

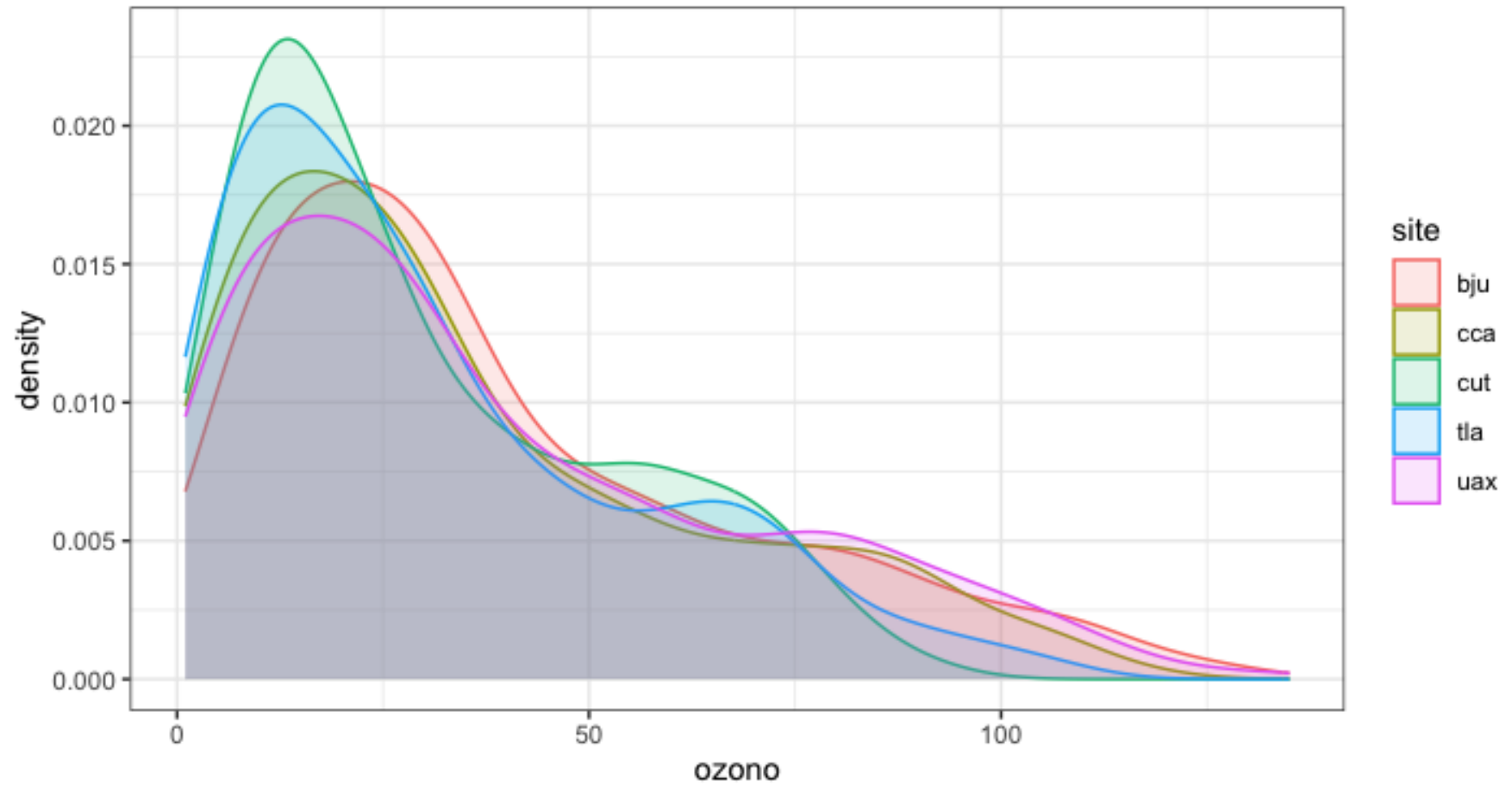
Tidyverse {ggplot2} parte 2

José Luis Texcalac Sangrador

Procesamiento y visualización de datos espaciales en R



```
ggplot(ozono_l) +  
  geom_density(aes(ozono, color = site, fill = site), alpha = 0.15) +  
  theme_bw()
```





```
ggplot(ozono_l) +
```

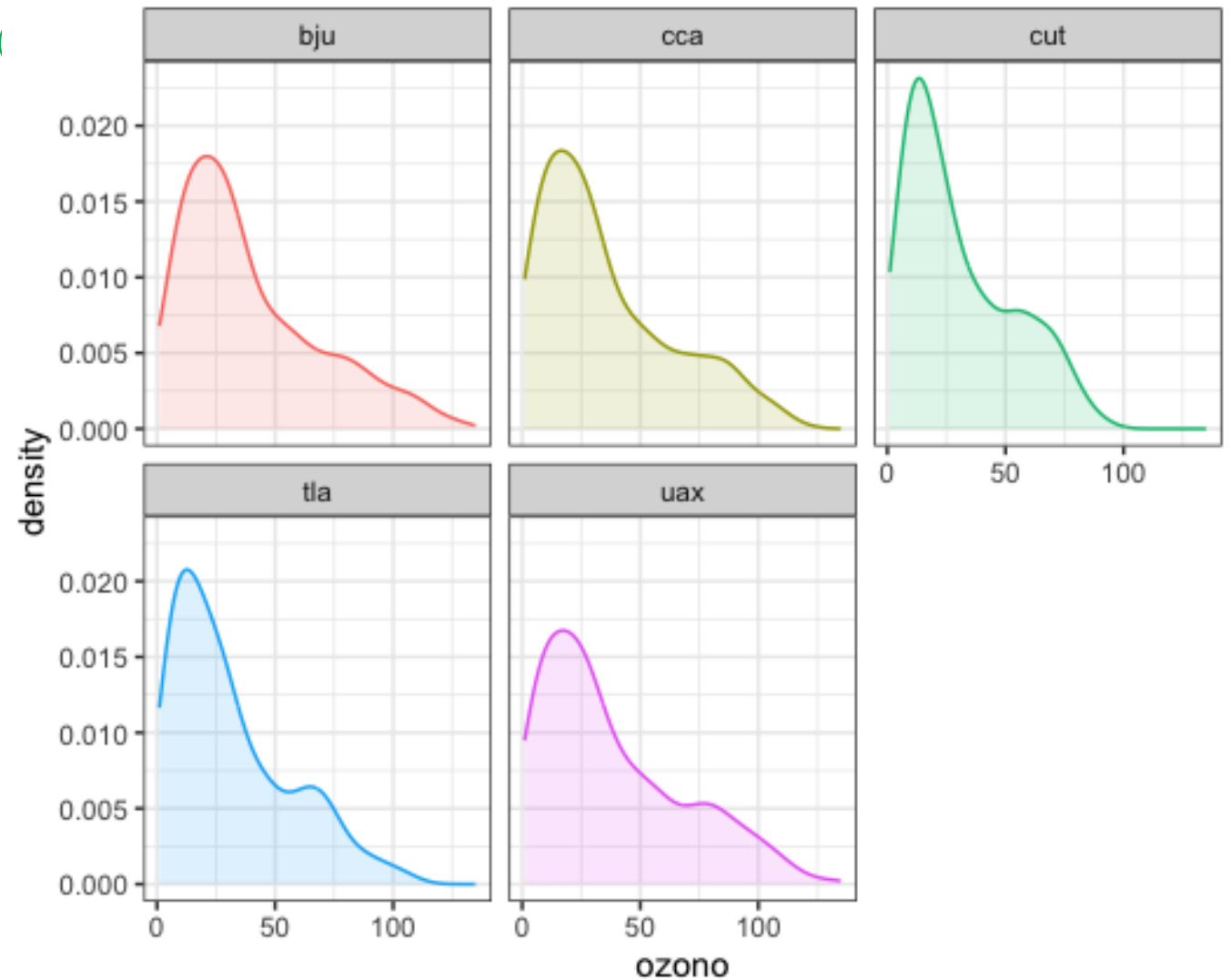
```
  geom_density(aes(ozono, color = site, fill = site), alpha = 0.15) +
```

```
  facet_wrap(vars(site)) +
```

```
  theme_bw() +
```

```
  theme(legend.position = "none",
```

```
        strip.text = element_text(
```





