Tidy Tuesday 3/8/23

CTB

2023-03-08

```
tuesdata <- tidytuesdayR::tt_load('2023-03-07')
```

```
## --- Compiling #TidyTuesday Information for 2023-03-07 ----

## --- There is 1 file available ---

## --- Starting Download ---

##
##  Downloading file 1 of 1: `numbats.csv`

## --- Download complete ---
```

```
numbats <- tuesdata$numbats

str(numbats)
```

```
## spc_tbl_ [805 x 16] (S3: spec_tbl_df/tbl_df/tbl/data.frame)
##  $ decimalLatitude : num [1:805] -37.6 -35.1 -35 -34.7 -34.6 ...
##  $ decimalLongitude: num [1:805] 146 150 118 118 117 ...
##  $ eventDate       : POSIXct[1:805], format: NA "2014-06-05 02:00:00" ...
##  $ scientificName  : chr [1:805] "Myrmecobius fasciatus" "Myrmecobius fasciatus" "Myrmecobius fascia
##  $ taxonConceptID  : chr [1:805] "https://biodiversity.org.au/afd/taxa/6c72d199-f0f1-44d3-8197-224a2
##  $ recordID        : chr [1:805] "73830609-3d94-461f-a833-01c0a30c5a0d" "13287c0e-034d-4f05-908b-d3b
##  $ dataResourceName: chr [1:805] "Queen Victoria Museum Art Gallery provider for OZCAM" "ALA species
##  $ year            : num [1:805] NA 2014 NA NA NA ...
##  $ month           : chr [1:805] NA "Jun" NA NA ...
##  $ wday            : chr [1:805] NA "Thu" NA NA ...
##  $ hour            : num [1:805] NA 2 NA NA NA NA NA NA NA NA ...
##  $ day             : Date[1:805], format: NA "2014-06-05" ...
##  $ dryandra        : logi [1:805] FALSE FALSE FALSE FALSE FALSE FALSE ...
##  $ prcp            : num [1:805] NA NA NA NA NA NA NA NA NA NA ...
##  $ tmax            : num [1:805] NA NA NA NA NA NA NA NA NA NA ...
##  $ tmin            : num [1:805] NA NA NA NA NA NA NA NA NA NA ...
##  - attr(*, "spec")=
##   .. cols(
##   ..   decimalLatitude = col_double(),
##   ..   decimalLongitude = col_double(),
##   ..   eventDate = col_datetime(format = ""),
```

```
##   ..   scientificName = col_character(),
##   ..   taxonConceptID = col_character(),
##   ..   recordID = col_character(),
##   ..   dataResourceName = col_character(),
##   ..   year = col_double(),
##   ..   month = col_character(),
##   ..   wday = col_character(),
##   ..   hour = col_double(),
##   ..   day = col_date(format = ""),
##   ..   dryandra = col_logical(),
##   ..   prcp = col_double(),
##   ..   tmax = col_double(),
##   ..   tmin = col_double()
##   .. )
##  - attr(*, "problems")=<externalptr>
```

```
head(numbats)
```

```
## # A tibble: 6 x 16
##   decimalLat~1 decim~2 eventDate           scien~3 taxon~4 recor~5 dataR~6  year
##          <dbl>   <dbl> <dttm>              <chr>   <chr>   <chr>   <chr>   <dbl>
## 1        -37.6    146. NA                  Myrmec~ https:~ 738306~ Queen ~    NA
## 2        -35.1    150. 2014-06-05 02:00:00 Myrmec~ https:~ 13287c~ ALA sp~  2014
## 3        -35      118. NA                  Myrmec~ https:~ 1041c2~ Wester~    NA
## 4        -34.7    118. NA                  Myrmec~ https:~ c9804b~ Wester~    NA
## 5        -34.6    117. NA                  Myrmec~ https:~ bc0c87~ Wester~    NA
## 6        -34.6    117. NA                  Myrmec~ https:~ 2b917c~ Wester~    NA
## # ... with 8 more variables: month <chr>, wday <chr>, hour <dbl>, day <date>,
## #   dryandra <lgl>, prcp <dbl>, tmax <dbl>, tmin <dbl>, and abbreviated
## #   variable names 1: decimalLatitude, 2: decimalLongitude, 3: scientificName,
## #   4: taxonConceptID, 5: recordID, 6: dataResourceName
```

```
numbats %>% group_by(scientificName) %>% summarise(n = n(),
                                                   minLat = min(decimalLatitude, na.rm=TRUE),
                                                   maxLat = max(decimalLatitude, na.rm=TRUE),
                                                   minLong = min(decimalLongitude, na.rm=TRUE),
                                                   maxLong = max(decimalLongitude, na.rm=TRUE),
                                                   earliest = min(eventDate, na.rm=TRUE),
                                                   most_recent = max(eventDate, na.rm=TRUE))
```

```
## # A tibble: 2 x 8
##   scientificName             n minLat maxLat minLong maxLong earliest
##   <chr>                  <int>  <dbl>  <dbl>   <dbl>   <dbl> <dttm>
## 1 Myrmecobius fasciatus    787  -37.6  -23.3    116.    150. 1856-12-31 13:55:08
## 2 Myrmecobius fasciatus~    18  -34.5  -26.7    132.    142. 1856-12-31 13:55:08
## # ... with 1 more variable: most_recent <dttm>
```

```
numbats <- numbats %>% mutate(scientificName = as.factor(scientificName))

numbats_loc <- numbats %>% filter(is.na(decimalLatitude) == FALSE & is.na(decimalLongitude) == FALSE)
```

