CDW Tally Analysis: D08 LENO

Courtney Meier, Cody Flagg

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

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

# 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
```

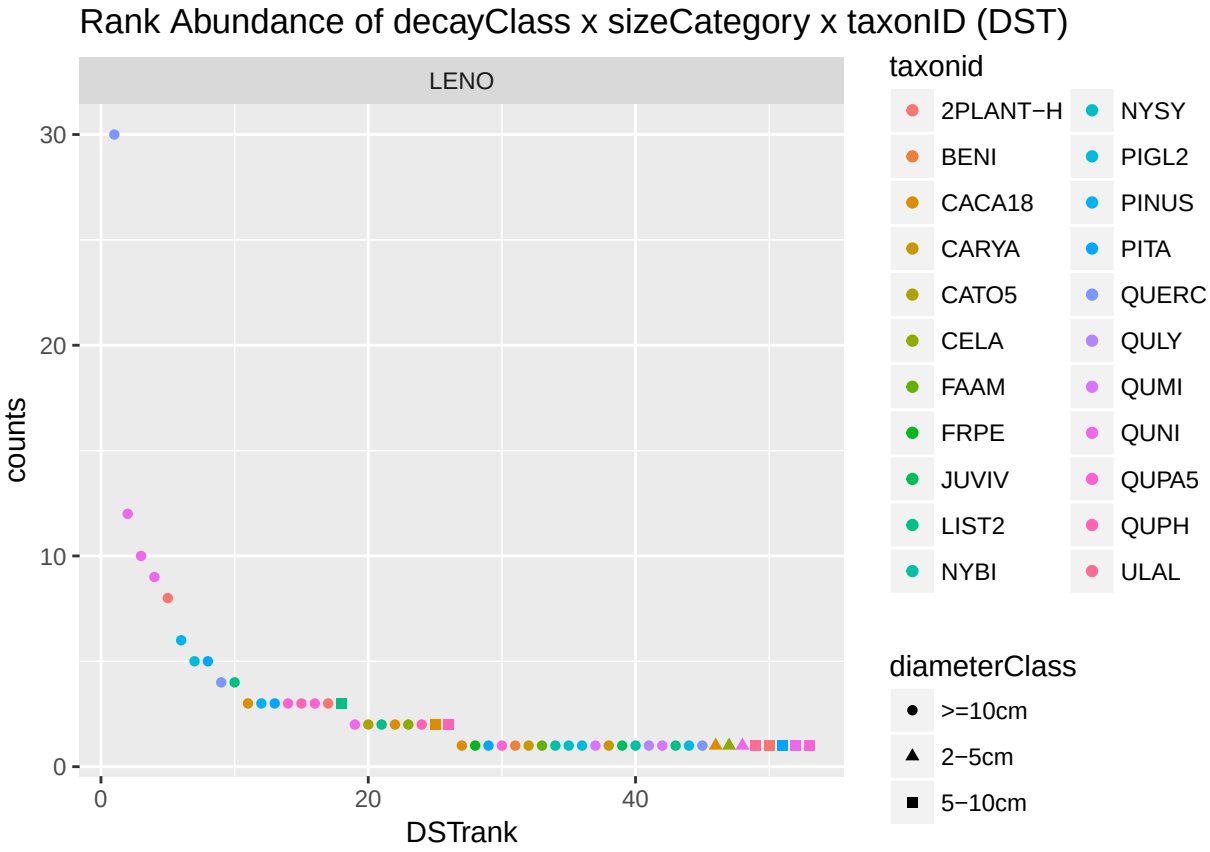
```
## Create diameter class factor
cdw$diameterClass <- ifelse(cdw$logmaxdiameter >= 10, '>=10cm',
                            ifelse(cdw$logmaxdiameter < 5, "2-5cm", "5-10cm"))

