

Systematic evidence-based review workshop: introduction & practical guidance on systematic reviews¹

Project Report

A systematic evidence-based review (SER) is a review of a clearly formulated question using systematic and explicit methods to identify, select, and critically appraise relevant research, and to collect and analyze data from the studies included in the review². This method differs from a synthesis or literature review in that it seeks to *evaluate* the available evidence against a set of well-defined and rigorous criteria. The value of this approach is that it can provide qualitative and quantitative summaries of existing and relevant knowledge for setting research priorities, informing policy decisions, and guiding funding directions.



Although some National and International organizations are utilizing systematic evidence-based review to inform environmental policy decisions it is still relatively unknown and under-utilized outside of the health profession, where it has been used for years. Organizations such as the Center for Evidenced Based Conservation and the Collaboration for Environmental Evidence have adopted SER as the most rigorous method for synthesizing scientific evidence to produce unbiased, repeatable reviews and have applied it to the environmental policy decision-making process.

In May of 2013, Oregon State University's Forest and Natural Resources Extension Program in collaboration with the Northwest Fire Science Consortium offered one of the first systematic evidence-based review training workshops in the Northwest. The workshop presenter was Dr. Gillian Petrokofsky from the University of Oxford; herself an expert in evidence-based forestry and systematic review development. The workshop was held over a period of 3 days from May 7-9, 2013, on the OSU campus in Corvallis and had 16 participants. The course introduced participants to the skills required for evidence-based natural resource analysis and included the following:

¹ Prepared by Janean Creighton on 5/31/13

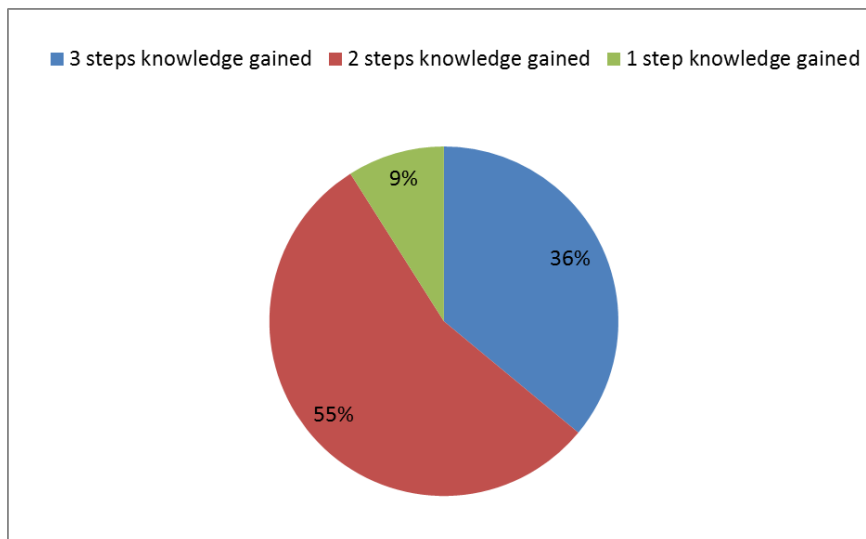
² Collaboration for Environmental Evidence (2013) Guidelines for Systematic Review and Evidence Synthesis in Environmental Management

1. framing answerable questions to address policy and practice concerns
2. finding the best available evidence to answer the question
3. recognizing the limitations of available studies and the problem of bias
4. critically appraising the evidence for its validity and usefulness
5. planning a systematic review
6. forming a systematic review team

