



Building transparency, credibility and trust in evidence synthesis practice: why editorial standards and policies matter

ARTICLE INFO

Keywords:

Editorial policies
Publishing standards
Quality control
Reproducibility
Review literature
Evidence-based practice

ABSTRACT

Editorial standards are not administrative formalities; they function as scientific quality control mechanisms that directly shape the validity, credibility, integrity, and utility of published research. Since 2016, *Environment International* has been the first environmental health journal to implement specialist editorial policies for handling systematic review submissions. Over the past decade, *Environment International* has been committed to the continuous advancement and rigorous editorial standards to ensure publication of trustworthy, high-impact evidence-based research. Central to this effort is the CREST_Triage tool (<https://osf.io/bv4en>), which enables transparent and rigorous editorial assessment of methodological quality, reporting completeness and reproducibility. In this editorial, we describe the recent developments in our editorial policies and efforts undertaken to further develop and strengthen our standards for evidence syntheses and narrative reviews. A major component of this work has been the expansion of our editorial policies to scoping reviews, review of reviews, their respective protocols, and narrative reviews, which is reflected by the development of new triage instruments, guidance, and workflows, which we have implemented in April 2025. *Environment International* remains one of the very few journals that actively implement effective quality control measures and enforcement of editorial standards for the evidence syntheses it publishes. We believe that transparent and consistent editorial triage criteria and decisions are beneficial to our authors, peer-reviewers, and the field at large. Amidst the reproducibility crisis in science and increasing concern over the validity of evidence syntheses in environmental health, including those introduced by generative artificial intelligence, we call for stronger editorial stewardship and wider adoption of specialist editorial policies by other journals to increase the quality, transparency and reproducibility of evidence syntheses, leading to more comparable manuscript evaluations across journals. As the evidence synthesis toolkit and practice continues to evolve, our editorial policies and standards will adapt accordingly, ensuring that *Environment International* remains at the forefront, while upholding the philosophy and principles that have guided us from the beginning.

1. Introduction

Evidence synthesis methods aim to comprehensively and objectively make sense of large, often heterogeneous bodies of research, shaping science into usable knowledge to inform decision-making in health, social, and policy contexts. Since their debut in healthcare and social sciences, these tools have gained widespread use across disciplinary fields such as environmental health, ecology, toxicology, and life sciences. Evidence synthesis methods commonly include systematic reviews and meta-analyses, scoping reviews, systematic evidence maps, reviews of reviews (also referred to as umbrella reviews), rapid literature reviews, and bibliometric analyses (Fig. 1). The use of these methods is widespread across health and environmental sciences, and in some disciplinary fields fairly recent, which is not without its teething problems. Important implementation challenges persist, and the validity of published evidence syntheses remains a concern, despite growing guidance and best practice recommendations (Menon et al., 2022; Moore et al., 2022; Sutton et al., 2021; Uttley et al., 2023). Our analysis

of hundreds of evidence synthesis method submissions for the period 2020–2022 shows that 91% of manuscripts triaged for compliance had important methodological and reporting quality shortcomings that were prohibitive of advancing them to peer-review (Whaley and Roth, 2022a); 79% of evidence synthesis submissions were desk-rejected upfront for that period, a percentage that increased to 85% in the period 2023–2025.

Reporting standards such as PRISMA (Page et al., 2021) and ROSES (Haddaway et al., 2018) can help increase the reporting quality of evidence syntheses, although the evidence is mixed (Ivaldi et al., 2024; Hamilton et al., 2026). While journals often endorse PRISMA (ca. 190 journals as per December 1, 2025, <https://www.prisma-statement.org/prisma-endorsers>), they do not typically enforce it. In practice, PRISMA is often not correctly applied. As a reporting checklist, PRISMA is not suitable for judging of the methodological quality of the work (Page and Moher, 2017). *Environment International* requires that a PRISMA or ROSES (Haddaway et al., 2018) statement be submitted alongside each submission. Based on our experience, adherence to

