

Visualizing cover data at each step of the data preparation workflow

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

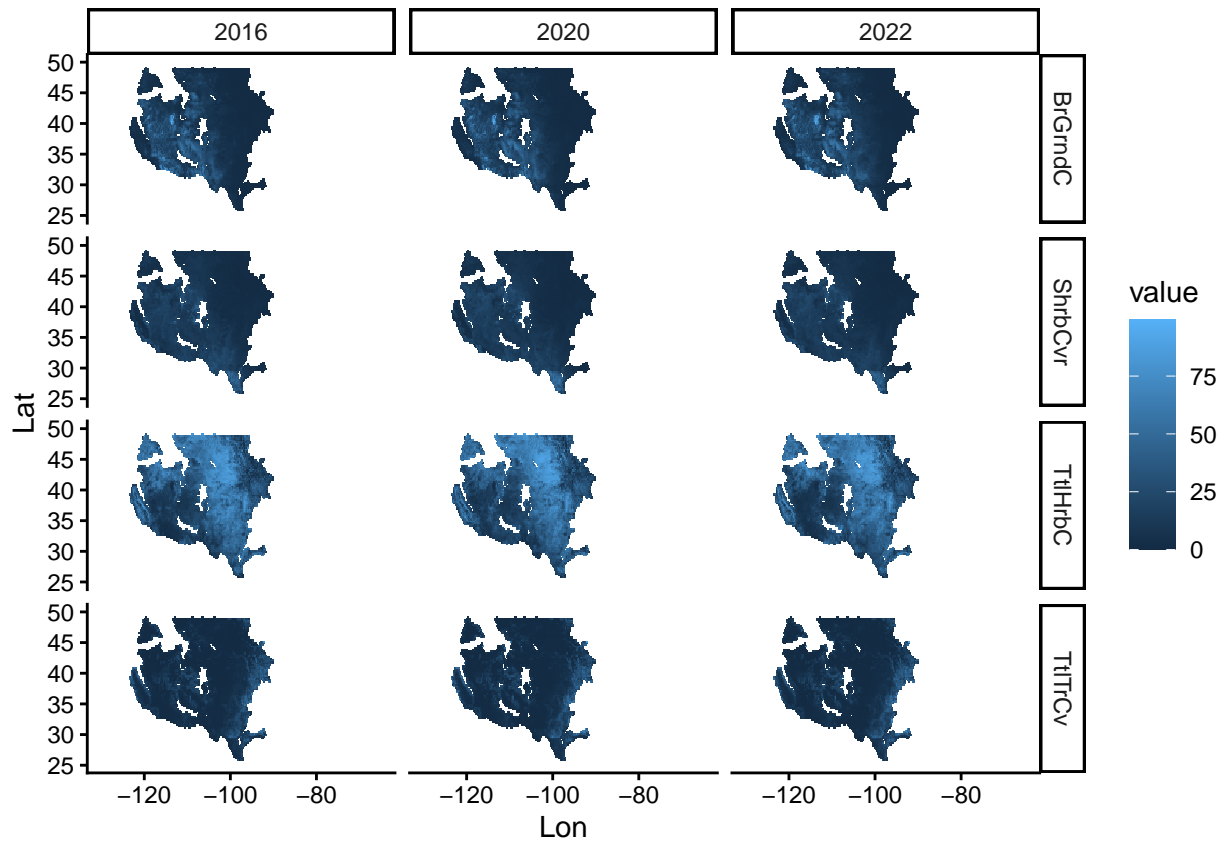
This document visualizes the data of vegetation cover by functional type that we use in subsequent analysis at each step of the data-processing workflow. These maps serve both as a reference and a check that the workflow is performing as intended.

