Splitting up pool 4

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```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.3     v purrr   0.3.4
## v tibble  3.1.1     v dplyr   1.0.5
## v tidyr   1.1.3     v stringr 1.4.0
## v readr   1.4.0     v forcats 0.5.1
```

```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(ggplot2)
library(RColorBrewer)
```

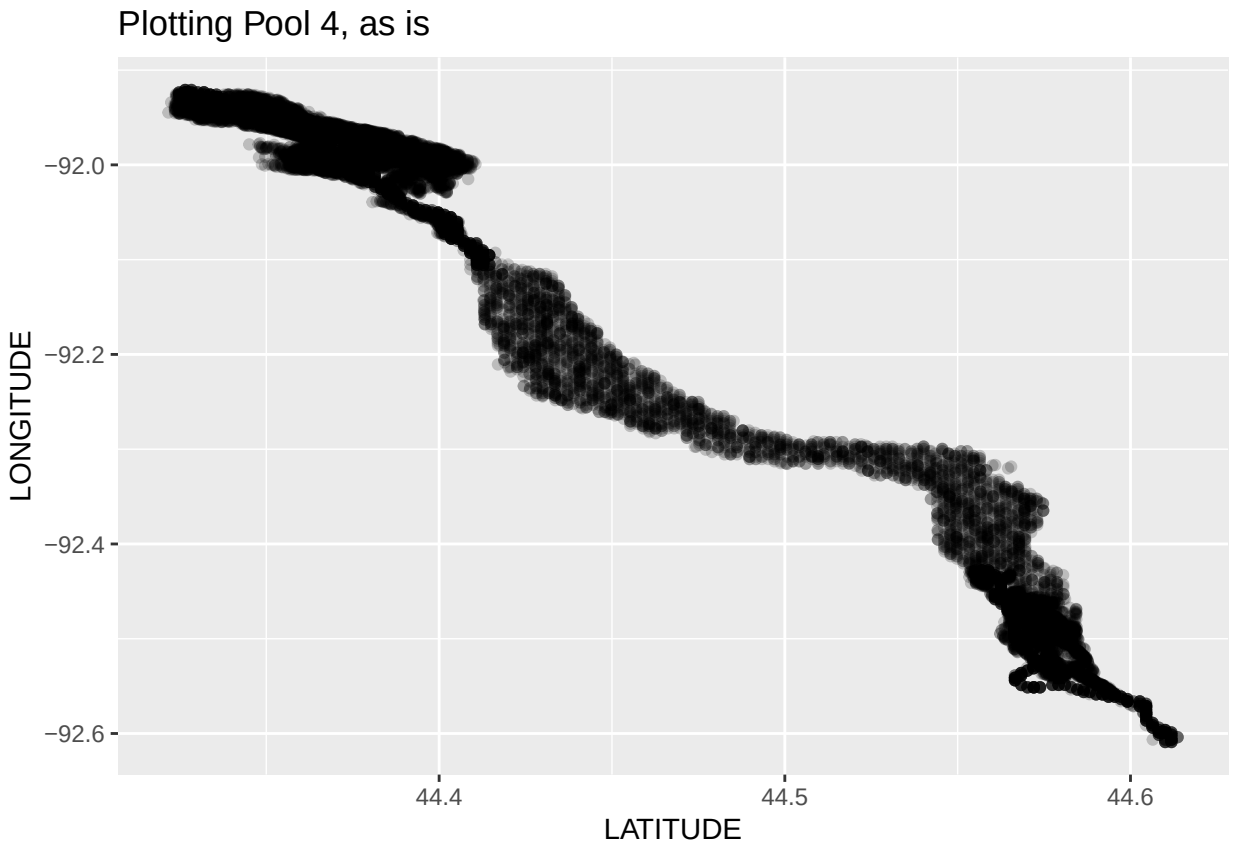
```
water20 <- read.csv(file = "../../LTRM data/RF interpolation/water_full.csv")
```

