Collaboration for Environmental Evidence

2015 Annual Report

Evidence serving better decisions for better outcomes

www.environmentalevidence.org

The mission

To effectively promote an evidence based approach to environmental management by facilitating the conduct and dissemination of high quality syntheses of evidence that will inform decision making and better conserve biodiversity and ecosystem services for global benefit.

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A MESSAGE FROM THE CHAIR

A major challenge for any global collaboration is communication among all contributors - individuals, groups and organisations; communication about how things are going, how it all fits together and where we are headed. As a Board we produce Strategic Plans, Annual Reports and Business Plans but what really matters is whether all contributors to CEE have a collective feeling of positive progress and that CEE is making a difference. I hope that this Annual Report helps communicate that this is indeed the case.

Submissions to our open-access journal, Environmental Evidence are increasing and diversifying as we get more manuscripts on methodology and commentary. The journal is now indexed on Scopus and being tracked by ISI. All indications are that we will achieve a good initial Impact factor (I know this matters to some authors). We will be expanding the Editorial Board next year to reflect the wider subject base of submissions. Environmental management is a very broad subject!

Governance of organisations like CEE might seem to some a tedious task that brings few rewards but my experience is different from this. Engaging with such a diverse group of people, all brought together by a common mission and a belief that we are making a difference, is reward in itself. We need to maintain a dynamic Board with a healthy rotation of Trustees representative of the full range of our stakeholders and we will continue to seek new members as some of the longer serving Trustees reach the end of our terms of office.

At the heart of our Collaboration is our network of Centres. They raise awareness within their countries and regions of the work of CEE, provide training and promote the conduct of CEE reviews and maps as well as doing a few themselves. Centres also provide personnel to run most of the CEE working teams such as the Journal, Meetings, Guidelines, Training and Website and Communications Teams. We now have six Centres, the newest in France having joined us this year. We continue to expand this network as the most fundamental structural element of the Collaboration.

CEE is becoming increasingly involved as a partner in the activities of the cross sectoral evidence synthesis community (e.g. Health, Education, International Development sectors). For example, CEE is a partner in the Global Evidence Synthesis Initiative, led by the Cochrane Collaboration and including the Campbell Collaboration, 3ie and the EPPI Centre.

This initiative seeks to build capacity for evidence synthesis where it is currently lacking, as in parts of Africa, Asia and Latin America. CEE is also a partner in EvidenceAid an interdisciplinary group aiming to provide evidence to help the international community cope with humanitarian disasters (see a recent blog that Teri Knight and I wrote on this subject), I hope CEE will continue to work with this community on interdisciplinary issues.

Opportunities for interaction within CEE are now greater than ever due to the rise of social media. For example, we have over 500 members of our LinkedIn Discussion Group and I encourage more to join and start discussions on all aspects of CEE's work. Perhaps most importantly we are seeing an increase in the number of authors registering systematic reviews and maps with CEE and publishing them in the CEE journal. The growth of the CEE Library is a measure of our achievement and we now have 80 completed reviews and maps and some 30 more in progress. It is through attracting more authors and review teams to contribute to CEE that this number will rise and recognition of CEE as a reliable source of evidence will increase.

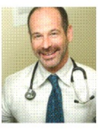
CEE guidelines are used much more widely than just for CEE systematic reviews and maps. Many articles are published that cite the guidelines even though the authors have not registered their review with CEE. We need to communicate more effectively with these authors to show them the benefits of registration and what CEE is trying to achieve at a global scale – increasing open-access to a reliable source of environmental evidence through the CEE library.

What progress would I like to see in 2016? There are two areas that we need to work hard on. First, the development of tools to ensure that our products are communicated effectively to potential users of evidence. CEE systematic reviews and maps are rigorous and reliable products but will anybody read them? We would be interested in hearing from anyone who has a 'better communication of findings' project of this kind planned or underway. Second, we need to be more proactive in forming themes for evidence synthesis activity where they are needed. These themes will be co-ordinated programmes, fundable by donor agencies, which seek to establish an evidence base for a focussed area of environmental management. CEE is interested in partnering or supporting institutions that wish to lead such thematic programmes.

Finally, I want to thank all who have contributed to CEE and its development to this key point. I think we are creating something remarkable and influential.

