Developing an Index of Multiple Environmental Deprivation

Version 1: September 2024

A collaborative independent project by the Environmental Data Network involving staff from:

DEFRA
Environment Agency
Friends of the Earth
Natural England
University of Leeds
University of Staffordshire
Birmingham City Council

Contents

Introduction **1**

Potential applications of the IMED 1

IMED version 1 outputs 3

Version 1 data caveats 3

Methodology and data **4**

Overview 4

Pollution domain 5

Nature domain 6

Climate domain 7

Calculating the overall IMED score 8

IMED version 1: Maps of IMED and domain deciles across England 10

Future development of the IMED **15**

Different options for existing indicators 16

Alternative data processing options 17

Appendix 1: Histograms for data, indicators, domains & IMED **18**

Introduction

Awareness of the human health consequences resulting from some environmental harms has increased over recent years, for example the mental health impacts from a lack of access to green space, whereas for other areas the relationship has been known for many decades, for example air pollution. There is not yet an established dataset that looks at cumulative environmental harms within neighbourhoods.

The development of a prototype Index of Multiple Environmental Deprivation (IMED) has been a collaborative independent project by the Environmental Data Network involving staff from Friends of the Earth, The Environment Agency, Natural England, DEFRA and academics. We all have a shared view that it is a worthwhile endeavour to create a prototype for discussion with a wider community to explore its potential usefulness, as well as receive feedback on the choices of indicators, domains, and analytical approach. If the idea of an IMED is thought to be useful by a range of stakeholders, we will then collaboratively explore how best to develop the IMED, who should be involved, set a timeframe, and then commence work on refining the methodology and publishing a new version.

This document describes the process used to derive the first version of the Index for Multiple Environmental Deprivation. We consider this iteration to be a proof of concept rather than a complete version of the index and are publishing this with the intention of allowing a wider set of interested people to review, feedback and provide additional ideas of how we might evolve future versions of the IMED so that it is both more comprehensive and useful for a wider audience.

The IMED has been calculated at Lower Super Output Area (LSOA) level, using the **2011 LSOA boundaries**. We have used 2011 boundaries because several of the data sources we have used were published using the 2011 boundaries. Additional data that is useful to correlate with this index, such as the current Index of Deprivation for England, also use 2011 boundaries. However, future iterations of the IMED should consider moving to the 2021 LSOA boundaries.

For this iteration, the **index only covers England**.

This document lists the data sources used, the approaches used to derive the IMED and presents LSOA-level maps of the IMED and the component IMED domains showing the most environmentally deprived deciles.

Comments on this draft can be sent to data@foe.co.uk.

Potential applications of the IMED

The Index of Multiple Environmental Deprivation (IMED) is a composite measure used to assess cumulative environmental quality using indicators that are important to community health and well-being. It is therefore human-centric and does not attempt to capture environmental harms that are more significant for other species (e.g. light or water pollution).

The IMED currently addresses environmental deprivation in three domains: exposure to pollution (as air quality and noise); exposure to climate risk (flooding and heat); and access to a salutogenic environment (tree canopy cover, greenspace, and public rights of way). Mapping the index allows areas experiencing the greatest overall environmental deprivation to be identified, whilst mapping individual domains allows for development of more targeted investigations, such as identification of communities most vulnerable to climate change.

The IMED can be used to understand environmental disparities at national, regional, and local scales, where it has a range of potential applications, including:

- **Policy development and resource allocation**. Environmental deprivation contributes to social deprivation, as recognised in the Index of Multiple Deprivation (IMD) (which includes only a simple living environment domain). The IMED provides a more substantive environmental index and so can better identify those communities most in need of environmental improvement, for health and climate resilience. This evidence can support development of national to local policy. Resources aimed at improving living conditions can be targeted to maximise impact from expenditure. The IMED uses publicly available data sets and so there is good scope for periodic updates. This would support monitoring and evaluation of policy and other interventions.
- **Health improvement**. There is already strong evidence of a relationship between environmental quality and health outcomes. Aggregate and domain level IMED data, mapped at fine spatial scale (LSOA) will allow analyses of the role of cumulative environmental factors on a range of health outcomes, leading to the design of health improvement interventions.
- **Understanding environmental and climate justice.** Social metrics are excluded from the IMED offering scope to explore the relationships between environmental deprivation, social deprivation, and health outcomes. Better understanding the 'triple jeopardy' of income deprivation, environmental deprivation and poor health is needed to better understand how social and political processes shape environmental inequality and climate vulnerability.
- **Inclusive spatial planning.** The IMED has been developed at fine spatial scale (LSOA level) and so can assist in local area planning and development to ensure equitable access to healthy and climate resilient environments for all residents.
- **Community Advocacy.** The IMED can enables community groups to advocate for better environmental conditions and climate resilience. The data-driven evidence can support those communities facing significant environmental deprivation and climate risk to argue for additional support (e.g. grants, technical assistance).
- **Supporting inter-agency action.** In addition to national and local government, numerous UK bodies have responsibilities relating to the environment, climate, health and inequality. The IMED, with national coverage of fine spatial scale data, supports dialogue between these bodies and their development of collaborative action to promote common interest.
- **Demonstrating commitment to environmental democracy.** The IMED is a powerful but readily understood tool that government and agencies can use to

convey action on environmental and climate justice. The audience can range from the public to the international community. For example, the IMED represents a practical measure to guide action and build capacity needed to meet commitments under the UNECE Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.

IMED version 1 outputs

Along with this document we have published the LSOA-level data sets of the derived indicators, domain scores and deciles, and IMED score and deciles. This data is open source and made freely available under a Creative Commons BY 4.0 Licence. The data is also provided in GIS formats which allow for direct mapping of the IMED. The aim is to provide the data in easy and ready to use format that facilitate the uses outlined above.

For example, providing the data in these formats enables the IMED to be easily used in conjunction with other LSOA data, particularly social and health data such as the English Indices of Deprivation. This enables examination of any correlations between social, health and environmental deprivation or identify locations where social, health and environmental deprivation converge.

Version 1 data caveats

We acknowledge that this first iteration of an IMED is not comprehensive in terms of covering all aspects of environmental deprivation. Firstly, there are a limited number of indicators in each domain. The number of indicators was kept intentionally small to ensure a manageable level of work for this proof-of-concept iteration. However, we also recognise that the pollution domain currently only considers the impacts of noise and air pollution; there are other causes of and impacts from pollution that we should look to include in future versions. It is also possible that the nature domain could be enhanced with additional data sources. And while flooding and heatwaves are significant climate risks, it is possible the climate domain could be strengthened by additional indicators.

Secondly, the data processing of some of the data sets to produce indicators could be more sophisticated. For some indicators, the data processing approach is sufficient. For others, particularly those with non-normal distributions, further processing options may produce a more optimal indicator. With some indicators having skewed distributions, not all indicators will have made a comparable contribution to the final index.

For some indicators we have used thresholds to produce an indicator, for example, air pollution guidelines. While the different indicators and the data that underpins them do not always allow for thresholds to be used, this could be seen as an inconsistency across the different indicators. Further discussion on alternative options for processing data can be found in the section on 'Future development of the IMED' on page 17.

Finally, when developing the Index we considered having a fourth domain covering 'Living Environment' which could include data such as road accidents, housing quality, and how well maintained the LSOA is (e.g. absence of litter, boarded-up properties, etc.).

We choose not to for this iteration but are interested in feedback of whether such a domain should be included in the next iteration.

Based on these caveats, this version of the Index should be considered ‘experimental’, and we do not recommend wider use of this version of the indicator other than for demonstration purposes.

Methodology and data

Overview

The first iteration of the IMED was calculated from six indicators in three domains covering pollution, nature, and climate risk. The indicators mostly draw on publicly available data (Table 1). A score was calculated for each domain, and the overall IMED score calculated by combining the three domain scores.