<https://doi.org/10.1016/j.envint.2026.110216>

Available online 26 March 2026

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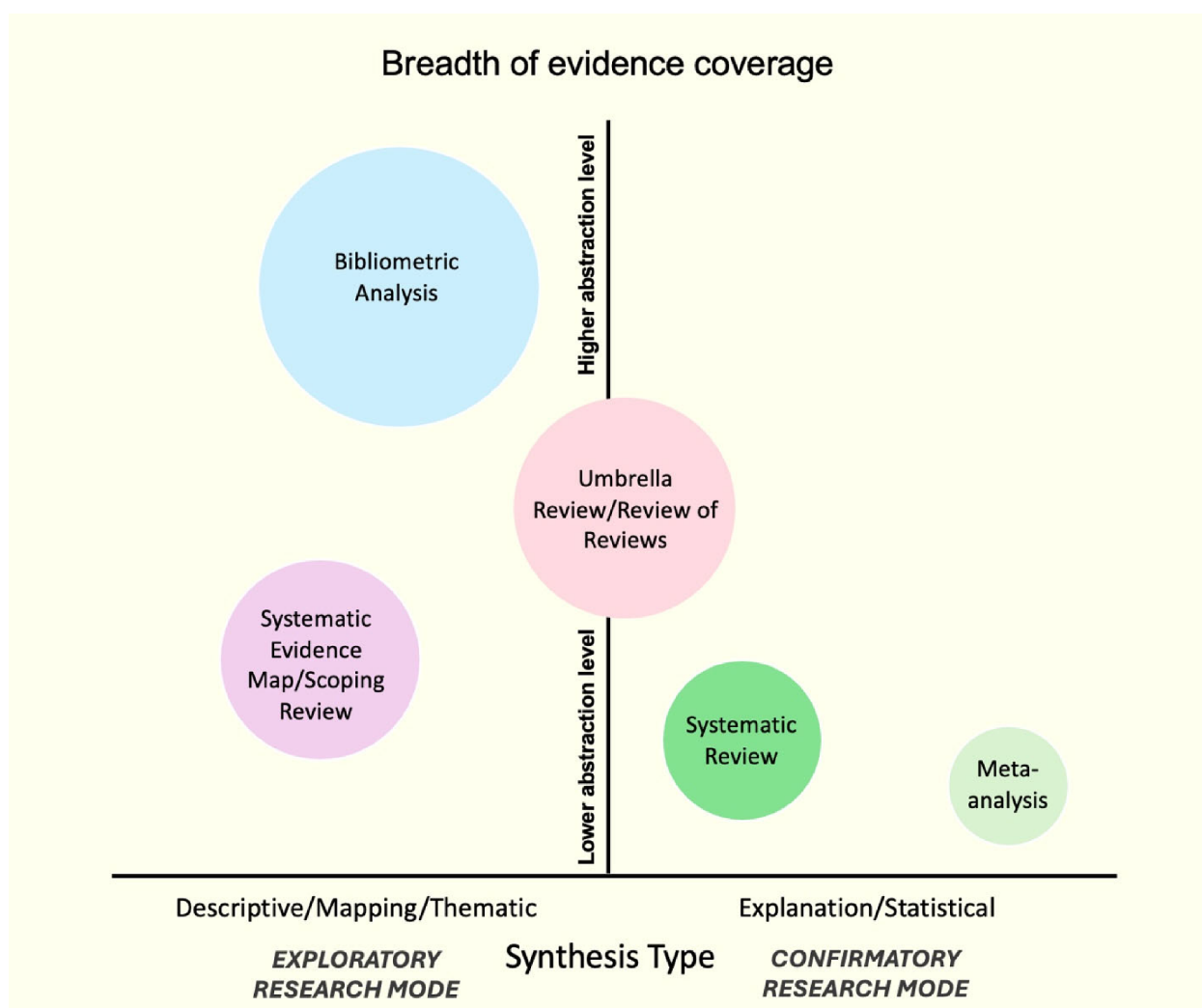


