The Scottish Soil Framework: Implementing soil protection policy at regional scale (and an insight into the Scottish Land Use Strategy)

Willie Towers (with help from many colleagues)







### **The Scottish Soils Framework - background**

- Recognition that soil does not have a coherent policy or legislative framework
- Reflects the multi-functional role of soils
  - A number of existing policies address particular functions of soil e.g. planning, waste management, agriculture
  - Crosses a number of policy areas
  - Leads to a fragmented approach
- Air and water are widely accepted as public goods; soils and land are usually in private ownership
- The Soils Framework was first issued in draft form in June
   2008 for public consultation



## Scotland's Soil Resource (2006)



- Report commissioned by the Scottish Government
- The title says it all!
- Provided the evidence base (and the lack of it in some circumstances) that underpinned the need for a Soil Framework
- Coincided with the publication of the proposed EU Soil Directive (currently mothballed)



### **The Scottish Soils Framework -Consultation**

- Recognition that the policy framework is confusing and fragmented
- Acknowledges formally for the first time by Government the value of soils to Scotland
- Sets out the vision for soil protection in Scotland
- It does <u>not</u> identify or propose new policies, rather it provides the framework for better co-ordination of existing ones
- Also includes commitments to increased information availability, awareness raising and increased dialogue with stakeholders









- 1. providing the basis for food, wood and biomass production
- 2. providing raw materials
- 3. providing a platform for buildings and roads
- 4. controlling and regulating environmental interactions: regulating water flow and quality
- 5. storing carbon and maintaining the balance of gases in the air
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### **The Scottish Soils Framework - Consultation**

- 41 (largely) responses from a wide range of interested parties; this was more than expected
- Excellent overall support for the need for and coordinating principles within the Framework
- Positive soil management a key factor running through the responses; enabling rather than restricting
- More detail required on roles, responsibilities, delivery mechanisms, targets and timescales



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Myself and a colleague, Philippa Booth, were seconded to the Scottish Government as technical advisors to analyse the feedback and help redraft the final document



## **The Scottish Soils Framework**

The James Hutton

- Framework published May 2009
- Aim: Promote the sustainable management and protection of soils consistent with the economic, social and environmental needs of Scotland
- Vision: Soils are recognised as a vital part of our economy, environment and heritage, to be safeguarded for existing and future generations in Scotland
- Outcomes and Actions key components of the Framework

























# The Scottish Soils Framework – examples of soil outcomes

- SO1 Soil organic matter stock protected and enhanced where appropriate
- SO4 Greenhouse gas emission from soils reduced
- SO7 Water quality enhanced through improved soil management
- SO12 Knowledge and understanding of soils enhanced, evidence base for policy review and development strengthened.



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Activities are relatively easily to monitor, the outcomes of these activities can be less easy......



## The Scottish Soil Framework: Actions

- The key part of the Framework
  - Ensures things get done
- Identifies c. 39 actions across 11 themes, for example
  - Research, information and soil monitoring
  - Conservation and biodiversity
  - Land Use and management (includes woodland) ......
- Each action is linked to a soil outcome, with a 'delivery' date and an 'owner(s)' who is responsible for delivery
- Key aspect is that the Actions appear in the same document and all 'owners' are aware of other's Actions
  - Designed to reduce duplication and/or incompatibilities.
- Co-ordinated and supported by the Scottish Government Soil Focus Group



ACTION	DETAIL	DELIVERY DATE	RELATED SOIL OUTCOMES	OWNER
Water Quality and Flooding	)			The James
Consider role of soils in flood risk management	nsider role of soils flood risk nagement sustainable flood risk Management introduced sustainable flood risk management.		<u>Primary</u> : Outcome 6 <u>Secondary:</u> Outcomes 1,2,3,4&7	Hutton SG Flooding Policy Team; SEPA and responsible authorities



ACTION	DETAIL	DELIVERY DATE	RELATED SOIL OUTCOMES	OWNER
State of Scotland's Soil report 2011	The Scottish Government will support SEPA in publishing a State of Scotland's Soils report in partnership with external organisations in 2011.	2011	<u>Primary</u> : Outcome 12	SEPA, SNH, SG Soils Team in conjunction with Soil Focus Group, Main Research Providers



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Conference on the outcomes of existing research programme	The Scottish Government will host a conference to publicise the outcomes of the programme of research 'Protecting the Nation's Soils'	By 2012	<u>Primary</u> : Outcome 12 <u>Secondary</u> : All other outcomes	Main Research Providers, SG Soils Team, SG RERAD



