

03 Cargar y manipular shapes

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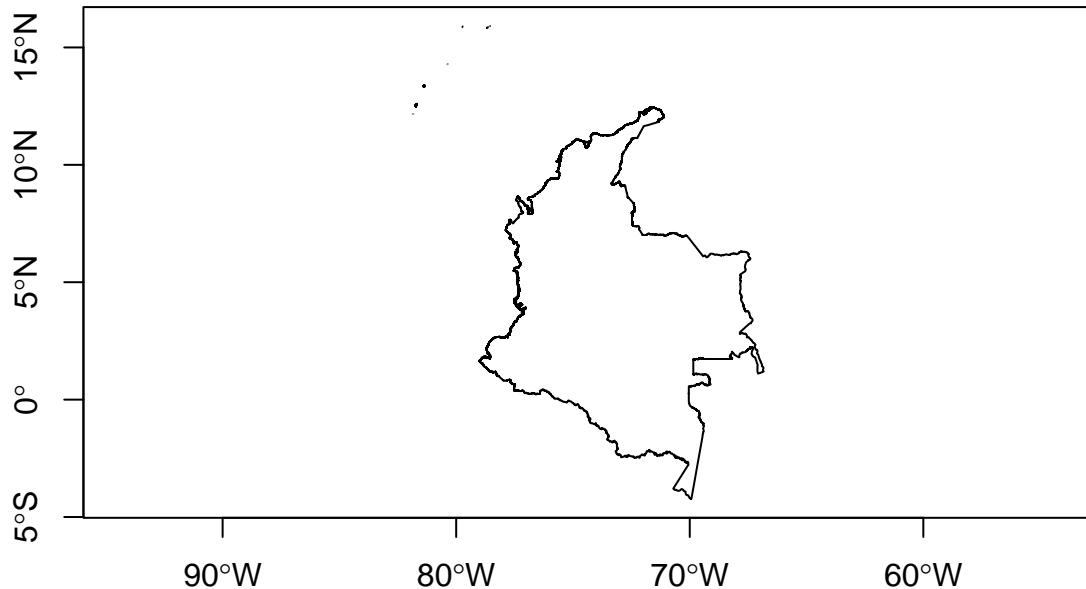
2023-12-01

Cargar y manipular datos vectoriales tipo .shp

Para esta sección vamos a emplear datos de áreas político administrativas globales de GADM. Descargaremos el mapa de todas las divisiones políticas administrativas (Pais, Departamentos y Municipios) de Colombia.

```
library(sp)
library(raster) #Empleamos la librería raster y la función shapefile
ruta = "col/" #Asigno la ruta en donde estan mis .shp

mapaCol = shapefile(paste(ruta,"gadm41_COL_0.shp",sep=""))
plot(mapaCol, axes=TRUE)
```



```
#Ahora miremos la información de nuestro archivo
str(mapaCol)
```

```

## Formal class 'SpatialPolygonsDataFrame' [package "sp"] with 5 slots
## ..@ data      :'data.frame': 1 obs. of 2 variables:
## ...$ GID_0   : chr "COL"
## ...$ COUNTRY: chr "Colombia"
## ..@ polygons :List of 1
## ...$ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... ..@ Polygons :List of 173
## ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... .. .. ..@ labpt  : num [1:2] -73.1 3.9
## ... .. .. ..@ area   : num 92.7
## ... .. .. ..@ hole    : logi FALSE
## ... .. .. ..@ ringDir: int 1
## ... .. .. ..@ coords : num [1:147652, 1:2] -69.9 -69.9 -69.9 -69.9 -69.9 ...
## ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... .. .. ..@ labpt  : num [1:2] -74.3 11
## ... .. .. ..@ area   : num 4.45e-05
## ... .. .. ..@ hole    : logi FALSE
## ... .. .. ..@ ringDir: int 1
## ... .. .. ..@ coords : num [1:77, 1:2] -74.3 -74.3 -74.3 -74.3 -74.3 ...
## ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... .. .. ..@ labpt  : num [1:2] -75.7 9.7
## ... .. .. ..@ area   : num 2.16e-08
## ... .. .. ..@ hole    : logi FALSE
## ... .. .. ..@ ringDir: int 1
## ... .. .. ..@ coords : num [1:4, 1:2] -75.7 -75.7 -75.7 -75.7 9.7 ...
## ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... .. .. ..@ labpt  : num [1:2] -75.6 10.3
## ... .. .. ..@ area   : num 1.2e-07
## ... .. .. ..@ hole    : logi FALSE
## ... .. .. ..@ ringDir: int 1
## ... .. .. ..@ coords : num [1:12, 1:2] -75.6 -75.6 -75.6 -75.6 -75.6 ...
## ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... .. .. ..@ labpt  : num [1:2] -75.6 10.3
## ... .. .. ..@ area   : num 1.07e-07
## ... .. .. ..@ hole    : logi FALSE
## ... .. .. ..@ ringDir: int 1
## ... .. .. ..@ coords : num [1:5, 1:2] -75.6 -75.6 -75.6 -75.6 -75.6 ...
## ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... .. .. ..@ labpt  : num [1:2] -75.6 10.4
## ... .. .. ..@ area   : num 0.00164
## ... .. .. ..@ hole    : logi FALSE
## ... .. .. ..@ ringDir: int 1
## ... .. .. ..@ coords : num [1:1652, 1:2] -75.6 -75.6 -75.6 -75.6 -75.6 ...
## ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... .. .. ..@ labpt  : num [1:2] -75.5 10.4
## ... .. .. ..@ area   : num 0.000139
## ... .. .. ..@ hole    : logi FALSE
## ... .. .. ..@ ringDir: int 1
## ... .. .. ..@ coords : num [1:781, 1:2] -75.5 -75.5 -75.5 -75.5 -75.5 ...
## ... .. ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... .. .. ..@ labpt  : num [1:2] -75.6 10.4
## ... .. .. ..@ area   : num 6.13e-09
## ... .. .. ..@ hole    : logi FALSE
## ... .. .. ..@ ringDir: int 1

```

```

## ... . . . . . @ coords : num [1:4, 1:2] -75.6 -75.6 -75.6 -75.6 10.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -75.5 10.4
## ... . . . . . @ area   : num 1.97e-08
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:6, 1:2] -75.5 -75.5 -75.5 -75.5 -75.5 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -74.4 10.7
## ... . . . . . @ area   : num 3.09e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:19, 1:2] -74.4 -74.4 -74.4 -74.4 -74.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.3 11.8
## ... . . . . . @ area   : num 4.21e-08
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -71.3 -71.3 -71.3 -71.3 11.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -72.5 11.8
## ... . . . . . @ area   : num 2.58e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:75, 1:2] -72.5 -72.5 -72.5 -72.5 -72.5 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.9 12.2
## ... . . . . . @ area   : num 2.23e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:14, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.9 12.2
## ... . . . . . @ area   : num 6.81e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:35, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.9 12.2
## ... . . . . . @ area   : num 2.73e-08
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -71.9 -71.9 -71.9 -71.9 12.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.9 12.2
## ... . . . . . @ area   : num 6.04e-07
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:11, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.9 12.2
## ... . . . . . @ area   : num 1.99e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1

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## ... . . . . . @ coords : num [1:16, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.9 12.2
## ... . . . . . @ area   : num 8.54e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:68, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.9 12.2
## ... . . . . . @ area   : num 1.39e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:20, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.9 12.2
## ... . . . . . @ area   : num 5.79e-07
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:12, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.9 12.2
## ... . . . . . @ area   : num 2.4e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:28, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.9 12.2
## ... . . . . . @ area   : num 1.52e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:81, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.9 12.3
## ... . . . . . @ area   : num 2.09e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:57, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.9 12.3
## ... . . . . . @ area   : num 0.000195
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:233, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.9 12.3
## ... . . . . . @ area   : num 4.39e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:138, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.8 12.3
## ... . . . . . @ area   : num 2.05e-07
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1

```

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## ... . . . . . @ coords : num [1:8, 1:2] -71.8 -71.8 -71.8 -71.8 -71.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.8 12.3
## ... . . . . . @ area   : num 1.28e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:12, 1:2] -71.8 -71.8 -71.8 -71.8 -71.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.8 12.3
## ... . . . . . @ area   : num 9.46e-09
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -71.8 -71.8 -71.8 -71.8 12.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.8 12.3
## ... . . . . . @ area   : num 3.41e-08
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:5, 1:2] -71.8 -71.8 -71.8 -71.8 -71.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.8 12.3
## ... . . . . . @ area   : num 7.24e-08
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:6, 1:2] -71.8 -71.8 -71.8 -71.8 -71.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -73.6 11.3
## ... . . . . . @ area   : num 6.89e-09
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -73.6 -73.6 -73.6 -73.6 11.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -74.1 11.3
## ... . . . . . @ area   : num 2.4e-08
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:5, 1:2] -74.1 -74.1 -74.1 -74.1 -74.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -74.3 11
## ... . . . . . @ area   : num 7.93e-09
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -74.3 -74.3 -74.3 -74.3 11 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -74.3 11
## ... . . . . . @ area   : num 2.88e-08
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -74.3 -74.3 -74.3 -74.3 11 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -74.3 11
## ... . . . . . @ area   : num 6.53e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1

```

```

## ... . . . . . @ coords : num [1:27, 1:2] -74.3 -74.3 -74.3 -74.3 -74.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.8 12.3
## ... . . . . . @ area   : num 2.66e-08
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -71.8 -71.8 -71.8 -71.8 12.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.8 12.3
## ... . . . . . @ area   : num 3.73e-08
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:5, 1:2] -71.8 -71.8 -71.8 -71.8 -71.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.8 12.3
## ... . . . . . @ area   : num 5.47e-08
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:5, 1:2] -71.8 -71.8 -71.8 -71.8 -71.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.8 12.3
## ... . . . . . @ area   : num 6.03e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:35, 1:2] -71.8 -71.8 -71.8 -71.8 -71.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.7 12.4
## ... . . . . . @ area   : num 2.23e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:112, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.7 12.4
## ... . . . . . @ area   : num 2.41e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:61, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.7 12.4
## ... . . . . . @ area   : num 2.51e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:47, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.7 12.4
## ... . . . . . @ area   : num 0.000726
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:1382, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.7 12.4
## ... . . . . . @ area   : num 7.65e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1

```

```

## ... . . . . . @ coords : num [1:41, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.7 12.4
## ... . . . . . @ area   : num 3.4e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:27, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.7 12.4
## ... . . . . . @ area   : num 4.4e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:21, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.7 12.4
## ... . . . . . @ area   : num 6.09e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:35, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.7 12.4
## ... . . . . . @ area   : num 5.01e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:25, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.6 12.4
## ... . . . . . @ area   : num 1.13e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:37, 1:2] -71.6 -71.6 -71.6 -71.6 -71.6 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.7 12.4
## ... . . . . . @ area   : num 2.16e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:17, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.7 12.4
## ... . . . . . @ area   : num 4.63e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:37, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -78.7 1.78
## ... . . . . . @ area   : num 7.49e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:27, 1:2] -78.7 -78.7 -78.7 -78.7 -78.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -78.8 1.8
## ... . . . . . @ area   : num 8.2e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1

```

```

## ... . . . . . @ coords : num [1:31, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -78.8 1.8
## ... . . . . . @ area   : num 8.87e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:35, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -78.8 1.8
## ... . . . . . @ area   : num 7.87e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:33, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -78.79 1.81
## ... . . . . . @ area   : num 6.55e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:38, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -78.81 1.81
## ... . . . . . @ area   : num 0.000144
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:154, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -78.77 1.81
## ... . . . . . @ area   : num 0.000183
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:237, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -78.84 1.82
## ... . . . . . @ area   : num 2.32e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:84, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -78.74 1.82
## ... . . . . . @ area   : num 0.000467
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:305, 1:2] -78.7 -78.7 -78.7 -78.7 -78.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -78.77 1.82
## ... . . . . . @ area   : num 1.58e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:61, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -78.83 1.82
## ... . . . . . @ area   : num 2.45e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1

```

```

## ... . . . . . @ coords : num [1:69, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -78.82 1.82
## ... . . . . . @ area   : num 9.57e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:37, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -78.8 1.83
## ... . . . . . @ area   : num 2.49e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:89, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -78.59 1.89
## ... . . . . . @ area   : num 1.38e-08
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -78.59 -78.59 -78.59 -78.59 1.89 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -78.63 2.34
## ... . . . . . @ area   : num 0.00012
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:151, 1:2] -78.6 -78.6 -78.6 -78.6 -78.6 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.98 2.65
## ... . . . . . @ area   : num 0.000282
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:281, 1:2] -78 -78 -78 -78 -78 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.24 3.58
## ... . . . . . @ area   : num 1.71e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:26, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.42 3.35
## ... . . . . . @ area   : num 4.09e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:19, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.42 3.36
## ... . . . . . @ area   : num 3.96e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:55, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.3 3.9
## ... . . . . . @ area   : num 4.79e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1

```

```

## ... . . . . . @ coords : num [1:19, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.36 3.91
## ... . . . . . @ area   : num 0.000119
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:130, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.35 3.92
## ... . . . . . @ area   : num 8.72e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:29, 1:2] -77.3 -77.3 -77.3 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.35 3.92
## ... . . . . . @ area   : num 5.17e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:15, 1:2] -77.4 -77.4 -77.4 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.3 3.97
## ... . . . . . @ area   : num 0.000136
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:151, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.38 3.98
## ... . . . . . @ area   : num 8.57e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:41, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.32 3.99
## ... . . . . . @ area   : num 1.57e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:41, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.3 4
## ... . . . . . @ area   : num 1.78e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:45, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.28 4.01
## ... . . . . . @ area   : num 2.41e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:63, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.28 4.06
## ... . . . . . @ area   : num 1.26e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1

```

```

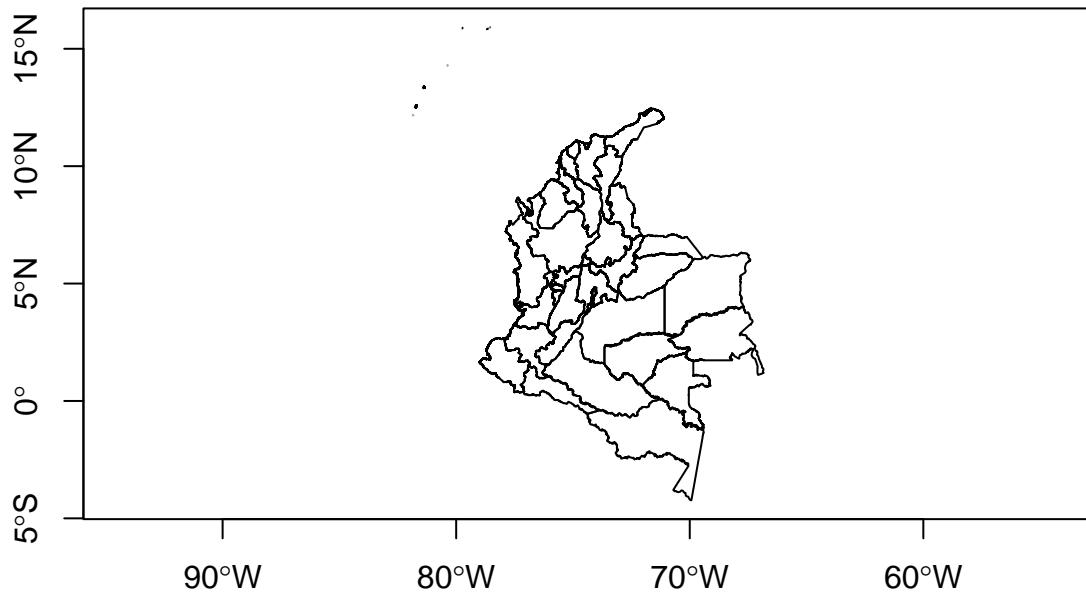
## ... . . . . . @ coords : num [1:49, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.27 4.06
## ... . . . . . @ area   : num 4.92e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:119, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.28 4.06
## ... . . . . . @ area   : num 4.94e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:31, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.46 4.06
## ... . . . . . @ area   : num 9.42e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:210, 1:2] -77.5 -77.5 -77.5 -77.5 -77.5 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.17 3.68
## ... . . . . . @ area   : num 7.78e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:32, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.1 3.7
## ... . . . . . @ area   : num 0.000195
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:190, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.14 3.71
## ... . . . . . @ area   : num 5.09e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:19, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.15 3.76
## ... . . . . . @ area   : num 5.61e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:90, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.14 3.78
## ... . . . . . @ area   : num 5.94e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:31, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.13 3.78
## ... . . . . . @ area   : num 1.64e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1

```

