

Scottish Wildlife Trust

Policy



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Integrated Catchment Management

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Summary

1. This paper outlines the Scottish Wildlife Trust's views on the application of integrated catchment management in Scotland. Integrated catchment management has been defined as *"a process that recognises the catchment as the appropriate organising unit for understanding and managing ecosystem processes in a context that includes social, economic and political considerations, and guides communities towards an agreed vision of sustainable land and water resource management for their catchment."* (see Appendix 1)
2. The concept of managing the interactions between land use and water at the catchment scale is not new, indeed catchment management planning is now a widely utilised management tool and has been adopted as a central theme of river basin management planning in Scotland.
3. While considerable progress has been made, continued effort is required to promote the benefits of fully integrated working at the catchment scale and move away from a history of poor integration, which has resulted in competing priorities, overlapping governance, and little or no linkage with funding mechanisms. A number of actions are identified in this policy statement to achieve this aim.

Context

4. The health of both the water and terrestrial environment is affected by the way we use the land and natural resources within river catchments. As a result of human induced pressures, ecosystems across large areas of Scotland are in a degraded state reducing their ability to provide the range of services required for our well-being.ⁱⁱ Unsustainable land and water management can lead to habitat loss and fragmentation, reductions in the quality and quantity of water in our river systems, increased flood risk, and reduced resilience to the effects of climate change.
5. It is now widely accepted that an integrated approach to the management of land *and* water at the catchment scale is necessary to deliver improvements in ecosystem health and to secure associated social and economic benefits.ⁱⁱⁱ
6. A variety of legislative and policy drivers for the adoption of an integrated approach to land and water management have been introduced over the last 15 years. In addition a new focus on applying an ecosystems approach^{iv}, aimed at securing multiple benefits^v, has emerged via both stakeholder-led initiatives and Scottish Government policy.
7. The Water Framework Directive (WFD)^{vi} was a major landmark in the management of the European water environment. Introduced in December 2000, it established requirements for integrated river basin planning in order to achieve good ecological status (GES) of European surface waters by 2015. Over one-third of Scotland's water environment does not currently meet the GES objective of WFD.^{vii}
8. The first plans (covering Scotland and Solway-Tweed River Basin Districts) were published in 2009 and provide information about the current ecological status of Scotland's freshwater systems, highlight pressures on water bodies, and identify measures to resolve any issues and targets for improvement. The plans establish a structure for involving a wide range of organisations in assessing the state of the water environment and in identifying where action is needed. The Scottish Government set up a number of stakeholder Area Advisory Groups^{viii} that take a catchment based approach to delivering

the objectives of the RBMPs and are widely seen as successful in providing close links to stakeholders and in operating at regional and local scales.

9. The Flood Risk Management (Scotland) Act (2009)^{ix} supports a catchment level approach to achieve ‘sustainable’ flood risk management. Managers are required to consider a wide range of solutions, including natural flood management, which promotes techniques that work with nature to enhance, restore or alter natural features and characteristics.
10. Scotland’s Land Use Strategy^x promotes taking an ecosystems approach and aims to manage land to secure multiple benefits. Regional Land Use Framework pilots in Aberdeenshire and Scottish Borders Council areas propose to demonstrate the strategy in practice by considering land use and the provision of ecosystem services in an integrated way.^{xi}
11. The 2020 Challenge for Scotland’s Biodiversity^{xii}, produced in response to the EU Biodiversity Strategy^{xiii} and the UN Aichi targets^{xiv}, makes the case for working at a landscape or catchment scale taking an integrated approach to land and freshwater management to achieve healthy ecosystems. It also sets out how Scotland will work towards establishing a set of Ecosystem Health Indicators (EHIs) in order to track progress towards the strategies goals, and that these indicators will be applied at the catchment level to determine the actions required.