Fig. 1. Topology of evidence synthesis methods. The conceptual space is defined by two primary dimensions: Synthesis Type (x-axis), representing the transition from descriptive mapping to explanatory statistical pooling, and Synthesis Scope (y-axis), representing the breadth of evidence coverage. **Bibliometric Analysis** can characterize the evolution of a field, identifying citation networks, dominant journals, and core knowledge structures through metadata analysis. **Systematic Evidence Maps & Scoping Reviews** are designed to map the extent, range, and nature of research activity on a broad topic; these identify key concepts and point to critical “knowledge gaps” in the existing literature. **Systematic Reviews** aim to answer specific, focused questions (e.g., PECO/PICO) by identifying all relevant studies and appraising their quality to provide a reliable summary of what is known. **Meta-Analysis** represents the highest degree of quantitative integration; the goal is to calculate a pooled effect size and provide a high-certainty estimate of an exposure/intervention's impact or a phenomenon's prevalence. **Umbrella Reviews/Review of Reviews** function at a higher abstraction level, synthesizing findings from multiple systematic reviews to provide an “overarching” summary of evidence for a broad subject area or related exposures/interventions. This topology highlights that these approaches are complementary instruments rather than a hierarchy, selected based on the specific research question and the required level of granularity. *Nota bene:* The size of the circle is proportional to the breadth of evidence coverage.

PRISMA, which is often self-proclaimed by authors, is a very poor predictor of the quality and publishability of an evidence synthesis submission. Reliance on informal peer-review as well as standard editorial checks for compliance and quality control against a reporting standard are insufficient for ensuring the rigour of evidence synthesis publications.

A handful of journals currently implement effective editorial quality controls for evidence syntheses. In 2016, *Environmental International* became the first environmental health journal to adopt specialist policies for handling systematic review submissions (Whaley and Halsall, 2016; Whaley et al., 2016). These pioneering activities included the appointment of a dedicated editor (Paul Whaley); the development and implementation of the CREST_Triage tool (<https://osf.io/bv4en>) (Whaley and Roth, 2022b) for transparent and consistent enforcement of our editorial standards; and the acceptance of Protocols as full manuscripts for systematic reviews, soon to be followed by systematic

evidence maps and their protocols (Whaley and Roth, 2022a). A second specialist editor (Nicolas Roth) was appointed in 2021, and a third editor in 2025 (Yefeng Yang).

The CREST_Triage tool remains a central pillar of the editorial work and guiding philosophy at *Environment International*: (i) It allows for a comprehensive, consistent, and transparent editorial assessment of evidence synthesis submissions. (ii) It focuses editorial attention on key aspects related to the quality, novelty, and publishability of a manuscript, in particular its methodological adequacy and rigour, its completeness, and the transparency in the way the work has been planned, conducted and reported. (iii) It serves as the conceptual basis that informs the development of new editorial standards, as the Journal continues to expand and refine its evidence synthesis publishing practices.

In this editorial, we highlight important changes in our editorial policies and efforts undertaken to strengthen and better align our

standards for evidence synthesis and narrative review submissions. We briefly present the philosophy and principles behind the development and enforcement of our editorial policies, looking back on some of our pioneer work and accomplishments realized over the past decade.

2. New editorial policies for scoping reviews and reviews of reviews

The classical “systematic review” toolkit has expanded over the last decade (Moher et al., 2015), in particular with the application of “big review” methods such as systematic evidence maps (or evidence gaps maps, see Khalil et al., 2025) that explore broader questions/topics and complex evidence landscapes (Fig. 1). While scoping reviews are well established, reviews of reviews (also known as overview of reviews, umbrella reviews) are becoming increasingly popular as the volume of systematic reviews explode in numbers. Rapid literature reviews have emerged as a new form of knowledge synthesis that accelerates the traditional systematic review process, without compromising on rigour and transparency, for informing time-sensitive science and policy contexts. Evidence synthesis practice has become multifaceted, as these methods are increasingly deployed in varying research and/or regulatory contexts. This can also lead to some “flexibility” in which authors apply these methods, with the unwanted consequence of blurring the lines between them. Acknowledging the growing diversity of evidence synthesis methods submitted to *Environment International*, we felt that new article types and standards were needed to adapt to changing practices, maintain consistent editorial triage processes, but also the need to communicate our standards more effectively.