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/astears/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
```

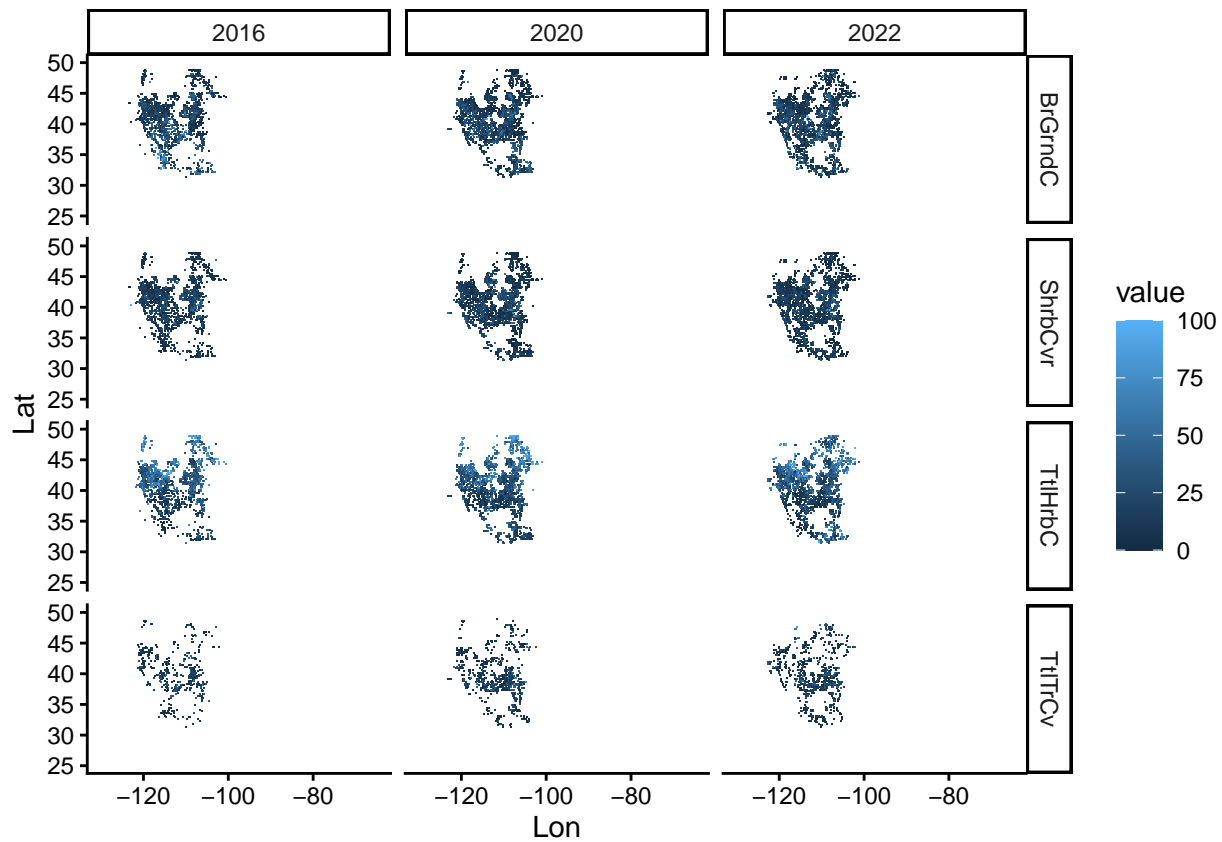


AIM (BLM Assessment, Inventory and Monitoring data)

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_, C3GrnC_, C4GrnC_, FrbCvr),
               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))
```

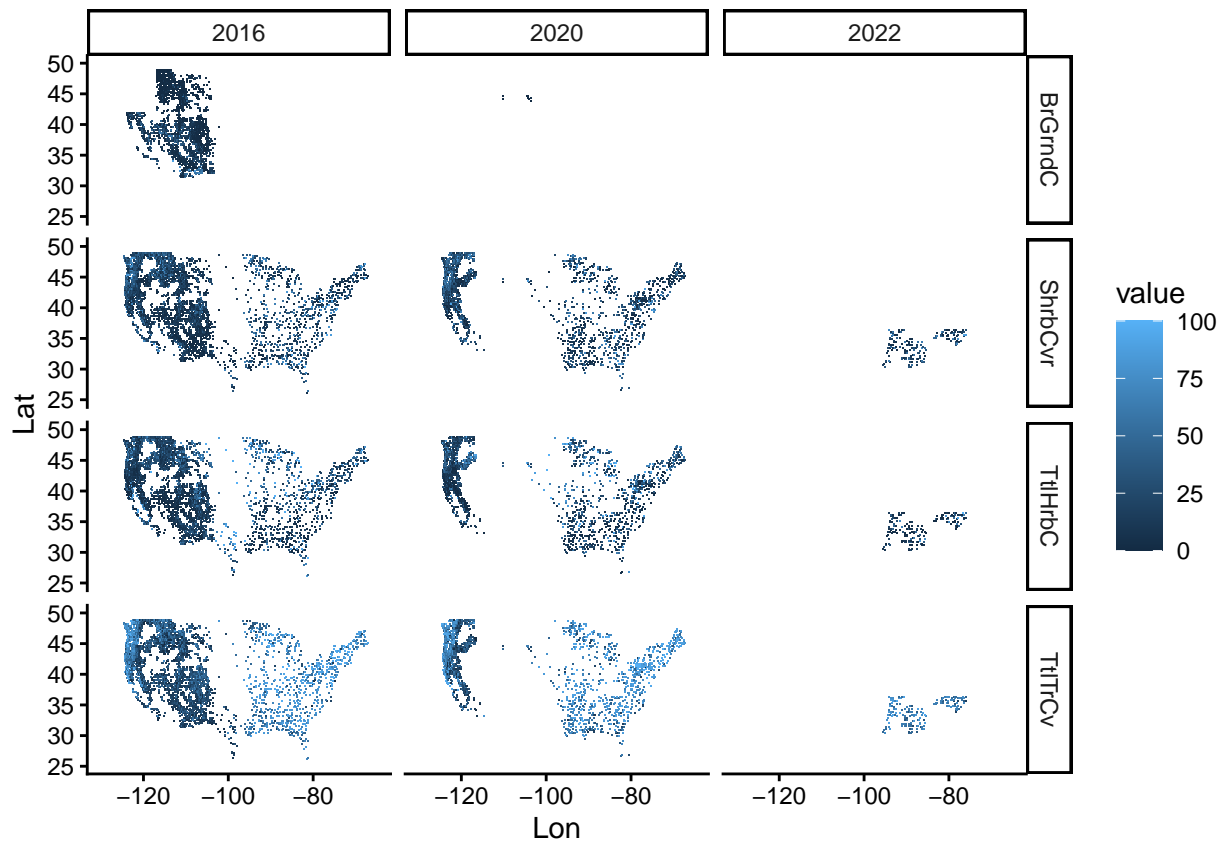


FIA (USFS Forest Inventory and Analysis data)

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_, C3GrnC_, C4GrnC_, FrbCvr),
               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_, C3GrnC_, C4GrnC_, FrbCvr_),
    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))

```

