Collaboration for Environmental Evidence

ANNUAL REPORT 2012

Growing Together

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COLLABORATION FOR ENVIRONMENTAL EVIDENCE

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CONTENTS

HIGHLIGHTS

2012 was a year of significant growth for CEE. From its formation in 2008 until 2012 CEE has had just one Centre based in Bangor, UK. It has always been our intention to build a global network of Centres and we took a big leap forward this year in founding two further centres in Australia and South Africa. In the spirit of the Collaboration the association between the CEE Board and the Centres is entirely voluntary and based on enthusiasm to contribute to CEE goals. Details of each Centre can be found at www.environmentalevidence.org/Centres.html and we warmly welcome Rob Richards and Mat Silver, Ruth Stewart and Carina van Rooyen, as Directors of the respective new centres. We are looking forward to further Centres being established in 2013.

In the 2011 Annual Report we anticipated the establishment of the CEE open-access journal 'Environmental Evidence' in partnership with BioMed Central. This year we can report on its successful launch and the publication of the first protocols and systematic reviews. The journal represents a key step towards giving the products of CEE a formal publication platform. Building the reputation of the journal will take some time but we expect it to become highly influential as a source of reliable evidence to inform environmental management. Read more about the journal's launch on page 21.

A key challenge for CEE is forming a global network of individuals that share common goals. Despite all the opportunities to network electronically there is really no substitute for face-to-face interaction to debate and form a common understanding of what we want to achieve. In August the CEE held a symposium at the European Congress of Conservation Biology in Glasgow, UK. The day-long session brought together many CEE contributors who had not met before. An excellent series of talks covered the growth of CEE, the development of systematic review methodology and reports of individual CEE systematic reviews. The talks were well attended and a great deal of interests was shown in our work. The day was rounded off by an excellent evening meal and social. We need to do this on a regular basis!

There was a significant increase in the demand for training in the last year. The number of environmental scientists who are trained in conducting systematic reviews remains very low but an awareness that systematic reviews cannot simply be done by reading the CEE Guidelines is growing. In 2012 the U.K. CEE Centre, the Centre for Evidence-based Conservation, conducted training events in Bern, Switzerland, Paris, Stockholm, Sweden and at three locations in the U.K. The Australian-based CEE Centre also became endorsed as a CEE Training Centre and plans to begin training events in their region during 2013. Further details of training can be found on page 14.

The CEE Trustees.

The CEE Community

The CEE is a global collaboration which works through its **CEE Centres**, which act as hubs of CEE Activity within their region**, CEE Methods Groups**, which lead development of CEE systematic review methodology and **CEE Review Groups** which encourage, facilitate and coordinate systematic review activity across specific topic areas. CEE activity is overseen by the **Board of Trustees** and is guided by the CEE **Advisory Group.**

The CEE is an open collaboration and its activity and impact is dependent upon a motivated community who support the key mission of developing a reliable evidence-base to enable more effective environmental management. **Review Teams**, who choose to undertake systematic reviews according to CEE guidelines and publish their protocols and reviews in the CEE journal, form the active core of the CEE community and engage with CEE from organisations and groups around the world. They form to undertake a specific systematic review task and disband once this is completed and published.

Alongside these formal structures is the **wider CEE community** who engage in active discussion and exchange of information and ideas. Previously called 'Joiners', this community now interacts as an active CEE discussion group using using the LinkedIn platform. To get involved, please either email cee.join@environmentalevidence.org or visit the CEE website and follow instructions for joining.

You can propose a Methods or Review Group or ask to join an existing one by mailing us at info@environmentalevidence.org

CEE Centres

CEE Centres act as hubs of CEE Activity within their region. During 2012, two new Centres in Australia and South Africa, were launched.

Whilst the specific functions of CEE Centres vary somewhat, from Centre to Centre, they all engage in core CEE activity:

- Developing expertise in systematic review methodology in environmental management and liaise with other CEE Centres and Methods Groups to further develop systematic review methodology
- Working with practitioners and policy formers to identify need for systematic review to address questions of importance to decision-makers, particularly those of relevance within their region
- Encouraging funding of, and supporting, systematic review activity in their region
- Acting as a central contact point for systematic review activity in their region
- Advising review teams on development of protocols and conduct of systematic reviews
- Liaising and integrating activities with other CEE Centres to develop the CEE library and maintain a common database of systematic reviews in progress

Centres may also opt to become endorsed as a CEE Training Centre, delivering training in CEE systematic review methodology across their region. For further details please see the Training information on Page 14.

