CDW Tally Analysis: D02 SCBI

Courtney Meier, Cody Flagg

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```
## Load libraries
library(plyr)
library(dplyr)
library(ggplot2)
library(httr)

##  Define paths and other inputs
domain <- "D02"
site <- "SCBI"

# Define path for writing out files
if (file.exists("~/Documents/workDocuments")){
outpath <- paste("~/Documents/workDocuments/gitRepositories/neonPlantSampling/cdw_tally_analysis/", doma
}

if (file.exists("~/Documents/neonScienceDocs")){
  outpath <- paste("~/Documents/neonScienceDocs/gitRepositories/neonPlantSampling/cdw_tally_analysis/",
}

## Define function for retrieving Fulcrum data
get_Fulcrum_data <- function(api_token, sql){
  require(httr)
  url = paste0("https://api.fulcrumapp.com/api/v2/query?token=",
               api_token, "&format=json", "&q=", sql, "&headers=true")
  request <- httr::GET(url, add_headers("X-ApiToken" = api_token,
                                        Accept = "application/json"))
  content <- jsonlite::fromJSON(httr::content(request, as = "text"))
  return(content$rows)
}
```

```
## Import data from Fulcrum
# Define Fulcrum API token
api_token = "3ab235047ec293b27f06f6819e81b291435f9c61282345ff1de9624f744034b4233a6fcd1b87c3c2"

# Define CDW Fulcrum query for domain
cdwQuery = paste(URLencode('SELECT * FROM "(TOS) Coarse Downed Wood: Tally [PROD]" AS parent
                      JOIN "(TOS) Coarse Downed Wood: Tally [PROD]/per_plot_azimuth_log" AS child'),
            URLencode("ON (parent._record_id = child._record_id)
                      WHERE domainid LIKE 'D02'"), sep = "%20")

# Get CDW data from Fulcrum
cdw <- get_Fulcrum_data(api_token = api_token, sql = cdwQuery)
```

```
##  Select desired fields from 'cdw' data frame, then select data for specified site only
cdw %>%
  dplyr::select(domainid, siteid, plotid_parent, tallydate, volumefactor, particle_count, lidsazimuth,
                      taxonid, decayclass, logid_ingest, logdistance, loglength, acceptedtaxonid, target
  dplyr::filter(siteid=="SCBI") -> cdw
```

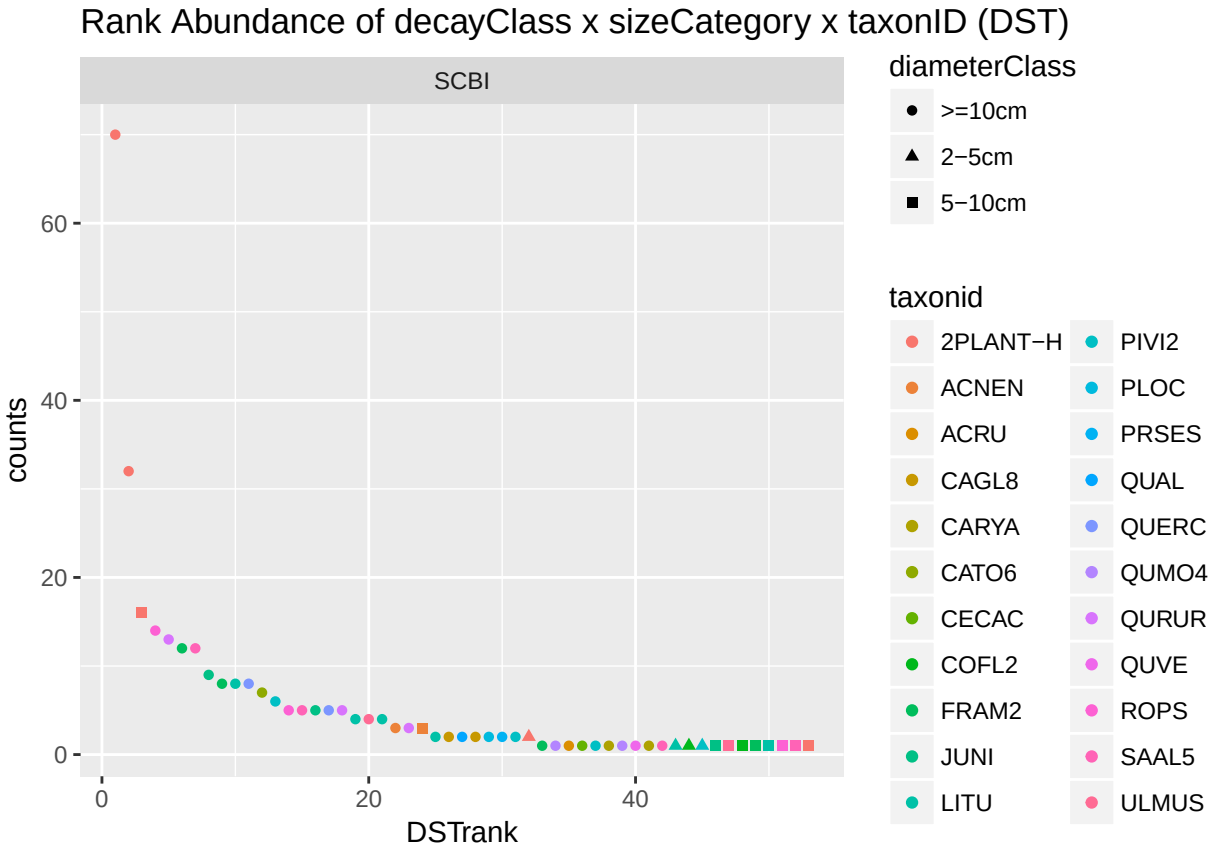
```
## Create diameter class factor
cdw$diameterClass <- ifelse(cdw$logdiameter >= 10, '>=10cm',
                            ifelse(cdw$logdiameter <5, "2-5cm", "5-10cm"))

