Data from Light availability predicts mortality probability of conifer saplings in Swiss mountain forests better than radial growth and tree size (Bianchi, Bugmann and Bigler, 2020)

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The file is tab-separated text file.

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Description of Data.txt:

This file contains 16 columns (variables) x 54046 rows (excluding the first row, which contains the header with the variable names). The data was used to create the Figures and to fit the survival models. Weather data used for Table 1 and Appendix 1 are property of MeteoSwiss and are not included.

The variables are:

1. Year

The variable "year" (integer) indicates the year of formation of each tree ring.

1. IDstemdisk

The variable "IDstemdisk" is a unique identifier of each stemdisk, where the first letter indicates the “alps”, the second letter the “site”, the third letter the “status”, the fourth letter the “species, and the first two numbers indicate a unique number within each site, status, species, and the last number indicate the “stemdisk.position”. E.g. “SCTP20\_2” identifies the second stem disk (at position of 40 cm height) of the twentieth sapling of *Picea abies* dead sampled in Campra in the Southern Swiss Alps.

1. Tree.ring.width

The variable “tree.ring.width” (unit: 0.01 mm) indicates the width of the tree rings measured on a LINTAB measurement table using the TSAP-Wind software (both of Rinntech, Heidelberg, Germany.

1. IDsapling

The variable "IDsapling" is a unique identifier of the tree sapling, where the first letter indicates the “alps”, the second letter the “site”, the third letter the “status”, the fourth letter the “species, and the two numbers indicate a unique number within each site, status, species. E.g. “NELA01” identifies the first sapling of *Abies alba* living sampled in Entlebuch in the Northern Swiss Alps.

1. Stemdisk.position

The variable “stemdisk.position” indicates 4 categories of sapling heights where stem disks were taken: “1” for stem disks taken at the root-shoot boundary (above root collar), “2” for stem disks taken at 40 cm height, “3” for stem disks taken at 70 cm height, and “4” for stem disks taken at 100 cm height.

1. Height.class

The variable “height.class” indicates 4 categories of sapling height: “10-40 cm”, “40-70 cm”, “70-100 cm”, and “100-130 cm”.

1. Height

The variable "height" (unit: cm) corresponds to the sapling height at sampling, which was measured perpendicularly from the soil surface to the apical meristem.

1. Diameter

The variable "diameter" (unit: cm) corresponds to the sapling diameter above the root collar at sampling, which was measured with a calliper.

1. Alps

The variable "alps" indicates 3 categories of Swiss Alps: “Southern”, “Central” and “Northern”.

1. Site

The variable "site" indicates 9 categories of study sites: “La Punt” at 46.57724°/9.90593°, “Chamues-ch” 46.54883°/9.97125°, “Samprou” 46.54446°/8.82848°, “Bergün” 46.63347°/9.7259°, “Filisur” 46.66112°/9.6733°, “Predasca” 46.55417°/8.91808°, “Campra” 46.51982°/8.88549°, “Grabs” 47.19159°/9.36694°, “Entlebuch” 47.02119°/8.09121° (latitude/longitude, WG84 coordinates) in Switzerland.

1. Status

The variable "status" indicates 2 categories of a sapling state at sampling: "living" and "dead".

1. Species

The variable "species" indicates 4 categories of tree species sampled: “*Pinus cembra*”, “*Larix decidua*”, “*Picea abies*”, “*Abies alba*”.

1. TOTheff

The variable "TOTheff" (unit: W/m^2) indicates the total (sum of direct and diffuse) radiation at the exact position where each sapling was sampled, measured with hemisferical photographs and analysed with the software Hemisfer.

1. Age.IDstemdisk

The variable “age.IDstemdisk” (unit: yr) indicates the number of tree rings formed in each stemdisk.

1. Matches

The variable “matches” identifies pairs of dead and living saplings of the same species within the same site paired retrospectively with tree age as matching variable using the function “pairmatch” of the “optmatch” package, version 0.9-10 (Hansen & Klopfer 2006).

1. RGR5.IDstemdisk

The variable "RGR5.IDstemdisk" (unit: 0.01 mm/yr) indicates the stemdisk-specific radial growth rate of the last five years prior to sampling of living saplings and prior to death of the dead saplings, respectively.