

PANGAEA – Data Publisher for Earth & Environmental Science

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About the Institution

PANGAEA Data Publisher for Earth & Environmental Science, is a globally leading information system, long term archive and data publisher for geoscientific, biological and environmental data. Data published by PANGAEA origins from a broad range of subdisciplines of the biological sciences, chemistry, physics with a special focus on earth sciences and environmental Sciences. Jointly hosted by the Centre for Marine Environmental Sciences (MARUM) at the University Bremen and the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI), PANGAEA is laid out as a permanent facility, guaranteeing the long-term availability and accessibility of archived data and metadata in secure and machine readable formats. It is also a World Data Center (WDC-PANGAEA) and accredited by [ICSU World Data System](#).



PANGAEA

Data Publisher for Earth &
Environmental Science.

About the Data Center

PANGAEA archives, curates and publishes multidisciplinary (e.g. geochemical, biological observational and occurrence) data from marine and terrestrial environments. Curation includes user support, definition of data set granularity, quality control, archival format transformation, metadata description and control. Supported data types are tabular data but also binary data, e.g. multimedia.



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Data Center Profile

Name	PANGAEA – Data Publisher for Earth & Environmental Science
URL	https://www.pangaea.de/
Description	The Data Publisher for Earth & Environmental Science is a globally leading information system, long term archive and data publisher for spatial geoscientific, biological and environmental data. Data published by PANGAEA origins from a broad range of subdisciplines from earth system research such as biological sciences, chemistry, physics with a special focus on earth sciences and environmental sciences. Jointly hosted by the Centre for Marine Environmental Sciences (MARUM) at the University Bremen and the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI), PANGAEA is laid out as a permanent facility, guaranteeing the long-term availability and accessibility of archived data and metadata in secure and machine readable formats. It is also a World Data Center (WDC-PANGAEA) and accredited by ICSU World Data System .
Data domains (scope)	PANGAEA archives, curates and publishes multidisciplinary (e.g. geochemical, biological observational and occurrence) data from marine and terrestrial environments.
Target group	PANGAEA is open to any project, institution, or individual scientist to use or to archive and publish data related to spatial geoscientific, biological and environmental data.

Service Description	PANGAEA offers data management, including curation, long term archiving and data publication for geoscientific, biological and environmental data. Curation includes user support, definition of data set granularity, quality control, archival format transformation, metadata description and control. Supported data types are tabular data but also binary data, e.g multimedia. PANGAEA supports long-tail data that is data acquired by individual scientists as well as data collected during small to large scale research projects. Every archived data set is citable and attributed by a persistent DOI.			
	IT services			
	PANGAEA offers services of data submission, archiving, publication, and retrieval for individual scientists as well as scientific projects. Thereby scientists benefits not only from the long term archiving and publication of their data but also from assignment of DOIs to their data as well as the cooperation of PANGAEA with scientific publishers like Elsevier, Copernicus or Springer.			
	Data submission and accession			
	PANGAEA Data curation services are managed by data scientists with thematic expertise in geosciences, oceanographic sciences, biology, etc. Intuitive interfaces of the PANGAEA ticket system allow users to submit individual data sets, and provide project data managers with methods for uploading data deposits. PANGAEA accepts data submissions in various formats including most commonly used spreadsheet formats such as EXCEL. This data is managed by data curators within a standardized editorial procedure for which PANGAEA has established workflows and work tracking systems to produce consistent, high-quality data packages from heterogeneous data submissions in appropriate granularities for scientific re-use. Each dataset is described and cataloged by multiple accession identifiers and scientifically appropriate metadata attributes. Most important a DOI allows persistent and globally resolved identification, sharing, publishing and citation of data sets.			
	Data integration and management			
	PANGAEA provides access to data and metadata using a service-oriented architecture for discovery and delivery of content. PANGAEA data access methods include the pangaea.de website , a public PANGAEA web based metadata catalogue and data portal based on ElasticSearch full-text engine, documented web services and APIs for advanced interaction with PANGAEA digital data libraries.			
	Data backup and archiving			
	Backup and archiving facilities of the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI) are used.			
	Data publication			
PANGAEA offers an integrated internet based data publication services by using persistent and unique identification (DOIs), which ensure citability of data. All identifier and metadata are registered at DataCite (DOI), library catalogues and internet search engines (Google, Bing, etc). PANGAEA supports also the integration of metadata within domain specific scientific portals (OBIS, GBIF) using appropriate exchange standards (OAI-PMH, DIGIR, OpenSearch etc.). The established cross-linking services allow to embed publication specific PANGAEA metadata within publisher websites (e.g. Elsevier). Furthermore, PANGAEA guides data publication via Data Journals such as the Earth System Science Data Journal (ESSD) and Scientific Data by the Nature publishing group.				
User services				
PANGAEA provides scientific data management for individual scientists, institutions and projects across all areas of earth science. PANGAEA has a broad and substantiated background in managing voluminous, heterogeneous and dynamic data as well as related IT subjects (databases, data infrastructures, protocols, system design, and automation). Data management is provided on a wide scale, ranging from archiving supplementary data to single publications of individual scientists to accompanying international projects from the preparation phase to the final report, organizing the data flow all the way. The long-term commitment of PANGAEA ensures that all archived data are available for future analysis and scientific communities.				
Service Levels	Data Set x	Data Package x	Data management x	Research Objects
Data Formats				
Data Submission Formats	Data	Preferably spreadsheets (TAB-delimited, CSV or Excel), databases, binary files, almost any file format is accepted (more format details in PANGAEA Wiki)		
	Metadata	All (standardized or other) formats are accepted		
Data Accessibility	Public access points	GFBio , PANGAEA , Institutional landing pages of citable stable URIs, GBIF , OBIS , GEOSS and others		
	Standardised exchange formats	INSPIRE, ISO 19115, Darwin Core , Dublin Core, XML		
	Data formats	TAB-delimited (UTF-8 as default encoding, but many alternative encodings possible)		
	Long-term availability	Unlimited, certified (WDS) long term archive		
Data Publication Services	Data Citation	Yes (doi and citation for each individual data set)		
	DOI	via DataCite		
Archiving (RAW-data ingest, data, media)		All data and metadata are archived on a combination of hardiscs and tape drive silos. Small to medium size data sets (ab. some million items) are stored in a relational PostgreSQL system (more information here).		
Licenses / Terms of Use	Metadata	All data published with PANGAEA are a Creative Commons License . The default licence is CC BY but other types such as CC-0, CC-BY-SA or CC-BY-ND are possible too.		
		More information here and the PANGAEA data policy .		
	Data	See above		
Documentation		https://wiki.pangaea.de/wiki/Main_Page		
Computing center, external service provider		The AWI Computer Center performs the technical operation.		
name of the associated computing center (s), (commercial) service provider (s) and services provided				
Backup		Daily incremental backup and weekly full backup in two mirrored tape drive archives (capacity >1 PB), located in different buildings. More information here .		

Your contact persons at PANGAEA

Data curator

- Matthias Pauli

Technical contact

- Lars Möller

NFDI contact persons

- Frank Oliver Glöckner, Janine Felden, Judith Engel



Contact PANGAEA at
NFDI4Biodiversity



Do you have questions, feedback or need help?

[Contact our Helpdesk](#) for direct support.