## 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
LENO	QUERC	4	>=10cm	30	160	18.75	18.75
LENO	QUNI	4	>=10cm	12	160	7.50	26.25
LENO	QUNI	2	>=10cm	10	160	6.25	32.50
LENO	QUNI	3	>=10cm	9	160	5.62	38.12
LENO	2PLANT-H	4	>=10cm	8	160	5.00	43.12
LENO	PINUS	4	>=10cm	6	160	3.75	46.87
LENO	PIGL2	4	>=10cm	5	160	3.12	49.99
LENO	PITA	4	>=10cm	5	160	3.12	53.11
LENO	QUERC	3	>=10cm	4	160	2.50	55.61
LENO	LIST2	4	>=10cm	4	160	2.50	58.11
LENO	CACA18	3	>=10cm	3	160	1.88	59.99
LENO	PINUS	3	>=10cm	3	160	1.88	61.87
LENO	PITA	3	>=10cm	3	160	1.88	63.75
LENO	QUPA5	3	>=10cm	3	160	1.88	65.63
LENO	QUPH	3	>=10cm	3	160	1.88	67.51
LENO	QUPA5	4	>=10cm	3	160	1.88	69.39
LENO	2PLANT-H	5	>=10cm	3	160	1.88	71.27
LENO	LIST2	NA	5-10cm	3	160	1.88	73.15
LENO	QUNI	1	>=10cm	2	160	1.25	74.40
LENO	CATO5	2	>=10cm	2	160	1.25	75.65
LENO	LIST2	3	>=10cm	2	160	1.25	76.90
LENO	CACA18	4	>=10cm	2	160	1.25	78.15
LENO	CELA	4	>=10cm	2	160	1.25	79.40
LENO	QUPH	4	>=10cm	2	160	1.25	80.65
LENO	CACA18	NA	5-10cm	2	160	1.25	81.90
LENO	QUPH	NA	5-10cm	2	160	1.25	83.15
LENO	CACA18	2	>=10cm	1	160	0.62	83.77
LENO	FRPE	2	>=10cm	1	160	0.62	84.39
LENO	PITA	2	>=10cm	1	160	0.62	85.01
LENO	QUPA5	2	>=10cm	1	160	0.62	85.63
LENO	BENI	3	>=10cm	1	160	0.62	86.25
LENO	CARYA	3	>=10cm	1	160	0.62	86.87
LENO	FAAM	3	>=10cm	1	160	0.62	87.49
LENO	NYBI	3	>=10cm	1	160	0.62	88.11
LENO	NYSY	3	>=10cm	1	160	0.62	88.73
LENO	PIGL2	3	>=10cm	1	160	0.62	89.35
LENO	QUMI	3	>=10cm	1	160	0.62	89.97
LENO	CARYA	4	>=10cm	1	160	0.62	90.59
LENO	JUVIV	4	>=10cm	1	160	0.62	91.21
LENO	NYBI	4	>=10cm	1	160	0.62	91.83

siteid	taxonid	decayClassNum	diameterClass	counts	totalLogs	relativeAbundance	cumulativeAbundance
LENO	QULY	4	>=10cm	1	160	0.62	92.45
LENO	QUMI	4	>=10cm	1	160	0.62	93.07
LENO	LIST2	5	>=10cm	1	160	0.62	93.69
LENO	PIGL2	5	>=10cm	1	160	0.62	94.31
LENO	QUERC	5	>=10cm	1	160	0.62	94.93
LENO	CACA18	NA	2-5cm	1	160	0.62	95.55
LENO	CELA	NA	2-5cm	1	160	0.62	96.17
LENO	QUNI	NA	2-5cm	1	160	0.62	96.79
LENO	ULAL	4	5-10cm	1	160	0.62	97.41
LENO	2PLANT-H	NA	5-10cm	1	160	0.62	98.03
LENO	PITA	NA	5-10cm	1	160	0.62	98.65
LENO	QUNI	NA	5-10cm	1	160	0.62	99.27
LENO	QUPA5	NA	5-10cm	1	160	0.62	99.89



Code