

Reporting Summary

Nature Portfolio wishes to improve the reproducibility of the work that we publish. This form provides structure for consistency and transparency in reporting. For further information on Nature Portfolio policies, see our [Editorial Policies](#) and the [Editorial Policy Checklist](#).

Statistics

For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

n/a Confirmed

- ☒ ☐ The exact sample size (n) for each experimental group/condition, given as a discrete number and unit of measurement
- ☒ ☐ A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly
- ☒ ☐ The statistical test(s) used AND whether they are one- or two-sided
Only common tests should be described solely by name; describe more complex techniques in the Methods section.
- ☒ ☐ A description of all covariates tested
- ☒ ☐ A description of any assumptions or corrections, such as tests of normality and adjustment for multiple comparisons
- ☒ ☐ A full description of the statistical parameters including central tendency (e.g. means) or other basic estimates (e.g. regression coefficient) AND variation (e.g. standard deviation) or associated estimates of uncertainty (e.g. confidence intervals)
- ☒ ☐ For null hypothesis testing, the test statistic (e.g. F , t , r) with confidence intervals, effect sizes, degrees of freedom and P value noted
Give P values as exact values whenever suitable.
- ☒ ☐ For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings
- ☐ ☒ For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes
- ☒ ☐ Estimates of effect sizes (e.g. Cohen's d , Pearson's r), indicating how they were calculated

Our web collection on [statistics for biologists](#) contains articles on many of the points above.

Software and code

Policy information about [availability of computer code](#)

Data collection	Google Forms was used to collect data for questionnaire one, and a Microsoft Excel spreadsheet was used for questionnaire 2 (this spreadsheet is provided as supplementary material).
Data analysis	All the R software and packages used in the analysis are freely available online and are clearly described and referenced in the Methods section of the main manuscript. No custom codes were developed. References are: Csardi, G. & Nepusz, T. The igraph software package for complex network research. InterJournal, Complex Systems 1695. https://igraph.org (2006). Team, R. C. R.: A Language and Environment for Statistical Computing. Retrieved from https://www.R-project.org/ (2020).

For manuscripts utilizing custom algorithms or software that are central to the research but not yet described in published literature, software must be made available to editors and reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Portfolio [guidelines for submitting code & software](#) for further information.

Data

Policy information about [availability of data](#)

All manuscripts must include a [data availability statement](#). This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A description of any restrictions on data availability
- For clinical datasets or third party data, please ensure that the statement adheres to our [policy](#)

This research reported here collected data from all 21 co-authors in the form of questionnaires. These questionnaires and the results are provided on an open-access data portal for permanent archive, namely the Algoa Bay project (algoabaydata.com).
Questionnaire 1 is provided on <https://algoabaydata.com/documents/344>;
and Questionnaire 2 is provided on <https://algoabaydata.com/documents/343>.
Participant names are removed from responses.

Human research participants

Policy information about [studies involving human research participants and Sex and Gender in Research](#).

Reporting on sex and gender	No additional human research participants were involved (other than the 21 co-authors).
Population characteristics	No additional human research participants were involved (other than the 21 co-authors).
Recruitment	No additional human research participants were involved (other than the 21 co-authors).
Ethics oversight	No additional human research participants were involved (other than the 21 co-authors).

Note that full information on the approval of the study protocol must also be provided in the manuscript.

Field-specific reporting

Please select the one below that is the best fit for your research. If you are not sure, read the appropriate sections before making your selection.

☐ Life sciences ☒ Behavioural & social sciences ☐ Ecological, evolutionary & environmental sciences

For a reference copy of the document with all sections, see nature.com/documents/nr-reporting-summary-flat.pdf

Behavioural & social sciences study design

All studies must disclose on these points even when the disclosure is negative.