Environmental Evidence Australia

Environmental Evidence Australia is based in Greenhills, New South Wales. The EEA team has a range of specialisations but we all share a passion for using evidence to improve environmental outcomes. EEA's primary goal is to better inform decision making on environmental matters across all sectors and we strive to do this through the research, development and application of evidence based practice to influence organisational decision processes and culture. This led the team to engage with CEE and, in May 2012, EEA became officially endorsed as the first Australian CEE Centre.

Key activity during 2012:

During 2012 EEA worked with a range of organisations with environmental interests including local, state and Commonwealth governments as well as regional natural resource management bodies throughout Australia. During the year we delivered five seminars/training exercises on the value of evidence based practice including the role of systematic review and held meetings with four groups to promote the value of systematic review. We have a specific interest in further development of systematic review methodology and have continued to develop and test new additions to the CEE systematic review approach and are actively involved in further development of the CEE Systematic Review Guidelines.

The Centre has also been working towards becoming endorsed as a CEE systematic review Training Centre with a view to running our first CEE endorsed course during early 2013.

Environmental Evidence Australia is led by Co-Directors Rob Richards and Mat Silver.
For more information about their activities visit: www.environmentalevidence.com.au
http://www.environmentalevidence.com.au/cee-activities

CEE Johannesburg

CEE activity in Johannesburg is led by a team of academics at the University of Johannesburg's Centre for Anthropological Research who aim to support the use of rigorous research evidence in decision-making in southern Africa in partnership with researchers, policy-makers, practitioners and communities. The team have over twelve years' experience of conducting systematic reviews and supporting other people to do so, as well as promoting evidence-informed decision-making more generally. They are committed to conducting research that reflects the priorities of communities affected by environmental decision-making, as well as those of the various decision-makers. The team is led by Dr Ruth Stewart and Dr Carina van Rooyen and includes researchers from across southern Africa.

Key activity during 2012:

CEE Johannesburg, was launched with a braai at the Research Village at the University of Johannesburg's Bunting Road Campus. The Centre has been publicised by presentations given by Ruth Stewart and other team members at two international conferences and to the systematic review community via a seminar at the EPPI-Centre in London, at the Campbell Annual Colloquium in Copenhagen, Denmark and at the Asian Campbell Colloquium in Dhaka, Bangladesh. An active Twitter account with a growing following of researchers and policy-makers interested in evidence on environmental issues across Africa - @CEEJoburg, has also been established.

During 2012 we have submitted a number of applications for funding to support CEE Johannesburg's work. Thus far we have been successful in securing funding from the University of Johannesburg for our review on the impacts of urban agriculture on food security, as well as support to attend and promote our work at international conferences in Glasgow and Berlin.

In order to ensure that research reflects the priorities of Africa, one of our first tasks as a CEE centre was to undertake a consultation of those working on environmental issues within the southern African region. In our first phase of data collection, we conducted online searching (between February and April 2012) to create a database of organisations working on environmental issues across the SADC region. In our second phase, all organisations on our database were emailed telling them about our new CEE Johannesburg Centre and inviting them to contribute their priority questions for review. Fifteen organisations responded and were interviewed. The findings of the consultation were presented at the Berlin Conference on Human Dimensions of Climate Change in October 2012.

CEE Johannesburg is hosted by the Centre for Anthropological Research, University of Johannesburg and led by Co-Directors: Dr Ruth Stewart and Dr Carina van Rooyen,
guided by Prof Thea de Wet, Director of the Centre for Anthropological Research.

For more information contact: Email: ruths@uj.ac.za (or r.stewart@ioe.ac.uk) Twitter: @CEEJoburg
http://www.environmentalevidence.org/Centres_Joburg.html

Centre for Evidence-Based Conservation

The Centre for Evidence-Based Conservation (CEBC) was established in 2003 with the goal of supporting decision making in conservation and environmental management. CEBC promotes evidence-based practice through the production and dissemination of systematic reviews on both the effectiveness of management and policy interventions and on the impact of human activities on the natural environment. With support from a wide range of organisations in the environmental and academic sectors, CEBC now acts as both a source of advice on evidence-based practice both in the UK and internationally. CEBC acts as the central coordinating centre for the Collaboration for Environmental Evidence, providing the Environmental Evidence Journal editorial office and CEE website hosting functions.

CEBC

Key activity during 2012:

A highlight during the year was the launch of the CEE journal, Environmental Evidence and the subsequent publication of the first set of systematic reviews and protocol. Other 'editorial' work included coordinating production of Version 4.2 of the CEE Guidelines for systematic review. We will continue to work with the Editors of Version 5 to ensure that these Guidelines reflect the most recent developments in systematic review methodology. The Centre also organised the highly successful first CEE Symposium which was held in Glasgow in August. See page 15 for further details. During the year we continued our activity as a CEE systematic review training centre, delivering courses in the UK, Switzerland, Sweden and France.