ozono_l %>%

group_by(date, site) %>%

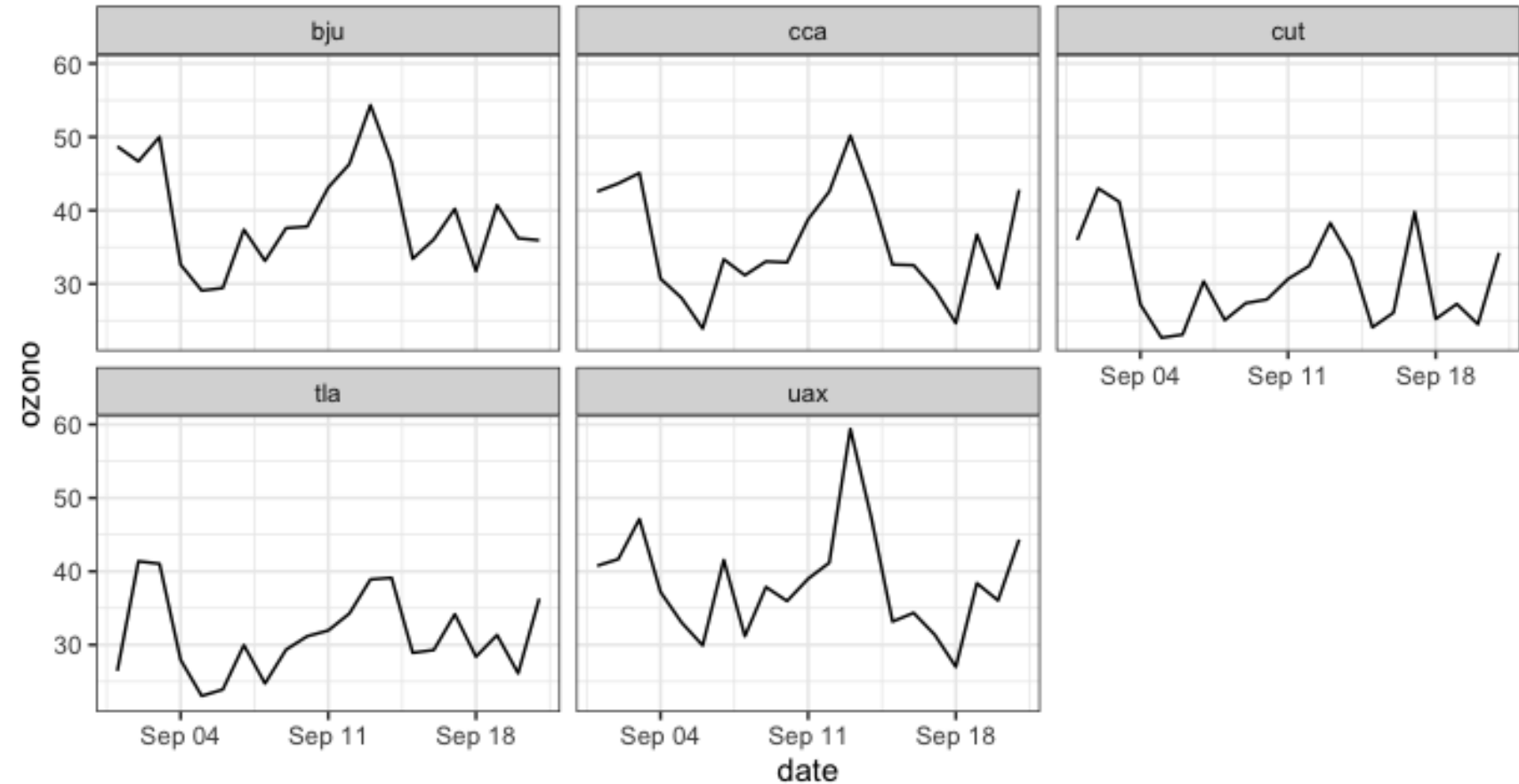
summarise(ozono = mean(ozono, na.rm = TRUE)) +

ggplot() +

geom_line(aes(date, ozono)) +

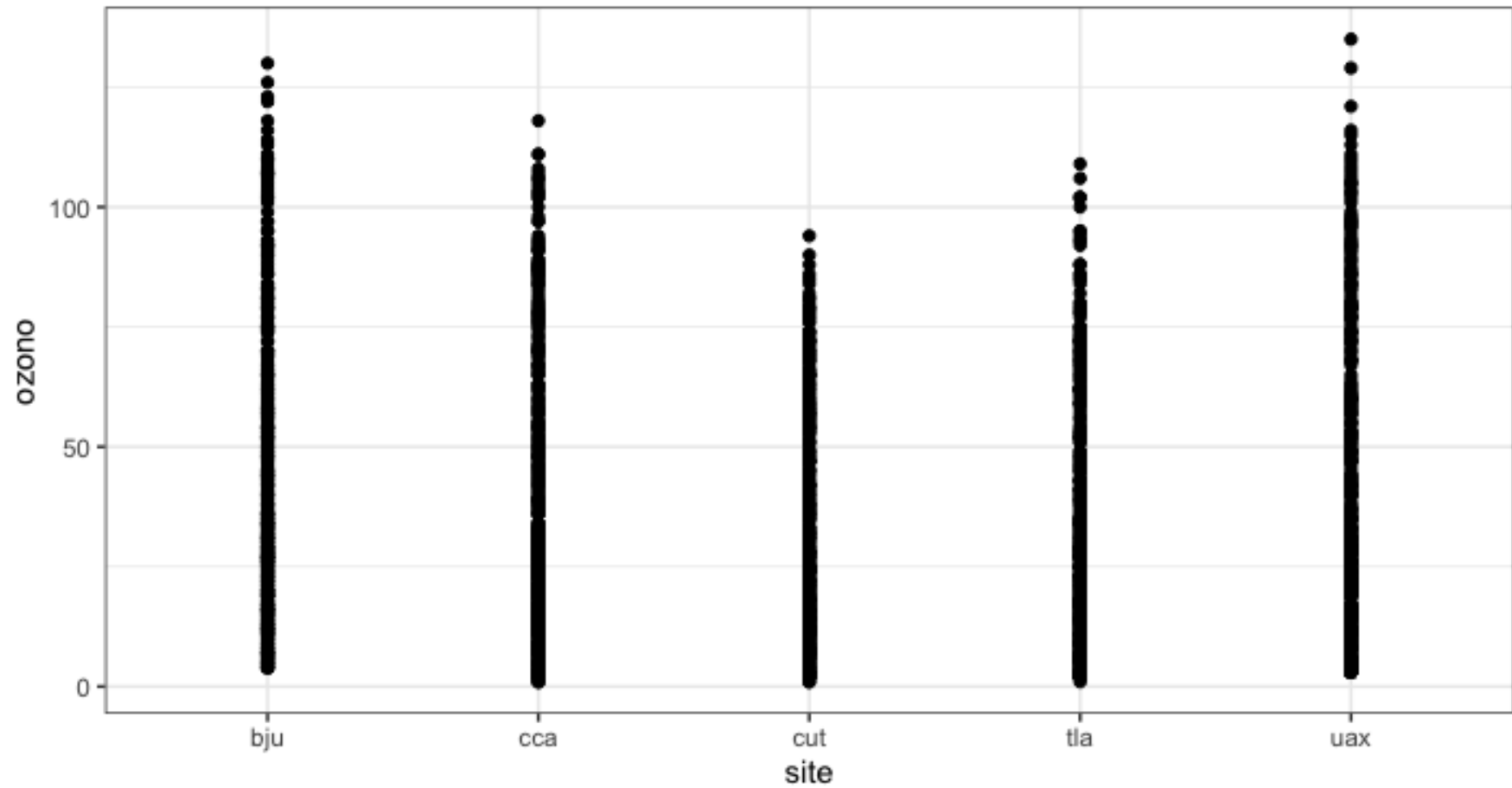
facet_wrap(vars(site)) +

theme_light()



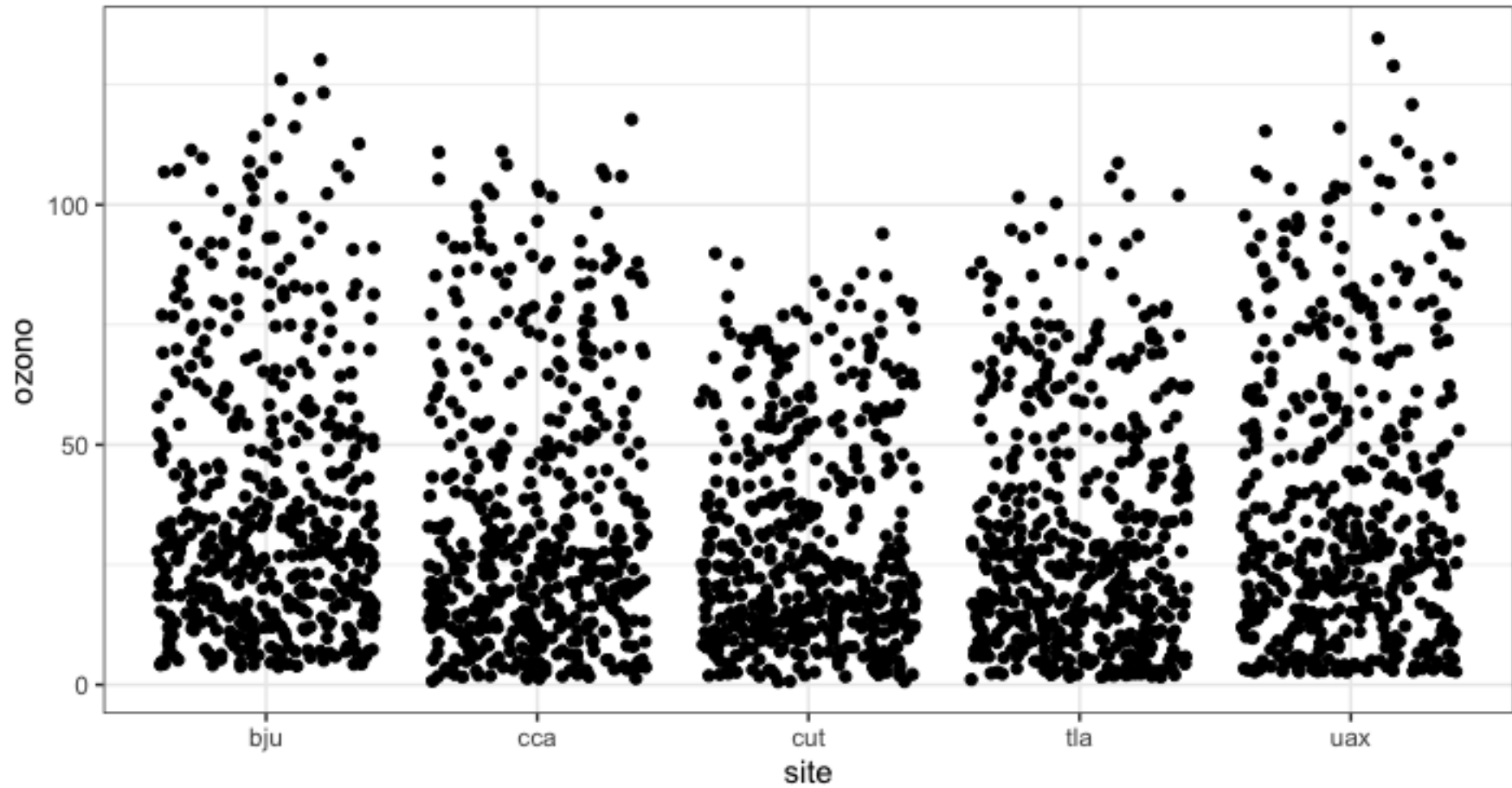


```
ggplot(ozono_l) +  
  geom_point(aes(site, ozono)) +  
  theme_bw()
```