Each domain was calculated from two indicators, some of these indicators being composites of more than one data set (e.g. two air pollutants). Indicator data was normalised on a 0 to 1 scale, with 1 representing the most polluted, most nature deprived or highest climate risk score. Some indicators naturally lent themselves to this scale (i.e. source data was expressed as a percentage), whilst others with highly skewed distributions needed to be processed further in order for them to have an influence on the overall score equivalent to the other indicators.

In calculating the domain scores from individual indicators, and the overall IMED score from the domains, we have incorporated a weighting system that enables different indicators or domains to have more or less significance in the final IMED score. However, for this first iteration of the IMED **we have used an equal weighting for all indicators and domains**, so that each has an equal impact on the final IMED score. The IMED calculation process is summarised in Table 2 and described in more detail below.

Table 1. Data sources used in IMED construction and mapping

Pollution	**Air pollution:** Neighbourhoods with NO_2 and $PM_{2.5}$ levels above WHO guidelines: Friends of the Earth analysis of Defra’s modelled background air pollution data, 2022. uk-air.defra.gov.uk/data/pcm-data **Noise pollution:** Road and rail noise: Strategic noise mapping, Defra 2019. https://www.gov.uk/government/publications/strategic-noise-mapping-2019; Aircraft noise: Aircraft Noise Map (data provided on request) https://noise-map.com/home/.
Nature	**Greenspace:** Access to green space in England: Scenario 2 (All green space with rights of way), Defra, Official Statistic in Development, 2024: https://www.gov.uk/government/statistics/access-to-green-space-in-england https://www.gov.uk/government/statistics/access-to-green-space-in-england/access-to-green-space-in-england

	Tree canopy cover: Terra Sulis on behalf of Friends of the Earth, 2022. https://policy.friendsoftheearth.uk/insight/mapping-english-tree-cover-results-ranking-and-methodology
Climate risks	**Flood risk:** Risk of Flooding from Rivers and Sea, Low to High Risk Extent. Environment Agency (2024) https://www.data.gov.uk/dataset/bad20199-6d39-4aad-8564-26a46778fd94/risk-of-flooding-from-rivers-and-sea; Risk of Flooding from Surface Water – 1 in 100 year event extent. Environment Agency (2015). https://environment.data.gov.uk/dataset/51a5c4e7-10d3-4f34-bb0e-558835ab8c85 **Heat exposure risk:** Twenty-year mean-monthly (Jan-Dec) near-surface daily maximum air temperature 2020-40 for RCP 8.5. CHESS-SCAPE: Future projections of meteorological variables at 1 km resolution for the United Kingdom 1980-2080 derived from UK Climate Projections 2018. https://catalogue.ceda.ac.uk/uuid/8194b416cbee482b89e0dfbe17c5786c
Other	**LSOA boundary files:** Lower layer Super Output Areas (December 2011) Boundaries EW BFC (V3). https://geoportal.statistics.gov.uk/datasets/ons::lower-layer-super-output-areas-december-2011-boundaries-ew-bfc-v3/about

Pollution domain

The pollution domain included two indicators: noise pollution and air pollution, both developed using Defra data. For humans, exposure to **noise** levels above 50 dB are known to impair daily activities, sleep, and communication[1] and the WHO recommend L_{den} noise thresholds of 54 dB for road traffic, 53 dB for railways and 45 dB for aircraft noise[2]. Therefore, the noise pollution indicator uses a calculated proportion of each LSOA that is affected by noise at or above 55 dB from road and rail (the lowest level observed in the data set) plus any additional area affected by aircraft noise above 45 dB, both using the L_{den} measurement[3]. The noise pollution indicator is the proportion of an LSOA affected by noise above WHO health guidelines.

The **air pollution** indicator is constructed from two of the most common harmful air pollutants, Nitrogen dioxide (NO_2) and fine particulates ($PM_{2.5}$). For each pollutant 1km grid background concentration maps were processed to produce concentration values

---

[1] Noise and mental health: evidence, mechanisms, and consequences, Hadad et all, 2024, https://www.nature.com/articles/s41370-024-00642-5

[2] Guidance on environmental noise, WHO, 2022, https://www.who.int/tools/compendium-on-health-and-environment/environmental-noise/

[3] Day-evening-night level, a descriptor of noise level based on energy equivalent noise level (Leq) over a whole day with a penalty of 10 dB(A) for night time noise (23.00-7.00) and an additional penalty of 5 dB(A) for evening noise (i.e. 19.00-23.00) Lden — European Environment Agency (europa.eu)

per LSOA using an area-based weighting approach. These LSOA background concentrations maps for each pollutant were then rescaled to between 0 and 1 including use of a transformation function such that 0.5 represented the 2021 WHO health guidelines for each pollutant (a maximum of 10 ug m^{-3} for NO_2 and 5 ug m^{-3} for $PM_{2.5}$, both as an annual average). The two rescaled scores where then summed and once again rescaled to a value of between 0 and 1.

The pollution domain score was then calculated from the noise pollution and air pollution indicators as follows:

*Pollution domain score = [noise pollution score * noise pollution weight] + [air pollution score * air pollution weight]*

This was then normalised to a value between 0 and 1 (with 1 representing the highest score with the most air and noise pollution). Using these scores, LSOAs were then divided into pollution domain deciles, with LSOAs in decile 1 having the highest pollution domain score (greatest environmental deprivation).

Nature domain

The nature domain used two indicators covering summer tree canopy cover and accessible public greenspace. The **tree canopy cover** indicator used the area-based (percentage) proportion of an LSOA that was calculated as having summer tree canopy cover. This data was produced for Friends of the Earth by Terra Sulis. Tree canopy cover data is expressed as a proportion of the LSOA area that is covered by tree canopies from an aerial perspective. For the IMED, this value was inverted so that areas with no tree cover had a value of 1.

The **accessible public greenspace** indicator was derived from Defra's Access to green space in England data, published at Output Area using Census 2021 boundaries. The data was aggregated to LSOA 2021 boundaries and then converted to LSOA 2011 boundaries using an area based looked up. The greenspace access data contained 7 different definitions, including three which corresponded with Natural England's previous Doorstep, Local and Neighbourhood Accessible Greenspace standards. The data for each definition describes the percentage of households that are within different walking distances of different types of green space.

For this iteration of the IMED, we chose to use Defra's 'Scenario 2' indicator which includes all accessible green spaces of at least 2 hectares but also included rural rights of way as a type of green space. These greenspaces had to be within a distance of 1 km. The greenspace access data was inverted to create a greenspace indicator, so that LSOAs where there was no access to these greenspaces had value of 1.

The nature domain indicator was calculated by combining the tree canopy cover and accessible public greenspace indicators. These included an option of weighting each indicator in this calculation as shown below.

*Nature domain score = [tree canopy score * tree canopy weight] + [greenspace score * greenspace weight]*

The final nature domain score was then normalised to a value of between 0 and 1 (with 1 representing the highest most nature deprived score). Using these scores, LSOAs were then divided into nature domain deciles, with LSOAs in decile 1 having the highest nature domain score (representing greatest environmental deprivation).

Climate domain

The climate change domain used indicators covering two topics capturing the extent of flood and heat risks. The **flood risk** indicator, based on Environment Agency data, included the extent of flooding from rivers and seas, with a second measure addressing risk of flooding by surface water. Both measures address the area (%) of LSOA at risk of flood, and hence are readily expressed on a 0 to 1 scale. As these cover different types of flood risk, the data were added to derive an overall flood score. This had a skewed distribution towards 0. Therefore, the distribution of flood risk score was made more normal by applying a log transformation. Resulting values were then recalibrated to a 0 to 1 scale.

The **heat risk** indicator was based on CHESS-SCAPE climate projections produced at 1 x 1 km grids. We used the 2020-40 maximum near surface air temperature monthly 'time slice' data under the RCP 8.5 scenario (i.e. a maximum temperature for each month averaged across 2020-40). RCP 8.5 is a 'representative concentration pathway', one of four scenarios modelled in the UKCIP18 programme with different assumptions about future economic, social and physical changes, and how these will influence the climate. RCP 8.5 is the high emission (least mitigation) scenario, under which global average temperature by 2100 is predicted to be 4.3 degrees above pre-industrial levels. In the period 2020-40 there was little variance in the temperature data between scenarios; RCP 8.5 was used to emphasise the differences across England.

