Growth rates of PIT data from the Delaware River

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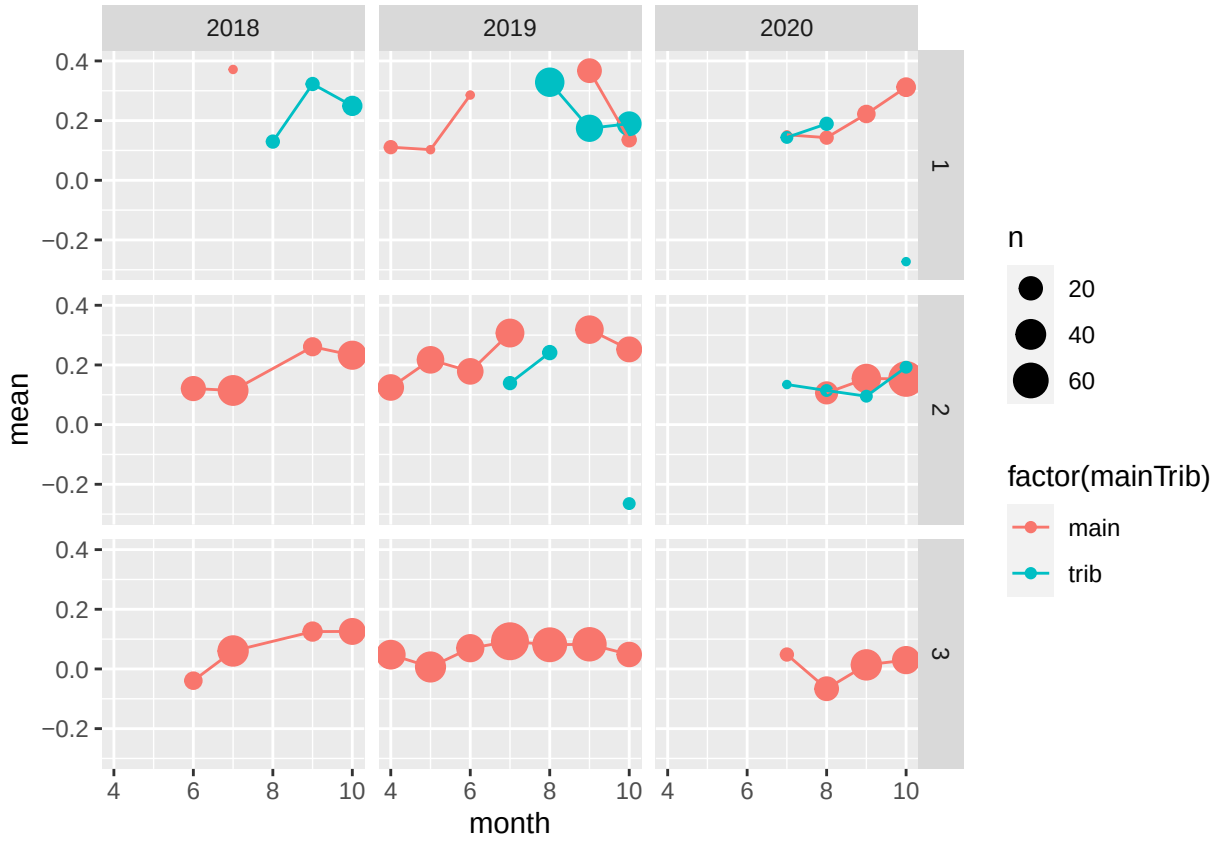
```
d <- tar_read(target_d)
eh <- tar_read(target_eh)
```

