Black sea bass shapefiles

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The purpose of this document is to create shapefiles for the southern MAB, northern MAB, and GB/GOM regions of black sea bass habitat.

First, here are the coordinates Paula uses for the Northern MAB:

```
lat <- c(40.50, 39.50, 40.00, 40.00, 41.00, 41.10, 41.00, 40.50)
lon <- -c(74.00, 72.00, 71.40, 69.50, 69.50, 70.00, 72.00, 74.00)

shape_df <- data.frame(lon, lat)

north <- shape_df %>%
  sf::st_as_sf(coords = c("lon", "lat"),
               crs =  "+proj=longlat +datum=WGS84 +no_defs +ellps=WGS84 +towgs84=0,0,0") %>%
  dplyr::summarise(geometry = sf::st_combine(geometry)) %>%
  sf::st_cast("POLYGON")
```

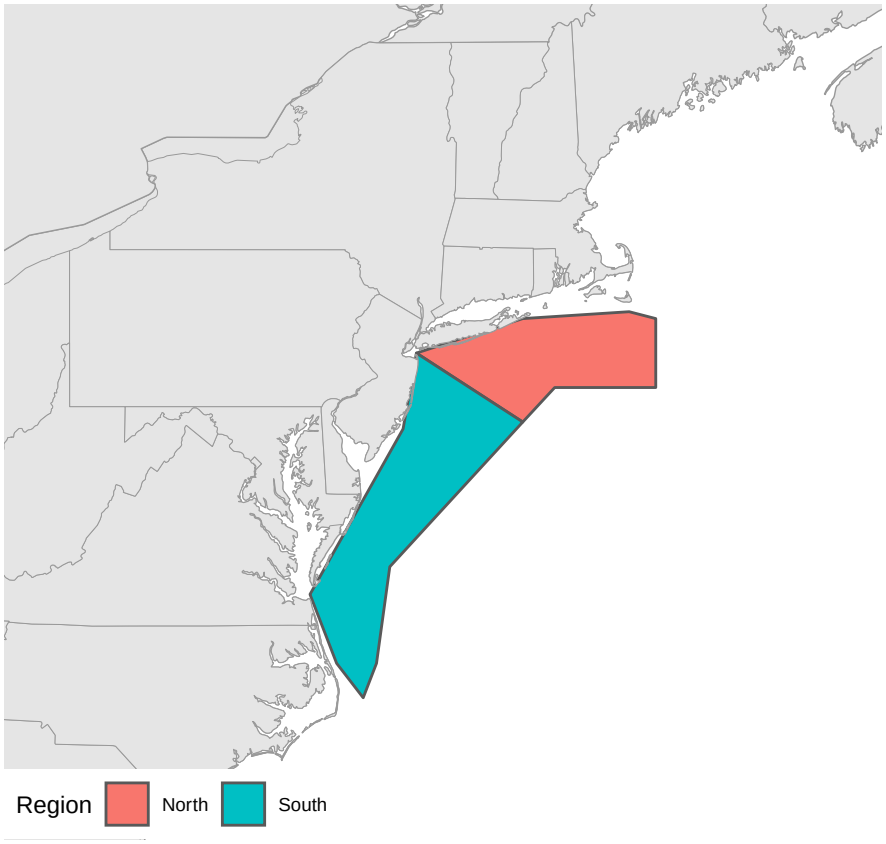
Next, the coordinates for the Southern MAB:

```
lat <- c(37.00, 36.00, 35.50, 36.00, 37.40, 39.50, 40.50, 39.40, 37.00)
lon <- -c(76.00, 75.50, 75.00, 74.75, 74.50, 72.00, 74.00, 74.25, 76.00)

shape_df <- data.frame(lon, lat)

south <- shape_df %>%
  sf::st_as_sf(coords = c("lon", "lat"),
               crs =  "+proj=longlat +datum=WGS84 +no_defs +ellps=WGS84 +towgs84=0,0,0") %>%
  dplyr::summarise(geometry = sf::st_combine(geometry)) %>%
  sf::st_cast("POLYGON")
```

Combine north and south:

```
bsb_shape <- rbind(north %>%
                     dplyr::mutate(Region = "North"),
                   south %>%
                     dplyr::mutate(Region = "South"))
```

Plot to make sure it looks correct:



Save the shapefile:

```
sf::write_sf(bsb_shape, here::here("black-sea-bass/bsb_shape.shp"))
```