

| Item number | Section/sub-section | Topic | Description | Further explanation | Checklist/meta-data | Author response | Comments |
|-------------|---------------------------------|----------------------------------|---|---|---------------------|---|--|
| 1 | Title | Title | The title must indicate that it is a systematic map, and should indicate if | The title should normally be the same or very similar to the review | Meta-data | Identifying and addressing the anthropogenic drivers of global change in the North Sea: a systematic map. | |
| 2 | Type of review | Type of review | Select one of the following types of review: systematic map, systematic | See CEE Guidance on systematic mapping [1], and on amendments and | Meta-data | systematic map | |
| 3 | Authors' contacts | Authors' contacts | The full names, institutional addresses and email addresses for all | | Checklist | Yes | |
| 4 | Abstract | Structured summary | The abstract of the manuscript must not exceed 500 words and must be | | Checklist | Yes | |
| 5 | Background | Background | Describe the rationale for the review in the context of what is already | A theory of change and/or conceptual model should be presented that | Checklist | Yes | |
| 6 | Stakeholder engagement | Stakeholder engagement | The actual role of stakeholders throughout the review process (e.g. in | | Checklist | Yes | Stakeholders other than researchers |
| 7 | Objective of the review | Objective | Describe the primary question and secondary questions (when | The primary question is the main question of the review. The secondary | Checklist | Yes | |
| 8 | | Definition of the question | Provide reference to the question key elements, e.g. population(s), | For other question types see [4,5] | Meta-data | Population: any | |
| 9 | Methods | Protocol | Provide citation, DOI or open-access link to published protocol. | The protocol should be peer-reviewed and publicly available online | Meta-data | https://doi.org/10.1186/s13750-021-00234-y | |
| 10 | | Deviations from protocol | Describe any ways in which the final methods of the review deviate from | | Checklist | Yes | |
| 11 | Searches | Search strategy | Detail the search strategy used, including: database names accessed, | | Checklist | Yes | |
| 12 | | Search string | Provide Boolean-style full search string and state the platform for which | | Meta-data | TS=("climat*" NEA Google scholar search syntax | |
| 13 | | Languages - bibliographic | List languages used in bibliographic database searches | | Meta-data | English | |
| 14 | | Languages – grey literature | List languages used in organisational website searches and web-based | | Meta-data | English | |
| 15 | | Bibliographic databases | Provide the number of bibliographic databases searched | | Meta-data | | 4 Scopus, Web of Science, Pubmed, AquaDocs |
| 16 | | Web-based search engines | Provide the number of web-based search engines searched | | Meta-data | | 3 Google scholar, BASE, CORE |
| 17 | | Organisational websites | Provide the number of organisational websites searched | | Meta-data | | 7 WWF, UNEP-WCMC, IUCN, IPBES, CBD, OSPAR, ICES, EEA |
| 18 | | Estimating comprehensiveness | Describe the process by which the comprehensiveness of the search | | Checklist | Yes | |
| 19 | | Search update | Describe any update to searches undertaken during the conduct of the | Compulsory (if update performed). A search update is good practice if | Checklist | Yes | |
| 20 | Article screening and study | Screening strategy | Describe the methodology for screening articles/studies for relevance. | | Checklist | Yes | |
| 21 | | Inclusion criteria | Describe the inclusion criteria used to assess relevance of identified | | Checklist | Yes | |
| 22 | Critical appraisal | Critical appraisal strategy | Describe here the method used for critical appraisal of study validity | Optional | Checklist | n/a | Critical appraisal not performed |
| 23 | | Critical appraisal used in | Describe how the information from critical appraisal was used in | Compulsory if critical appraisal performed | Checklist | n/a | Critical appraisal not performed |
| 24 | Meta-data extraction and | Meta-data extraction and coding | Describe the method for meta-data extraction and coding for studies, | | Checklist | Yes | |
| 25 | | Approaches to missing data | Describe any process for obtaining and confirming missing or unclear | | Checklist | Yes | |
