NDVI Trace in Hayman Fire

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Hayman Fire

In 2002 there was a large fire in central Colorado. This analysis is meant to highlight how the fire altered vegetation in the area. Here we also compare the data to data in the Sierra Nevada (Bradshaw et al. 2003).

Data read

First we have to read in the NDVI data which is structured to compare unburned vs burned sites in the Hayman region.

```
#Reading in the data.
ndvi <- read_csv('data/hayman_ndvi.csv') %>%
  rename(burned=2,unburned=3) %>%
  filter(!is.na(burned),
         !is.na(unburned))
```

```
## Parsed with column specification:
## cols(
##   DateTime = col_date(format = ""),
##   `NDVI (Landsat 4/5/7/8 SR) at Polygon 1, 1984-01-01 to 2019-08-15` = col_double(),
##   `NDVI (Landsat 4/5/7/8 SR) at Polygon 2, 1984-01-01 to 2019-08-15` = col_double()
## )
```

```
## Warning: 1 parsing failure.
## row col  expected    actual                   file
## 533  -- 3 columns 2 columns 'data/hayman_ndvi.csv'
```

Tidying

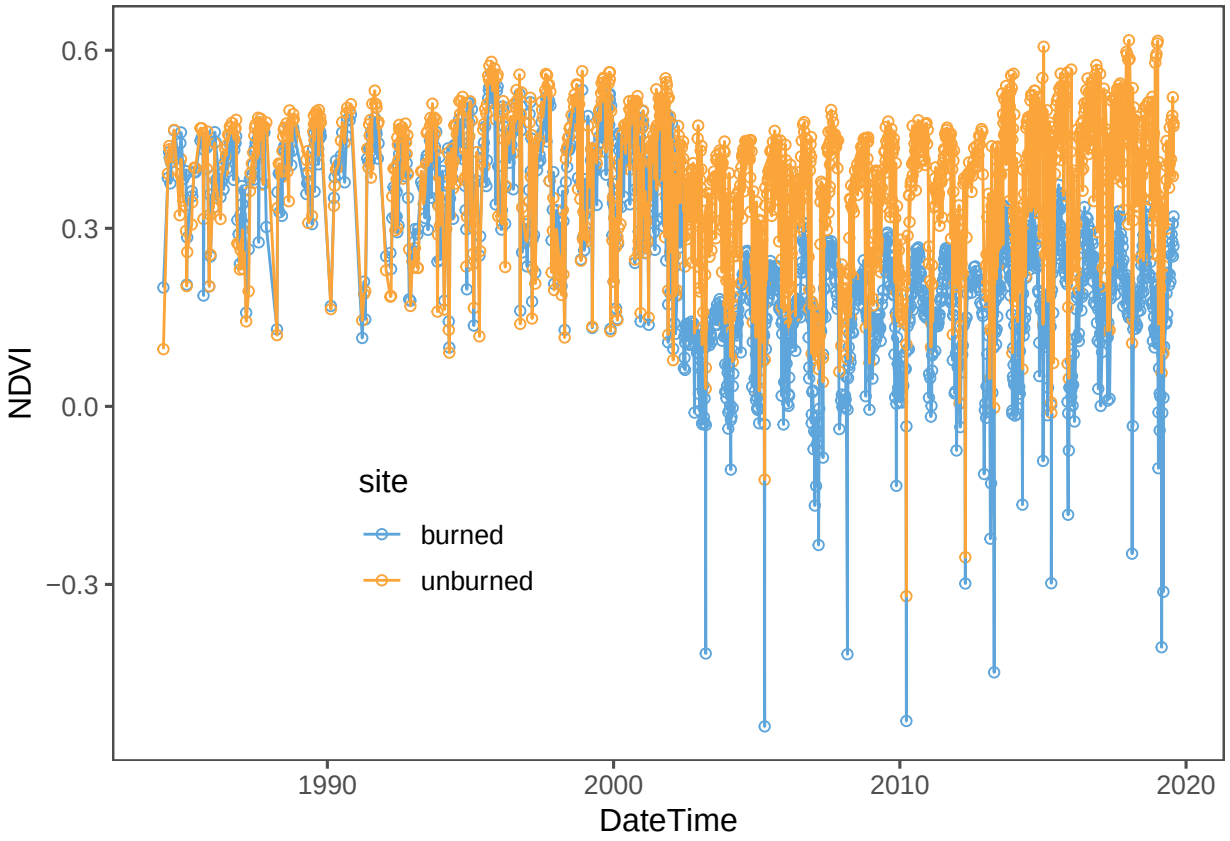
Next we clean the data a little

```
# Converting from wide to long data
ndvi_long <- gather(ndvi,
                    key='site',
                    value='NDVI',
                    -DateTime)
```

Plot of NDVI over time

NDVI (greenness) after the fire dramatically decreased and stayed low for at least 17 years.

```
# Plotting all the data
ggplot(ndvi_long,aes(x=DateTime,y=NDVI,color=site)) +
  geom_point(shape=1) +
  geom_line() +
  theme_few() +
  scale_color_few() +
  theme(legend.position=c(0.3,0.3))
```



Bradshaw, Larry, Roberta Bartlette, John McGinely, and Karl Zeller. 2003. "Fire Behavior, Fuel Treatments, and Fire Suppression on the Hayman Fire-Part 1: Fire Weather, Meteorology, and Climate." *In: Graham, Russell T., Technical Editor. Hayman Fire Case Study. Gen. Tech. Rep. RMRS-GTR-114. Ogden, UT: US Department of Agriculture, Forest Service, Rocky Mountain Research Station. P. 36-58* 114.