

Visualizing cover data at each step of the data preparation workflow

```
library(tidyverse)
library(sf)
library(terra)
ggplot2::theme_set(theme_classic())
```

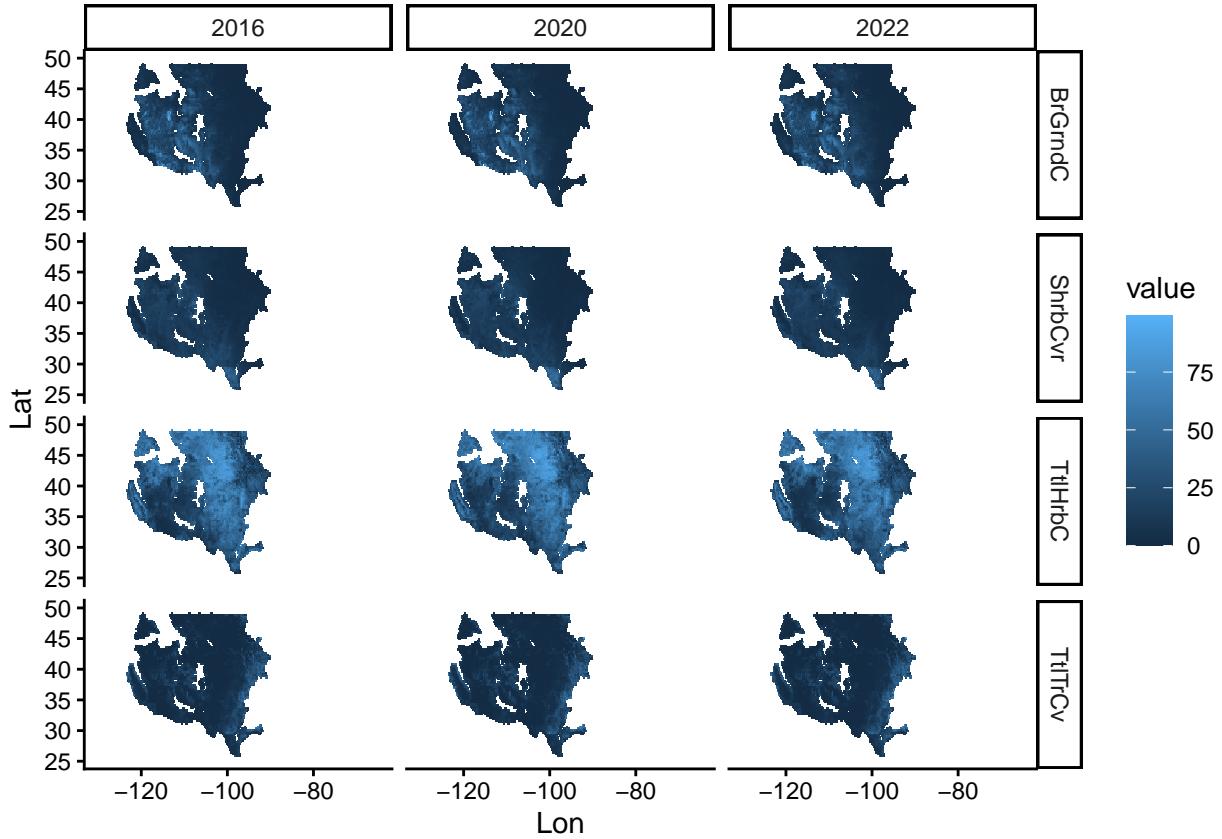
This document visualizes the data of vegetation cover by functional type that we use in subsequent analysis at each step of the data-processing workflow. These maps serve both as a reference and a check that the workflow is performing as intended.

For the sake of simplified comparison, I show data from 2016, 2020, and 2022, which are years for which we have easy to access rasters of FIA data to compare to.

RAP

Initial dataset

```
## Reading layer 'vegCompPoints' from data source
##   '/Users/asteams/Documents/Dropbox_static/Work/NAU_USGS_postdoc/cleanPED/PED_vegClimModels/Data_pro
##   using driver 'ESRI Shapefile'
## Simple feature collection with 1310227 features and 30 fields
## Geometry type: POINT
## Dimension:      XY
## Bounding box:  xmin: -124.7004 ymin: 24.68798 xmax: -67.10236 ymax: 49.3489
## Geodetic CRS:  WGS 84
```



AIM (BLM Assessment, Inventory and Monitoring data)