Policy Statement

12. The Scottish Wildlife Trust believes that integrated catchment management supports and encourages landscape-scale thinking in accordance with the Trust’s vision for Living Landscapes^{xv}, and offers a process to integrate land and water use practices and policies, reduce conflicts, encourage collaboration and deliver multiple benefits rather than focussing on single outcomes such as water quality.
13. The Scottish Wildlife Trust fully recognises the progress that has been made in Scotland towards integrated catchment management approaches that deliver multiple benefits. While the process of River Basin Management Planning has focussed largely on the objectives for the aquatic environment the second cycle of planning provides an opportunity to refresh the approach and aid the delivery of multiple benefits across a range of other areas of domestic and EU policy.
14. The Scottish Wildlife Trust believes the engagement of local stakeholders to establish common ownership of problems and their solutions, is central to the integrated catchment management approach. The involvement of a wide range of stakeholders with interest in different aspects of the catchment will allow a broader discussion and appreciation of the value of the catchment. It can open up more opportunities for improvement and access to the resources of a greater range of partners to take forward actions. Effective engagement can also improve public understanding of the need for land use change.
15. The Scottish Wildlife Trust believes that effective delivery of integrated catchment management in Scotland will require action in the following areas:

Co-ordination and leadership by the Scottish Government and public bodies

16. While top-down, largely government-led processes operating at regional or national scales have already seen the development of management and co-ordination at the catchment scale, a variety of bottom-up initiatives operating at smaller scales have evolved in parallel across the UK. Such approaches specialise in local energy and activity but require support, direction skills, guidance and mentoring to be successful. The Scottish Wildlife Trust believes that such bottom-up approaches developed by key community stakeholders in combination with appropriate co-ordination and leadership from Scottish Government and public bodies are required.
17. The Scottish Wildlife Trust believes that best-practice catchment partnerships funded over the long-term could demonstrate how integrated catchment management helps meet a wide range of international obligations and secures healthy and resilient ecosystems.
18. The Scottish Wildlife Trust believes that catchment partnerships should build on the experiences of applying integrated catchment management approaches and have explicit duties to share and disseminate knowledge (see Appendix 2). Freely available and accessible practical knowledge and information is critical and the development and support of suitable knowledge networks to enable this must be prioritised.
19. While catchment partnerships must be provided with a broad framework of ideas for developing plans with some examples of best practices, the Scottish Wildlife Trust does not believe that all catchments should conform to one template; any framework should be adaptable to suit the specific needs of the catchment.

Accessible tools to identify map and value ecosystem services

20. The Scottish Wildlife Trust believes that unless river catchments and the ecosystem services they provide have clear and identifiable values to society it will be challenging to communicate with stakeholders and reach conclusions on the improvements required.
21. The Scottish Wildlife Trust believes that simple tools are needed to identify and map the services provided by the natural environment, and aid in scenario planning for land use change and climate change. Geographic Information Systems (GIS) provide a powerful platform for the visualisation and spatial analysis of ecosystem services at multiple scales, allowing service provision and demand to be evaluated and monitored. Such tools can also allow multiple partners to be drawn into projects and allow the pooling and effective allocation of limited resources.
22. The Scottish Wildlife Trust will continue to support the development of tools to inform decision-making and discussion about ecosystem services at a catchment scale (see Appendix 3).

Development and alignment of financial tools

23. The Scottish Wildlife Trust believes that the integration of policy initiatives to achieve multiple benefits is not only useful in terms of achieved outcomes, but can have wider positive impacts by aggregating funding streams, leveraging additional funding, reducing red tape for land managers and funding bodies and developing cost effective approaches.

