotland's Environment Web

An innovative partnership between Scotland's leading organisations working to protect and improve the environment

www.environment.scotland.gov.uk

Layman report: August 2015

life

natural
scotland
SCOTTISH GOVERNMENT

Our partners

Contents

An introduction

Scotland's Environment Web is the product of an innovative partnership between some of Scotland's leading organisations that work to protect and improve the environment.

Formed in 2010, this unique partnership was further strengthened when it attracted funding from the European Union LIFE+ programme in 2011.

The website is much more than a rich source of information. Through collective expertise and best practice, the partners have worked with the Scottish Environment Protection Agency (SEPA) to develop innovative tools that brings Scotland's environment to life for visitors to the site.

The result … is a valuable source of information and data that informs, educates and helps people to understand their environment – assisting them to get involved in protecting it.

Foreword

Scotland's Environment Web is a powerfull tool, full of information about Scotland's environment.

Working towards becoming the one-stop gateway to everything that you need to understand and learn about Scotland's environment, **Scotland's Environment Web** also gives a valuable insight into those organisations that are at the forefront of protecting and improving our environment.

Here we share the objectives for **Scotland's Environment Web**, give you an insight into what you'll find on the site and look at what's planned next for Scotland's Environment Web.

The 2014 *State of the Environment Report for Scotland* affirms our belief that we must work to do what we can to protect and improve our environment, not just for this generation but for the generations who will follow us.

Why not take a few minutes to explore the website? You'll be captivated by the variety of projects, knowledge and facts – all in the one place.

We thank our partners for their continued support because without it, **Scotland's Environment Web** wouldn't exist.

David Pirie
Executive Director
Scottish Environment Protection Agency

Our objectives

Scotland's Environment Web has four main objectives.

Work in partnership with others, to create a data sharing website that is recognised as a credible source of information about Scotland's environment.

Adopt best practice to expand and share information about Scotland's environment with the rest of Scotland, UK and Europe.

To better understand the impact of changes to our environment so that we can influence policy, focus attention and resources on dealing with the most serious problems - and do what's needed to protect our environment.

To educate and inform people so that more take an interest and active role in discovering, protecting and understanding the environment around them.

A single source of credible information

Understanding the forces facing Scotland's environment isn't easy. While there's lots of information available, it can be confusing where to find it.

Scotland's Environment Web makes it easy for everyone – people with personal and professional interest, teachers, young people and environmental specialists.

It brings together everything that you want to know about Scotland's environment into one place.

With contributions from some of Scotland's leading organisations that look to protect and improve the environment, the website presents information in a way that makes it easy for people to find what they're looking for.
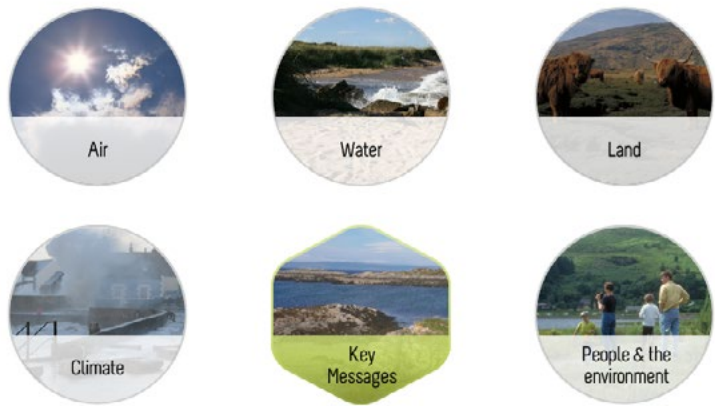
And those looking for more detail are taken to specialist sources of information on our partners websites or on daughter websites (Scotland's Soils, Scotland's Aquaculture and Atlas of Living Scotland), which form part of Scotland's interconnected family of online information sources. With the help of some innovative and dynamic online tools and infographics, information is clearly set out, making the website easy and fun to explore too.

The website is split into five main sections:

- Get Informed
- Get Interactive
- Get Communicating
- Get Involved
- Get Learning

Get Informed...

Here, you'll find *Scotland's state of the environment report* 2014.

