

The consequences of nitrogen-induced shifts in fungal and bacterial communities for carbon cycling in temperate forests

DPIA

DPIA

Have you performed a DPIA for the personal data processing activities for this project?

- Not applicable

The consequences of nitrogen-induced shifts in fungal and bacterial communities for carbon cycling in temperate forests

GDPR

GDPR

Have you registered personal data processing activities for this project?

- No

The consequences of nitrogen-induced shifts in fungal and bacterial communities for carbon cycling in temperate forests
FWO DMP (Flemish Standard DMP)

1. Research Data Summary

List and describe all datasets or research materials that you plan to generate/collect or reuse during your research project. For each dataset or data type (observational, experimental etc.), provide a short name & description (sufficient for yourself to know what data it is about), indicate whether the data are newly generated/collected or reused, digital or physical, also indicate the type of the data (the kind of content), its technical format (file extension), and an estimate of the upper limit of the volume of the data.

| | | | | Only for digital data | Only for digital data | Only for digital data | Only for physical data |
|-------------------------------|--|---|--|--|---|--|------------------------|
| Dataset Name | Description | New or reused | Digital or Physical | Digital Data Type | Digital Data format | Digital data volume (MB/GB/TB) | Physical volume |
| | | <i>Please choose from the following options:</i> <ul style="list-style-type: none"> • Generate new data • Reuse existing data | <i>Please choose from the following options:</i> <ul style="list-style-type: none"> • Digital • Physical | <i>Please choose from the following options:</i> <ul style="list-style-type: none"> • Observational • Experimental • Compiled/aggregated data • Simulation data • Software • Other • NA | <i>Please choose from the following options:</i> <ul style="list-style-type: none"> • .por, • .xml, • .tab, • .csv,.pdf, • .txt, .rtf, • .dwg, • .gml, ... • NA | <i>Please choose from the following options:</i> <ul style="list-style-type: none"> • <100MB • <1GB • <100GB • <1TB • <5TB • <10TB • <50TB • >50TB • NA | |
| ICP data | Data received from ICP forests to select sampling plots | Reuse existing data | Digital | Observational | .csv | <1GB | |
| Soil respiration measurements | Measurements of soil respiration to be collected during field work | Generate new data | Digital | Observational | .csv | <1TB | |
| Soil properties | Measurements of various soil properties (soil pH, nitrogen, carbon, fungal biomass, available phosphorous, etc.) | Generate new data | Digital | Observational | .csv | <1TB | |
| Sequencing data | Metabarcoding of fungal and bacterial communities from the soil samples | Generate new data | Digital | Experimental | .csv | <5TB | |
| Ectomycorrhizal data | Community composition of ectomycorrhizal fungi from root samples | Generate new data | Digital | Observational | .csv | <1TB | |

| | | | | | | | |
|----------------------------------|---|---------------------|----------|--------------------------|------|------|-------------------|
| Soil samples | Soil samples from different soil layers in 102 sampling plots | Generate new data | Physical | | | | 400-600 samples |
| Litter samples | Litter from 102 sampling plots | Generate new data | Physical | | | | 102 samples |
| Root samples | Ectomycorrhizal root tips sieved from soil samples | Generate new data | Physical | | | | 1000-2000 samples |
| Soil respiration from experiment | Measurements of soil respiration from a mesocosm experiment | Generate new data | Digital | Observational | .csv | <1TB | |
| Soil properties from experiment | measurements of soil properties (pH, nitrogen, carbon, phosphorous, SOM, microbial biomass) from a mesocosm experiment | Generate new data | Digital | Observational | .csv | <1TB | |
| plant properties from experiment | Measurements of plant properties (height, weight, root colonization) from a mesocosm experiment | Generate new data | Digital | Observational | .csv | <1TB | |
| Plot metadata | Data on the sampling plots (Latitude, longitude, date and time of sampling, tree cover, nitrogen deposition, soil type, etc.) | Reuse existing data | Digital | Compiled/aggregated data | .csv | <1TB | |

If you reuse existing data, please specify the source, preferably by using a persistent identifier (e.g. DOI, Handle, URL etc.) per dataset or data type:

ICP data comes from the ICP Forests database: <http://icp-forests.org/documentation>

Are there any ethical issues concerning the creation and/or use of the data (e.g. experiments on humans or animals, dual use)? Describe these issues in the comment section. Please refer to specific datasets or data types when appropriate.

