Package: mbquartR (via r-universe)

October 29, 2026

Title Finding Manitoba Quarter Sections

Version 0.1.1

Description This package has four main functions: 1) download the Manitoba Original Survey Legal Descriptions data set; 2) find the coordinates of a quarter sections given the legal land description (e.g., ``NE-11-33-29W''); 3) find the legal land description using coordinates (lat and long); and 4) plot these points on a map.

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URL https://docs.ropensci.org/mbquartR/, https://github.com/ropensci/mbquartR

BugReports https://github.com/ropensci/mbquartR/issues

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Suggests testthat (>= 3.0.0), curl (>= 5.2.1), knitr, rmarkdown

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`mbquartR-package` *Finding Manitoba, Canada, quarter sections made easier*

Description

`mbquartR` is an R package for locating quarter sections in Manitoba using lat/long coordinates or the legal land descriptions using the Manitoba Original Survey Legal Descriptions data set from the DataMB website (https://geoportal.gov.mb.ca/).

Details

There are four main functions in this package:

1. Download the Manitoba Original Survey Legal Descriptions data set

- `quarters_dl()`

1. Search for legal land descriptions using lat and long coordinates

- `search_coord()`

1. Search for lat and long coordinates using legal land descriptions

- `search_legal()`

1. Plot search results on an interactive map

- `map_quarter()`

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- Emily H Markowitz (Research Fisheries Biologist, Alaska Fisheries Science Center NOAA Fisheries | U.S. Department of Commerce. <https://emilyhmarkowitz.github.io/emilyhmarkowitz> Emily reviewed the package for rOpenSci, see <https://github.com/ropensci/software-review/issues/658>) [reviewer]
- Sheila M Saia (Environmental Data Scientist, Tetra Tech. <https://sheilasaia.rbind.io/> Sheila reviewed the package for rOpenSci, see <https://github.com/ropensci/software-review/issues/658>) [reviewer]

See Also

Useful links:

- https://docs.ropensci.org/mbquartR/
- https://github.com/ropensci/mbquartR
- Report bugs at https://github.com/ropensci/mbquartR/issues

`map_quarter` *Quickly find MB quarter sections on a map*

Description

Map the output of `search_legal()` or `search_coord()`, similar data frame, or a vector of legal land descriptions onto an interactive Leaflet map.

Usage

```
map_quarter(x, map.type = "Esri.WorldImagery")
```

Arguments

`x`	Output from `search_legal()` or `search_coord()`, similar data frame, or a vector of legal land descriptions.
`map.type`	Base map: see https://leaflet-extras.github.io/leaflet-providers/preview/ for available options

Details

Map displays the centre point and estimates the boundaries for quarter sections.

Map locations using a data frame which must include a column named `legal` containing legal land descriptions.

Map locations using a vector of legal land descriptions.

Value

A Leaflet map

Examples

```
search1 <- search_legal(x = c("NE-11-33-29W1", "SW-20-2-1W1"))
map_quarter(x = search1)

search2 <- search_coord(long = c(-101.4656, -99.99768),
lat = c(51.81913, 49.928926))
map_quarter(x = search2)

search3 <- c("NE-11-33-29W1", "SW-20-2-1W1")
map_quarter(x = search3)
```

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mbquartR_example *Manitoba Original Survey Legal Descriptions data*

Description

A subset of data from Manitoba Original Survey Legal Descriptions data

Usage

```
mbquartR_example
```

Format

`mbquartR_example`**:**

A data frame with 4 rows and 14 columns:

FID Unique ID number

Formal Legal Description The formal legal description (Leading zeros on numbers)

Quarter Quarter Section value

SECTION Section value

TOWNSHIP Township value

RANGE Range value

x, y Center Coordinates ...

Source

https://geoportal.gov.mb.ca/

quarters_dl *Download the MB quarter section data*

Description

Downloads the full list of quarter sections and coordinates from the Manitoba Geoportal. Note that when the Geoportal is unavailable, data is downloaded from an archived version from the package repository on Github.

Usage

```
quarters_dl(force = FALSE, ask = TRUE, quiet = FALSE)
```

Arguments

force	Logical. If TRUE, forces a re-download of the data. Note this data shouldn't require regular (or any) updates.
ask	Logical. If TRUE, ask to create the cache folder for MB quarter section data
quiet	Logical. If TRUE, suppresses status messages while downloading the data

Details

This data set should be static.

