Migratory Species and Climate Change Expert Workshop

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MODERATED DISCUSSION: HORIZON SCANNING - THREATS AND OPPORTUNITIES FOR MIGRATORY SPECIES

(Based on a document prepared by the UK Government)

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Moderated discussion: Horizon scanning - threats and opportunities for migratory species

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Background

1. Horizon scanning (HS) of conservation issues is now widely practised, with the annual scan for global biological conservation issues for 2025 identifying 15 emerging issues of concern (Sutherland *et al*, 2024)[1]. A full description of the techniques involved are given in *Transforming Conservation: A Practical Guide to Evidence and Decision Making* (2022)[2], notably under section 7.4.4. 'Horizon scanning to explore potential futures'[3].

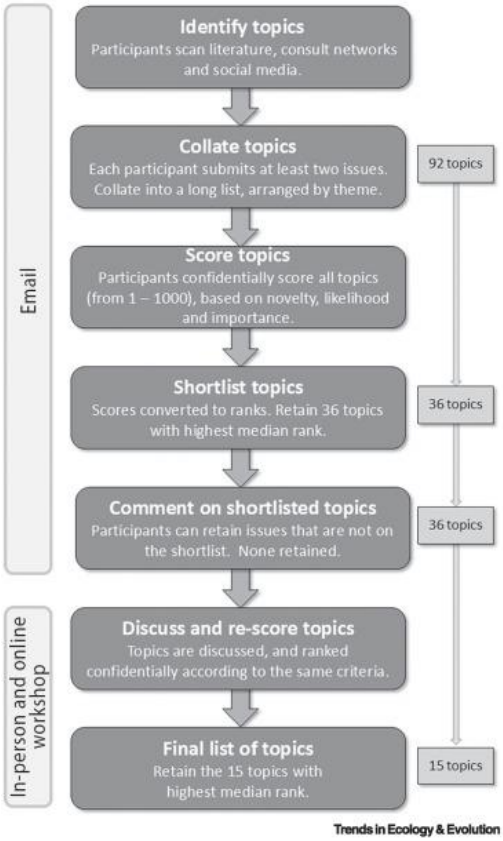
2. Several papers have been published covering horizon scans for particular taxa or topics, for example: migratory shorebirds (Charadrii)[4], non-native species threats[5] ; marine and coastal biodiversity[6]; and potential threats to high-Arctic biodiversity, human health and the economy from marine invasive alien species[7]. These approaches are important in anticipating potential concerns, and then considering policy or other responses in the face of the magnitude of threats.

3. For the 2025 HS[8] , thirty-two scientists, practitioners, and policy makers participated in the scan. **Each submitted two to five novel, largely unknown, issues, that might impact biological conservation during the next decade.** Issues were gathered from participants' networks and colleagues in person, by email and social media, and at conferences. **As a result of this, 96 topics/issues were initially submitted for consideration.** However, two issues submitted by several individuals were similar and thus merged, yielding a total of 92 unique issues for the first round of scoring. Each participant, individually and confidentially,

[1] https://www.sciencedirect.com/science/article/pii/S0169534724002751
[2] Blog describing the book: https://about.conservationevidence.com/2022/12/07/transforming-conservation/. Book available at: https://www.openbookpublishers.com/books/10.11647/obp.0321
[3] https://books.openbookpublishers.com/10.11647/obp.0321/ch7.xhtml#_idTextAnchor232
[4] https://rse.org.uk/programme/policy-advice/inquiries/tree-planting-inquiry/
[5] https://www.nonnativespecies.org/non-native-species/risk-analysis/horizonscanning/
[6] https://www.nature.com/articles/s41559-022-01812-0
[7] https://pubmed.ncbi.nlm.nih.gov/37942571/
[8] https://www.sciencedirect.com/science/article/pii/S0169534724002751

then scored all issues from 1 to 1000 (low to high) on the basis of the issue's novelty and potential impact (positive or negative) on biological conservation. Participants also added notes on issues to inform future discussion. Full details of the work are given in Sutherland *et al*'s the paper[9], and Figure 1 summarises the process.

Figure 1. Process for identifying and evaluating horizon scan topics/issues (from Sutherland et al 2024).



Proposal for Migratory Species

4. We wish to develop this approach for migratory species under the CMS, ultimately devising a list of issues potentially threatening migratory species. These range across: a) natural (e.g. weather, habitat, food supplies); b) current anthropogenic (e.g. forest loss, agricultural

[9] https://www.sciencedirect.com/science/article/pii/S0169534724002751

intensification, barriers, hunting, poisoning, infrastructure); and c) future issues (e.g. infectious diseases, changing public interests, political issues).

The ask of Workshop Participants

5. **We ask you to identify topics/issues which are considered to be a concern for migratory species.** We will collate the list as a basis for a more formal and independent exercise, post-Workshop, to develop a list of topics for formal evaluation *sensu* Sutherland *et a*l (2024).

6. By way of steer, Sutherland et al (2024) identified the following top-15 topics/issues of concern for global biodiversity conservation:

    - Greater biological risks from nocturnal, near-surface level ozone
    - Metal and non-metal organic frameworks
    - Macroalgae as a new source of critical rare earth elements
    - Emerging techniques for remediating per- and polyfluoroalkyl contamination
    - Adhesive trichome hair mimics as alternatives to pesticides
    - Synthetic gene drives in plants
    - Light evaporating water without heat
    - Low emission cement recycling
    - Impacts of near-magma geothermal drilling
    - Compounded effects of water quality and quantity on human and natural systems
    - European laws and unintended challenges for wood production
    - Record Antarctic sea ice lows across the continent could lead to large-scale ecosystem alterations
    - Faster than predicted melting of Thwaites glacier
    - Anthropogenic impacts on seabed carbon stores
    - Potential alteration of ocean processes by offshore wind energy infrastructure.