Written by some of Scotland's leading environment and health agencies, the report gives a comprehensive and impartial assessment of Scotland's environment and how it is changing.

Infographics, and links to supporting data, help readers to analyse and quickly grasp the report's findings.

And with it published online, it's easy for readers leave comments and to ask questions.
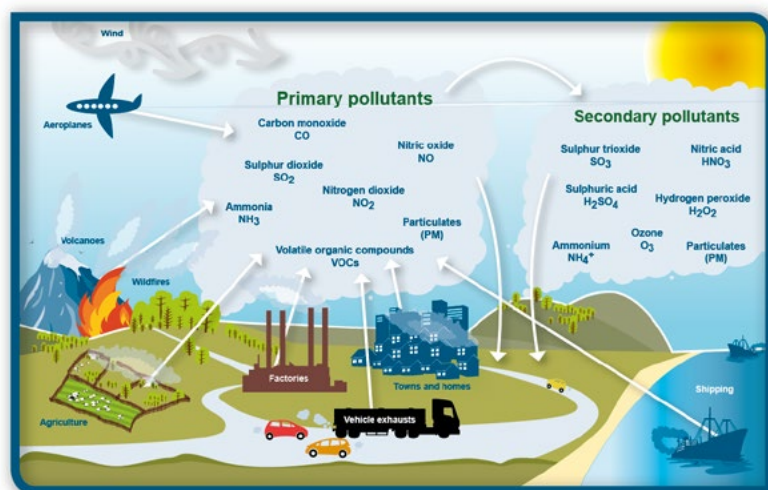
Air quality infographic

Get Interactive...

Map view
Search by postcode, National Grid Reference, Town or Feature in Scotland and view any combination of different environmental map layers. This data is published by a range of Scottish organisations and agencies.

Search the map   Read more

Land Information Search
Land Information Search are map-based tools that allow you to search for environmental features that fall within or close by an area of your choice. You can print off a list of the identified points of interest, including the contact details of organisations that can answer any queries.

Read more

Discover data
Are you interested in Data? Improve your understanding of Scotland's environment with new tools to view, analyse and interact with data from different sources.

Read more

Postcode search

Ever wondered what the environment is like in your local area?

Add in your postcode to take a look at a map of your area and find out more about air and water quality, or see if there are any sites of scientific interest or conservation areas nearby.

Try and find your own house with the aerial photography view from the Basemap Selector.

Get started by entering your postcode in the box!

Do you want to find out more about your local environment?

Enter your postcode

What is in my area?

One of the easiest ways to understand and interpret lots of complex scientific information is to see it depicted visually and be able to interact with it.

The Discover data pages offer a variety of interactive applications and maps to present a wide range of published complex scientific data in interactive graphs and charts.
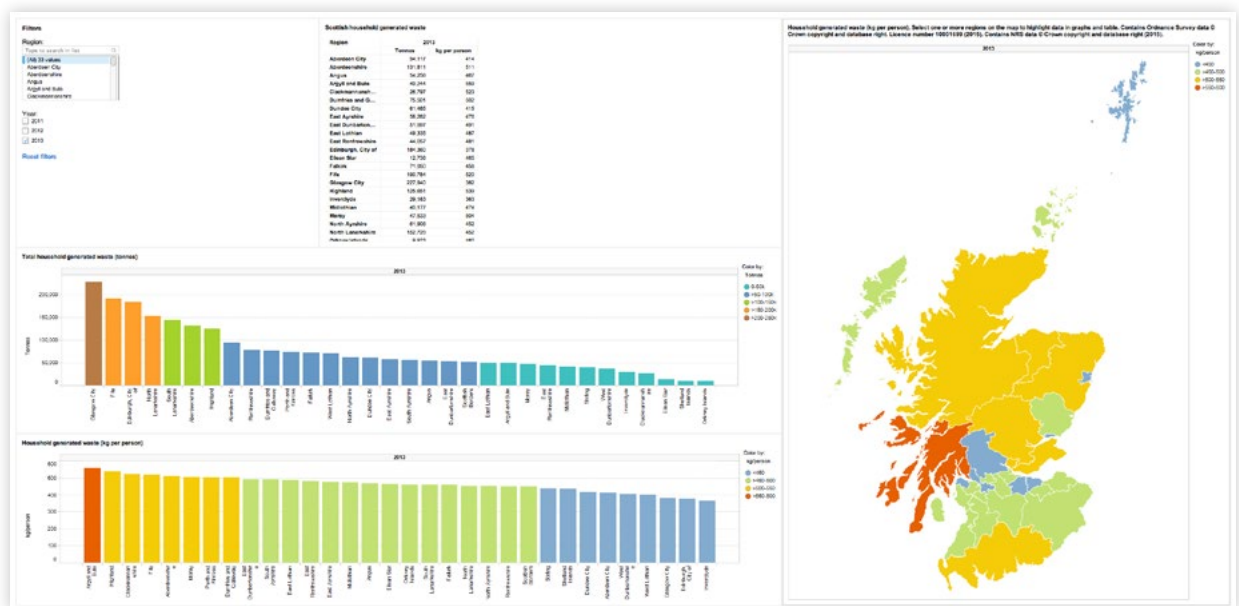
You can export the results of your search in a number of formats – as an image, csv file or PDF – which is ideal for reports and presentations.

