Kelp Wrack Metrics

Data collected from Bandon Beach from 2018-2021

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# Introduction

GOES HERE.

# Methods

## Field Surveys

GOES HERE.

## Data Analysis

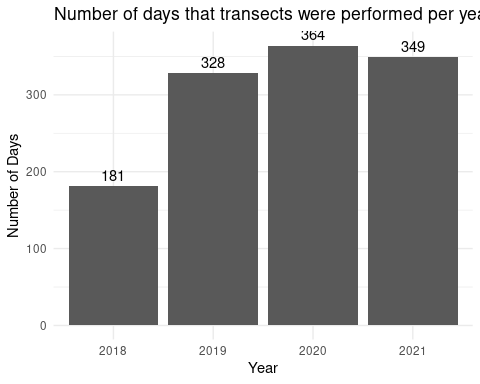
GOES HERE.

# Results

# Import all data and manage for analyses/visualizations  
  
# read in young dataset  
young\_sporophyte <- read\_csv("Data/young\_sporophyte\_data.csv",   
 col\_types = cols(Date = col\_character(),   
 Stipe = col\_number(),  
 Bulb = col\_number(),   
 Blade = col\_double(),   
 `Ho Fa` = col\_double(),   
 Single = col\_character(),   
 Group = col\_character()))  
  
# fix erroneous date  
young\_sporophyte$Date <- young\_sporophyte$Date %>%  
 recode("11/28/2028" = "11/28/2018",  
 "10/9/2028" = "10/9/2018",  
 "6/17/2028" = "6/17/2018",  
 "56/2/2021" = "5/26/2021")  
young\_sporophyte$Date <- mdy(young\_sporophyte$Date)  
# fix bulb diameter and blade width typos  
young\_sporophyte['Bulb'][young\_sporophyte['Bulb'] == 53.0] <- 5.3  
young\_sporophyte['Bulb'][young\_sporophyte['Bulb'] == 30.0] <- 3.0  
young\_sporophyte['Blade'][young\_sporophyte['Blade'] == 22.0] <- 2.2  
# fix substrate typos  
young\_sporophyte$Subst <- young\_sporophyte$Subst %>%  
 recode("NL" = "Nl",  
 "Ni" = "Nl",  
 "MY" = "My",  
 "R" = "Ro",  
 "B" = "Ba",  
 "Bs" = "Ba",  
 "Bo" = "Ba",  
 "Bl" = "Ba",  
 "Cf" = "Cr",  
 "LS" = "Ls",  
 "SS" = "Ss",  
 "Hy" = "Hf",  
 "Mp" = "Mu",  
 "Dl" = "Do")  
  
# need to check these Subst code corrections:   
# 2021-08-14 17.0 2.3 NA 2.1 1 0 B none none none none NA  
# 2021-05-26 11.5 1.8 NA 2.4 1 0 Bo none Am none none NA  
# 2018-10-09 5.0 0.4 NA NA 0 1 Bl none none none none Cluster 5-110  
# 2021-06-12 13.4 2.3 2.0 2.7 1 0 Cf none none none none NA  
# 2021-06-12 8.2 3.9 2.5 4.4 1 0 Cf none Cf none none NA  
# 2020-04-28 22.5 3.7 1.5 NA 1 0 Mp none none none none NA  
  
# fix CoSp1 typos  
young\_sporophyte$CoSp1 <- young\_sporophyte$CoSp1 %>%  
 recode("LS" = "Ls",  
 "Br" = "Bo",  
 "Po" = "Pp",  
 "Rc" = "Rp",  
 "Cor" = "Co",  
 "Py" = "Pt",  
 "U" = "Ul",  
 "Io" = "Is",  
 "Tu" = "none",  
 "ls" = "Ls",  
 "Ba" = "Bo",  
 "By" = "Bo",  
 "Cs" = "Cc")  
   
# need to check these Subst code corrections:   
# ALL Br, Po, Rc, Py  
# 2018-09-12 127.5 4.0 NA NA 1 0 U none Tu none none NA  
# 2021-06-12 24.3 3.8 2.3 3.0 1 0 U none Cs none none NA  
  
# substrate type dataset  
substrateData <- read\_csv("Data/substrateCodes.csv")  
  
# split columns add none value  
substrate <- substrateData %>%  
 separate(`Subst=Substrate`, into = c("Subst", "Substrate"), sep = "=") %>%  
 bind\_rows(c(Subst = "none", Substrate = "none"))  
  
  
  
# cospecies dataset  
cospeciesData <- read\_csv("Data/cospeciesCodes.csv")  
  
# split columns add none and duplicate columns  
cospecies <- cospeciesData %>%  
 separate(`Cosp = Cospecies`, into = c("Cosp", "Cospecies"), sep = " = ") %>%  
 bind\_rows(c(Cosp = "none", Cospecies = "none")) %>%  
 mutate(CoSp1 = Cosp,  
 CoSp2 = Cosp,  
 CoSp3 = Cosp)

## For each of the four years, how many days was the beach transect surveyed for young sporophytes?

young\_sporophyte\_q1 <- young\_sporophyte %>%  
 separate(Date, c("year", "month", "day"), sep = "-") %>%  
 unite("month-day", month:day, remove = FALSE) %>%   
 select(year, "month-day") %>%  
 group\_by(year) %>%  
 summarise(days = length(unique(`month-day`)))  
  
ggplot(young\_sporophyte\_q1, aes(x = year, y = days)) +  
 geom\_col() +  
 theme\_minimal() +  
 labs(y = "Number of Days", x = "Year", title = "Number of days that transects were performed per year") +  
 geom\_text(aes(label = days), vjust = -0.5) +  
 labs(title = "Number of days that transects were performed per year")



# References