

# Firewatch

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Retrieve the data from SQLite

```
con <- dbConnect(drv=RSQLite::SQLite(), dbname="FPA_FOD_20210617.sqlite")

## list all tables
tables <- dbListTables(con)

## exclude sqlite_sequence (contains table information)
tables <- tables[tables != "sqlite_sequence"]

lDataFrames <- vector("list", length=length(tables))

## create a data.frame for each table
for (i in seq(along=tables)) {
  lDataFrames[[i]] <- dbGetQuery(conn=con, statement=paste("SELECT * FROM '", tables[[i]], "'", sep=""))
}
```

```
## Warning in result_fetch(res@ptr, n = n): Column 'SOURCE_REPORTING_UNIT': mixed
## type, first seen values of type integer, coercing other values of type string
```

```
## Warning in result_fetch(res@ptr, n = n): Column 'LOCAL_FIRE_REPORT_ID': mixed
## type, first seen values of type integer, coercing other values of type string
```

Store dataframe in fire and place

```
## Rows: 52 Columns: 4
```

```
## -- Column specification -----
## Delimiter: ","
## chr (2): STATE, name
## dbl (2): latitude, longitude
```

```
##
## i Use 'spec()' to retrieve the full column specification for this data.
## i Specify the column types or set 'show_col_types = FALSE' to quiet this message.
```

CONT\_DATE and CONT\_DOY have a lot of NA, but it's the same value as DISCOVERY\_DATE, DISCOVERY\_DOY

a= store the rows that have NA. It's only have one row that NWCG\_CAUSE\_CLASSIFICATION== NA, so delete it and store in fire\_clean

place\_1 has a mutate column named NWCG\_REPORTING\_UNIT\_ID. Then, LEFT JOIN with fire\_clean\_1

#Summary

```
## NWCG_REPORTING_UNIT_ID FIRE_YEAR DISCOVERY_DATE DISCOVERY_DOY
## Length:2166752 Length:2166752 Min. :1992-01-01 Min. : 1
## Class :character Class :character 1st Qu.:1999-08-22 1st Qu.: 89
## Mode :character Mode :character Median :2006-03-04 Median :165
## Mean :2005-10-09 Mean :165
## 3rd Qu.:2011-10-20 3rd Qu.:230
## Max. :2018-12-31 Max. :366
## NWCG_CAUSE_CLASSIFICATION NWCG_GENERAL_CAUSE FIRE_SIZE
## Length:2166752 Length:2166752 Min. : 0.0
## Class :character Class :character 1st Qu.: 0.1
## Mode :character Mode :character Median : 1.0
## Mean : 76.0
## 3rd Qu.: 3.0
## Max. :662700.0
## FIRE_SIZE_CLASS LATITUDE LONGITUDE STATE
## Length:2166752 Min. :17.94 Min. : -178.80 Length:2166752
## Class :character 1st Qu.:32.96 1st Qu.: -110.85 Class :character
## Mode :character Median :35.64 Median : -93.11 Mode :character
## Mean :36.89 Mean : -96.19
## 3rd Qu.:40.81 3rd Qu.: -82.46
## Max. :70.33 Max. : -65.26
## UnitId GeographicArea Gacc WildlandRole
## Length:2166752 Length:2166752 Length:2166752 Length:2166752
## Class :character Class :character Class :character Class :character
## Mode :character Mode :character Mode :character Mode :character
##
##
##
## UnitType Department Agency Parent
## Length:2166752 Length:2166752 Length:2166752 Length:2166752
## Class :character Class :character Class :character Class :character
## Mode :character Mode :character Mode :character Mode :character
##
##
##
## Country State Code Name
## Length:2166752 Length:2166752 Length:2166752 Length:2166752
## Class :character Class :character Class :character Class :character
## Mode :character Mode :character Mode :character Mode :character
##
##
##
```