With **Map view** you can look at summary maps for anywhere in Scotland showing data about air, water, land and features that influence our health and well-being, such as areas of greenspace and protected areas.

For the more advanced map view, you can search and view any combination of more than 200 spatial data sets. These are viewable on four different types of base map, including aerial photography. You can also use the Geolocator to view maps of the area you are in when out and about.
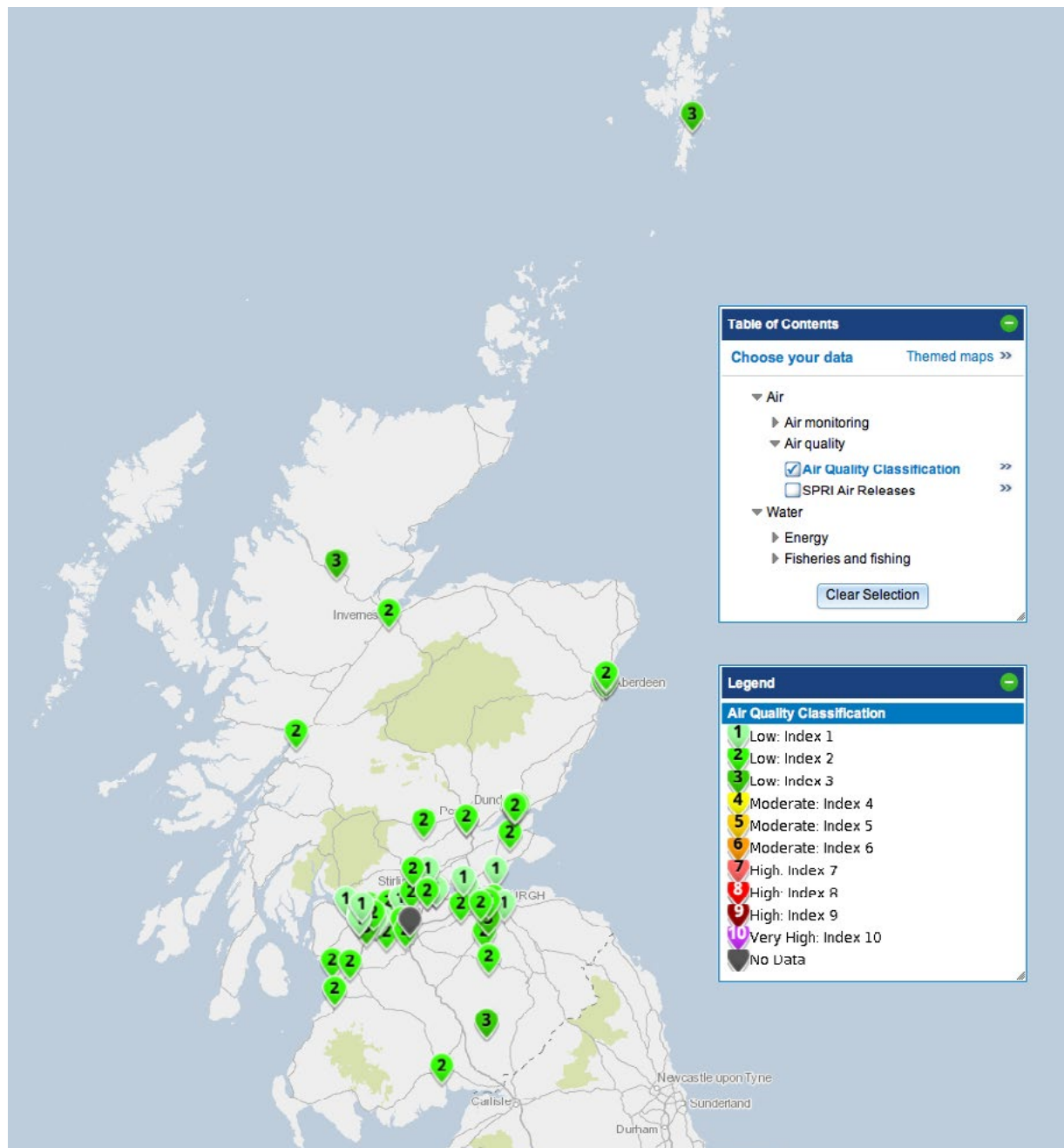
If you manage land, apply for grants or permits, or you simply want to find out more about a particular area, then **Land information search** tools are for you. Each tool allows you to mark out the area you are interested in and provides search results highlighting the presence of a range of environmental features that fall directly within your area of interest and within a buffer zone. The tools run a search of all the different published data sets from the **Scotland's Environment Web** partners, ensuring the use of the most up-to-date published information.

