

# Long-term environmental monitoring infrastructures in Europe - observations, measurements, scales, and socio-ecological representativeness

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## Table of contents

### List of figures

**Fig. S1:** Overview of countries and relative share of sites in comparison to formally accredited sites in LTER-Europe included in the analysis of geographical and ecological representativeness (dataset A)..3

**Fig. S2:** Example for site-specific coverage of standard observation requirements (see Table 1); white sections indicate standard observations not considered.....4

**Fig. S3:** Classification of LTER-Europe sites with detailed documentation (dataset B, 24 countries, 224 sites) corresponding to the Ecosystem Integrity (EI) framework and the LTER-Europe set of standard observations.....5

**Fig. S4:** Number of LTER-Europe standard observations vs. EI components currently measured by LTER-Europe sites with detailed documentation available (dataset B). The size of the bubbles represents the number of sites (at the top of each bubble) in the corresponding category.....6

### List of tables

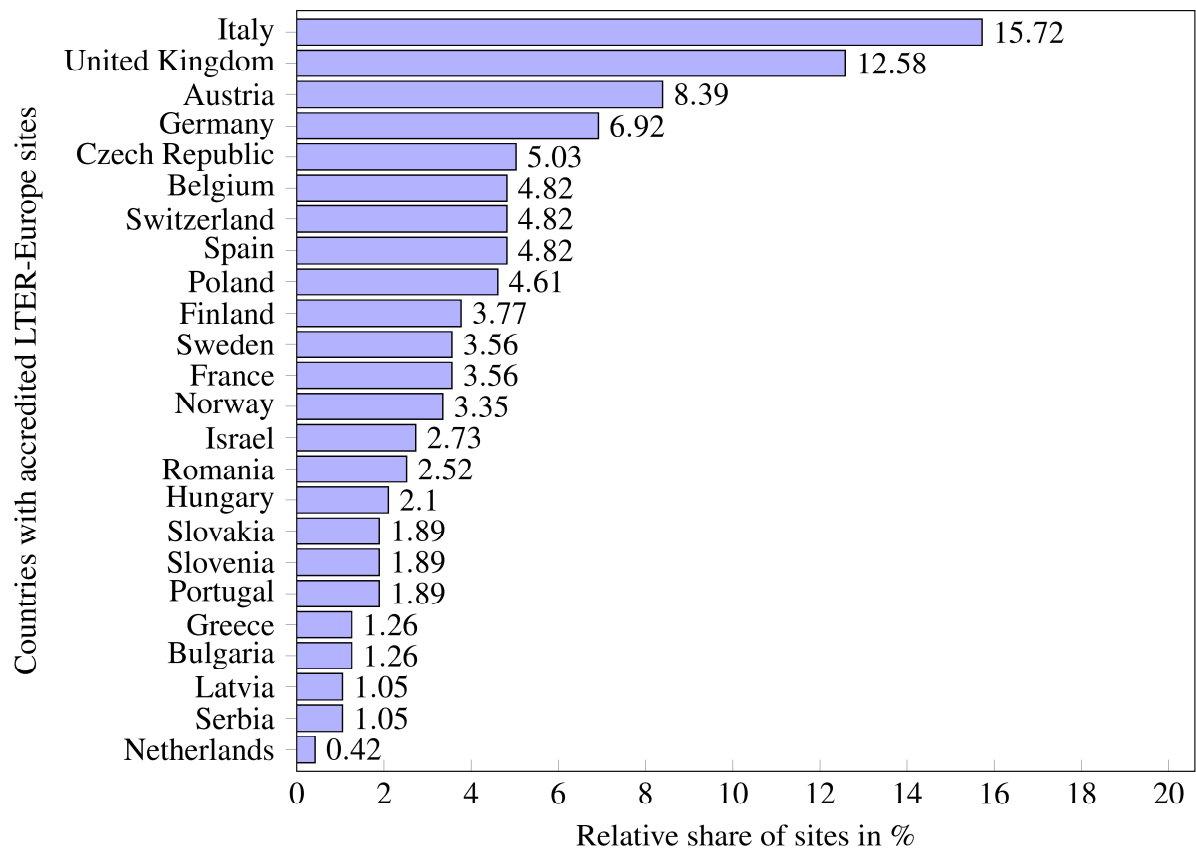
**Table S1:** Summary of the imported strata data.....7