For each grid location the maximum summer temperature was identified and the data aligned to LSOA boundaries on an area-weighted basis. Maximum summer temperature data by LSOA were then rescaled and normalised to a value of 0 to 1, with 0 representing the LSOA with the lowest temperature and 1 the LSOA with highest temperature.

The climate risk domain was then calculated by adding the flooding risk indicator to the heat risk indicator.

*Climate domain score = [flood score * flood weighting] + [heat risk score * heat risk weighting]*

This was then normalised to generate a climate domain score between 0 and 1, from which climate domain deciles were then determined.

Table 2. Summary of data processing to derive IMED indicators

Domain	Indicator	Processing summary
Pollution	Air pollution	NO_2 and $PM_{2.5}$ annual average background concentrations each rescaled to a value from 0 to 1, with 0.5 representing WHO guidelines, then both combined into one air pollution indicator (0 = lowest levels of air pollution; 0.5 air pollution at WHO guidelines; 1 = highest air pollution from NO_2 and $PM_{2.5}$).
	Noise pollution	Proportion of an LSOA with noise levels from road and rail above 55 dB and from aircraft above 45 dB (1 = 100% of LSOA impacted by noise pollution).
Nature	Tree cover	Tree canopy cover (% LSOA), inverted to between 0 and 1 (1 = minimum observed tree canopy cover).
	Greenspace	Percentage of the population within 1 km of accessible greenspace (Defra Scenario 2, which included at least 2 hectares of accessible greenspace and rural rights of way). The percentage access was inverted to a value of between 0 and 1 (1 = least amount of accessible greenspace, i.e. none).
Climate	Flood risk	Proportion of LSOA at risk of flooding from rivers and seas, combined with proportion of LSOA at risk of surface water flooding. This data was normalised by using a log transformation and expressed on 0-1 scale (0 = no part of LSOA at risk of flooding, 1 = all LSOA at risk of flooding).
	Heat exposure risk	20 year modelled monthly average maximum temperature for 2020-2040 under UKCIP18 RCP 8.5 (high emission/least emission mitigation) climate scenario, rescaled to a value of 0-1 (0 = lowest average maximum monthly temp, 1 = highest average maximum monthly temp).

Calculating the overall IMED score

The IMED score was calculated by summing the domain scores to produce an overall index of multiple environmental deprivation (IMED):

*IMED score = [pollution domain score * pollution weighting] +*
*[nature domain score * nature weighting] +*
*[climate domain score * climate weighting]*

IMED deciles were then calculated from the IMED score, with decile 1 representing the most environmentally deprived LSOAs. Figure 2 summarises the index construction process, whilst the appendix (Figures 3-6) provides histograms of the three domain scores and the overall IMED scores.

Maps of the overall IMED, domains scores and most deprived LSOAs are shown below.

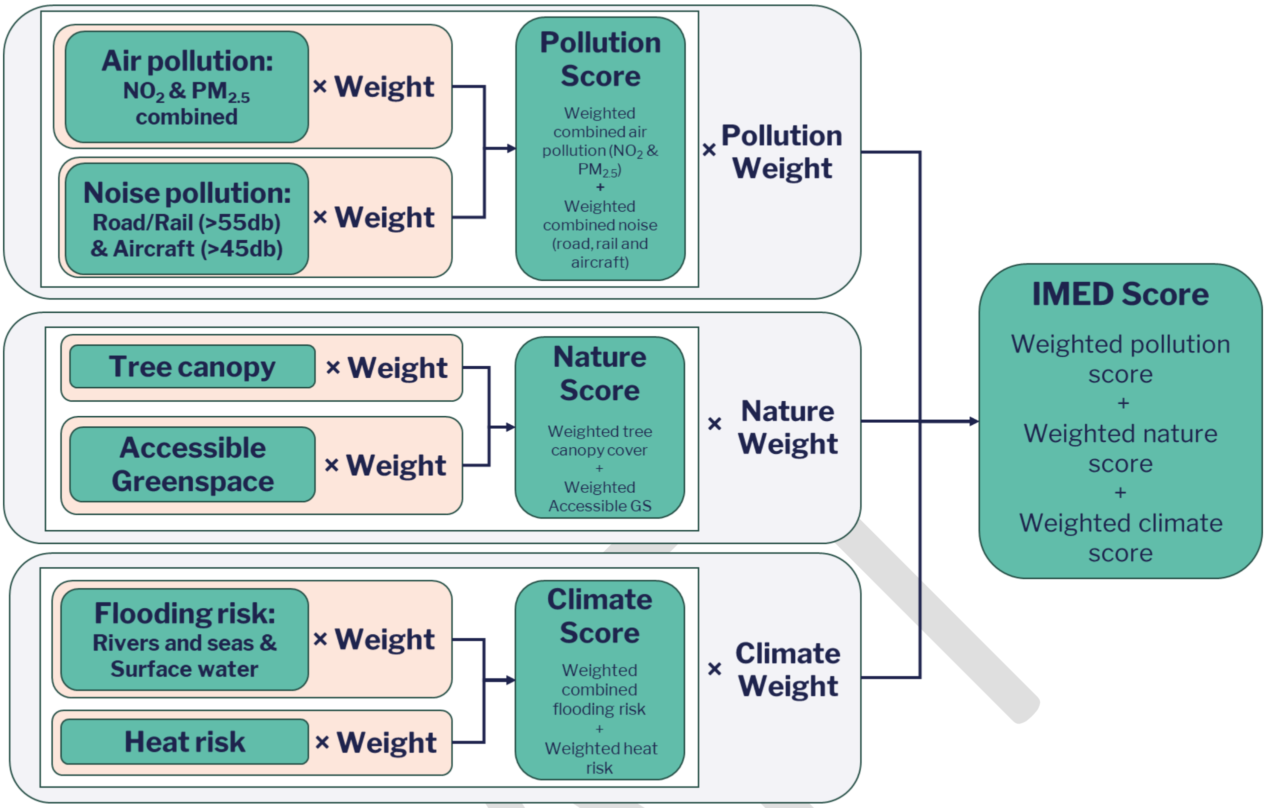

Figure 1. Process diagram summarising the calculation of the IMED.
(NB. In this first IMED iteration, indicator and domain weights are all equal)

