Package 'pdxTrees'

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Title Data Package of Portland, Oregon Trees

Version 0.5.0

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Description An engaging collection of datasets from Portland Parks and Recreation. The city of Portland inventoried every tree in over 170 parks and along the streets in 96 neighborhoods.

Depends R (>= 3.1)

License GPL-3

Encoding UTF-8

URL

BugReports

RoxygenNote 7.3.3

Suggests knitr, rmarkdown, leaflet, leaflet.extras, gganimate, infer, moderndive, readr, utils, gifski, ggplot2, forcats

VignetteBuilder knitr

Imports magrittr, rlang, dplyr

NeedsCompilation no

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Repository CRAN

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get_pdxTrees_parks   *Load the pdxTrees_parks data*

Description

This function pulls the pdxTrees_parks dataset from the GitHub repository: `https://github.com/mcconvil/pdxTrees`. pdxTrees_parks is a data frame of all the trees in 174 parks in Portland, OR and was collected as part of the Urban Forestry Tree Inventory Project.

Usage

```
get_pdxTrees_parks(park = NULL)
```

Arguments

park   A vector of park names for filtering the data. If NULL, all park trees will be
                    returned.

Value

Returns a data frame of 34 variables where each row is a tree:

UserID ID

Inventory_Date Date of data collection

Species Species of the tree. All dead trees were listed as "unknown"

Common_Name Common name of the tree

DBH Diameter at breast height (4.5' above ground)

Condition Trees were rated as good, fair, poor, or dead. These general ratings reflect whether or
     not a tree is likely to continue contributing to the urban forest (good and fair trees) or whether
     the tree is at or near the end of its life (poor and dead trees).

Tree_Height Height from the ground to the live top of the tree. For dead trees, total height was
     measured.

Crown_Width_NS North to South canopy width

Crown_Width_EW East to West canopy width

Crown_Base_Height Height from the ground to the lowest live canopy.

Collected_By Whether data were collect by staff or volunteer

Park Park where tree is located

Scientific_Name Scientific name of the tree

Family Family of the tree

Genus Genus of the tree

Functional_Type Categorical variable with groups: Broadleaf Deciduous (BD), Broadleaf Ever-
     green (BE), Coniferous Deciduous (CD), and Coniferous Evergreen (CE)

Mature_Size Categorical variable with groups: Large (L), Medium (M), and Small (S). Categorization is based on the height, canopy width, and general form of the tree at maturity

Native Whether or not the tree is native

Edible Categorical variable of edible trees

Nuisance Categorical variable indicating if it is a nuisance species

Structural_Value Monetary value of replacing the tree and the benefits that it provides, based on methods from the Council of Tree and Landscape Appraisers

Carbon_Storage_lb The amount of carbon (in lbs.) that is bound up in both the above-ground and below-ground parts of the tree

Carbon_Storage_value The monetary value associated with tree effects on atmospheric carbon, $129.72/ton. This value is estimated based on the economic damages associated with increases in carbon or carbon dioxide emissions.

Carbon_Sequestration_lb The amount of carbon (in lbs.) removed from the atmosphere by the tree, annually.

Carbon_Sequestration_value The monetary value of carbon ($129.72/ton), estimated based on the economic damages associated with increases in carbon or carbon dioxide emissions.

Stormwater_ft The amount (cubic feet) of avoided stormwater runoff because of rainfall interception by the tree on its leaves and other surfaces.

Stormwater_value The monetary value of stormwater runoff that is avoided annually because of the rainfall interception by the tree ($0.008936/gallon), based on the economic damages associated with runoff and costs of stormwater control.

Pollution_Removal_oz The amount (oz.) of air pollution that is removed from the atmosphere by trees.

Pollution_Removal_value The monetary value associated with tree effects on atmospheric pollution, annually.

Total_Annual_Services Sum of the annual benefits

Origin Origin of the tree

Species_Factoid Additional information about the tree

Longitude Longitude

Latitude Latitude

Source

Examples

```
# To grab all trees
 get_pdxTrees_parks()

# To grab trees from one park
get_pdxTrees_parks(park = "Berkeley Park")

# To grab trees from multiple parks
get_pdxTrees_parks(park = c("Berkeley Park", "East Delta Park"))
```

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get_pdxTrees_streets   *Load the pdxTrees_streets data*

Description

This function pulls the pdxTrees_streets dataset from the GitHub repository: `https://github.com/mcconvil/pdxTrees`. pdxTrees_streets is a data frame of all the street trees in the 96 neighborhoods of Portland, OR and was collected as part of the Urban Forestry Tree Inventory Project.

Usage

```
get_pdxTrees_streets(neighborhood = NULL)
```

Arguments

neighborhood   A vector of neighborhood names for filtering the data. If NULL, all street trees will be returned.

Value

Returns a data frame with 218602 rows and 23 variables:

UserID ID

Inventory_Date Date of data collection

Species Species of the tree. All dead trees were listed as "unknown"

Common_Name Common name of the tree

DBH Diameter at breast height (4.5' above ground)

Condition Trees were rated as good, fair, poor, or dead. These general ratings reflect whether or not a tree is likely to continue contributing to the urban forest (good and fair trees) or whether the tree is at or near the end of its life (poor and dead trees).

Site_Type Where along the street the tree was located. There are 8 different site types and more info can be found here: `https://gis-pdx.opendata.arcgis.com/datasets/PDX::street-tree-inventory-acti about`

Site_Size Categorical size of the site: Small, Medium, Large

Site_Width How wide the site was in ft.

Wires Whether or not the site had wires: High voltage, No High voltage (No HV), other

Site_Development The condition of the site either being improved (ex. along a side walk or paved roadway) or unimproved (a gravel road))

Address The address where the tree is located

Neighborhood The Portland neighborhood in which the tree is located

Collected_By Who collected the data on this tree: staff or volunteer

Scientific Scientific name of the tree

Family Family of the tree

Genus Genus of the tree

Functional_Type Categorical variable with groups: Broadleaf Deciduous (BD), Broadleaf Evergreen (BE), Coniferous Deciduous (CD), and Coniferous Evergreen (CE)

Mature_Size Categorical variable with groups: Large (L), Medium (M), and Small (S). Categorization is based on the height, canopy width, and general form of the tree at maturity

Edible Categorical variable of edible trees

Notes Note on the data collection

Longitude Longitude

Latitude Latitude

Source

https://www.portland.gov/trees/get-involved/tree-inventory#toc-street-tree-inventory

Examples

```
 # To grab all trees
get_pdxTrees_streets()

# To grab trees from one neighborhood
get_pdxTrees_streets(neighborhood = "Concordia")

# To grab trees from multiple neighborhoods
get_pdxTrees_streets(neighborhood = c("Concordia","Eastmoreland","Sunnyside"))
```

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