```

## ... . . . . . @ coords : num [1:35, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.14 3.78
## ... . . . . . @ area   : num 1.23e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:37, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.14 3.78
## ... . . . . . @ area   : num 4.78e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:33, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.16 3.79
## ... . . . . . @ area   : num 0.00101
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:402, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.07 3.87
## ... . . . . . @ area   : num 4.16e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:25, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.07 3.88
## ... . . . . . @ area   : num 0.00034
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:240, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.1 3.88
## ... . . . . . @ area   : num 0.000228
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:225, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.26 4.01
## ... . . . . . @ area   : num 1.28e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:59, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.25 4.01
## ... . . . . . @ area   : num 5.41e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:31, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.22 4.01
## ... . . . . . @ area   : num 5.09e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1

```



```

str(mapaDpto)

## Formal class 'SpatialPolygonsDataFrame' [package "sp"] with 5 slots
## ..@ data      :'data.frame': 33 obs. of 11 variables:
## ...$ GID_1    : chr [1:33] "COL.1_2" "COL.2_2" "COL.3_2" "COL.4_2" ...
## ...$ GID_0    : chr [1:33] "COL" "COL" "COL" "COL" ...
## ...$ COUNTRY  : chr [1:33] "Colombia" "Colombia" "Colombia" "Colombia" ...
## ...$ NAME_1   : chr [1:33] "Amazonas" "Antioquia" "Arauca" "Atlántico" ...
## ...$ VARNAME_1: chr [1:33] "NA" "NA" "NA" "NA" ...
## ...$ NL_NAME_1: chr [1:33] "NA" "NA" "NA" "NA" ...
## ...$ TYPE_1   : chr [1:33] "Comisaria" "Departamento" "Intendencia" "Departamento" ...
## ...$ ENGTYPED_1: chr [1:33] "Commissiary" "Department" "Intendancy" "Department" ...
## ...$ CC_1     : chr [1:33] "NA" "NA" "NA" "NA" ...
## ...$ HASC_1   : chr [1:33] "CO.AM" "CO.AN" "CO.AR" "CO.AT" ...
## ...$ ISO_1    : chr [1:33] "CO-AMA" "CO-ANT" "CO-ARA" "NA" ...
## ..@ polygons  :List of 33
## ...$ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... ..@ Polygons :List of 1
## ... ...$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... ... ..@ labpt  : num [1:2] -71.5 -1.54
## ... ... ..@ area   : num 8.87
## ... ... ..@ hole   : logi FALSE
## ... ... ..@ ringDir: int 1
## ... ... ..@ coords : num [1:4632, 1:2] -69.8 -69.8 -69.8 -69.9 -69.9 ...
## ... ... ..@ plotOrder: int 1
## ... ... ..@ labpt  : num [1:2] -71.5 -1.54
## ... ... ..@ ID     : chr "0"
## ... ... ..@ area   : num 8.87
## ... ... ..$ comment: chr "0"
## ...$ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... ..@ Polygons :List of 6
## ... ...$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... ... ..@ labpt  : num [1:2] -75.57 6.92
## ... ... ..@ area   : num 5.15
## ... ... ..@ hole   : logi FALSE
## ... ... ..@ ringDir: int 1
## ... ... ..@ coords : num [1:31664, 1:2] -75.6 -75.6 -75.6 -75.6 -75.6 ...
## ... ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... ... ..@ labpt  : num [1:2] -76.74 8.01
## ... ... ..@ area   : num 4.02e-08
## ... ... ..@ hole   : logi FALSE
## ... ... ..@ ringDir: int 1
## ... ... ..@ coords : num [1:4, 1:2] -76.74 -76.74 -76.74 -76.74 8.01 ...
## ... ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... ... ..@ labpt  : num [1:2] -76.74 8.07
## ... ... ..@ area   : num 0.000143
## ... ... ..@ hole   : logi FALSE
## ... ... ..@ ringDir: int 1
## ... ... ..@ coords : num [1:77, 1:2] -76.7 -76.7 -76.7 -76.7 -76.7 ...
## ... ... ..$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... ... ..@ labpt  : num [1:2] -76.93 8.16
## ... ... ..@ area   : num 4.13e-07
## ... ... ..@ hole   : logi FALSE
## ... ... ..@ ringDir: int 1

```

```

## ... . . . . . @ coords : num [1:20, 1:2] -76.9 -76.9 -76.9 -76.9 -76.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -76.91 8.53
## ... . . . . . @ area   : num 8.61e-09
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -76.91 -76.91 -76.91 -76.91 8.53 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -76.91 8.53
## ... . . . . . @ area   : num 4.44e-07
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:10, 1:2] -76.9 -76.9 -76.9 -76.9 -76.9 ...
## ... . . . . . @ plotOrder: int [1:6] 1 3 6 4 2 5
## ... . . . . . @ labpt  : num [1:2] -75.57 6.92
## ... . . . . . @ ID     : chr "1"
## ... . . . . . @ area   : num 5.15
## ... . . . . . $ comment: chr "0 0 0 0 0 0"
## ... . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . @ Polygons :List of 1
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -70.97 6.57
## ... . . . . . @ area   : num 1.94
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:8063, 1:2] -69.7 -69.7 -69.6 -69.6 -69.5 ...
## ... . . . . . @ plotOrder: int 1
## ... . . . . . @ labpt  : num [1:2] -70.97 6.57
## ... . . . . . @ ID     : chr "2"
## ... . . . . . @ area   : num 1.94
## ... . . . . . $ comment: chr "0"
## ... . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . @ Polygons :List of 4
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -75 10.7
## ... . . . . . @ area   : num 0.274
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:3621, 1:2] -74.9 -74.9 -74.9 -74.9 -74.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -74.9 11.1
## ... . . . . . @ area   : num 3.74e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:22, 1:2] -74.9 -74.9 -74.9 -74.9 -74.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -74.9 11.1
## ... . . . . . @ area   : num 4.14e-08
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -74.9 -74.9 -74.9 -74.9 11.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -74.9 11.1
## ... . . . . . @ area   : num 9.52e-08

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## .. . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords   : num [1:5, 1:2] -74.9 -74.9 -74.9 -74.9 -74.9 ...
## .. . . . . . . . . . . @ plotOrder: int [1:4] 1 2 4 3
## .. . . . . . . . . . . @ labpt    : num [1:2] -75 10.7
## .. . . . . . . . . . . @ ID       : chr "3"
## .. . . . . . . . . . . @ area     : num 0.274
## .. . . . . . . . . . . $ comment: chr "0 0 0 0"
## .. . . . . . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ Polygons :List of 1
## .. . . . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . . . . . @ labpt   : num [1:2] -74.18 4.31
## .. . . . . . . . . . . . . . . . . @ area    : num 0.133
## .. . . . . . . . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . . . . . @ coords  : num [1:11100, 1:2] -74.2 -74.2 -74.2 -74.2 -74.2 ...
## .. . . . . . . . . . . . . . . . . @ plotOrder: int 1
## .. . . . . . . . . . . . . . . . . @ labpt   : num [1:2] -74.18 4.31
## .. . . . . . . . . . . . . . . . . @ ID      : chr "4"
## .. . . . . . . . . . . . . . . . . @ area    : num 0.133
## .. . . . . . . . . . . . . . . . . $ comment: chr "0"
## .. . . . . . . . . . . . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . . . . . @ Polygons :List of 7
## .. . . . . . . . . . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . . . . . . . . . . . @ labpt   : num [1:2] -74.51 8.74
## .. . . . . . . . . . . . . . . . . . . . . . . @ area    : num 2.19
## .. . . . . . . . . . . . . . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . . . . . . . . . . . @ coords  : num [1:33559, 1:2] -74.2 -74.2 -74.2 -74.2 -74.2 ...
## .. . . . . . . . . . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . . . . . . . . . . . @ labpt   : num [1:2] -75.6 10.3
## .. . . . . . . . . . . . . . . . . . . . . . . @ area    : num 1.2e-07
## .. . . . . . . . . . . . . . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . . . . . . . . . . . @ coords  : num [1:12, 1:2] -75.6 -75.6 -75.6 -75.6 -75.6 ...
## .. . . . . . . . . . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . . . . . . . . . . . @ labpt   : num [1:2] -75.6 10.3
## .. . . . . . . . . . . . . . . . . . . . . . . @ area    : num 1.07e-07
## .. . . . . . . . . . . . . . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . . . . . . . . . . . @ coords  : num [1:5, 1:2] -75.6 -75.6 -75.6 -75.6 -75.6 ...
## .. . . . . . . . . . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . . . . . . . . . . . @ labpt   : num [1:2] -75.6 10.4
## .. . . . . . . . . . . . . . . . . . . . . . . @ area    : num 0.00164
## .. . . . . . . . . . . . . . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . . . . . . . . . . . @ coords  : num [1:1652, 1:2] -75.6 -75.6 -75.6 -75.6 -75.6 ...
## .. . . . . . . . . . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . . . . . . . . . . . @ labpt   : num [1:2] -75.5 10.4
## .. . . . . . . . . . . . . . . . . . . . . . . @ area    : num 0.000139
## .. . . . . . . . . . . . . . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . . . . . . . . . . . @ coords  : num [1:781, 1:2] -75.5 -75.5 -75.5 -75.5 -75.5 ...
## .. . . . . . . . . . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots

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## ... . . . . . @ labpt : num [1:2] -75.6 10.4
## ... . . . . . @ area : num 6.13e-09
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -75.6 -75.6 -75.6 -75.6 10.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -75.5 10.4
## ... . . . . . @ area : num 1.97e-08
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:6, 1:2] -75.5 -75.5 -75.5 -75.5 -75.5 ...
## ... . . . . . @ plotOrder: int [1:7] 1 4 5 2 3 7 6
## ... . . . . . @ labpt : num [1:2] -74.51 8.74
## ... . . . . . @ ID : chr "5"
## ... . . . . . @ area : num 2.19
## ... . . . . . $ comment: chr "0 0 0 0 0 0 0"
## ... . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . @ Polygons :List of 1
## ... . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -73.11 5.77
## ... . . . . . . @ area : num 1.88
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:33651, 1:2] -73.2 -73.2 -73.2 -73.2 -73.2 ...
## ... . . . . . . @ plotOrder: int 1
## ... . . . . . . @ labpt : num [1:2] -73.11 5.77
## ... . . . . . . @ ID : chr "6"
## ... . . . . . . @ area : num 1.88
## ... . . . . . . $ comment: chr "0"
## ... . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . . @ Polygons :List of 1
## ... . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . @ labpt : num [1:2] -75.31 5.34
## ... . . . . . . . @ area : num 0.604
## ... . . . . . . . @ hole : logi FALSE
## ... . . . . . . . @ ringDir: int 1
## ... . . . . . . . @ coords : num [1:12114, 1:2] -75.8 -75.8 -75.8 -75.8 -75.8 ...
## ... . . . . . . . @ plotOrder: int 1
## ... . . . . . . . @ labpt : num [1:2] -75.31 5.34
## ... . . . . . . . @ ID : chr "7"
## ... . . . . . . . @ area : num 0.604
## ... . . . . . . . $ comment: chr "0"
## ... . . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . . . @ Polygons :List of 1
## ... . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . . @ labpt : num [1:2] -73.963 0.803
## ... . . . . . . . . @ area : num 7.3
## ... . . . . . . . . @ hole : logi FALSE
## ... . . . . . . . . @ ringDir: int 1
## ... . . . . . . . . @ coords : num [1:10198, 1:2] -73 -73 -73 -73 -73 ...
## ... . . . . . . . . @ plotOrder: int 1
## ... . . . . . . . . @ labpt : num [1:2] -73.963 0.803
## ... . . . . . . . . @ ID : chr "8"
## ... . . . . . . . . @ area : num 7.3

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## ... . . . . $ comment: chr "0"
## ... . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . @ Polygons :List of 1
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -71.6 5.41
## ... . . . . . . @ area : num 3.62
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:19808, 1:2] -72.9 -72.9 -72.9 -72.9 -72.9 ...
## ... . . . . . . @ plotOrder: int 1
## ... . . . . . . @ labpt : num [1:2] -71.6 5.41
## ... . . . . . . @ ID : chr "9"
## ... . . . . . . @ area : num 3.62
## ... . . . . . . $ comment: chr "0"
## ... . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . @ Polygons :List of 1
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -76.8 2.4
## ... . . . . . . @ area : num 2.48
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:18403, 1:2] -76.1 -76.1 -76.1 -76.1 -76.1 ...
## ... . . . . . . @ plotOrder: int 1
## ... . . . . . . @ labpt : num [1:2] -76.8 2.4
## ... . . . . . . @ ID : chr "10"
## ... . . . . . . @ area : num 2.48
## ... . . . . . . $ comment: chr "0"
## ... . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . @ Polygons :List of 1
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -73.52 9.54
## ... . . . . . . @ area : num 1.84
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:29258, 1:2] -73.3 -73.3 -73.3 -73.3 -73.3 ...
## ... . . . . . . @ plotOrder: int 1
## ... . . . . . . @ labpt : num [1:2] -73.52 9.54
## ... . . . . . . @ ID : chr "11"
## ... . . . . . . @ area : num 1.84
## ... . . . . . . $ comment: chr "0"
## ... . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . @ Polygons :List of 28
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -77.46 4.06
## ... . . . . . . @ area : num 9.42e-05
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:210, 1:2] -77.5 -77.5 -77.5 -77.5 -77.5 ...
## ... . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . @ labpt : num [1:2] -77.47 4.07
## ... . . . . . . . @ area : num 1.11e-05
## ... . . . . . . . @ hole : logi FALSE
## ... . . . . . . . @ ringDir: int 1
## ... . . . . . . . @ coords : num [1:38, 1:2] -77.5 -77.5 -77.5 -77.5 -77.5 ...

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## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.5 4.14
## ... . . . . . @ area  : num 2.69e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:168, 1:2] -77.5 -77.5 -77.5 -77.5 -77.5 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.48 4.14
## ... . . . . . @ area  : num 5.02e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:125, 1:2] -77.5 -77.5 -77.5 -77.5 -77.5 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.5 4.15
## ... . . . . . @ area  : num 4.86e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:107, 1:2] -77.5 -77.5 -77.5 -77.5 -77.5 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.45 4.21
## ... . . . . . @ area  : num 4.33e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:35, 1:2] -77.5 -77.5 -77.5 -77.5 -77.5 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.47 4.22
## ... . . . . . @ area  : num 7.95e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:27, 1:2] -77.5 -77.5 -77.5 -77.5 -77.5 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.5 4.28
## ... . . . . . @ area  : num 8.71e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:37, 1:2] -77.5 -77.5 -77.5 -77.5 -77.5 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.43 4.29
## ... . . . . . @ area  : num 9.41e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:111, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.43 4.29
## ... . . . . . @ area  : num 3.65e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:61, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.4 4.3
## ... . . . . . @ area  : num 0.000152
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:159, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...