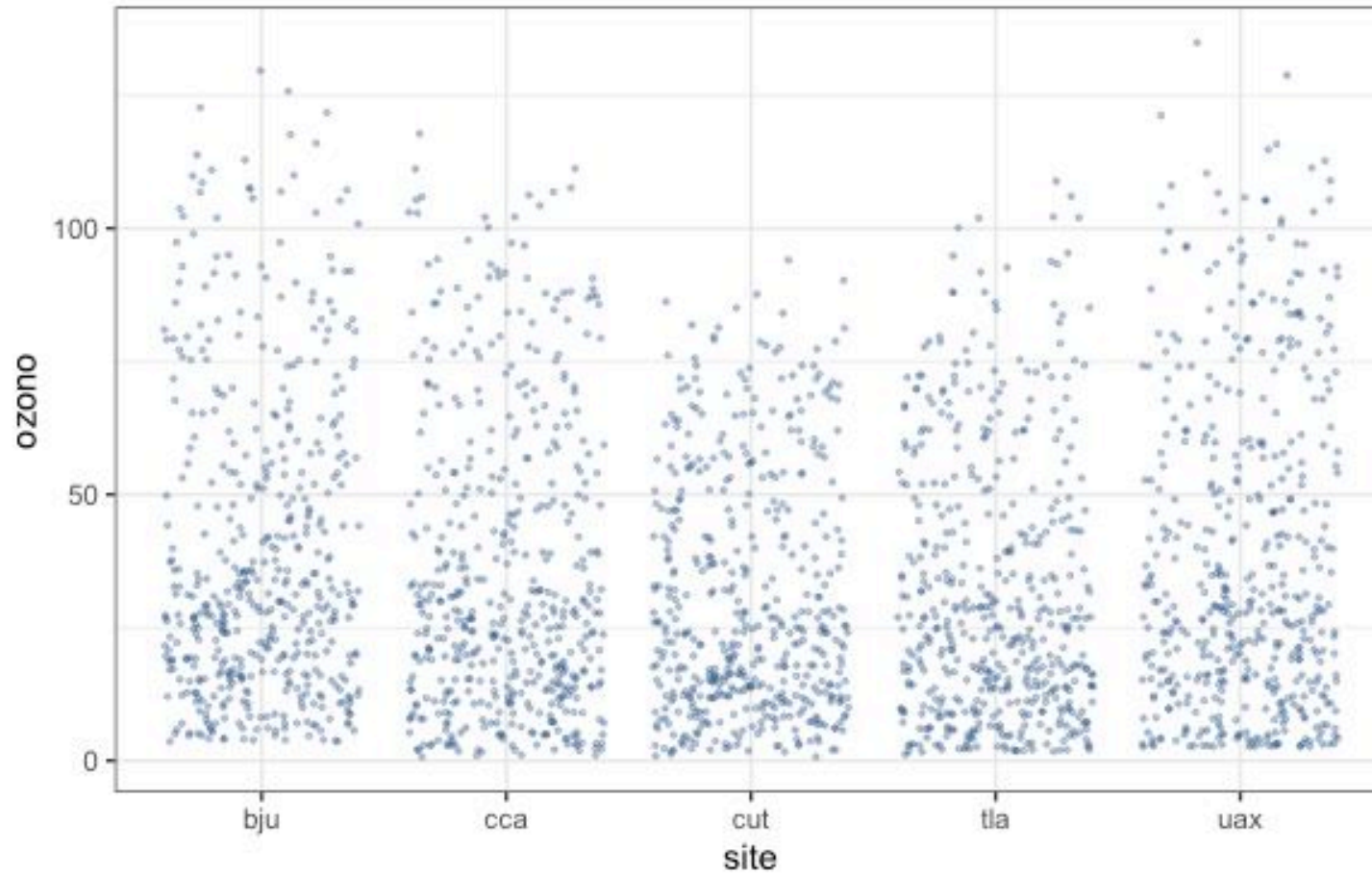


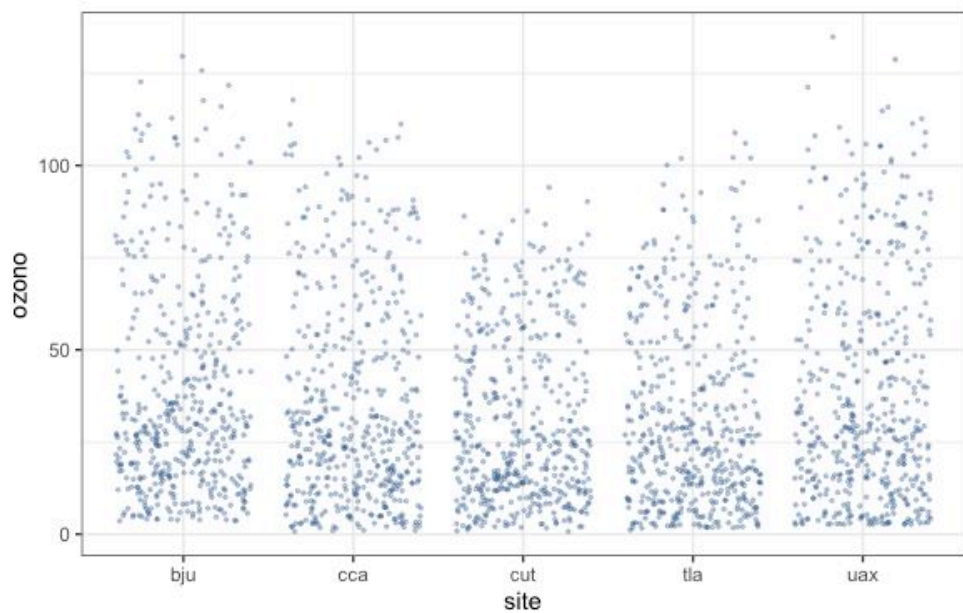
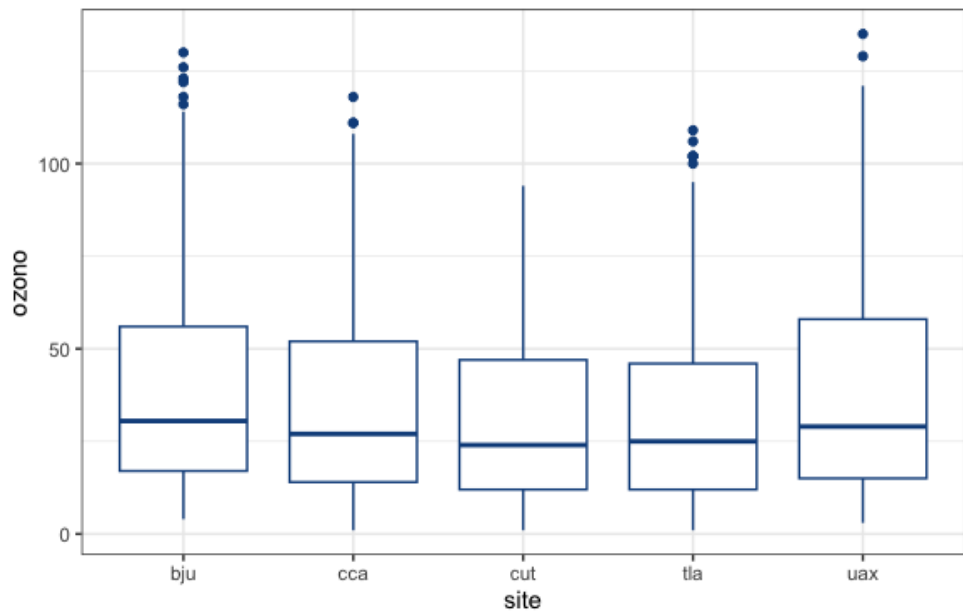
```
ggplot(ozono_l) +  
  geom_jitter(aes(site, ozono)) +  
  theme_bw()
```