Prepare data for sparkline

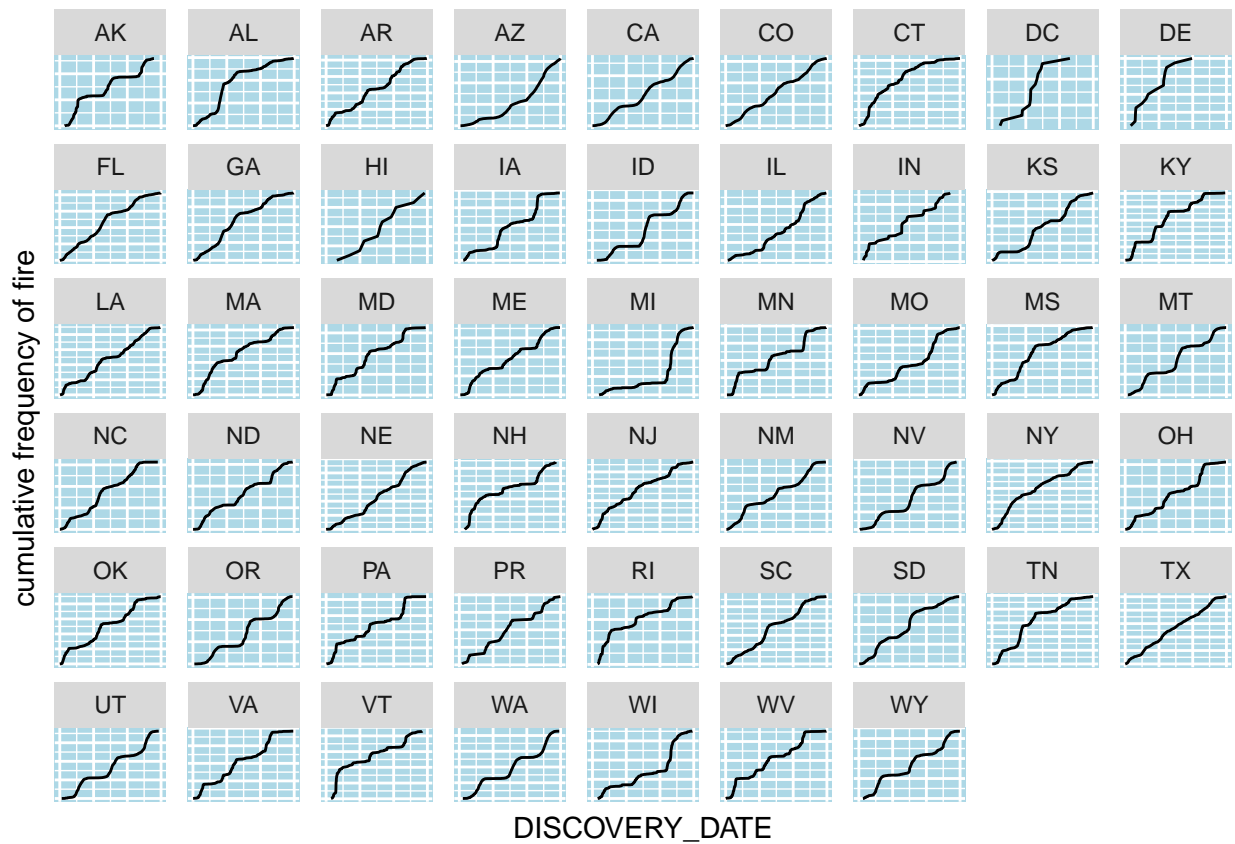
## 'summarise()' has grouped output by 'STATE'. You can override using the '.groups' argument.

plot- Sparkline\_cumulative fire in 5 years [start:01/01/2016]

```

g <- fire_clean_2 %>%
  ggplot(aes(x = DISCOVERY_DATE, y = cum)) +
  facet_wrap(~ STATE, ncol = 9, scales = "free_y") +
  geom_line() + theme(axis.ticks.y = element_blank(), axis.text.y = element_blank()) +
  theme(axis.ticks.x = element_blank(), axis.text.x = element_blank()) + theme(panel.background = element_rect(
    colour = "lightblue",
    size = 0.5, linetype = "solid"),
  panel.grid.major = element_line(size = 0.5, linetype = 'solid',
    colour = "white"),
  panel.grid.minor = element_line(size = 0.25, linetype = 'solid', colour = "white")) + ylab('cumulative frequency of fire')
g

