WATER SECURITY
Knowledge Exchange Programme

Specific Priority Subject 1.3 Summary Report

Linking natural networks and communities across rural and urban systems

Date:	**Thursday 3rd May 2012**
Host Organisation:	**The James Hutton Institute, Aberdeen**
Location:	**Edinburgh Training and Conference Venue, Edinburgh**
Report Number:	**WSKEP 08S**
Version Number:	**1.0**

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Document Information

Title	Specific Priority Subject 1.3 Summary Report
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Contributors	All those who attended the Workshop
Distribution	The participants at the Workshop and those with an interest in the subject
Document Reference	WSKEP 08S

Document History

Date	Revision	Prepared by	Organisation	Approved by	Notes
03/7/2012	Final	Peter Woodward	Quest Associates	Wendy Kenyon	Report distributed to participants and uploaded to the website

Acronyms

WSKEP   Water Security Knowledge Exchange Programme

Acknowledgement

The Author would like to thank Jane Lund and Bob Ferrier from the James Hutton Institute for organising the event.

Summary

This report is the Summary Outcomes Report of the WSKEP Specific Priority Subject Workshop 1.3 on 'Linking natural networks and communities across rural and urban systems'. It includes an introduction reporting the key recommendations resulting from the Workshop. This document will be made available on the Programme website www.wskep.net. The full Participants Outcomes Report was distributed to all participants of the Workshop.

Disclaimer

This document reflects only the combined views participants at the Workshop.

Contents

1. Overview

1.1. Introduction

Bob Ferrier welcomed participants to the workshop. Wendy Kenyon gave a presentation highlighting a framework which might help in understanding, analysing and addressing the many complexities involved in the issue of linking natural networks and communities across rural and urban systems. The DPSIR model was proposed and presented. The DPSIR model is a causal framework for organising/analysing/presenting information about the state of the environment and describing interactions between society and environment. It is used by the European Environment Agency (EEA), United Nations Environment Programme, and many researchers looking at a variety of issues. Driving forces (D) of social and economic development exert pressure (P) on the environment thereby changing its state (S), potentially resulting in impacts (I) on human health and/or ecosystem function that may elicit an environmental management response (R).

1.2. What is the big science issue / challenge

Francesca Giannini, Scotland Europa, introduced funding programmes in this area of work with a particular focus on European funding, and participants discussed science issues and challenges. There was a focus on the importance of communication between urban and rural interests, about the economic value of water, and the value of long-term funding of research sites, datasets and land management initiatives. There was also considerable interest in decentralise water and waste water services, and closing the loop and the cyclic economy resource efficiency.

1.3. Networks and alliances

In this session discussion focussed on the need to share data to achieve better outcomes and new research, and the view that citizen science has an important role to play in future development of linking natural networks and communities across rural and urban systems.

1.4. The Water Security KE Programme

In discussion about Water Security Knowledge Exchange, participants agreed that Scotland was in general good at knowledge exchange given the short path length between policy, research, between legislation and innovation, and the structures in place to facilitate this easy interaction, such as CREW (the Centre of Expertise for Waters). There was again discussion of the importance of long-term integrated open access research platforms to inform current research and be available in the future to support examination of current unknowns.

2. The workshop and report

This workshop was the eighth in a series being run on behalf of the Water Security Knowledge Exchange Programme (WSKEP) with funding from NERC. It was organized by the James Hutton Institute.

Nine Priority Subjects were identified at a national consultation event held in June 2011. The theme of this workshop was **'Linking natural networks and communities across rural and urban systems**'.

The workshop was designed to support the following key aims:

- increase awareness and uptake of research outputs in the focus area of 'Linking natural networks and communities across rural and urban systems'
- identify user needs and potential future research projects
- strengthen research/user group collaboration and networks

The workshop was divided into 4 sessions with initial presentations (available separately) as follows:

Session 1	**Setting the scene and making connections**
	Introduction: Bob Ferrier, The James Hutton Institute
	Towards a shared understanding of Priority Subject Area
	Introduction: Wendy Kenyon, The James Hutton Institute
Session 2	**Making the most of current research activity**
	Introduction: Professor Chris Spray, University of Dundee
Session 3	**Identify areas for future research activity/collaborations**
	Introduction: Francesca Giannini, Scotland Europa
Session 4	**Alliances, networks and advice to the WSKEP**
	Introduction: David Harley, Scottish Environmental Protection Agency

The heart of the workshop time was devoted to opportunities for participative working among the 22 delegates. This report features the outcomes from those interactions as written up by delegates during the sessions. As such this report is primarily aimed as an 'aide memoire' for participants.

Elements from this report will be used to inform further development of the Water Security KEP.