The new **What's in my area** feature allows users to view a dashboard of local scale information and data. For example, this might include information about outdoor spaces or historical buildings to visit; the state of their local environment showing information about features such as river quality; information on local path networks and clean beaches; and details of activities to get involved in, such as citizen science or voluntary projects.

Get Involved…

Project Finder

You can search here for information on monitoring or action projects near you that you might want to take part in, or, if you're looking for volunteers to help out with projects you are running, register with us. Either way it's quick and easy if you use our Project Finder.

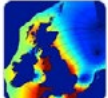Start project finder

Our Environment Competition

If you're a young person of school age, a teacher or youth group leader, show us how you would make our environment better, and be in with the chance of winning a great prize.

Our Environment competition 2016 is now open. Find out how you can submit your entry."

Find out more

Mobile apps

Select the image to find out more information about our latest apps & ways to download. Feel free to **get in touch** and let us know about any other useful mobile apps that you would like Scotland's Environment to share. You can view our full list on our **app page**.

Air Quality in Scotland   anyTide   Earth-Now

Previous   Next   Autoplay   Stop

Please note that Scotland's Environment Web is not responsible for the content of the external sites.

Young people

"I'm surprised by how much we are allowed to contribute... we're genuinely in control" Pupil

"I don't think this kind of collaborative work has been done before with young people" Staff

Young people are the future managers of Scotland's environment, so it's important for Scotland's Environment Web to ask how we can help, inspire and learn from them.

We did just that with a group of students from **Stirling High School** and used the valuable experience to help us plan a whole series of 'Get Learning' pages which will be launched on the website in the near future.

Find out more

The Big Discussion

We held in depth discussions with members of the public to explore how their priorities for Scotland's environment compared with the ones identified on our Get Informed pages.

Not only were we interested in what they had to say, but in testing different ways of helping people to take part in discussion and debate. This proved to be a fascinating process, from which we learnt a great deal that can be used in future discussions.

Find out more

The thinking behind the **Get Involved** set of pages is to motivate more people to get outdoors, record what they see and gather information that will tell us more about Scotland's environment.

Highlighted here, are some of the website's features that make it easy for people to get involved and interested in Scotland's environment.

One popular section is the mobile app catalogue.

People find apps easy to use and they are proving to be a popular way for people to keep in tune with their environment. At **Scotland's Environment Web** visitors can view and download any of the recommended free apps and work continues to develop and add more. Let the team know via Contact us if you've come across a great app about the environment so we can share it with others.