Andrew Pullin, Chair of Trustees

The CEE Board of Trustees during 2015



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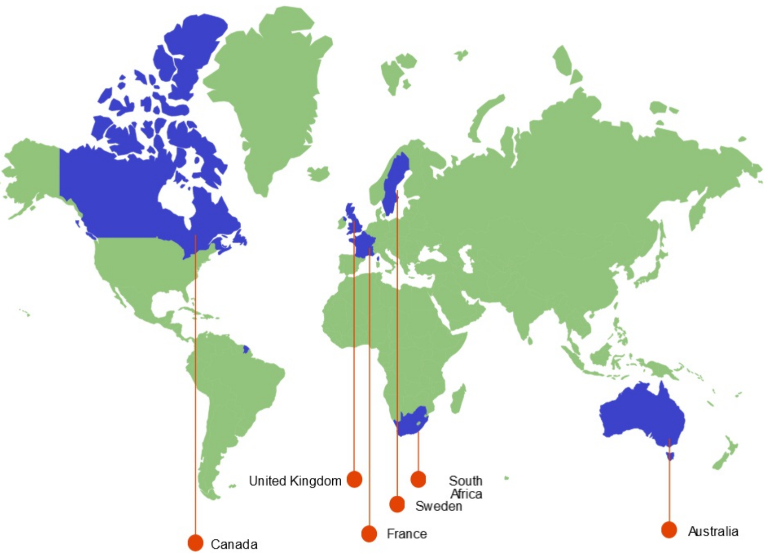
CEE Centres



CEE Network

As of December 2015, CEE has six Centres located in the United Kingdom, (Centre for Evidence-based Conservation), Australia (Centre for Evidence Informed Practice and Policy), South Africa (located at the Centre for Anthropological Research, University of Johannesburg), Sweden (Mistra Council for Evidence-Based Environmental Management) and Canada (Centre for Evidence-based Conservation and Environmental Management based in Carlton University, Ottawa). In 2015 an additional Centre in France joined the network. The new Centre sits within the Foundation for Research on Biodiversity in Paris.

Centre activities

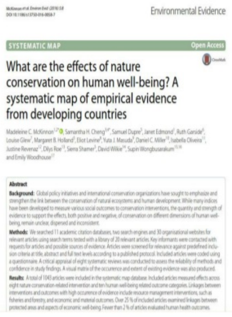
Whilst the specific functions of CEE Centres vary somewhat from Centre to Centre, they all engage in some key activities:

- Developing expertise in evidence synthesis in environmental management and collaborating to further develop synthesis methods.
- Working with practitioners and policy makers to identify key questions suitable for evidence synthesis to assist decision making.
- Seeking and encouraging funding to undertake Systematic Reviews and evidence mapping.
- Provision of a central contact point for supporting undertaking and training in systematic review, rapid review and evidence mapping activities in their region.
- Contribute to the CEE library.
- Liaising and integrating activities with other CEE Centres.

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, CEE Systematic Maps use established searching protocols and have rigorous inclusion criteria, but unlike systematic reviews, they do not attempt a synthesis of evidence. 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 management, where a topic is too broad for traditional Systematic Review, or where the evidence is too disparate or unsuitable for quantitative analysis. The CEE Systematic Mapping group aims to further develop the methodology for environment management systematic maps and ensure that CEE Systematic Mapping offers the greatest value possible to the evidence base.

In 2015 five protocols and five completed Systematic Maps were published in the journal of Environmental Evidence.



Environmental Evidence

SYSTEMATIC MAP Open Access

What are the effects of nature conservation on human well-being? A systematic map of empirical evidence from developing countries

Madeleine C. McKinnon, Samantha H. Cheng, Samuel Dupre, Janet Edmond, Ruth Garside, Louise Glew, Margaret B. Holland, Eliot Levine, Yuta J. Masuda, Daniel C. Miller, Isabella Oliveira, Justine Revenaz, Dilys Roe, Sierra Shamer, David Wilkie, Supin Wongbusarakum and Emily Woodhouse

Abstract

Background: Global policy initiatives and international conservation organizations have sought to emphasize and strengthen the link between the conservation of natural ecosystems and human development. While many indices have been developed to measure various social outcomes to conservation interventions, the quantity and strength of evidence to support the effects, both positive and negative, of conservation on different dimensions of human well-being, remain unclear, dispersed and inconsistent.

Methods: We searched 11 academic citation databases, two search engines and 30 organisational websites for relevant articles using search terms tested with a library of 20 relevant articles. Key informants were contacted with requests for articles and possible sources of evidence. Articles were screened for relevance against predefined inclusion criteria at title, abstract and full text levels according to a published protocol. Included articles were coded using a questionnaire. A critical appraisal of eight systematic reviews was conducted to assess the reliability of methods and confidence in study findings. A visual matrix of the occurence and extent of existing evidence was also produced.