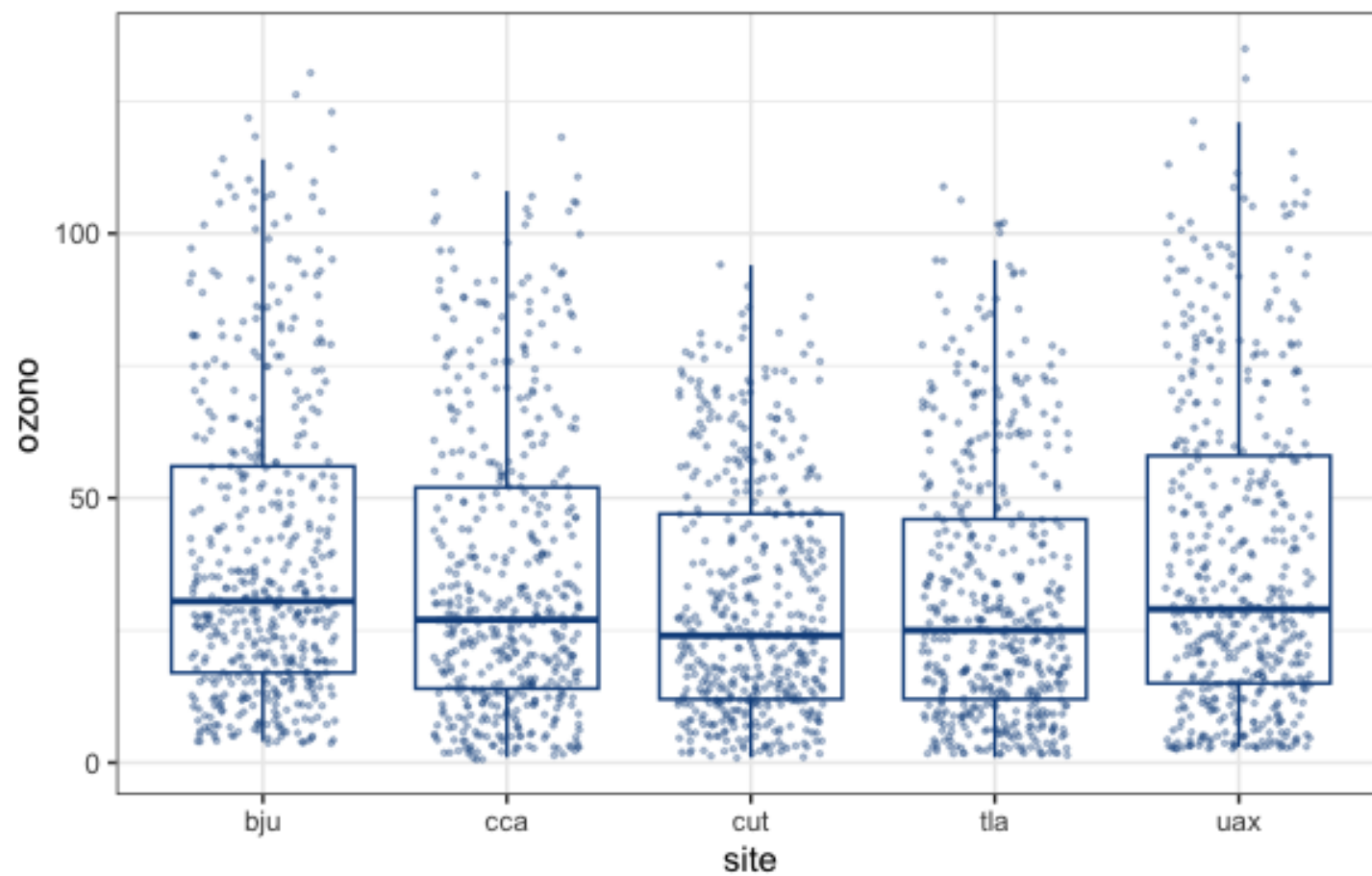


```
ggplot(ozono_l) +  
  geom_jitter(aes(site, ozono), size = 0.5, color = "dodgerblue4", alpha = 0.3) +  
  theme_bw()
```

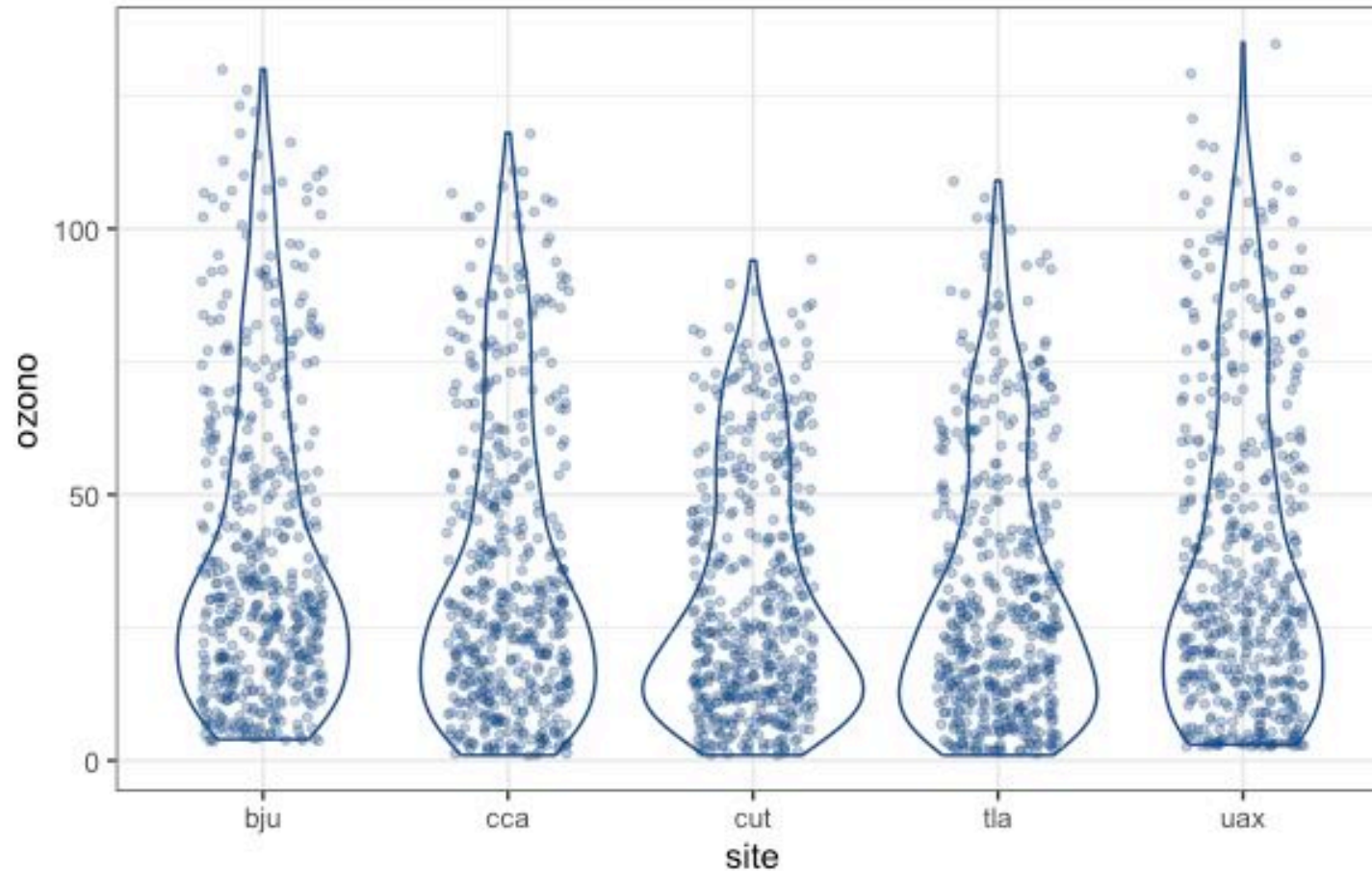




```
ggplot(ozono_l) +
  geom_boxplot(aes(site, ozono), color = "dodgerblue4", outlier.shape = NA) +
  geom_jitter(aes(site, ozono), size = 0.5, color = "dodgerblue4", alpha = 0.3) +
  theme_bw()
```




```
ggplot(ozono_l) +  
  geom_violin(aes(site, ozono), fill = "transparent",  
              color = "firebrick1", linewidth = 0.5, draw_quantiles = c(0.5)) +  
  geom_jitter(aes(site, ozono), size = 0.5, color = "dodgerblue4", alpha = 0.3) +  
  theme_bw()
```