Initial Dataset

```

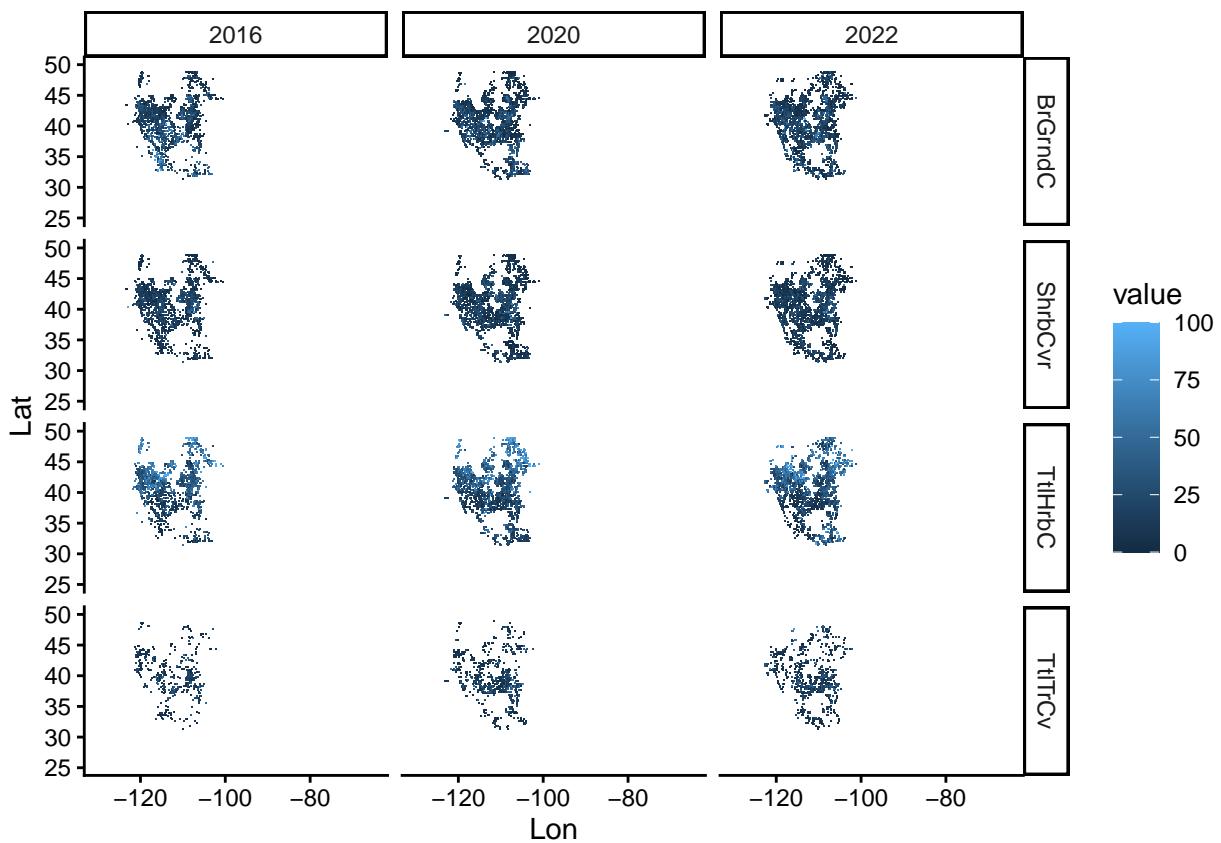
## make figure for LDC
# get data just for LDC
dat_1 %>%
  st_zm() %>%
  filter(Source == "LDC") %>%
  filter(Year %in% c(2016, 2020, 2022)) %>%
  #st_drop_geometry() %>%
  pivot_longer(cols = c(ShrbCvr, TtlTrCv, TtlHrbC, BrGrndC#, AngTrC_, CnfTrC_, C3GrmC_, C4GrmC_, FrbCrv),
               ),
  names_to = "coverType",
  values_to = "coverValues"
) %>%
filter(!is.na(coverValues)) %>%
#filter(coverType == "ShrbCvr" & Year == 2016) %>%
ggplot() +
  facet_grid(rows = vars(coverType), cols = vars(Year)) +
  stat_summary_2d(aes(x = Lon, y = Lat, z = coverValues), fun = mean, binwidth = .25) +
  #geom_point(aes(x = Lon, y = Lat, col = coverValues)) +

```

```

xlim(c(-130, -65)) +
  ylim(c(25, 50))

```



FIA (USFS Forest Inventory and Analysis data)

