Data Visualizations and Analysis

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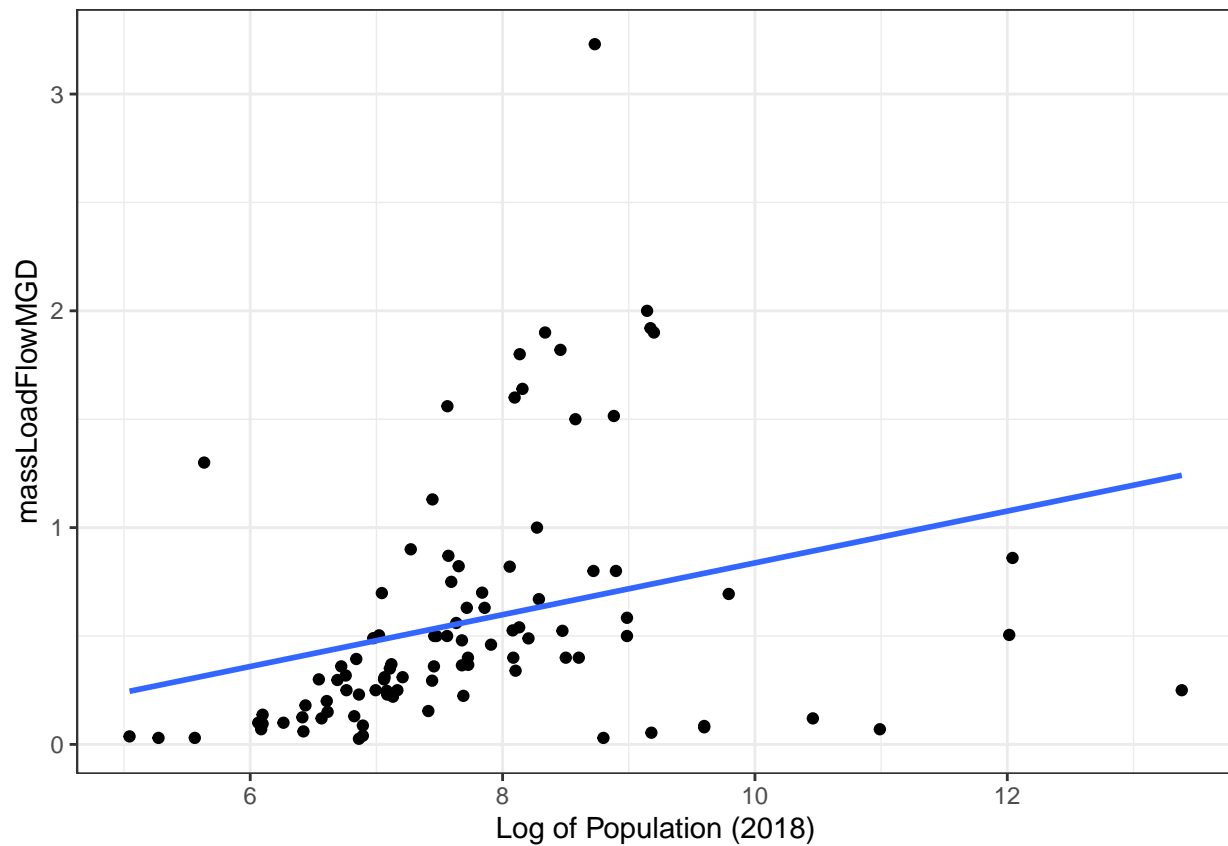
7/13/2020

```r
ggplot(working_df, aes(x = log(pop_2018), y = massLoadFlowMGD)) +
  geom_point() +
  geom_smooth(method = "lm", se = FALSE) +
  theme_bw() +
  labs(x = "Log of Population (2018)")
```

```
## `geom_smooth()` using formula 'y ~ x'
```

```
## Warning: Removed 17 rows containing non-finite values (stat_smooth).
```