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24. It is anticipated that the Scottish Rural Development Programme (SRDP) will continue to be the primary source of funding for environmental improvement projects within catchments. Proposals for a revised SRDP include a new fund to help facilitate co-operative action at a landscape or ecosystem scale, for example to improve habitat connectivity and contribute to green networks, restore large areas of peatland, or co-ordinate the management of diffuse pollution or flood water within a catchment.^{xvi} The Scottish Wildlife Trust asserts that it is vital that this co-operative action fund is adequately resourced in order to achieve its aim.
25. The Scottish Wildlife Trust understands that the Natural Capital Group^{xvii} of the 2020 Challenge for Scotland's Biodiversity has been tasked with exploring the use of emerging and innovative ideas on management, valuation and use of the environment. One such mechanism that has been used in an integrated catchment management context is Payment for Ecosystem Services (PES)^{xviii}. Upstream Thinking^{xix}, South West Water's flagship programme of environmental improvements, has for example demonstrated how connecting the provider of ecosystem services with the buyer through an intermediary partnership programme can be cost effective and deliver multiple benefits to society. Guidance that builds on the findings of the Natural Capital Group and best-practice examples such as Upstream Thinking will be required for such mechanisms to be effective.

Standardised reporting

26. The Scottish Wildlife Trust believes that the application of indicators of ecosystem health, biodiversity, the stock of natural capital and ecosystem service flows is required to monitor change and to target action towards systemic and specific threats to ecosystem health.
27. The Scottish Wildlife Trust fully supports the development of *Ecosystem Health Indicators* (EHIs)^{xx} identified to help inform priorities for action and to assess progress in delivery of the Scottish Biodiversity Strategy. The Trust strongly encourages that efforts are made to ensure that EHIs become operational at a catchment scale as early as possible.
28. Simple and regularly reported EHIs at a catchment level will not only help target resources to those areas where ecosystem health is failing or could be improved but, just as importantly, they will help stakeholders understand what is going on in their local environment, whether management interventions are working, and what they might do to help.
29. In order to ensure the management of catchments for multiple benefits, EHIs must nest effectively together with Scotland's Natural Capital Asset Index^{xxi}, indicators of ecosystem service flows as well as indicators to assess social and economic objectives.

How the Scottish Wildlife Trust will use this policy

30. The Scottish Wildlife Trust will advocate the adoption of integrated catchment management as an effective approach to managing land and water and the management of whole river systems for multiple benefits to the Scottish Government, local authorities, statutory agencies the business sector, and other key stakeholders.
31. The Scottish Wildlife Trust will continue to manage the rivers, streams and wetlands on its reserves, re-connecting them with the surrounding land, working with neighbours within river catchments and with land managers across Scotland through the Trust's Living Landscapes projects, to restore the health of whole ecosystems by improving and reconnecting habitats to deliver multiple benefits.

Related Scottish Wildlife Trust Policies

Policy Futures 1: Living Landscapes

Policy Futures 3: Climate Connections

Appendix 1 – What is Integrated Catchment Management?

1. A catchment is the area of land from which all surface water drains towards a single watercourse. The boundary of catchments is formed by the high ground that separates them known as the watershed. Land within any given catchment will host a variety of human activities, that alone or combined can impact the health of ecosystems and reduce their ability to deliver goods and services such as drinking water or recreation.
2. Integrated catchment management embraces the ecosystem services approach by looking at activities and issues in the catchment as a whole, rather than considering different aspects separately. It should also be seen as a partnership approach to achieving sustainable development at catchment scale; a fully functional integrated catchment management approach includes dialogue and collaboration between the research community, policy makers, and on the ground practitioners.

Appendix 2 - Good practice examples of adopting integrated catchment management approaches