Launched in July 2014, **Project finder** can help people find out what's happening locally that may interest them. It matches volunteers with environmental projects and topics that interest them in their area and further afield across Scotland.

The number of organisations and projects registered continues to grow, with volunteering opportunities ranging from taking part in surveys of birds, bats, hedgehogs, glow-worms, butterflies and Scottish dragons – to cleaning up local beaches, walkways and parks.

It's easy to use; voluntary groups simply register their project. Their online profile explains who they are, where they are, what they do and how people can get involved. And it's all free.

Hogganfield   Image credit: TCV

There's also lots of guidance and support for anyone wanting to set up their own science project.

And, if you're of school age (or a teacher) and interested in sharing your ideas on how you would improve your environment, you can find out how to get involved in the Our Environment competition. The competition, which has successfully run for the past two years, challenges young people to investigate an environmental problem in their area and come up with a solution that reduces the problem and benefits the local community. This year's competition (2015-2016) was launched in August.

Get communicating...

Scotland's environment **news** pages are regularly updated and carry news from partners and local and national media. You can also find information on the latest updates to the website.

Social circles provides an update on the latest twitter posts from our partners and you can see your own Instagram photos of Scotland's Environment if you tag them with #ScotEnvironment. This means you'll always be up to speed on the latest updates from **Scotland's Environment Web** and its partners. You can also follow **Scotland's Environment Web** directly on twitter (@ScotEnvironment) and facebook (Scotland's Environment Web), and subscribe to the newsletter and RSS news feed to ensure you never miss out.

A little about our audience

Scotland's Environment Web attracts visitors with a mix of interests and backgrounds. Broadly speaking, visitors fall into three groups:

- people who collect and transform data for analysis, research and publishing;
- people who want to find out about the condition of their local environment to inform decision making;
- people who champion the website. This group share their expertise to bring new features to the site and help users to make the most of what the site offers.

This can include visitors to the site who are:

- members of the public interested in finding out about, and getting more involved in, Scotland's environment and how to protect it;
- community and third sector groups;
- students and teachers;
- those with a range of professional interests in the environment (e.g. industry, policy makers) looking for a broad overview of the multiple aspects of Scotland's environment.

For those looking for a more focussed view of specific environmental topics, three daughter websites – Scotland's Soils, Scotland's Aquaculture and Atlas of Living Scotland biodiversity portal – have joined the **Scotland's Environment Web** family.

Get Learning...

Transport choices make a significant difference to global carbon emissions. Motor vehicles are the biggest cumulative CO2 emitters in the world, and it is estimated that around one-fifth of the vehicles on the road at 8.50am are involved in school run. There are also health implications of our transport choices.

Firstly, a larger number of vehicles on the road could be seen to increase the level of danger to pedestrians and cyclists. Secondly, there have been some suggestions, albeit subject to debate, that vehicle pollution can contribute to illnesses such as asthma.

Finally, choosing to walk or ride a bicycle rather than travelling by car is good for our general health and fitness.

Early & First level
We can travel to school in different ways – car, bus, bicycle and on foot – the choices we make have an effect on the environment.
Find out more

Second level
We can travel to school in different ways – car, bus, bicycle and on foot – the choices we make have an effect on the environment.
Find out more

Third & Fourth level
Motor vehicles are the biggest cumulative CO2 emitters in the world, and it is estimated that around one-fifth of the vehicles on the road
Find out more

Senior level
Transport choices make a significant difference to global carbon emissions. There are also health implications of our transport choices.
Find out more

Useful links
Websites and links from other organisations about the environment.
View more useful links

Mobile apps
Get involved in Scotland's Environment using a range of mobile apps.
Find out more

Launched at the start of the new school session in 2015, the Get Learning pages help teachers and learners to find information, data and resources related to the environment in Scotland.

Maps, data, resources and useful links have been carefully matched with Curriculum for Excellence and the new National Qualifications. These have been sorted under headings that are linked to the Keep Scotland Beautiful Eco-Schools programme, which most schools in Scotland participate in.

The Get Learning pages also give young people the opportunity to share their own images and thoughts about the environment. Instagram posts using #GetLearningScot feed through to the site and scroll across the bottom of each page allowing young people to engage with their local environment, share ideas and ask questions.

