READ ME File For Post-fire recovery by peat moss inoculation depends on water table depth

Dataset DOI: 10.5258/SOTON/D2276

Date that the file was created: January 2023

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GENERAL INFORMATION

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ReadMe Author: Harry ER Shepherd, University of Southampton

Date of data collection: October 2020 – April 2021

Information about geographic location of data collection:

Mesocosm experiment performed in Radboud University, NL. Mesocosms originally collected from Deurnsche Peel, NL.

Related projects:

RECOUP-Moor

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SHARING/ACCESS INFORMATION

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Licenses/restrictions placed on the data, or limitations of reuse: If reusing please site the associated manuscript (reference below).

Recommended citation for the data: Shepherd HER, Martin I, Marin A, Cruijsen PMJM, Temmink RJM & Robroek BJM (2023) Post-fire recovery by peat moss inoculation depends on water table depth. Journal of Applied Ecology

This dataset supports the publication:

AUTHORS: Shepherd HER, Martin I, Marin A, Cruijsen PMJM, Temmink RJM & Robroek BJM

TITLE: Post-fire recovery by peat moss inoculation depends on water table depth

JOURNAL: Journal of Applied Ecology

PAPER DOI IF KNOWN: TBC

Links to other publicly accessible locations of the data: NA

Links/relationships to ancillary or related data sets: NA

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DATA & FILE OVERVIEW

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This dataset contains:

Shepherd\_Inoc\_ABG\_trts.csv: Aboveground trait data for observed vascular plant species (extracted from LEDA and Ecoflora: see manuscript for references)

Shepherd\_Inoc\_ABG\_surveys.csv: Aboveground vegetation surveys in the recovering mesocosms

Shepherd\_Inoc\_Vegetation\_des.csv: Taxonomic descriptions of all vegetation observed in study

Shepherd\_Inoc\_Micro\_trts.csv: Microbial treatment file for use in code

Shepherd\_Inoc\_CN\_R1.csv: Results of CN analysis on soil nutrient composition (carbon and nitrogen)

Shepherd\_Inoc\_Veg\_DW.csv: Vegetation dry-weight from harvested mesocosms

Shepherd\_Inoc\_Micro\_data.csv: ASV abundance of prokaryote sequences for each surveyed community, output from DADA2 pipeline.

Shepherd\_Inoc\_PWcomp.csv: Pore water nutrient analysis from mesocosms

Shepherd\_et\_al\_flux\_dataR1.csv: Flux data outputs for CO2 and CH4 concentration from mesocosms

Shepherd\_et\_al\_ABG\_analysis.R: Code for aboveground analysis of plant composition and function.

Shepherd\_et\_al\_BG\_comm\_analysis.R: Code for belowground prokaryote community analysis

Shepherd\_et\_al\_Inoc\_Func\_analysis.R: Code for functional analysis of recovering mesocosms

Relationship between files, if important for context: All datasets are read in by the three code files within this archive.

Additional related data collected that was not included in the current data package:

If data was derived from another source, list source: LEDA, Ecoflora (plant trait data only)

If there are there multiple versions of the dataset, list the file updated, when and why update was made: Shepherd\_et\_al\_flux\_data was updated to Shepherd\_et\_al\_flux\_dataR1 on 03/01/2023 to remove two erroneous columns.

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METHODOLOGICAL INFORMATION

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Description of methods used for collection/generation of data: Description of data collection is outlined in the associated manuscript.

Methods for processing the data: Data was compiled and prepared into its current form using R v 4.1.2

Software- or Instrument-specific information needed to interpret the data, including software and hardware version numbers: R version 4.1.2 (R Core Team. (2022). R: A Language and Environment for Statistical Computing. https://www.R-project.org/)

Standards and calibration information, if appropriate:

Environmental/experimental conditions: Greenhouse mesocosm experiment described in associated manuscript.