| 26 | Data synthesis and presentation | Narrative synthesis strategy | Describe methods used for narratively synthesising the evidence base in | | Checklist | Yes | |
| 27 | | Knowledge gap and cluster | Describe the methods used to identify and/or prioritise key knowledge | | Checklist | Yes | |
| 28 | | Demonstrating procedural | Describe the role of systematic reviewers (who have also authored | Reviewers who have authored articles to be considered within the | Checklist | Yes | |
| 29 | Results (review findings) | Description of review process | Describe the review process including the volume of evidence identified | | Checklist | Yes | |
| 30 | | Number of search results | Provide the number of search results from bibliographic databases | This number should not include web-based search engine or | Meta-data | 32,622 | |
| 31 | | Number of search results after | Provide the total number of search results from bibliographic database | This number should not include web-based search engine or | Meta-data | 22,511 | |
| 32 | | Full text screening excludes | Additional file containing list of and reasons for full text exclusions. | | Checklist | Yes | |
| 33 | | Title screening results | Provide the number of articles retained following title screening. | Optional if screening titles and abstracts together | Meta-data | n/a | |
| 34 | | Abstract screening results | Provide the number of articles retained following abstract screening. | Optional if screening titles and abstracts together | Meta-data | n/a | |
| 35 | | Title and abstract screening | Provide the number of articles retained following title and abstract | Optional if screening titles and abstracts separately | Meta-data | 7,440 | |
| 36 | | Retrieval results | Provide the number of articles retrieved at full text. | | Meta-data | 5,795 | |
| 37 | | Unobtainable articles | Additional file containing list of unobtainable articles. | | Checklist | Yes | |
| 38 | | Full text screening results | Provide the number of articles retained following full text screening. | | Meta-data | 3,356 | |
| 39 | | Consistency checking: screening | Results of consistency checking at all stages (screening, meta-data | | Checklist | Yes | |
| 40 | | Narrative synthesis | Describe the body of evidence identified using figures and tables, | | Checklist | Yes | |
| 41 | | Systematic map database | Additional file containing meta-data and coding for included studies. | | Checklist | Yes | |
| 42 | | Limitations of the review | Discuss possible limitations in the methods used. | | Checklist | Yes | |
| 43 | | Limitations of the evidence base | Discuss possible limitations in the evidence base. | | Checklist | Yes | |
| 44 | Conclusions | Knowledge gaps and clusters | Describe knowledge gaps (unrepresented or underrepresented subtopics | | Checklist | Yes | |
| 45 | | Implications for | Summarise the state of the evidence base and discuss the way in which | Reviews must not include practical environmental management | Checklist | Yes | |
| 46 | | Implications for research | Discuss the way in which the identified evidence may inform research | In this section some advocacy for future research on the reviewed topic | Checklist | Yes | |
| 47 | Declarations | Competing interests | Describe of any financial or non-financial competing interests that the | | Checklist | Yes | |

References

- [1] James, K.L., Randall, N.P. and Haddaway, N.R., 2016. A methodology for systematic mapping in environmental sciences. *Environmental Evidence*, 5(1), p.7.
- [2] Bayliss, H.R., Haddaway, N.R., Eales, J., Frampton, G.K. and James, K.L., 2016. Updating and amending systematic reviews and systematic maps in environmental management. *Environmental Evidence*, 5(1), p.20.
- [3] Haddaway, N.R., Kohl, C., da Silva, N.R., Schiemann, J., Spök, A., Stewart, R., Sweet, J.B. and Wilhelm, R., 2017. A framework for stakeholder engagement during systematic reviews and maps in environmental management. *Environmental Evidence*, 6(1), p.11.
- [4] Collaboration for Environmental Evidence. 2018. Guidelines and Standards for Evidence synthesis in Environmental Management. Version 5.0. www.environmentalevidence.org/information-for-authors.
- [5] Leeds Institute of Health Sciences. https://medhealth.leeds.ac.uk/info/639/information_specialists/1500/search_concept_tools. Accessed 12/11/2017.