

ENVIRONMENT LEADING-EDGE APPROACH

Putting Scotland at the forefront of sharing information, prioritising problems and involving citizens

By Hazel McFarlane

In this digital age, Scotland's Environment Web (SEWeb) is leading the way in developing digital technologies which will help the public to find out more about Scotland's environment.

People expect more from information provision than simply reproducing books and publications on screen. They want interest and interactivity – to be able to visualise information spatially and in other ways to find out what is important. This is truer than ever when it comes to Scotland's environment, and the scientific data and information which is collected, researched, analysed and used.

SEWeb's innovative approach, providing access to data and information in a digital format, brings together information on Scotland's environment so that it is easily available and in a useable form. Jointly funded by the European Union's LIFE+ programme and the Scottish Environment Protection Agency (SEPA) and with input and support from a number of partner organisations across Scotland, the SEWeb project is committed to developing a modern and dynamic approach to presenting information.

It aims to move away from static reports, to a website where unprecedented access to the most up-to-date environmental information is available. The leading-edge approach that SEWeb is undertaking will be of benefit to a range of audiences, including policymakers, the education sector, young people and the wider public.

David Pirie, Director of Science and Strategy at SEPA, says: "The environment is all interconnected. What happens in one area has a consequence for another and therefore the science and research we do needs to be multidisciplinary and joined up. We needed a way for partners to interact and bring data together and then to make that data accessible and communicate it. SEWeb achieves all of that."

Ed Mackey, Unit Manager for Knowledge and Information Management at SEWeb partner, Scottish Natural Heritage (SNH), agrees and says the partnership aspect of SEWeb is fundamental: "More

than ever before we need to work together to use our expertise, knowledge and other resources to best effect. SEWeb adds value through a shared understanding of environmental opportunities and constraints founded on common access to a comprehensive and trusted evidence base."

Developing technology to aid the collection, analysis and interpretation of environmental data is at the forefront of SEWeb. The web is a more dynamic place than a few years ago. By providing information in a vibrant, interactive way the information becomes more engaging and more likely to change behaviour as a result. There are a number of tools which SEWeb and its partners are developing in their mission to make environmental data more accessible. These include 'Spotfire' and a new interactive map search tool. It is a visual data analysis tool which can read data from any source, and multiple sources, all at once. It is web based and can be used without the need to download additional tools. It will allow users to

interactively interrogate data using various forms of presentation including maps, tables and graphs. All data can be exported for use in reports and presentations.

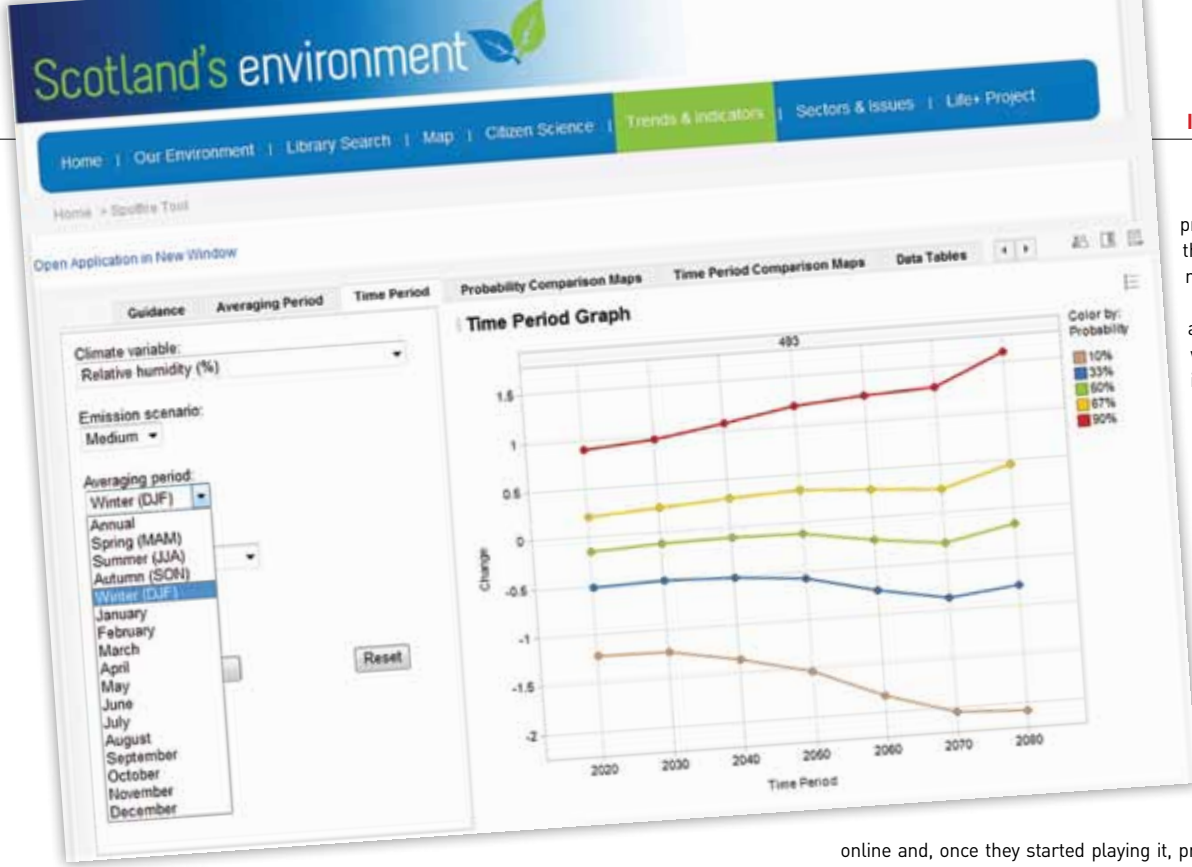
Through 'Spotfire', SEWeb provides users with a platform which will allow them to analyse and view multiple levels of data on the environment, allowing them to filter the information to their area or level of interest. Each application will vary in its complexity and therefore the audiences it is most suitable for. The first to be released will be a water quality application which is designed for users with varying levels of knowledge, from members of the general public, to the education sector, local authorities, planners and professionals. The second application on climate change projections, however, will use complex data which will be aimed towards industry professionals.

