Primates en Costa Rica

Carga de paquetes

```
library(sf)
library(raster)
library(dplyr)
library(spData)

library(leaflet)
library(plotly)
library(DT)
library(RColorBrewer)
```

Conjunto de datos

```r
# Especies de primates en Costa Rica
Primates <- st_read("https://raw.githubusercontent.com/gf0604-procesamientodatosgeograficos/2
021i-datos/main/gbif/primates-cr-registros.csv",
                    options = c("X_POSSIBLE_NAMES=decimalLongitude",
                                "Y_POSSIBLE_NAMES=decimalLatitude"),
                    quiet = TRUE)
```

```r
# Capa de cantones

Cantones <- st_read("https://raw.githubusercontent.com/gf0604-procesamientodatosgeograficos/2
021i-datos/main/ign/delimitacion-territorial-administrativa/cr_cantones_simp_wgs84.geojson",
                    quiet = TRUE)
```

```r
# crs

st_crs(Primates) = 4326
```

```r
# Cruce espacial con los datos de los cantones

Primates <- Primates %>%
  st_join(Cantones["canton"])
```

Primera parte

Tabla con el registro de las especies de primates en Costa Rica

```
Primates %>%
  st_drop_geometry() %>%
  select(family, species, stateProvince, canton, eventDate) %>%
  datatable(colnames = c("Familia",
                         "Especie",
                         "Provincia",
                         "Cantón",
                         "Fecha")
  )
```

Show **10 ▼** entries   **Search:** ⬚

	Familia	Especie	Provincia	Cantón	Fecha
1	Atelidae	Ateles geoffroyi	Puntarenas		2021-03-14T14:56:51
2	Cebidae	Cebus capucinus	Puntarenas	Quepos	2017-04-04T09:27:23

	Familia	Especie	Provincia	Cantón	Fecha
3	Atelidae	Alouatta palliata	Guanacaste	Santa Cruz	2021-06-03T17:51:30
4	Atelidae	Alouatta palliata	Puntarenas	Golfito	2019-06-16T07:28:00
5	Cebidae	Cebus capucinus	Puntarenas	Quepos	2020-09-26T12:42:02
6	Atelidae	Alouatta palliata	Puntarenas	Puntarenas	2021-06-06T14:24:30
7	Cebidae	Cebus capucinus	Cartago	Paraíso	2020-07-04T09:58:00
8	Cebidae	Cebus capucinus	Puntarenas	Puntarenas	2016-02-05T07:14:00
9	Atelidae	Alouatta palliata	Puntarenas	Osa	2021-05-30T15:18:21
10	Atelidae	Alouatta palliata	Puntarenas	Osa	2021-05-30T14:24:12

Showing 1 to 10 of 4,509 entries

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```
options = list(searchHighlight = TRUE,
               language = list(url = "//cdn.datatables.net/plug-ins/1.10.11/i18n/spanish.jso
n")
)
```

```
rownames = FALSE
options = list(
  searchHighlight = TRUE,
  language = list(url = "//cdn.datatables.net/plug-ins/1.10.11/i18n/spanish.json"),
  pageLength = 5)
```

Segunda parte

```
g <- data.frame("Categorie" = rownames(Primates), Primates)
```

```
g1 <- g[, c("Categorie", "species", "recordNumber")]
```

```
color <- brewer.pal(length(count), "PiYG")
```

```
## Warning in brewer.pal(length(count), "PiYG"): minimal value for n is 3, returning requeste
d palette with 3 different levels
```

Gráfico de pastel con cada una de las especies en Costa Rica

```
plot_ly(g1,
        labels = ~ species,
        type = "pie"
        ) %>%
  layout(
    title = "Porcentajes de cada especie",
    xaxis = list(
      showgrid = FALSE,
      zeroline = FALSE,
      showticklabels = FALSE

    ),
    yaxis = list(
      showgrid = FALSE,
      zeroline = FALSE,
      showticklabels = FALSE
    )

