

Ecosystem Approach Working Group (EAWG): 1st Brief Discussion Paper

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Key Messages and findings

- The Ecosystem Approach and Ecosystem Services are highly relevant to Scottish Government policy, research across the Scottish Government's two research programmes, agencies and organisations in Scotland.
- A mapping exercise identified broad research/policy areas of common interest to workshop participants and the Main Research Providers in Scotland, and these will be the foundation of working partnerships.
- The EAWG workshops, on specific topics aligned to the Ecosystem Services Theme research programme, are just a starting point for developing partnerships and it is envisaged other projects and collaborations will emerge in due course.
- At the first workshop participants identified that a priority research area is the relationship between biodiversity, ecosystem function and the delivery of ecosystem services.
- A potential research gap across the two research programmes is the link between ecosystem services, the urban environment and human well being.
- Whilst it needs to be recognised that the Ecosystem Services Theme is undertaking strategic academic research, there is also a need to link in and inform imminent and emerging policy reforms and strategic reviews such as CAP, SRDP and the Scottish Biodiversity Strategy.

Introduction:

The inaugural meeting of the Ecosystem Approach Working Group (EAWG) highlighted the breadth of policy and research to which the Ecosystem Approach and the concept of Ecosystem Services (ESS) are relevant, and demonstrated the value of developing new networks and working partnerships to address issues of common interest between individuals and organisations, and between policy makers and researchers. Thirty four people attended the inaugural meeting of the EAWG, held at Victoria Quay, Edinburgh on 10th August 2011. These included representatives from Scottish Government (SG), a range of agencies and organisations, and representatives from the main RESAS funded research themes within the Environmental Change and Land, Food and People research programmes 2011-2016 (see Appendix 1). The research themes that were not well represented were food, diet and health, and rural communities.

The evaluation forms and workshop identified that participants' areas of interest included: biodiversity; economics; water/flooding risk management; animal health/welfare; land use policy; forestry; environmental protection; climate change; indicators for ecosystem services and Strategic Environmental Assessment. The evaluation forms indicated a range of existing knowledge on the subjects – for example 4/17 had a 'great deal' of knowledge about ecosystem services; 7 of 17 a 'fair amount'; 5 had a little knowledge and one did not answer.

The meeting agenda covered: introductions; the Ecosystem Services Theme (EST): concepts, terminology and challenges; the role and remit of the EAWG; topics for future meetings and a mapping exercise to identify the main issues of interest to EAWG members.

This paper draws on notes taken during the meeting, as well as the results of the mapping exercise and the results of the evaluation forms provided at the end of the meeting. The evaluation forms were filled in by 17 participants from a variety of organisations. Therefore, this paper is based on the expressed views of those attending the meeting and may not represent the full range of views of EAWG members. However, the paper provides a useful starting point for developing the working

partnership as it captures some of the initial issues that will have to be addressed as we move forward.

The paper is split into two parts: the research challenges, and developing a working partnership.

Research Challenges for Ecosystem Services and the Ecosystem Approach in Scotland

Some specific research questions and challenges were raised by Rob Brooker during the presentation of the EST's planned research. These were:

- How do ecosystem services (ESS) interconnect?
- How do ecosystem stocks support flows?
- What are the priority ESS for Scotland?
- What indicators of ESS should we use?
- How to manage tradeoffs between ESS?
- How to describe or value ESS?
- What scale to work at?
- How to use in equitable decision-making?

All of these topics will be picked up in forthcoming EAWG meetings; the schedule of which can be found in the EAWG Action Plan (Appendix 2). In addition, working group members raised a number of discussion points including the role of biodiversity in ESS, integration with policy, and ensuring a focus on urban as well as rural systems. The evaluation forms also highlighted further topics to focus on and issues regarding terminology.

Role of biodiversity in ESS

There was general agreement that biodiversity underpins ecosystem services and significantly contributes to all the four ecosystem service groups (supporting, provisioning, regulating and cultural) that deliver direct benefits to humans. However, what is not well understood is the relationship between biodiversity, ecosystem function and the delivery of ecosystem services. Furthermore, we do not yet fully understand how to quantify these links to human benefits in a meaningful manner. Some respondents noted that they did not fully understand where the concept of biodiversity fits within the concepts of ESS and the Ecosystem Approach (EA).