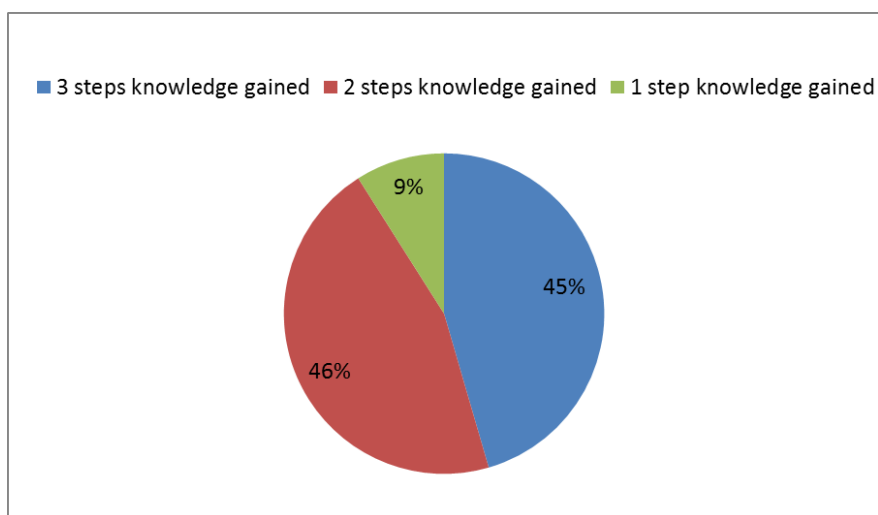
Evaluation results

Using a Likert scale (where “5” is high and “1” is low), participants were asked to indicate their level of knowledge of SER *prior* to the workshop and *after* the workshop. Response (n=11)

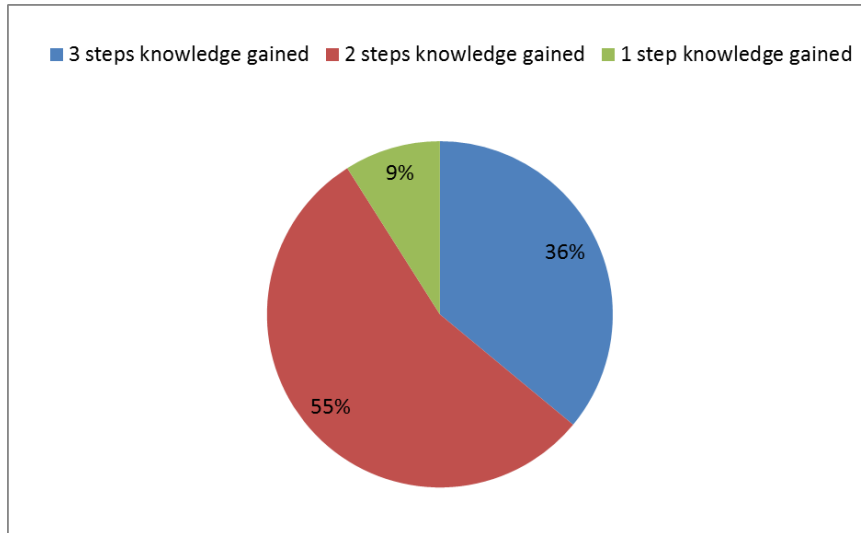
Knowledge of systematic evidence-based reviews *in general*



Using systematic evidence-based reviews in *planning*



Using systematic evidence-based reviews in *policy decisions*



Participants were asked to indicate the usefulness of a series of classroom and group activities (where “5” is very useful and “1” is not at all useful):

PICO assessment activity

<u>Rating</u>	<u>Mean = 4.5 (n=11)</u>
5 (very useful)	60%
4	30%
3	10%
2	0
1 (not at all useful)	0

Designing a literature search strategy

<u>Rating</u>	<u>Mean = 4.6 (n=10)</u>
5 (very useful)	78%
4	11%
3	0
2	11%
1 (not at all useful)	0

Usefulness of the workshop to your current and/or future work

<u>Rating</u>	<u>Mean = 4.7 (n=11)</u>
5 (very useful)	80%
4	10%
3	10%
2	0
1 (not at all useful)	0

Participants were also asked to rank elements of the workshop (where “5” is high and “1” is low)

Quality of the instruction

<u>Rating</u>	<u>Mean = 4.7 (n=11)</u>
5 (very useful)	80%
4	10%
3	10%
2	0
1 (not at all useful)	0