**Table S2:** Distribution of relative share of area of formally accredited LTER-Europe sites (dataset A, excluding offshore sites) within biogeographical regions and comparison with the proportional coverage in the LTER-Europe area.....8

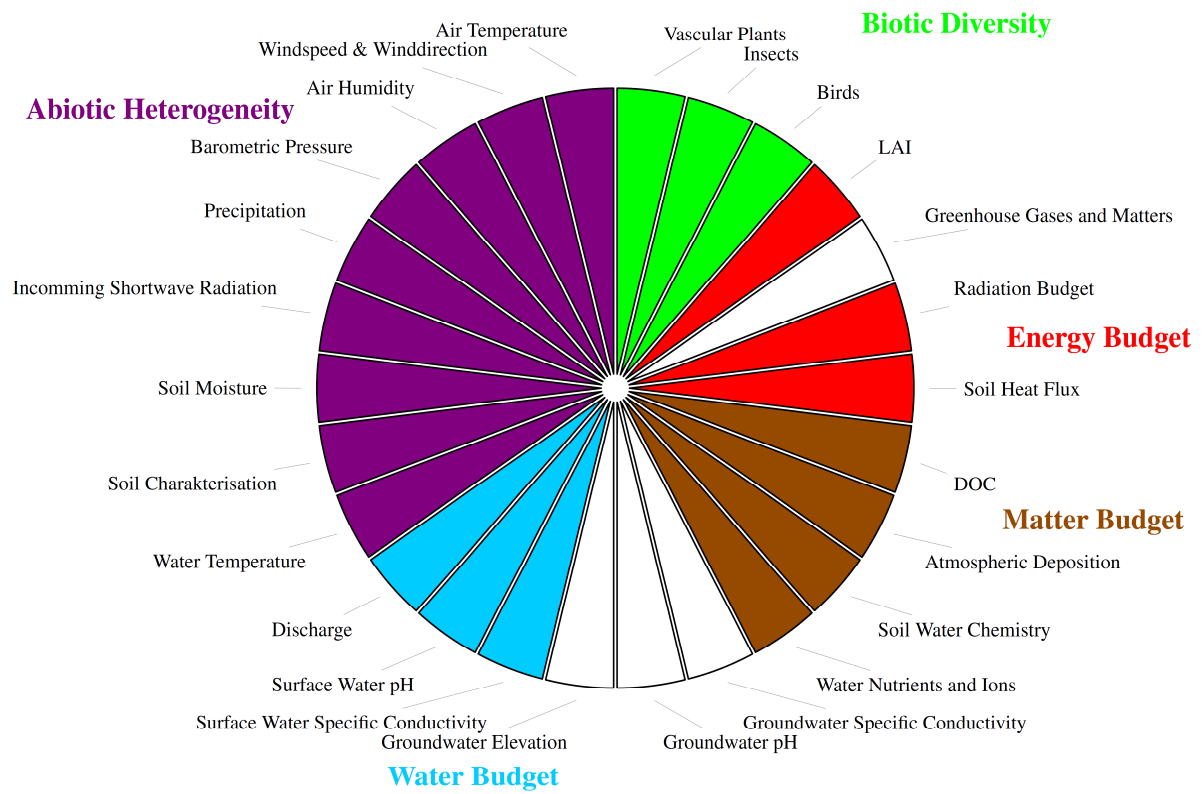
**Table S3:** Distribution of relative share of area of formally accredited LTER-Europe sites (dataset A, excluding offshore sites) within bioclimate regions compared to the proportional coverage in the LTER-Europe area.....9