2012 saw the start of a major project developing evidence-based environmental management in Sweden. Funded by the Swedish organisation Mistra, a new centre (EviEM) has been established at the Swedish Royal Academy of Sciences. The objective is to commission a series of systematic reviews relevant to Sweden over the next 5 years. The Director of CEBC, Andrew Pullin, has been appointed to the EviEM Board, EviEM staff have visited CEBC to learn more about the process of systematic review and CEBC staff have spent time at EviEM and presented a formal training event.

The Centre for Evidence-based Conservation is based at Bangor University, UK and is led by Professor Andrew Pullin: a.s.pullin@bangor.ac.uk; www.cebc.bangor.ac.uk

SYSTEMATIC MAPPING METHODS GROUP

Systematic mapping is a robust, repeatable and transparent scientific method used to identify, categorise and map available literature relevant to a topic. Like systematic reviews, systematic maps use established searching protocols, and have rigorous inclusion criteria, but unlike systematic reviews, they do not attempt to answer a question. Systematic maps can be integrated into the systematic review process or be produced as discrete pieces of work. The methodology was developed for use in social science and education but offers a useful tool for environmental evidence, where a topic is too broad for traditional systematic review, or where the evidence is too disparate or unsuitable for quantitative analysis. The systematic mapping group aims to further develop the methodology for environment management systematic maps, and ensure that systematic mapping offers the greatest value possible to the evidence base.

Key activity during 2012

The first systematic map report was published in environmental evidence in 2012 and this was used to inform a synopsis of evidence published on the conservation evidence website. More systematic maps are underway, with a number of protocols recently published on the CEE website, and further protocols out to review.

The first systematic mapping methods group meeting was held in April 2012. The meeting was attended by members of the group, together with UK government and research council representatives, and social scientists working in similar areas. The group discussed a variety of approaches to systematic mapping methodology and ways in which systematic map databases could presented to increase accessibility for users.

Systematic mapping was introduced in a presentation as part of the symposium 'Applications and impacts of evidence-based conservation' at the European Congress of Conservation Biology held in August 2012 (see page 15).

For more information on systematic mapping, or if you would like to join the Methods Group, please contact the Chair, Nicola Randall: nrandall@harper-adams.ac.uk and visit www.environmentalevidence.org/MGroups_maps.html.

Statistical Methods Group

The methods used to conduct systematic reviews are constantly evolving. Systematic reviews in environmental management and conservation are faced with numerous challenges due to the large variety of ecological conditions and variables and the dispersed nature of the research data. The statistical methods group aims to bring together those with an expertise and interest in quantitative data synthesis, to meet these challenges.

Key activity during 2012:

Group members Prof. Jessica Gurevitch, Prof Julia Koricheva and Prof. Kerrie Mengersen co-edited the first handbook of meta-analysis in ecology and evolution (Koricheva J, Gurevitch J, Mengersen K (eds). Handbook of meta-analysis for ecology and evolution. Princeton University Press, April 2013. http://press.princeton.edu/titles/10045.html). The group are currently involved in the publication of a special issue of the Journal for Research Synthesis Methods focusing on ecological synthesis. It is anticipated that the special issue will contain articles on the similarities and differences in approach to synthesis in the different disciplines; discussion of searching, interpretation and statistical approaches to synthesis in ecology.

The group contributed to the CEE Symposium in Glasgow in August, where Elena Kulinskaya and Julia Koricheva delivered an invited talk "Evidence Synthesis in Environmental Management – Challenges of Quantitative Synthesis" and they also delivered the first course on meta-analysis in environmental management at the same conference. This course was then later delivered in Bern (Switzerland) in September 2013 as part of a CEE endorsed training course in systematic review methodology.

The Statistical Methods Group is led by Professor Elena Kulinskaya from the University of East Anglia (UK). For further information contact: E.Kulinskaya@uea.ac.uk

Ecosystem Services, Health and Well-being Review Group

As policy interest in the human well-being benefits of ecosystem services increases, a growing number of systematic reviews are being commissioned which address the human health and welfare impacts of environmental management. These reviews cut across both disciplinary (environment and public health) and methodological (drawing from qualitative and quantitative research) boundaries. There is a need to ensure that resources for evidence synthesis are directed at the most important questions and for coordination of this 'cross-over' area of review activity. In 2012 CEE launched the 'Ecosystem Services and Human Health and Well-being' Review Group (ESHWeB) which will offer the opportunity for more coordination of activity, for interdisciplinary collaboration in seeking funding for systematic reviews and in developing and using 'fit for purpose' methodology.