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## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.4 4.3
## ... . . . . . @ area  : num 3.86e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:72, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.38 4.37
## ... . . . . . @ area  : num 4.4e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:28, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.38 4.38
## ... . . . . . @ area  : num 5.29e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:136, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.32 4.57
## ... . . . . . @ area  : num 2.04e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:63, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -76.93 5.93
## ... . . . . . @ area  : num 3.88
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:46501, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.32 4.67
## ... . . . . . @ area  : num 2.68e-08
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -77.32 -77.32 -77.32 -77.32 4.67 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.37 5.28
## ... . . . . . @ area  : num 1.12e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:31, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.4 5.41
## ... . . . . . @ area  : num 8.66e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:94, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.49 4.28
## ... . . . . . @ area  : num 6.09e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:30, 1:2] -77.5 -77.5 -77.5 -77.5 -77.5 ...

```



```

## ... . . . . .@ Polygons :List of 2
## ... . . . . . .$. :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . .@ labpt   : num [1:2] -75.8 8.35
## ... . . . . . . .@ area    : num 2.06
## ... . . . . . . .@ hole    : logi FALSE
## ... . . . . . . .@ ringDir: int 1
## ... . . . . . . .@ coords  : num [1:20303, 1:2] -75.8 -75.8 -75.8 -75.8 ...
## ... . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . .@ labpt   : num [1:2] -75.83 9.41
## ... . . . . . . .@ area    : num 2.93e-06
## ... . . . . . . .@ hole    : logi FALSE
## ... . . . . . . .@ ringDir: int 1
## ... . . . . . . .@ coords  : num [1:21, 1:2] -75.8 -75.8 -75.8 -75.8 ...
## ... . . . . . . .@ plotOrder: int [1:2] 1 2
## ... . . . . . . .@ labpt   : num [1:2] -75.8 8.35
## ... . . . . . . .@ ID      : chr "13"
## ... . . . . . . .@ area    : num 2.06
## ... . . . . . . $. comment: chr "0 0"
## ... . . . $. :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . .@ Polygons :List of 1
## ... . . . . . .$. :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . .@ labpt   : num [1:2] -74.1 4.82
## ... . . . . . . .@ area    : num 1.82
## ... . . . . . . .@ hole    : logi FALSE
## ... . . . . . . .@ ringDir: int 1
## ... . . . . . . .@ coords  : num [1:26887, 1:2] -74.4 -74.4 -74.4 -74.4 ...
## ... . . . . . . .@ plotOrder: int 1
## ... . . . . . . .@ labpt   : num [1:2] -74.1 4.82
## ... . . . . . . .@ ID      : chr "14"
## ... . . . . . . .@ area    : num 1.82
## ... . . . . . . $. comment: chr "0"
## ... . . . $. :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . .@ Polygons :List of 1
## ... . . . . . .$. :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . .@ labpt   : num [1:2] -68.81 2.72
## ... . . . . . . .@ area    : num 5.78
## ... . . . . . . .@ hole    : logi FALSE
## ... . . . . . . .@ ringDir: int 1
## ... . . . . . . .@ coords  : num [1:13644, 1:2] -66.8 -66.9 -66.9 -66.9 ...
## ... . . . . . . .@ plotOrder: int 1
## ... . . . . . . .@ labpt   : num [1:2] -68.81 2.72
## ... . . . . . . .@ ID      : chr "15"
## ... . . . . . . .@ area    : num 5.78
## ... . . . . . . $. comment: chr "0"
## ... . . . $. :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . .@ Polygons :List of 1
## ... . . . . . .$. :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . .@ labpt   : num [1:2] -72.13 1.93
## ... . . . . . . .@ area    : num 4.51
## ... . . . . . . .@ hole    : logi FALSE
## ... . . . . . . .@ ringDir: int 1
## ... . . . . . . .@ coords  : num [1:15390, 1:2] -72 -72 -72.1 -72.1 -72.1 ...
## ... . . . . . . .@ plotOrder: int 1
## ... . . . . . . .@ labpt   : num [1:2] -72.13 1.93

```

```

## ... . . . . .@ ID      : chr "16"
## ... . . . . .@ area    : num 4.51
## ... . . . . .$ comment: chr "0"
## ... . . . . $.:Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . .@ Polygons :List of 1
## ... . . . . .$.:Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . .@ labpt   : num [1:2] -75.6 2.56
## ... . . . . . .@ area    : num 1.52
## ... . . . . . .@ hole    : logi FALSE
## ... . . . . . .@ ringDir: int 1
## ... . . . . . .@ coords   : num [1:9107, 1:2] -76.3 -76.3 -76.3 -76.3 ...
## ... . . . . . .@ plotOrder: int 1
## ... . . . . . .@ labpt   : num [1:2] -75.6 2.56
## ... . . . . . .@ ID      : chr "17"
## ... . . . . . .@ area    : num 1.52
## ... . . . . . .$ comment: chr "0"
## ... . . . . $.:Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . .@ Polygons :List of 38
## ... . . . . .$.:Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . .@ labpt   : num [1:2] -72.4 11.5
## ... . . . . . .@ area    : num 1.69
## ... . . . . . .@ hole    : logi FALSE
## ... . . . . . .@ ringDir: int 1
## ... . . . . . .@ coords   : num [1:24965, 1:2] -73.1 -73.1 -73.1 -73.1 ...
## ... . . . . . $.:Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . .@ labpt   : num [1:2] -73.6 11.3
## ... . . . . . .@ area    : num 6.89e-09
## ... . . . . . .@ hole    : logi FALSE
## ... . . . . . .@ ringDir: int 1
## ... . . . . . .@ coords   : num [1:4, 1:2] -73.6 -73.6 -73.6 -73.6 11.3 ...
## ... . . . . . $.:Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . .@ labpt   : num [1:2] -72.5 11.8
## ... . . . . . .@ area    : num 2.58e-05
## ... . . . . . .@ hole    : logi FALSE
## ... . . . . . .@ ringDir: int 1
## ... . . . . . .@ coords   : num [1:75, 1:2] -72.5 -72.5 -72.5 -72.5 ...
## ... . . . . . $.:Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . .@ labpt   : num [1:2] -71.9 12.2
## ... . . . . . .@ area    : num 2.23e-06
## ... . . . . . .@ hole    : logi FALSE
## ... . . . . . .@ ringDir: int 1
## ... . . . . . .@ coords   : num [1:14, 1:2] -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $.:Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . .@ labpt   : num [1:2] -71.9 12.2
## ... . . . . . .@ area    : num 6.81e-06
## ... . . . . . .@ hole    : logi FALSE
## ... . . . . . .@ ringDir: int 1
## ... . . . . . .@ coords   : num [1:35, 1:2] -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $.:Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . .@ labpt   : num [1:2] -71.9 12.2
## ... . . . . . .@ area    : num 2.73e-08
## ... . . . . . .@ hole    : logi FALSE
## ... . . . . . .@ ringDir: int 1
## ... . . . . . .@ coords   : num [1:4, 1:2] -71.9 -71.9 -71.9 -71.9 12.2 ...

```

```

## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.9 12.2
## ... . . . . . @ area : num 6.04e-07
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:11, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.9 12.2
## ... . . . . . @ area : num 8.54e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:68, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.9 12.2
## ... . . . . . @ area : num 1.39e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:20, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.9 12.2
## ... . . . . . @ area : num 5.79e-07
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:12, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.9 12.2
## ... . . . . . @ area : num 1.52e-05
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:81, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.9 12.3
## ... . . . . . @ area : num 2.09e-05
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:57, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.9 12.3
## ... . . . . . @ area : num 0.000195
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:233, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.9 12.3
## ... . . . . . @ area : num 4.39e-05
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:138, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.9 12.2
## ... . . . . . @ area : num 1.99e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:16, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...

```

```

## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.9 12.2
## ... . . . . . @ area : num 2.4e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:28, 1:2] -71.9 -71.9 -71.9 -71.9 -71.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.8 12.3
## ... . . . . . @ area : num 2.05e-07
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:8, 1:2] -71.8 -71.8 -71.8 -71.8 -71.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.3 11.8
## ... . . . . . @ area : num 4.21e-08
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -71.3 -71.3 -71.3 -71.3 11.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.7 12.4
## ... . . . . . @ area : num 2.41e-05
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:61, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.7 12.4
## ... . . . . . @ area : num 2.51e-05
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:47, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.7 12.4
## ... . . . . . @ area : num 0.000726
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:1382, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.8 12.3
## ... . . . . . @ area : num 2.66e-08
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -71.8 -71.8 -71.8 -71.8 12.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.8 12.3
## ... . . . . . @ area : num 3.73e-08
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:5, 1:2] -71.8 -71.8 -71.8 -71.8 -71.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.8 12.3
## ... . . . . . @ area : num 5.47e-08
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:5, 1:2] -71.8 -71.8 -71.8 -71.8 -71.8 ...

```

```

## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.8 12.3
## ... . . . . . @ area   : num 1.28e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:12, 1:2] -71.8 -71.8 -71.8 -71.8 -71.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.8 12.3
## ... . . . . . @ area   : num 9.46e-09
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -71.8 -71.8 -71.8 -71.8 12.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.8 12.3
## ... . . . . . @ area   : num 3.41e-08
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:5, 1:2] -71.8 -71.8 -71.8 -71.8 -71.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.8 12.3
## ... . . . . . @ area   : num 7.24e-08
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:6, 1:2] -71.8 -71.8 -71.8 -71.8 -71.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.8 12.3
## ... . . . . . @ area   : num 6.03e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:35, 1:2] -71.8 -71.8 -71.8 -71.8 -71.8 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.7 12.4
## ... . . . . . @ area   : num 2.23e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:112, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.7 12.4
## ... . . . . . @ area   : num 7.65e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:41, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.7 12.4
## ... . . . . . @ area   : num 3.4e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:27, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -71.7 12.4
## ... . . . . . @ area   : num 4.4e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:21, 1:2] -71.7 -71.7 -71.7 -71.7 -71.7 ...

```



```

## ... . . . . . @ coords : num [1:4, 1:2] -74.3 -74.3 -74.3 -74.3 11 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -74.3 11
## ... . . . . . @ area   : num 2.88e-08
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -74.3 -74.3 -74.3 -74.3 11 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -74.3 11
## ... . . . . . @ area   : num 6.53e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:27, 1:2] -74.3 -74.3 -74.3 -74.3 -74.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -74.1 11.3
## ... . . . . . @ area   : num 2.4e-08
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:5, 1:2] -74.1 -74.1 -74.1 -74.1 -74.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -74.3 11
## ... . . . . . @ area   : num 4.45e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:77, 1:2] -74.3 -74.3 -74.3 -74.3 -74.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -74.3 11
## ... . . . . . @ area   : num 3.78e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:15, 1:2] -74.3 -74.3 -74.3 -74.3 -74.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -74.3 11
## ... . . . . . @ area   : num 1.87e-08
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:4, 1:2] -74.3 -74.3 -74.3 -74.3 11 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -74.4 10.7
## ... . . . . . @ area   : num 3.09e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:19, 1:2] -74.4 -74.4 -74.4 -74.4 -74.4 ...
## ... . . . . . @ plotOrder: int [1:10] 1 7 5 8 10 2 4 6 9 3
## ... . . . . . @ labpt  : num [1:2] -74.3 10.2
## ... . . . . . @ ID     : chr "19"
## ... . . . . . @ area   : num 1.88
## ... . . . . . $ comment: chr "0 0 0 0 0 0 0 0 0 0"
## ... . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . @ Polygons :List of 1
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -72.95 3.34
## ... . . . . . @ area   : num 6.95
## ... . . . . . @ hole   : logi FALSE

```

```

## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:11767, 1:2] -73.7 -73.7 -73.7 -73.7 -73.7 ...
## .. . . . . . . . . . . @ plotOrder: int 1
## .. . . . . . . . . . . @ labpt : num [1:2] -72.95 3.34
## .. . . . . . . . . . . @ ID : chr "20"
## .. . . . . . . . . . . @ area : num 6.95
## .. . . . . . . . . . . $ comment: chr "0"
## .. . . . . . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ Polygons :List of 17
## .. . . . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . . . . . @ labpt : num [1:2] -77.87 1.57
## .. . . . . . . . . . . . . . . . . @ area : num 2.55
## .. . . . . . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . . . . . @ coords : num [1:18080, 1:2] -76.9 -76.9 -76.9 -76.9 -76.9 ...
## .. . . . . . . . . . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . . . . . @ labpt : num [1:2] -78.7 1.78
## .. . . . . . . . . . . . . . . . . @ area : num 7.49e-06
## .. . . . . . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . . . . . @ coords : num [1:27, 1:2] -78.7 -78.7 -78.7 -78.7 -78.7 ...
## .. . . . . . . . . . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . . . . . @ labpt : num [1:2] -78.8 1.8
## .. . . . . . . . . . . . . . . . . @ area : num 8.2e-06
## .. . . . . . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . . . . . @ coords : num [1:31, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## .. . . . . . . . . . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . . . . . @ labpt : num [1:2] -78.8 1.8
## .. . . . . . . . . . . . . . . . . @ area : num 8.87e-06
## .. . . . . . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . . . . . @ coords : num [1:35, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## .. . . . . . . . . . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . . . . . @ labpt : num [1:2] -78.8 1.8
## .. . . . . . . . . . . . . . . . . @ area : num 7.87e-06
## .. . . . . . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . . . . . @ coords : num [1:33, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## .. . . . . . . . . . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . . . . . @ labpt : num [1:2] -78.79 1.81
## .. . . . . . . . . . . . . . . . . @ area : num 6.55e-06
## .. . . . . . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . . . . . @ coords : num [1:38, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## .. . . . . . . . . . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . . . . . @ labpt : num [1:2] -78.81 1.81
## .. . . . . . . . . . . . . . . . . @ area : num 0.000144
## .. . . . . . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . . . . . @ coords : num [1:154, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## .. . . . . . . . . . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . . . . . @ labpt : num [1:2] -78.77 1.81
## .. . . . . . . . . . . . . . . . . @ area : num 0.000183

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## .. . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords  : num [1:237, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt   : num [1:2] -78.84 1.82
## .. . . . . . . . . . . @ area    : num 2.32e-05
## .. . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords  : num [1:84, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt   : num [1:2] -78.74 1.82
## .. . . . . . . . . . . @ area    : num 0.000467
## .. . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords  : num [1:305, 1:2] -78.7 -78.7 -78.7 -78.7 -78.7 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt   : num [1:2] -78.77 1.82
## .. . . . . . . . . . . @ area    : num 1.58e-05
## .. . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords  : num [1:61, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt   : num [1:2] -78.83 1.82
## .. . . . . . . . . . . @ area    : num 2.45e-05
## .. . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords  : num [1:69, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt   : num [1:2] -78.82 1.82
## .. . . . . . . . . . . @ area    : num 9.57e-06
## .. . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords  : num [1:37, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt   : num [1:2] -78.8 1.83
## .. . . . . . . . . . . @ area    : num 2.49e-05
## .. . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords  : num [1:89, 1:2] -78.8 -78.8 -78.8 -78.8 -78.8 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt   : num [1:2] -78.59 1.89
## .. . . . . . . . . . . @ area    : num 1.38e-08
## .. . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords  : num [1:4, 1:2] -78.59 -78.59 -78.59 -78.59 1.89 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt   : num [1:2] -78.63 2.34
## .. . . . . . . . . . . @ area    : num 0.00012
## .. . . . . . . . . . . @ hole    : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords  : num [1:151, 1:2] -78.6 -78.6 -78.6 -78.6 -78.6 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt   : num [1:2] -77.98 2.65
## .. . . . . . . . . . . @ area    : num 0.000282

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## ... . . . . . @ coords : num [1:9948, 1:2] -75.6 -75.6 -75.6 -75.6 -75.6 ...
## ... . . . . . @ plotOrder: int 1
## ... . . . . . @ labpt : num [1:2] -75.84 5.08
## ... . . . . . @ ID : chr "25"
## ... . . . . . @ area : num 0.289
## ... . . . . . $ comment: chr "0"
## ... . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . @ Polygons :List of 12
## ... . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -81.8 12.2
## ... . . . . . . @ area : num 5.64e-06
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:15, 1:2] -81.8 -81.8 -81.8 -81.8 -81.8 ...
## ... . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -81.7 12.5
## ... . . . . . . @ area : num 0.00233
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:792, 1:2] -81.7 -81.7 -81.7 -81.7 -81.7 ...
## ... . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -81.7 12.6
## ... . . . . . . @ area : num 5.48e-06
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:21, 1:2] -81.7 -81.7 -81.7 -81.7 -81.7 ...
## ... . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -81.4 13.4
## ... . . . . . . @ area : num 0.00182
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:545, 1:2] -81.4 -81.4 -81.4 -81.4 -81.4 ...
## ... . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -81.4 13.4
## ... . . . . . . @ area : num 0.000116
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:123, 1:2] -81.4 -81.4 -81.4 -81.4 -81.4 ...
## ... . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -80.4 14.3
## ... . . . . . . @ area : num 2.54e-05
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:8, 1:2] -80.4 -80.4 -80.4 -80.4 -80.4 ...
## ... . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -78.7 15.8
## ... . . . . . . @ area : num 5.21e-06
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:5, 1:2] -78.7 -78.7 -78.7 -78.7 -78.7 ...
## ... . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -78.7 15.8
## ... . . . . . . @ area : num 8.72e-06
## ... . . . . . . @ hole : logi FALSE