**Table S4:** Distribution of relative share of area of formally accredited LTER-Europe sites (dataset A, excluding offshore sites) within land cover classes and comparison with the proportional coverage in the LTER-Europe area.....10

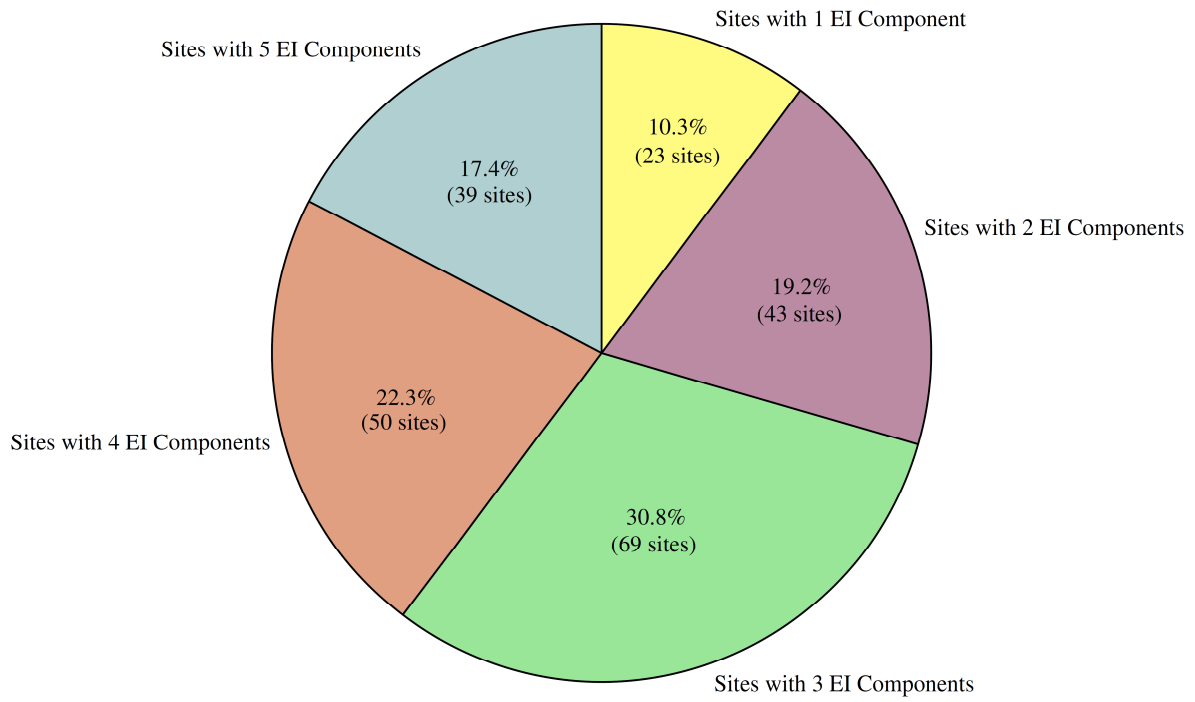
**Table S5:** Distribution of relative share of area of formally accredited LTER-Europe sites (dataset A, excluding offshore sites) within land form units and comparison with the proportional coverage in the LTER-Europe area.....11



