Scotland's Environment Web

Designing Tools to Access and Analyse Environmental Data

Sharing Good Practice
Battleby, Perth

Jo Muse
8th March 2013
www.environment.scotland.gov.uk
Scotland’s Environment Web

‘The gateway to everything you want to know about Scotland’s environment’

3.5 year programme launched November 2011

Supported by EU LIFE Funding

Move to more dynamic approach to accessing and presenting information and data from multiple sources, in one place

Move away from static, published reports to providing access to the most up-to-date environmental information and data published

A “Trusted” source of data and information on Scotland’s Environment

Exemplar project – share learning and knowledge exchange
SEWeb (LIFE) Partners – collaborative working

- Scottish Government (SG)
- Scottish Environment Protection Agency (SEPA)
- Scottish Natural Heritage (SNH)
- Historic Scotland (HS)
- Forestry Commission Scotland (FCS)
- James Hutton Institute (JHI)
- Marine Scotland (MS)
- Scottish Environment LINK
- RAFTS
- NHS Scotland
- COSLA
- Food Standards Agency Scotland (FSAS)
- Keep Scotland Beautiful
- EEA
- Scottish Sustainable Network
- Local Authorities
- Health Protection Scotland
- British Geological Survey
- British Trust for Conservation Volunteers
- Education Scotland
- Universities and academics
- Met Office
- Adaptation Scotland
- SNIFTER
- Zero Waste Scotland
- Climate X Change
- CREW
- NBN

............... and others
SEWeb – Online Tools to Access Env Data

- Single view of Scotland’s environment
- Tools to speed up access to data from different sources and support interpretation.
- Better use of spatial information to help improve understanding of local environment
- Streamline data reporting to Europe and facilitate linked data
- Access to high quality on-line interactive resources to promote better understanding of the environment, public debate on environmental priorities, public monitoring of the environment and public activity to protect and improve the environment.
- Work with the primary and secondary education systems to increase understanding of the environment, and provide access to environmental data for school, college and university students, teachers and lecturers.
- Expose more academic data to non-academics
- Innovate and demonstrate
- Show Case Best Practice
Welcome to Scotland's Environment Web

Scotland's Environment Web (SEWeb) brings together information on Scotland's environment. Nowhere else can environmental data, information and reports, from known and trusted sources, be looked at in one place.

Written in the 'Our environment' section of the website, a report on the state of Scotland's environment is provided, written by the organisations who are working to protect, understand and improve the environment. The report summarises the condition of the environment, why it's like that, why you should care, and what is being done to improve it. If you want to know more about the environment in your local area, search the Maps or use the 'What's in My Backyard' postcode search, to access a wide range of environmental data collated and published by Scottish organisations and agencies. The SEWeb Library can help you find further information and guidance relating to Scotland's environment from the websites of our Partners. If you are interested in collecting data and observations on your local environment, the Citizen Science section provides further information on how you can get involved.

The web site is supported by funding from the European Union LIFE+ programme and is part of the Scottish Government's 'Natural Scotland' campaign.

Summary

Our environment is vital to our success and well-being as a nation and is generally in good condition. We must work together to protect it.

The environment is always changing and this website will be regularly updated to reflect this, so that this website provides in one place the most current assessment of the state of Scotland's environment.

Read more

Quick Links

SNH Species Action Plan Single Outcome Agreement Profiles - 5th March 2013
2012 Rural Scotland in Focus- SRUC 2012
Challeraig Desk of Ash- Forestry Commission Scotland
Scotland's Greenspace Map- A World First
Scottish Marine Atlas - Information for the National Marine Plan
Index of Multiple Deprivation - Identify Areas of Multiple Deprivation
Environment Audit Report- Historic Scotland
December 2012 National Marine Plan- Marine Scotland
Scotland’s Marine Atlas: Information for the National Marine Plan - Chapter 6

Climate Change
The most up-to-date assessment of the implications of climate change for Scotland’s seas is provided by the Marine Climate Change Impacts Partnership (MCCIP), which produces a Report Card at regular intervals based on evidence from the leading scientists in the field. The impacts of climate change are potentially very far reaching on both commercial and non-commercial species. Likewise the additional stresses imposed by climate change on already heavily exploited fish stocks could be significant, but at the same time it may create opportunities to exploit new stocks such as seabass and John Dory...

Organisation: Marine Scotland
FileType: PDF

Natural Heritage Trends of Scotland: phenological indicators of climate change. Report No. 167
The Intergovernmental Panel on Climate Change has recognised that much of the evidence for climate change impacts comes from phenological studies... Finally, climate change will affect the ecological status of lakes and thus potentially their compliance with the EU Water Framework Directive...

