gdd_related

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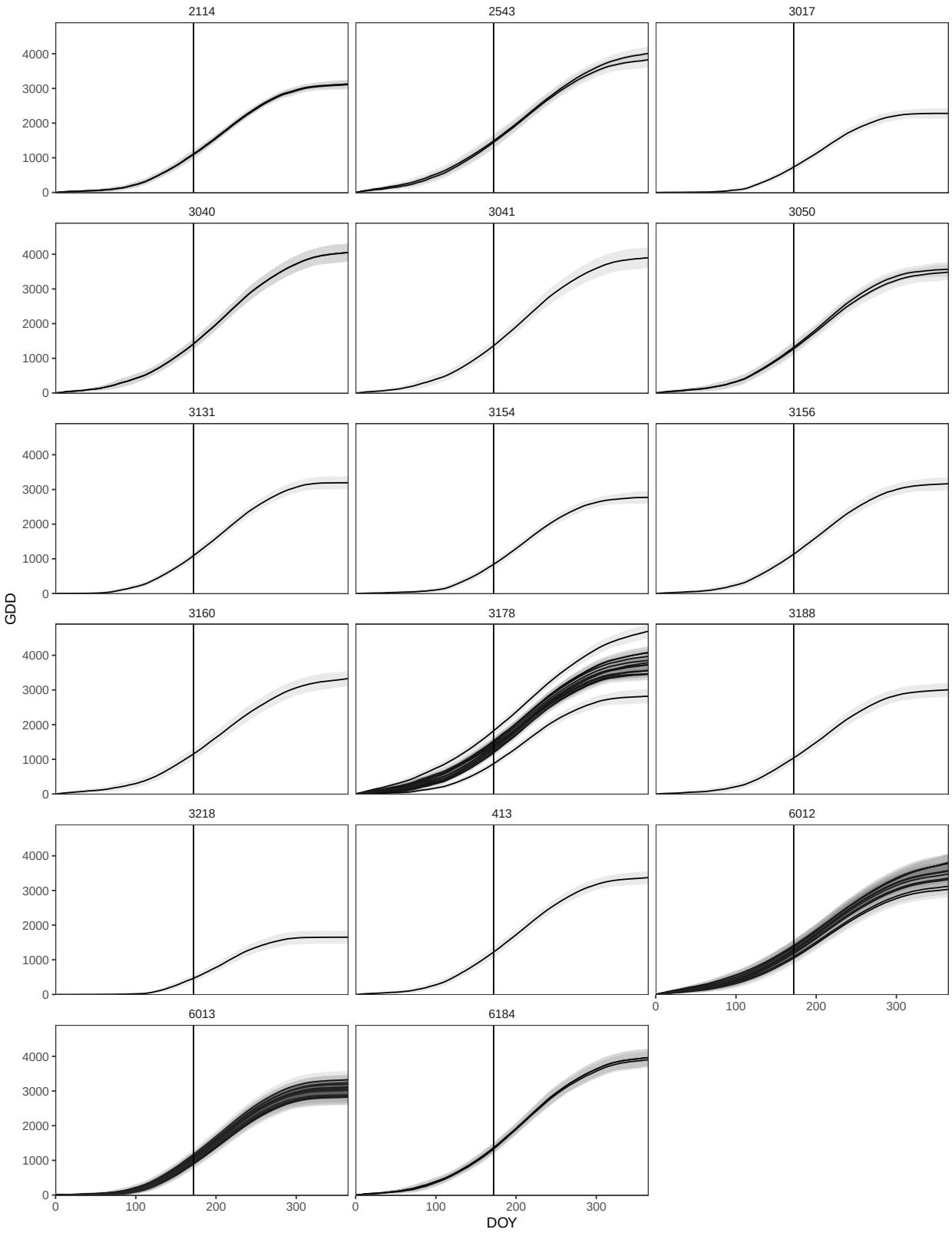
```
process_data <- readRDS(file.path(wd, "data/processed", "journe2024_replicate.rds"))

gdd_data <- process_data %>%
  dplyr::group_by(sitenewname, Year) %>%
  dplyr::mutate(tmean_filt = ifelse(Tmean <= 35 & Tmean >=5, Tmean, 0),
                gdd = cumsum(tmean_filt)) %>%
  dplyr::select(-tmean_filt) %>%
  ungroup() %>%
  mutate(doy = as.numeric(strftime(Date, format = "%j")),
         source = stringr::str_split(sitenewname, "_", simplify = T)[, 1])
```

```
gdd_data %>%
  dplyr::group_by(source, sitenewname,doy) %>%
  summarise(gddm = mean(gdd), sd = sd(gdd)) %>%
  ggplot(aes(x = doy, y = gddm, group = sitenewname)) +
  facet_wrap(~ source, ncol = 3) +
  geom_line() +
  geom_ribbon(aes(ymin = gddm-sd, ymax = gddm+sd), alpha = 0.1) +
  theme_bw() +
  theme(legend.position = 'none',
        strip.background = element_blank(),
        panel.grid.minor = element_blank(), panel.grid.major = element_blank()) +
  labs(y = "GDD", x = "DOY")+
  geom_vline(xintercept = 172) +
  coord_cartesian(xlim = c(0,365), expand = FALSE)
```

```
## `summarise()` has grouped output by 'source', 'sitenewname'. You can override
## using the `.groups` argument.
```




```
gdd_data %>%
  dplyr::group_by(sitenewname) %>%
```

```
  mutate(maxv = max(gdd), minv = min(gdd),
         gdd_sc = (gdd-minv)/(maxv-minv)) %>%
  dplyr::group_by(source,sitenewname,doy) %>%
  summarise(gddm = mean(gdd_sc), sd = sd(gdd_sc)) %>%
