

# Maritime Pirate Attacks

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```
library(tidyverse)
```

```
-- Attaching core tidyverse packages ----- tidyverse 2.0.0 --
v dplyr      1.1.4      v readr      2.1.6
v forcats    1.0.1      v stringr    1.5.1
v ggplot2    4.0.1      v tibble     3.3.0
v lubridate  1.9.4      v tidyr      1.3.2
v purrr      1.0.4
-- Conflicts ----- tidyverse_conflicts() --
x dplyr::filter() masks stats::filter()
x dplyr::lag()     masks stats::lag()
i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become
```

```
library(lubridate)
library(sf)
```

Linking to GEOS 3.14.1, GDAL 3.12.3, PROJ 9.8.1; sf\_use\_s2() is TRUE

```
library(leaflet)
# library(dataReporter) -- not available in this environment
```

```
source("importer_donnees_csv.R")
source("pirateIcon.R")
```

```
glimpse(pirate_attacks_sf, width = 67)
```

```
Rows: 7,511
Columns: 15
$ date          <date> 1993-01-02, 1993-01-04, 1993-01-06,~
```

```

$ time <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, ~
$ attack_type <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, ~
$ location_description <chr> "Hong Kong - Luzon - Hainan", "Hong ~
$ nearest_country <chr> "CHN", "CHN", "CHN", "CHN", "PHL", "~
$ eez_country <chr> "TWN", "CHN", "TWN", "CHN", "PHL", "~
$ shore_distance <dbl> 357.5023726, 47.4315725, 280.8118709~
$ shore_longitude <dbl> 115.825956, 115.825956, 114.302501, ~
$ shore_latitude <dbl> 22.746644, 22.746644, 22.044867, 29.~
$ attack_description <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, ~
$ vessel_name <chr> "Mv Cosmic Leader", "Mv Tricolor Sta~
$ vessel_type <chr> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, ~
$ vessel_status <chr> NA, NA, NA, NA, NA, NA, NA, NA, "Anc~
$ data_source <chr> "mappingpiracy", "mappingpiracy", "m~
$ geometry <POINT> POINT (116.9667 19.7), POINT (116 ~

```

```

pirate_attacks_sf_ss <- pirate_attacks_sf %>%
  filter(data_source == "imb") %>%
select(
  date,
  attack_type,
  shore_distance,
  vessel_type,
  vessel_status
) %>%
  replace_na(list(vessel_status="Underway")) %>%
  mutate(month_event = month(date),
         year_event = year(date))

```

## Statistiques descriptives

```
# makeDataReport(pirate_attacks_sf_ss, replace = TRUE) -- dataReporter not available
```

## Exporter les types de navires

```

pirate_attacks_sf_ss %>%
  group_by(vessel_type) %>%
  st_set_geometry(NULL) %>%
  count() %>%

```

```
arrange(desc(n)) %>%  
write_csv("vessel_types.csv")
```

## Traitement manuel

Je crée manuellement des catégories plus larges, puis je réimporte

```
custom_vessel_categories <-  
  read_csv(  
    "data/csv/custom_vessel_categories.csv",  
    col_types = cols(vessel_type = col_character(),  
                     vessel_category = col_character())  
  )
```

```
pirate_attacks_sf_ss2 <- pirate_attacks_sf_ss %>%  
  left_join(custom_vessel_categories)
```

Joining with `by = join\_by(vessel\_type)`

```
pirate_attacks_sf_ss2 %>% sf::write_sf("data/geojson/pirate_attacks_sf_ss2.geojson")
```

writing: substituting ENGCRS["Undefined Cartesian SRS with unknown unit"] for missing CRS

Warning in CPL\_write\_ogr(obj, dsn, layer, driver,  
as.character(dataset\_options), : GDAL Error 6: DeleteLayer() not supported by  
this dataset.

## Filtrage

```
pirate_attacks_sf_maps <- pirate_attacks_sf_ss2 %>%  
  filter(year_event == 2015, month_event==1)
```

```
m <- leaflet(pirate_attacks_sf_maps) %>%  
  addTiles() %>%  
  addMarkers(  
    popup = paste0(  
      "Type: ",
```

```
pirate_attacks_sf_maps$vessel_category,  
"<br>",  
"Statut: ",  
pirate_attacks_sf_maps$vessel_status,  
"<br>",  
"Type d'attaque: ",  
pirate_attacks_sf_maps$attack_type,  
"<br>",  
"Distance de la côte: ",  
round(pirate_attacks_sf_maps$shore_distance, 2),  
"km",  
"<br>",  
"Date: ",  
pirate_attacks_sf_maps$date  
)  
icon = pirateIcon,  
clusterOptions = markerClusterOptions()  
)
```