Learners can also find links to citizen science projects and surveys on these pages, giving them the chance to get involved in collecting data about their own environment and taking steps to conserving and improving it.

Learning in the classroom

Citizen science

Taking a measured approach to Scotland's environmental problems

Part of the **Scotland's Environment Web** project was to identify the key issues facing Scotland's environment and to provide a clear summary of the state of the environment that could inform and educate the public.

The assessments of 'State' for the different environmental topics are designed to be the starting point for the public to explore *Scotland's state of the environment report* 2014 and give users (often with little knowledge of the environment), a quick summary of each aspect of the environment.

Assessments were carried out for the majority of the topics in the report. A small number of topics were excluded – either because it was inappropriate to assess them as there was no shared opinion of what a 'good state' would be, or because there were already trusted sources of information available to the public relating to that topic (for example, the Marine Atlas was felt to be a good source for marine waters).

An average of six specialists per topic were identified by the topic authors and the editorial group, drawn from across non-governmental organisations, **Scotland's Environment Web** partners, academics and main research providers.

This was the first time in Scotland that a multi-agency, collaborative approach has been taken to define environmental problems.

There were five components to the work on each topic:

- an expert judgment of the current state of the environment;
- an expert judgment of the trend in state;
- a brief narrative, expanding on the conclusions;
- the list of primary and secondary pressure(s) that resulted in the current state;
- a list of the datasets that contributed to the conclusions.

The state and trend assessments are embedded in the *Scotland's state of the environment report*, which was published in June 2014, and the **Indicators and data pages** have started to publish the datasets used to make these assessments.

State and trend

State: Good - high agreement, high evidence

Trend: Stable/improving - medium agreement, high evidence

There is an explanation of the diagram and further information on how we carried out the assessments on the summary pages.

- These assessments are of the current "average condition"; some lochs are in a worse condition, and others are in a better one. Equally, the condition of some lochs is worsening, while it is improving in others.
- Making any overall assessment of the condition of our lochs is a simplification.

↓ Read more

You can find out more about how the key environmental issues facing Scotland were identified and how state and trend assessments were made in the *Key environmental issues facing Scotland: final report*.

Measuring results makes a difference

Part of the LIFE bid was to assess the effectiveness of measures; the management group thought it was important to leave a legacy from the project, so the brief was widened to include developing a toolkit to help policy makers in selecting appropriate interventions.

The work had two main elements: assessing the economic effectiveness of measures to tackle waste crime in Scotland, and developing a tool to assess both effectiveness of measures (EoM) and help policy-makers in deciding on effective policy interventions.

The report, *An Economic Assessment of Waste Crime Enforcement in Scotland*, was published in November 2014 and recently discussed at an international conference in Edinburgh.

To assess EoM and decide on new policy interventions, a tool (multi-criteria decision making) was selected, following a rigorous literature review carried out by CREW link. This was trialled on the issue of waste crime. This was mostly carried out in SEPA but also reached out to academia, local government and professional representatives.

The multi-criteria decision making process and results of the trial have been encouraging. CREW will follow up the trial with further consultation with participants on the data and results. Discussions regarding multi-criteria decision making with SEPA have been very positive. Initial indications are that it may be used in the:

- SEPA Corporate plan;
- an exercise by SEPA to rank environmental priorities across Scotland (may be an iterative process);
- LIFE SMART Waste Project.

It is recognised that the effectiveness of all environmental measures in Scotland have not been assessed as originally proposed in the Scotland's Environment Web LIFE bid. This was in part due to the scale of the exercise and partly because of difficulties getting engagement with all parties needed to carry it out.

However, important progress has been made by carrying out a detailed evaluation of multi-criteria decision making, an innovative process that could be used widely to assess the effectiveness of environmental measures.

Multi-criteria decision making is novel in its approach to collecting and evaluating qualitative data and has the potential to be widely used by all partner organisations. Partner organisations have been encouraged to read the trial results and consider multi-criteria decision making where the gathering of qualitative information in a structured manner is important.