Similarly, a new interactive map search tool called the Land Information Search (LIS) will be hosted on SEWeb. This tool will give information about any land designations or features in any chosen area, for example, special protection areas or woodland grant schemes. The LIS will be an updated version of the current tool which was created by the Forestry Commission and its development will be led by SNH.

Ed Mackey from SNH says: "LIS recognises that information is a dynamic property and that the constituency of interests in it is diverse. By creating a 'level playing field' of readily accessible environmental information it saves time and money, for example, in development planning or environmental assessment." He adds: "It makes efficient use of information, for differing and interrelated purposes, in ways that will benefit the operation of government, business, education and research, and the interested citizen." The application can be used to identify any designations or sensitivities which may affect a potential project.

So how does this advanced approach benefit its key audiences? For the education sector, SEWeb is a useful tool in aiding teaching and research methods for environmental subjects. John Isaacs, lecturer at Abertay University, has been involved in the project and can see the benefits from an educational perspective. "Using this type of technology will allow teachers and students to find the information they are looking for much more easily.

"Teachers will be able to find appropriate course material without having to trawl through in-depth reports and similarly students will be able to find the information they require for reports and assignments which is relevant and unbiased." This highlights one of the key benefits of the way the information is



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online and, once they started playing it, protecting the environment for fun, they'd have that same stuff in their head for real too. I'm really proud of what we've done, I never thought we'd get the chance to actually make the prototypes for real, so that's been fantastic." SEWeb intends to launch some of these prototypes in 2014.

Helping the public to better understand, protect and improve Scotland's environment is key to SEWeb. As well as 'Spotfire' and the LIS, SEWeb is also developing tools and resources to help people measure and monitor their own environment. Citizen science, or public monitoring, is about public involvement in data collection and analysis. The significant increase in personal access to smart phones and tablet computers extends the scope and uptake of citizen science data gathering.

SEWeb will promote public monitoring in Scotland and encourage members of the public and the education sector to get involved in this type of data gathering. It will provide a toolkit of resources for new and developing projects, a searchable register of opportunities, and demonstrate how the data which is collected can be used to develop an understanding of the environment. A newly developed public engagement section will be launched on SEWeb in summer 2013.

SEWeb provides an authoritative and up to date account of the state of Scotland's environment. It will continue to broaden the range of data, the way it is presented and increase accessibility.

The web is becoming more graphics based, more intuitive and is increasingly being built around applications that allow people to draw on raw data and display it in the way they find most beneficial and this recent trend is likely to continue.

SEWeb will put Scotland at the European forefront of sharing environmental information, prioritising problems and involving citizens in assessing and improving their own environment, with a number of exciting developments and changes coming to the website over the coming year. "I think it's a fantastic public resource," says David Pirie. "It's a tremendous opportunity to make a real difference to the environment. It's an opportunity to allow us to engage with people, get the knowledge and understanding out of all our raw data and find out about the issues that matter the most."

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presented on SEWeb; it is neutral so that the user can fully interpret the meaning for themselves.

Young people have been identified as being the most receptive to web-based information and an important audience. The project has been working with pupils from Stirling High School to gain insight and ideas as to how the website could help and support young people to get more involved in Scotland's environment. The young people went on to produce prototype resources including a game, mobile phone app, youth pages on the website and social networking.

Gregor MacMillan, one of the students who took part, says: "We decided that a game would be the best way to get other young people interested because we all play games