Consequently, we have expanded our approach to other systematic review-like article types and developed new Guidance for Authors (GfA), CREST-based triage instruments, reporting standards, and protocols for scoping reviews and reviews of reviews. Authors will find new and update webpage content under our Policies and Guidelines (<https://www.sciencedirect.com/journal/environment-international/about/policies-and-guidelines/guidance-notes-for-authors-of-systematic-reviews-systematic-evidence-maps-and-related-manuscript-types>). We have also updated the Editor’s Choice section (<https://www.sciencedirect.com/journal/environment-international/about/editors-choice>), to better communicate the Journal’s expectations for each evidence synthesis article we publish, and we encourage prospective authors to consult this resource at an early stage of reporting their research. Currently, *Environment International* accepts the following types of manuscript in relation to conduct of evidence synthesis methods: systematic reviews, reviews of reviews, systematic evidence maps, scoping reviews, protocols (of the four aforementioned types), and method papers. Other types of evidence syntheses are published on a case-by-case basis, e.g. such as advanced bibliometric approaches and rapid literature reviews, and prospective authors are invited to contact the editors directly to enquiry about the suitability for publication of their manuscript. As evidence synthesis methods are increasingly applied across disciplinary fields to meet research, societal, and policy needs and priorities, the evidence synthesis toolkit and practice will evolve. *Environment International* will stay close to the latest developments in the field and adapt its specialist editorial policies, ensuring the Journal continues to serve as a trustworthy and forward-thinking voice in the field of evidence synthesis publishing.

3. Raising the bar for narrative review submissions

While evidence synthesis methods and systematic reviews in particular are often considered the ‘gold standard’ in research synthesis (although one might want to challenge that notion, see e.g., Moore et al., 2022), narrative reviews still have their place in a variety of contexts to inform specific research or decision-making needs. *Environment International* receives several hundreds of narrative reviews every year, with a desk-rejection rate >90%. Typically, submissions show a large degree

of heterogeneity in terms of their methodological and reporting quality and relevance to the Journal’s scope. Guidance on “best practice” for writing narrative reviews is abundant in the literature yet uneven and often of questionable utility insofar methodological rigour, reporting completeness, transparency, and reproducibility are concerned. *Environment International* did not have explicit requirements for narrative reviews so far (few journals do). The situation prompted us to develop a new GfA to clearly communicate our standards (<https://www.sciencedirect.com/journal/environment-international/about/policies-and-guidelines/guidance-notes-for-authors-of-narrative-reviews>), while ensuring a better alignment of our publishing practice across all the literature review article types the Journal publishes.

An analysis of 400 narrative reviews submitted to *Environment International* between January 1 and December 1, 2025 showed that submissions often lacked proper conceptual and methodological grounding: roughly 50% of submissions had no clear focus and objectives, and 90% had no description of methods used for identifying and interpreting the literature of interest. Approaching a literature review in such a way may be prone to important bias; results de facto in critical reliability, transparency, reproducibility, and validity issues; and is not useful to inform any meaningful conclusions. Authors of narrative reviews should explicitly describe (briefly but clearly) the conceptual and methodological grounding of the review in relation to planning and scoping (incl. motivation, contribution to the field), framing (research question, objectives), collecting, selecting, extracting, evaluating, and synthesizing the information of interest. The argument “my review is not systematic” does not preclude authors from being rigorous and transparent. *Environment International* does not accept narrative reviews that do not include a full description of research methods. Many authors of narrative reviews claim to have implemented systematic review principles, whereas they have not, which represent roughly 30% of narrative review submissions.

