

# World Maps

December 08, 2021

## Session Info

Give the session info (reduced).

```
## [1] "R version 4.0.5 (2021-03-31)"  
## [1] "x86_64-apple-darwin17.0"
```

## Load Libraries

If the libraries are not installed yet, you need to install them using, for example, the command: `install.packages("ggplot2")`.

```
library(readr)  
library(ggmap)  
library(maps)  
library(gridExtra)  
library(ggrepel)  
library(RCurl)
```

Give the package versions.

```
##      RCurl      ggrepel  gridExtra      maps      ggmap      ggplot2      readr  
## "1.98-1.5"    "0.9.1"      "2.3"      "3.3.0"      "3.0.0"      "3.3.5"      "1.4.0"
```

## Load the language info

Load language info file directly from the github repo.

```
languages <- as.data.frame(read_csv("https://raw.githubusercontent.com/100LC/100LC/master/LangInfo/langs"))
```

## Simple Stats

```
length(unique(languages$iso639_3)) # number of languages according to iso
```

```
## [1] 100
```

```
length(unique(languages$glottocode)) # number of languages according to glottolog
```

```
## [1] 100
```

```
length(unique(languages$family_id)) # number of language families according to glottolog
```

```
## [1] 61
```

```
unique(languages$macroarea_glotto) # number of macroareas according to glottolog
```

```
## [1] "Eurasia"      "Papunesia"    "South America" "Africa"
## [5] "North America" "Australia"
```

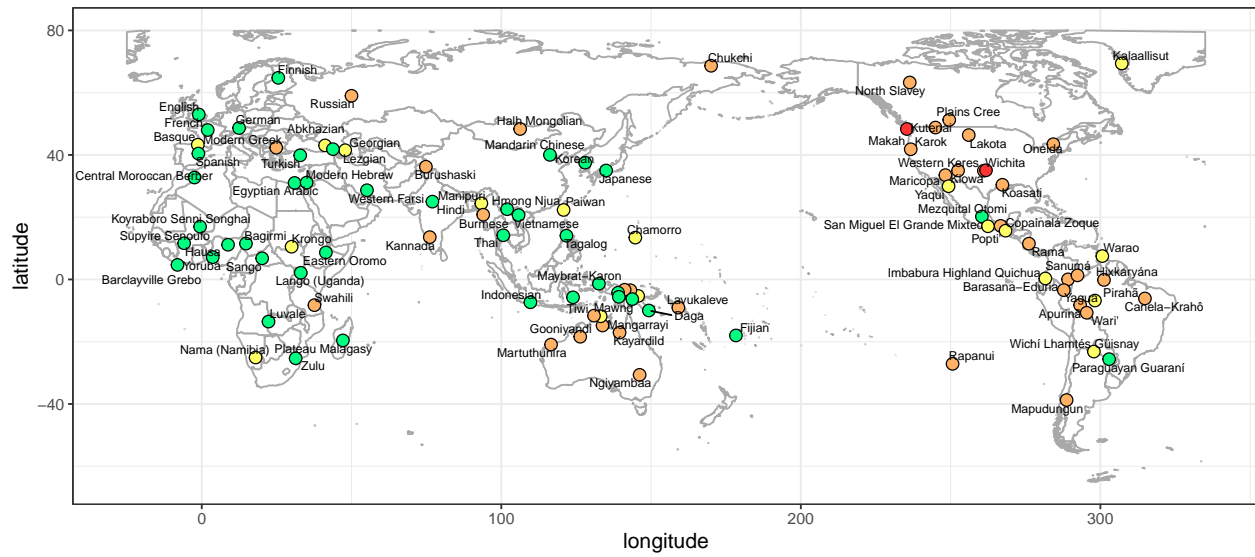
## Pre-Processing

```
# add 360 to longitudes for languages with longitudes < -25
# (this is necessary to create a Pacific centered map)
languages$longitude_glotto[languages$longitude_glotto < -25] <-
  languages$longitude_glotto[languages$longitude_glotto < -25] + 360
# collapse status information into fewer factors
languages$status[languages$status %in% c("definitely endangered", "severely endangered", "critically endangered")]
```

## World Map

World maps with endangerment status information from Glottolog.

```
# create world map
world <- map_data("world", wrap = c(-25, 335))
status.map <- ggplot() +
  geom_polygon(data = world, aes(x = long, y = lat, group = group),
    fill = "white", colour = "darkgrey") +
  geom_point(data = languages, aes(x = longitude_glotto, y = latitude_glotto,
    fill = status),
    alpha = 1, size = 3, pch = 21) +
  scale_fill_manual(values = c("#FFB266", "#FF3333", "#00FF80", "#FFFF66")) +
  geom_text_repel(data = languages, aes(x = longitude_glotto, y = latitude_glotto,
    label = name_glotto), size = 2.5,
    box.padding = unit(0.1, 'lines'), force = 0.5) +
  scale_y_continuous(limits = c(-65, 80)) +
  labs(x = "longitude", y = "latitude", fill = "Endangerment Status") +
  theme_bw() +
  theme(axis.title.x = element_text(size = 12),
    axis.title.y = element_text(size = 12),
    title = element_text(size = 12),
    legend.title = element_text(size = 12),
    legend.text = element_text(size = 12),
    legend.position = "bottom")
status.map
```



Endangerment Status    ● endangered    ● extinct    ● safe    ● vulnerable

Save to file.

```
ggsave("~/Desktop/worldMap_100LC.pdf", status.map,
        dpi = 300, scale = 1, width = 12, height = 6, device = cairo_pdf)
```