- No

Will you process personal data? If so, briefly describe the kind of personal data you will use in the comment section. Please refer to specific datasets or data types when appropriate.

- No

Does your work have potential for commercial valorization (e.g. tech transfer, for example spin-offs, commercial exploitation, ...)? If so, please comment per dataset or data type where appropriate.

- No

Do existing 3rd party agreements restrict exploitation or dissemination of the data you (re)use (e.g. Material/Data transfer agreements/ research collaboration agreements)? If so, please explain in the comment section to what data they relate and what restrictions are in place.

- No

Are there any other legal issues, such as intellectual property rights and ownership, to be managed related to the data you (re)use? If so, please explain in the comment section to what data they relate and which restrictions will be asserted.

- No

2. Documentation and Metadata

Clearly describe what approach will be followed to capture the accompanying information necessary to keep data understandable and usable, for yourself and others, now and in the future (e.g., in terms of documentation levels and types required, procedures used, Electronic Lab Notebooks, README.txt files, Codebook.tsv etc. where this information is recorded).

Plot metadata, data on soil properties and sequencing data will be collected and managed using the PlutoF platform. The PlutoF GO app will be used to record plot metadata in the field. For each dataset a README.txt file will be created.

Will a metadata standard be used to make it easier to find and reuse the data? If so, please specify (where appropriate per dataset or data type) which metadata standard will be used. If not, please specify (where appropriate per dataset or data type) which metadata will be created to make the data easier to find and reuse.

- No

3. Data storage & back-up during the research project

Where will the data be stored?

Data will be stored on a laptop.

How will the data be backed up?

The data will be backed up weekly or daily (depending on the amount of data produced) on an external hard-drive and to ManGO. The harddrive will remain at the office.

Is there currently sufficient storage & backup capacity during the project? If yes, specify concisely. If no or insufficient storage or backup capacities are available, then explain how this will be taken care of.

- No

The ManGO account will be acquired at the start of the fieldwork campaign.

How will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?

The laptop is password protected and the password is regularly changed. The harddrive is locked away.

What are the expected costs for data storage and backup during the research project? How will these costs be covered?

The ManGO account costs 35€ per year per TB and will be paid from the FWO bench fee. The harddrive costs ca. 100€ and will be paid with the FWO bench fee.

4. Data preservation after the end of the research project

Which data will be retained for at least five years (or longer, in agreement with other retention policies that are applicable) after the end of the project? In case some data cannot be preserved, clearly state the reasons for this (e.g. legal or contractual restrictions, storage/budget issues, institutional policies...).

All newly generated data during the project will be retained for at least five years.

Where will these data be archived (stored and curated for the long-term)?

Sequencing data will be submitted to the European Nucleotide Archive.
All other data will be deposited in the KU Leuven Research Data Repository.

What are the expected costs for data preservation during the expected retention period? How will these costs be covered?

Both repositories are free of charge.

5. Data sharing and reuse

Will the data (or part of the data) be made available for reuse after/during the project? In the comment section please explain per dataset or data type which data will be made available.

- Yes, in an Open Access repository

Raw sequencing data will be made available through the European Nucleotide Archive. All other data will be made available through the KU Leuven Research Data Repository.

If access is restricted, please specify who will be able to access the data and under what conditions.

Access will not be restricted.

Are there any factors that restrict or prevent the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party, legal restrictions)? Please explain in the comment section per dataset or data type where appropriate.

- No

Where will the data be made available? If already known, please provide a repository per dataset or data type.

Raw sequencing data will be made available through the European Nucleotide Archive. All other data will be made available through the KU Leuven Research Data Repository.

When will the data be made available?

Upon submission of manuscripts based on analysis of the data or the end of the project (Oct 2028), whichever comes first.

Which data usage licenses are you going to provide? If none, please explain why.

CC BY

Do you intend to add a PID/DOI/accession number to your dataset(s)? If already available, you have the option to provide it in the comment section.

- Yes

What are the expected costs for data sharing? How will these costs be covered?

The repositories that will be used are free of charge.

6. Responsibilities

Who will manage data documentation and metadata during the research project?

Margaux Boeraeve

Who will manage data storage and backup during the research project?

Margaux Boeraeve

Who will manage data preservation and sharing?

Margaux Boeraeve

Who will update and implement this DMP?

Margaux Boeraeve