ESHWeB aims to:

- Work with key decision-makers to identify the most important questions to be addressed through evidence synthesis
- Work with funders to ensure that resources for evidence synthesis address these questions and that appropriate evidence synthesis methodologies are used
- Foster communication and collaboration between those undertaking evidence synthesis within the eco-system services, human health and well-being cross-over area, developing a learning community which will push forward cross-disciplinary, mixed method evidence synthesis methodology
- Maintain an overview and database of relevant evidence syntheses
- Increase the number of systematic reviews of ESHWeB questions which are published in the CEE open-access journal 'Environmental Evidence', thereby increasing their visibility to end-users
- Increase the number of papers about evidence synthesis relating to ESHWeB which are published in the peer-reviewed literature
- Work directly with end-users to develop efficient and effective mechanisms for dissemination of the findings of evidence syntheses and monitoring their impact

ESHWeB is led by Dr Ruth Garside, from the European Centre for Environment and Human Health, University of Exeter Medical School, who also acts as Subject Editor for the CEE Journal , Environmental Evidence.

Organisations, groups or individuals planning to commission or undertake systematic reviews which fit this brief are invited to get in touch with us via email to:
Dr Ruth Garside, Review Group lead: Ruth.Garside@ex.ac.uk (www.ecehh.org)
Dr Teri Knight: cee.administration@environmentalevidence.org

Training

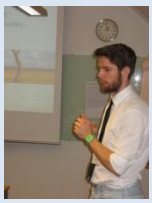
Rather than delivering training directly, CEE endorses courses, delivered by others, which conform to CEE guidelines for systematic review. During the year, training courses were delivered by the Centre for Evidence-based Conservation (Bangor University) in Bern, Paris and Stockholm and at three locations in the U.K. The Statistical Methods Groups delivered specialist modules in meta-analysis as part of two of these courses.

One-day 'Introduction to Systematic Review' courses provide an overview of the review process from identifying suitable questions with stakeholders, through searching, inclusion, critical appraisal and data extraction to synthesis and dissemination. These courses are not intended to equip participants with the skills and knowledge required to undertake a systematic review, rather, to provide an understanding of what systematic review has to offer, how it differs from other forms of literature review, the demands of the process and the uses of systematic review in policy and practice. The 'Introduction' courses are targeted at both commissioners and users of systematic review as well as potential authors.

For more in-depth coverage of the systematic review process, aimed at those who wish to acquire the skills and knowledge needed to undertake a review, two or more days 'methodology' courses are recommended. These are generally 'bespoke' courses designed and delivered for a specific organisation or group.

Demand for training in CEE systematic review methodology increased during 2012 from across the globe and the CEE Centre based in Australia became formally endorsed as a CEE Training and plans to begin training events in their region during 2013.

If you are interested either in receiving training in CEE systematic review methodology or becoming a provider of training, then please either contact cee.administration@environmentalevidence.org or contact the relevant CEE Centre directly (cebctraining@bangor.ac.uk or rob.richards@environmentalevidence.com.au)



www.environmentalevidence.org/Training.html

CEE Symposium at the European Congress of Conservation Biology, Glasgow, August 2012

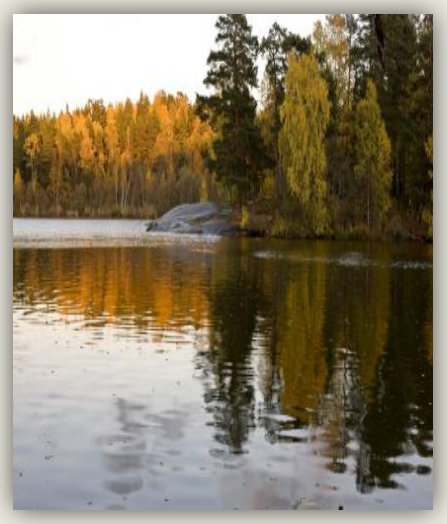
In August the CEE held a symposium at the European Congress of Conservation Biology in Glasgow, UK. In previous ECCB meetings, both plenary speakers and symposium sessions have advocated evidence-based approaches to conservation. This first CEE Symposium took the process one step forward and explored both the theoretical basis for, and demonstrated application and impacts of evidence-based conservation. It explored the cultural and institutional needs of evidence-based practice in the sector and the developments required to increase its use in decision making. Finally, it identified the main actors in further developing an evidence base for conservation. Speakers were:

Andrew Pullin	Establishing the Collaboration for Environmental Evidence (CEE): challenges and achievements of evidence-based conservation
Maria Scibberas	Evaluating the biological effectiveness of fully and partially protected marine areas.
Raj Whitlock	Genetics in conservation: can systematic reviews be used to bridge the gap between the conservation genetics literature and conservation practitioners?
Teri Knight	Nature conservation and human health: exploring the evidence-base.
Nicola Randall	Systematic maps to inform conservation policy
Scott Goetz	Assessing carbon stocks and changes in terrestrial carbon pools: a systematic review of methods
Matt Keene	Realizing An Effectiveness Revolution in Environmental Management
Paul Beier	After 87 corridor experiments, why do we still lack evidence whether conservation corridors work?
Barbara Livoreil	Systematic reviews and evidence synthesis in the Network of Knowledge for European expertise on biodiversity
Ruth Stewart	Systematic reviews of environmental evidence: a regional centre for Africa
Elena Kulinskaya	Evidence synthesis in environmental management – challenges of quantitative synthesis
Sif Johansson	Scientifically based decisions for the environment
Dave Stone	Environmental Systematic Reviews: do they have an impact on advice, regulation, and land management practices? Lessons from the experiences of Natural England.
CEE representatives	Concluding Round table – What should CEE priorities be?

The day-long session brought together many CEE contributors who had not met before. The excellent series of talks covered the growth of CEE, the development of systematic review methodology and reports of individual CEE systematic reviews. The talks were well attended and a great deal of interests was shown in our work. The day was rounded off by an excellent evening meal and social event.

SYSTEMATIC REVIEWS completed in 2012

What is the impact of 'liming" lakes on the abundance and diversity of lake biota?
Mant, R. & Pullin, A.S. 2012.
CEE review 11-003. Collaboration for Environmental Evidence:
www.environmentalevidence.org/SR11003.html



Findings: Increasing and preserving the diversity of organisms present in an ecosystem can (but may not always) represent a favourable ecological outcome, especially if achieved across a broad spectrum of the ecosystem and of acid sensitive species that were previously absent due to acidification. In this regard liming of lakes can be considered, in some circumstances, an effective conservation measure. However, in a minority of lakes diversity decreased with liming. The evidence base is insufficient to explore reasons for Variation in effectiveness and more powerful study designs are required to enable prediction of when extremes of impact may occur.

What are the major barriers to increased use of modern energy services among the world's poorest people and are interventions to overcome these effective?
Watson, J., Byrne, R., Morgan Jones, M., Tsang, F., Opazo, J., Fry, C., Castle-Clarke, S. 2012.
CEE review 11-004. Collaboration for Environmental Evidence:
www.environmentalevidence.org/SR11004.html

Findings*:* Most of the evidence on economic and technical barriers to energy access is consistent and strong. Specifically, this evidence relates to high upfront costs of energy conversion technologies and grid-connection charges, cost-recovery difficulties, poor performance of equipment, and technical capacities for operation and maintenance. However, evidence for interventions to overcome these is less robust. The weakest evidence concerns political and cultural barriers and associated interventions, despite frequent references to their importance. Moreover, our review highlights the interactions between different types of barriers and interventions. To understand these interactions, and increase the chances that the poor can gain access to modern energy services, analyses of barriers and implementation of interventions should be more systemic. The review concludes with implications for policy, management and research that flow from these conclusions.

Have wet meadow restoration projects in the Southwestern U.S. been effective in restoring hydrology, geomorphology, soils, and plant species composition to conditions comparable to wet meadows with minimal human-induced disturbance?
Ramstead K.M., Allen, J.A. & Springer, A.E. 2012.
CEE review 09-014. Collaboration for Environmental Evidence: www.environmentalevidence.org/SR75.html

Findings: While caution is warranted due to data quality limitations, progress has been made over the past 20 years in wet meadow restoration. In particular, important contributions have been made in restoring the highly degraded wet meadow systems that are characterized by deep, wide and relatively straight gullies. There is evidence, for example, that the pond-and-plug approach is an effective technique for restoring many aspects of these systems, albeit at the cost of creating new features (ponds) that are not necessarily natural features of wet meadows. There is a need to allocate additional effort to project documentation, including better-designed and longer-lasting monitoring programs. One approach that might help is for practitioners to work with scientists from government agencies, local universities and colleges, and other organizations. When this type of collaboration has happened in the past it appears to have been effective. Many important lessons could have been learned, and mistakes avoided, if more effort had been put into documenting both successes and failures of past projects.

