

Data Sharing and Management Agreement

Between The Fjords Research Group

This Data Sharing and Management Agreement regulates data management, availability, usage and ownership of data within the Between The Fjords group, led by Prof Vigdis Vandvik at the University of Bergen. The Between The Fjords group and is responsible for running two main experimental field systems in western Norway: the Vestland Climate Grid^S and LandPress climate gradient^L. Within these field systems, there are a number of externally funded research projects* and educational projects**, each with a designated Principal Investigator (PI), a number of researchers and students, and various collaborators and smaller and larger sub-projects.

The aim of this data sharing and management agreement is to facilitate collection of high-quality research data, to optimize data use and reuse, and to pre-empt data and metadata quality problems and misunderstandings or disputes over data ownership and rights.

Between The Fjords adhere to [FAIR](#) Data and [Open Science](#) principles as part of a broader commitment to maximise the use, re-use and impact of our hard-earned and publicly-funded data. This means, firstly, that we strive to collect, manage, store and publish our data in ways that ensure they are Findable, Accessible, Interoperable, and Reusable (i.e, FAIR). Further, we will share our data openly with the scientific community and beyond, as part of a broader Open Science commitment. However, note that we expect proper attribution to the original source when our data are used in downstream analyses, following [community standards](#), and that we expect that the downstream use of the data, in most cases, should also adhere to FAIR Data and Open Science principles. All researchers, technicians and students collecting or using Between The Fjords data must sign this agreement.

I. Data collection and management agreement

1. All staff and students involved in collecting data in Between The Fjords and associated projects agree to follow the data gathering protocols agreed for each (sub)project, and to collect, record and report high-quality research data.
2. To avoid loss of data all staff and students commit to comprehensive data and metadata documentation by following protocols, accurately filling in field sheets, collecting accurate and comprehensive field notes, taking pictures in the field and/or lab, digitalizing datasheets, etc. All this should be done as early in the process to minimize risk of data loss and errors.
3. High-quality and well documented research data is key to ensure scientific reproducibility. It requires all data to be correctly and fully recorded and documented; including full openness and transparency about any data errors, data loss, uncertainties, data cleaning procedures, outlier treatment, etc.

II. Data documentation, ownership, usage, and sharing agreement

1. Unless otherwise specified, the raw data and accompanying data documentation belongs to the individual research projects and the institution of the PI of each specific research project.
2. All subprojects, data collection, data storage and data usage should be described in the project ReadMe file for each main project, and in a Data Documentation file for each dataset.

3. The complete data, including data documentation and code from the (sub)projects will be delivered to the PI upon completion.
4. Project PIs are responsible for collecting and safely storing project data and metadata
5. All data and code from the collaborating projects will be shared with the Between The Fjords group, and will be made available to the group members as needed and agreed.

III. Authorship rights to reports and downstream publications

1. All research project participants' authorship rights to reports and downstream publications based fully or in part from the project data, are regulated by international research ethics standards (cf. the [Vancouver Protocol](#), and the [Norwegian National Research Ethics Committees](#)).
2. Following these standards, authorship credit should be based on;
 - a. substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data;
 - b. drafting the article or revising it critically for important intellectual content; and
 - c. final approval of the version to be published.
3. Authors should meet conditions a, b, and c. In addition to being accountable for the parts of the work they have done, an author should be able to identify which co-authors are responsible for specific other parts of the work. In addition, authors should have confidence in the integrity of the contributions of their co-authors.
4. Between The Fjords practice an open and inclusive authorships policy, this means that potential co-authors (anyone that has contributed to a) above), should be offered the opportunity to earn co-authorship by contributing to b) and c) above.
5. These rules apply to all project participants, from students to PIs.
6. Master students hold the rights to be lead author on papers primarily based on their thesis work for 12 months after graduating, unless agreed otherwise beforehand. If the student has not taken any initiative and made no progress towards publishing their thesis within this period, the right to be main author can be transferred to another project participant with co-author rights. The student still holds the rights to earn co-authorship rights based on conditions 2a) –2c) above.
7. The PI regulates the usage of data in downstream research publications for each project.

IV. Data sharing outside of the Between The Fjords group

1. Unpublished project data can be used, shared or presented outside the projects but this should be explicitly agreed (on a case-by case basis with the relevant project PI).
2. Published data are openly available, but we note that intellectual ownerships and authorship rights of the data and broader meta-data (including the study design, raw data, data documentation, etc.) follows the data when shared outside of the Between The Fjords group. Any potential issues should be discussed before data sharing (following best community standards, roughly as reflected by our full data including data documentation are published under [CC-BY](#) of [CC-BY-SA](#) license or similar).
3. Any publications using the BetweenTheFjords data must follow current international research ethics standards such as the [Vancouver Protocol](#), and the [Norwegian National Research Ethics Committees](#)).