A leader in open source data

Scotland's Environment Web does not publish any of its own data. Instead, it harvests data from a range of different sources and organisations. Much of it is open data, which is:

- non personal and non-commercially sensitive;
- easily discoverable, accessible to anyone and able to be freely used, reused and redistributed by anyone;
- data made available, via the internet, is an electronic format which supports its ready reuse, and with an open licencing that allows its reuse.

(Scottish Government *Open Data Strategy*, February 2015)

Scotland's Environment Web has been cited in the [Scottish Government *Open Data Strategy*](#) as a best practice case example of providing access to open data.

Tools on **Scotland's Environment Web** give people access to detailed analysis about Scotland's environment in an interactive and easy to use format, making it easier to interpret and understand.

Some of the data you can find on **Scotland's Environment Web** is linked, which makes reporting to the European Union much easier and quicker.

The work achieved through Scotland's Environment Web supports the Scottish Government's policy for public sector organisations to make data and information more open for reuse and sharing, and supports the European Commission's ambitions for sharing public and spatial information (INSPIRE Directive).

Behind every great project is a great partnership

The achievements of **Scotland's Environment Web** would not have been possible without strong collaboration between key agencies and their contributions to the project.

Working in partnership has been at the very heart of **Scotland's Environment Web** since it started, drawing on expertise and shared resources to develop and grow Scotland's Environment website into an invaluable resource - helping people discover and understand more about Scotland's Environment.

SEPA manages **Scotland's Environment Web** on behalf of the many organisations who are actively involved in making this project a success. This includes the Scottish Government, Forestry Commission Scotland (FCS), Scottish Natural Heritage (SNH), James Hutton Institute, Marine Scotland, National Health Service Scotland, Health Protection Scotland, Education Scotland, The Conservation Volunteers, British Geological Survey, Keep Scotland Beautiful, and Historic Scotland.

As a result of the partners involved in the project, users of the website can be confident that they are viewing trusted and authoritative information and data.

Best practice case studies have been published on the partnership approach to developing the **Land information search** mapping tool for the agri-environment and forestry sectors (involving SEPA, SNH and FCS). The approach taken by **Scotland's Environment Web** is generally considered by much of the public sector as an exemplar in partnership working.

Our environment, in safe young hands

As the future custodians of the environment, young people are a primary audience for **Scotland's Environment Web**.

It was important for the project to actively engage with young people in how they thought **Scotland's Environment Web** could support them and their peers to enjoy, understand, protect and improve Scotland's environment.

Throughout the project, Scotland's young people were engaged through workshops to redesign the website, and competitions to get them thinking about local environment issues.

This involvement has not only been a benefit to the project, but also to the young people themselves, giving them a sense of responsibility and commitment and helping to foster a long-term connection to the environment. In particular, the young people involved with the workshops gained confidence and developed new skills in self-management, communication, teamwork and leadership.

This bond between young people and the environment is being further strengthened. Working with Education Scotland, the project team is putting the environment firmly on Scotland's schools' curriculum.
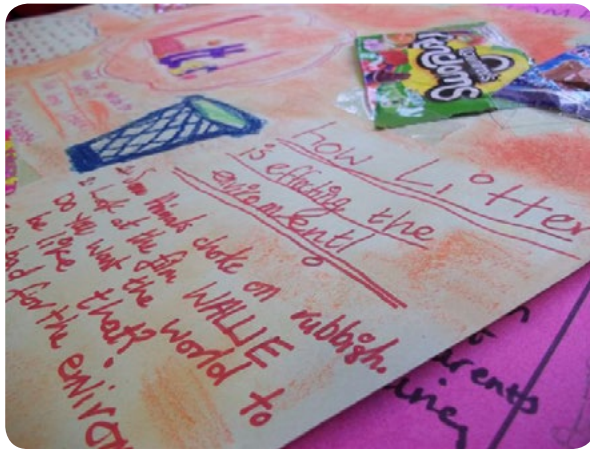
One of the entries for Our Environment competition

Scotland's environment competition award ceremony, 17 June 2014

The new Get Learning section, added in August 2015, provides a valuable resource. With links to maps, mobile apps and other data tools relating to the Scottish curriculum, students and teachers can enjoy exploring the pages and discovering new information and data.