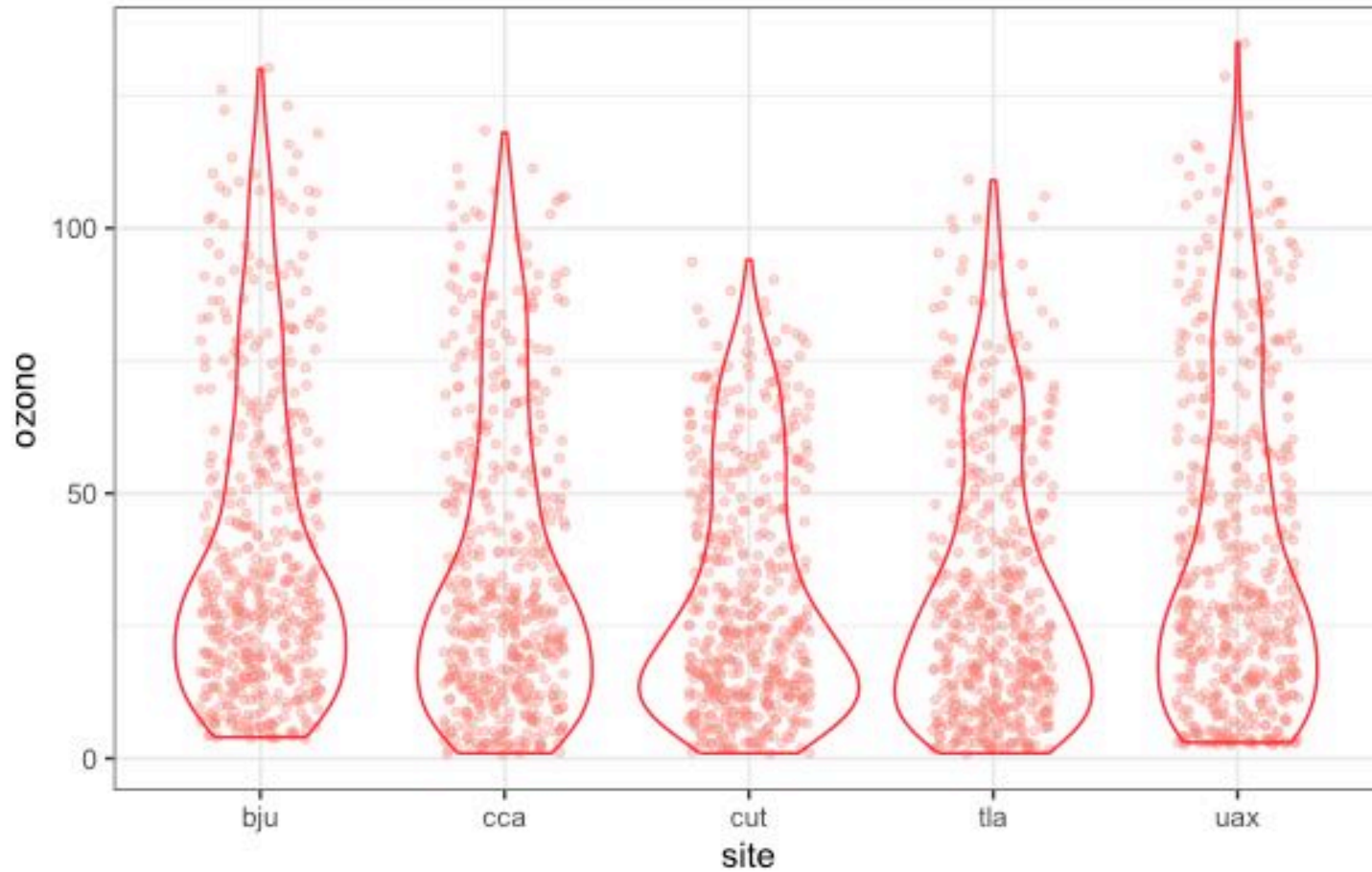


```
ggplot(ozono_l) +
```

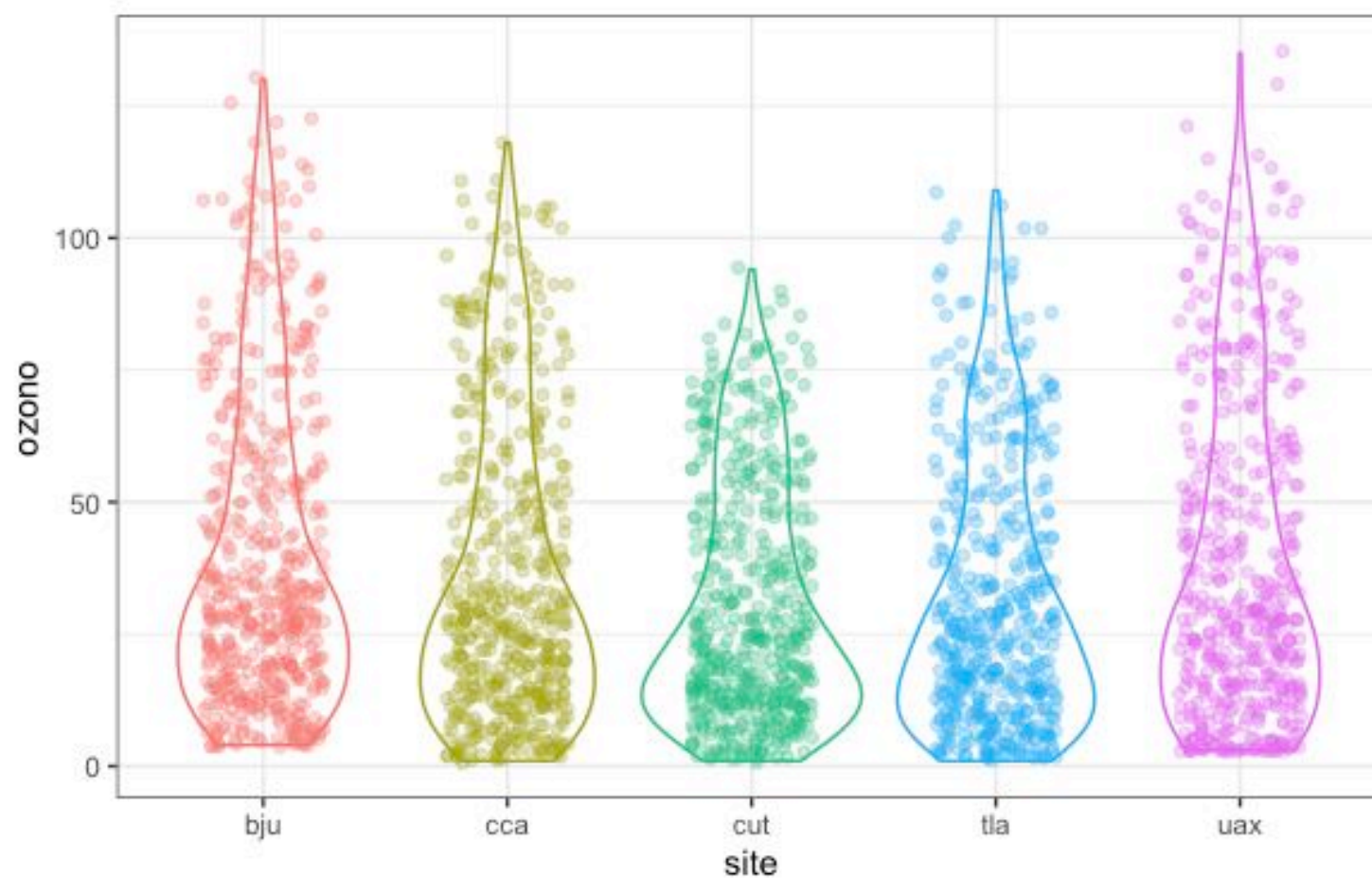
```
  geom_jitter(aes(site, ozono), color = "salmon", size = 1, alpha = 0.5, width = 0.25) +
```

```
  geom_violin(aes(site, ozono), fill = "transparent", color = "firebrick1", linewidth = 0.5, draw_quantiles = c(0.5)) +
```

```
  theme_bw()
```

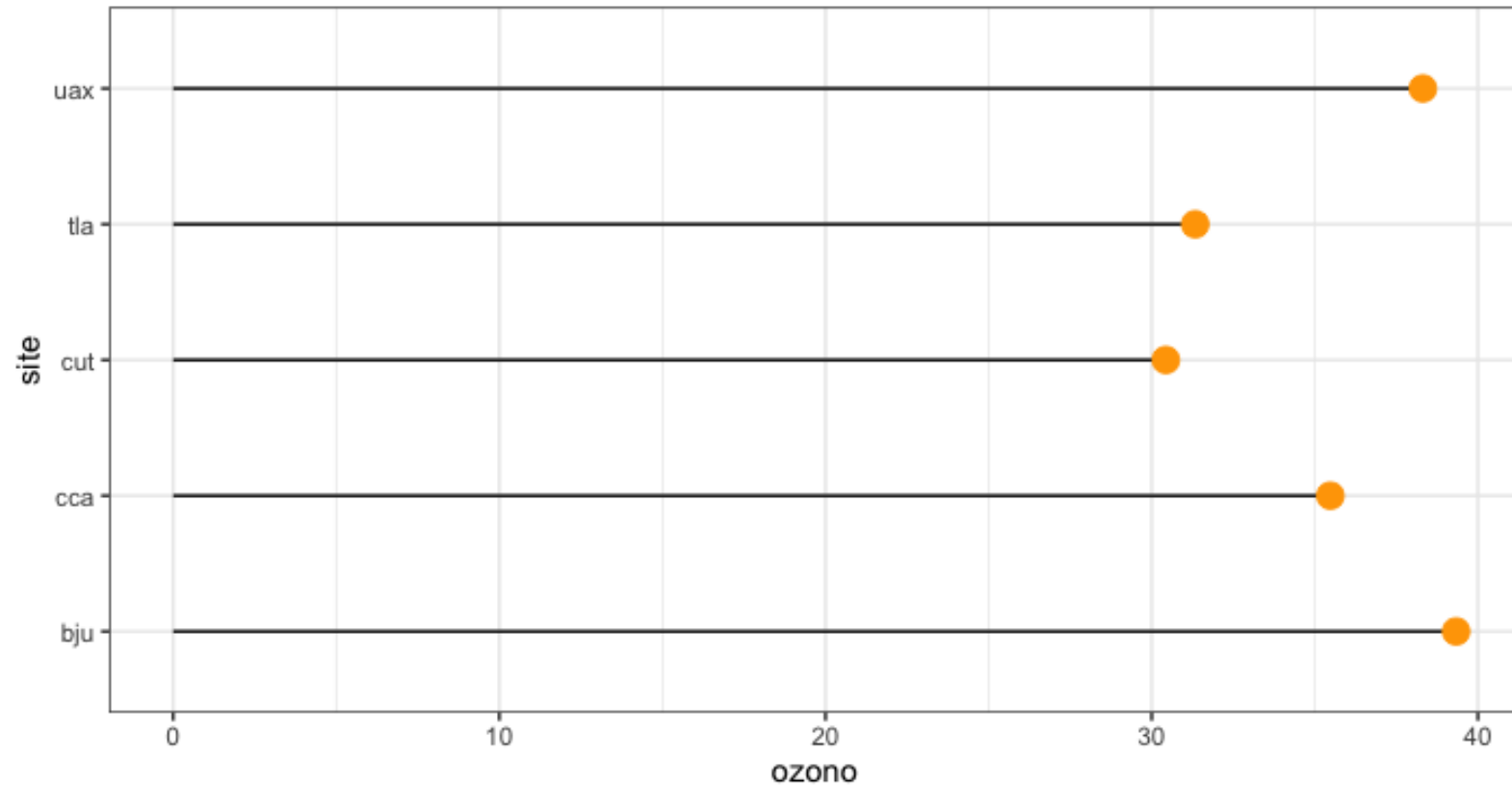


```
ggplot(ozono_l) +  
  geom_jitter(aes(site, ozono, color = site), alpha = 0.3, width = 0.25) +  
  geom_violin(aes(site, ozono, color = site), fill = "transparent",) +  
  theme_bw() +  
  theme(legend.position = "none")
```





```
ozono_l %>%  
  group_by(site) %>%  
  summarise(ozono = mean(ozono, na.rm = TRUE)) %>%  
  ggplot(aes(site, ozono)) +  
  geom_segment(aes(xend = site, yend = 0)) +  
  geom_point(size = 4) +  
  coord_flip() +  
  theme_bw()
```