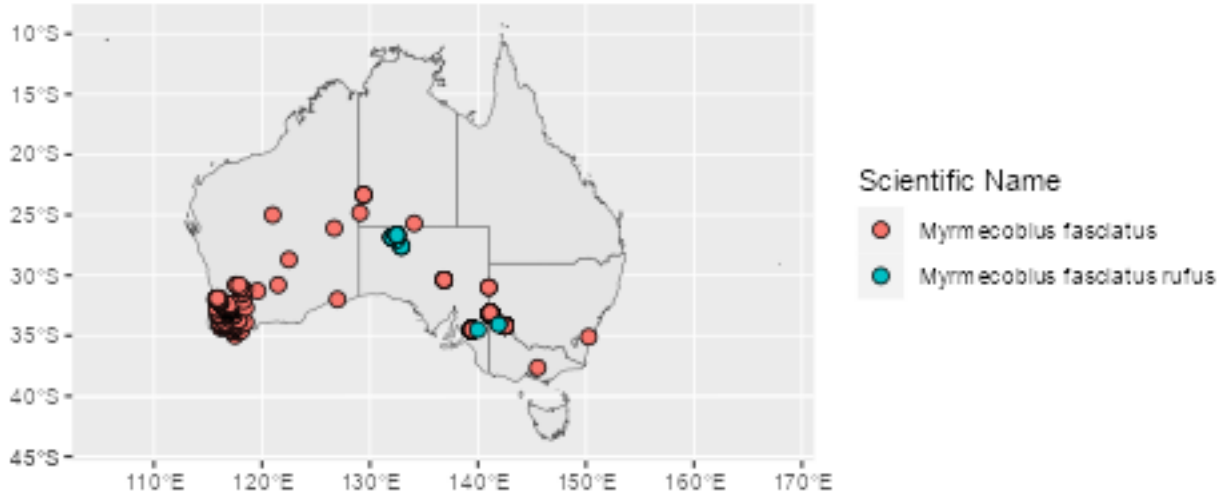
```
library(ozmaps)
library(sf)
```

```
## Linking to GEOS 3.9.3, GDAL 3.5.2, PROJ 8.2.1; sf_use_s2() is TRUE
```

```
sf_oz <- ozmap_data("states")

num_sites <- st_as_sf(numbats_loc, coords = c("decimalLongitude", "decimalLatitude"), crs=4326) %>%
  st_transform(2248)

aus_map <- ggplot(sf_oz) + geom_sf() +
  coord_sf(crs = "+proj=lcc +lon_0=135 +lat_0=-30 +lat_1=-10 +lat_2=-45 +datum=WGS84")

num_map <- aus_map +
  geom_sf(data=num_sites, size=2.5, shape=21, aes(fill=scientificName)) +
  guides(fill = guide_legend(title = "Scientific Name"))
```

```
## Coordinate system already present. Adding new coordinate system, which will
## replace the existing one.
```

```
num_map
```



```
ggsave("numbat_map.png", plot=num_map,width=7, height=6)
getwd()
```

```
## [1] "C:/Users/ctber/Documents/R/TidyTuesdays_qCMB"
```

```
numbats_dryandra <- numbats_loc %>% filter(dryandra == TRUE)

dry_sites <- st_as_sf(numbats_dryandra, coords = c("decimalLongitude", "decimalLatitude"), crs=4326) %>%
  st_transform(2248)

dry_map <- ggplot(sf_oz) + geom_sf() +
  coord_sf(xlim=c(110,130), ylim=)

dry_map +
  geom_sf(data=dry_sites, size=2.5, shape=21)
```

```
## Coordinate system already present. Adding new coordinate system, which will
## replace the existing one.
```