The effectiveness of integrated farm management, organic farming and agri-environment schemes for conserving biodiversity in temperate Europe - A systematic map
Randall, N.P. & James K.L. 2012.
CEE review 07-011. Collaboration for Environmental Evidence: www.environmentalevidence.org/SR35.html

Findings: The systematic map describes the scope of research on the topic. It can be used to inform future primary research, or research synthesis and evaluation methods such as systematic review. Areas for which there appear to be evidence gaps, and so may have potential for further primary research, are highlighted. They include the effectiveness of agri-environment options under different farming systems and in providing for amphibians and reptiles. Implications for the development of future systematic maps are discussed, including the question of how to incorporate study quality appraisal.

Does delaying the first mowing date increase biodiversity in European farmland meadows?
Humbert, J-Y., Pellet, J., Buri, P. & Arlettaz, R. 2012.
CEE review 09-011. Collaboration for Environmental Evidence: www.environmentalevidence.org/SR72.html

Findings: The resulting meta-analysis shows that in general delaying the first mowing date in European meadowlands has either positive or neutral effects on plant and invertebrate biodiversity (except for plant species richness when delaying from spring to fall or from early summer to later). Overall, there was also strong between-study heterogeneity, pointing to other major confounding factors, the elucidation of which requires further field experiments with both larger sample sizes and a distinction between taxon-specific and meadow-type-specific responses.

Systematic reviews registered in 2012

Lyons et al.: What are the effects of macroalgal blooms on the structure and functioning of marine ecosystems? A systematic review protocol. Environmental Evidence 2012 1:7. doi:10.1186/2047-2382-1-7

Background: Anthropogenic activities are believed to have caused an increase in the magnitude, frequency, and extent of macroalgal blooms in marine and estuarine environments. These blooms may contribute to declines in seagrasses and non-blooming macroalgal beds, increasing hypoxia, and reductions in the diversity of benthic invertebrates. However, they may also provide other marine organisms with food and habitat, increase secondary production, and reduce eutrophication. The objective of this systematic review will be to quantify the positive and negative impacts of anthropogenically induced macroalgal blooms in order to determine their effects on ecosystem structure and functioning, and to identify factors that cause their effects to vary. The effects of exotic seaweeds on native benthic assemblages: variability between trophic levels and influence of background environmental and biological conditions.

Rilov et al.: How strong is the effect of invasive ecosystem engineers on the distribution patterns of local species, the local and regional biodiversity and ecosystem functions?. Environmental Evidence 2012 1:10. doi:10.1186/2047-2382-1-10

Background: One of the most influential forms of biological invasions is that of invasive ecosystem engineers, species that affect other biota via alterations to the abiotic environment. Such species can have wide-reaching consequences because they alter ecosystems and essentially “change the rules of existence” for a broad suite of resident biota. They thus affect resources or stressors that affect other organisms. The objective of this systematic review will be to quantify the positive and negative impacts of invasive ecosystem engineers on ecosystem structure and functioning, and to identify factors that cause their effects to vary.

Fedrowitz and Gustafsson: Does the amount of trees retained at clearfelling of temperate and boreal forests influence biodiversity response?. Environmental Evidence 2012 1:5. doi:10.1186/2047-2382-1-5.

Background: Clear-felling is one of the main methods used in many parts of the world for the production of pulp, timber and bioenergy, leading to a simplified forest structure and species composition. One of the measures to mitigate the impact of logging on biodiversity is the retention of trees at final harvest. Tree retention approaches in forestry are still rather new, although widely distributed across different continents. Several studies have been performed on the effects of retention trees on biodiversity but to date there is no evidence on the relation between the amounts of trees, i.e. the number, volume or area per ha retained, and the response of biodiversity.

Randall et al.: How effective are slurry storage, cover or catch crops, woodland creation, controlled trafficking or break-up of compacted layers, and buffer strips as on-farm mitigation measures for delivering an improved water environment?. Environmental Evidence 2012 1:12. doi:10.1186/2047-2382-1-12

Agriculture has intensified over the last 50 years resulting in increased usage of fertilizers and agrochemicals, changes in cropping practices, land drainage and increased stocking rates. In Europe, this has resulted in declines in the quality of soils and waters due to increased run off and water pollution. Fifty percent of nitrates in European rivers are derived from agricultural sources in the UK this value is as high as 70%, where agriculture also contributes to approximately 28% of phosphates and 76% of sediments recorded in rivers. Catchments dominated by agricultural land use have increased levels of pesticides and bacterial pathogens. European member states have a policy commitment to tackle water pollution through the Water Framework Directive. An analysis of the effectiveness of water pollution mitigation measures should enable decision makers and delivery agencies to better facilitate catchment planning.

