Carse of Stirling
an ecosystem approach project
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Rural-urban linkages of nature-based solutions for climate change mitigation and adaptation and planning perspective
European Conference on Biodiversity and Climate Change 2015
Scottish Natural Heritage

Project area
Scottish Natural Heritage

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Scottish Land Use Strategy - Proposal 8
‘Demonstrate how the ecosystem approach could be taken into account in relevant decisions made by public bodies to deliver wider benefits, and provide practical guidance.’

Scottish Natural Heritage and the Scottish Environmental Protection Agency led project to demonstrate the benefits of applying an ecosystem approach to land use decision making.

‘The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way’

Convention on Biological Diversity 1994

Scottish Land Reform
Exploring co-production and the integration of public policy with local perspectives.
Project elements – Phase 1

- Develop a methodology
- Identify and recruit stakeholders for the Project Panel
- Panel meeting 1 - Introduction to the project and to benefits from the land
- Panel meeting 2 – valuing and mapping benefits
- Panel meeting 3 – past, present and future change
- Panel meeting 4 – options for the future
- Panel meeting 5 – Vision and Action Plan
Figure 4: Role of the project area in providing flood regulation services
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Project outputs – Example 2

- Limited development of existing settlements
- Drainage to improve farmland on the Carse results in contraction of the moorland
- Intensification of agricultural production on land away from the flat cassekins
- Flood protection along the Forth and tributaries to reduce impacts on productive farmland
- Gradual landscape change as a result of field enlargement, tree removal and new agricultural buildings
- Increased urban flood defences and restrictions on new development
- Focus on increasing agricultural production – arable crops and hay – on the best land on the Carse

Max agriculture

The Carse of Stirling Partnership
Farming and wildlife Description

This scenario reflects a view expressed by some members of the Stakeholder Panel that it should be possible to integrate food production with objectives relating to other types of benefit, particularly biodiversity and sustainable flood management.

This scenario explores the implications of adopting a ‘sustainable’ approach to agricultural production and includes the following measures:

- The current emphasis on mixed farming would continue, with a combination of larger and smaller farms across the area. The area under different types of land management—arable, hay production, dairy, sheep and horticulture—would change in response to local environmental conditions. There would be an increase in organic, free range and high animal welfare farming, with little or no move of stock indoors.
- Communities would become more connected with the land around them, through community growing or orchard initiatives or the availability of local produce and there would be new opportunities for education and training.
- There would be an increase in farm diversification, with a range of businesses bringing together food production, education, recreation and tourism.
- Changed patterns of land management in areas subject to flooding or with consistently high soil moisture. This could see a move away from arable production in such areas. While there could be some expansion of pastoral farming, particularly sheep, the scenario could also see new wetlands and wildlife corridors established close to rivers and burns. This could include some new tree planting where it helped link existing habitats, intercept rainfall and run off and reduced the risk of erosion.
- Wetland creation and management. New ponds and wetlands would be created to provide habitats and areas of temporary storage for flood water. They can also help slow the speed of flow along burns, reducing the risk of erosion.
- Landscape conservation. This scenario would see an increased emphasis on maintaining and replacing traditional landscape features such as hedges, field boundary trees and small farm woodlands. The aim would be to support upland habitats, provide local sources of woodfuel and contribute to landscape character and sense of place.
- This scenario would also see an increase in the take up of small scale renewables to provide sustainable power sources within the area.
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Project successes - Phase 2

- Carse of Stirling Partnership
- A farmer designed and led survey of habitats and wildlife – CAP Pillar 2
- Carse of Stirling Clover Project with schools
- Flooding Study - Scotland’s Centre of Expertise for Waters and Heriot-Watt University
- National Lottery - funding for promotional material
- Path audit to develop links, maps and signage
- Strategic Development Plan with LEADER – Development Officer
Some woodland expansion on higher ground and upper parts of the catchment – but avoiding high carbon soils and more productive farmland – to absorb and store carbon.

Management of peat moorland to absorb and store carbon.

Management of mosses to maintain and enhance carbon storage.

Domestic scale renewables and energy efficiency measures.

Farmscale renewables – small turbines, anaerobic digestion plants.

Farming practices to reduce energy use and maintain or increase soil carbon storage.

Improved public transport, cycling and walking provision.

Small scale hydro schemes on suitable watercourses.

Wind farms on higher ground.

NORTH
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Project Links – Food and Ecosystem Health

Farming and Wildlife Group

Areas with greatest potential to enhance and link woodland habitats.

Areas with greatest potential to enhance and link wetland habitats.

Continued emphasis on mixed farming, with some changes in areas most at risk of flooding or high soil moisture.

Management of moorland habitats.

Restructuring of existing productive forests to increase biodiversity.

Some new wetlands to reduce flood risk and enhance biodiversity.

Areas with greatest potential to enhance and link grassland habitats.

Management and enhancement of hedges and field boundary trees.

Small farmwoodlands and wetlands.

Continued diversification of farming, including further smallholdings.

NORTH

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Access and Recreation Group
Scottish Natural Heritage

Next steps

• Town Planning Institute Award in Planning Excellence 2014

• Nature of Scotland Awards, shortlisted in the Sustainable Development category 2015

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