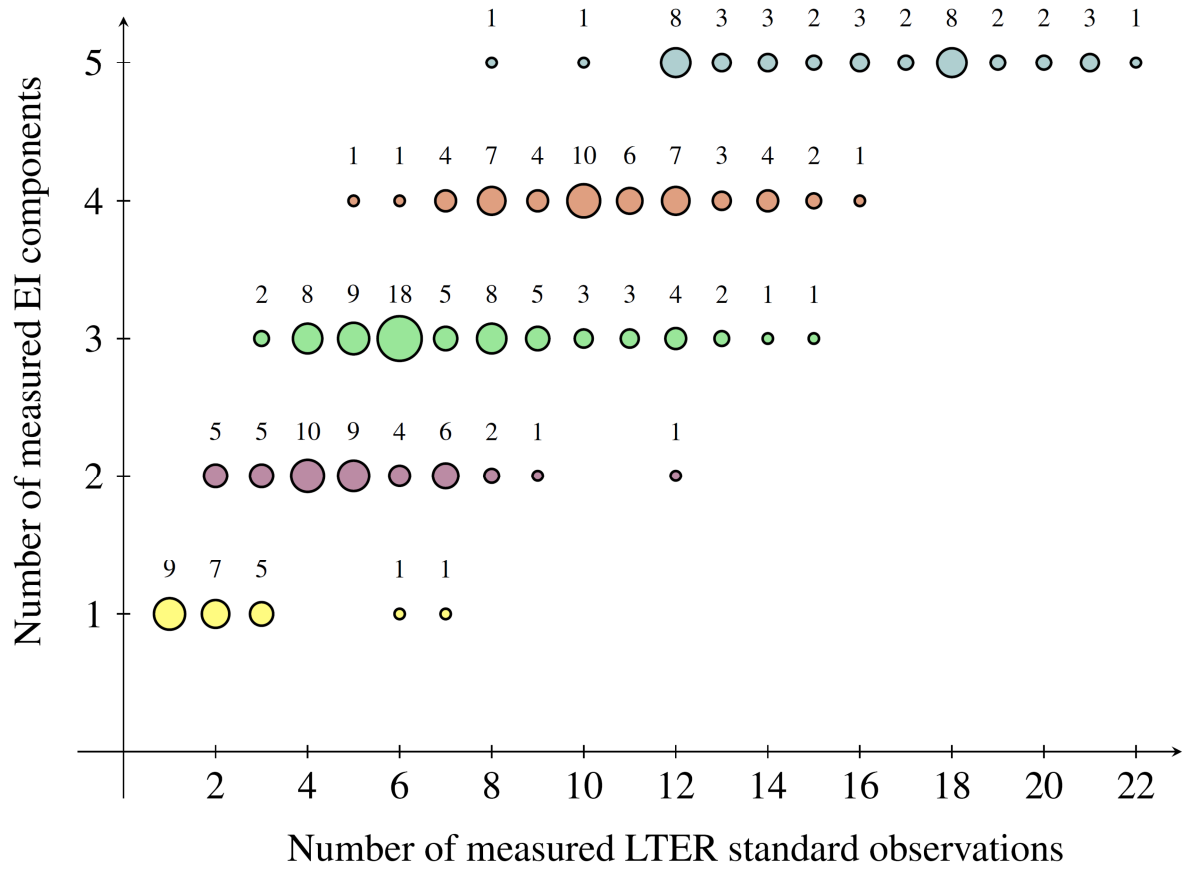
**Fig. S1: Overview of countries and relative share of sites in comparison to formally accredited sites in LTER-Europe included in the analysis of geographical and ecological representativeness (dataset A).**



**Fig. S2: Example for site-specific coverage of standard observation requirements (see Table 1); white sections indicate standard observations not considered.**



**Fig. S3: Classification of LTER-Europe sites with detailed documentation (dataset B, 24 countries, 224 sites) corresponding to the Ecosystem Integrity (EI) framework and the LTER-Europe set of standard observations.**



**Fig. S4: Number of LTER-Europe standard observations vs. EI components currently measured by LTER-Europe sites with detailed documentation available (dataset B). The size of the bubbles represents the number of sites (at the top of each bubble) in the corresponding category.**

**Table S1: Summary of the imported strata data**

Strata Types	Description	Data source
Biogeographical Regions	2.4.1	EEA (2016)
Bioclimates	2.4.2	Sayre et al. (2014)
Land Cover	2.4.3	Bontemps et al. (2009); Sayre et al. (2014)
Landforms	2.4.4	Danielson and Gesch (2011); Sayre et al. (2013)
Socio-Ecological Regions	2.4.5	CIESIN (2016); Eurostat (2015); SSB (2017); UNstats (2017); WEO (2017)

