

# Benefits of independent science review in natural resource policymaking: Literature search protocol

(7 March 2016)

## 1. Background

In 2015, the Oregon Legislature passed Senate Bill 202 regarding independent scientific review of natural resources issues and policies in Oregon. As directed by SB 202, the Oregon Governor's Office appointed a Task Force of experts to examine the state's need, capacity and options for independent scientific review and to make recommendations to the Legislature.

Among other tasks, SB202 directs the Task Force to *"Evaluate whether natural resource agencies, legislators, and the public would benefit from the incorporation of independent scientific review in the making of [natural resource] policy decisions."* To help make this evaluation, the Task Force decided to review literature on the benefits of independent scientific review of natural resource issues and policies.

This protocol specifies details of a systematic search strategy designed to find literature that is relevant to the review questions.

## 2. Review questions

**Primary questions:** *Do natural resource agencies, legislators and the public benefit from the incorporation of independent scientific review in the making of [natural resource] policy decisions? If so, what are these benefits? To whom do they accrue? How?*

**Secondary questions:** *Are there disadvantages, downsides or drawbacks to natural resource agencies, legislators and the public from the incorporation of independent scientific review in the making of [natural resource] policy decisions? If so, what are these disadvantages, downsides or drawbacks? Who do they affect? How?*

## 3. Methods

### 3.1 Scope; specific content being sought

Literature with substantive discussion of the benefits and/or disadvantages of independent science review in natural resource policymaking and implementation.

**Most relevant:** Literature published in refereed journals focused on topic listed above.

**Relevant:** Non-refereed reports, policy papers, conference proceedings, etc. from state, federal and tribal land and natural resource agencies focused on topic listed above. Literature that discusses rationales for independent scientific review (as opposed to specifically discussing benefits that accrue from such reviews). Literature that discusses lessons learned, improvements or ways to realize cost savings in independent science reviews.

**Less relevant:** Literature with substantive discussion of benefits of independent science review in fields other than natural resources. Literature that includes useful content on benefits of independent science review, but this is not the central theme or point of the paper. Literature that focuses primarily on the process and mechanics of transferring science into policy, rather than the benefits of monitoring this process via scientific review.

### 3.2 Keywords and search strings

- Independent scientific review *and* benefit
- Independent science review *and* benefit
- Independent peer review *and* benefit
- External scientific review *and* benefit
- External science review *and* benefit
- External peer review *and* benefit
- Benefits of independent scientific review
- Benefits of independent science review
- Benefits of external scientific review
- Benefits of external science review
- Disadvantages of independent scientific review
- Disadvantages of independent science review
- Disadvantages of external scientific review
- Disadvantages of external science review
  
- Benefits of scientific review\*
- Benefits of science review\*
- Disadvantages of scientific review\*
- Disadvantages of science review\*
- \*consider these broader search strings only if more focused strings are unproductive and time allows

### 3.3 Search strategy

*The following databases will be searched:*

- Web of Science
- CAB Abstracts
- Agricola
- Academic Search Premier
- Environmental Science & Pollution Management
- Google Scholar
- Social science database(s) GET NAMES

*The first 50 “hits” returned will be scanned for relevance.*

*Other sources*

- Solicit suggestions from Task Force members and their colleagues
- Solicit suggestions from the public via Task Force website(?)
- Bibliographies of the most relevant studies identified in database searches

- Websites of existing independent science review entities
- Federal Register?

### 3.4 Inclusion/exclusion criteria

*Coarse filter of “hits” in database searches:* Abstracts, discussion, conclusions of papers identified by database searches will be scanned for useful content. Those meeting “most relevant” and “relevant” standards will be included at this stage. “Less relevant” papers may be included or excluded at this stage. Reasons for excluding a reference will be documented with a brief explanation. Depending on quality and quantity of references identified, references included during coarse filter phase may be excluded later. Reasons for doing so will be documented.

### 3.5 Data synthesis and presentation

Relevant information will be presented in an excel spreadsheet. This information will be further synthesized into a narrative synthesis.

## 4. Potential Conflicts of Interest and Sources of Support

The Institute for Natural Resources (INR) mission is to provide access to integrated knowledge and information to inform natural resource decision making and develop solutions in the context of sustainability. [The INR provides this access through a variety of means, including science synthesis and independent science reviews.](#) Thus, it is possible that INR could be seen as predisposed to emphasize the benefits of independent scientific reviews, and de-emphasize the disadvantages.

INR realizes that a credible review hinges on avoiding this perception and on filtering literature and presenting findings objectively. Also, an accurate and clear-eyed synthesis of knowledge on the pros and cons of independent science can inform INR’s work.

[At the direction of the SB202 Task Force, INR staff is helping to engage in this review, which is funded the Oregon Legislature.](#)

## 5. Additional Comments & Discussion

This protocol for a systematic literature search will be revised as the review progresses. In other words, [this protocol is a living document and can change from “what we plan to do” to “what we did”.](#)

By applying this protocol, we aim to document an objective and transparent search for literature relevant to our review questions. But our ability to find highly relevant, focused literature that explicitly describes and accounts for the benefits that we are concerned with may be limited- either because there simply isn’t much of it, or because there is little agreement on keywords.

Instead, we may find a much larger volume of tangentially relevant literature on the use and application of science in natural resource policymaking. In that case, defining and applying clear and tightly focused literature inclusion/exclusion criteria may be challenging. Conversely, relaxing our inclusion criteria may result in a body of literature that is beyond what we can accommodate given our timeline.

Thus, rather than a comprehensive and exhaustive examination of the topic - the goal of “traditional” systematic reviews - we should perhaps strive for a *representative* review of relevant literature to support defensible, reasonably well-researched cases “for” and “against” independent scientific review in natural resource policymaking.

Regardless of our eventual approach and product, documenting the steps taken in this protocol will lend objectivity and transparency to the process.