Value

Nothing. But has the side effect of downloading a .csv file of Manitoba Original Survey Legal Descriptions and coordinates to the cache folder (`cache_dir()`).

Examples

```
quarters_dl()
```

search_coord *Search for the nearest quarter section using latitude and longitude*

Description

Find the quarter section(s) and other legal division types closest to provided coordinates. Returns the legal land description. Users must use provide coordinates in the decimal degree format.

Usage

```
search_coord(long, lat)
```

Arguments

long	Numeric. Vector of longitudes (decimal degree) with resolution up to one hundred thousandth of a degree. Values outside of bounds will return error (-102.0 to -88.9 degrees).
lat	Numeric. Vector of latitudes (decimal degree) with resolution up to one hundred thousandth of a degree. Values outside of bounds will return error (49.0 to 60.0 degrees).

Details

The longitudinal extent of Manitoba ranges from approximately -102.0 to -88.9 degrees (negative values indicate western hemisphere).

The latitudinal extent of Manitoba ranges from approximately 49.0 to 60.0 degrees (positive values indicate northern hemisphere).

A legal land description consists of four values separated by a -

1. Quarter Section (SW)
2. Section (9)
3. Township (8)
4. Range (6E1)

For example: A legal land description of SW-9-8-6E1 can be interpreted as the Southwest Quarter of Section 9, Township 8, Range 6 East of the 1st Meridian.

#' Other land division types can have different naming conventions and include:

- RL = River lot (e.g., RL-11-Oak Island)
- Lot = Township lot (e.g., 10-54-27W1)
- OT = Outer two mile lot (e.g., OT-11A-St. Clements)
- PL = Parish lot (e.g., PL-R-St. Andrews)
- SL = Settlement lot (e.g., SL-2-Roman Catholic Mission Property)
- WL = Wood lot (e.g., WL-179-Portage La Prairie)

Value

A tibble of the centre latitude and longitude coordinates, corresponding legal land descriptions, land division type, the user provided latitude and longitude coordinates, and distance in metres from the provided coordinates to the centre of the closest quarter section.

Examples

```
search_coord(long = c(-101.4656, -99.99768), lat = c(51.81913, 49.928926))
x <- data.frame(long = c(-101.4656, -99.9976), lat = c(51.81913, 49.92892))
search_coord(long = x$long, lat = x$lat)
```

`search_legal` *Search for the coordinates of MB quarter sections*

Description

Find the centre coordinates of quarter sections and other legal division types using the legal land description.

Usage

```
search_legal(x)
```

Arguments

`x`	Character. Vector of quarter section legal land descriptions you wish to search for.

Details

A legal land description for a quarter section consists of four values separated by a -

1. Quarter Section (SW)
2. Section (9)
3. Township (8)
4. Range (6E1)

For example: A legal land description of SW-9-8-6E1 can be interpreted as the Southwest Quarter of Section 9, Township 8, Range 6 East of the 1st Meridian.

`search_legal()` takes legal land descriptions and locates the centre coordinates of the quarter sections. You can include leading zeroes (e.g., NE-01-012-12E1) or not (e.g., NE-1-12-12E1). The data set used in this package includes three meridians (W1, E1, and E2); however, most commonly searched for quarter sections use the East 1 (E1) or West 1 (W1) meridians. If the meridian number is not included it will default to 1. For example, a search for NW-36-89-11E will by default search for NW-36-89-11E1 despite NW-36-89-11E2 existing in the data set.

Other land division types can have different naming conventions and include:

- RL = River lot (e.g., RL-11-Oak Island)
- Lot = Township lot (e.g., 10-54-27W1)
- OT = Outer two mile lot (e.g., OT-11A-St. Clements)
- PL = Parish lot (e.g., PL-R-St. Andrews)
- SL = Settlement lot (e.g., SL-2-Roman Catholic Mission Property)
- WL = Wood lot (e.g., WL-179-Portage La Prairie)

Value

A tibble of legal land descriptions, division type, and corresponding latitude and longitude coordinates.

Examples

```
search_legal(x = c("NE-11-33-29W", "SW-20-2-1W"))
```

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