Munroe et al.: Review of the evidence base for ecosystem-based approaches for adaptation to climate change. Environmental Evidence 2012 1:13. doi:10.1186/2047-2382-1-13

Background: Ecosystem-based approaches for adaptation (EbA) integrate the use of biodiversity and ecosystem services into an overall strategy for helping people adapt to climate change. To date, insight into these approaches has often been based on reports from isolated anecdotal case studies. Although these are informative, and provide evidence that people are using ecosystems to adapt, they provide rather limited insight in terms of measuring and evaluating the effectiveness of EbA, especially when compared with technical or structural adaptation interventions. The body of scientific evidence indicating how effective such approaches are is lacking in some aspects. Where evidence does exist it is often dispersed across a range of related fields, such as natural resource management, disaster risk reduction and agroecology. To date, there has been little attempt to systematically assemble and analyse this evidence. Therefore, the current state of evidence regarding the merits or otherwise of EbA is unknown and it has not been possible to identify prevailing knowledge gaps to inform research and analysis, which will enable policymakers to compare EbA with other adaptation options.

Miller et al.: Will environmental flows increase the abundance of native riparian vegetation on lowland rivers? Environmental Evidence 2012, 1:14. doi:10.1186/2047-2382-1-14

Background: The extraction of water and alteration of flow regimes by humans have profound negative effects on river ecosystems. Returning water as “environmental flows” is a primary method for restoration, but evidence linking flow restoration to ecological benefits is weak. In order to draw more informative conclusions about the effects of environmental flows on ecosystems, reviews of ecological responses to altered flow regime need to focus on relationships between causes (flow components) and effects (ecological responses). We will review the literature on the responses of native riparian vegetation to flow alterations on regulated rivers. This review should improve river restoration efforts by identifying which flow components can be targeted by environmental flows to improve vegetation condition and increase abundance at the individual, population, and community levels.

What is a Systematic Review?

It is a 'review' because:

- it compiles existing findings from the peer-reviewed scientific literature and grey literature (reports, theses…), in order to produce a synthesis of the current knowledge on a specific issue.
- it allows identification of knowledge gaps or methodological problems and thus informs future decisions in terms of research priorities, policy or management practices.

It is 'systematic' because:

- it has a clearly pre-defined methodology for the review process (set out in a 'protocol')
- this methodology conforms to published standards (see www.environmentalevidence.org/Authors.htm, for the CEE guidelines for systematic review)
- it includes structured consultation and discussion with stakeholders and experts before and during the conduct of the review
- each step must be transparent, replicable and therefore, updatable
- each decision must be explained and justified
- the conclusions of the review are informed and moderated by a systematic critical appraisal of the reliability of the methods used in each study included in the review

Are systematic reviews in environmental management different from other systematic reviews?

Systematic reviews form the basis of decision-making in the Health sector and are also used to inform Social Care and Education. Whether using research from clinical trials, social science or field studies, systematic reviews face challenges particular to the type of primary research methods being used, or the nature of the subject, intervention, outcomes or context. Systematic reviews in environmental management face specific challenges as the number of factors affecting an observation or measurement can be large and important, especially in field studies. Randomised Controlled Trails, considered a 'gold-standard' in healthcare research of effectiveness of interventions, are not often conducted in environmental research. As a consequence, systematic reviews in environmental management face specific challenges related to the reliability of data and the variability of results. The critical appraisal stage of systematic review is therefore very important. Synthesis of data from studies with very different study designs, measurement tools and outcomes, can be challenging. CEE Methods Groups aim to develop CEE systematic review methodology in order to meet some of these challenges. If you are interested in contributing to methodology development then contact us via info@environmentalevidence.org.

To read more about systematic review in environmental management: www.environmentalevidence.org & www.cebc.ac.uk

ENVIRONMENTAL EVIDENCE JOURNAL

CEE's new open-access journal '***Environmental Evidence***' was launched in 2011 and received its first submissions early in 2012. ***Environmental Evidence*** facilitates rapid publication of systematic reviews and evidence syntheses on the effectiveness of environmental management interventions and on the impact of human activities on the environment. In partnership with BioMed Central we have put in place a business plan for the journal to establish its reputation as a leading source of evidence to inform environmental management.

The founding Editorial Board provides a good indication of the global support from leading scientists.