But it's not just young people within the school environment that Scotland's Environment Web wanted to involve in the project.

Taking one of the key project objectives of making data more available on a wider scale, students from universities across the country were challenged to develop fresh new innovative ideas to make better use of the available data. A two-day hackathon event – EcoHack 2015 – held in May, provided a platform for a diverse range of environmental and tech savvy experts and students to exchange ideas, build prototypes, and shape the next generation of environmental data applications. The event demonstrated the innovative potential of open data and benefits of working with students from a range of specialist areas – environment, computing, and data analysis.

EcoHack 2015

What has Scotland's Environment Web changed?

The collaborative approach adopted by the **Scotland's Environment Web** project, has strengthened partnerships across Scotland's environmental sector. It has allowed the partners to learn from each other, and share knowledge, expertise and resources.

Put simply, it has revolutionised the way people access and work with environmental data. **Scotland's Environment Web** has attracted a new audience who are hungry to learn about their environment and are eager to make a difference.

- By working with teachers and visiting schools, Scotland's young people are more aware of their environment and are urged to think about how they can protect and improve it.
- People can now easily find out what's going on in their local area and they're supported to get involved.
- More people are recording and monitoring what's happening in their local area and reporting their findings. This gives a better overall picture of trends and alerts us to new and increasing risks.

Scotland's Environment Web project is a model for others to follow. It shows:

- how engaging with the public can change behaviour and practices;
- how online tools can make information and data more accessible and more widely used to inform decisions;
- the value of providing a centralised gateway to trusted sources of information in an increasingly cluttered landscape of web information;
- the benefits that come from agencies pooling resources and working together.

Scotland's Environment Web partners are keen to share what has been learnt from the project with others. All reports, research and methodologies that have been developed are freely available on the website.

A look at what's coming next...

Scotland's Environment Web is still in its infancy, yet it's clear that its possibilities are endless. As more features are added, and as the number of people visiting the site increases, it won't be long before this rich source of information is the go-to place for everyone – scientists, academics, journalists and the general public.

With ongoing funding from SEPA, and support from partners, **Scotland's Environment Web** will continue to improve and refine the website and content, so that people find what they're looking for – and discover new information – quickly and easily.

Planned developments over the next six months include:

- continue to update Get Informed with new infographics and factsheets;
- work with partners to develop the Atlas of living Scotland, a new daughter website that will provide information and data on Scotland's biodiversity;
- new features to be added to make it easier and quicker to extract and analyse data;
- improve the functionality of Map view to make it easier to search for data, and add new data sets to the Land information search as new open data becomes available;
- new data visualisation tools available through Discover data, including applications for nitrate vulnerable zones and greenspace mapping;
- extend citizen science, a campaign to urge more people to discover, understand and protect their local environment, into more schools with a particular focus on projects relating to soils;
- increase the resources available to learners and practitioners through Get Learning and launch a competition to encourage schools and centres of learning to engage with their local environment;
- ongoing work with partners to engage audiences and promote the tools available on **Scotland's Environment Web**;

Longer-term developments include:

- extending the interconnected family of daughter websites;
- grow the number of data visualisation tools and explore new ways of helping people connect with their environment through the provision of high quality online data;
- grow the number of openly published data sets and resources that users can find, discover and access via Scotland's environmental gateway;
- EcoHack#2 to encourage innovators and creative minds to explore new opportunities to make environmental data more available and accessible to a wider audience;
- carry out a full review of the State of Scotland's Environment report;
- ongoing enhancements and redesign of the website to ensure its accessible to all, including for those using mobile devices;
- establish **Scotland's Environment Web** as the shared digital data hub for the environment – helping partners meet their own open data and digital strategy objectives;
- enable schools to share best practice through Get Learning.

But this is just the beginning…

Through innovation, demonstration, shared learning and collaborative working, **Scotland's Environment Web** will continue towards the goal of creating a web of data providers, data users, environmental scientists and observers, and environmental stewards, that share knowledge and data to benefit the environment, society and the economy.

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Find out more about **Scotland's Environment Web** at www.environment.scotland.gov.uk
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