Su turno...

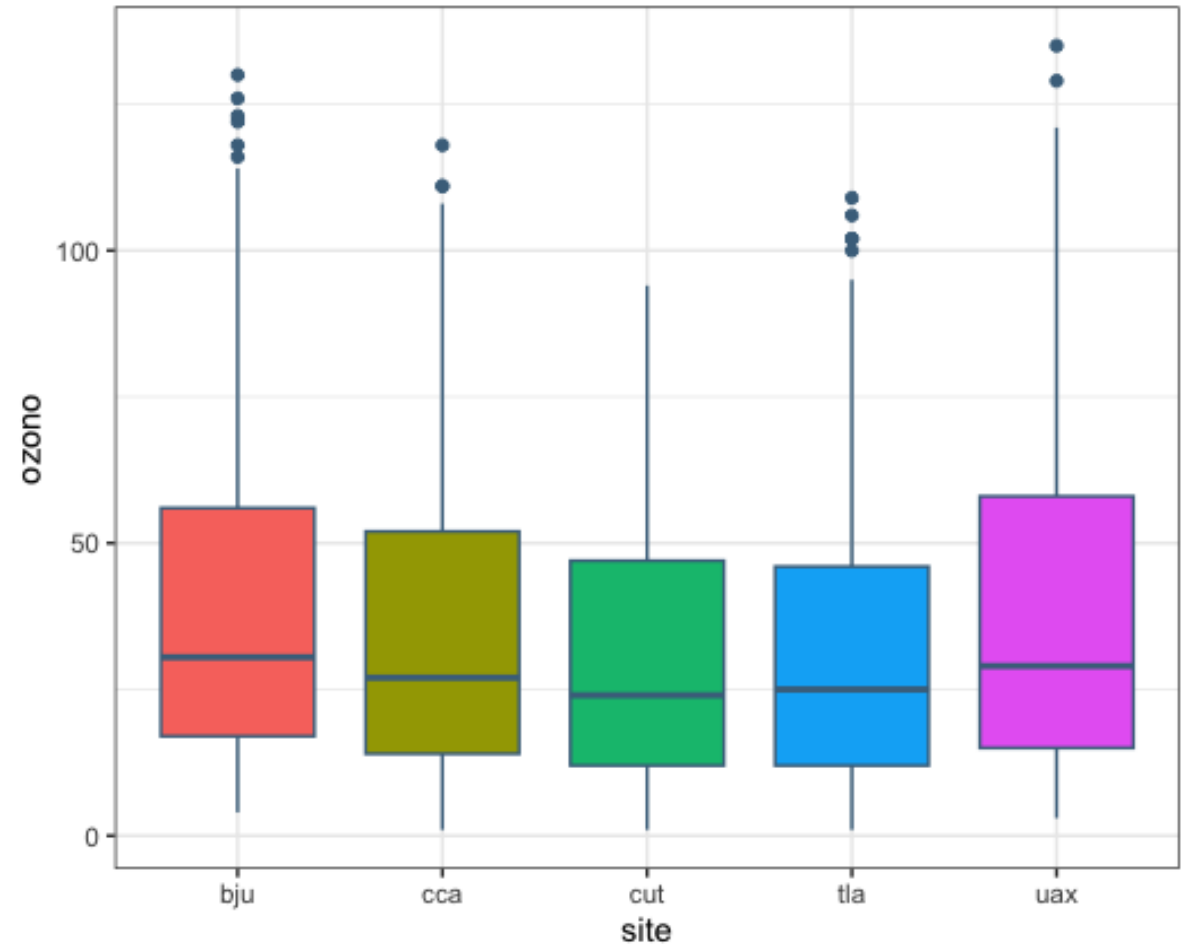
- Importe la malla `pm25_zmvm_2019.rds` y guarde el objeto como `pm25_w`.
- Transforme a formato long, guarde el resultado como `pm25_l`, nombre una columna `site` para estaciones y `pm25` para el contaminante.
- Genere un gráfico con geometría boxplot, debe mostrar una caja por cada estación de monitoreo, editelo a su gusto.
- Genere un gráfico que incluya las geometrías de violín y jitter que muestre los datos de cada estación de monitoreo.
- Genere un gráfico que muestre la tendencia de la concentración de $PM_{2.5}$ por estación de monitoreo (use facet).
- Genere un gráfico que muestre la tendencia de la concentración promedio de $PM_{2.5}$ de todas las estaciones.





```
ggplot(data = ozono_l) +  
  geom_boxplot(aes(site, ozono, fill = site), color = "skyblue4") +  
  theme_bw() +  
  theme(legend.position = "none")
```

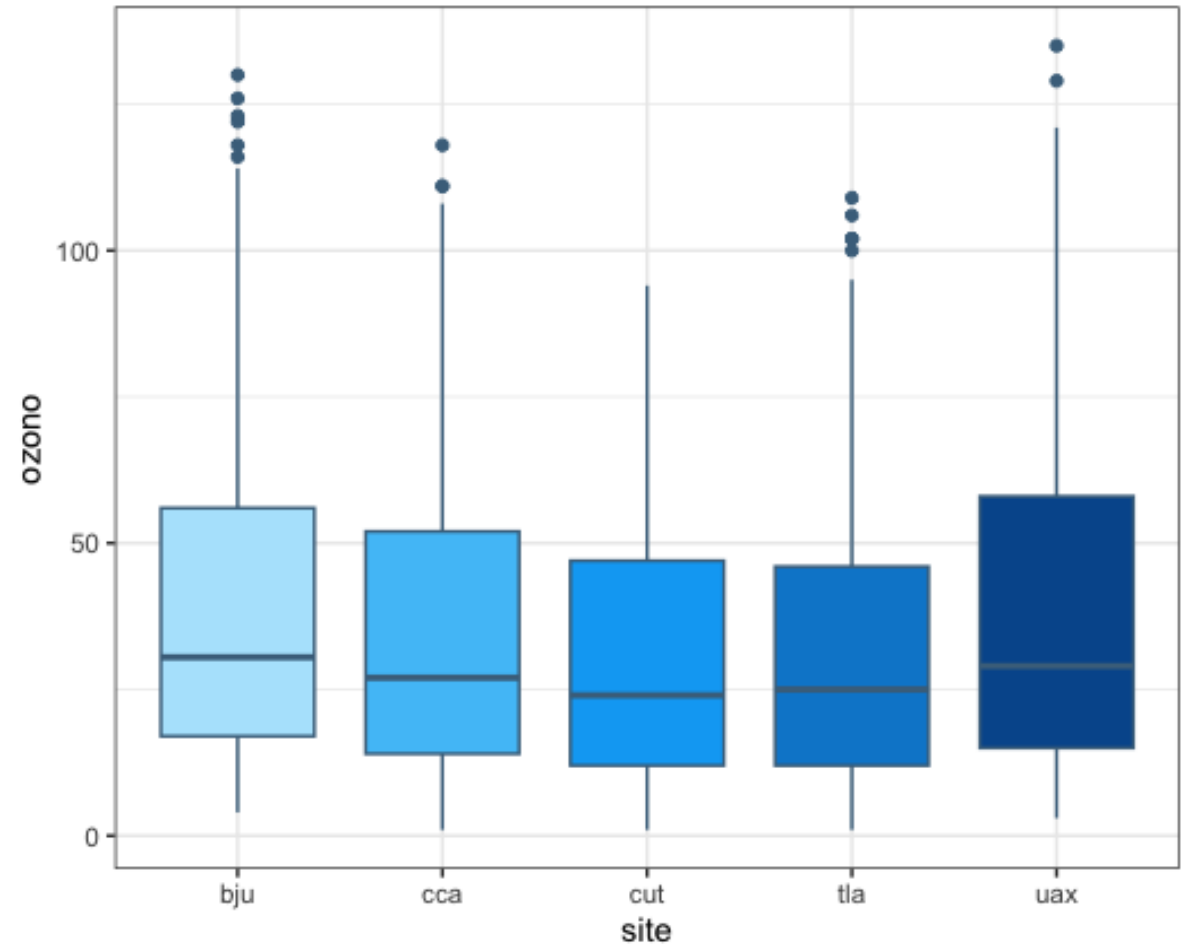
Seleccionar colores
de forma manual





```
ggplot(data = ozono_l) +  
  geom_boxplot(aes(site, ozono, fill = site), color = "skyblue4") +  
  scale_fill_manual(values = c("#B3E5FC", "#4FC3F7", "#03A9F4", "#0288D1", "#01579B")) +  
  theme_bw() +  
  theme(legend.position = "none")
```