**Table S2: Distribution of relative share of area of formally accredited LTER-Europe sites (dataset A, excluding offshore sites) within biogeographical regions and comparison with the proportional coverage in the LTER-Europe area.**

Biogeographical Region	LTER-Europe countries share in %	LTER-Europe sites share in %
Alpine	9.3	13.8
Anatolian	5.8	0
Arctic	2.2	1.8
Black Sea	1.6	0.6
Continental	25.9	22.3
Macaronesian	0.1	0
Mediterranean	16.6	12.4
Pannonian	1.7	0.3
Steppic	4.1	1.1
Atlantic	11.8	23.6
Boreal	13.5	19.1
Coastal areas	7.3	5.0



**Table S3: Distribution of relative share of area of formally accredited LTER-Europe sites (dataset A, excluding offshore sites) within bioclimate regions compared to the proportional coverage in the LTER-Europe area.**

Bioclimates	LTER-Europe countries share in %	LTER-Europe sites share in %
Arctic	<0.1	<0.1
Cold Moist	<0.1	0
Cold Very Wet	9.0	12.3
Cold Wet	15.3	14.3
Cool Moist	9.0	1.4
Cool Semi-Dry	4.8	1.2
Cool Very Wet	3.5	4.3
Cool Wet	32.5	32.3
Hot Dry	0.1	0.2
Hot Moist	0.3	<0.1
Hot Semi-Dry	0.2	<0.1
Hot Very Dry	<0.1	0.1
Hot Wet	0.4	<0.1
Very Cold Very Wet	4.7	7.0
Very Cold Wet	2.2	1.2
Very Hot Dry	<0.1	<0.1
Very Hot Very Dry	<0.1	<0.1
Warm Dry	<0.1	<0.1
Warm Moist	3.6	0.7
Warm Semi-Dry	5.5	3.6
Warm Very Wet	0.6	<0.1
Warm Wet	8.1	4.7
Coastal areas	0	16.6

**Table S4: Distribution of relative share of area of formally accredited LTER-Europe sites (dataset A, excluding offshore sites) within land cover classes and comparison with the proportional coverage in the LTER-Europe area.**

Land Cover Classes	LTER-Europe countries share in %	LTER-Europe sites share in %
Urban and associated areas	1.7	1.7
Rainfed cropland	23.0	25.1
Irrigated cropland	0.5	0.2
Forest	28.7	26.7
Heathland & sclerophyllous vegetation	0.5	0.6
Grassland	3.1	5.1
Sparsely vegetated area	3.7	4.3
Vegetated areas on regularly flooded soil	1.3	2.2
Bare areas	1.0	1.4
Complex cropland	1.9	1.0
Mosaic cropland / natural vegetation	20.9	6.3
Mosaic of natural vegetation	11.2	9.1
Water bodies	2.3	15.3
Permanent snow and ice	0.2	0
Coastal areas	0	1.0

**Table S5: Distribution of relative share of area of formally accredited LTER-Europe sites (dataset A, excluding offshore sites) within land form units and comparison with the proportional coverage in the LTER-Europe area.**

Land Form Units	LTER-Europe countries share in %	LTER-Europe sites share in %
Flat or Nearly Flat Plains	27.0	24.1
High Hills	9.9	12.1
High Mountains	11.9	12.4
Irregular Plains with Low Hills	<0.1	<0.1
Irregular Plains with Moderate Relief	<0.1	<0.1
Low Mountains	11.2	8.6
Moderate Hills	6.4	8.8
Scattered High Hills	0.8	0.5
Scattered High Mountains	2.2	1.9
Scattered Low Mountains	11.9	8.8
Scattered Moderate Hills	1.1	2.2
Smooth Plains with local relief	0.5	0.5
Surface Water	1.9	3.5
Tablelands with Considerable Relief	3.9	5.9
Tablelands with High Relief	2.3	2.5
Tablelands with Moderate Relief	2.2	3.1
Tablelands with Very High Relief	0	<0.1
Coastal areas	6.7	4.9