  )
```

Porcentajes de cada especie
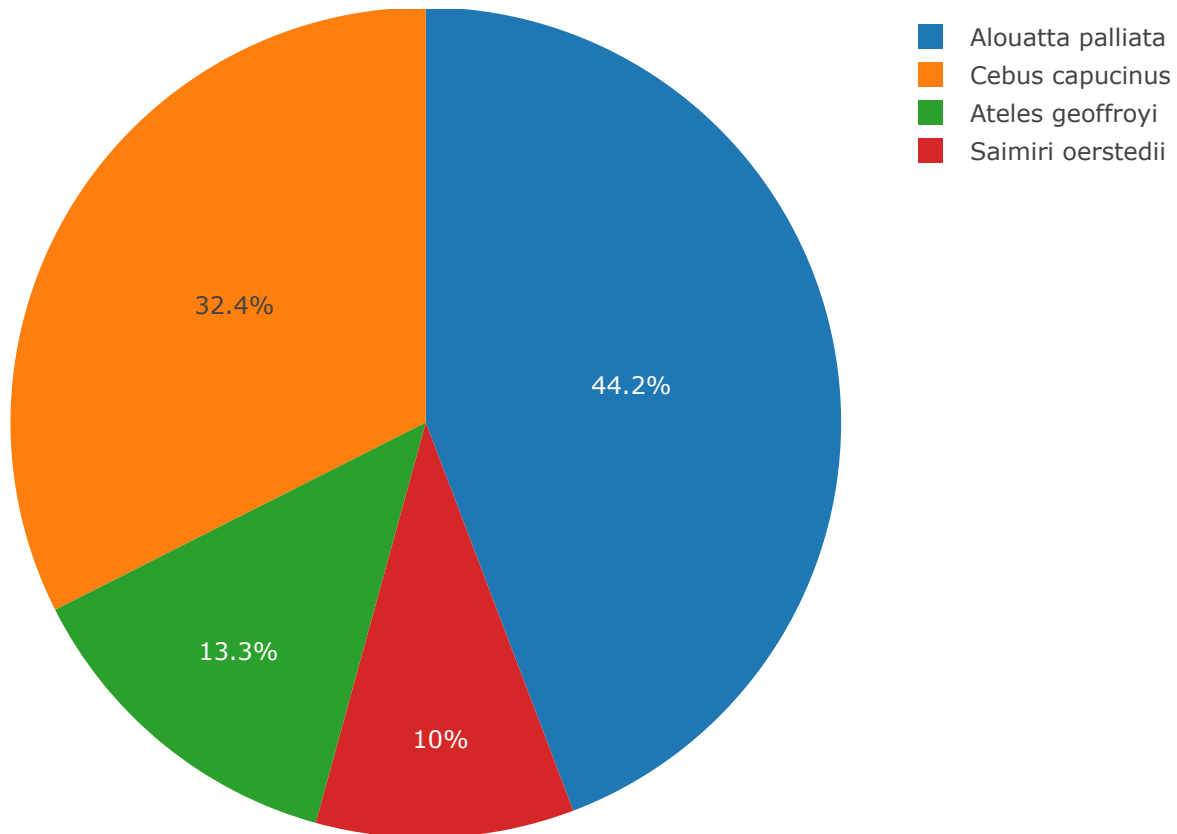
Tercera parte

Crear variables

```
AG <- Primates %>%
  filter(species == "Ateles geoffroyi")
```

```
CC <- Primates %>%
  filter(species == "Cebus capucinus")
```

```
AP <- Primates %>%
  filter(species == "Alouatta palliata")
```

```
SO <- Primates %>%
  filter(species == "Saimiri oerstedii")
```

Mapa de la presencia de primates

```r
Primates %>%
  select(stateProvince,
         canton,
         eventDate,
         species) %>%
  leaflet() %>%
  addProviderTiles(providers$OpenStreetMap.Mapnik, group = "OpenStreetMap") %>%
  addProviderTiles(providers$Stamen.Tonerlite, group = "Stamen Toner Life") %>%
  addProviderTiles(providers$Esri.WorldImagery, group = "Imágenes de ESRI") %>%
  addCircleMarkers(
    data = AG,
    stroke = F,
    radius = 4,
    fillColor = "red",
    fillOpacity = 2,
    popup = paste(
      Primates$stateProvince,
      Primates$canton,
      Primates$eventDate,
      Primates$species,
      sep = "<br/>"
    ),
    group = "AG"
  )%>%

  addCircleMarkers(
```

```
    data = CC,
    stroke = F,
    radius = 4,
    fillColor = "blue",
    fillOpacity = 2,
    popup = paste(
      Primates$stateProvince,
      Primates$canton,
      Primates$eventDate,
      Primates$species,
      sep = "<br/>"
    ),
    group = "CC"
) %>%