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4. Between The Fjords have an Open Science policy, and we will share and make data and code publicly available, either as a standalone dataset or when appropriate in databases. We expect that the original publication is appropriately cited when data is used in downstream publications.

V. Reference to projects in acknowledgement

1. All papers based on or using Between The Fjords project sites, data, or metadata shall refer to the project short name and funding source and project code in the acknowledgements.

By signing this agreement, I agree to comply with the Between The Fjords data sharing and management regulations set out above, and I gain rights to access and use project data as needed and agreed with the PIs.

Printed name:

Place, date:

Signature:

Appendix: Between The Fjords project overview as of January 2021:

*Research projects **Educational projects ^SSeedclim climate grid ^LLandPress climate gradient:

FUNDER^{*S}: Direct and indirect climate impacts on the biodiversity and FUNctioning of the UNDERground ecosystem. NORWEGIAN RESEARCH COUNCIL KLIMAFORSK project 315249. kNOK 12.000. 2021 – 2025. PI Vandvik, Halbritter

ECoMAP^{*}: Modelling Ecological state and Condition Maps to support knowledge-based decision-making in Area management and spatial Planning (ECoMAP). NORWEGIAN RESEARCH COUNCIL KSPSAMARBEID20 project 320602. kNOK 20.000. 2021 – 2024. PI: Vandvik

RangeX^{*}: Mechanisms underlying the success and impacts on biodiversity and ecosystem functioning of range-expanding species under climate change. BiodivERSA project 578. My deliverables: kNOK 3.150. 2021 – 2023. PI: Alexander, WP lead Vandvik.

Three-D^{*S}: Integrated assessment to aid mitigation of negative impacts by THREE global change Drivers on alpine biodiversity and ecosystem function. NORWEGIAN RESEARCH COUNCIL MILJØFORSK project 287801. kNOK 6.220. 2019 – 2022. PI Halbritter, Vandvik

EMERALD^{*SL}: Terrestrial ecosystem-climate interactions of our EMERALD planet. NORWEGIAN RESEARCH COUNCIL KLIMAFORSK project 294948. kNOK 29.992. 2019 – 2022. PI Stordal/ WP lead Vandvik

Fra vugge til grad^{*S}: Student research – from cradle to grade. Olav Thon Stiftelsen student active research project grant XXX. kNOK 1.500. 2019 – 2021. PI Vandvik, Førland, Gya, Lygre.

ExpertS^{SL}**: Experiments, Traits, Synthesis: Using knowledge from global ecological experiments to validate, assess, and improve trait-based theory. NORWEGIAN RESEARCH COUNCIL INTPART project 287784. kNOK 5.960. 2019 – 2021. PI Vandvik, Enquist

INCLINE^{*S}: Indirect climate change impacts on alpine plant communities. NORWEGIAN RESEARCH COUNCIL FRIMEDBIO project 274712. kNOK 11.009. 2018 – 2021. PI Vandvik, Töpper

RECITE^{SL}**: Research and Education Partnership in Climate Change Impacts on Terrestrial Ecosystems. NORWEGIAN RESEARCH COUNCIL INTPART project 274831. kNOK 5.787. 2018 – 2021. PI Vandvik

HiddenCosts^{*L}: Hidden costs of implementing afforestation as a climate mitigation strategy: A comprehensive assessment of direct and indirect impacts. NORWEGIAN RESEARCH COUNCIL KLIMAFORSK project 268243. kNOK 10.936. 2017 – 2020. PI Lee

LandPress^{*L}: Land use management to ensure ecosystem service delivery under new societal and environmental pressures in heathlands. NORWEGIAN RESEARCH COUNCIL MILJØFORSK project 255090. kNOK 12.983. 2016 – 2019. PI Vandvik, Velle

TraitTrain^{SL}**: Comparing climate change impacts on High North vs. Alpine ecosystems through research and training in trait-based approaches. SIU project HNP-2015/10037. kNOK 1.500. 2016 – 2018. PI Vandvik

FunCaB^{*S}: The role of Functional group interactions in mediating climate change impacts on the Carbon dynamics and Biodiversity of alpine ecosystems. NORWEGIAN RESEARCH COUNCIL KLIMAFORSK project 244525. kNOK 7.900. 2015 – 2018. PI Vandvik

DRIVE^{*S}: The plant root microbiome diversity and resilience in a changing climate. NORWEGIAN RESEARCH COUNCIL FRIMEDBIO project 240897. 2014 – 2017. PI: Vik

TransPlant^{S}**: SIU project UTF-2013/10074. kNOK 1.109. 2014 – 2016. PI Vandvik

SEEDCLIM^{*S}: The role of seeds in a changing climate - linking germination ecophysiology to population and community ecology. NORWEGIAN RESEARCH COUNCIL NORKLIMA project 184912. kNOK 9.566. 2008 – 2015. PI Vandvik

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