Describe any quality-assurance procedures performed on the data:

People involved with sample collection, processing, analysis and/or submission:

Harry ER Shepherd, Isa Martin, Andreea Marin, Peter MJM Cruijsen, Ralph JM Temmink & Bjorn JM Robroek

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Shepherd\_Inoc\_ABG\_trts.csv

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Number of variables: 5

Number of cases/rows: 8

Variable list, defining any abbreviations, units of measure, codes or symbols used: EMV : Ellenberg moisture value. SM: seed mass (mg), SLA: specific leaf area (mm2 mg-1), LDMC: leaf dry matter content (mg g-1); Plant\_height = Plant height (m)

Rows refer to individual species (see Shepherd\_Inoc\_Vegetation\_des.csv for details)

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Shepherd\_Inoc\_ABG\_surveys.csv

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Number of variables: 27

Number of cases/rows: 21

Variable list, defining any abbreviations, units of measure, codes or symbols used: Species abbreviations defined in Shepherd\_Inoc\_Vegetation\_des.csv

Rows refer to mesocosms with treatment information given.

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Shepherd\_Inoc\_Vegetation\_des.csv

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Number of variables: 6

Number of cases/rows: 24

Variable list, defining any abbreviations, units of measure, codes or symbols used: Species\_t2 refers to alternative species names using for matching code.

Rows refer to individual species.

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Shepherd\_Inoc\_Micro\_trts.csv

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Number of variables: 8

Number of cases/rows: 61

Variable list, defining any abbreviations, units of measure, codes or symbols used: Code: Mesocosms treatment/time code; Group: Sampling group; Inoculation: inoculated yes (y) or no (n); water\_table: high water table (H) or low water table (L); Epi\_code: Eppendorf unique code; Sample\_code: Code for sampling data; Days: Days since inoculation; Time: Character code of time since inoculation

Rows refer to individual mesocosms on different time points.

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Shepherd\_Inoc\_CN\_R1.csv

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Number of variables: 11

Number of cases/rows: 27

Variable list, defining any abbreviations, units of measure, codes or symbols used: Code: Mesocosms treatment and group; Treatment: Experimental treatment; Rep: Replicate (group); Ino: inoculated yes (Y) or no (N); WL: high water table (H) or low water table (L); SoilC: Soil carbon (%); SoilN: Soil nitrogen (%); SoilCN: ratio of soil carbon to nitrogen; VegC: Vegetation carbon (%); VegN: Vegetation Nitrogen (%); VegCN: ratio of vegetation C to N.

Rows refer to individual mesocosms.

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Shepherd\_Inoc\_Veg\_DW.csv

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Number of variables: 7

Number of cases/rows: 21

Variable list, defining any abbreviations, units of measure, codes or symbols used: Code: Mesocosms treatment and group; Treatment: Experimental treatment; Rep: Replicate (group); Ino: inoculated yes (Y) or no (N); WL: high water table (H) or low water table (L); NetDW = Dry weight of aboveground biomass (g)

Rows refer to individual mesocosms.

Missing data codes:

Specialized formats or other abbreviations used:

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Shepherd\_Inoc\_Micro\_data.csv

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Number of variables: 68

Number of cases/rows: 13760

Variable list, defining any abbreviations, units of measure, codes or symbols used: Code: Column titles refer to individual mesocosms outlined in Shepherd\_Inoc\_Micro\_trts.csv followed by taxonomic information

Rows refer to individual prokaryote sequences observed in the community (sequences provided in the first column)

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Shepherd\_Inoc\_PWcomp.csv

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Number of variables: 20

Number of cases/rows: 76

Variable list, defining any abbreviations, units of measure, codes or symbols used: Mesocosms treatment and group; Treatment: Experimental treatment; Rep: Replicate (group); Ino: inoculated yes (Y) or no (N); WL: high water table (H) or low water table (L); meso = mesocosm code; Remaining Columns refer to raw and standardised concentrations of pore water compositions.

Rows refer to individual prokaryote sequences observed in the community (sequences provided in the first column)

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Shepherd\_et\_al\_flux\_dataR1.csv

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Number of variables: 21

Number of cases/rows: 634

Variable list, defining any abbreviations, units of measure, codes or symbols used: Mesocosms treatment and group; Treatment: Experimental treatment; Ino: inoculated yes (Y) or no (N); Date: Date of measurement; Start: start of measurement time; End: end of measurement time; Gas: Gas recorded; Slope: slope of gas concentration; Ta: total atmospheric pressure; Flux: change in concentration over time; Plot: mesocosm; LSD: light condition; Flux\_mg: gas flux in mg; vol\_correct: volume correction constant; Flux\_corrected: flux corrected for volume; Days: days since incoulation

Rows refer to individual prokaryote sequences observed in the community (sequences provided in the first column)