Initial Dataset

```

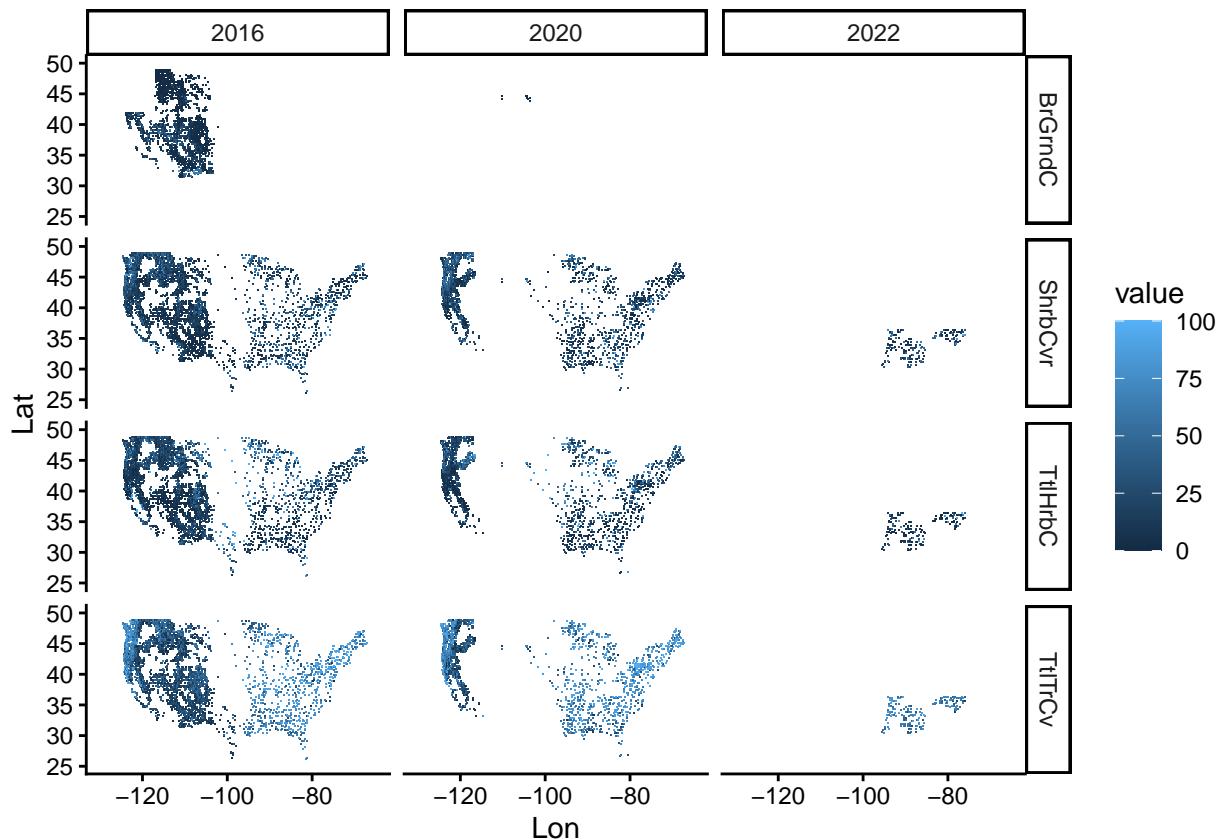
## make figure for FIA
# get data just for FIA
dat_1 %>%
  st_zm() %>%
  filter(Source == "FIA") %>%
  filter(Year %in% c(2016, 2020, 2022)) %>%
  #st_drop_geometry() %>%
  pivot_longer(cols = c(ShrbCvr, TtlTrCv, TtlHrbC, BrGrndC#, AngTrC_, CnfTrC_, C3GrcM_, C4GrcM_, FrbCrv),
               ),
  names_to = "coverType",
  values_to = "coverValues"
  ) %>%
  filter(!is.na(coverValues)) %>%
  #filter(coverType == "ShrbCvr" & Year == 2016) %>%
  #slice_sample(n = 1000) %>%

```

```

ggplot() +
  facet_grid(rows = vars(coverType), cols = vars(Year)) +
  #geom_point(aes(x = Lon, y = Lat, col = coverValues)) +
  stat_summary_2d(aes(x = Lon, y = Lat, z = coverValues), fun = mean, binwidth = .25) +
  xlim(c(-130, -65)) +
  ylim(c(25, 50))

```



LANDFIRE Reference database

Initial Dataset

```

## make figure for FIA
# get data just for FIA
dat_1 %>%
  st_zm() %>%
  filter(Source == "FIA") %>%
  filter(Year %in% c(2016, 2020, 2022)) %>%
  #st_drop_geometry() %>%
  pivot_longer(cols = c(ShrbCvr, TtlTrCv, TtlHrbC, BrGrndC#, AngTrC_, CnfTrC_, C3GrmC_, C4GrmC_, FrbCvr),
               ),
  names_to = "coverType",
  values_to = "coverValues"

```

```

) %>%
filter(!is.na(coverValues)) %>%
#filter(coverType == "ShrbCv" & Year == 2016) %>%
#slice_sample(n = 1000) %>%
ggplot() +
facet_grid(rows = vars(coverType), cols = vars(Year)) +
#geom_point(aes(x = Lon, y = Lat, col = coverValues)) +
stat_summary_2d(aes(x = Lon, y = Lat, z = coverValues), fun = mean, binwidth = .25) +
xlim(c(-130, -65)) +
ylim(c(25, 50))

```