IMED version 1: Maps of IMED and domain deciles across England

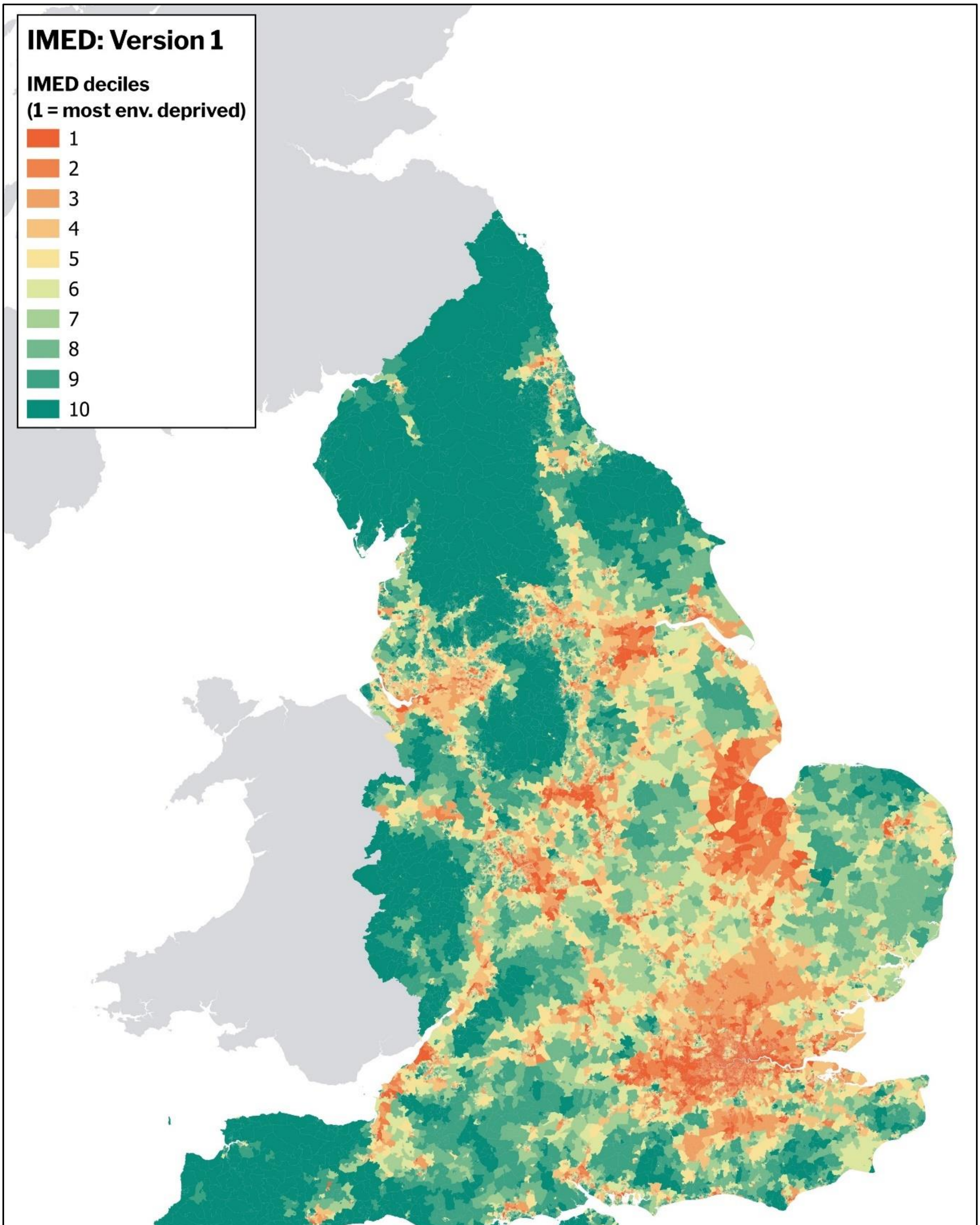

Figure 2. Map of IMED deciles

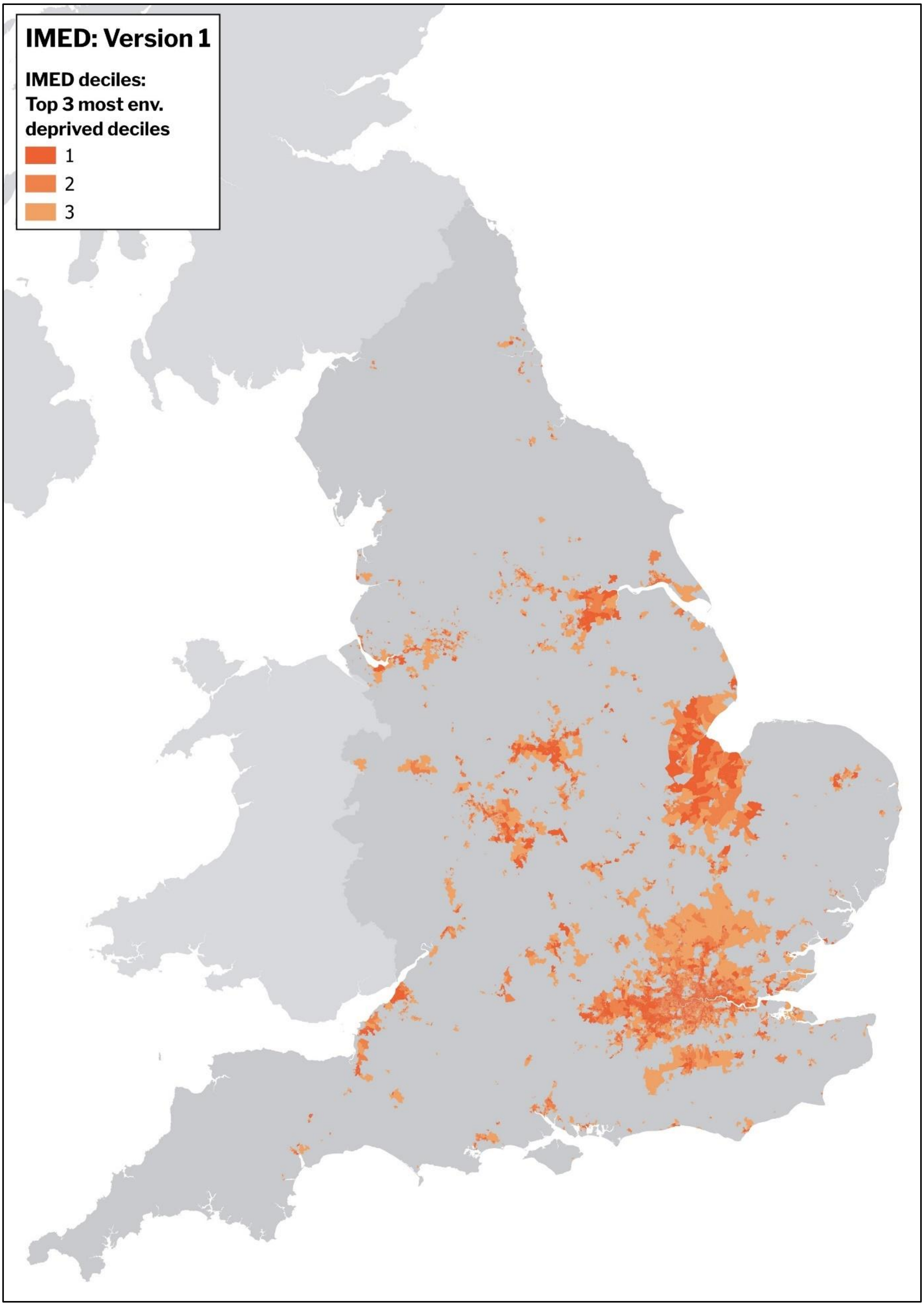

Figure 3. Map of the three most environmental deprived IMED deciles (1 – 3)