The relationship between biodiversity and ecosystem service delivery is being explicitly investigated by the EST, working in partnership with other Themes in the research programmes, such as the Land use Theme (Theme 3). Collaborations with other initiatives such as NERC's Biodiversity and Ecosystem Service Sustainability (BESS) programme and the Valuing Nature Networks (VNN) will complement (not duplicate) and build on the EST, in particular with regards to the links between ESS and biodiversity.

Integration with imminent policy reforms, strategies and revisions

A number of participants raised the point that there were imminent policy reforms (e.g. Common Agricultural Policy (CAP) reform) and strategic reviews (Scottish Biodiversity Strategy) where direct input from ESS and EA research would be beneficial in informing debate and direction. The participants were keen to see how the EST intended to engage in these reforms.

The EST will be limited in how it can effectively engage with CAP reform, given that these policy developments are at a late stage in the process and the EST research is just beginning. However, the effects of CAP reform are included within the planned scenario work, and the EST would probably be able to explore the impacts of CAP reforms on ESS delivery. It will be important to include farming in

the research, as food security was raised as a policy driver in the evaluation forms. It was noted that there are other themes within the research programme that were already engaged in the debate on CAP reform and attend CAP policy meetings (Theme 4 – Economic Adaptation). The opportunity to influence, and evaluate the results of, the next Scottish Rural Development Programme was also raised via the evaluation forms.

Working in partnership with SNH to inform the revision of the Scottish Biodiversity Strategy is a good example of where the EAWG could be directly engaged. Again, there will be limitations on what can be achieved within the timescales required, but there is an opportunity to use work on ESS indicators to feed into the 2020 targets. Woodland expansion was also raised as an important policy area to engage with. Finally, one respondent wanted the EST to make clear that this work relates to terrestrial and freshwater ecosystems and does not currently include marine systems.

EAWG and the EST (particularly WP1.3) should have direct input into the development of the Land Use Strategy (LUS). The EST will provide useful underpinning evidence to steer the process of how the LUS develops guidance for different land-use systems, actors and at different scales.

Priority Topics to Address

From the debate within the meeting and the evaluation form, it seems clear that attendees would like to spend more time specifying and quantifying the stocks of ESS. They would also like to better understand the link between function and services. These issues will be picked up in future EAWG meetings.

It also seems that many participants would like to link the ESS and EA to different forms of land use – both rural and urban. In terms of rural land use, there was a desire to consider how the concept of ESS delivery could be used to reward land managers. There was also a desire to explore how understanding ESS delivery would fit with work on animal welfare. There was concern that there was too much focus on rural land use and not enough on urban environments. Although aspects of this research are being addressed in the EST (cultural services and well being) and in Theme 8 (Rural Communities) it was felt that more research was needed on the links between ESS, the urban environment, and human health and well being. A possible opportunity to take this forward might be the NERC BESS programme. Finally, some participants wanted an ‘integrated’ approach to land use that looked across different land use sectors within a system.

The issue of quantification is implicit in the above two topics – participants were interested in knowing how much of what was where, and methodologies to determine this. However, quantification was also requested with regard to economic valuation of ESS delivery. This links back to the interest in rewarding farmers for ESS delivery and integrating research evidence with reforms of CAP and SRDP. However, some attendees warned against spurious valuation and wanted more focus on methods to value things for which we currently have a poor understanding.

Understanding(s) of Ecosystem Services and the Ecosystem Approach

The workshop participants were generally comfortable with the terminology of Ecosystem Services and Ecosystem Approach. However, in order to communicate these concepts to the public more accessible and descriptive language would be required e.g. ‘the benefits humans get from the environment’. The need to clarify the terminology and raise awareness of concepts was raised in some evaluation forms as a challenge to be addressed. Partly in response to this issue, we have created a glossary of terms (see Appendix 3).

