Package 'OpenBARD'

July 21, 2025

Title Open British Arboricultural Record Dataset

Version 0.0.1

Description Data used in compiling the Handbook of UK Urban Tree Allometric Equations and Size Characteristics (Fennel 2024). The data include measurements of height, crown radius and diameter at breast height (DBH) for UK urban trees. For more details see Fennell (2024) Handbook of UK Urban Tree Allometric Equations and Size Characteristics (Version 1.4). <doi:10.13140/RG.2.2.28745.04961>.

URL https://codeberg.org/drdcarpenter/OpenBARD

BugReports https://codeberg.org/drdcarpenter/OpenBARD/issues

License GPL-3

Encoding UTF-8

RoxygenNote 7.3.2

Depends R (>= 2.10)

LazyData true

NeedsCompilation no

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Repository CRAN

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obard *Open British Arboricultural Record Dataset (OpenBARD)*

Description

OpenBARD are tree data used in the production of Fennell, Joseph. (2024). Handbook of UK Urban Tree Allometric Equations and Size Characteristics (Version 1.4). doi:10.13140/RG.2.2.28745.04961.

Usage

```
obard
```

Format

The data frame obard has 15357 rows and 30 variables:

record_id Record ID

n_stems Number of stems

stem_diameter_1_cm Diameter in cm of first stem

stem_diameter_2_cm Diameter in cm of second stem

stem_diameter_3_cm Diameter in cm of third stem

stem_diameter_4_cm Diameter in cm of fourth stem

stem_diameter_5_cm Diameter in cm of fifth stem

height_m Height of tree in metres

life stage Life stage of tree

physiological_condition Physiological condition of tree

classification Nature of the location of the tree (urban, suburban, rural)

county County in which tree is located

latin_name_clean Latin (scientific) name for tree

common_name_clean Common name for tree

generic_name_clean Genus name for tree

genus Genus of tree

species Specific epithet for tree

combined_stem_diameter_cm Combined diameter in cm of stems

is_multistem Is the tree multistemmed?

crown_radius_n_m Radius in metre of crown on north compass point

crown_radius_s_m Radius in metre of crown on south compass point

crown_radius_e_m Radius in metre of crown on east compass point

crown_radius_w_m Radius in metre of crown on west compass point

crown_radius_se_m Radius in metre of crown on south-east compass point

crown_radius_nw_m Radius in metre of crown on north-west compass point

crown_radius_ne_m Radius in metre of crown on north-east compass point

crown_radius_sw_m Radius in metre of crown on south-west compass point

crown_radius_minimum_bounding_circle The radius of the expected minimum bounding circle of the crown

crown_radius_maximum The maximum radial value recorded for the tree

data_contributor_id Dataset-unique identifier for the data contributor

Details

The data can be found on Zenodo: https://zenodo.org/records/15593688

Estimates for the maximum sizes of amenity (and other, non-forestry) trees are important for urban planning and tree management. This report presents the findings of an applied research study to generate current best estimates for UK tree typical sizes and allometric equations. This report contains typical mature sizes for 46 species and 29 genera of trees commonly found in the UK's towns, cities and land outside of woodland. While the data come from sites across the UK in both urban and rural areas, the data were all collected as part of professional tree surveys and so are likely to be representative of amenity trees. Trees grown in woodland conditions are not likely to be well represented by the models presented here. This report also contains allometric model formulae for up to 23 species (depending on the relationship), allowing tree characteristics such as diameter at breast height to be predicted by other measured parameters. The formulae can be used in Excel (or other software) for prediction.

What does the document contain? (1) Summary of methods used to generate the values and equations (2) Typical and large (95th percentile) crown radius, height, diameter at breast height and root protection radius for UK amenity tree species and genera (3) Plots to show these values (4) Coefficients for single-parameter allometric equations.

Source

https://zenodo.org/records/15593688

Examples

```
# Load full data set
data(obard)

# View summary
str(obard)
```

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