Another growing editorial concern is that the volume of narrative reviews presumably entirely produced by generative artificial intelligence (AI) seems to be on the rise, although difficult to detect and prove currently, although there are telltale signs (e.g., Kobak et al., 2025; Nature 2026). A complete absence of conceptual and methodological grounding, irrelevant citations, the systematic use of hyperbolic language, superficial or disconnected content, and the presence of prompts are some of the criteria suggestive of the use of generative AI that should trigger higher editorial scrutiny and early investigation. Use of AI tools is authorized to help polishing the language and support content organization – and it must be disclosed – but it should not be used for data generation, analysis and synthesis, which require human critical thinking and judgement. For more information, authors are referred to Elsevier’s policies on the use of generative AI (<https://www.elsevier.com/about/policies-and-standards/generative-ai-policies-for-journals>). In the age of fast publishing, we hope that the new editorial policy will help raise the quality of submissions to the Journal, and might also in particular contribute to deter authors of questionable integrity to submit AI-generated papers.

4. Promoting open science practice with registered reports

Environment International endorses the Registered Reports publishing format (Nosek and Lakens, 2014) for all the evidence syntheses it publishes. We consider this best practice in the field since peer-review of planned methods can help researchers to de-risk their project at an early stage, allowing them to identify issues that could threaten the feasibility, validity, and publishability of their work. The practice also may disincentivize questionable research practice, including publication bias, HARKing, and p-hacking (Chambers et al., 2014; Head et al., 2015; Nature, 2018).

Protocols are evaluated against our CREST Triage standards, initially developed for systematic review and systematic evidence map protocols, and extended to scoping review and review of reviews protocols. We

developed modified reporting statements drawing on PRISMA-ScR for scoping review protocols, and on the PRIOR (Preferred Reporting Items for Overviews of Reviews, Gates et al., 2022) reporting guidelines for review of reviews protocols. Our submissions requirements for evidence synthesis protocols are detailed in our updated GfA (<https://www.sciencedirect.com/journal/environment-international/about/policies-and-guidelines/guidance-notes-for-authors-of-systematic-reviews-systematic-evidence-maps-and-related-manuscript-types>). *Environment International* has published since 2018 a total of 41 evidence synthesis protocols: 31 systematic review or systematic review and meta-analysis protocols, 9 systematic evidence map protocols, and 1 review of reviews protocol (source: Scopus). Less than 10% of evidence synthesis submissions to *Environment International* are protocols.

5. Editorial stewardship, best practice, and trust

The implementation of CREST_Triage requires a substantial engagement from the journal's specialist editors. CREST_Triage has been designed to help editors make consistent and transparent decisions about advancing a submission to peer-review. That process is typically done in 30–60 min, but can take up to several hours in case of large and complex manuscripts, and may take up to two rounds of revision pre-review. The editorial assessment is formalized as a structured triage report, which comprehensively explain our standards, where and why authors were falling short of them, and gives recommendations to maximize their chances of a successful resubmission to the journal. We offer advice to authors to explain our decisions if there is a need to clarify outstanding issues that might compromise a resubmission. If sent to peer-review, the editorial triage report and author's responses are available to reviewers so that the editorial assessment pre-review is transparent. We invite in general two subject matter experts and two methodologists, which may include librarian experts/information specialists on a case-by-case basis. As best practice recommendation, we strongly encourage authors to engage with librarian experts/information specialists in the planning, conduct and reporting of their evidence syntheses, and in general to secure one as co-author (Rethlefsen et al., 2015). Triage does not intend to substitute itself to peer-review, but aims to support that process, by quickly identifying important methodological and reporting quality/completeness shortcomings that can compromise the publishability of a submission. We believe that consistent and transparent editorial triage criteria are beneficial to our authors, peer-reviewers, and the field at large.

Communicating our standards clearly and transparently remains therefore a priority. CREST_triage has been well accepted by authors and reviewers. Amidst the reproducibility crisis in science and increasing concern over the validity of evidence syntheses in environmental health, we call for a stronger editorial stewardship and the adoption of specialist editorial policies by other journals to increase the quality and validity of evidence syntheses published.