Although there seemed to be a shared understanding and usage of terms, there were some interesting trends from those evaluation questions that asked respondents to provide definitions in their own words.

In terms of ESS: most recognised that ESS link the benefits or services (or both) provided by the natural environment to society/human wellbeing; one respondent noted that this was in reference to the future, and two mentioned the categorisation (supporting etc); one noted the need to consider how human activities impact on ESS; another related their definition to benefits arising from environmental protection (not the environment). The last two points are interesting as they direct attention to how people manage ESS, not just the flow of benefits to people. Two problems were raised: firstly, how to deal with the intrinsic existence values of species and biodiversity, which may not directly generate benefits to society and human wellbeing; secondly, the danger of monetising ESS and conceiving of nature purely as a means-end relationship – even if these approaches might fit best with evidence based decision making processes.

Responses to the EA were more varied. The majority mentioned embedding the concept of ESS and ecosystem health in decision-making, with various descriptors e.g. holistic, transparent, systemic adaptive, and involving people (see also below some of the challenges about which people to involve). A subset specified that this decision making process required understanding trade-offs, often with reference to land use systems, and that this required understanding safe ‘operating’ limits for ecosystem health. Such an approach should improve integrated delivery and better protection of ecosystems. However, there were some other interpretations – one felt it was seeing how ESS benefited people (roughly equivalent to the ESS definitions above); others were about an approach to understanding the environment, without reference to decision making or people e.g. “thinking on the bigger scale about the environment - no longer just focussing on specific species”. This division between seeing an EA as primarily about decision-making, and seeing an EA as a way to frame biophysical interactions, could cause conceptual confusion when working together.

Developing working partnerships using EAWG

The meeting and evaluation outputs also considered how best to develop and sustain a working group that brings together academic researchers, agency staff and practitioners. The aims for the EAWG are to: promote and coordinate working partnerships across the research themes and with other organisations/institutions; facilitate exchange of knowledge and data; raise awareness of Ecosystem Service Theme (EST), ESS and EA; explore and develop new concepts.

The EST management team were keen that EAWG delivered outputs which have a shared mutual interest. They expressed a genuine interest in the different ways EAWG members wanted to engage with the group and find the best ways to share information. Although there are planned workshops every four months on selected topics, other means of engaging on joint research initiatives are welcome. The EAWG workshops should be seen as a starting point in the engagement process and a potential stimulus for spin-off projects based on collaborations formed from sub-sets of EAWG members.

Delivery to Policy and Practice

A recurrent discussion point raised by the workshop participants was how the strategic research programme was going to develop and deliver practical tools and applications that can be used on the ground. Examples given included incorporating and mainstreaming the EA into flood risk assessments and appraisals, how to put the EA into practice in forestry and biodiversity/climate change policy, cost benefit analysis for development, trade-offs for land use policy etc. As one respondent said, this requires going beyond interesting maps and research papers. An associated challenge expressed in the evaluation forms was the need to get ESS and EA mainstreamed into existing policies.

The EST management team were keen to express that EAWG could deliver some practical applications and tangible outputs. However, the EST is a research programme which aims to improve the scientific evidence-base and methodologies / tools available to take forward the Ecosystem