  ggplot(aes(x = doy, y = gddm, group = sitenewname)) +
  facet_wrap(~ source, ncol = 3) +
  geom_line() +
  geom_ribbon(aes(ymin = gddm-sd, ymax = gddm+sd), alpha = 0.1) +
  theme_bw() +
  theme(legend.position = 'none',
        strip.background = element_blank(),
        panel.grid.minor = element_blank(), panel.grid.major = element_blank()) +
  labs(y = "GDD scaled", x = "DOY")+
  geom_vline(xintercept = 172) +
  coord_cartesian(xlim = c(0,365), expand = FALSE)
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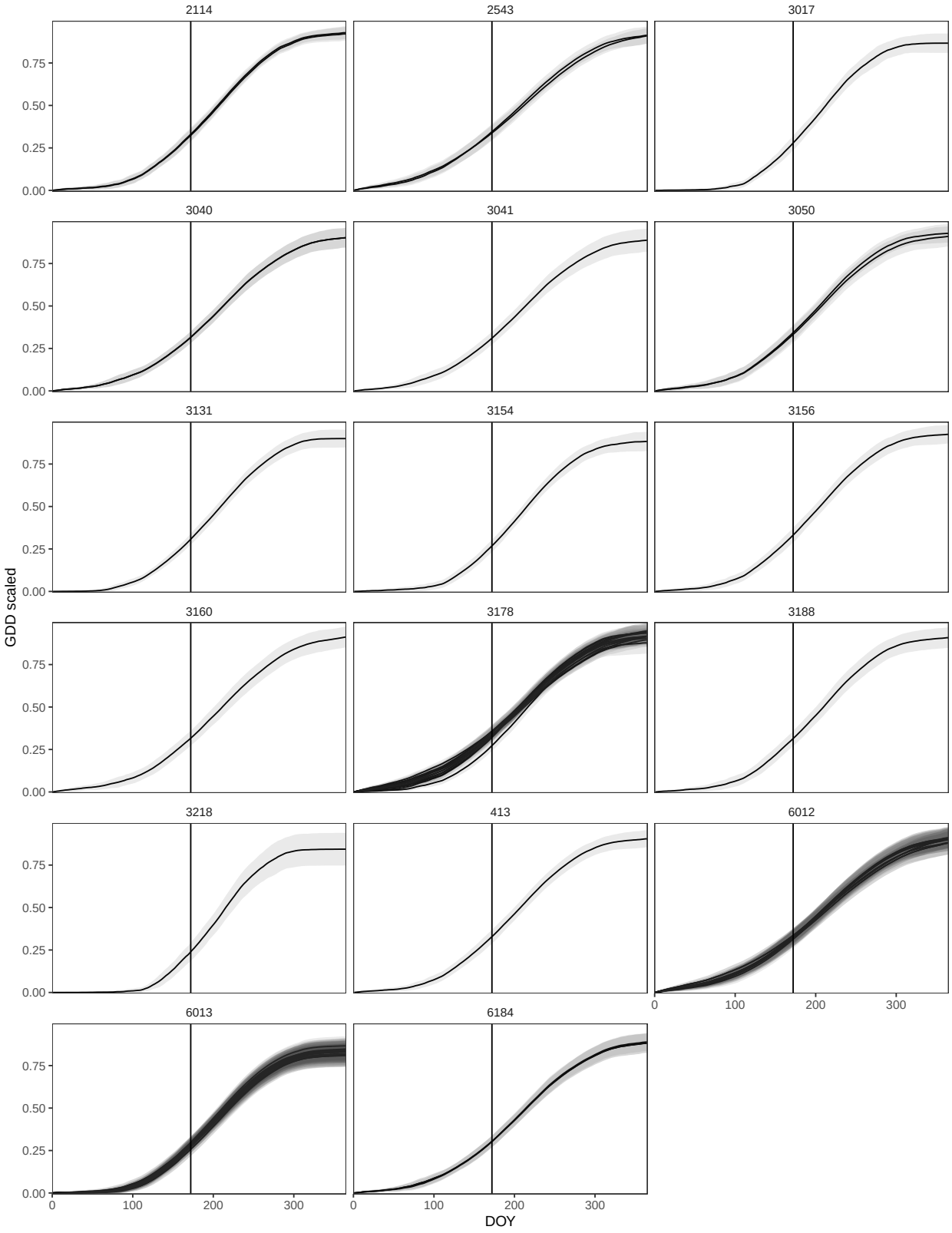


```
gdd_data %>%
  dplyr::group_by(sitenewname) %>%
```

```
  mutate(maxv = max(gdd), minv = min(gdd),
         gdd_sc = (gdd-minv)/(maxv-minv)) %>%
  dplyr::group_by(source,sitenewname,doy) %>%
  summarise(gddm = mean(gdd_sc), sd = sd(gdd_sc)) %>%
  ggplot(aes(x = doy, y = gddm, group = sitenewname)) +
  geom_line() +
  geom_ribbon(aes(ymin = gddm-sd, ymax = gddm+sd), alpha = 0.1) +
  stat_summary(aes(group=1), fun=mean, geom="line", colour="white", linewidth = 1.3) +
  stat_summary(aes(group=1), fun=mean, geom="line", colour="darkred", linewidth = 1) +
  theme_bw() +
  theme(legend.position = 'none',
        strip.background = element_blank(),
        panel.grid.minor = element_blank(), panel.grid.major = element_blank()) +
  labs(y = "GDD scaled", x = "DOY")+
  geom_vline(xintercept = 172) +
  coord_cartesian(xlim = c(0,365), expand = FALSE)
```

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