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## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:6, 1:2] -78.7 -78.7 -78.7 -78.7 -78.7 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -78.6 15.9
## .. . . . . . . . . . . @ area : num 2.37e-05
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:9, 1:2] -78.6 -78.6 -78.6 -78.6 -78.6 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -79.7 15.9
## .. . . . . . . . . . . @ area : num 7.07e-06
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:5, 1:2] -79.7 -79.7 -79.7 -79.7 -79.7 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -79.7 15.9
## .. . . . . . . . . . . @ area : num 2.81e-06
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:4, 1:2] -79.7 -79.7 -79.7 -79.7 15.9 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -78.6 15.9
## .. . . . . . . . . . . @ area : num 4.63e-06
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:4, 1:2] -78.6 -78.6 -78.6 -78.6 15.9 ...
## .. . . . . . . . . . . @ plotOrder: int [1:12] 2 4 5 6 9 8 10 1 3 7 ...
## .. . . . . . . . . . . @ labpt : num [1:2] -81.7 12.5
## .. . . . . . . . . . . @ ID : chr "26"
## .. . . . . . . . . . . @ area : num 0.00436
## .. . . . . . . . . . . $ comment: chr "0 0 0 0 0 0 0 0 0 0 0 0"
## .. . . . . . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ Polygons :List of 1
## .. . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . @ labpt : num [1:2] -73.5 6.7
## .. . . . . . . . . . . . . @ area : num 2.5
## .. . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . @ coords : num [1:21295, 1:2] -72.9 -72.9 -72.9 -72.9 -72.9 ...
## .. . . . . . . . . . . . . @ plotOrder: int 1
## .. . . . . . . . . . . . . @ labpt : num [1:2] -73.5 6.7
## .. . . . . . . . . . . . . @ ID : chr "27"
## .. . . . . . . . . . . . . @ area : num 2.5
## .. . . . . . . . . . . . $ comment: chr "0"
## .. . . . . . . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## .. . . . . . . . . . . . @ Polygons :List of 2
## .. . . . . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . @ labpt : num [1:2] -75.11 9.06
## .. . . . . . . . . . . . . @ area : num 0.881
## .. . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . @ coords : num [1:25135, 1:2] -74.6 -74.6 -74.6 -74.6 -74.6 ...
## .. . . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . @ labpt : num [1:2] -75.7 9.7

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## ... . . . . . @ area    : num 2.16e-08
## ... . . . . . @ hole     : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords   : num [1:4, 1:2] -75.7 -75.7 -75.7 -75.7 9.7 ...
## ... . . . . . @ plotOrder: int [1:2] 1 2
## ... . . . . . @ labpt    : num [1:2] -75.11 9.06
## ... . . . . . @ ID       : chr "28"
## ... . . . . . @ area     : num 0.881
## ... . . . . . $ comment: chr "0 0"
## ... . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . @ Polygons :List of 1
## ... . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . . . @ labpt   : num [1:2] -75.25 4.04
## ... . . . . . . . . . @ area    : num 1.95
## ... . . . . . . . . . @ hole    : logi FALSE
## ... . . . . . . . . . @ ringDir: int 1
## ... . . . . . . . . . @ coords  : num [1:11895, 1:2] -76.1 -76.1 -76.1 -76.1 -76.1 ...
## ... . . . . . . . . . @ plotOrder: int 1
## ... . . . . . . . . . @ labpt   : num [1:2] -75.25 4.04
## ... . . . . . . . . . @ ID      : chr "29"
## ... . . . . . . . . . @ area    : num 1.95
## ... . . . . . . . . . $ comment: chr "0"
## ... . . . . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . . . . . @ Polygons :List of 60
## ... . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . . . @ labpt   : num [1:2] -76.52 3.85
## ... . . . . . . . . . @ area    : num 1.7
## ... . . . . . . . . . @ hole    : logi FALSE
## ... . . . . . . . . . @ ringDir: int 1
## ... . . . . . . . . . @ coords  : num [1:30441, 1:2] -76.6 -76.6 -76.6 -76.6 -76.6 ...
## ... . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . . . @ labpt   : num [1:2] -77.14 3.71
## ... . . . . . . . . . @ area    : num 5.09e-06
## ... . . . . . . . . . @ hole    : logi FALSE
## ... . . . . . . . . . @ ringDir: int 1
## ... . . . . . . . . . @ coords  : num [1:19, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . . . @ labpt   : num [1:2] -77.17 3.68
## ... . . . . . . . . . @ area    : num 7.78e-06
## ... . . . . . . . . . @ hole    : logi FALSE
## ... . . . . . . . . . @ ringDir: int 1
## ... . . . . . . . . . @ coords  : num [1:32, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . . . @ labpt   : num [1:2] -77.1 3.7
## ... . . . . . . . . . @ area    : num 0.000195
## ... . . . . . . . . . @ hole    : logi FALSE
## ... . . . . . . . . . @ ringDir: int 1
## ... . . . . . . . . . @ coords  : num [1:190, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . . . @ labpt   : num [1:2] -77.15 3.76
## ... . . . . . . . . . @ area    : num 5.61e-05
## ... . . . . . . . . . @ hole    : logi FALSE
## ... . . . . . . . . . @ ringDir: int 1
## ... . . . . . . . . . @ coords  : num [1:90, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...

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## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.16 3.79
## ... . . . . . @ area   : num 0.00101
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:402, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.14 3.78
## ... . . . . . @ area   : num 5.94e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:31, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.13 3.78
## ... . . . . . @ area   : num 1.64e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:35, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.14 3.78
## ... . . . . . @ area   : num 1.23e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:37, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.14 3.78
## ... . . . . . @ area   : num 4.78e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:33, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.42 3.35
## ... . . . . . @ area   : num 4.09e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:19, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.42 3.36
## ... . . . . . @ area   : num 3.96e-05
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:55, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.3 3.9
## ... . . . . . @ area   : num 4.79e-06
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:19, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -77.36 3.91
## ... . . . . . @ area   : num 0.000119
## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:130, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...

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## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.24 3.58
## ... . . . . . @ area  : num 1.71e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:26, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.26 4.01
## ... . . . . . @ area  : num 1.28e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:59, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.25 4.01
## ... . . . . . @ area  : num 5.41e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:31, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.26 4.02
## ... . . . . . @ area  : num 8.84e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:214, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.35 3.92
## ... . . . . . @ area  : num 8.72e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:29, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.35 3.92
## ... . . . . . @ area  : num 5.17e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:15, 1:2] -77.3 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.3 3.97
## ... . . . . . @ area  : num 0.000136
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:151, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.38 3.98
## ... . . . . . @ area  : num 8.57e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:41, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.32 3.99
## ... . . . . . @ area  : num 1.57e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:41, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...

```

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## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.3 4
## ... . . . . . @ area : num 1.78e-05
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:45, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.28 4.01
## ... . . . . . @ area : num 2.41e-05
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:63, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.27 4.03
## ... . . . . . @ area : num 5.56e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:27, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.24 4.03
## ... . . . . . @ area : num 4.25e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:23, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.25 4.03
## ... . . . . . @ area : num 7.17e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:33, 1:2] -77.2 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.26 4.03
## ... . . . . . @ area : num 1.9e-05
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:69, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.24 4.03
## ... . . . . . @ area : num 3.55e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:21, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.25 4.03
## ... . . . . . @ area : num 6.94e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:35, 1:2] -77.2 -77.2 -77.2 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.26 4.03
## ... . . . . . @ area : num 4.4e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:19, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...

```

```

## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.24 4.03
## ... . . . . . @ area : num 7.72e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:21, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.26 4.05
## ... . . . . . @ area : num 8.09e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:37, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.28 4.05
## ... . . . . . @ area : num 5.47e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:27, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.28 4.05
## ... . . . . . @ area : num 0.000112
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:167, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.28 4.06
## ... . . . . . @ area : num 1.26e-05
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:49, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.27 4.06
## ... . . . . . @ area : num 4.92e-05
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:119, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.28 4.06
## ... . . . . . @ area : num 4.94e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:31, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.23 4.04
## ... . . . . . @ area : num 7.16e-05
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:151, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.2 4.04
## ... . . . . . @ area : num 5.33e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:29, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...

```

```

## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.21 4.05
## ... . . . . . @ area : num 7.17e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:29, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.23 4.06
## ... . . . . . @ area : num 7.4e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:31, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.23 4.07
## ... . . . . . @ area : num 1.33e-05
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:37, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.25 4.06
## ... . . . . . @ area : num 3.75e-05
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:89, 1:2] -77.3 -77.3 -77.3 -77.3 -77.3 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.25 4.06
## ... . . . . . @ area : num 6.17e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:25, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.25 4.07
## ... . . . . . @ area : num 2.26e-05
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:83, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.24 4.08
## ... . . . . . @ area : num 0.00012
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:157, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.25 4.08
## ... . . . . . @ area : num 9.73e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:43, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.07 3.87
## ... . . . . . @ area : num 4.16e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:25, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...

```

```

## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.07 3.88
## ... . . . . . @ area  : num 0.00034
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:240, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.1 3.88
## ... . . . . . @ area  : num 0.000228
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:225, 1:2] -77.1 -77.1 -77.1 -77.1 -77.1 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.22 4.01
## ... . . . . . @ area  : num 5.09e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:39, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.21 4.02
## ... . . . . . @ area  : num 4.47e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:29, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.22 4.02
## ... . . . . . @ area  : num 4.47e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:21, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.21 4.03
## ... . . . . . @ area  : num 2.25e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:91, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.22 4.03
## ... . . . . . @ area  : num 1.29e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:33, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.21 4.03
## ... . . . . . @ area  : num 2.29e-05
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:65, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -77.2 4.03
## ... . . . . . @ area  : num 7.02e-06
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:21, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...

```

```
##          GID_1 GID_0 COUNTRY           NAME_1      VARNAME_1
## 0    COL.1_2   COL Colombia Amazonas        NA
```

## 1	COL.2_2	COL Colombia	Antioquia	NA		
## 2	COL.3_2	COL Colombia	Arauca	NA		
## 3	COL.4_2	COL Colombia	Atlántico	NA		
## 4	COL.5_2	COL Colombia	Bogotá D.C.	Distrito Capital de Bogotá		
## 5	COL.6_2	COL Colombia	Bolívar	NA		
## 6	COL.7_2	COL Colombia	Boyacá	NA		
## 7	COL.8_2	COL Colombia	Caldas	NA		
## 8	COL.9_2	COL Colombia	Caquetá	NA		
## 9	COL.10_2	COL Colombia	Casanare	NA		
## 10	COL.11_2	COL Colombia	Cauca	NA		
## 11	COL.12_2	COL Colombia	Cesar	El Cesar		
## 12	COL.13_2	COL Colombia	Chocó	NA		
## 13	COL.14_2	COL Colombia	Córdoba	NA		
## 14	COL.15_2	COL Colombia	Cundinamarca	NA		
## 15	COL.16_2	COL Colombia	Guainía	Guanía		
## 16	COL.17_2	COL Colombia	Guaviare	NA		
## 17	COL.18_2	COL Colombia	Huila	NA		
## 18	COL.19_2	COL Colombia	La Guajira	Guajira Goagira La Goajira		
## 19	COL.20_2	COL Colombia	Magdalena	La Magdalena		
## 20	COL.21_2	COL Colombia	Meta	NA		
## 21	COL.22_2	COL Colombia	Nariño	NA		
## 22	COL.23_2	COL Colombia	Norte de Santander	Santander del Norte		
## 23	COL.24_2	COL Colombia	Putumayo	NA		
## 24	COL.25_2	COL Colombia	Quindío	NA		
## 25	COL.26_2	COL Colombia	Risaralda	NA		
## 26	COL.27_1	COL Colombia	San Andrés y Providencia	Saint Andrew and Providence		
## 27	COL.28_2	COL Colombia	Santander	NA		
## 28	COL.29_2	COL Colombia	Sucre	NA		
## 29	COL.30_2	COL Colombia	Tolima	NA		
## 30	COL.31_2	COL Colombia	Valle del Cauca	Valle		
## 31	COL.32_2	COL Colombia	Vaupés	NA		
## 32	COL.33_2	COL Colombia	Vichada	NA		
##	NL_NAME_1	TYPE_1	ENGTYPE_1	CC_1	HASC_1	ISO_1
## 0	NA	Comisaría	Commissiary	NA	CO.AM	CO-AMA
## 1	NA	Departamento	Department	NA	CO.AN	CO-ANT
## 2	NA	Intendencia	Intendancy	NA	CO.AR	CO-ARA
## 3	NA	Departamento	Department	NA	CO.AT	NA
## 4	NA	Distrito Capital	Capital District	NA	CO.DC	NA
## 5	NA	Departamento	Department	NA	CO.BL	NA
## 6	NA	Departamento	Department	NA	CO.BY	NA
## 7	NA	Departamento	Department	NA	CO.CL	CO-CAL
## 8	NA	Intendencia	Intendancy	NA	CO.CQ	NA
## 9	NA	Intendencia	Intendancy	NA	CO.CS	CO-CAS
## 10	NA	Departamento	Department	NA	CO.CA	CO-CAU
## 11	NA	Departamento	Department	NA	CO.CE	CO-CES
## 12	NA	Departamento	Department	NA	CO.CH	NA
## 13	NA	Departamento	Department	NA	CO.CO	NA
## 14	NA	Departamento	Department	NA	CO.CU	CO-CUN
## 15	NA	Comisaría	Commissiary	NA	CO.GN	NA
## 16	NA	Comisaría	Commissiary	NA	CO.GV	CO-GUV
## 17	NA	Departamento	Department	NA	CO.HU	CO-HUI
## 18	NA	Departamento	Department	NA	CO.LG	CO-LAG
## 19	NA	Departamento	Department	NA	CO.MA	CO-MAG
## 20	NA	Departamento	Department	NA	CO.ME	CO-MET

```

## 21      NA    Departamento      Department      NA CO.NA      NA
## 22      NA    Departamento      Department      NA CO.NS CO-NSA
## 23      NA    Intendencia     Intendancy     NA CO.PU CO-PUT
## 24      NA    Departamento      Department      NA CO.QD      NA
## 25      NA    Departamento      Department      NA CO.RI CO-RIS
## 26      NA    Departamento      Department      NA CO.SA      NA
## 27      NA    Departamento      Department      NA CO.ST CO-SAN
## 28      NA    Departamento      Department      NA CO.SU CO-SUC
## 29      NA    Departamento      Department      NA CO.TO CO-TOL
## 30      NA    Departamento      Department      NA CO.VC CO-VAC
## 31      NA    Comisaría       Comissiary     NA CO.VP      NA
## 32      NA    Comisaría       Comissiary     NA CO.VD CO-VID

```

#Dentro de "data" tenemos la variable "NAME_1" la cual contiene el nombre de los departamentos. Pidamos

```
mapaDpto@data[["NAME_1"]]
```

```

## [1] "Amazonas"                  "Antioquia"
## [3] "Arauca"                    "Atlántico"
## [5] "Bogotá D.C."               "Bolívar"
## [7] "Boyacá"                     "Caldas"
## [9] "Caquetá"                   "Casanare"
## [11] "Cauca"                      "Cesar"
## [13] "Chocó"                      "Córdoba"
## [15] "Cundinamarca"              "Guainía"
## [17] "Guaviare"                  "Huila"
## [19] "La Guajira"                "Magdalena"
## [21] "Meta"                       "Nariño"
## [23] "Norte de Santander"        "Putumayo"
## [25] "Quindío"                   "Risaralda"
## [27] "San Andrés y Providencia"  "Santander"
## [29] "Sucre"                      "Tolima"
## [31] "Valle del Cauca"           "Vaupés"
## [33] "Vichada"