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Information availability	Web delivery of soil information will be available from the National Soils database at the Macaulay Institute allowing stakeholders the ability to compare their soils data with National data.	Piloted during 2009 Final delivery 2011	<u>Primary</u> : Outcome 12 <u>Secondary:</u> All other Outcomes	Main Research Providers, SG Soils Team, SG RERAD



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Scottish soil monitoring network	The Scottish Government will help to develop a soil monitoring network, taking account of recommendations on suitable tools, methods, & procedures for soil monitoring in Scotland from Scottish Government funded research as well as findings of the UK Soil Indicators Consortium.	By 2011	<u>Primary</u> : Outcomes 1-8, 10, 12	SG Soils Team in conjunction with Soil Focus Group, SG RERAD Main Research Providers, SEPA



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Review Land Capability for Agriculture Assessment	The Scottish Government will review the Land Capability for Agriculture (LCA) Assessment in the light of implications of climate change and produce an updated and fully digital LCA assessment.	Ongoing	<u>Primary</u> : Outcome 8 and 10 <u>Secondary:</u> Outcomes 1 to 7	SG RERAD, Macaulay Institute

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Identify soil management practices that optimise soil carbon sequestration	Produce guidance for the sustainable use of soils and protection of soil carbon including an assessment of the realistic potential for Scottish soils to sequester carbon and to contribute to the SG 80% GHG emissions reduction target.	Ongoing	<u>Primary</u> : Outcomes 1,4 & 12 <u>Secondary:</u> Outcomes 2,3,5,6,7&8	SG Soils Team in conjunction with Soil Focus Group and main research providers



 On the whole, yes. See: <u>http://www.soils-</u> <u>scotland.gov.uk/documents</u> <u>/115131209 Scottish Soil</u> <u>Framework (SSF) Progress</u>

Report.pdf





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Action 14 Review Land
 Capability for Agriculture
 Assessment

## SSF Actions: have they been successful?



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- Action 14 Review Land Capability for Agriculture Assessment
- Potential increased capability in Scotland; implications for planning ?



## **Action 9 – information availability**





## **Action 9 – information availability**



## Action 9 – information availability





## Action 9 \_\_ information availability



### Scotland's soils

Scotland's environment



Harme | Soli Maps and Data | Solis in Scotland | State of Scotland's Solis | Library | Help | News | The website

#### ect Suit May Unit for Alvertion City



For the soil the following number of observations have been made for the selected attribute. Ap. 27 Es: 18 BCx.17 C 22 in the plot there is a toor and whisker for each sell hortzon. The median value of the chosen soit athibute is marked by the red dot. The box shows the median plus/minus one standard deviation and the whistens. show the maximum and minimum observed values. In cases of fewer than 6 sancies the resources minimum and reasonum values are shown as a tair. If there is a single observation then a red dot will be shown in the graph.

#### Welcome to the Scotland's Soils website

Scotland's selfs are a great natural resource and provide many essential services to society, so it is important that they are sustainably managed and protected for future generations. This website arms to make authoritative, scientificably robust soils information and data more accessible, both to help decisionmakers and to increase public understanding of soils. It is the result of a two-year project taxies by the Scottant Covernment in partnership with SEPA, SNH and Forestry Commission Scotland.

As well as presenting key tacts on Scotland's soils, they functions and the pressures they face, the verballe includes interactive maps and datasets which you can download for use in your own spread sheets or analysis software – these are free of charge for noncommercial users.

#### Latest News

Physical

Laurich of the Scattanda Sola vetrate (Added 6th Dec 2013) Scattal Sola Vices, (Added 7th Nov 2013) International Year of Stats (Added 6th Nov 2013)

#### **Quick Links**

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### Scottish Soil Survey

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This website is hosted and maintained by <u>Bicardo AEA</u> on behalf of the <u>Bicaldoh Government</u> in partnership with <u>James Hulton institute</u> @ 2013 (<u>Cooptes</u> Pretty

## Getting the information out there.....



## SOCiT (Soil Organic Carbon information Technology)

- Interested in your soil carbon content?
- Obtain a colour correction card
- Dig a small pit to expose soil
- Take a digital photograph
- Send it to the James Hutton Institute using the app
- Soil colour and site character used to drive a predictive model
- Predicted SOC content sent back to the mobile phone within approx. 30 seconds



## Action 10 Scottish soil monitoring network



Monitoring for multiple benefits: Focus on functions of soil (link to ecosystem services)

