CDW Tally Analysis: D08 DELA

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

##  Define paths and other inputs
domain <- "D08"
site <- "DELA"

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

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

## 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(paste0("ON (parent._record_id = child._parent_id)
                      WHERE domainid LIKE'", domain, "'")), 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_ingest, particle_count, lidsaz
                    taxonid, decayclass, logid_ingest, logdistance, loglength, acceptedtaxonid, target
  dplyr::filter(siteid==site) -> cdw
```

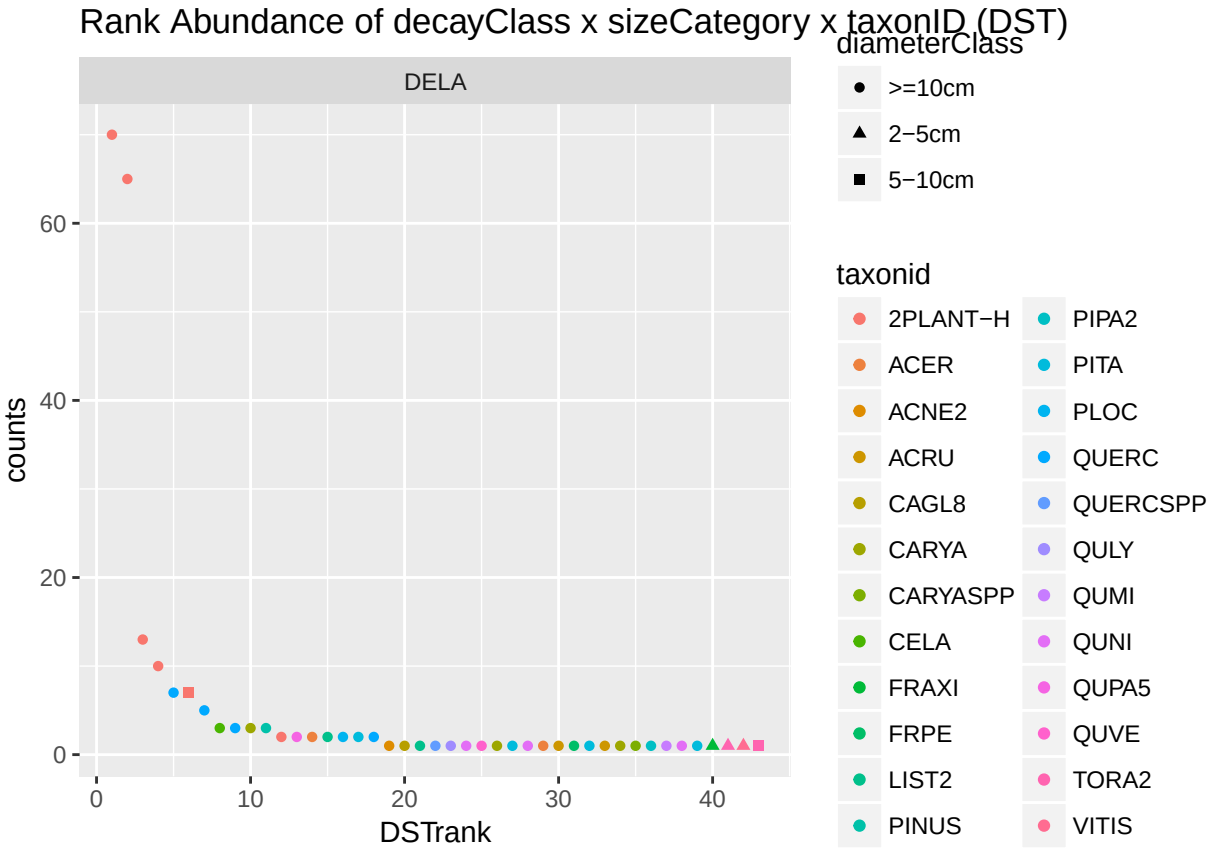
```
## Create diameter class factor
cdw$diameterClass <- ifelse(cdw$logmaxdiameter >= 10, '>=10cm',
                            ifelse(cdw$logmaxdiameter < 5, "2-5cm", "5-10cm"))

## 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
DELA	2PLANT-H	4	>=10cm	70	228	30.70	30.70
DELA	2PLANT-H	3	>=10cm	65	228	28.51	59.21
DELA	2PLANT-H	2	>=10cm	13	228	5.70	64.91
DELA	2PLANT-H	5	>=10cm	10	228	4.39	69.30
DELA	QUERC	3	>=10cm	7	228	3.07	72.37
DELA	2PLANT-H	NA	5-10cm	7	228	3.07	75.44
DELA	QUERC	2	>=10cm	5	228	2.19	77.63
DELA	CELA	1	>=10cm	3	228	1.32	78.95
DELA	QUERC	1	>=10cm	3	228	1.32	80.27
DELA	CARYA	3	>=10cm	3	228	1.32	81.59
DELA	PINUS	3	>=10cm	3	228	1.32	82.91
DELA	2PLANT-H	1	>=10cm	2	228	0.88	83.79
DELA	QUPA5	1	>=10cm	2	228	0.88	84.67
DELA	ACER	2	>=10cm	2	228	0.88	85.55
DELA	LIST2	2	>=10cm	2	228	0.88	86.43
DELA	PLOC	2	>=10cm	2	228	0.88	87.31
DELA	PITA	4	>=10cm	2	228	0.88	88.19
DELA	QUERC	4	>=10cm	2	228	0.88	89.07
DELA	ACNE2	1	>=10cm	1	228	0.44	89.51
DELA	CAGL8	1	>=10cm	1	228	0.44	89.95
DELA	LIST2	1	>=10cm	1	228	0.44	90.39
DELA	QUERCSPP	1	>=10cm	1	228	0.44	90.83
DELA	QULY	1	>=10cm	1	228	0.44	91.27
DELA	QUNI	1	>=10cm	1	228	0.44	91.71
DELA	QUVE	1	>=10cm	1	228	0.44	92.15
DELA	CARYA	2	>=10cm	1	228	0.44	92.59
DELA	PITA	2	>=10cm	1	228	0.44	93.03
DELA	QUNI	2	>=10cm	1	228	0.44	93.47
DELA	ACER	3	>=10cm	1	228	0.44	93.91
DELA	ACRU	3	>=10cm	1	228	0.44	94.35
DELA	FRPE	3	>=10cm	1	228	0.44	94.79
DELA	PITA	3	>=10cm	1	228	0.44	95.23
DELA	ACRU	4	>=10cm	1	228	0.44	95.67
DELA	CARYA	4	>=10cm	1	228	0.44	96.11
DELA	CARYASPP	4	>=10cm	1	228	0.44	96.55
DELA	PIPA2	4	>=10cm	1	228	0.44	96.99
DELA	QUMI	4	>=10cm	1	228	0.44	97.43
DELA	QUNI	4	>=10cm	1	228	0.44	97.87
DELA	PITA	5	>=10cm	1	228	0.44	98.31
DELA	FRAXI	NA	2-5cm	1	228	0.44	98.75

siteid	taxonid	decayClassNum	diameterClass	counts	totalLogs	relativeAbundance	cumulativeAbundance
DELA	TORA2	NA	2-5cm	1	228	0.44	99.1
DELA	VITIS	NA	2-5cm	1	228	0.44	99.6
DELA	TORA2	NA	5-10cm	1	228	0.44	100.0



Code