```
## Warning: Removed 17 rows containing missing values (geom_point).
```
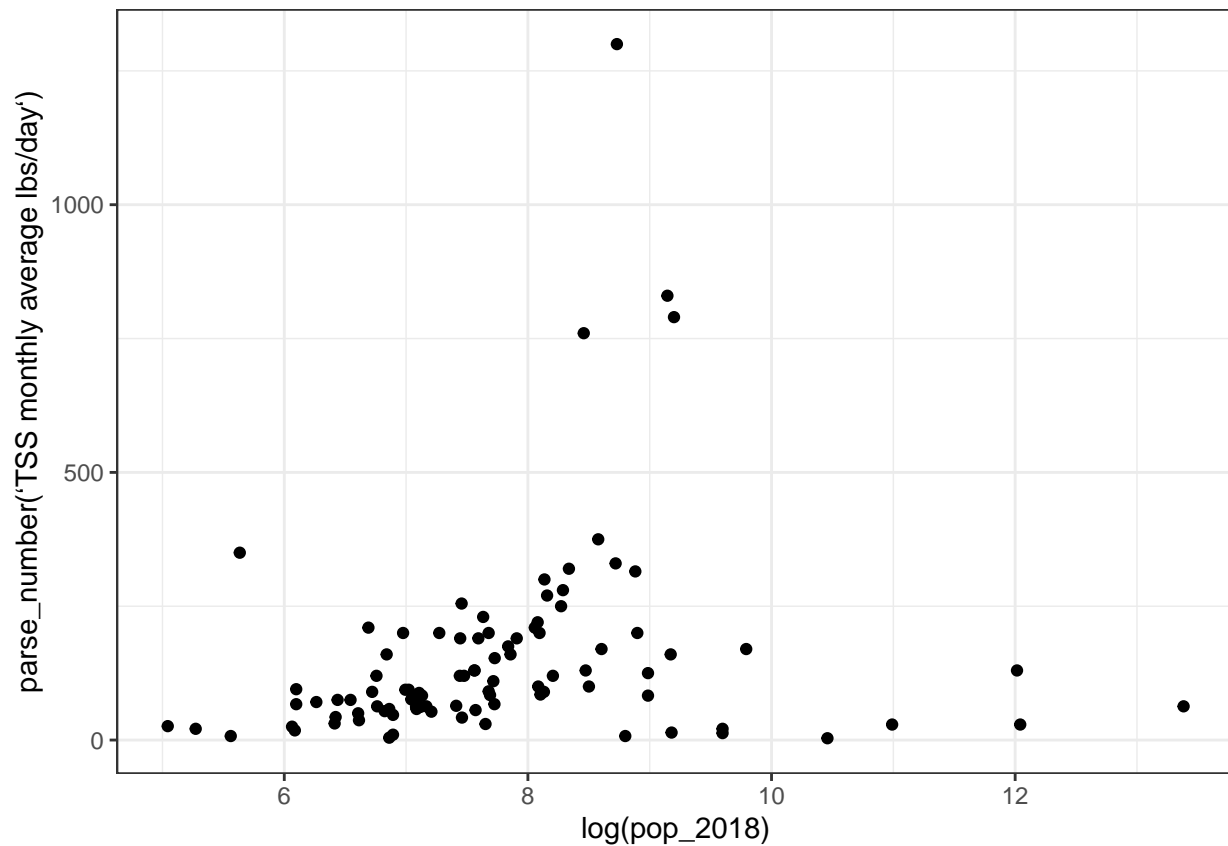
```
ggplot(working_df, aes(x = log(pop_2018),
                       y = parse_number('TSS monthly average lbs/day'))) +
  geom_point() +
  theme_bw()
```

```
## Warning: 2 parsing failures.
## row col expected actual
##  13  -- a number    na
##  45  -- a number    na
```

```
## Warning: 2 parsing failures.
## row col expected actual
##  13  -- a number    na
##  45  -- a number    na
```

```
## Warning: Removed 19 rows containing missing values (geom_point).
```



```
working_df %>%
  filter(type1 %in% c("lagoons", "activated sludge")) %>%
  group_by(type1) %>%
  summarize(median = median(pop_2018, na.rm = TRUE))
```

```
## 'summarise()' ungrouping output (override with '.groups' argument)
```

2