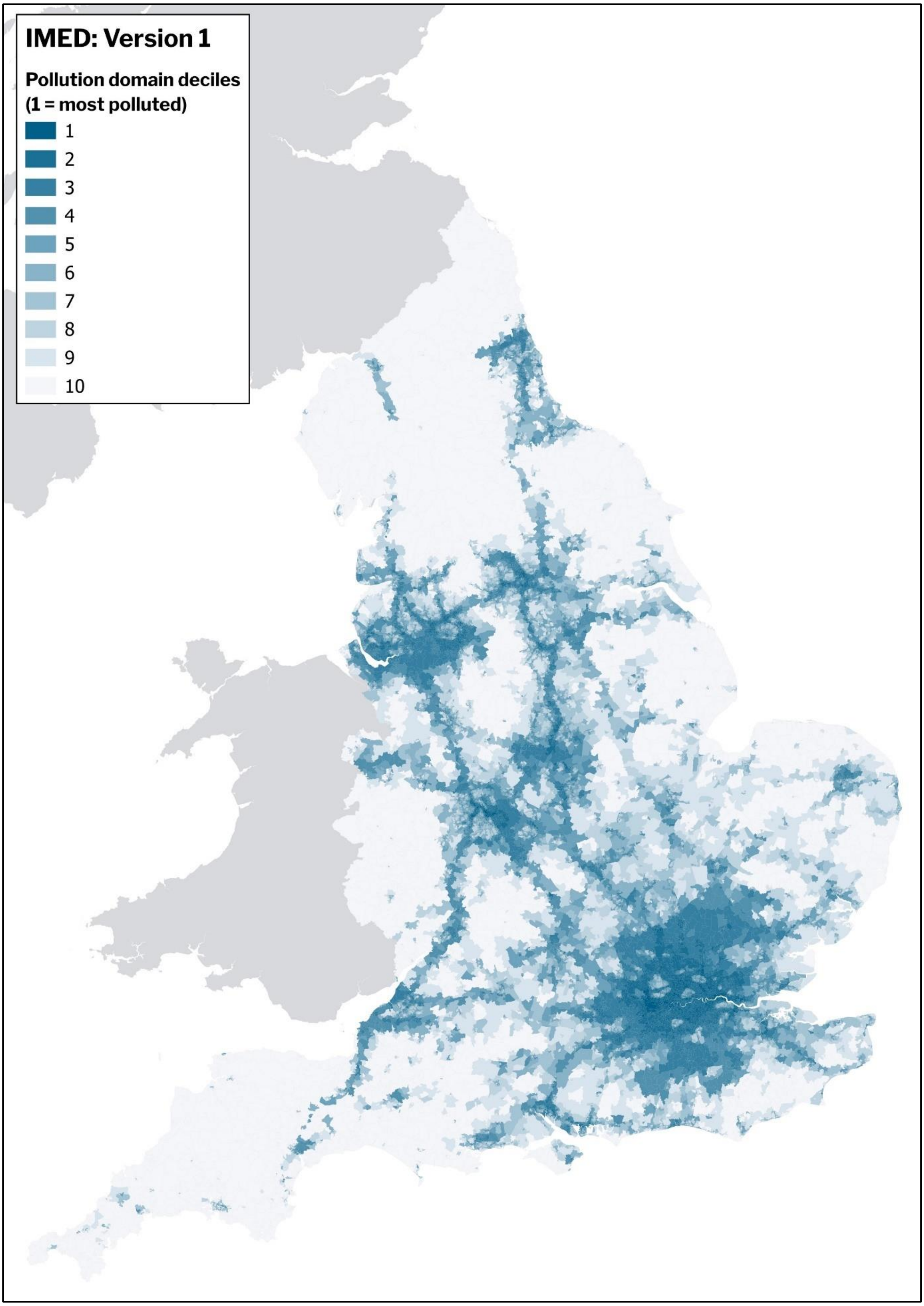

Figure 4. Map of IMED pollution domain deciles

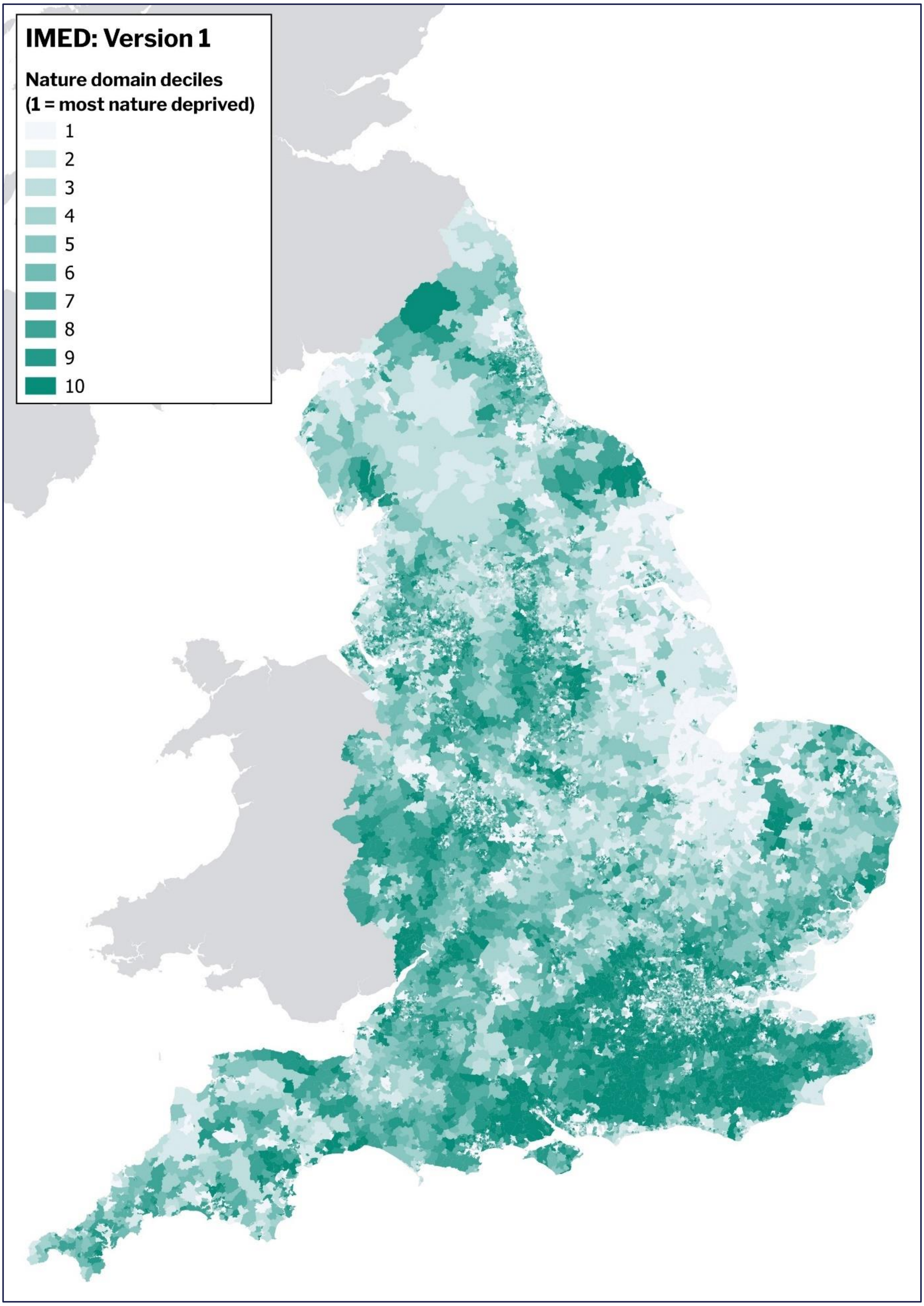

Figure 5. Map of IMED nature domain deciles

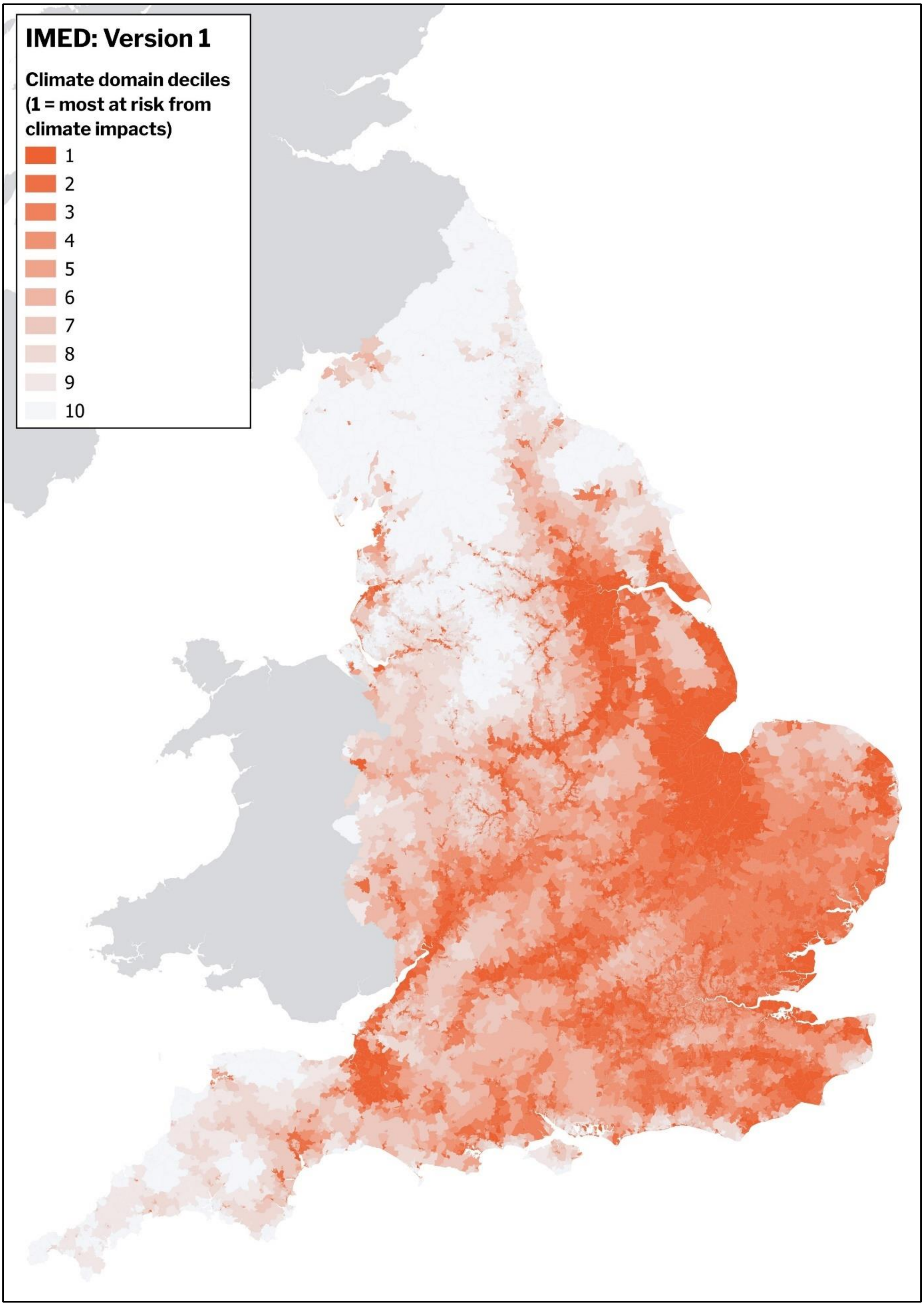

Figure 6. Map of IMED climate domain deciles

Future development of the IMED

In publishing this first iteration of the IMED, our intention is to seek opinions of a wider group of stakeholders and gather feedback on how best to evolve this further. For example, future evolutions of the IMED could focus on including more indicators to derive a more comprehensive index that gives enhanced performance and functionality. As mentioned earlier, for example, we did consider whether we should include a Living Environment Domain encompassing indicators such as road accidents, housing condition, neighbourhood condition. There is likely to be a law of diminishing returns where additional indicators do not provide meaningful additional change.

We have a compiled a set of questions to help frame this review which fall under the following categories. This is not an exhaustive list of questions but may help frame any responses that readers may wish to share.

- **Design:**
  - Are the current indicators selected acceptable?
  - How can we improve the indicators and calculation of domains scores?
  - What further indicators should we consider including?
- **Methods**:
  - Have the best data sets been used for the current list of indicators?
  - What other data sets should we include?
  - Would you process the data differently?
  - Is the aggregation method appropriate or are there better approaches we should consider?
  - Should we add weighting to different indicators and domains? If so, how should we apply these weights?
- **Application:**
  - What are the potential uses of the IMED?
  - Who are the key audiences and users of the IMED?
  - What would these different users need from IMED outputs?
  - What data formats should we use? And how should we make them available to users?
  - What other outputs help audience engage with and use the IMED (e.g. maps, data visualisations, etc.)
- **General:**
  - Who else should we consult and engage with?
  - Which other organisations could help? Should we look to involve others in the future?
  - Any other comments?

Some initial thoughts on these points are provided below, notably on the existing indicators, possible alternative data sets and different options for data processing.

Different options for existing indicators

In terms of the existing data sets used and there processing we also have some more direct questions that have arisen from the analysis, which we summarise below.

Noise data

The approach used to process noise data is likely to be too simplistic: once an LSOA is 100% noise affected an increase in noise intensity has no added impact and does not take into account the intensity of noise experienced. However, the approach used a noise threshold based on WHO guidelines, so we would have to devise a more complicated approach that puts a greater emphasis on higher noise levels. For this iteration, there was no obvious approach to use and attempts to do so were deemed arbitrary and added unfounded complexity. Further research would be required to ensure a robust and meaningful representation of higher noise levels for future IMED iterations.

Greenspace

For this iteration we have used the latest access to greenspace data from Defra and selected one of the 7 scenarios used that accounted for rights of way. However, there may be merits of using an alternative scenario. In addition, this data does not account for private gardens and adding private garden space to an accessible greenspace indicator could represent and more comprehensive picture.