Results: A total of 1043 articles were included in the systematic map database. Included articles measured effects across eight nature conservation-related intervention and ten human well-being related outcome categories. Linkages between interventions and outcomes with high occurence of evidence include resource management interventions, such as fisheries and forestry, and economic and material outcomes. Over 25 % of included articles examined linkages between protected areas and aspects of economic well-being. Fewer than 2 % of articles evaluated human health outcomes.

For more information on CEE Systematic Mapping Methods Group, please contact Nicola Randall: nrandall@harper-adams.ac.uk and visit www.environmentalevidence.org/MGroups_maps.html.

Statistical Methods Group

statistics
research
proof
information
findings
evidence
data
results
intel
investigation
knowledge

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.

Group members have started to think about Big Data in the context of CEE Systematic Reviews, both in terms of use of big data as part of the review process and what the evidence synthesis paradigm can export to big data problems.

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

Rapid Review Methods Group

Often decision makers are required to provide transparent and defensible answers in short time frames and/or with limited resources. The emergence of more rapid systematic approaches to undertaking reviews of evidence is an area that CEE is investing skills and resources. A Rapid Review Methods Group was formalised in 2015 and is lead by Neal Haddaway (CEE Sweden). The group will focus on researching, testing and developing new methods of rapid evidence synthesis for application to the environmental sector. The group will continue to work across the network of CEE Centres.

done FAST
done RIGHT

The CEE Community

First and foremost CEE is an open collaboration and its activity and impact is dependent upon a motivated community of contributors who support CEE's mission. The CEE is a global collaboration that works through its CEE Centres, which act as hubs of CEE activity within their region. Centres may vary in the activities that they specialise in but all undertake core CEE activities. The CEE also operates Review Teams and Methods Groups. Governance of CEE is the responsibility of the Board of Trustees acting under UK charity law.

Collaboration for Environmental Evidence

CEE Methods Groups, lead development of CEE Systematic Review methodology and CEE Thematic Groups which encourage, facilitate and coordinate Systematic Review activity across specific topic areas. CEE Review Teams, who choose to register and conduct 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. Review Teams can be commissioned or be self-forming and undertake a specific Systematic Review or mapping task, usually with input from decision makers and other stakeholders.

Around the Centres in 2015

Canada

Established in 2015, the Canadian Centre for Evidence-Based Conservation and Environmental Management, is located at Carleton University in Ottawa, Ontario.The Centre is led by Dr Steven Cooke and aims to serve as a nexus for the synthesis of knowledge in support of environmental and conservation interests that is unique in North America and will have global implications for policy, conservation and environmental initiatives. The Centre collaborates with a number of other academic and government conservation based entities such as the Canadian Wildlife Federation, Parks Canada, Environment Canda, Fisheries and Oceans Canada, provincial/territorial governments, Bournemouth University and the University of Canberra.

The Centres focus in 2015 was to train members of the team with two training courses completed including the Centre for Evidence Based Conservation Distance Learning Course in Systematic Review methodology and an Introduction to Systematic Review and Meta-Analysis undertaken at the John Hopkins Bloomberg School of Public Health. In 2015 the Centre submitted a protocol for it's first Systematic Review "The effectiveness of non-native fish control techniques in freshwater ecosystems". The Centre also produced two other publications:

* 'The Canadian Context for Evidence-Based Conservation and Environmental Management' by Steven J. Cooke, Jake C. Rice, Kent Prior, , Robin Bloom, Olaf Jensen, David Browne, Lisa Donaldson, Joseph R. Bennett, Jessie C. Vermaire and Graeme Auld

* 'A Call for Evidence-Based Conservation and Management of Fisheries and Aquatic Resources' by Steven J. Cooke, Sean Wesch, Lisa Donaldson, Alexander D.M. Wilson and Neal Haddaway.

Australia

The Collaboration for Evidence Informed Practice and Policy (CEIPP) was established in December 2014 and is a collaboration between the University of Queensland, Monash University, the University Of Melbourne, the University of Canberra and Evidentiary. Members of the Centre are involved in the development and implementation of a range of evidence synthesis methods to improve environmental decision making within policy and on-ground management. The group collaborates with a diverse group of government and academic entities.

While CEIPP has not been successful in securing grant funding in 2015, members of the group continue to play an active role in CEE activities, Methods Groups, strategic planning and training.