Organisation: SNH
FileType: PDF

Climate change
SEPA recognises that climate change is the greatest threat to the future of the planet’s ecosystems, with significant socio-economic consequences for humankind... SEPA’s five year climate change sets out SEPA’s role in climate change and actions for the next five years to further integrate climate change across the organisation... SEPA’s Climate Change Plan was subject to a Strategic Environmental Assessment (SEA) as part of its preparation... In Scotland, climate change is evident from observed changes in temperature, rainfall and snow cover...

Organisation: SEPA
FileType: HTML
SEWeb Data Access Tools - Future

Interactive Map Search Tool

- More interaction with the data
- Personalise the area of search
- Identify data and sources of expertise specific to the area of interest
- Upgrading the FCS Land Information Search Tool (forestry grants and licence applications), based on SNH Geoview Technology
- Collaborative project – FCS, SNH, ScGovt, BGS, SEPA
- Partnership forum for developing common standards and templates for future environmental mapping applications in Scotland
- Move on from Web Map Services (view spatial data) to Web Feature Services (more interactive, download data behind the maps)
A total of 32 currently available data layers have been searched.
The following land designations/areas of interest are located, partially or fully inside the drawn area and as a result should be considered in any application for a grant or felling licence:

1. Conservancy Boundaries
   • NAME: Highland and Islands

2. Forest District Boundaries
   • DISTRICT: Inverness, Ross & Shie

3. Felling Licence Applications pre 2011
   • PROP_NAME: Killen Woodland

4. Felling Licence Applications pre 2011
   • PROP_NAME: Burnside Wood, Killen

5. WFD.Water
   • WATER_BODY_NAME: Killen Burn

6. WFD.Groundwater
   • WATER_BODY_NAME: Black Isle bedrock and localized sand and gravel aquifers

The following land designations/areas of interest are outside the drawn area but are within close proximity and may still affect your application:

7. Felling Licence Applications pre 2011
   • PROP_NAME: Rosehaugh Estate

8. Woodland Grant Scheme
   • PROPNAME: Rosehaugh II
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   - PROP_NAME: Burnside Wood, Killin

5. WFD Rivers
   - WATER_BODY_NAME: Killin Burn

6. WFD Groundwater
   - WATER_BODY_NAME: Black Isle bedrock and localised sand and gravel aquifers

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   - PROP_NAME: Rosehaugh Estate

8. Woodland Grant Scheme 3
   - PROP_NAME: Rosehaugh II

Printable Copy of Results
## Trends and Indicators

### About Trends and Indicators


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### Air quality

Despite improvements in air quality, it continues to have an impact on the environment and human health, and further improvements need to be made.

### Climate change

The climate has changed and is continuing to change. Positive action now will help ensure the well-being of the country in the future.

### Noise, light and odour

Nuisance impacts on people’s enjoyment of their environment. Resolving nuisances requires balancing the needs of different groups.

### Soils

Scotland’s soils are diverse and rich in carbon; they are vital for Scotland’s health, prosperity and environment.

### Rocks and Landforms

Scotland’s rocks and landforms provide economic, social and environmental benefits, and help us to understand our dynamic Earth.

### Land use and management

Scotland’s land is primarily rural and is used for a range of agricultural, forestry, sporting and recreational activities.
## Air Quality Datasets

### Summary Metadata

<table>
<thead>
<tr>
<th>Dataset Description</th>
<th>Scotland Government</th>
<th>National Statistics</th>
<th>Select datasets for analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen dioxide concentrations: 1987-2011</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground level ozone concentrations: 1986-2011</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Particulate matter (PM10) concentrations: 1992-2011</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Pollutants by Gas (ktonnes): 1990 - 2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atmospheric lead concentrations: 1980-2009</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon monoxide (CO) concentrations: 1990-2011</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SEWeb Data Access Tools - Future

Spotfire
- Data analysis and visualisation tool which allows rapid development of analyses
- Can read from multiple data sources into one analysis
  - Excel, csv, databases (Oracle, SQL etc), XML, web services
  - Can relate, transform, manipulate and calculate new data from existing
  - Maintains live links to data, or can embed i.e. snapshot data
- Highly interactive analyses produced
- Immediately available as a fully interactive web version
  - No need for IT resource or skills
  - Allows rapid deployment to users (days not months)
  - No need for specialised software
Scotland's environment

SEWeb Tools Under Development

Spotfire

Open Application in New Window

Guidance  Current Water Classification  Historical Water Classification

Water Body Category:
All

Local Authority:
Type to search in list
(A8) 32 values
Aberdeen City
Aberdeenshire
Angus
Argyll and Bute

Postcode District:
Type to search in list
(A8) 440 values
AB10
AB11
AB12
AB13

Water Body Name:
Type to search in list
(A8) 3154 values
A Gillibe - Kinlochle
Abahinn Chl-aig
Abbey Burn
Aberchadder Burn / All...

