Instructions for Zealandia Hihi Constructed Value of Information (CVoI) Elicitation
May-July 2023

Contact Hannah Sipe (sipeh@uw.edu) with any questions about this document

Timeline:
Round 1 will be sent out May 29th (NZST) and will be due on June 12th (NZST)
Discussion meeting will occur on June 29th (NZST)
Round 2 will be sent out June 29th (NZST) and will be due on July 12th (NZST)

Instructions and Steps:
Please do not consult others in the group when providing answers for Round 1 or Round 2. You can use other means available to answer questions, for example consulting literature, or drawing on experience or research. See the 'Resources to consult' section below for potentially helpful resources. Feel free to reach out with any questions that come up during any point in this process.

Round 1 sent out May 29th (NZST)

1. You will be sent a Word Document with questions on May 29th (NZST). Please answer all questions and return your answers by June 12th (NZST). Please do not consult others in the group, as explained above, but you can use any other sources to inform your answers. Note that all answers will be shown to the group, but individual identities will not be shared.

2. Each question will ask you to provide CVoI component scores for each hypothesis:
    a. Magnitude of uncertainty (the degree to which we are uncertain about the validity of the hypothesis)
    b. Relevance (a) (the degree to which the hypothesis may impact the population)
    c. Relevance (b) (the degree to which management actions could address the hypothesis)
    d. Reducibility (the degree to which uncertainty about the hypothesis could be reduced or resulted)

3. Remember that each score is on the ratio scale. For example:
    a. For magnitude of uncertainty (which ranges from 0 to 4) a score of 4 indicates twice as much uncertainty as a score of 2.
    b. For relevance (a) (which ranges from 0 to 4) a score of 4 indicates twice as much impact on the population as a score of 2.
    c. For relevance (b) (which ranges from 0 to 4) a score of 4 indicates twice as much effect of management as a score of 2.
    d. For reducibility (which ranges from 0 to 4) a score of 4 indicates twice as much ability to reduce uncertainty as a score of 2.

4. Once you have finished scoring, please email your Round 1 responses to sipeh@uw.edu by June 12th (NZST).

Discussion meeting will be held on June 29th (NZST).

1. Feedback: Once all the Round 1 values are in, we will compile the group's responses in graphs like those in Figure 1 below. The graph shows the combined CVoI mean and reducibility mean, with standard errors across all individuals for both CVoI and reducibility. We will also provide a table with the elicited values and group-average interval. Individual identities will not be shared in compiled materials. These will be used during the discussion meeting.

2. Discussion: We will meet on June 29th (NZST) to discuss the results from round 1 of scoring. During this meeting, we will show compiled results in graphs similar to Figure 1. Discussion is an important stage in this process, so please come ready to share your thoughts (it may be helpful to take notes on your rationale as you provide scores for hypotheses). It is valuable to disagree and debate during discussion, but make sure you share any sources or rationale that back up your argument.

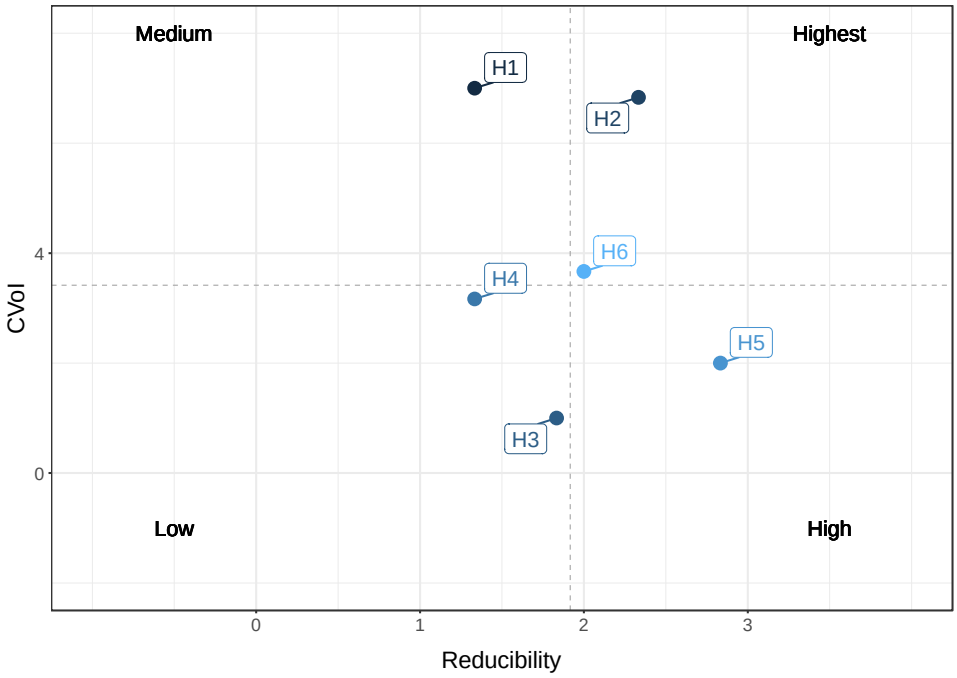

Figure 1. Example output showing combined CVoI and reducibility scores. Colored dots represent means across experts.

Round 2 will open on June 29th (NZST)

1. Following the discussion meeting, we will email out a second Word Document for you to revisit your scores in light of the group discussion. Consider any reasoning or information that came up during the discussion when revising your answers.
2. Round 2 will close on July 12th (NZST).

Final analysis

1. Following the closure of Round 2, we will aggregate the results. We will email final figures and tables out to the group. Unless we decide otherwise as a group, we will use these answers as the final results.

Resources to consult:

- Available information from Zealandia has been compiled for each hypothesis in the 'Zealandia Hihi Hypotheses with data' document.
- Information about each hypothesis has been summarized in an annotated bibliography ("Annotated Bibliography for hypotheses.docx") and the literature in the bibliography can be found in the folder "Bibliography Literature".
- For more information about the CVoI process, here are a few examples in the literature:

Lawson, A. J., Kalasz, K., Runge, M. C., Schwarzer, A. C., Stantial, M. L., Woodrey, M., & Lyons, J. E. (2022). Application of qualitative value of information to prioritize uncertainties about eastern black rail population recovery. *Conservation Science and Practice*, 4(7), e12732. https://doi.org/10.1111/csp2.12732

Rushing, C. S., Rubenstine, M., Lyons, J. E., & Runge, M. C. (2020). Using value of information to prioritize research needs for migratory bird management under climate change: A case study among federal land acquisition in the United States. *Biological Reviews*, 95, 1109–1130. https://doi.org/10.1111/brv.12602

Stantial, M.L., Lawson, A.J., Fournier, A.M.V., Kappes, P.J., Kross, C.S., Runge, M.C., Woodrey, M.S. and Lyons, J.E. (2023), Qualitative value of information provides a transparent and repeatable method for identifying critical uncertainty. Ecological Applications. Accepted Author Manuscript e2824. https://doi.org/10.1002/eap.2824