Priorities for CEIPP in 2016 are:

- Consolidate the group and develop a strategic plan to guide the activities and goals of the group
- Training in evidence based decision making
- Promotion of evidence based decision making including systematic approaches to evidence synthesis
- Utilise opportunities to work collaboratively with other CEE Centres
- Research and development of methods for evidence synthesis across multidisciplinary topics and seek opportunities for publication
- Assist potential review teams in undertaking systematic reviews of evidence

Sweden

Mistra EviEM was founded in January 2012 with the purpose of encouraging a scientifically evaluated approach to decisions in environmental management. The Council is financially and politically independent and seeks to improve documentation for decision-making in Swedish environmental management through systematic reviews of research results in areas connected to environmental management. Mistra EviEM's reviews are proposed mainly by public agencies or other decision-makers and stakeholders in the environmental sector.

Mistra (the Swedish Foundation for Strategic Environmental Research) is to provide funds totaling some SEK 60 million for EviEM's activities in the period 2012–2017. EviEM is governed by an independent Executive Committee, and has a Secretariat comprising five employees, that occupies premises at the international research institute Stockholm Environment Institute. This ensures the Council's independence, both financial and political.

In 2015 EviEM completed four Systematic Reviews and associated summary reports:

* How is mountain vegetation affected by reindeer grazing?
* How effective are wetlands for nitrogen and phosphorus removal?
* Can biomanipulation improve water quality in eutrophicated lakes?
* How does farming affect the organic carbon content of arable soils?

UK

The Centre for Evidence-Based Conservation (CEBC) is located at Bangor University in northern Wales. CEBC is the original CEE Centre and plays a key role in the central coordination and progression of CEE functions including coorindaiton of th eother Centres and training activities. CEBC aims to advance evidence based decision making through the promotion, conduct and dissemination of CEE Systematic Maps and Reviews.

The CEBC team has been instrumental in the promotion and establishment of new CEE Centres including the Canadian and French Centres in 2015. In 2015 progress was made for the creation of a new Centre in the USA. It is hope that establishment of this Centre will be formalised in 2016.

During 2015 the CEBC continued to act as the central coordinating centre for the CEE including the coordination of international Centre activities, providing the Environmental Evidence Journal editorial office, hosting the CEE website and commencement of organisation for the first CEE international conference to be held in Stockholm in August 2016.

During 2015 CEBC undertook or supervised the conduct of ten Systematic Reviews or Systematic Maps covering topics such as forest management, agricultural soils management, genetically modified crops, forest protected areas, temperate lakes and seaweeds. Progress in development of the new version of the Systematic Review Guidelines was also made. The CEBC will continue to play a coordinating role in 2016 including expansion of the Board membership and implementation of the Strategic Plan.

France

The CEE network was thrilled to see a new CEE Centre located in France come on board in August 2015. The Centre is hosted in The Fondation pour la Recherche sur la Biodiversité (FRB), a foundation for scientific cooperation about biodiversity and ecosystems. It acts as a science-policy-society interface encouraging dialogue and joint projects and calls, thanks to its scientific council and it Stakeholders Advisory Board (more than 170 institutional members). It also works closely with various ministries such as those in charge of ecology, agriculture, research and oversea territories.

In 2016 the FRB will develop a Steering Committee and roadmap to support various initiatives such as:

1. Promoting and explaining the methodology of Systematic Reviews
2. Providing and organising training sessions for possible review teams
3. Initiate dialogue with commissioners to define suitable questions and realistic expectations
4. Working at launching calls for tenders for Systematic Reviews
5. Welcoming review teams in the Centre for Synthesis and Analysis for Biodiversity (CESAB)

Systematic Reviews have been the basis for a national "Collective expertise" approach in France. There is an active Cochrane Center in Paris, yet Systematic Maps and reviews in environmental management are poorly known so far. The new Centre aims to help promote these approaches in French-speaking countries.

South Africa

The CEE Centre in South Africa is hosted by the Centre for Anthropological Research at the University of Johannesburg. The Centre collaborates with numerous and international leaders in evidence based practice including The Africa Evidence Network, the South African government, the Cochrane Collaboration, Campbell Collaboration, the EPPI-Centre, the Natural Resources and Environment Unit at the Council for Scientific and Industrial research and the Human Sciences Research Council.

The Centre seeks to promote the use of research synthesis in decision making. In achieving this the Centre works closely with government to build a demand for and awareness of Systematic Reviews and other forms of research synthesis.

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In 2015 the Centre trained over 200 civil servants in a training programme 'Building Capacity to Use Research Evidence'. Through training and other activities, the Centre has built strong connections with the the South African government including within the Department for Environmental Affairs, the Department for Water Affairs and Sanitation and the Department for Human Settlements.The Centre produced several publications in 2015 including:

* A theory of change for capacity-buidling for the use of research evidence by decision-makers in southern Africa' by R Stewart.