```

#En este caso "Bogotá D.C." corresponde a la posición 5.

```
mapaDpto@data[["NAME_1"]][[5]]
```

```
## [1] "Bogotá D.C."
```

#Miremos como se puede graficar ese polígono

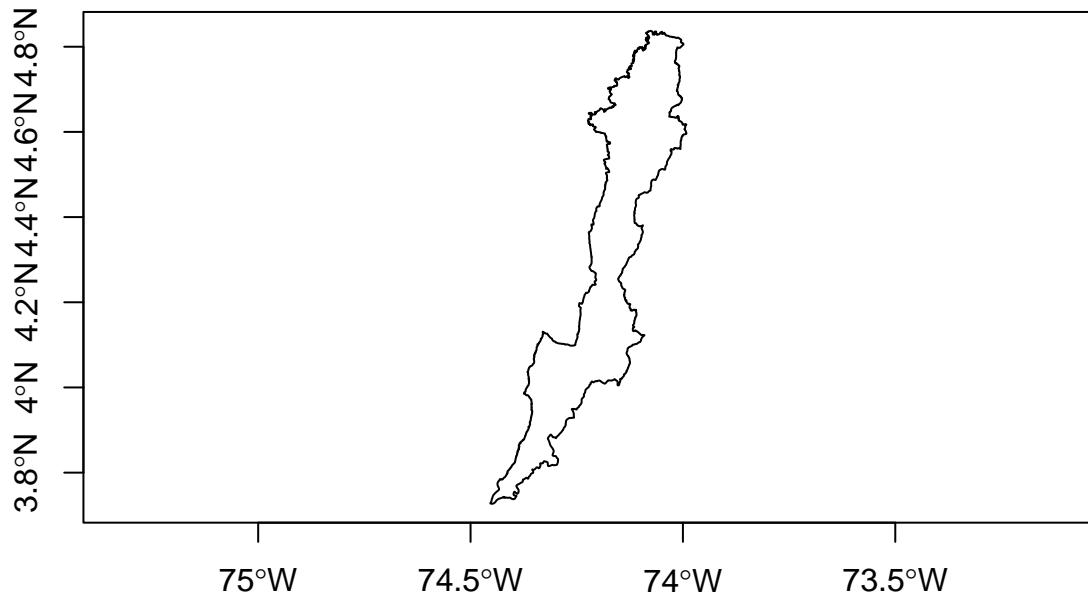
```
mapaDpto[mapaDpto@data[["NAME_1"]] == "Bogotá D.C.", ]
```

```

## class      : SpatialPolygonsDataFrame
## features   : 1
## extent     : -74.45332, -73.99173, 3.726927, 4.837221  (xmin, xmax, ymin, ymax)
## crs        : +proj=longlat +datum=WGS84 +no_defs
## variables  : 11
## names      : GID_1, GID_0, COUNTRY, NAME_1,          VARNAME_1, NL_NAME_1,
## value      : COL.5_2, COL, Colombia, Bogotá D.C., Distrito Capital de Bogotá, NA, Distrito

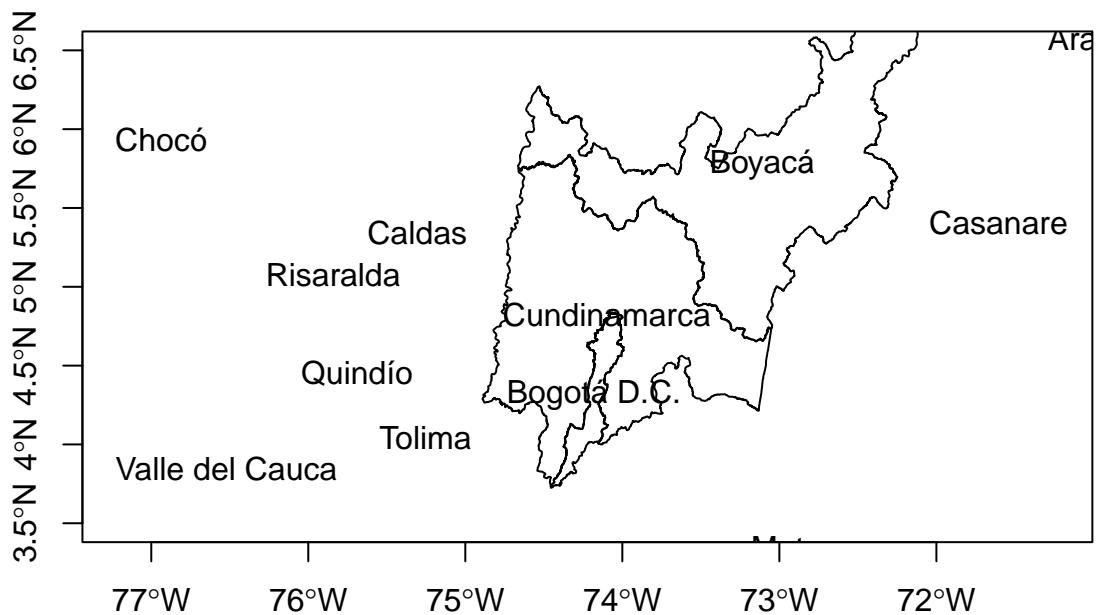
```

```
plot(mapaDpto[mapaDpto@data[["NAME_1"]]== "Bogotá D.C.", ], axes=TRUE)
```

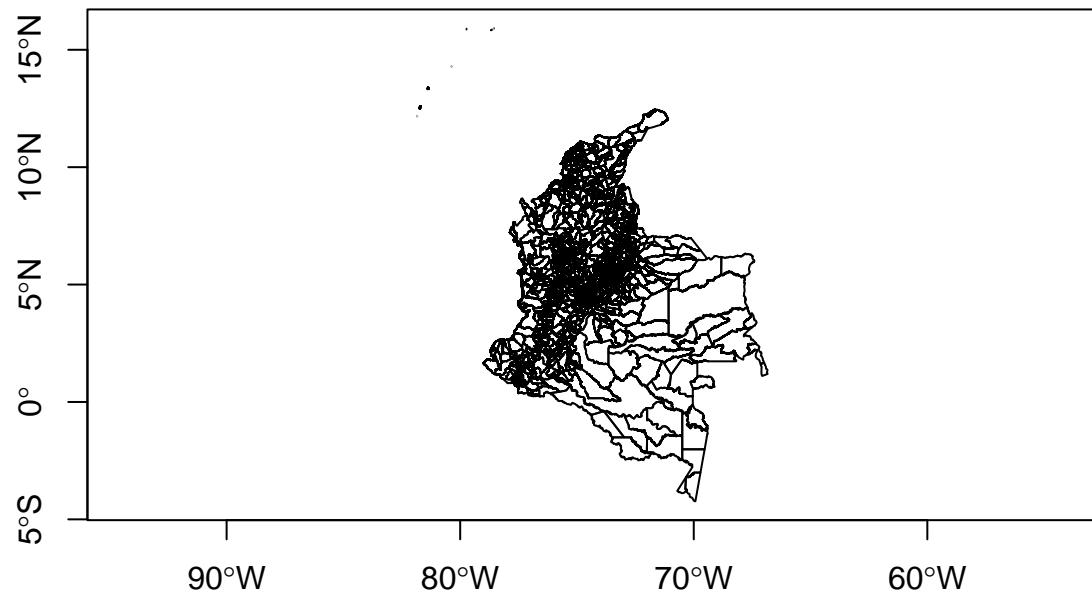


Ahora agreguemos otros departamentos

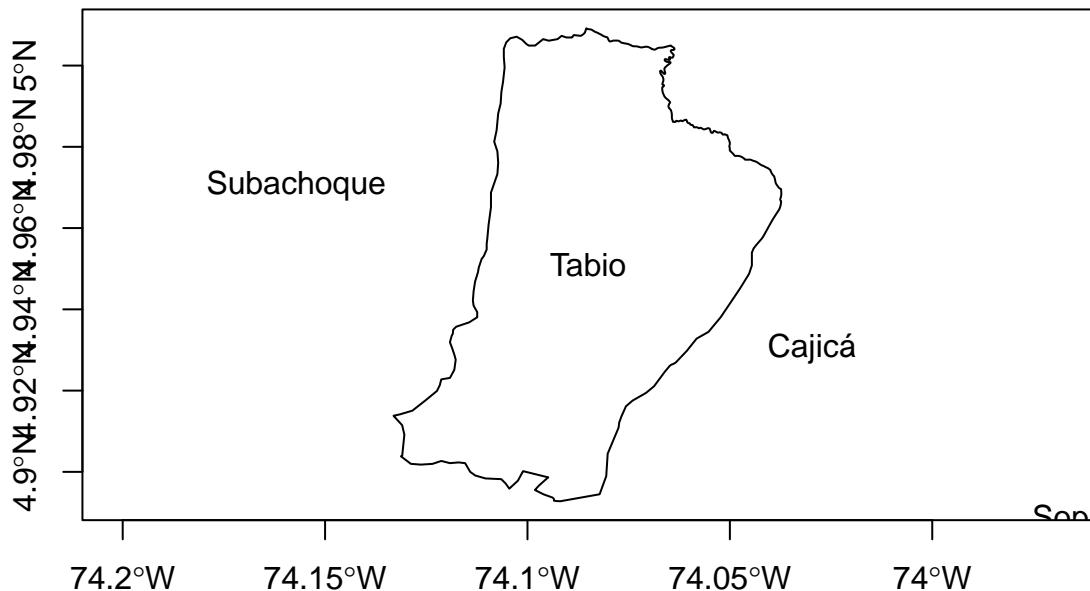
```
plot(mapaDpto[mapaDpto@data[["NAME_1"]]== "Bogotá D.C.", ], ylim=c(3.5,6.5), axes=TRUE)
plot(mapaDpto[mapaDpto@data[["NAME_1"]]== "Cundinamarca", ], add=TRUE)
plot(mapaDpto[mapaDpto@data[["NAME_1"]]== "Boyacá", ], add=TRUE)
text(mapaDpto, "NAME_1")
```



```
# Por ultimo revisemos los municipios  
mapaMpio = shapefile(paste(ruta,"gadm41_COL_2.shp",sep=""))  
plot(mapaMpio, axes=TRUE)
```



```
#Exploraremos el municipio del Tabio
plot(mapaMpio[mapaMpio@data[["NAME_2"]]== "Tabio",], axes=TRUE)
text(mapaMpio, "NAME_2")
```

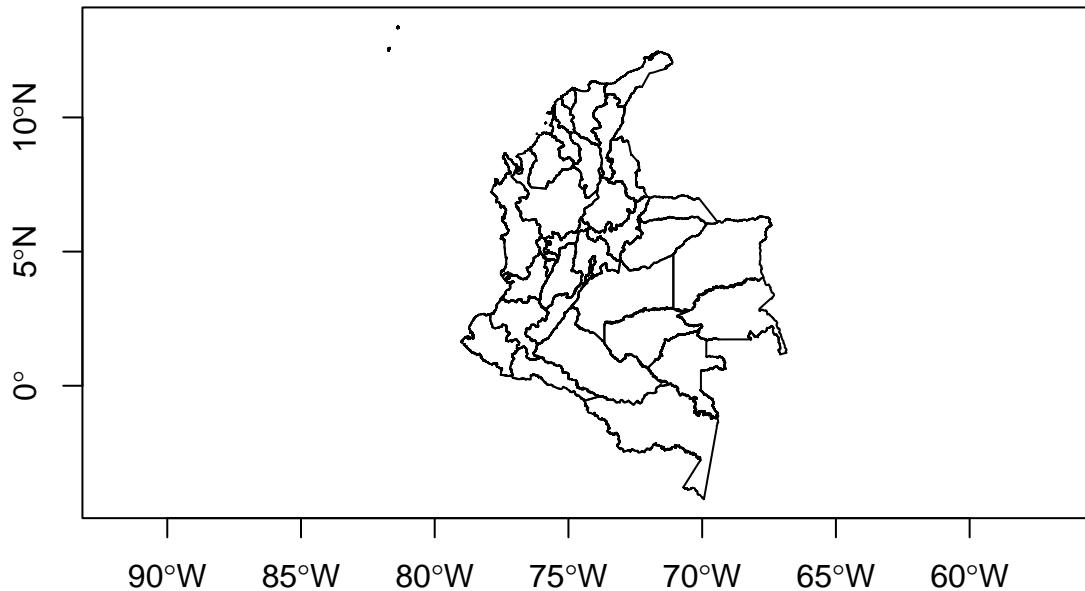


Edición de mapas

En esta sección vamos a ver algunas formas de manipular nuestros datos espaciales.

```
ruta2 = "dane/" #Asigno la ruta en donde estan mis .shp
mapaDane = shapefile(paste(ruta2,"MGN_DPTO_POLITICO.shp",sep=""))

## Warning in OGRSpatialRef(dsn, layer, morphFromESRI = morphFromESRI, dumpSRS =
## dumpSRS, : Discarded datum Marco_Geocentrico_Nacional_de_Referencia in Proj4
## definition: +proj=longlat +ellps=GRS80 +towgs84=0,0,0,0,0,0,0 +no_defs
plot(mapaDane, axes=TRUE)
```



```
str(mapaDane)
```

```
## Formal class 'SpatialPolygonsDataFrame' [package "sp"] with 5 slots
## ..@ data      : 'data.frame': 33 obs. of 9 variables:
## ...$ DPTO_CCDGO: chr [1:33] "05" "08" "11" "13" ...
## ...$ DPTO_CNMBR: chr [1:33] "ANTIOQUIA" "ATLÁNTICO" "BOGOTÁ, D.C." "BOLÍVAR" ...
## ...$ DPTO_ANO_C: int [1:33] 1886 1910 1538 1886 1886 1905 1981 1857 1967 1951 ...
## ...$ DPTO_ACT_A: chr [1:33] "Constitucion Politica de 1886" "Ley 21 de 1910" "Constitucion Polit...
## ...$ DPTO_NAREA: num [1:33] 62809 3314 1623 26720 23138 ...
## ...$ DPTO_CSMBL: chr [1:33] "3" "3" "3" "3" ...
## ...$ DPTO_VGNC : int [1:33] 2021 2021 2021 2021 2021 2021 2021 2021 2021 2021 ...
## ...$ Shape_Leng: num [1:33] 21.49 2.57 3.77 16.23 15.91 ...
## ...$ Shape_Area: num [1:33] 5.135 0.274 0.132 2.196 1.888 ...
## ..@ polygons   :List of 33
## ...$ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... ..@ Polygons :List of 1
## ... ...$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... ... ..@ labpt  : num [1:2] -75.57 6.92
## ... ... ..@ area   : num 5.14
## ... ... ..@ hole   : logi FALSE
## ... ... ..@ ringDir: int 1
## ... ... ..@ coords : num [1:39167, 1:2] -76.4 -76.4 -76.4 -76.4 -76.4 ...
## ... ..@ plotOrder: int 1
## ... ..@ labpt    : num [1:2] -75.57 6.92
## ... ..@ ID       : chr "0"
## ... ..@ area     : num 5.14
```

```

## ... . . . . $ comment: chr "0"
## ... . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . @ Polygons :List of 1
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -75 10.7
## ... . . . . . . @ area : num 0.274
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:7546, 1:2] -74.8 -74.8 -74.8 -74.8 -74.8 ...
## ... . . . . . . @ plotOrder: int 1
## ... . . . . . . @ labpt : num [1:2] -75 10.7
## ... . . . . . . @ ID : chr "1"
## ... . . . . . . @ area : num 0.274
## ... . . . . . $ comment: chr "0"
## ... . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . @ Polygons :List of 1
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -74.18 4.32
## ... . . . . . . @ area : num 0.132
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:23076, 1:2] -74.1 -74.1 -74.1 -74.1 -74.1 ...
## ... . . . . . . @ plotOrder: int 1
## ... . . . . . . @ labpt : num [1:2] -74.18 4.32
## ... . . . . . . @ ID : chr "2"
## ... . . . . . . @ area : num 0.132
## ... . . . . . $ comment: chr "0"
## ... . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . @ Polygons :List of 50
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -76.18 9.39
## ... . . . . . . @ area : num 0.000243
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:202, 1:2] -76.2 -76.2 -76.2 -76.2 -76.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -75.87 9.78
## ... . . . . . . @ area : num 2.57e-05
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:84, 1:2] -75.9 -75.9 -75.9 -75.9 -75.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -75.86 9.79
## ... . . . . . . @ area : num 1.13e-06
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:203, 1:2] -75.9 -75.9 -75.9 -75.9 -75.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt : num [1:2] -75.85 9.79
## ... . . . . . . @ area : num 8.62e-07
## ... . . . . . . @ hole : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:64, 1:2] -75.9 -75.9 -75.9 -75.9 -75.9 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots

```

```

## .. . . . . . . . . . . @ labpt : num [1:2] -75.9 9.8
## .. . . . . . . . . . . @ area : num 4.87e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:50, 1:2] -75.9 -75.9 -75.9 -75.9 -75.9 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.9 9.8
## .. . . . . . . . . . . @ area : num 9.42e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:61, 1:2] -75.9 -75.9 -75.9 -75.9 -75.9 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.9 9.8
## .. . . . . . . . . . . @ area : num 7.42e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:62, 1:2] -75.9 -75.9 -75.9 -75.9 -75.9 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.84 9.79
## .. . . . . . . . . . . @ area : num 0.000214
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:2520, 1:2] -75.9 -75.9 -75.9 -75.9 -75.9 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.1
## .. . . . . . . . . . . @ area : num 1.43e-06
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:14, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.1
## .. . . . . . . . . . . @ area : num 4.05e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:30, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 5.5e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:41, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 3.69e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:7, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 2.66e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:9, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots

```

```

## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 1.36e-06
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:97, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.8 10.2
## .. . . . . . . . . . . @ area : num 1.12e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:18, 1:2] -75.8 -75.8 -75.8 -75.8 -75.8 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 4.43e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:9, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 1.14e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:46, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 2.07e-06
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:153, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 4.17e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:53, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 3.34e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:44, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 1.42e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:51, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 3.3e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:77, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots

```

```

## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 9.17e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:116, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.8 10.2
## .. . . . . . . . . . . @ area : num 7.82e-05
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:412, 1:2] -75.8 -75.8 -75.8 -75.8 -75.8 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 3.79e-05
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:473, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.8 10.2
## .. . . . . . . . . . . @ area : num 2.19e-06
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:77, 1:2] -75.8 -75.8 -75.8 -75.8 -75.8 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.8 10.2
## .. . . . . . . . . . . @ area : num 8.52e-08
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:24, 1:2] -75.8 -75.8 -75.8 -75.8 -75.8 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.8 10.2
## .. . . . . . . . . . . @ area : num 7.99e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:33, 1:2] -75.8 -75.8 -75.8 -75.8 -75.8 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.8 10.2
## .. . . . . . . . . . . @ area : num 6.43e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:24, 1:2] -75.8 -75.8 -75.8 -75.8 -75.8 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.8 10.2
## .. . . . . . . . . . . @ area : num 1.3e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:12, 1:2] -75.8 -75.8 -75.8 -75.8 -75.8 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.8 10.2
## .. . . . . . . . . . . @ area : num 2.73e-08
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:5, 1:2] -75.8 -75.8 -75.8 -75.8 -75.8 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots

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## .. . . . . . . . . . . . . @ labpt : num [1:2] -75.8 10.2
## .. . . . . . . . . . . . . @ area : num 9.66e-07
## .. . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . @ coords : num [1:95, 1:2] -75.8 -75.8 -75.8 -75.8 -75.8 ...
## .. . . . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . @ labpt : num [1:2] -75.8 10.2
## .. . . . . . . . . . . . . @ area : num 1.49e-05
## .. . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . @ coords : num [1:271, 1:2] -75.8 -75.8 -75.8 -75.8 -75.8 ...
## .. . . . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . @ labpt : num [1:2] -75.8 10.2
## .. . . . . . . . . . . . . @ area : num 1.06e-06
## .. . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . @ coords : num [1:57, 1:2] -75.8 -75.8 -75.8 -75.8 -75.8 ...
## .. . . . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . . . @ area : num 4.67e-06
## .. . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . @ coords : num [1:228, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . @ labpt : num [1:2] -75.8 10.2
## .. . . . . . . . . . . . . @ area : num 1.15e-06
## .. . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . @ coords : num [1:80, 1:2] -75.8 -75.8 -75.8 -75.8 -75.8 ...
## .. . . . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . @ labpt : num [1:2] -75.8 10.2
## .. . . . . . . . . . . . . @ area : num 1.72e-08
## .. . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . @ coords : num [1:5, 1:2] -75.8 -75.8 -75.8 -75.8 -75.8 ...
## .. . . . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . . . @ area : num 1.14e-07
## .. . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . @ coords : num [1:23, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . . . @ area : num 1.17e-06
## .. . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . @ coords : num [1:33, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . . . @ area : num 1.84e-06
## .. . . . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . . . @ coords : num [1:54, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots

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## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 0.000167
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:302, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 1.31e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:18, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 1.1e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:19, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 2.61e-07
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:44, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 1.61e-08
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:17, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.7 10.2
## .. . . . . . . . . . . @ area : num 2.92e-08
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:19, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.6 10.3
## .. . . . . . . . . . . @ area : num 1.03e-05
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:129, 1:2] -75.6 -75.6 -75.6 -75.6 -75.6 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.6 10.3
## .. . . . . . . . . . . @ area : num 4.26e-06
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:95, 1:2] -75.6 -75.6 -75.6 -75.6 -75.6 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots
## .. . . . . . . . . . . @ labpt : num [1:2] -75.6 10.4
## .. . . . . . . . . . . @ area : num 0.00161
## .. . . . . . . . . . . @ hole : logi FALSE
## .. . . . . . . . . . . @ ringDir: int 1
## .. . . . . . . . . . . @ coords : num [1:2269, 1:2] -75.6 -75.6 -75.6 -75.6 -75.6 ...
## .. . . . . . . . . . . $. :Formal class 'Polygon' [package "sp"] with 5 slots

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## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords  : num [1:39186, 1:2] -76.5 -76.5 -76.5 -76.5 -76.5 ...
## ... . . . . . @ plotOrder: int 1
## ... . . . . . @ labpt   : num [1:2] -76.8 2.4
## ... . . . . . @ ID      : chr "7"
## ... . . . . . @ area    : num 2.53
## ... . . . . . $ comment: chr "0"
## ... . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . @ Polygons :List of 1
## ... . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt  : num [1:2] -73.52 9.54
## ... . . . . . . @ area   : num 1.86
## ... . . . . . . @ hole   : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:49011, 1:2] -73.5 -73.5 -73.5 -73.5 -73.5 ...
## ... . . . . . . @ plotOrder: int 1
## ... . . . . . . @ labpt  : num [1:2] -73.52 9.54
## ... . . . . . . @ ID     : chr "8"
## ... . . . . . . @ area   : num 1.86
## ... . . . . . . $ comment: chr "0"
## ... . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . . @ Polygons :List of 1
## ... . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . @ labpt  : num [1:2] -75.79 8.36
## ... . . . . . . . @ area   : num 2.06
## ... . . . . . . . @ hole   : logi FALSE
## ... . . . . . . . @ ringDir: int 1
## ... . . . . . . . @ coords : num [1:18958, 1:2] -75.9 -75.9 -75.9 -75.9 -75.9 ...
## ... . . . . . . . @ plotOrder: int 1
## ... . . . . . . . @ labpt  : num [1:2] -75.79 8.36
## ... . . . . . . . @ ID     : chr "9"
## ... . . . . . . . @ area   : num 2.06
## ... . . . . . . . $ comment: chr "0"
## ... . . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . . . @ Polygons :List of 1
## ... . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . . @ labpt  : num [1:2] -74.1 4.82
## ... . . . . . . . . @ area   : num 1.82
## ... . . . . . . . . @ hole   : logi FALSE
## ... . . . . . . . . @ ringDir: int 1
## ... . . . . . . . . @ coords : num [1:41457, 1:2] -74.3 -74.3 -74.3 -74.3 -74.3 ...
## ... . . . . . . . . @ plotOrder: int 1
## ... . . . . . . . . @ labpt  : num [1:2] -74.1 4.82
## ... . . . . . . . . @ ID     : chr "10"
## ... . . . . . . . . @ area   : num 1.82
## ... . . . . . . . . $ comment: chr "0"
## ... . . . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . . . . @ Polygons :List of 1
## ... . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . . . @ labpt  : num [1:2] -76.94 5.95
## ... . . . . . . . . . @ area   : num 3.94
## ... . . . . . . . . . @ hole   : logi FALSE
## ... . . . . . . . . . @ ringDir: int 1

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## ... . . . . . @ coords : num [1:56057, 1:2] -77.4 -77.4 -77.4 -77.4 -77.4 ...
## ... . . . . . @ plotOrder: int 1
## ... . . . . . @ labpt     : num [1:2] -76.94 5.95
## ... . . . . . @ ID        : chr "11"
## ... . . . . . @ area      : num 3.94
## ... . . . . . $ comment: chr "0"
## ... . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . @ Polygons :List of 1
## ... . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt   : num [1:2] -75.58 2.57
## ... . . . . . . @ area    : num 1.47
## ... . . . . . . @ hole    : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords  : num [1:17800, 1:2] -74.5 -74.5 -74.5 -74.5 -74.5 ...
## ... . . . . . . @ plotOrder: int 1
## ... . . . . . . @ labpt   : num [1:2] -75.58 2.57
## ... . . . . . . @ ID      : chr "12"
## ... . . . . . . @ area    : num 1.47
## ... . . . . . . $ comment: chr "0"
## ... . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . . @ Polygons :List of 1
## ... . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . @ labpt   : num [1:2] -72.4 11.5
## ... . . . . . . . @ area    : num 1.71
## ... . . . . . . . @ hole    : logi FALSE
## ... . . . . . . . @ ringDir: int 1
## ... . . . . . . . @ coords  : num [1:36662, 1:2] -71.7 -71.7 -71.7 -71.7 -71.6 ...
## ... . . . . . . . @ plotOrder: int 1
## ... . . . . . . . @ labpt   : num [1:2] -72.4 11.5
## ... . . . . . . . @ ID      : chr "13"
## ... . . . . . . . @ area    : num 1.71
## ... . . . . . . . $ comment: chr "0"
## ... . . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . . . @ Polygons :List of 1
## ... . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . . @ labpt   : num [1:2] -74.3 10.2
## ... . . . . . . . . @ area    : num 1.91
## ... . . . . . . . . @ hole    : logi FALSE
## ... . . . . . . . . @ ringDir: int 1
## ... . . . . . . . . @ coords  : num [1:58968, 1:2] -74 -74 -74 -74 -74 ...
## ... . . . . . . . . @ plotOrder: int 1
## ... . . . . . . . . @ labpt   : num [1:2] -74.3 10.2
## ... . . . . . . . . @ ID      : chr "14"
## ... . . . . . . . . @ area    : num 1.91
## ... . . . . . . . . $ comment: chr "0"
## ... . . . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . . . . @ Polygons :List of 1
## ... . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . . . @ labpt   : num [1:2] -72.92 3.39
## ... . . . . . . . . . @ area    : num 6.74
## ... . . . . . . . . . @ hole    : logi FALSE
## ... . . . . . . . . . @ ringDir: int 1
## ... . . . . . . . . . @ coords  : num [1:17976, 1:2] -71.1 -71.1 -71.1 -71.1 -71.1 ...
## ... . . . . . . . . . @ plotOrder: int 1

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## ... . . . . .@ labpt    : num [1:2] -72.92 3.39
## ... . . . . .@ ID       : chr "15"
## ... . . . . .@ area     : num 6.74
## ... . . . . .$ comment: chr "0"
## ... . . . . $:Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . @ Polygons :List of 2
## ... . . . . .$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . .@ labpt   : num [1:2] -78.89 1.51
## ... . . . . . .@ area    : num 8.97e-07
## ... . . . . . .@ hole    : logi FALSE
## ... . . . . . .@ ringDir: int 1
## ... . . . . . .@ coords  : num [1:56, 1:2] -78.9 -78.9 -78.9 -78.9 -78.9 ...
## ... . . . . . .$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . .@ labpt   : num [1:2] -77.87 1.57
## ... . . . . . .@ area    : num 2.55
## ... . . . . . .@ hole    : logi FALSE
## ... . . . . . .@ ringDir: int 1
## ... . . . . . .@ coords  : num [1:34875, 1:2] -78.1 -78.1 -78.1 -78.1 -78.1 ...
## ... . . . . . @ plotOrder: int [1:2] 2 1
## ... . . . . . .@ labpt   : num [1:2] -77.87 1.57
## ... . . . . . .@ ID      : chr "16"
## ... . . . . . .@ area    : num 2.55
## ... . . . . . .$ comment: chr "0 0"
## ... . . . . . $:Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . @ Polygons :List of 1
## ... . . . . . .$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . .@ labpt   : num [1:2] -72.9 8.1
## ... . . . . . . .@ area    : num 1.79
## ... . . . . . . .@ hole    : logi FALSE
## ... . . . . . . .@ ringDir: int 1
## ... . . . . . . .@ coords  : num [1:28149, 1:2] -73 -73 -73 -73 -73 ...
## ... . . . . . . @ plotOrder: int 1
## ... . . . . . . .@ labpt   : num [1:2] -72.9 8.1
## ... . . . . . . .@ ID      : chr "17"
## ... . . . . . . .@ area    : num 1.79
## ... . . . . . .$ comment: chr "0"
## ... . . . . . $:Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . @ Polygons :List of 1
## ... . . . . . .$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . .@ labpt   : num [1:2] -75.69 4.46
## ... . . . . . . .@ area    : num 0.157
## ... . . . . . . .@ hole    : logi FALSE
## ... . . . . . . .@ ringDir: int 1
## ... . . . . . . .@ coords  : num [1:6894, 1:2] -75.7 -75.7 -75.7 -75.7 -75.7 ...
## ... . . . . . . @ plotOrder: int 1
## ... . . . . . . .@ labpt   : num [1:2] -75.69 4.46
## ... . . . . . . .@ ID      : chr "18"
## ... . . . . . . .@ area    : num 0.157
## ... . . . . . .$ comment: chr "0"
## ... . . . . . $:Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . @ Polygons :List of 1
## ... . . . . . .$ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . .@ labpt   : num [1:2] -75.84 5.08
## ... . . . . . . .@ area    : num 0.29

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## ... . . . . . @ hole    : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords  : num [1:14855, 1:2] -76 -76 -76 -76 -76 ...
## ... . . . . . @ plotOrder: int 1
## ... . . . . . @ labpt   : num [1:2] -75.84 5.08
## ... . . . . . @ ID      : chr "19"
## ... . . . . . @ area    : num 0.29
## ... . . . . . $ comment: chr "0"
## ... . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . @ Polygons :List of 1
## ... . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt  : num [1:2] -73.49 6.69
## ... . . . . . . @ area   : num 2.5
## ... . . . . . . @ hole   : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:21538, 1:2] -73.8 -73.8 -73.8 -73.8 -73.8 ...
## ... . . . . . . @ plotOrder: int 1
## ... . . . . . . @ labpt  : num [1:2] -73.49 6.69
## ... . . . . . . @ ID     : chr "20"
## ... . . . . . . @ area   : num 2.5
## ... . . . . . . $ comment: chr "0"
## ... . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . . @ Polygons :List of 1
## ... . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . @ labpt  : num [1:2] -75.11 9.06
## ... . . . . . . . @ area   : num 0.871
## ... . . . . . . . @ hole   : logi FALSE
## ... . . . . . . . @ ringDir: int 1
## ... . . . . . . . @ coords : num [1:24257, 1:2] -75.5 -75.5 -75.5 -75.5 -75.5 ...
## ... . . . . . . . @ plotOrder: int 1
## ... . . . . . . . @ labpt  : num [1:2] -75.11 9.06
## ... . . . . . . . @ ID     : chr "21"
## ... . . . . . . . @ area   : num 0.871
## ... . . . . . . . $ comment: chr "0"
## ... . . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . . . @ Polygons :List of 1
## ... . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . . @ labpt  : num [1:2] -75.26 4.03
## ... . . . . . . . . @ area   : num 1.97
## ... . . . . . . . . @ hole   : logi FALSE
## ... . . . . . . . . @ ringDir: int 1
## ... . . . . . . . . @ coords : num [1:24819, 1:2] -74.8 -74.8 -74.8 -74.8 -74.8 ...
## ... . . . . . . . . @ plotOrder: int 1
## ... . . . . . . . . @ labpt  : num [1:2] -75.26 4.03
## ... . . . . . . . . @ ID     : chr "22"
## ... . . . . . . . . @ area   : num 1.97
## ... . . . . . . . . $ comment: chr "0"
## ... . . . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . . . . @ Polygons :List of 2
## ... . . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . . . @ labpt  : num [1:2] -77.23 4.04
## ... . . . . . . . . . @ area   : num 8.1e-05
## ... . . . . . . . . . @ hole   : logi FALSE
## ... . . . . . . . . . @ ringDir: int 1