Reset Filters

Classification Map

© 2012 Scottish Environment Protection Agency. Some features of this map are based on digital spatial data licensed from the Centre for Ecology and Hydrology. © CEH. Includes material based upon Ordnance Survey mapping with permission of

Classification Summary

Number of water bodies at each classification.

Change Summary

Number of water bodies changing classification from previous year.

Current Classification Table

To download the data in this table, right-click anywhere on the table and select 'Export Table'

PDF Data Sheet

Select water body(s) from any chart, table or map to view hyperlinks to their Water...
### Current Classification Table

To download the data in this table, right-click anywhere on the table and select ‘Export Table’.

<table>
<thead>
<tr>
<th>Water Body</th>
<th>Classification</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>10321 - River Creran</td>
<td>High</td>
<td>Improved</td>
</tr>
<tr>
<td>100229 - Loch Frisa</td>
<td>Good</td>
<td>Improved</td>
</tr>
<tr>
<td>100246 - Loch Nell</td>
<td>Moderate</td>
<td>Improved</td>
</tr>
<tr>
<td>100252 - Loch Fad</td>
<td>Moderate</td>
<td>Improved</td>
</tr>
<tr>
<td>100303 - Loch Garzdale</td>
<td>High</td>
<td>Improved</td>
</tr>
<tr>
<td>200028 - Firth of Clyde Inner - Cumbraes</td>
<td>Good</td>
<td>Improved</td>
</tr>
<tr>
<td>4711 - Glannyle Water</td>
<td>Good</td>
<td>No Change</td>
</tr>
</tbody>
</table>
### Classification Map

© 2012 Scottish Environment Protection Agency. Some features of this map are based on digital spatial data licensed from the Centre for Ecology and Hydrology. CEH includes material based upon Ordnance Survey mapping with permission of

#### Classification Summary

Number of water bodies at each classification.

<table>
<thead>
<tr>
<th>Year</th>
<th>Good</th>
<th>Moderate</th>
<th>Poor</th>
<th>Bad</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>2009</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>2010</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>2011</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Change Summary

Number of water bodies changing classification from previous year.

<table>
<thead>
<tr>
<th>Year</th>
<th>Improved</th>
<th>No Change</th>
<th>Degraded</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>2</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>2010</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2011</td>
<td>6</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

### Overall Classification Table

To download the data in this table, right-click anywhere on the table and select 'Export Table'.

<table>
<thead>
<tr>
<th>Water Body</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>16075 - Auchter Water</td>
<td>Poor</td>
<td>Poor</td>
<td>Poor</td>
<td>Poor</td>
</tr>
<tr>
<td>16079 - Jock's Burn</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Poor</td>
<td>Poor</td>
</tr>
<tr>
<td>16080 - Nathan Water</td>
<td>Poor</td>
<td>Poor</td>
<td>Poor</td>
<td>Poor</td>
</tr>
<tr>
<td>16083 - Fiddler Burn/Mashock Burn</td>
<td>Good</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Good</td>
</tr>
<tr>
<td>16091 - Netherton Burn</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>16736 - Garrion Burn</td>
<td>Poor</td>
<td>Poor</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>10919 - River Clyde (Mouse Water to Strathclyde Loch outflow)</td>
<td>Moderate</td>
<td>Bad</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
</tbody>
</table>
Online Tools to Access Environmental Data
Opportunity AND Challenge

• Supports the emerging Open Data Agenda and Public Services Digital Strategy
• INSPIRE Directive compliant
• Increased transparency and consistency
• Much quicker to access and reporting, easier to interpret and understand, and communicate complex data.
• Supports informed decision making, raised awareness, and ultimately influence positive behaviour change

BUT
• Dependent on data being made available by data owner in right format
• Lots of different data owners
• Different scales of available data
• Data collected in different ways, in different formats
• Lack of nationally approved web service standards and mapping standards
• SEWeb leading the way and setting the standards in some areas
For further information – contact:

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Mobile : 07769 936510
Email : joanna.muse@sepa.org.uk

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