6. Conclusion

Evidence syntheses are a cornerstone to effectively inform environmental health decision-making. Evidence synthesis practice has become multifaceted yet faces also multiple challenges. The steady deployment of evidence synthesis methods across scientific disciplines (health, life sciences, environmental sciences, technology) leads to important implementation challenges, despite growing guidance and best practice papers. The quality and validity of published evidence syntheses remain a concern. Dedicated editors can play a pivotal role in addressing these challenges. In the age of fast publishing, use of generative AI calls for new solutions and stronger editorial scrutiny. *Environment International* remains one of the very few journals that implements effective quality control measures and enforcement of editorial standards. We believe that adoption of specialist editorial policies will be beneficial to the science community at large to address the validity crisis in evidence

synthesis publications, and build credibility and trust in science. The Journal will continue to optimize its editorial workflows and strengthen its standards and editorial policies to improve the quality and trustworthiness of the evidence syntheses it publishes. As the evidence synthesis toolkit and practice continues to evolve, thus will *Environment International* remain at the forefront, upholding the philosophy and principles that have guided its editors from the beginning.

Acknowledgements

We would like to thank Paul Whaley for his pioneering work with the development of our editorial standards and the CREST_Triage tool for Systematic Reviews and Systematic Evidence Maps, and Daniel Lovegrove at Elsevier for his longstanding support for our work in the evidence synthesis section.

