

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
<i>Only common tests should be described solely by name; describe more complex techniques in the Methods section.</i> |
| ☒ | ☐ | 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
<i>Give P values as exact values whenever suitable.</i> |
| ☒ | ☐ | 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 SoSci Survey (Version 2.3.12)

Data analysis IBM SPSS Statistics 23

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](#)

Source data:

1. Correlation tables
2. Coding database
3. Data sources for city populations

Supplementary information:

1. Searches, inclusion and exclusion criteria, and the code book

Supplementary tables:

1. ROSES map report

2. List of included and excluded literature

Data sources:

1. Base map for fig.1 : Natural Earth (n.d.). Natural Earth 1:10m Physical Vectors - Free vector and raster map data at 1:10m, 1:50m, and 1:110m scales. Accessible through: <https://www.naturalearthdata.com/downloads/10m-physical-vectors/>.2. Population in the Low Coastal Elevation Zone (LCEZ): Center for International Earth Science Information Network - CIESIN - Columbia University (2021). Low Elevation Coastal Zone (LECZ) Urban-Rural Population and Land Area Estimates, Version 3. Accessible through: <https://doi.org/10.7927/d1x1-d702>.3. World Bank income classification: World Bank (2024). World Bank Country and Lending Groups. Accessible through: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519>.4. World Bank GNI per capita: World Bank Open Data (2019). GNI per capita, PPP (current international \$). Accessible through: https://blogs.worldbank.org/en/opendata/new-country-classifications-income-level-2019-2020?source=post_page-----

Human research participants

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

Reporting on sex and gender

n/a

Population characteristics

n/a

Recruitment

n/a

Ethics oversight

n/a

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 sciencesFor 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

This mapping of evidence for adaptation in coastal cities is based on a mixed-methods approach for analyzing scientific publications. Quantitative and qualitative data was derived by answering a structured questionnaire for each coastal city mentioned in a publication. The statistical analysis includes counts, shares, and correlation analyses; the qualitative analysis builds on a qualitative content analysis of included publications.

Research sample

The literature searches identified a total of 683 scientific publications (without duplicates) in three data bases; GAMI Database, Web of Science and Scopus. 671 were retrieved at full text. 487 were excluded as they did not meet the defined inclusion criteria (i.e. presenting or reviewing evidence for adaptation in coastal cities). 183 scientific publications were fully coded and included in the analyses.

Sampling strategy

Systematic database searches with different search strings in Web of Science and Scopus in combination with data from the GAMI database. The final search string was determined by an evaluation of its comprehensiveness by the highly experienced experts of the author team. The sample size was not predetermined; the representativeness of the sample resulting from the searches was evaluated by the team of authors being knowledgeable in the field.

Data collection

We extracted all publications listed under the code "cities and settlements by the sea" from the GAMI dataset. Additional searches with the same search string were conducted in Web of Science and Scopus. All duplicates were removed and the full publications were downloaded by the individual coders. The coding was implemented through an online questionnaire (soSciSurvey); one questionnaire per coastal city was answered by the coders. To check for intercoder variability, 10% of the sample was double-coded, checking for consistency.

Timing

The searches and compilation of the reference list was conducted on 5th July 2021; the coding was implemented between August 2021 - June 2022

Data exclusions

487 publications were excluded from the analysis because they did not meet the inclusion criteria. Details can be found in the roses flow diagram for systematic reviews.

Non-participation

No participants involved.

Randomization

Radomization was not applied to the data as it was neither necessary, nor appropriate, given that we used the full dataset (all resulting publications from the search string).

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