```
blue_pal <- c(brewer.pal(9,'Blues')[2], brewer.pal(9,'Blues')[5], brewer.pal(9,'Blues')[7])
```

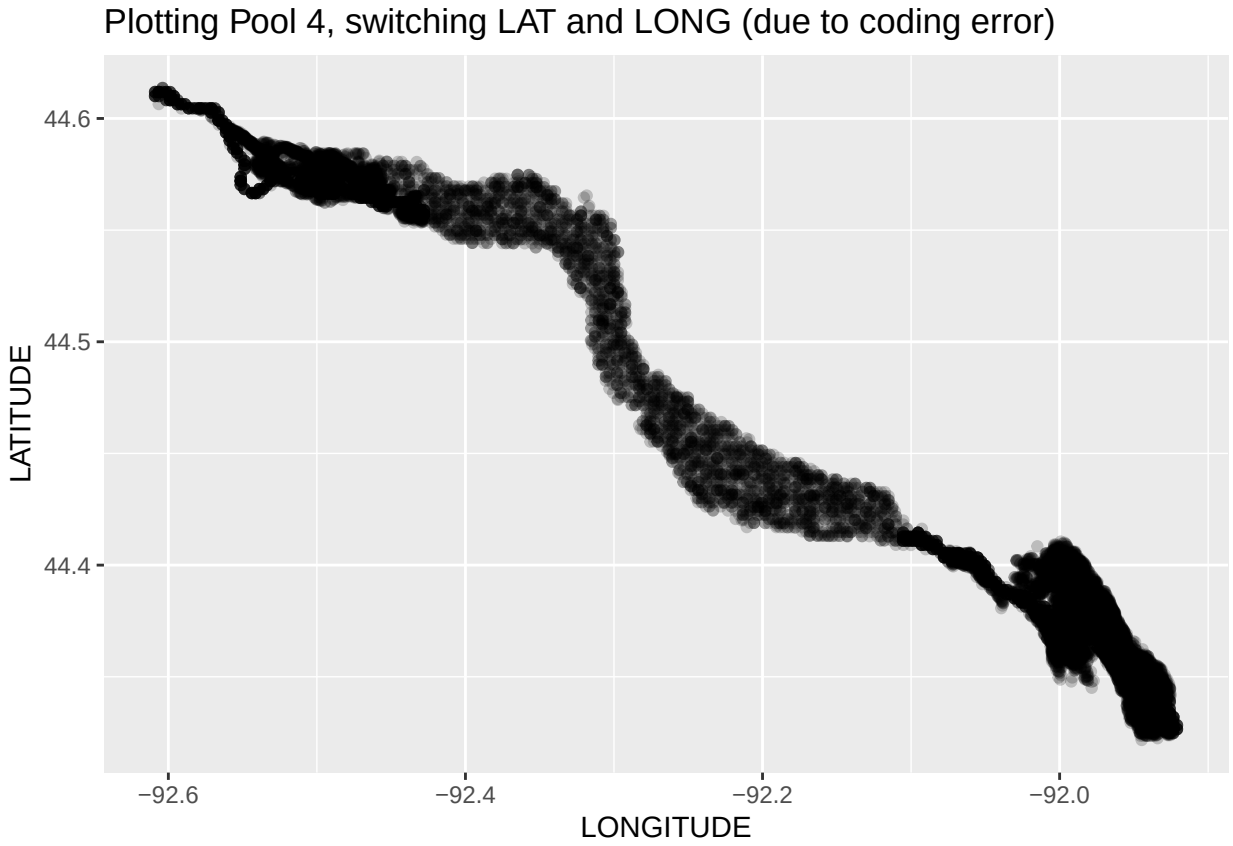
```
water20 %>% distinct(STRATUM)
```

```
##                                       STRATUM
## 1                                Main channel
## 2                                Side channel
## 3 Backwater area contiguous to the main channel
## 4                      Lake Pepin or Swan Lake
## 5                                   Impounded
## 6                                    Isolated
## 7           Unexploded Ordinance Area - Pool 13
```