    addCircleMarkers(
    data = AP,
    stroke = F,
    radius = 4,
    fillColor = "aqua marine",
    fillOpacity = 2,
    popup = paste(
      Primates$stateProvince,
      Primates$canton,
      Primates$eventDate,
```
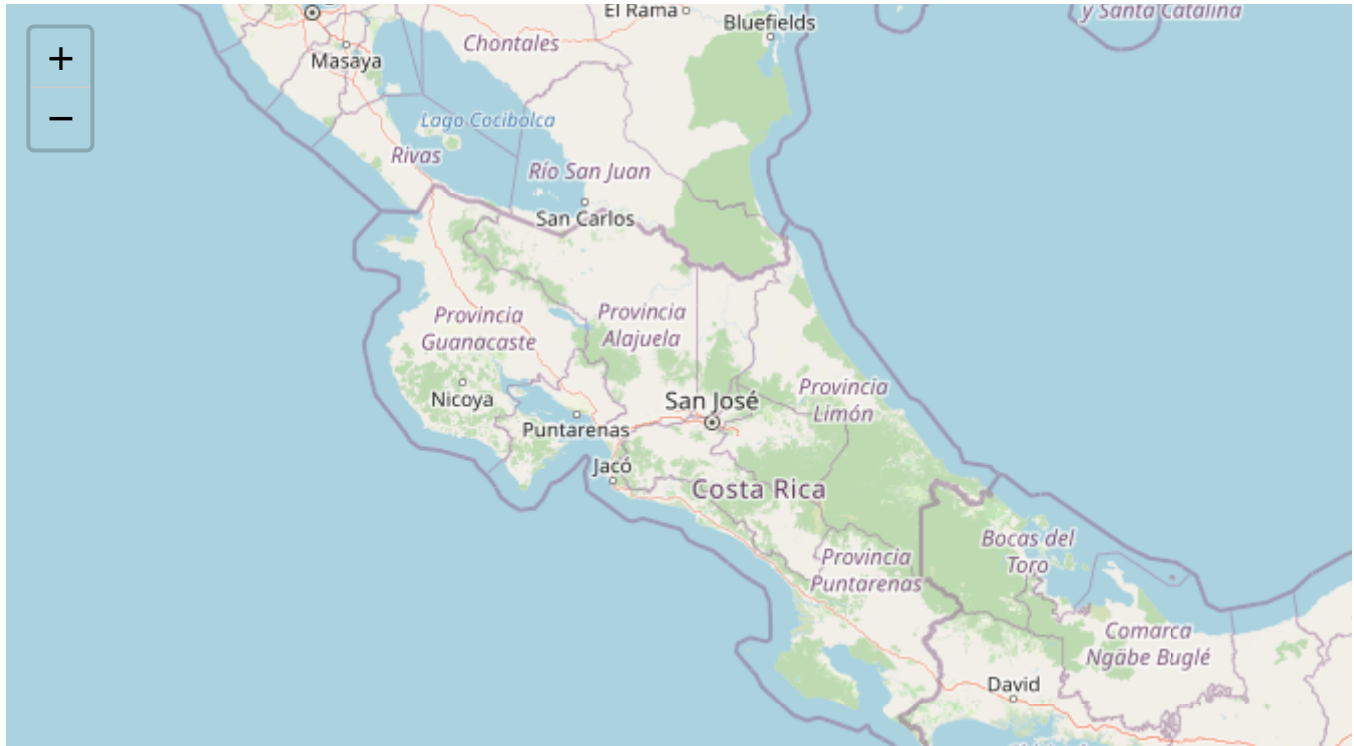
```
    Primates$species,
    sep = "<br/>"
  ),
  group = "AP"
) %>%

  addCircleMarkers(
  data = SO,
  stroke = F,
  radius = 4,
  fillColor = "green",
  fillOpacity = 2,
  popup = paste(
    Primates$stateProvince,
    Primates$canton,
    Primates$eventDate,
    Primates$species,
    sep = "<br/>"
  ),
  group = "SO"
) %>%

  addLayersControl(
    baseGroups = c("OpenStreetMap", "Stamen Toner Lite", "Imágenes de ESRI"),
    overlayGroups = c("Primates")
  ) %>%
```

```
addMiniMap(
  tiles = providers$Stamen.OpenStreetMap.Mapnik,
  position = "bottomleft",
  toggleDisplay = TRUE
)
```