

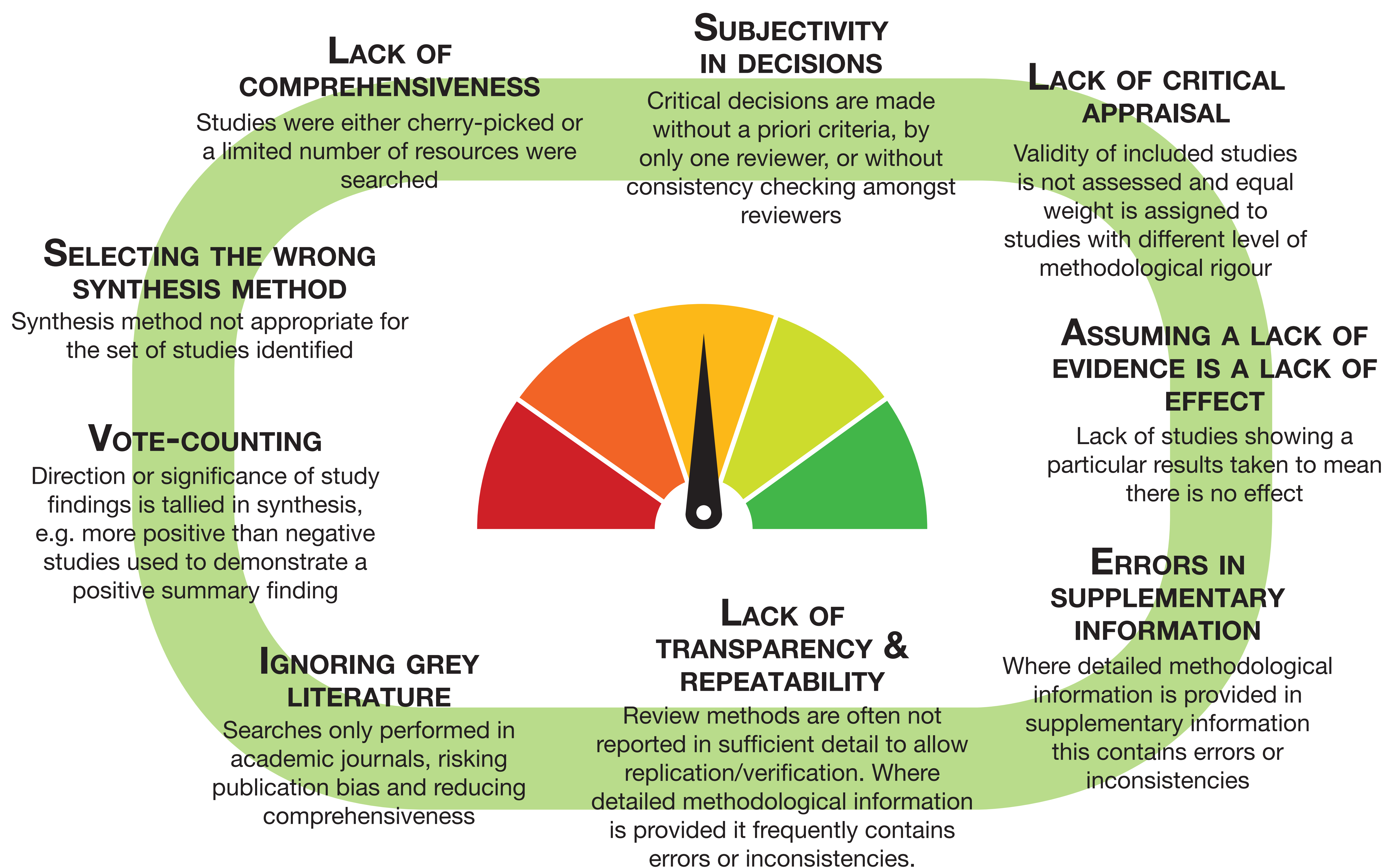
# The *not-so-systematic* reviews: challenges with misunderstanding definitions in environmental sciences

Neal Haddaway, Biljana Macura and Magnus Land  
Mistra-EviEM, Stockholm Environment Institute, Stockholm, Sweden

When conducted well, systematic reviews can offer ‘gold standard’ evidence for use in decision-making. However, when done badly or when misunderstood, the evidence from a not-so-systematic review could be biased and incorrect. Here we discuss the problem with sub-standard reviews in conservation and environment management.

## COMMON PROBLEMS IN (NOT SO) SYSTEMATIC REVIEWS

It is widely accepted that systematic reviews that have ‘added value’ compared to a traditional review, but many researchers still have a limited understanding of the necessary steps and safeguards needed to ensure a systematic review is truly reliable. Many evidence reviews in conservation and environmental management lack transparency and repeatability, performing little critical appraisal, failing to attempt comprehensiveness and often performing vote-counting. We have identified a series of recently published reviews that claim to be ‘systematic reviews’ in the field of conservation and environmental management<sup>1,2,3</sup>. Through our analyses we have identified the following critical pitfalls.



## STEPS FORWARD

Careful gatekeeping is needed by journal editors, peer-reviewers and/or endorsing bodies to ensure a minimum standard is attained before reviews can be truly seen as being ‘systematic reviews’. Since endorsing bodies (e.g. CEE, Cochrane, Campbell) already perform this role, we call on editors and peer-reviewers to assist in ensuring substandard systematic reviews are not published and that authors (future reviewers) are aware of systematic review guidance available to help them.

<sup>1</sup> Haddaway, N.R., Land, M. and Macura, B., 2017. A little learning is a dangerous thing”: A call for better understanding of the term ‘systematic review. *Environment international*, 99, pp.356-360.

<sup>2</sup> Haddaway, N.R. and Watson, M.J., 2016. On the benefits of systematic reviews for wildlife parasitology. *International Journal for Parasitology: Parasites and Wildlife*, 5(2), pp.184-191.

<sup>3</sup> Haddaway, N.R., 2017. Response to “Collating science-based evidence to inform public opinion on the environmental effects of marine drilling platforms in the Mediterranean Sea”. *Journal of Environmental Management*.