Finally, the indicator used for this iteration of the IMED expresses the availability of greenspace to the population within each LSOA (i.e. the distance/time to travel to greenspace) but doesn't necessary describe the total physical greenspace environment within the boundaries of an LSOA. We initially considered using Natural England's data to total quantity of accessible greenspace, but decided to use the recently published Defra data as it considers the availability of greenspace to the LSOA population and accounts for pathways and rights of access. We could use total accessible greenspace in addition to the two indicators we've used (i.e. add a third indicator). None of these indicators describe the quality of the greenspace which is likely to be important to enjoyability and well-being.

Flooding data processing

There are several questions we considered on how we processed the flooding data:

- Should the two data sets (covering risk of flooding from rivers/seas and from surface water) be treated separately as we have done here, or combined into overall flooding extent from all risks?
- Should we consider adding risk of flooding from groundwater, as mapped by the British Geological Survey[4]?
- And should we focus more specifically on properties affected by flooding, and not include all land at risk within each LSOA? i.e. Is this a better indicator of flooding impacts? Or is the wider flooding of communities a significant enough risk?

[4] https://www.bgs.ac.uk/datasets/groundwater-flooding/

Heat data
Our preferred method of modelling heat risk was to use daily modelled temperatures through the summer months and identify the number of days within each LSOA which have average 24 hour temperatures above a certain thresholds (in previous analysis Friends of the Earth has used 24.5°C, 27.5°C and 30°C over multiple days as 'hot', 'very hot' and 'dangerous' thresholds – remembering that this is the 24 hour average including night time temperatures).

However, the processing and time requirements meant that we used a more simplified approach for this iteration looking at monthly average maximum temperature over the summer, which while still a reasonable indicator of future heat risks, should be improved upon in future iterations to show areas where heat exposure is likely to cause more significant health problems.

The temperature data used in this version did not take into account the urban heat island effect. This is a shortcoming that would also need to be addressed in further improvements to the climate risk domain.

Alternative data processing options

The focus of Version 1 of IMED has been to produce a proof-of-concept prototype. We have attempted to reduce complexity in term of data processing. And while we have built in options for weighting indicators and domains, these have all be set equally for this version. However, it may be worth exploring further option on data distributions, deriving indicator scores and weighting indicators and domains.

Deriving indicators
There are alternative options to consider when processing and combining the different indicators and domains. For example, the tree canopy and access to greenspace data have skewed distributions that were used directly. Although some options were considered to normalise these, there may be other methods we could employ to produce a more normally distributed nature domain score. Alternatively, it may be worth considering alternative processing of the data such as z-scores, ranking or different approaches.

This analysis should present statistics to demonstrate the degree of normality in each of the raw data sources used, for example by applying skewness (kurtosis) or Shapiro-Wilk tests.

Weighting and sensitivity analysis
For future iterations, we should look to explore whether building in different weightings for indicators or domains enhances the IMED. This should involve research and gathering expert opinions and finding an approach that most stakeholders feel is the best approach to weighting. This should include presenting a sensitivity analysis demonstrating the impact of varying weights on the final IMED outputs.