```

```

## ... . . . . . @ coords : num [1:55, 1:2] -77.2 -77.2 -77.2 -77.2 -77.2 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt  : num [1:2] -76.52 3.86
## ... . . . . . @ area   : num 1.68
## ... . . . . . @ hole   : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:34315, 1:2] -76.1 -76.1 -76.1 -76.1 -76.1 ...
## ... . . . . . @ plotOrder: int [1:2] 2 1
## ... . . . . . @ labpt  : num [1:2] -76.52 3.86
## ... . . . . . @ ID     : chr "23"
## ... . . . . . @ area   : num 1.68
## ... . . . . . $ comment: chr "0 0"
## ... . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . @ Polygons :List of 1
## ... . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . @ labpt  : num [1:2] -70.97 6.57
## ... . . . . . . @ area   : num 1.94
## ... . . . . . . @ hole   : logi FALSE
## ... . . . . . . @ ringDir: int 1
## ... . . . . . . @ coords : num [1:11206, 1:2] -70.7 -70.7 -70.7 -70.7 -70.7 ...
## ... . . . . . . @ plotOrder: int 1
## ... . . . . . . @ labpt  : num [1:2] -70.97 6.57
## ... . . . . . . @ ID     : chr "24"
## ... . . . . . . @ area   : num 1.94
## ... . . . . . . $ comment: chr "0"
## ... . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . . @ Polygons :List of 1
## ... . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . @ labpt  : num [1:2] -71.6 5.4
## ... . . . . . . . @ area   : num 3.62
## ... . . . . . . . @ hole   : logi FALSE
## ... . . . . . . . @ ringDir: int 1
## ... . . . . . . . @ coords : num [1:18555, 1:2] -72.3 -72.3 -72.3 -72.3 -72.3 ...
## ... . . . . . . . @ plotOrder: int 1
## ... . . . . . . . @ labpt  : num [1:2] -71.6 5.4
## ... . . . . . . . @ ID     : chr "25"
## ... . . . . . . . @ area   : num 3.62
## ... . . . . . . . $ comment: chr "0"
## ... . . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . . . @ Polygons :List of 1
## ... . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . . . . @ labpt  : num [1:2] -75.856 0.452
## ... . . . . . . . . @ area   : num 2.11
## ... . . . . . . . . @ hole   : logi FALSE
## ... . . . . . . . . @ ringDir: int 1
## ... . . . . . . . . @ coords : num [1:15587, 1:2] -76.7 -76.7 -76.7 -76.7 -76.7 ...
## ... . . . . . . . . @ plotOrder: int 1
## ... . . . . . . . . @ labpt  : num [1:2] -75.856 0.452
## ... . . . . . . . . @ ID     : chr "26"
## ... . . . . . . . . @ area   : num 2.11
## ... . . . . . . . . $ comment: chr "0"
## ... . . . . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . . . . @ Polygons :List of 6
## ... . . . . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots

```

```

## ... . . . . . @ labpt : num [1:2] -81.7 12.6
## ... . . . . . @ area : num 1.4e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:135, 1:2] -81.7 -81.7 -81.7 -81.7 -81.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -81.7 12.6
## ... . . . . . @ area : num 1.13e-07
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:39, 1:2] -81.7 -81.7 -81.7 -81.7 -81.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -81.7 12.5
## ... . . . . . @ area : num 0.00222
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:6683, 1:2] -81.7 -81.7 -81.7 -81.7 -81.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -81.7 12.6
## ... . . . . . @ area : num 2.25e-06
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:372, 1:2] -81.7 -81.7 -81.7 -81.7 -81.7 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -81.4 13.4
## ... . . . . . @ area : num 0.00172
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:18715, 1:2] -81.4 -81.4 -81.4 -81.4 -81.4 ...
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -81.4 13.4
## ... . . . . . @ area : num 0.000106
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:2380, 1:2] -81.4 -81.4 -81.4 -81.4 -81.4 ...
## ... . . . . . @ plotOrder: int [1:6] 3 5 6 4 1 2
## ... . . . . . @ labpt : num [1:2] -81.7 12.5
## ... . . . . . @ ID : chr "27"
## ... . . . . . @ area : num 0.00405
## ... . . . . . $ comment: chr "0 0 0 0 0 0"
## ... . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . . @ Polygons :List of 1
## ... . . . . . $ :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . @ labpt : num [1:2] -71.5 -1.55
## ... . . . . . @ area : num 8.88
## ... . . . . . @ hole : logi FALSE
## ... . . . . . @ ringDir: int 1
## ... . . . . . @ coords : num [1:39789, 1:2] -71.1 -71.1 -71.1 -71.1 -71.1 ...
## ... . . . . . @ plotOrder: int 1
## ... . . . . . @ labpt : num [1:2] -71.5 -1.55
## ... . . . . . @ ID : chr "28"
## ... . . . . . @ area : num 8.88
## ... . . . . . $ comment: chr "0"
## ... . . . . . $ :Formal class 'Polygons' [package "sp"] with 5 slots

```

```

## ... . . . . .@ Polygons :List of 1
## ... . . . . .$. :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . .@ labpt   : num [1:2] -68.82 2.73
## ... . . . . . .@ area    : num 5.75
## ... . . . . . .@ hole    : logi FALSE
## ... . . . . . .@ ringDir: int 1
## ... . . . . . .@ coords  : num [1:31813, 1:2] -67.7 -67.7 -67.7 -67.7 -67.7 ...
## ... . . . . . .@ plotOrder: int 1
## ... . . . . .@ labpt   : num [1:2] -68.82 2.73
## ... . . . . .@ ID      : chr "29"
## ... . . . . .@ area    : num 5.75
## ... . . . . .$. comment: chr "0"
## ... . . . $. :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . @ Polygons :List of 1
## ... . . . . .$. :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . .@ labpt   : num [1:2] -72.13 1.92
## ... . . . . . .@ area    : num 4.51
## ... . . . . . .@ hole    : logi FALSE
## ... . . . . . .@ ringDir: int 1
## ... . . . . . .@ coords  : num [1:42321, 1:2] -71.3 -71.3 -71.3 -71.3 -71.3 ...
## ... . . . . . .@ plotOrder: int 1
## ... . . . . .@ labpt   : num [1:2] -72.13 1.92
## ... . . . . .@ ID      : chr "30"
## ... . . . . .@ area    : num 4.51
## ... . . . . .$. comment: chr "0"
## ... . . . $. :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . @ Polygons :List of 1
## ... . . . . .$. :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . .@ labpt   : num [1:2] -70.561 0.646
## ... . . . . . .@ area    : num 4.31
## ... . . . . . .@ hole    : logi FALSE
## ... . . . . . .@ ringDir: int 1
## ... . . . . . .@ coords  : num [1:64938, 1:2] -70.1 -70.1 -70.1 -70.1 -70.1 ...
## ... . . . . . .@ plotOrder: int 1
## ... . . . . .@ labpt   : num [1:2] -70.561 0.646
## ... . . . . .@ ID      : chr "31"
## ... . . . . .@ area    : num 4.31
## ... . . . . .$. comment: chr "0"
## ... . . . $. :Formal class 'Polygons' [package "sp"] with 5 slots
## ... . . . . @ Polygons :List of 1
## ... . . . . .$. :Formal class 'Polygon' [package "sp"] with 5 slots
## ... . . . . . .@ labpt   : num [1:2] -69.41 4.71
## ... . . . . . .@ area    : num 8.1
## ... . . . . . .@ hole    : logi FALSE
## ... . . . . . .@ ringDir: int 1
## ... . . . . . .@ coords  : num [1:28239, 1:2] -67.8 -67.8 -67.8 -67.8 -67.8 ...
## ... . . . . . .@ plotOrder: int 1
## ... . . . . .@ labpt   : num [1:2] -69.41 4.71
## ... . . . . .@ ID      : chr "32"
## ... . . . . .@ area    : num 8.1
## ... . . . . .$. comment: chr "0"
## ... . . . @ plotOrder : int [1:33] 29 33 7 16 30 1 31 32 12 26 ...
## ... . . . @ bbox      : num [1:2, 1:2] -81.74 -4.23 -66.85 13.39
## ... . . . - attr(*, "dimnames")=List of 2

```

```

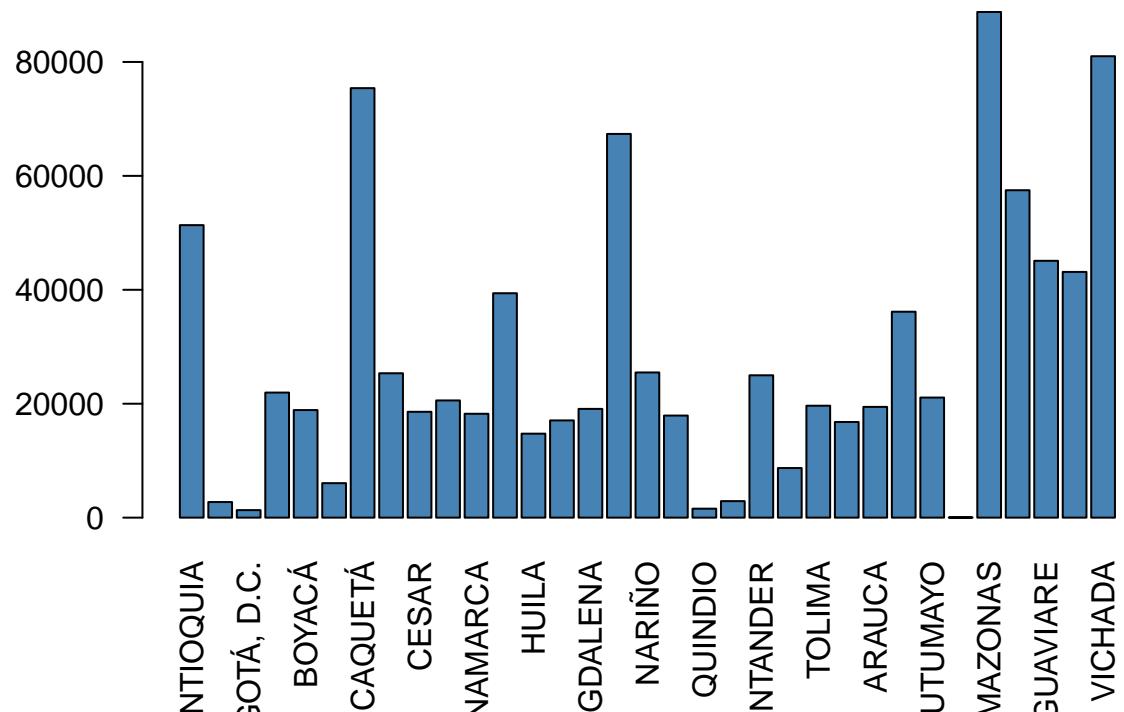
## ... . . . $ : chr [1:2] "x" "y"
## ... . . . $ : chr [1:2] "min" "max"
## ..@ proj4string:Formal class 'CRS' [package "sp"] with 1 slot
## ... . . . @ projargs: chr "+proj=longlat +ellps=GRS80 +towgs84=0,0,0,0,0,0,0 +no_defs"
## ... . . . $ comment: chr "GEOGCRS[\\"MAGNA-SIRGAS\\",\n      DATUM[\\"Marco Geocentrico Nacional de Referen
## ... $ comment: chr "TRUE"

#Extraer nombre de dptos y areas
nombreDpto = mapaDane@data[["DPTO_CNMBR"]]
areaDpto = mapaDane@data[["Shape_Area"]] * 10000

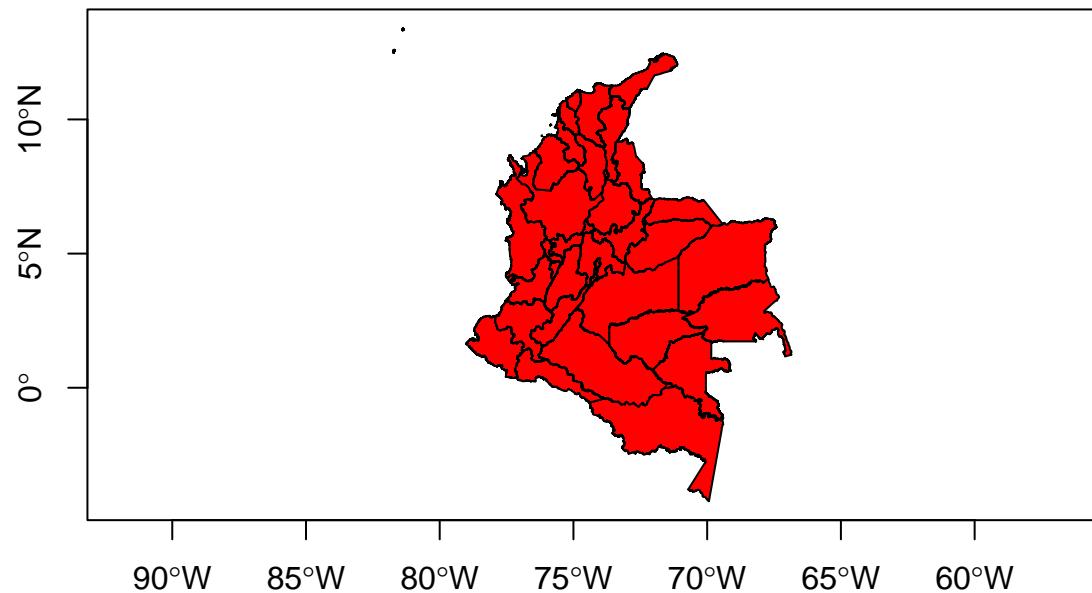
#Graficar

barplot(areaDpto, names.arg=nombreDpto, col="steelblue", las=2)

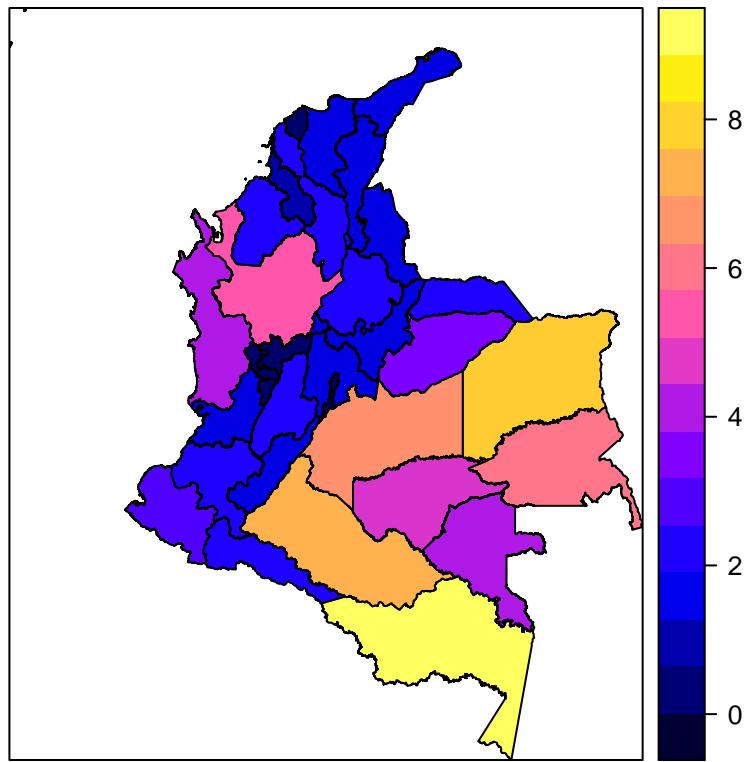
```



```
plot(mapaDane, col=rainbow(areaDpto), axes=TRUE)
```



```
spplot(mapaDane,"Shape_Area", axes=TRUE)
```