Seleccionar colores
de forma manual

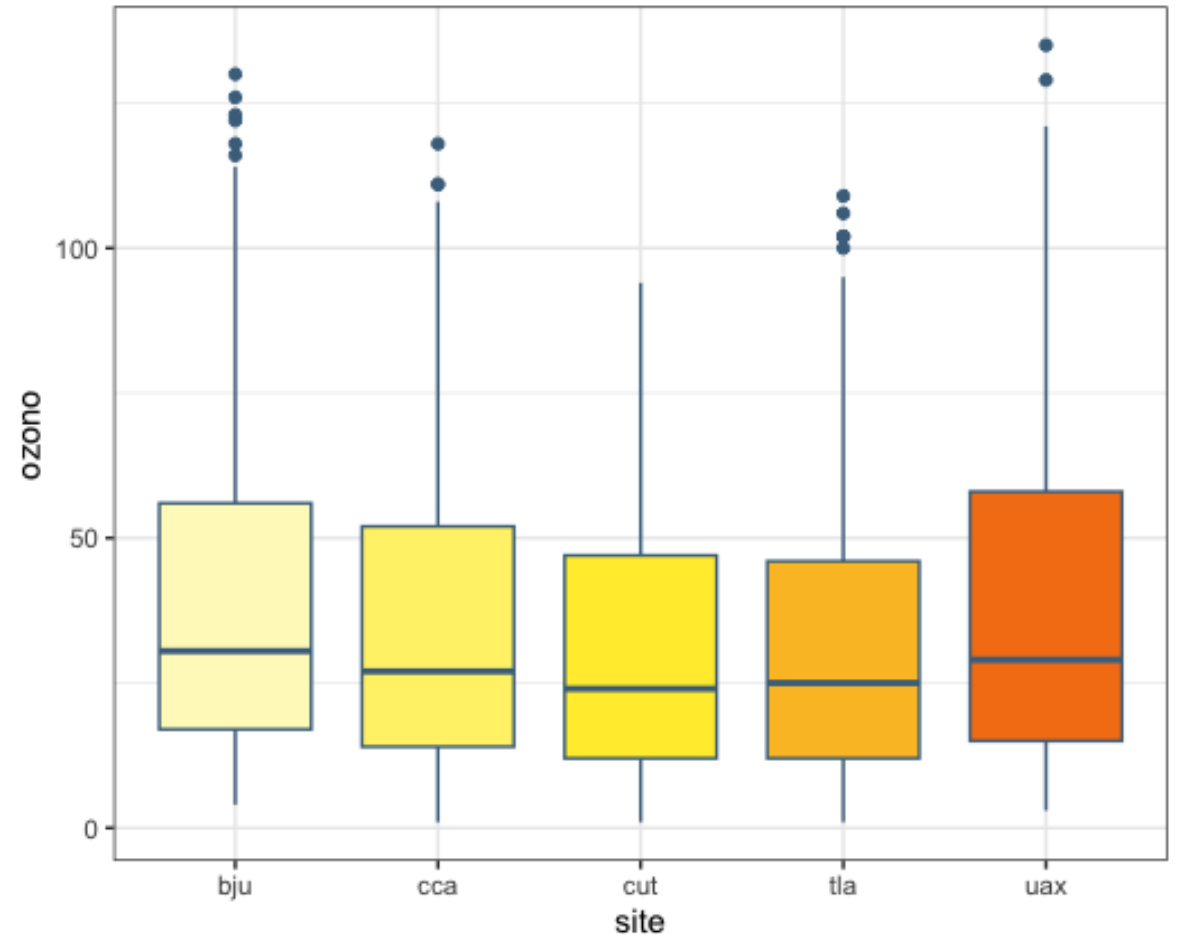




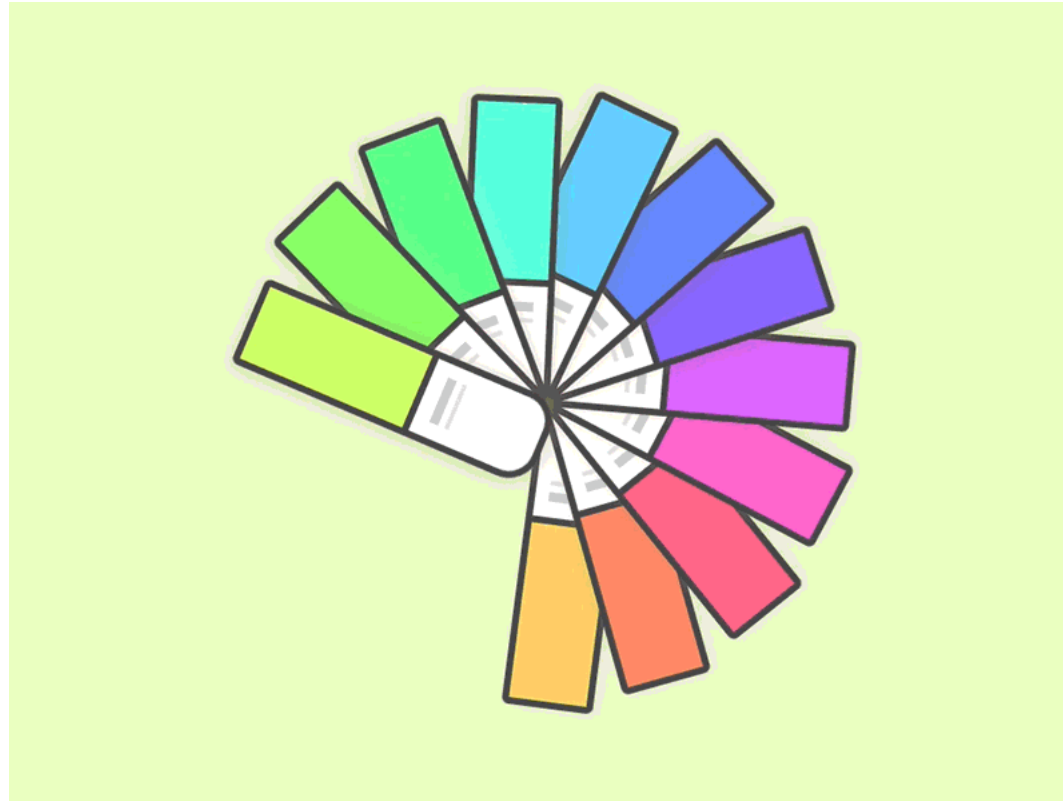
```
colores_pal <- c("#FFF9C4", "#FFF176", "#FFEB3B", "#FBC02D", "#F57F17")
```

```
ggplot(data = ozono_l) +  
  geom_boxplot(aes(site, ozono, fill = site), color = "skyblue4") +  
  scale_fill_manual(values = colores_pal) +  
  theme_bw() +  
  theme(legend.position = "none")
```

Seleccionar colores
de forma manual



Paletas de colores



<https://r-charts.com/color-palettes/>



Rcolorbrewer

```
install.packages("RColorBrewer")
```

```
library(RColorBrewer)
```