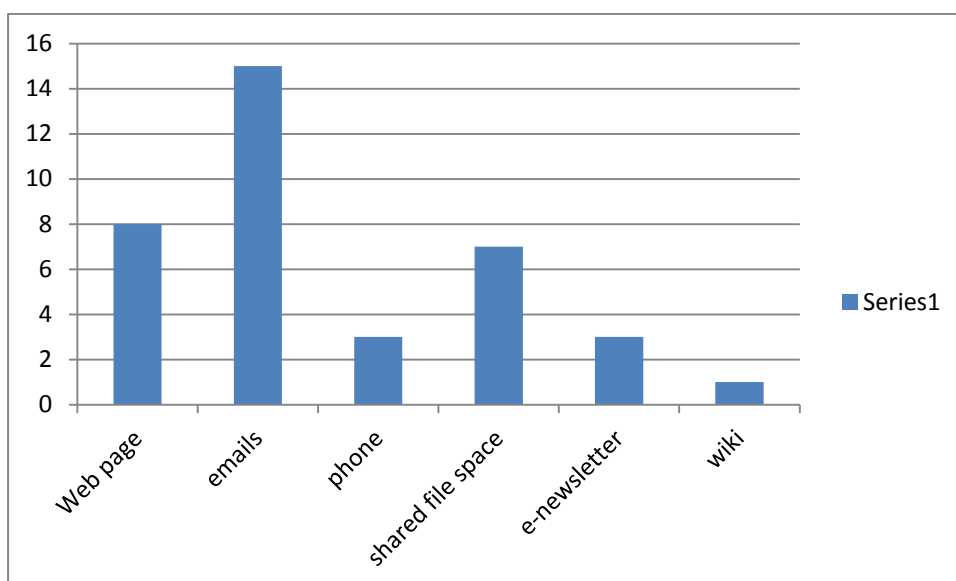
Services concept and the application of the Ecosystem Approach in Scotland. In this context, EST researchers will have to deliver scientific outputs alongside policy-relevant outputs to address the different requirements of the Theme i.e. academic rigour, scientific advancement and end-user needs. In addition, the RESAS Programme includes related activities which are specifically tailored to be directly responsive to end-user needs. These include the newly established Centres of Expertise in Water and Climate Change and targeted / applied contract research projects. It is envisaged that the EST will feed into all of these activities where and when appropriate. One possible outcome of an effective EAWG partnership could be increasing our capacity to fit within existing, and anticipate future, decision making processes and deadlines. This could help to better align the time scales between end-user (e.g. policy) decision-making needs and the delivery of research.

Coordination and Engagement

Some evaluation responses raised the issue of how best to coordinate data and expertise across the Scottish Government and their agency partners. One respondent also noted the need to change the culture within agencies to improve coordination and integration. Some attendees asked if these organisations had sufficient resources and capacity to engage effectively. Although coordination and integration should save resources, it takes time to share information and coordinate work. There are various activities underway to improve coordination across Scotland. The EST will work to ensure that it links to these e.g. the SEWEB and associated activities to coordinate and access Scottish data.

This challenge is multiplied when trying to coordinate and integrate with researchers across multiple research themes and based in different organisations. Members of the EAWG were also keen that the group was used to ensure that we avoided duplication across the UK. This means learning from existing and planned work out-with Scotland. DEFRA and other relevant participants (NERC BESS, Natural England) are part of the EAWG so as to increase these linkages and to keep them informed of activities and progress.

The need to coordinate and integrate across many different organisations and individuals (our current membership list stands at over 70 people) puts increased importance on communication flows within and between meetings. Communication preferences from the evaluation returns are shown below:



Note that phone calls could be conference calls; and emails could/should have links to the website.

In order to streamline communication and ensure only the most relevant people attend the workshops, we have suggested that not all those on our mailing list attend all meetings – some may wish to attend meetings on particular topics, whilst others might just like to be ‘corresponding’ members, i.e. receiving papers and updates but not doing actual analysis within and between meetings. Further details of membership types, as presented at the inaugural meeting, can be found in the EAWG Action Plan (Appendix 2) and the Draft Agreement on the Role, Remit and Activities of the EAWG (Appendix 4). In terms of missing members, Iain Bainbridge (SNH) and Hamish Trench (CNPA) were suggested by name, with Julia Garrett (FCS) as a corresponding member. Organisations suggested were National Farmers Union Scotland and ConFor, and wider environmental interests beyond SNH, SEPA and RSPB.