```
## # A tibble: 2 x 2
##   type1           median
##   <chr>            <dbl>
## 1 activated sludge  1962.
## 2 lagoons           1718.
```

```r
library(viridis)
```

```
## Loading required package: viridisLite
```

```r
working_df %>%
  ggplot(aes(x = Region.x,
             fill = type1)) +
  geom_bar(position = "fill") +
  scale_fill_viridis_d(option = "C", na.value = "grey50") +
  scale_x_discrete(labels=c("Eastern", "Northwest", "West")) +
  theme_bw() +
  labs(x = "Region",
       fill = "Main Type",
       y = "Proportion",
       title = "Rural WWTPs in Oregon by Type")
```
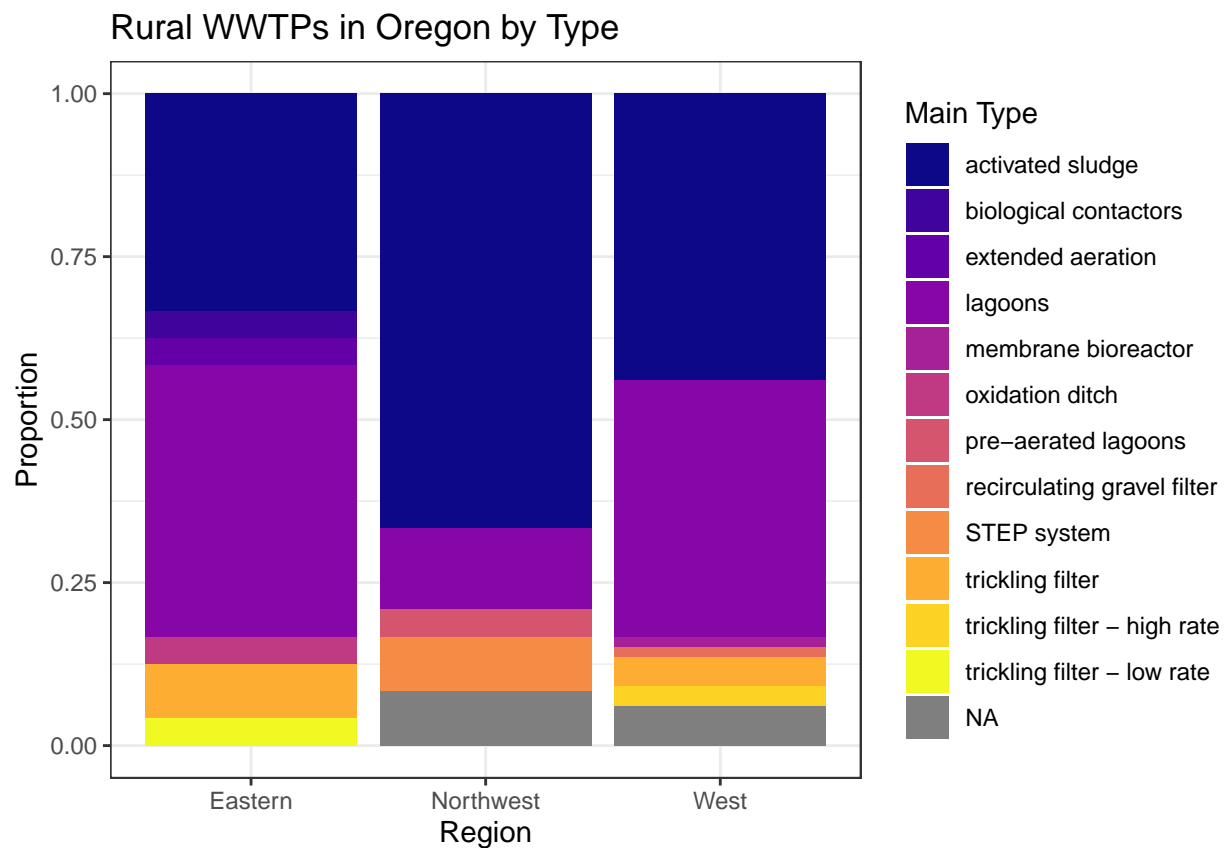


```r
working_df %>%
  filter(type2 != c("na", NA)) %>%
```

```
ggplot(aes(x = Region.x,
           fill = type2)) +
geom_bar(position = "fill") +
scale_fill_viridis_d(option = "C", na.value = "grey50") +
scale_x_discrete(labels=c("Eastern", "Northwest", "West")) +
theme_bw() +
labs(x = "Region",
     fill = "Secondary Type",
     y = "Proportion",
     title = "Rural WWTPs in Oregon by Secondary Type")
```


Rural WWTPs in Oregon by Secondary Type