Editor-in-Chief
Professor Andrew Pullin, Bangor University, United Kingdom
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In 2012 the journal received 24 submissions and published 15 articles. Since the journal does not accept primary research papers we do not expect large numbers of submissions. We aim for quality and rigour rather than volume and our target for 2013 is 25 published articles.

Targets for 2013
Increase visibility in the field through promotion at conferences and editorial board advocacy .
Increase submissions so that we are able to publish a minimum of 2 articles per month which is required for tracking for impact factor by Thomson Reuters.
Increase visibility through press releases for relevant articles of interest- these will also be highlighted via social media channels (Twitter and BMC's facebook page) and the BioMed Central blog.

www.environmentalevidencejournal.org

The Board of Trustees

Andrew Pullin, Chair

Andrew Pullin is Professor of Evidence-Based Conservation at Bangor University, UK and Director of the Centre for Evidence-Based Conservation (CEBC, www.cebc.bangor.ac.uk), which has the goal of supporting decision making in conservation and environmental management through the production and dissemination of systematic reviews on the effectiveness of management and policy interventions. His research seeks to improve effectiveness of conservation and environmental management interventions by providing objective scientific evidence for the development of both policy and practice. He is an Editor of the journals *Environmental Evidence* and *Biological Conservation*, and an author of a textbook on *Conservation Biology*.

Teri Knight, Secretary and Treasurer

Teri Knight is a public health specialist who currently divides her time between working as a Consultant in Public Health for Public Health Wales, as an academic at Bangor University and as Secretary and Treasurer of CEE. She has a particular interest in the relationship between the natural environment, ecosystem services and human health and well-being and has been involved in developing the CEE Review Group for 'Eco-system Services, Health and Well-being', ESHWeB.

Rob Marrs

Rob Marrs is the Bulley Professor of Applied Plant Biology at the University of Liverpool. His main interests are in the fields of conservation and ecological restoration, where he tries to work out how to manipulate ecosystems towards specific endpoints. His research combines manipulative field experimentation (long-term), survey and modelling usually in British heathlands and moorlands. He is passionate about implementing conservation/restoration policy and practice based on evidence-based science.

Jennie Milward

Jennie Milward has a background in mathematics and statistics and a lifelong interest in climate and sustainability. In her current business role she is involved in reducing the organisation's impact on the environment.

More about the Collaboration

The Collaboration for Environmental Evidence was established in 2007 and is registered for charitable purposes within the UK. In line with legal requirements, the endeavors of CEE satisfy three 'charitable purposes':

- the advancement and improvement of environmental protection
- the advancement of science
- the advancement of education

and the two 'public benefit principles': the general public will benefit from more effective environment management and conservation action because those working in the environmental sector will be able to more easily access information to help them improve the effectiveness of their work. The CEE places no restrictions on who can benefit.

The CEE Constitution sets out how the CEE will operate within Charity Law. The CEE operates as a 'not-for-profit' organisation and has a Board of Trustees responsible for proper governance of the CEE, probity, adherence to regulations for 'not for profit' organisations and charity law. An Advisory Group, composed of representatives of CEE constituencies and stakeholders (e.g. voluntary or employed lay and professional practitioners, government policy makers, NGOs, industry, scientists, educators) oversees function, helping to ensure that the activities of the CEE are, as far as possible, unbiased and objective and that they remain relevant to these stakeholders. Maintenance of the CEE website, coordination of collaborative activity and general administration are functions currently provided by the Centre for Evidence-based Conservation, based at Bangor University, UK, which acts as the UK CEE Centre. As CEE activity increases through greater engagement in systematic reviews, Review Groups and Methods Groups and the establishment of CEE Centres outside of the UK, the demands placed the CEE infrastructure are also increasing. The CEE is open to all who wish to contribute to the conduct, or use, of systematic reviews and who are committed to the principle of evidence-based practice. The continued success of this 'open-access' strategy is dependent on adequate and sustainable funding of the core infrastructure. Many funding streams, such as research grants, do not fund infrastructure costs and CEE therefore seeks donations to enable it to continue to support and coordinate environmental management systematic review activity worldwide.

Potential donors are encouraged to contact us at: info@environmentalevidence.org.

THANK YOU!

The existence and growth of the CEE is due in no small part to a wide range of individuals and organisations who have actively supported its vision and aims, either through funding, giving it visibility in key arenas, through giving their time to key CEE activity, or through active involvement in systematic reviews. Particular thanks in 2012 are due to:

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Leaders of CEE Centres and Groups
Commissioners and funders of systematic reviews
Review authors, stakeholders and peer-reviewers
Volunteers and supporters
BioMed Central and the EEJ Editorial Board

Collaboration for Environmental Evidence

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