Some evaluation forms suggested that there was a need to engage a wider group of stakeholders including the public, land managers and/or those affecting the environment. This is part of a wider responsibility for the EST, to be delivered through the knowledge exchange activities targeting schools, land managers, commercial enterprises, local authorities etc. Others wanted to ensure that the EAWG influenced decision makers. A role for the EAWG is to deliver joint outputs on specific topics that could support and inform decision makers. The original tender for the EST proposed that a wider consultative group be convened to ensure that the strategic direction of the EST is aligned with policy needs and the results are fed back to policy makers. However, and as noted in the EST’s 30th June response to SG, this has been put ‘on hold’ whilst current arrangements for the management of the Research Programmes (and the associated role of consultative groups) is clarified. These issues will be in the remit of the programme advisors once they are in post.

Mapping exercise – identifying potential shared areas of work

During the submission process for the EST, a desk review was carried out to establish the range of research being conducted within all eight themes of the two RESAS Strategic Research Programmes, and how the work in Themes 2 – 8¹ complemented the area of research in Theme 1 (Ecosystem Services). At a workshop in May, representatives of the Themes were asked to ‘validate’ the results during a break-out session centred on the research questions addressed in the review. These were grouped into topics: the four Ecosystem Service groups; biodiversity; the systems under study; spatial scales at which work was being undertaken; research platforms/locations being used; key policies being addressed; scenarios of change being considered, and ‘meta concepts’ such as resilience, trade-offs and perceptions.

Participants at the 1st EAWG workshop were invited to carry out a similar exercise from the perspective of their individual organisations. Rather than being done by a questionnaire, the results of the EST review were presented graphically, and participants were asked to highlight areas of interest, add new topics, and make any comments, which were recorded by the facilitation team.

Responses for both exercises were weighted based on the number received. In some cases, respondents highlighted an entire category – in these cases, the assumption was made that each item within that category was relevant. By comparing the two sets and identifying areas where both groups weighted an item above a certain threshold, potential areas of future collaboration could be identified.

Comments from participants at the EAWG workshop highlighted a number of other locations/research platforms in use, as well as a new system and scale (noted in red text). In addition, a completely new category was proposed (Delivery Mechanisms) with a number of suggested items within it. These included River Basin Management Planning, Natural Flood

¹ Theme 2 – Water and Renewable Energy, Theme 3 – Land Use, Theme 4 – Economic Adaptation, Theme 5 – Food, Theme 6 – Animal/Plant Health and Disease and Animal Welfare, Theme 7 – Healthy Safe Diets, Theme 8 – Rural Communities

Management, Catchment Plans, Local Development Plans, Monitored Priority Catchments and Forestry Plans. Presenting these delivery mechanisms for discussion at a future EAWG meeting may be a useful approach for developing ideas of how shared research can bridge the science-policy-practitioner interface. This information will also inform the EST researchers on the possible levels of implementation, and the context for research.

Although the participants from the two workshops displayed some differences in their overall research interests (a reflection on the participant make up of the two workshops), the results of the comparison show a number of areas of commonality across all of the categories. Opportunities exist in these areas for issues to be tackled together, and for resources and data to be shared to enable greater value to be achieved for RESAS and other branches of SG. By identifying the areas/questions where the largest efforts are being focussed, prioritisation of further discussions to pull together teams from the range of partners can start.

The results will also be useful for focusing discussion for the 2nd EAWG meeting. This will consider a number of topics in a one day workshop: identifying priority Ecosystem Services and possible indicators; and discussing proposed scenarios of change. As with all EAWG meetings from now on, the meeting will also identify knowledge gaps and potential collaborations for taking specific research topics further during the programme.

Results are presented in Appendix 5. Slide 1 shows the synthesis of RESAS Theme responses; Slide 2 the responses from the EAWG workshop; Slide 3 shows potential synergies based on the weighted responses.

Concluding Remarks

The paper has summarised the main points arising from the 1st EAWG meeting. There are many challenges ahead; some specific to the complex and new nature of working on the concept of ESS, others specific to the process of working in partnership across different research, policy and practice interests. The opportunity to reflect on how well we meet these challenges is written into the EST research programme. The EAWG promises to be an exciting and interesting experiment in co-production of knowledge to better support the implementation of ESS and the EA to Scotland. The next working paper will be produced in draft form to support the next EAWG meeting in November 2011, and will be finalised once inputs from this meeting have been integrated.