3.   Towards a shared understanding of the Priority Subject Area

Table groups discussed the contextual presentation by Wendy Kenyon, The James Hutton Institute, and noted key insights and issues, supported by a brief narrative, that enrich the Priority Subject Area, as follows:

Ref	Insight/issue
3.1	• Challenges associate3d with landowner engagement & regulation e.g. CAR • Funding mechanisms & the implications of flooding, restoration initiatives etc. • Interaction between different policies and their implementation
3.2	• Where and why are these linkages necessary? Who needs to know? • Who best can facilitate these linkages?
3.3	• Lack of understanding between urban + rural populations • Value of water, not just £/quality
3.4	• Rural – urban disconnection – some mechanisms, some gaps • Economic value + opportunities + non-monetary assets • Need to balance + manage the whole range of natural capital, "stocks and flows" – not simply focus on water

4. Making the most of current research activity

This session gave participants the opportunity to learn more about current research programmes and to make new connections to add value to research taking place. Chris Spray, University of Dundee, gave an overview of research projects.

Individuals then gave a short introduction to research work they were involved with. Other participants had the opportunity to connect with programmes that interested them. Comments were captured, and participants logged their interest. 16 connections were identified across 6 research programmes.

5. Identify areas for future research activity / collaborations

Francesca Giannini, Scotland Europa, gave an introduction to funding programmes in this area of work with a particular focus on European funding. Through table group discussions, individuals were invited to identify key propositions where further research/activity could be of value in taking forward this Priority Subject Area.

Other delegates were invited to join in a conversation to further develop the proposition and indicate if they were interested in collaboration in this area, beyond the workshop.

Eleven propositions were developed. These were roughly grouped in common themes by participants and discussed, as follows:

Ref	Propositions for further research / activity
5.1	Marketing the message
5.2	Research into the economic value of overcoming communication disconnects
5.3	Ecosystem services evaluation – further development
5.4	Ecosystem Health Indicators
5.5	Recognise multiple values of long-term measured catchment studies and invest more in them
5.6	Scientific framework for long-term land management
5.7	Closing the loop + the cyclic economy
5.8	Impacts of soil sealing on the urban/peri-urban environment & solutions
5.9	Research into decentralising water & waste water services
5.10	Probability/trend/impact of new technology on the water resource of Scotland to identify water technologies that could compliment traditional catchment management and traditional treatment solutions for drinking & water waste
5.11	Research into alternative political frameworks & mechanisms for long term funding

Prioritisation

Following the discussion, delegates were given 3 sticky dots to indicate the three propositions they believed should be given priority consideration. The table below shows the results of this prioritisation:

Ref	Proposition	Dots	Position
5.5	Recognise value of long-term catchment studies and invest more in them	13	1
5.6	Scientific framework for long-term land management		
5.9	Decentralise water & waste water services	11	2
5.7	Closing the loop + the cyclic economy resource efficiency	9	3
5.1	Marketing the message	6	4

5.4	Ecosystem Health Indicators	3	5
5.8	Impacts of soil sealing on the urban/peri-urban environment & solutions	3	5
5.2	Economic value of overcoming communication disconnects	1	7
5.3	Ecosystem services evaluation – development	1	7
5.10	Probability/trend/impact of new technology on the water resource of Scotland to identify water technology that could compliment traditional catchment management and traditional treatment solutions for drinking & water waste	0	9
5.11	Research into alternative political frameworks & mechanisms for long term funding	0	9

6. Improving alliances and networks

David Harley, Scottish Environmental Protection Agency, gave an overview of alliances and network approaches that help foster research and practice in this area.

Delegates, in table groups, were then invited to make suggestions for steps to further improve communication and networking, as follows:

Ref	Suggestions to improve networks/communication
6.1	**Make landscape less complicated** – more structure: less competition for data
6.2	**Improved data availability/sharing** Sometimes it's not easy to access data owned by other organisations
6.3	**Citizen science** better use of to bridge science/community/policy divide
6.4	**Linked-in - use discussion groups** bring third sector/private/public together
6.5	**Sustainable transport synergies with green networks** What has worked elsewhere? – benefits: lower carbon, lower air pollution, liveability,

	neighbourhood cohesion, flood alleviation, ecological connectivity, health and wellbeing

7. How do we maximise the value of the Water Security KEP?

Table groups were invited to suggest ways to maximise the value of the Water Security Knowledge Exchange programme, as follows:

Ref	Insights for WSKEP
7.1	Learn from Scotland? - Short path length between policy, research, between legislation and innovation
7.2	Web-Science See work of Tim Berners Lee bringing together documents, data, trends etc
7.3	The National Ecological Network
7.4	Core fund (20 years) integrated catchment research platforms for open access monitoring/data/research Need sub catchments with a range of issues, focus, governance