```
water20 %>%
  filter(FLDNUM == "Lake City, MN") %>%
  ggplot(aes(x = LATITUDE, y = LONGITUDE)) +
  geom_point(alpha = 0.2) +
  ggtitle("Plotting Pool 4, as is")
```

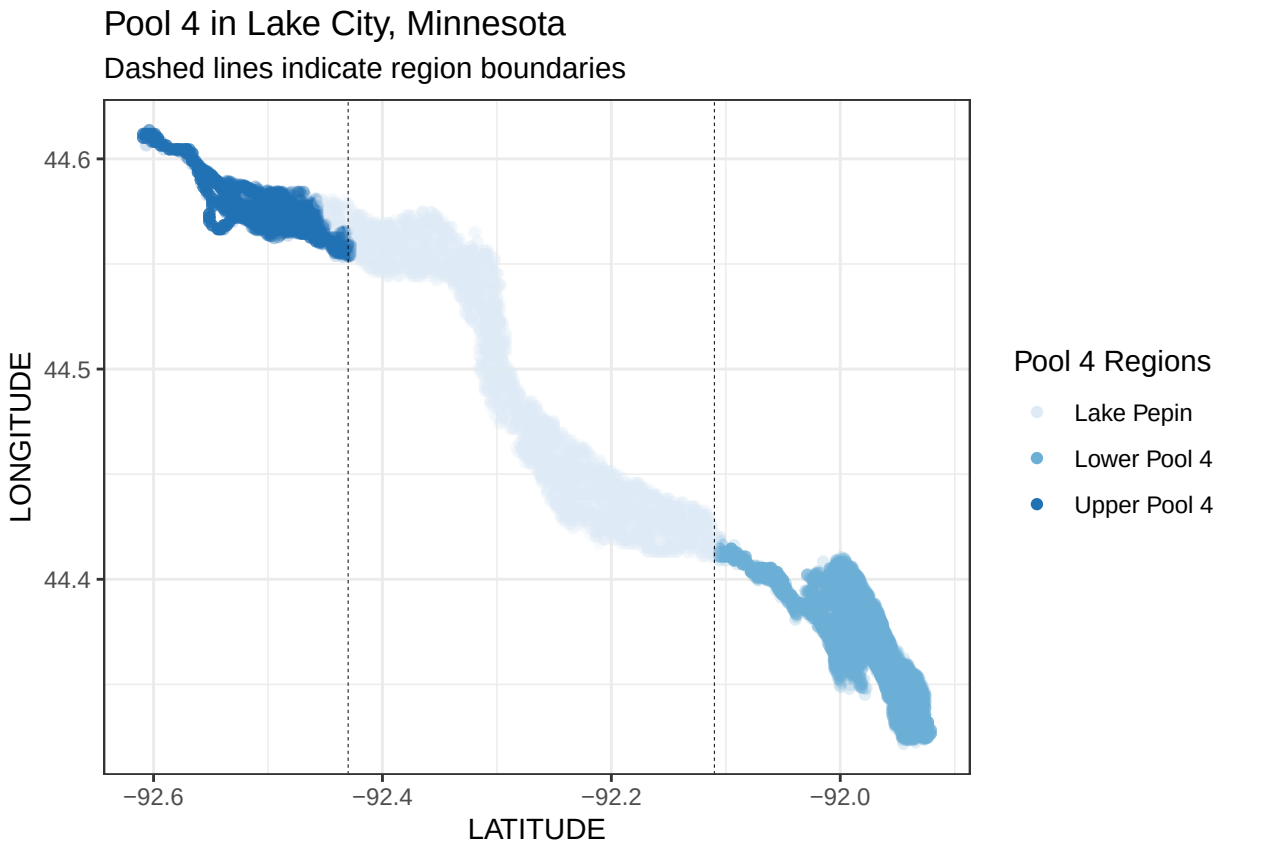



```
water20 %>%
  filter(FLDNUM == "Lake City, MN") %>%
  ggplot(aes(x = LONGITUDE, y = LATITUDE)) +
  geom_point(alpha = 0.2) +
  ggtitle("Plotting Pool 4, switching LAT and LONG (due to coding error)")
```



This is correct.

```
water20 %>%
  filter(FLDNUM == "Lake City, MN") %>%
  mutate(wrong_long = LONGITUDE,
         wrong_lat = LATITUDE,
         LONGITUDE = wrong_lat,
         LATITUDE = wrong_long,
         `Pool 4 Regions` = case_when(LATITUDE <= -92.4 & STRATUM != "Lake Pepin or Swan Lake" ~
                                        "Upper Pool 4",
                                      LATITUDE >=  -92.11 & STRATUM != "Lake Pepin or Swan Lake" ~
                                        "Lower Pool 4",
                                      TRUE ~ "Lake Pepin")) %>%
  ggplot(aes(x = LATITUDE, y = LONGITUDE)) +
  geom_point(aes(color = `Pool 4 Regions`), alpha = 0.2) +
  scale_color_manual(values = blue_pal) +
  geom_vline(aes(xintercept = -92.11), linetype = "dashed", size = 0.15) +
  geom_vline(aes(xintercept = -92.43), linetype = "dashed", size = 0.15) +
  ggtitle("Pool 4 in Lake City, Minnesota",
          subtitle = "Dashed lines indicate region boundaries") +
  guides(colour = guide_legend(override.aes = list(alpha = 1))) +
  # scale_x_continuous(limits = c(91.8, 92.65)) +
  # scale_y_continuous(limits = c(-44.65, -44.3)) +
  theme_bw()
```




```
ggsave("Pool 4 Splitting.png", width = 8, height = 6)
```