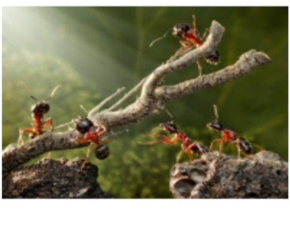
* 'Capacity for conducting systematic reviews in low and middle income countries: a rapid appraisal' by S Oliver, M Bangapan, C Stansfield and R Stewart.

* 'The last mile on the long walk to evidence-informed development: building capacity to use research evidence' by L Langer, R Stewart and T de Wet.

Systematic Reviews and Maps in 2015

What is the impact of active management on biodiversity in boreal and temperate forests set aside for conservation or restoration? (systematic map)

Claes Bernes, Bengt Gunnar Jonsson, Kaisa Junninen, Asko Lõhmus, Ellen Macdonald, Jörg Müller, Jennie Sandström, 2015



Are alternative livelihood projects effective at reducing local threats to specified elements of biodiversity and/or improving or maintaining the conservation status of those elements? (systematic review)

Dilys Roe, Francesca Booker, Mike Day, Wen Zhou, Sophie Allebone-Webb, Nicholas A. O. Hill, Noelle Kumpel, Gillian Petrokofsky, Kent Redford, Diane Russell, Gill Shepherd, Juliet Wright, Terry C. H. Sunderland, 2015

What are the effects of agricultural management on soil organic carbon in boreo-temperate systems? (systematic map)

Neal R. Haddaway, Katarina Hedlund, Louise E. Jackson, Thomas Kätterer, Emanuele Lugato, Ingrid K. Thomsen, Helene Bracht Jørgensen, Bo Söderström, 2015

What are the non-food impacts of GM crop cultivation on farmers' health? (systematic review)

Monica Racovita, Dennis Ndolo Obonyo, Wendy Craig, Decio Ripandelli, 2015

What evidence exists on the impact of governance type on the conservation effectiveness of forest protected areas? Knowledge base and evidence gaps. (systematic map)

Biljana Macura, Laura Secco, Andrew S. Pullin, 2015

What are the impacts of reindeer/caribou (Rangifer tarandus L.) on arctic and alpine vegetation? (systematic review)

Claes Bernes, Kari Anne Bråthen, Bruce C Forbes, James DM Speed, Jon Moen, 2015

How effective are on-farm mitigation measures for delivering an improved water environment? (systematic map)

Nicola P Randall, Louise M Donnison, Paul J Lewis, Katy L James, 2015

What is the effect of non-native seaweeds on resident benthic assemblages? Variability between trophic levels and influence of background environmental and biological conditions? (systematic review)

Fabio Bulleri, Lisandro Benedetti-Cecchi, Eva Chatzinikolaou, Tasman Crowe, Jonne Kotta, Devin Lyons, Rebecca Mant, Gil Rilov, Luca Rindi, Elena Maggi, 2015

What is the influence of a reduction of planktivorous and benthivorous fish on water quality in temperate eutrophic lakes? (systematic review)

Claes Bernes, Stephen R Carpenter, Anna Gårdmark, Per Larsson, Lennart Persson, Christian Skov, James DM Speed, Ellen Van Donk, 2015

The fitness consequences of inbreeding in natural populations and their implications for species conservation (systematic map)

Linda E Neaves, Jacqualyn Eales, Raj Whitlock, Peter M Hollingsworth, Terry Burke, Andrew S Pullin, 2015

CEE Journal

Environmental Evidence is the journal of the Collaboration for Environmental Evidence (CEE). The Journal facilitates rapid publication of evidence syntheses, in the form of CEE-registered Systematic Reviews and Maps. We focus on the effectiveness of environmental management interventions and the impact of human activities on the environment. Our scope covers all forms of environmental management and human impacts and therefore spans the natural and social sciences. Subjects include water security, agriculture, food security, forestry, fisheries, natural resource management, biodiversity conservation, climate change, ecosystem services, pollution, invasive species, environment and human wellbeing, sustainable energy use, soil management, environmental legislation, environmental education.

Objective use of scientific evidence to inform policy or practice is a major aim and to that end the journal also publishes methodology papers and encourages submissions that promise advances in the field of evidence synthesis and dissemination.

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In 2015 the journal published 25 articles.

Our target for 2016 is 30 articles

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 CEE Systematic Reviews. Particular thanks for 2015 are due to:

The Trustees
CEE Guidelines Editorial Board
Leaders and staff of CEE Centres
Leaders and contributors to CEE Groups
Commissioners and funders of CEE Systematic Reviews
Review authors, stakeholders and peer-reviewers
Volunteers and supporters
BioMed Central and the EEJ Editorial Board

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