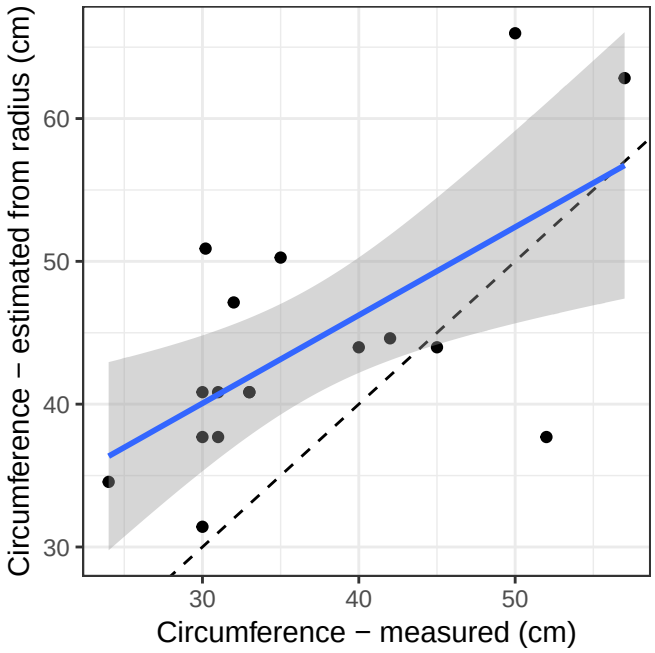
Urticina mapping

Load the data and prep for mapping.

```
library(tidyverse)
theme_set(theme_bw())
dat <- read_csv("data/urticina_mapping_data - Sheet1.csv")
dat <- dat %>%
  mutate(x = ifelse(east_west == "east",
                    distance_cable_cm/100,
                    -distance_cable_cm/100),
         y = distance_tag_cm/100 + reference_tag)
```

Is the measured circumference similar to an estimated circumference (calculated from the diameter)?

```
dat <- dat %>%
   mutate(circum_calc = 2 * pi * diameter_cm/2,
          area_cm2 = pi * (diameter_cm/2)^2)
dat %>%
  ggplot(aes(circum_cm, circum_calc)) +
  geom_point() +
  geom_abline(aes(slope = 1, intercept = 0), linetype = 2) +
  geom_smooth(method = "lm") +
  labs(x = "Circumference - measured (cm)",
       y = "Circumference - estimated from radius (cm)")
```



Map of *Urticina piscivora* at Hopkins Marine Life Refuge permanent cable.

```
dat %>%
  ggplot(aes(x = x, y = y, color = dive, size = area_cm2)) +
  geom_vline(aes(xintercept = 0), size = 2, color = "gray") +
  geom_vline(aes(xintercept = 0), size = 0.5, color = "black", linetype = 2) +
  geom_hline(aes(yintercept = 100), size = 0.5, color = "black", linetype = 2) +
  labs(x = "Distance due east/west from cable (m)",
       y = "Distance along cable (m)") +
  geom_point(alpha = 0.5) +
```

```
scale_size_area()
```