

Kelp stressors paper life-cycle figure

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Life cycle figure for kelp stressors paper

This creates pie charts showing literature review results by life cycle stage and direct stressors (Pressures) on kelp habitats.

Packages needed:

```
library(tidyverse)
```

```
## -- Attaching packages ----- tidyverse 1.3.0
```

```
## v ggplot2 3.3.1    v purrr   0.3.4
## v tibble  3.0.1    v dplyr  1.0.0
## v tidyr   1.1.0    v stringr 1.4.0
## v readr   1.3.1    v forcats 0.5.0
```

```
## Warning: package 'forcats' was built under R version 4.0.2
```

```
## -- Conflicts ----- tidyverse_conflicts()
```

```
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(ggforce)
```

```
## Warning: package 'ggforce' was built under R version 4.0.2
```

```
library(ggpubr)
```

```
## Warning: package 'ggpubr' was built under R version 4.0.2
```

```
library(patchwork)
```

```
## Warning: package 'patchwork' was built under R version 4.0.2
```

```
library(png)
```

```
## Warning: package 'png' was built under R version 4.0.2
```

```
library(tinytex)
```

```
## Warning: package 'tinytex' was built under R version 4.0.2
```

Import data

```
dat <- read.csv("data/life cycle literature stats for figure 2.csv", header = TRUE)

#pivot data and change factor level order of lifestages to get in correct life-cycle order
dat <- dat %>%
  pivot_longer(cols = c("Adults", "Zoospores", "Gametophytes", "Juveniles"),
               names_to = "lifestage",
               values_to = "papers") %>%
  mutate(lifestage = factor(lifestage, levels = c("Adults", "Zoospores", "Gametophytes", "Juveniles")))
```

Calculate angle position for each pie

```
dat_pies <- left_join(dat,
                      dat %>%
                        group_by(Stressor) %>%
                        summarize(Cnt_total = sum(papers))) %>%
  group_by(Stressor) %>%
  mutate(end_angle = 2*pi*cumsum(papers)/Cnt_total,      # ending angle for each pie slice
         start_angle = lag(end_angle, default = 0),      # starting angle for each pie slice
         mid_angle = 0.5*(start_angle + end_angle))      # middle of each pie slice, for the text label
```

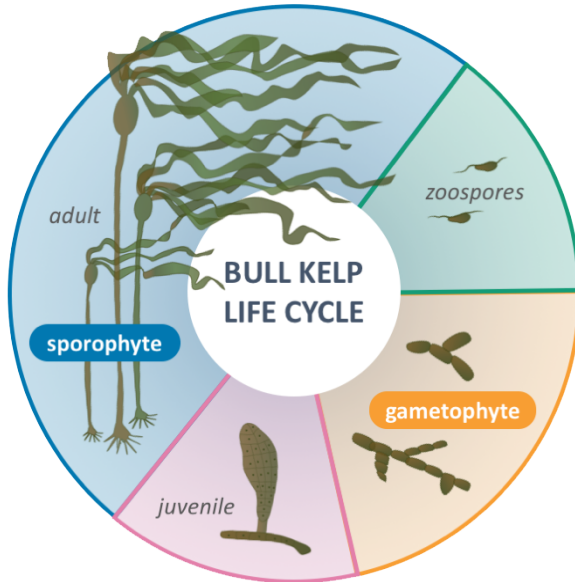
```
## 'summarise()' ungrouping output (override with '.groups' argument)
```

```
## Joining, by = "Stressor"
```

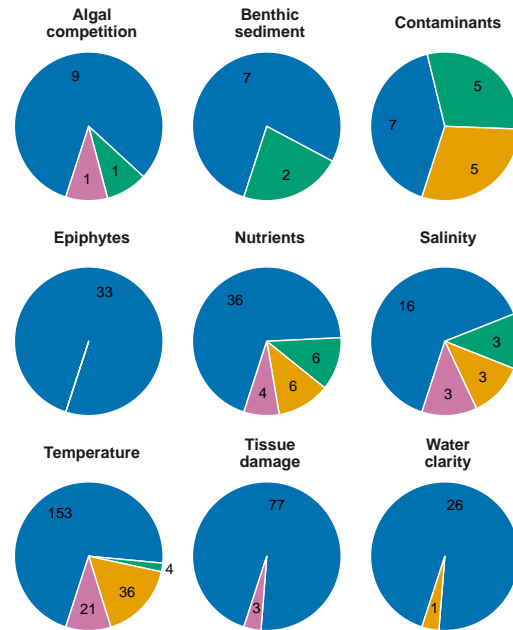
Label locations and rotation parameters

```
rpie = 1 # pie radius
rlabel = c(rep(0.7 * rpie, 20), 1.1, rep(0.7 * rpie, 4)) # radius of the labels - 0.5 would place it ex
rot = pi * 1.1 #in order to keep adults in the left/upper portion of all the pies; larger values for "
```

A



B



Save plot

```
png("Figure 2. Life cycle literature stats.png", width = 13, height = 7, units = "in", res = 300)
lc + p1 + plot_layout(widths = c(1,1)) + plot_annotation(tag_levels = 'A')
dev.off()
```

```
## pdf
## 2
```