#Vamos a extraer las coordenadas y los nombres de los dpto

```

coordenadas = coordinates(mapaDane)
coordenadas = data.frame(coordenadas)
colnames(coordenadas) = c("Lon","Lat") #Renombramos las columnas
coordenadas

##           Lon         Lat
## 0 -75.56506  6.9228696
## 1 -74.96523 10.6768851
## 2 -74.18108  4.3161108
## 3 -74.50738  8.7437281
## 4 -73.10207  5.7766072
## 5 -75.30688  5.3420643
## 6 -73.96632  0.8295936
## 7 -76.82423  2.3968314
## 8 -73.51780  9.5368251
## 9 -75.79201  8.3585352
## 10 -74.09774  4.8239789
## 11 -76.93573  5.9463351
## 12 -75.58435  2.5701430
## 13 -72.42939 11.4769597
## 14 -74.26176 10.2473835
## 15 -72.91604  3.3941467
## 16 -77.87020  1.5710947
## 17 -72.88188  8.0951375

```

```

## 18 -75.68963 4.4552416
## 19 -75.84214 5.0833441
## 20 -73.48601 6.6936339
## 21 -75.10982 9.0649420
## 22 -75.25582 4.0347734
## 23 -76.51866 3.8588455
## 24 -70.96732 6.5695772
## 25 -71.60188 5.4040643
## 26 -75.85591 0.4522600
## 27 -81.71764 12.5431237
## 28 -71.50213 -1.5462277
## 29 -68.81661 2.7278429
## 30 -72.12773 1.9245078
## 31 -70.56141 0.6462456
## 32 -69.41400 4.7135571

#Ahora agregramos el nombre de los dptos

Colombia = cbind(coordenadas,nombreDpto,areaDpto)
colnames(Colombia)[3:4]= c("Nombre", "Area")
str(Colombia)

## 'data.frame': 33 obs. of 4 variables:
## $ Lon : num -75.6 -75 -74.2 -74.5 -73.1 ...
## $ Lat : num 6.92 10.68 4.32 8.74 5.78 ...
## $ Nombre: chr "ANTIOQUIA" "ATLÁNTICO" "BOGOTÁ, D.C." "BOLÍVAR" ...
## $ Area : num 51352 2738 1322 21956 18884 ...

#Vamos a crear dos variables, hombres y mujeres. Los valores se crearan aleatoriamente

mujeres = runif(33, 100000,1000000)
hombres = runif(33,100000,1000000)

Colombia = cbind(Colombia, mujeres, hombres)
Colombia = data.frame(Colombia)
colnames(Colombia)[5:6]= c("Mujeres", "Hombres")
str(Colombia)

## 'data.frame': 33 obs. of 6 variables:
## $ Lon : num -75.6 -75 -74.2 -74.5 -73.1 ...
## $ Lat : num 6.92 10.68 4.32 8.74 5.78 ...
## $ Nombre : chr "ANTIOQUIA" "ATLÁNTICO" "BOGOTÁ, D.C." "BOLÍVAR" ...
## $ Area : num 51352 2738 1322 21956 18884 ...
## $ Mujeres: num 906298 520346 610887 351394 290917 ...
## $ Hombres: num 923233 386705 473791 846885 913168 ...

summary(Colombia)

##          Lon             Lat           Nombre            Area
## Min.   :-81.72   Min.   :-1.546   Length:33      Min.   : 40.49
## 1st Qu.:-75.69  1st Qu.: 2.728   Class :character  1st Qu.:16794.96
## Median :-74.26  Median : 5.083   Mode   :character  Median :19650.37
## Mean   :-74.22  Mean   : 5.383                    Mean   :28131.37
## 3rd Qu.:-72.88  3rd Qu.: 8.095                    3rd Qu.:39397.43
## Max.   :-68.82  Max.   :12.543                    Max.   :88774.80
## 
##          Mujeres        Hombres

```

```

##   Min.    :172218    Min.    :140101
## 1st Qu.:351394    1st Qu.:323890
## Median :606618    Median :548143
## Mean   :583218    Mean   :546427
## 3rd Qu.:764073    3rd Qu.:751179
## Max.   :985166    Max.   :974349

xY = cbind(as.double(coordenadas[,1]),as.double(coordenadas[,2]))
ColPuntos = SpatialPointsDataFrame(coords =xY,data=Colombia[,c(3:6)], proj4string = CRS('+init=epsg:4326'))
ColPuntos

## class       : SpatialPointsDataFrame
## features    : 33
## extent      : -81.71764, -68.81661, -1.546228, 12.54312  (xmin, xmax, ymin, ymax)
## crs         : +proj=longlat +datum=WGS84 +no_defs
## variables   : 4
## names       : Nombre,           Area,           Mujeres,           Hombres
## min values  : AMAZONAS, 40.4933513324, 172217.712458223, 140100.792935118
## max values  : VICHADA, 88774.7998889, 985166.25741031, 974348.621163517

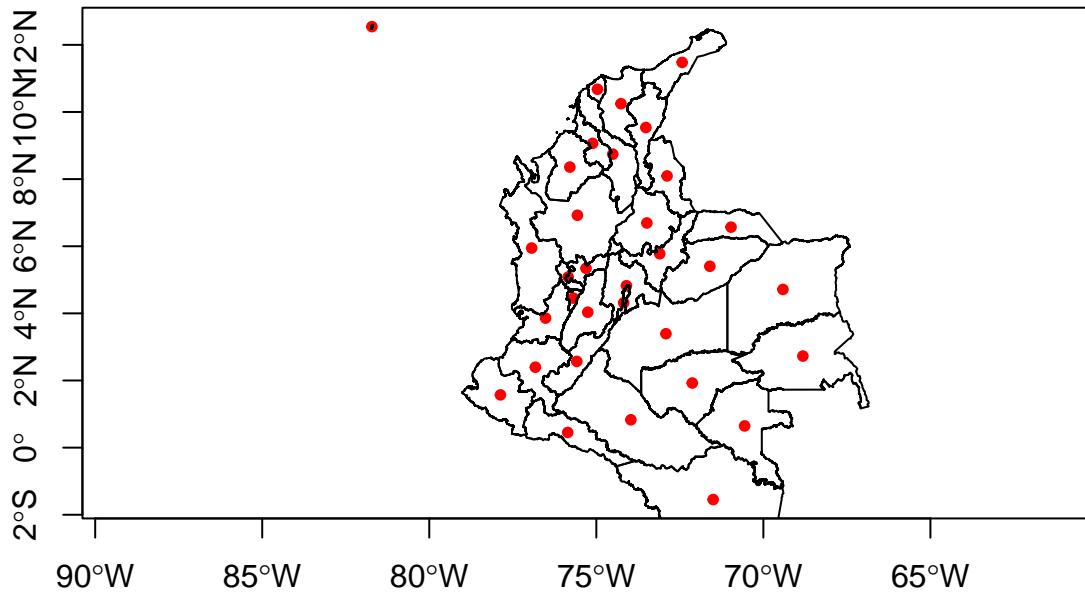
magnitudArea = ColPuntos@data["Area"]
magnitudArea

##          Area
## 0  51352.36254
## 1  2738.22519
## 2  1322.07884
## 3  21956.39253
## 4  18883.90832
## 5  6054.99791
## 6  75402.41065
## 7  25344.10108
## 8  18582.04407
## 9  20575.06408
## 10 18236.21270
## 11 39397.42557
## 12 14742.19177
## 13 17068.42477
## 14 19092.66130
## 15 67361.72994
## 16 25484.71932
## 17 17923.25441
## 18 1574.23729
## 19 2897.88646
## 20 24991.05532
## 21 8708.11455
## 22 19650.36674
## 23 16794.95705
## 24 19441.56904
## 25 36150.62828
## 26 21079.64833
## 27   40.49335
## 28 88774.79989
## 29 57479.37395
## 30 45089.06230
## 31 43138.10177

```

```
## 32 81006.80492
plot(ColPuntos[["Area"]], pch=20, col='red', axes=TRUE, main="Areas por Dpto")
plot(mapaDane, add=TRUE)
```

Areas por Dpto



```
magnitudMujeres = ColPuntos@data[["Mujeres"]]
magnitudMujeres
```

```
##      Mujeres
## 0  906297.9
## 1  520346.0
## 2  610886.8
## 3  351394.2
## 4  290917.3
## 5  912864.1
## 6  897550.9
## 7  391801.8
## 8  332706.3
## 9  764072.6
## 10 222626.9
## 11 234654.4
## 12 583975.1
## 13 361642.8
## 14 728071.0
## 15 846819.7
## 16 912918.9
## 17 723138.4
```

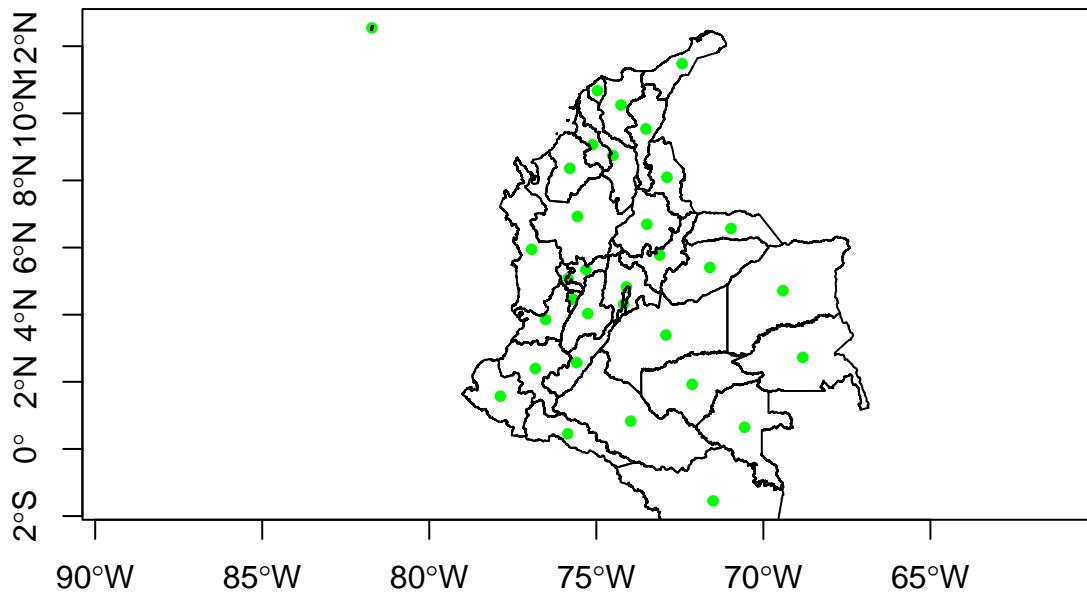
```

## 18 476899.1
## 19 504086.8
## 20 956915.9
## 21 562138.6
## 22 219255.7
## 23 750023.5
## 24 177906.1
## 25 172217.7
## 26 609271.9
## 27 344263.6
## 28 875989.7
## 29 728707.7
## 30 606617.7
## 31 684032.7
## 32 985166.3

plot(ColPuntos["Mujeres"], pch=20, col='green', axes=TRUE, main="Areas por Dpto")
plot(mapaDane, add=TRUE)

```

Areas por Dpto



```

magnitudHombres = ColPuntos@data["Hombres"]
magnitudHombres

```

```

##      Hombres
## 0 923233.4
## 1 386705.0
## 2 473790.9
## 3 846885.0

```

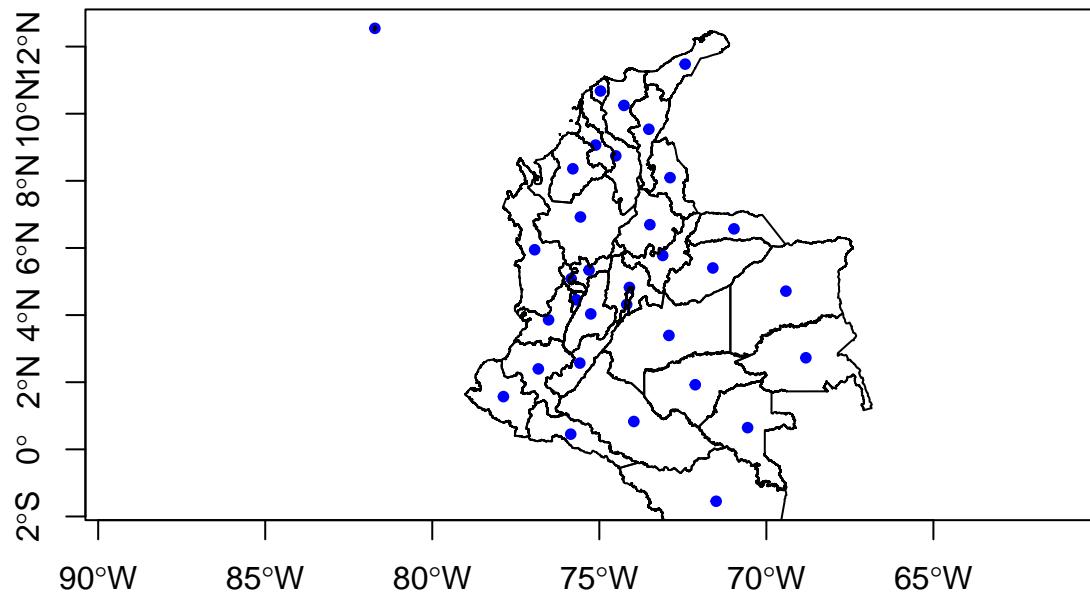
```

## 4 913168.4
## 5 261528.1
## 6 808340.0
## 7 628285.3
## 8 294828.2
## 9 625274.9
## 10 175345.6
## 11 565840.5
## 12 645240.7
## 13 489962.1
## 14 237729.7
## 15 771931.9
## 16 140100.8
## 17 898154.2
## 18 702951.7
## 19 254826.8
## 20 323889.8
## 21 967999.9
## 22 693670.5
## 23 393606.2
## 24 548142.8
## 25 659819.6
## 26 522915.5
## 27 218369.0
## 28 974348.6
## 29 151739.5
## 30 401917.1
## 31 380358.5
## 32 751179.1

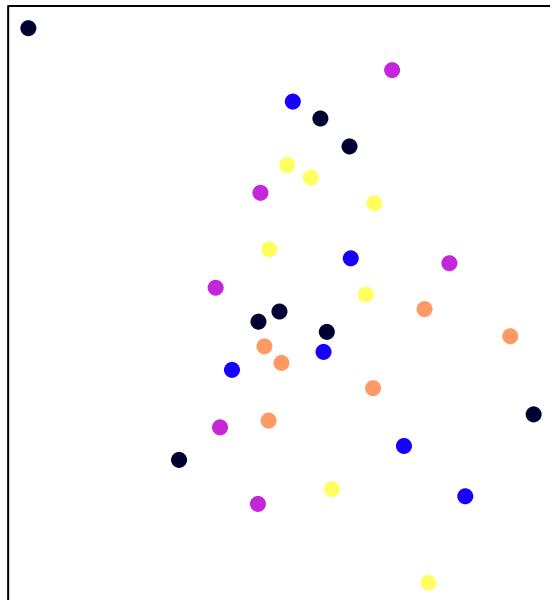
plot(ColPuntos["Hombres"], pch=20, col='blue', axes=TRUE, main="Areas por Dpto")
plot(mapaDane, add=TRUE)

```

Areas por Dpto



```
spplot(ColPuntos, "Hombres", axes=TRUE)
```



- [1.401e+05, 3.07e+05]
- (3.07e+05, 4.738e+05]
- (4.738e+05, 6.406e+05]
- (6.406e+05, 8.075e+05]
- (8.075e+05, 9.743e+05]