In addition, the next version of the IMED we also aim to present a sensitivity analysis to help inform decision about which are the optimal processing and data options.

Appendix 1: Histograms for data, indicators, domains & IMED

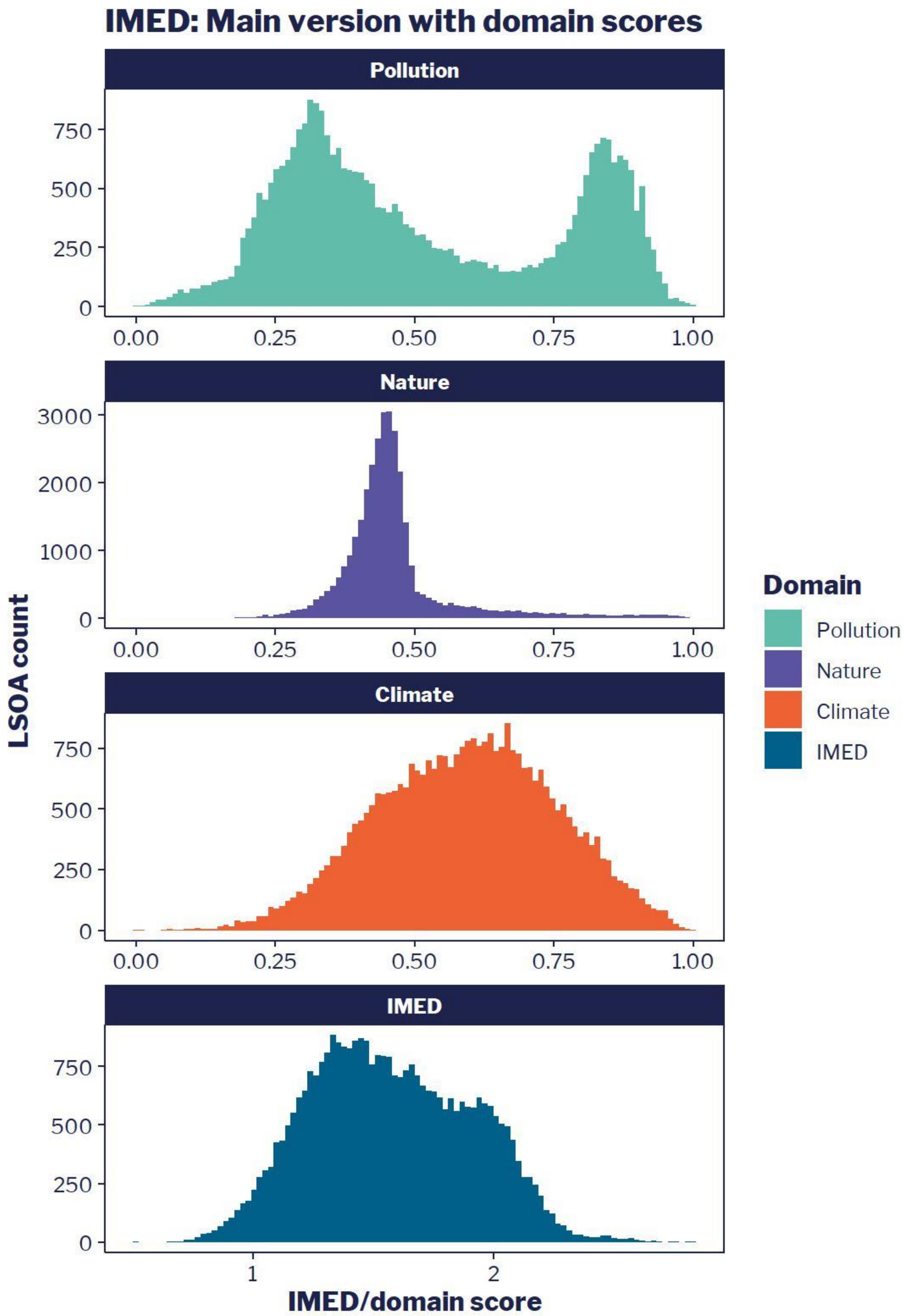

Figure 7. Histograms of the IMED score and the underlying pollution, nature and climate domain scores.

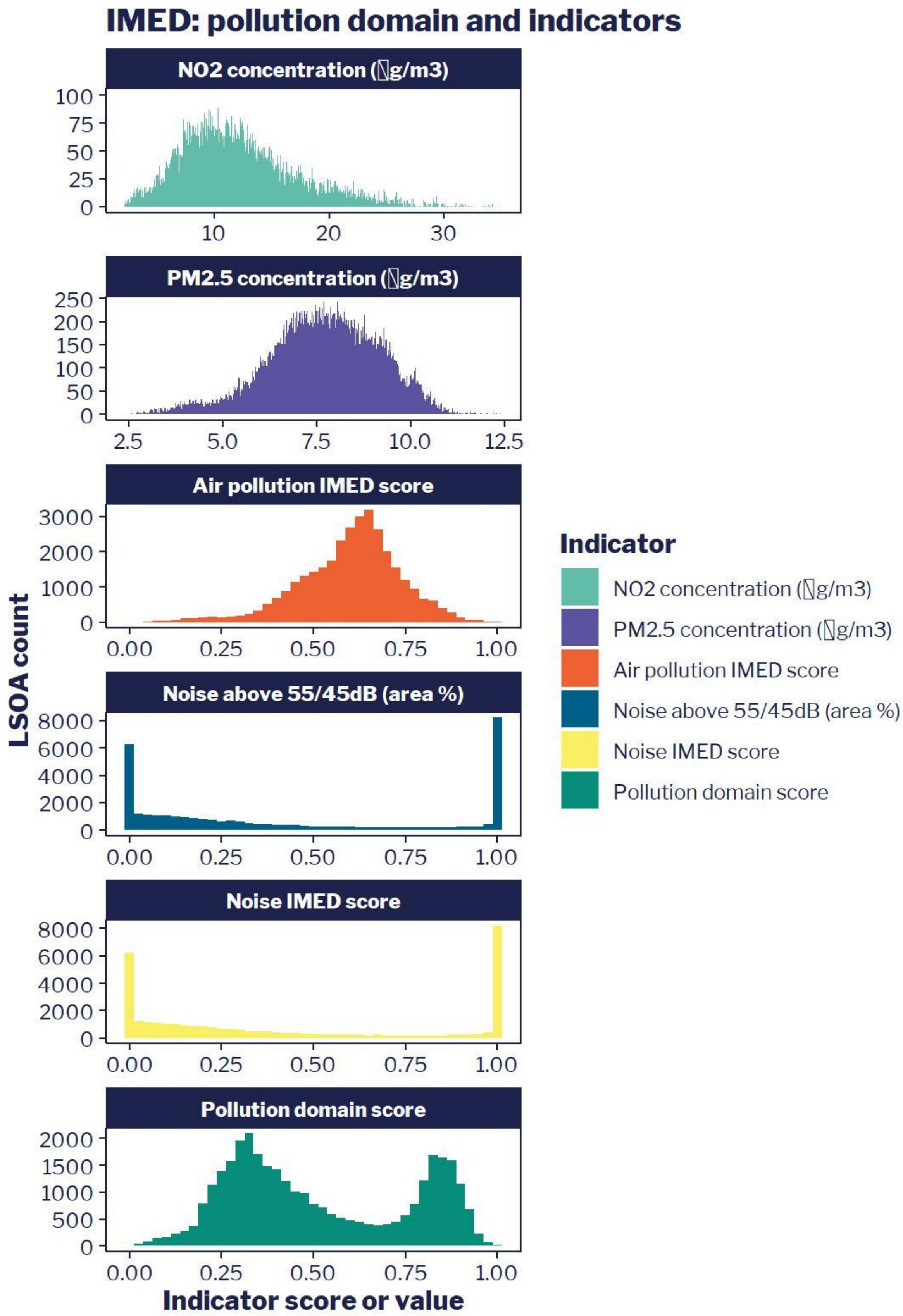

Figure 8. Histograms of the IMED pollution domain indicator scores.