1. Initiatives at the catchment scale have been launched within four pilot catchments projects (on the Nith, Dee, South Esk and Glazert Water) to determine how multiple benefits can be derived from measures to meet WFD objectives with a primary focus on flood mitigation and physical alterations.^{xxii} In addition a total of fourteen priority catchment initiatives are underway to tackle diffuse pollution and the second cycle of RBMPs will likely see further catchments identified.^{xxiii}
2. Many good examples have emerged in Scotland of catchment management partnerships and Area Advisory Groups forming strong and effective links and taking positive actions. The Tweed Forum^{xxiv} was formed in 1991 "to promote the sustainable use of the whole of the Tweed catchment through holistic and integrated management and planning" and is now recognised as a global leader in integrated catchment management. The Tweed Catchment Management Plan (CMP) forms a single management framework for the many interacting ecosystem services provided by the waters of the Tweed catchment – an area of some 5,000 km². The CMP offers a framework to integrate different administrative, planning and regulatory systems and multiple demands on the catchment and enables a variety of interested parties to coordinate and work together effectively.
3. The Dee Catchment Partnership^{xxv} is an independent association of public agencies, organisations and individuals that coordinates local stakeholders to achieve the common goal of restoring habitat and water quality throughout the River Dee catchment. Central to its work is the Dee Catchment Management Plan that sets out the agreed actions required to ensure that the catchment's water resources are used in a sustainable way. To clearly communicate the work identified by the partnership, the plan includes 37 "Action Cards", each addressing a key issue facing the catchment, the shared objective, the actions required and the organisations responsible for delivery.
4. The Carse of Stirling Project^{xxvi,xxvii} set up by SNH and SEPA in response to the Scottish Land Use Strategy aims to demonstrate the benefits of applying an ecosystems approach to land use. The project has brought together local stakeholders to consider the wide range of benefits that are derived from the land in the Carse of Stirling, and how these can be developed and maximised in a balanced, integrated way. In doing so it tested a model of stakeholder engagement that can be used elsewhere.
5. The project found that the presentation of data to a lay audience required careful consideration and that time is best invested at the outset in explaining the aims and outputs of the work. It also found that working towards the achievement of an agreed vision and set of actions "helped focus minds on collaboration, problem solving and solutions".
6. It further recommends that stakeholder engagement can be most successful where trusted third parties act as facilitator allowing stakeholder concerns to be dispelled and stronger links to local policy development and implementation to be built. This matches the experience of Wildlife Trusts' in England, which suggests that coordination by the voluntary sector can work well where there is a dedicated third party catchment officer or 'champion' working closely with statutory agencies and other stakeholders, especially where that coordinator has excellent standing in the local community.

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7. In England, Upstream Thinking^{xxviii} is South West Water’s flagship programme of environmental improvements aimed at improving water quality in river catchments in order to reduce water treatment costs. Run in collaboration with conservation charities, including Westcountry Rivers Trust and the Wildlife Trusts of Devon and Cornwall, it is one of the first programmes in the UK to consider all issues that can influence water quality and quantity across entire catchments. A collaborative approach sees landowners informed and assisted in the protection of river catchments and tailored one-to-one advice is supported by a capital grant scheme with the Rivers Trust acting as “honest brokers”.

Appendix 3 – Examples of Geographic Information System tools in catchment management planning.

1. EcoServ-GIS is an ecosystem services GIS toolkit developed by Durham Wildlife Trust. It generates fine scale maps illustrating service demands against the capacity of the ecosystem to deliver the service, providing a quantitative tool for local and regional decision making. For example helping to ensure that networks of greenspace, and the range of services they provide, are protected, enhanced and connected at a landscape scale, targeting conservation strategies, and stimulating innovative landscape planning.^{xxix}
2. The Scottish Wildlife Trust is working with Scottish Natural Heritage (SNH) and SEPA to adapt EcoServ-GIS to Scotland by applying it to North Lanarkshire. The toolkit will be evaluated using the Cumbernauld Living Landscape and Seven Lochs Wetland Park as case studies. Combining the toolkit with local knowledge the case studies will look at the suitability of the tool to inform decision-making and discussion about ecosystem services at a landscape or catchment scale.
3. To aid in the development of the second cycle of RBMPs in Scotland, SEPA have developed an online GIS application to enable the public to carry out searches on specific bodies of water or catchments. The tool incorporates information on SEPA's updated analysis of the ecosystem services provided by the water environment as well as mapping the current characterisations, pressures and potential impacts of climate change and land use change. It also has the capability to predict the impact of measures on specific ecosystem services, which will help SEPA understand how to select those intervention options that maximise a range of benefits.^{xxx} Additionally, Scotland's Environment Web^{xxxi}, the online gateway to information on Scotland's environment, is being developed to include information and maps on the status of Scotland's ecosystems and ecosystem services.