## Simplify decayclass to numeric value wrapped inside sapply(decayClassNum, "[[", 1) e.g. 'return firs
cdw$decayClassNum <- sapply(stringr::str_split(cdw$decayclass, pattern = " "),"[[", 1)


## Write data file
write.csv(cdw, file = paste(outpath, paste(domain, site, "merged","cdw_rawdata.csv", sep="_"), sep = "/
```

siteid	taxonid	decayClassNum	diameterClass	counts	totalLogs	relativeAbundance	cumulativeAbundance
SCBI	2PLANT-H	3	>=10cm	70	298	23.49	23.49
SCBI	2PLANT-H	4	>=10cm	32	298	10.74	34.23
SCBI	2PLANT-H	3	5-10cm	16	298	5.37	39.60
SCBI	ROPS	3	>=10cm	14	298	4.70	44.30
SCBI	QURUR	3	>=10cm	13	298	4.36	48.66
SCBI	FRAM2	3	>=10cm	12	298	4.03	52.69
SCBI	SAAL5	3	>=10cm	12	298	4.03	56.72
SCBI	JUNI	2	>=10cm	9	298	3.02	59.74
SCBI	FRAM2	2	>=10cm	8	298	2.68	62.42
SCBI	LITU	2	>=10cm	8	298	2.68	65.10
SCBI	QUERC	3	>=10cm	8	298	2.68	67.78
SCBI	CATO6	3	>=10cm	7	298	2.35	70.13
SCBI	PIVI2	3	>=10cm	6	298	2.01	72.14
SCBI	ROPS	2	>=10cm	5	298	1.68	73.82
SCBI	SAAL5	2	>=10cm	5	298	1.68	75.50
SCBI	JUNI	3	>=10cm	5	298	1.68	77.18
SCBI	QUERC	4	>=10cm	5	298	1.68	78.86
SCBI	QURUR	4	>=10cm	5	298	1.68	80.54
SCBI	LITU	3	>=10cm	4	298	1.34	81.88
SCBI	ULMUS	3	>=10cm	4	298	1.34	83.22
SCBI	LITU	4	>=10cm	4	298	1.34	84.56
SCBI	ACNEN	2	>=10cm	3	298	1.01	85.57
SCBI	QURUR	2	>=10cm	3	298	1.01	86.58
SCBI	ACNEN	2	5-10cm	3	298	1.01	87.59
SCBI	LITU	1	>=10cm	2	298	0.67	88.26
SCBI	CAGL8	2	>=10cm	2	298	0.67	88.93
SCBI	QUAL	2	>=10cm	2	298	0.67	89.60
SCBI	CAGL8	3	>=10cm	2	298	0.67	90.27
SCBI	PLOC	3	>=10cm	2	298	0.67	90.94
SCBI	PRSES	3	>=10cm	2	298	0.67	91.61
SCBI	PIVI2	4	>=10cm	2	298	0.67	92.28
SCBI	2PLANT-H	3	2-5cm	2	298	0.67	92.95
SCBI	FRAM2	1	>=10cm	1	298	0.34	93.29
SCBI	QUMO4	1	>=10cm	1	298	0.34	93.63
SCBI	ACRU	2	>=10cm	1	298	0.34	93.97
SCBI	CECAC	2	>=10cm	1	298	0.34	94.31
SCBI	PIVI2	2	>=10cm	1	298	0.34	94.65
SCBI	CARYA	3	>=10cm	1	298	0.34	94.99
SCBI	QUMO4	3	>=10cm	1	298	0.34	95.33
SCBI	QUVE	3	>=10cm	1	298	0.34	95.67
SCBI	CARYA	4	>=10cm	1	298	0.34	96.01

siteid	taxonid	decayClassNum	diameterClass	counts	totalLogs	relativeAbundance	cumulativeAbundance
SCBI	SAAL5	5	>=10cm	1	298	0.34	96.35
SCBI	LITU	2	2-5cm	1	298	0.34	96.69
SCBI	COFL2	3	2-5cm	1	298	0.34	97.03
SCBI	PIVI2	3	2-5cm	1	298	0.34	97.37
SCBI	JUNI	2	5-10cm	1	298	0.34	97.71
SCBI	ULMUS	2	5-10cm	1	298	0.34	98.05
SCBI	COFL2	3	5-10cm	1	298	0.34	98.39
SCBI	FRAM2	3	5-10cm	1	298	0.34	98.73
SCBI	LITU	3	5-10cm	1	298	0.34	99.07
SCBI	ROPS	3	5-10cm	1	298	0.34	99.41
SCBI	SAAL5	3	5-10cm	1	298	0.34	99.75
SCBI	2PLANT-H	4	5-10cm	1	298	0.34	100.09



Code