Quality of the content

<u>Rating</u>	<u>Mean = 4.7 (n=11)</u>
5 (very useful)	80%
4	10%
3	10%
2	0
1 (not at all useful)	0

Opportunity for discussion

<u>Rating</u>	<u>Mean = 5.0 (n=10)</u>
5 (very useful)	100%
4	0
3	0
2	0
1 (not at all useful)	0

When asked if they would attend an additional SER training if it was offered, 90% said “yes” and 10% said “maybe”. When asked if they would recommend the workshop to their colleagues, 100% said that they would.

Participants were asked a series of open-ended questions. Below are the aggregated responses:

1. What attracted you to this workshop?

- *The lack of a systematic look at the literature in my discipline*
- *Opportunity to share experience and learn more about recent developments on the topics*
- *Subject matter – relevance of SEBR in Oregon*
- *Interest in EBR on a topic I am working on*
- *Wanting to better understand the systematic review process in general and find ways to improve the rigor and transparency of lit reviews that I and my group are currently working on*
- *The possibility of better understanding of an effective review process*
- *Reputation of the presenters; interest in the topic; relevance to future of the library*
- *Potential usefulness to current and future work to use the systematic review protocol*
- *Focus on using info sources/lit reviews process in methodological work*

- *Opportunity to learn a relevant skill in literature review that is transparent, relevant, focused, and repeatable*
- *The concept and the hands-on approach*

2. Overall favorite thing about the workshop

- *Hands on and presentations by Jeff and Terry*
- *Team work*
- *Combination of lectures/varied speakers/group activities; also ability to apply aspects of systematic review to other research projects (e.g. transparency)*
- *Group activities*
- *Interactions among participants*
- *Effective introduction to systematic review process*
- *It was all informative and enlightening and affirming*
- *Gillian's accent and sense of humor*
- *Lots of time for interaction*
- *Interaction – informal, with other attendees Q & A's*
- *Hands on activities that allowed us to practice aspects of an SR; presentations from those who've done this; Gillian's expertise*

3. Overall least favorite thing about the workshop

- *Of course, as always, we'd need more time*
- *Nice to have had a bit larger audience*
- *8:30 AM start time*
- *Maybe 4 more hours*
- *At times the workshop seemed like it was geared for people who had at least some background in systematic review. At times, I felt a little behind.*
- *It was all good*
- *Needed a little more time (3 full days)*
- *Instructor wasted time with side stuff and took a long time to make her points; the librarian's presentation could have been condensed to 30 minutes, allowing the group to have more hands-on work; group hands-on work was poorly directed*

Additional comments

- *Thank you! I will definitely apply the methodology to my next literature review!*
- *Excellent! Thanks!*
- *This was a very good introduction to the concept of and process for conducting a systematic review. Very useful.*
- *Thank you!!*
- *Thanks for organizing this training workshop!!*
- *Fascinating to hear Gillian's take on systematic reviews. Topic of "evidence mapping" was interesting.*
- *I'm so glad we had OSU reference librarians participating, and it was great that they threw up a web site to capture materials and serve as an on-going resource.*

List of attendees

Bonnie Avery	OSU Libraries & Press
Jeff Behan	OSU – INR
Max Bennett	OSU Extension – Jackson County
Michael Borman	OSU Animal & Rangeland Sciences
Aron Borok	Oregon Dept. of Environmental Quality
Deanne Carlson	OSU College of Forestry
Janean Creighton	OSU
Terry Freuh	Oregon Dept. of Forestry
Lisa Gaines	OSU – INR
Jim Johnson	OSU College of Forestry
Ellen Hammond	Oregon Dept. of Agriculture
Mary Sisock	Oregon State University College of Forestry
Ken Vance-Borland	Oregon State University College of Forestry
Andrea Wirth	OSU Libraries
Kristin Zouhar	USFS Rocky Mountain Research Station
Susan Morre	Oregon State University College of Forestry