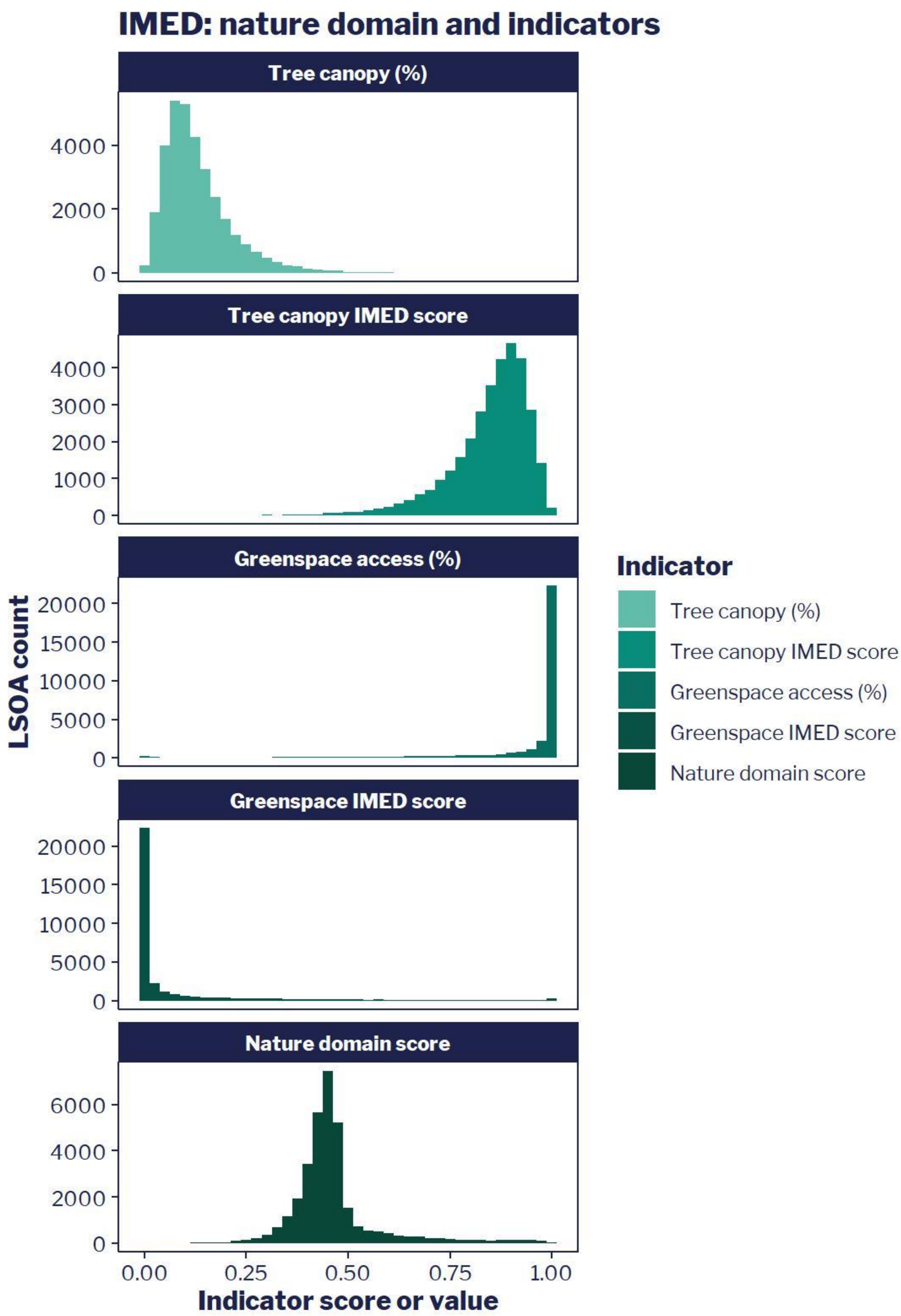

Figure 9. Histograms of the IMED nature domain indicator scores.

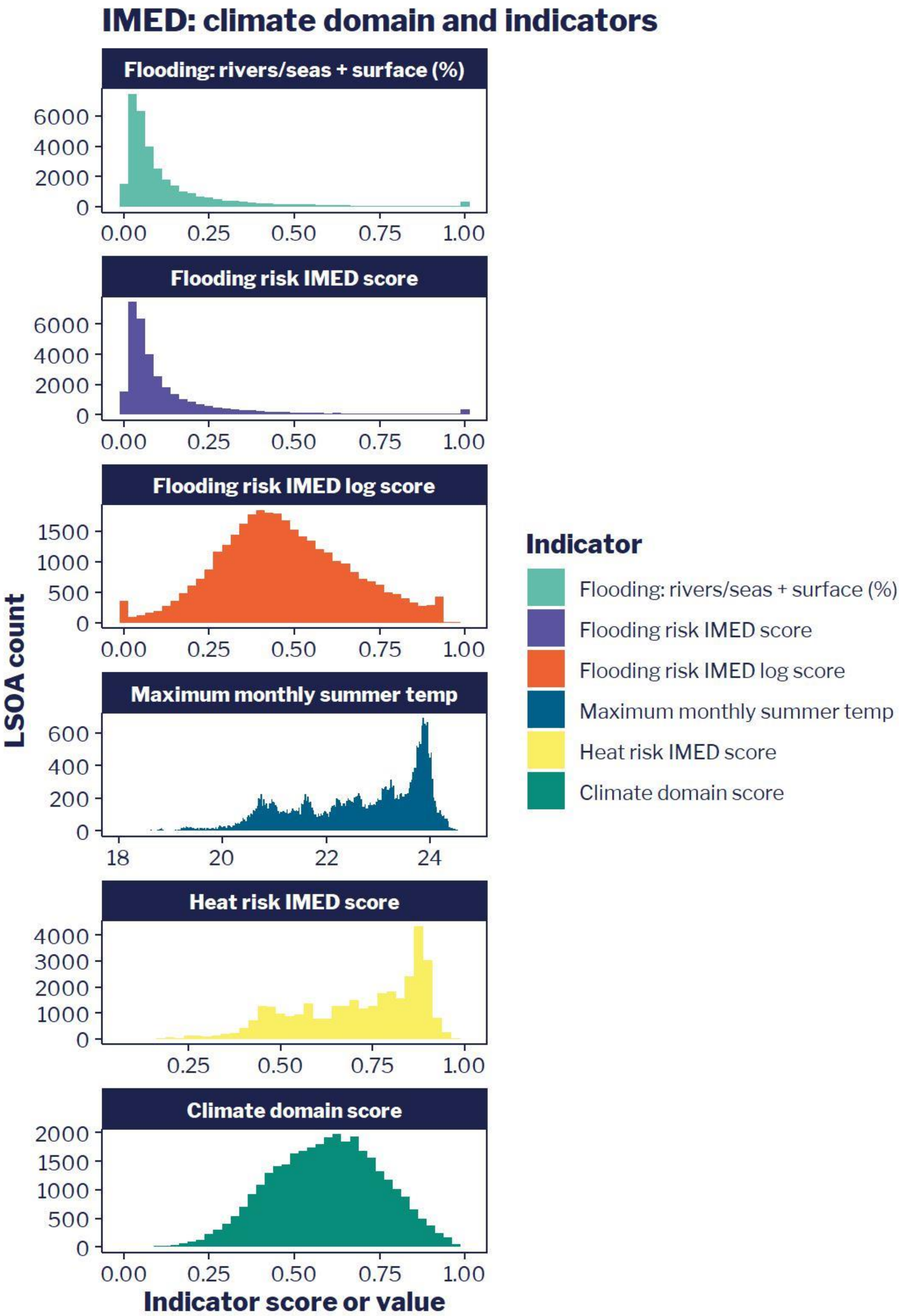

Figure 10. Histograms of the IMED climate domain indicator scores.