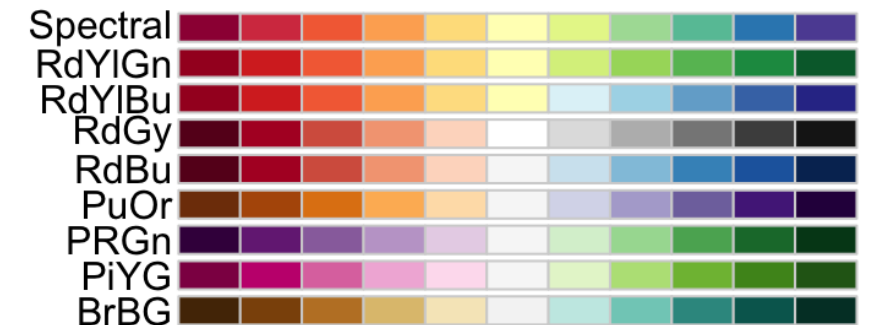
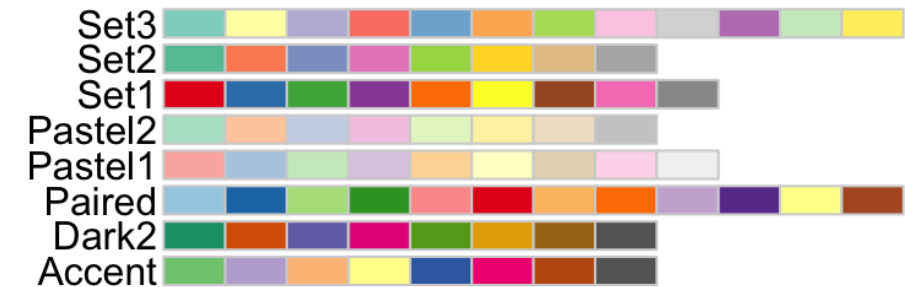
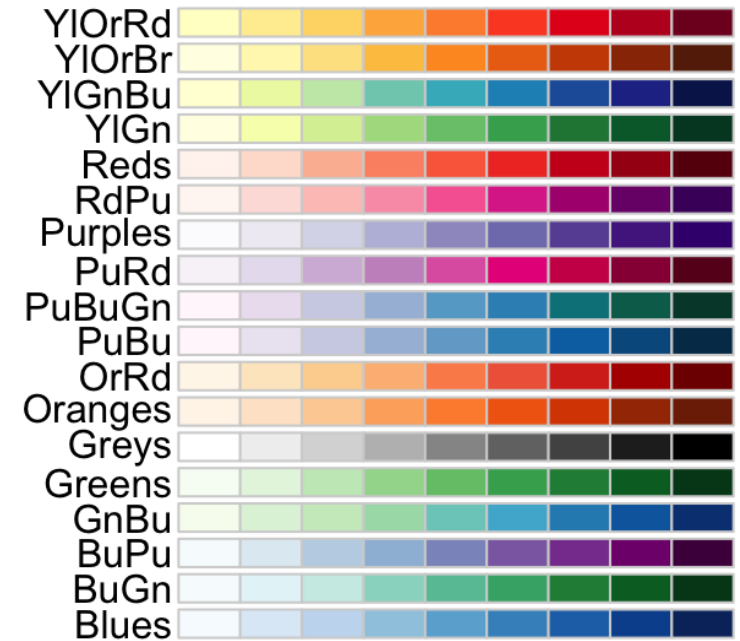
```
display.brewer.all()
```

Para box plot, bar plot, violin plot, dot plot, etc.

```
scale_fill_brewer(palette = "Set2")
```

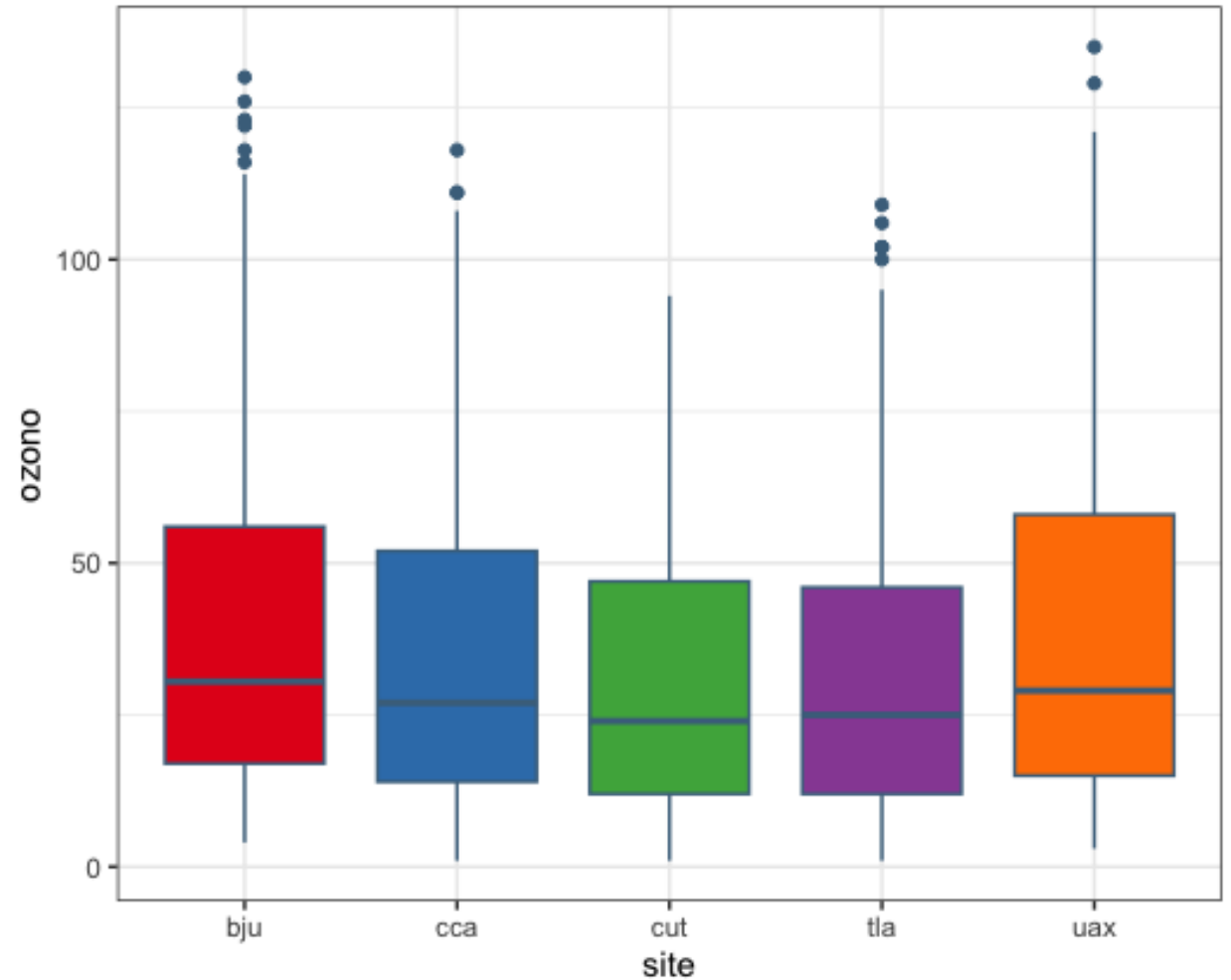
Para líneas y puntos

```
scale_color_brewer(palette = "Set2")
```





```
ggplot(data = ozono_l) +  
  geom_boxplot(aes(site, ozono, fill = site), color = "skyblue4") +  
  scale_fill_brewer(palette = "Set1") +  
  theme_bw() +  
  theme(legend.position = "none")
```





Viridis

```
install.packages("viridis")
```

```
library(viridis)
```

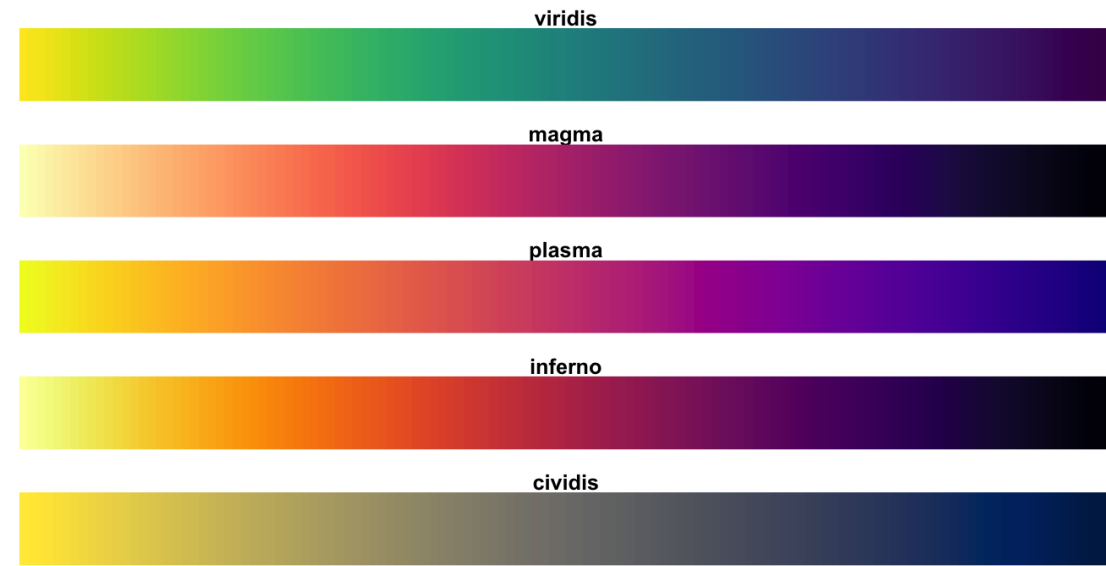
Para box plot, bar plot, violin plot, dot plot, etc.

```
scale_fill_viridis()
```

Para líneas y puntos

```
scale_color_viridis()
```

Paletas: "magma" ("A"), "inferno" ("B"), "plasma" ("C"), "viridis" ("D"), "cividis" ("E"), "rocket" ("F"), "mako" ("G"), "turbo" ("H")



#440154FF	#481A6CFF	#472F7DFF	#414487FF
#39568CFF	#31688EFF	#2A788EFF	#23888EFF
#1F988BFF	#22A884FF	#35B779FF	#54C568FF
#7AD151FF	#A5DB36FF	#D2E21BFF	#FDE725FF



```
ggplot(data = ozono_l) +  
  geom_boxplot(aes(site, ozono, fill = site), color = "skyblue4") +  
  scale_fill_viridis(option = "A", discrete = TRUE) +  
  theme_bw() +  
  theme(legend.position = "none")
```