References

- Chambers, C.D., Feredoes, E., Muthukumaraswamy, S.D., Etschells, P., 2014. Instead of "playing the game" it is time to change the rules: registered reports at AIMS neuroscience and beyond. *AIMS Neurosci.* 1, 4–17. <https://doi.org/10.3934/neuroscience.2014.1.4>.
- Gates, M., Gates, A., Pieper, D., et al., 2022. Reporting guideline for overviews of reviews of healthcare interventions: development of the PRIOR statement. *BMJ* 378, e070849. <https://doi.org/10.1136/bmj-2022-070849>.
- Haddaway, N.R., Macura, B., Whaley, P., Pullin, A.S., 2018. ROSES reporting standards for systematic evidence syntheses: pro forma, flow-diagram and descriptive summary of the plan and conduct of environmental systematic reviews and systematic maps. *Environ. Evid.* 7, 7. <https://doi.org/10.1186/s13750-018-0121-7>.
- Hamilton, D.G., McKenzie, J.E., Nejtgaard, C.H., Brennan, S.E., Moher, D., Page, M.J., 2026. Evaluation of tools used to assess adherence to PRISMA 2020 reveals inconsistent methods and poor tool implementability: part I of a systematic review. *J. Clin. Epidemiol.* 192, 112133. <https://doi.org/10.1016/j.jclinepi.2026.112133>.
- Head, M.L., Holman, L., Lanfear, R., Kahn, A.T., Jennions, M.D., 2015. The extent and consequences of p-hacking in science. *PLoS Biol.* 13, e1002106. <https://doi.org/10.1371/journal.pbio.1002106>.
- Ivaldi, D., Burgos, M., Oltra, G., et al., 2024. Adherence to PRISMA 2020 statement assessed through the expanded checklist in systematic reviews of interventions: a meta-epidemiological study. *Cochrane Evid. Synth. Methods* 2, e12074. <https://doi.org/10.1002/cesm.12074>.
- Khalil, H., Welsh, V., Grainger, M., Campbell, F., 2025. Guidance to undertaking systematic evidence maps. *Environ. Int.* 204, 109827. <https://doi.org/10.1016/j.envint.2025.109827>.
- Kobak, D., González-Márquez, R., Horvát, E.Á., Lause, J., 2025. Delving into LLM-assisted writing in biomedical publications through excess vocabulary. *Sci. Adv.* 11, eadt3813. <https://doi.org/10.1126/sciadv.adt3813>.
- Menon, J.M.L., Struijs, F., Whaley, P., 2022. The methodological rigour of systematic reviews in environmental health. *Crit. Rev. Toxicol.* 52, 167–187. <https://doi.org/10.1080/10408444.2022.2082917>.
- Moher, D., Stewart, L., Shekelle, P., 2015. All in the family: systematic reviews, rapid reviews, scoping reviews, realist reviews, and more. *Syst. Rev.* 4, 183. <https://doi.org/10.1186/s13643-015-0163-7>.
- Moore, R.A., Fisher, E., Eccleston, C., 2022. Systematic reviews do not (yet) represent the 'gold standard' of evidence: a position paper. *Eur. J. Pain.* 26, 557–566. <https://doi.org/10.1002/ejp.1905>.
- Nature, 2018. Learning from replication. *Nat. Hum. Behav.* 2, 601. <https://doi.org/10.1038/s41562-018-0441-1>.
- Nature, 2026. Navigating the promise and pitfalls of artificial intelligence. *Nat. Microbiol.* 11, 613–614. <https://doi.org/10.1038/s41564-026-02300-y>.
- Nosek, B.A., Lakens, D., 2014. Registered reports: a method to increase the credibility of published results. *Soc. Psychol.* 45, 137–141. <https://doi.org/10.1027/1864-9335/a000192>.
- Page, M.J., Moher, D., 2017. Evaluations of the uptake and impact of the preferred reporting items for systematic reviews and meta-analyses (PRISMA) statement and extensions: a scoping review. *Syst. Rev.* 6, 263. <https://doi.org/10.1186/s13643-017-0663-8>.
- Page, M.J., McKenzie, J.E., Bossuyt, P.M., et al., 2021. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *Int. J. Surg.* 88, 105906. <https://doi.org/10.1016/j.ijsu.2021.105906>.
- Rethlefsen, M.L., Farrell, A.M., Osterhaus Trzasko, L.C., Brigham, T.J., 2015. Librarian co-authors correlated with higher quality reported search strategies in general internal medicine systematic reviews. *J. Clin. Epidemiol.* 68, 617–626. <https://doi.org/10.1016/j.jclinepi.2014.11.025>.
- Sutton, P., Chartres, N., Rayasam, S.D.G., Daniels, N., Lam, J., Maghrbi, E., Woodruff, T.J., 2021. Reviews in environmental health: how systematic are they? *Environ. Int.* 152, 106473. <https://doi.org/10.1016/j.envint.2021.106473>.
- Uttley, L., Quintana, D.S., Montgomery, P., Carroll, C., Page, M.J., Falzon, L., Sutton, A., Moher, D., 2023. The problems with systematic reviews: a living systematic review. *J. Clin. Epidemiol.* 156, 30–41. <https://doi.org/10.1016/j.jclinepi.2023.01.011>.
- Whaley, P., Halsall, C., 2016. Assuring high-quality evidence reviews for chemical risk assessment: Five lessons from guest editing the first environmental health journal

- special issue dedicated to systematic review. *Environ. Int.* 92-93, 553–555. <https://doi.org/10.1016/j.envint.2016.04.016>.
- Whaley, P., Roth, N., 2022a. How we promote rigour in systematic reviews and evidence maps at environment international. *Environ. Int.* 170, 107543. <https://doi.org/10.1016/j.envint.2022.107543>.
- Whaley, P., Roth, N., 2022b. CREST_triage: appraisal tools for systematic reviews and systematic evidence maps. *Open Sci. Framework*. <https://doi.org/10.17605/OSF.IO/U4J5M>.
- Whaley, P., Letcher, R.J., Covaci, A., Alcock, R., 2016. Raising the standard of systematic reviews published in environment international. *Environ. Int.* 97, 274–276. <https://doi.org/10.1016/j.envint.2016.08.007>.

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2026-04

Elsevier

<https://doi.org/10.1016/j.envint.2026.110216>

Roth N, Yang Y, Coulon F, et al., (2026) Building transparency, credibility and trust in evidence synthesis practice: why editorial standards and policies matter. Environment International, Volume 210, April 2026, Article number 110216