- 1. providing the basis for food, wood and biomass production (Provisioning);
- 2. providing raw materials (P);
- 3. providing a platform for buildings and roads (P);
- 4. controlling and regulating environmental interactions: regulating water flow and quality (Regulating);
- 5. storing carbon and maintaining the balance of gases in the air (R);
- 6. providing valued habitats and sustaining biodiversity (R, C);
- 7. preserving cultural and archaeological heritage (Cultural);



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- 7. preserving cultural and archaeological heritage (Cultural);
- 8. Protecting human and animal health (R);
- 9. Sustainability of Scotland's soil resources (Supporting)

Short-term tasks	Links to on-going activities	Policy area	Lead
<b>Soil carbon and peatlands</b> Establish baseline for the status of soil carbon in Scotland's peatlands Audit of cumulative impacts on peatland soil	SNH Green Stimulus Peatland Restoration Project Plan	Land Use Strategy Scottish Biodiversity Strategy Scottish Soil Framework	SNH
Soil erosion in agricultural land How widespread is erosion of agricultural soils? how does actual erosion relate to risk of erosion?	SEPA catchment walks	Water Quality (WFD) GAEC / SRDP Scottish Soil Framework	SEPA
Soil sealing What is the current extent of sealing on soils (i.e. current baseline) What quality of soil has been lost? What are the implications of current development plans for soils?	No on-going activities but feasible given existing data resources	Planning Scottish Soil Framework Land Use Strategy	Hutton
<b>Soil nutrient status</b> Status and trends in soil nutrients with a focus on agricultural soils	focus onRESAS research programme (outputs from the NSIS2)Water Quality (WFD) Scottish Soil Framework		Hutton
Forest soils Establish robust baseline for monitoring forest soils in Scotland	Forestry Commission Scotland	Land Use Strategy Scottish Soil Framework	FCS
Soil biodiversity Baseline for Scotland's soils	RESAS soil biodiversity research, Countryside Survey	Scottish Biodiversity Strategy Scottish Soil Framework	Hutton

## Actions 'owned' by Forestry Commission Scotland – summaries of progress



19. Ensure forestry good practice to promote sustainable soil management (SSM) remains fit for purpose

20. Review UK Forestry Standard and the supporting Guidelines

21. Delivery of sustainable forest management

22. Delivery of the Scottish Forestry Strategy

23. Stump harvesting guidance Forestry Commission Scotland took part in the review and consulted on the UK Forestry Standard and the supporting Guidelines. FCS has published in 2011 its policy position of a presumption against planting of trees where there is peat of 50cm or more depth. Guidance has also been prepared on re-stocking.

Forestry Commission Scotland consulted on the UK Forestry Standard and the supporting Guidelines. SEPA provided a response to the FCS consultation. The revised Forestry Standard was published in 2011.

The UKFS continues to be implemented through forest regulatory and financial support mechanisms. FCS is working on initiatives to improve the long-term management of steep slopes, and improved access to information and support to deliver appropriate woodland creation for water and soil benefits.

Forestry Commission Scotland has worked with partners in delivering the actions of the Scottish Soil Framework and the annual Scottish Forestry Strategy plans to promote and deliver the sustainable management of soils.

Interim guidance on stump harvesting was published in 2009.

## Actions 'owned' by Forestry Commission Scotland



36. Forest Carbon Standard and Climate Change guidelines

37. Forest carbon review

38. Climate Change Action Plan The UK Forestry Standard continues to be implemented through forest regulatory and financial support mechanisms.

The Forests and Soils Guidelines (2011) are one of the associated guidelines to support the UK Forestry Standard (Forestry Commission, 2011). There are also Forests and Climate Change guidelines (2011) which support the UKFS, and a FCS Climate Change programme (2013).

39. Sustainable Forest Management The UKFS continues to be implemented through forest regulatory and financial support mechanisms.



## **Actions 'owned' by Forestry Commission Scotland**



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38. Climate Change Action Plan	Change programme (2013).
39. Sustainable Forest	The UKFS continues to be implemented through forest regulatory and financial support mechanisms.

High level responses to actions, much more happens behind the scenes!

Management

 A key component of soils interest in Scotland (and beyond)





- A key component of soils interest in Scotland (and beyond)
- Research





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- A key component of soils interest in Scotland (and beyond)
- Research



- A key component of soils interest in Scotland (and beyond)
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Research



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- Research
- Management; no new woodland on peat



- A key component of soils interest in Scotland (and beyond)
- Research
- Management; no new woodland on peat







- A key component of soils interest in Scotland (and beyond)
- Research
- Management; no new woodland on peat
- Advice



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A good example of collaborative working on a common theme