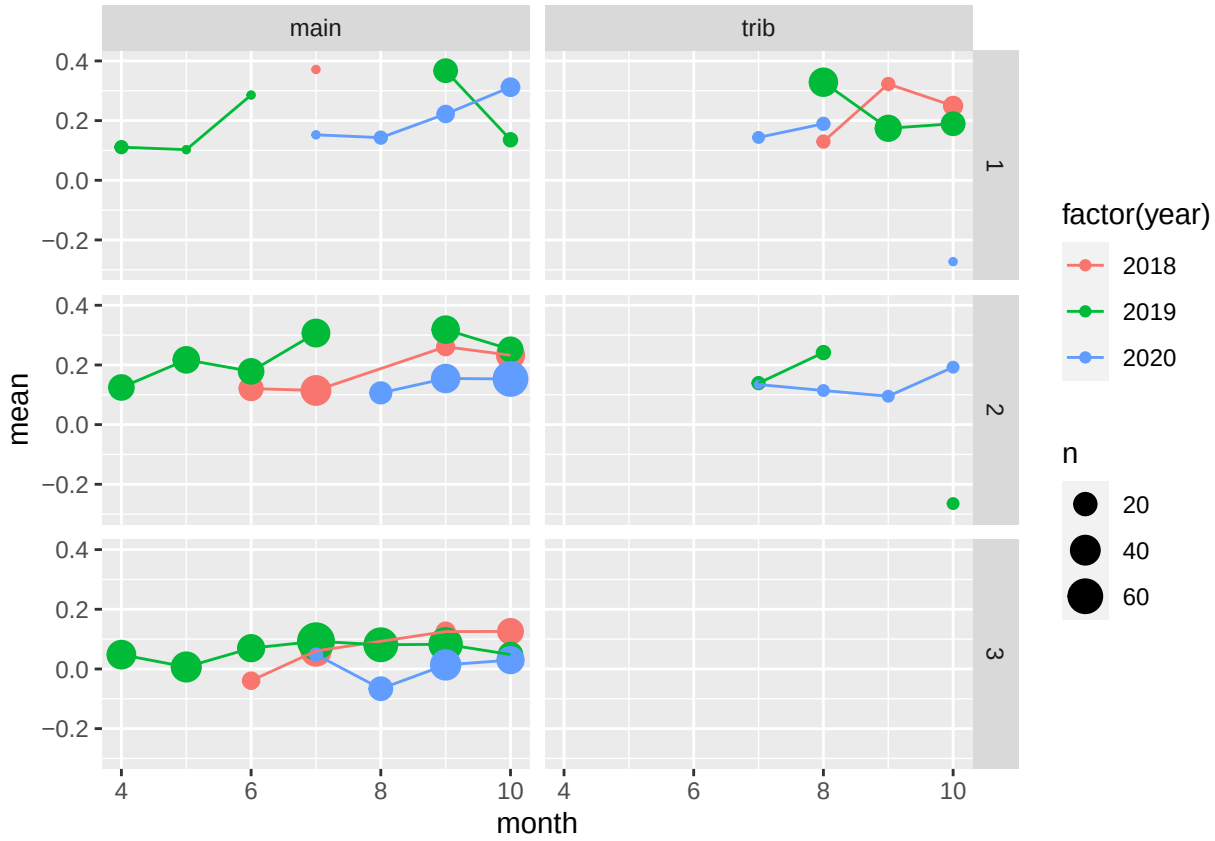
Add growth rate

```
d <- d %>%
  mutate(year = as.numeric(substr(dateYM, 1,4)),
         month = as.numeric(substr(dateYM, 6,7)))

d <- d %>%
  group_by(tag) %>%
  arrange(tag, date) %>%
  mutate(LengthLag = lag(Length),
         dateLag = lag(date),
         dateDiff = as.numeric(date - dateLag),
         growth = (Length - LengthLag) / dateDiff)
```

```
meanGrowth <- d %>%
  filter(dateDiff < 300) %>%
  group_by(mainTrib, year, month, sizeState) %>%
  summarise(mean = mean(growth, na.rm = TRUE),
            n = n())
#> `summarise()` has grouped output by 'mainTrib', 'year', 'month'. You can
#> override using the `.groups` argument.

ggplot(meanGrowth, aes(month, mean, color = factor(mainTrib))) +
  geom_point(aes(size = n)) +
  geom_line() +
  ylim(-0.3, 0.4) +
  facet_grid(sizeState ~ year)
#> Warning: Removed 10 rows containing missing values (geom_point).
#> Warning: Removed 1 row(s) containing missing values (geom_path).
```




```
ggplot(meanGrowth, aes(month, mean, color = factor(year))) +
  geom_point(aes(size = n)) +
  geom_line() +
  ylim(-0.3, 0.4) +
  facet_grid(sizeState ~ mainTrib)
#> Warning: Removed 10 rows containing missing values (geom_point).
#> Removed 1 row(s) containing missing values (geom_path).
```


main
trib
1
2
3
mean
0.4
0.2
0.0
−0.2
4
6
8
10
month
factor(year)
2018
2019
2020
n
20
40
60