Study description	We used a mixed methods approach to collect and analyse questionnaire data. Qualitative and semi-quantitative data were collected with a modified Delphi approach to consensus building. This approach included two questionnaires. The first was conducted with Google Forms, where authors used a 5-point Likert scale to indicate their level of agreement with each principle, with space for open-ended comments. The second was conducted via a Microsoft Excel spreadsheet, where authors scored the relationships among the principles as supporting, neutral or constraining. Once data were generated, quantitative analyses included Bar plots (of the Likert-scale agreement) and Chi-squared tests (of the relationship between the agreement rating and any concerns with the principle). Word clouds identified high level themes among the principles. Finally, a quantitative network analysis identified the linkages between the principles and the direction of the relationships. All analyses were conducted using R software and packages (as cited in the Methods section).
Research sample	All 21 co-authors were selected initially to attend the founding conference in South Africa, and these authors were retained throughout the research process. We do thus not view the author pool as a sample, but rather as a fixed group, or full population (in statistical terms). Selection criteria for the author pool are provided in the manuscript, but in essence, authors were selected based on extensive experience across legal-social-environmental ocean governance domains, and present a diversity across disciplines, geography and institutions (see Figure 1 in the manuscript).
Sampling strategy	Given that we do not view our author pool as a sample, but rather as a 'population', we did not have a sampling strategy per se, other than to ensure that our author pool was drawn from diverse disciplines, geographies and institutions. The sampling procedure can thus best be described as one of convenience. Consequently, we did not consider saturation, other than the decision that we made to stop after two rounds of questionnaires (and not to complete a third round). Co-author (stakeholder) fatigue became evident after two rounds, and there was sufficient consensus on the principles at that point that a third round was deemed unnecessary (and may actually have had negative returns in the form of authors leaving the process).

Data collection	Our two questionnaires used Google Forms, and an Excel spreadsheet sent out on email (and uploaded to a shared cloud drive). Set time periods were given for questionnaire completion, and a core group of four authors handled the communications and analysis. Given that the authors of the manuscript are the study population (i.e., the participants are the researchers), no-one else was present or involved in data collection. No hypothesis was being tested, and all authors knew the objectives of the process. All responses were made available to all authors, except that the names of authors were removed from the responses (to protect the personal views of the authors).
Timing	Figure 2 in the manuscript describes the timing of the research process in detail. In summary, the founding conference was held in January 2020 (just before the COVID pandemic was announced globally). Questionnaire 1 was developed between January-May 2020, it was completed by co-authors in June and responses were analysed by the core team thereafter. Questionnaire 2 was developed and sent to co-authors in August-September 2020 and responses were analysed thereafter. Results were presented to co-authors at a virtual workshop in April 2021, whereafter a writing period allowed all co-authors to develop different sections of the written manuscript and contribute to the associated supplementary materials. The first draft publication was produced at the end of 2021, and January-September 2022 was used to refine the draft, develop the case study narratives, and finalise the artwork.
Data exclusions	No data were excluded from the analyses.
Non-participation	No participants dropped out or were excluded from the process. All original 21 co-authors remained in the research team until manuscript submission.
Randomization	Randomization was not applicable to our study design, because respondents for the study were participants/presenters at the TOG conference held in Port Elizabeth. Hence there was no random selection of a sample. Questionnaire 1: Questions needed to link together in terms of the principle, level of agreement, and alternative wording. Randomization using Google Forms was not appropriate for this. Questionnaire 2: The Excel spreadsheet provided a matrix of the principles applied against each of the other principles which could be answered in any order by the respondents and hence randomization was unnecessary.

Reporting for specific materials, systems and methods

We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.

Materials & experimental systems

n/a	Involved in the study
☒	☐ Antibodies
☒	☐ Eukaryotic cell lines
☒	☐ Palaeontology and archaeology
☒	☐ Animals and other organisms
☒	☐ Clinical data
☒	☐ Dual use research of concern

Methods

n/a	Involved in the study
☒	☐ ChIP-seq
☒	☐ Flow cytometry
☒	☐ MRI-based neuroimaging