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- ⁱ Integrated Catchment Management for the Motueka River, New Zealand
<http://icm.landcareresearch.co.nz/about/newsletter/issue1.asp>
- ⁱⁱ UK National Ecosystem Assessment 2011 Available online at: <http://uknea.unep-wcmc.org>
- ⁱⁱⁱ See for example 2020 Challenge for Scotland's Biodiversity Available online at:
<http://www.scotland.gov.uk/Resource/0042/00425276.pdf>
- ^{iv} 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 Available online at: <http://www.cbd.int/ecosystem/>
- ^v The delivery of more than one outcome e.g. river restoration which improves the ecological status of a water body and also strengthens and increases woodland habitat networks.
- ^{vi} http://ec.europa.eu/environment/water/water-framework/index_en.html
- ^{vii} Current condition and challenges for the future: Scotland river basin district Available at: https://consultation.sepa.org.uk/rbmp/cccf-scotland/consult_view
- ^{viii} http://www.sepa.org.uk/water/river_basin_planning/area_advisory_groups.aspx
- ^{ix} <http://www.scotland.gov.uk/Topics/Environment/Water/Flooding/FRMAct>
- ^x <http://www.scotland.gov.uk/Topics/Environment/Countryside/Landusestrategy>
- ^{xi} <http://www.scotland.gov.uk/Topics/Environment/Countryside/Landusestrategy/regional>
- ^{xii} <http://www.scotland.gov.uk/Resource/0042/00425276.pdf>
- ^{xiii} http://ec.europa.eu/environment/nature/biodiversity/comm2006/pdf/2020/1_EN_ACT_part1_v7%5b1%5d.pdf
- ^{xiv} <http://www.cbd.int/sp/targets/>
- ^{xv} Hughes, J & Brooks, S (2009) Living landscapes: towards ecosystem-based conservation in Scotland. Scottish Wildlife Trust, Edinburgh
- ^{xvi} Scotland Rural Development Programme (SRDP) 2014-2020 Stage 2: Final Proposals
<http://www.scotland.gov.uk/Publications/2013/12/7550>
- ^{xvii} <http://www.biodiversityscotland.gov.uk/about/scottish-biodiversity-governance/natural-capital-group/>
- ^{xviii} "A term used to describe schemes in which the beneficiaries, or users, of ecosystem services provide payment to the stewards, or providers, of ecosystem services." Payments for Ecosystem Services: A Best Practice Guide. Defra, 2013 Available online at:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/200920/pb13932-pes-bestpractice-20130522.pdf
- ^{xix} <http://www.upstreamthinking.org>
- ^{xx} <http://www.snh.gov.uk/docs/A1308427.pdf>
- ^{xxi} <http://www.snh.gov.uk/docs/B814140.pdf>
- ^{xxii} http://www.sepa.org.uk/water/river_basin_planning/implementing_rbmp/pilot_catchment_project.aspx
- ^{xxiii} http://www.sepa.org.uk/water/river_basin_planning/dp_priority_catchments.aspx
- ^{xxiv} <http://www.tweedforum.org>
- ^{xxv} <http://www.theriverdee.org>
- ^{xxvi} <http://www.stirling.gov.uk/services/community-life-and-leisure/your-community/community-information/stirling-carse>
- ^{xxvii} LUC and STAR. 2014. Carse of Stirling – an ecosystems approach demonstration project: Technical Report. Scottish Natural Heritage Commissioned Report No. 676. Available online at: http://www.snh.org.uk/pdfs/publications/commissioned_reports/676.pdf
- ^{xxviii} <http://www.upstreamthinking.org>
- ^{xxix} <http://www.durhamwt.co.uk/what-we-do/current-projects/ecoserv-project/>
- ^{xxx} http://www.sepa.org.uk/water/river_basin_planning/significant_issues.aspx
- ^{xxxi} <http://www.environment.scotland.gov.uk/>