```



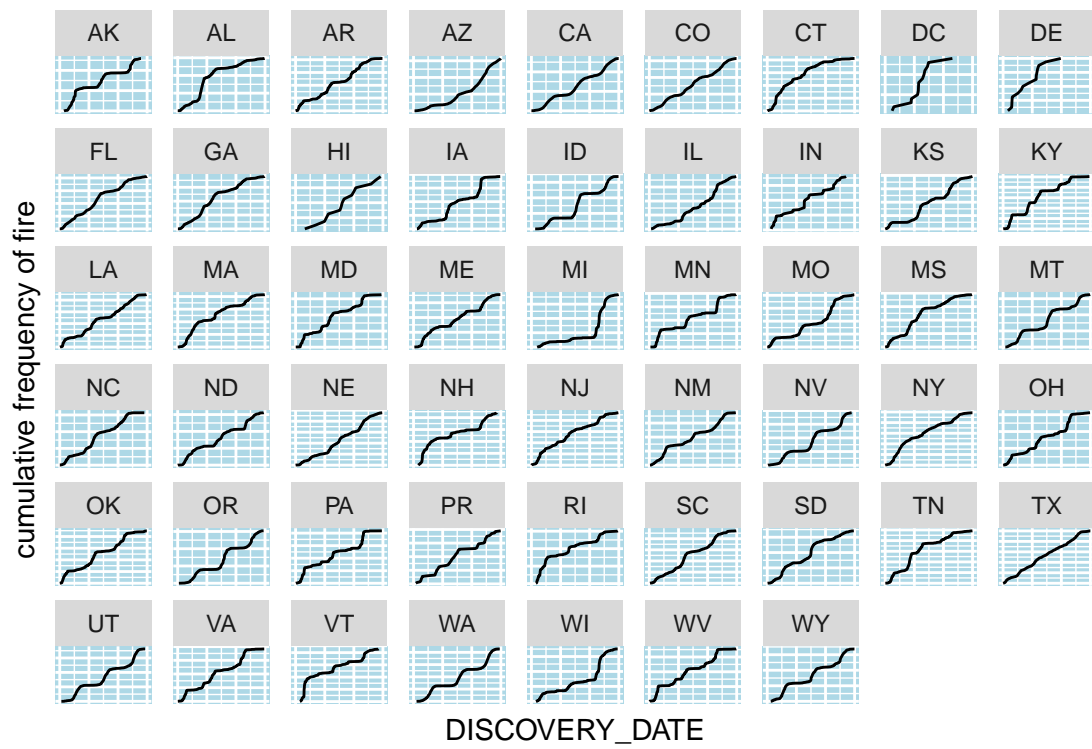
```
library(ggh4x)
```

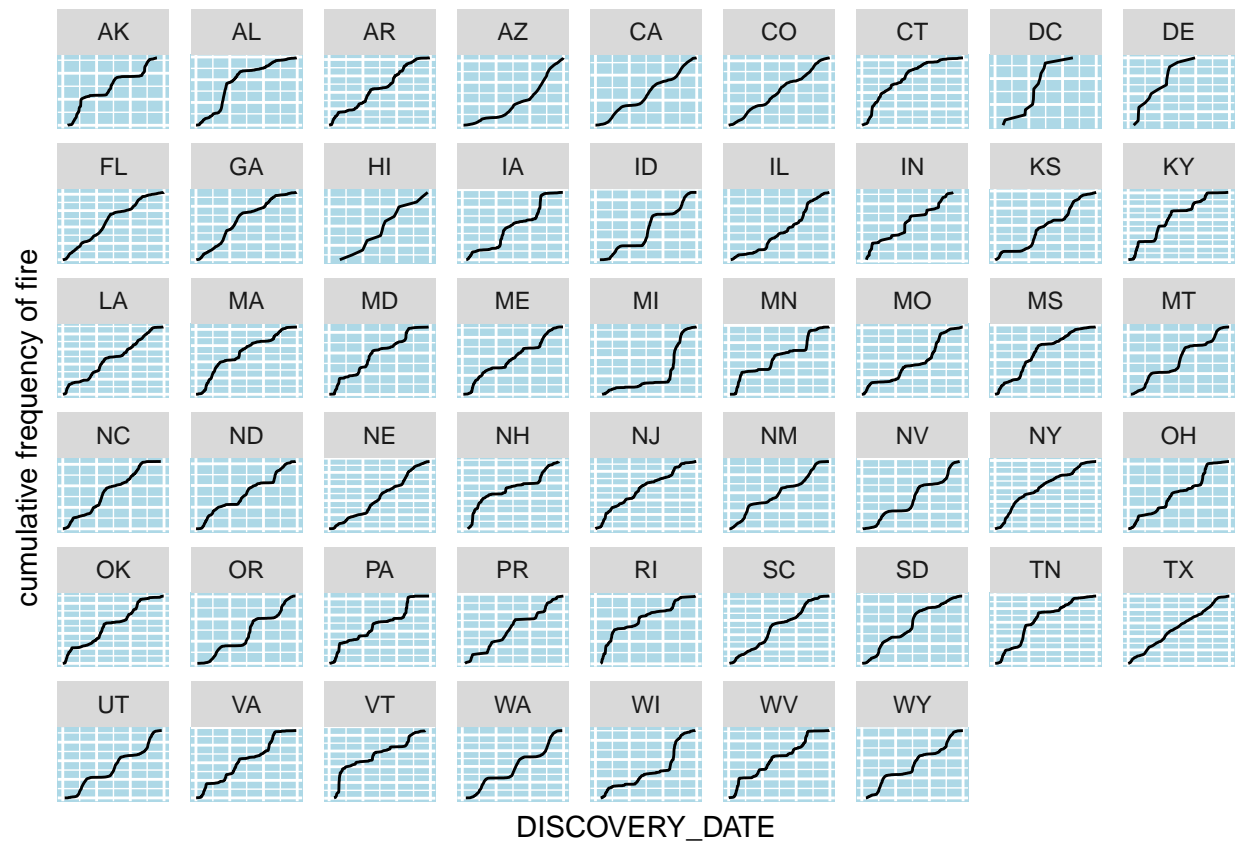
```
## Warning: package 'ggh4x' was built under R version 4.1.1
```

```

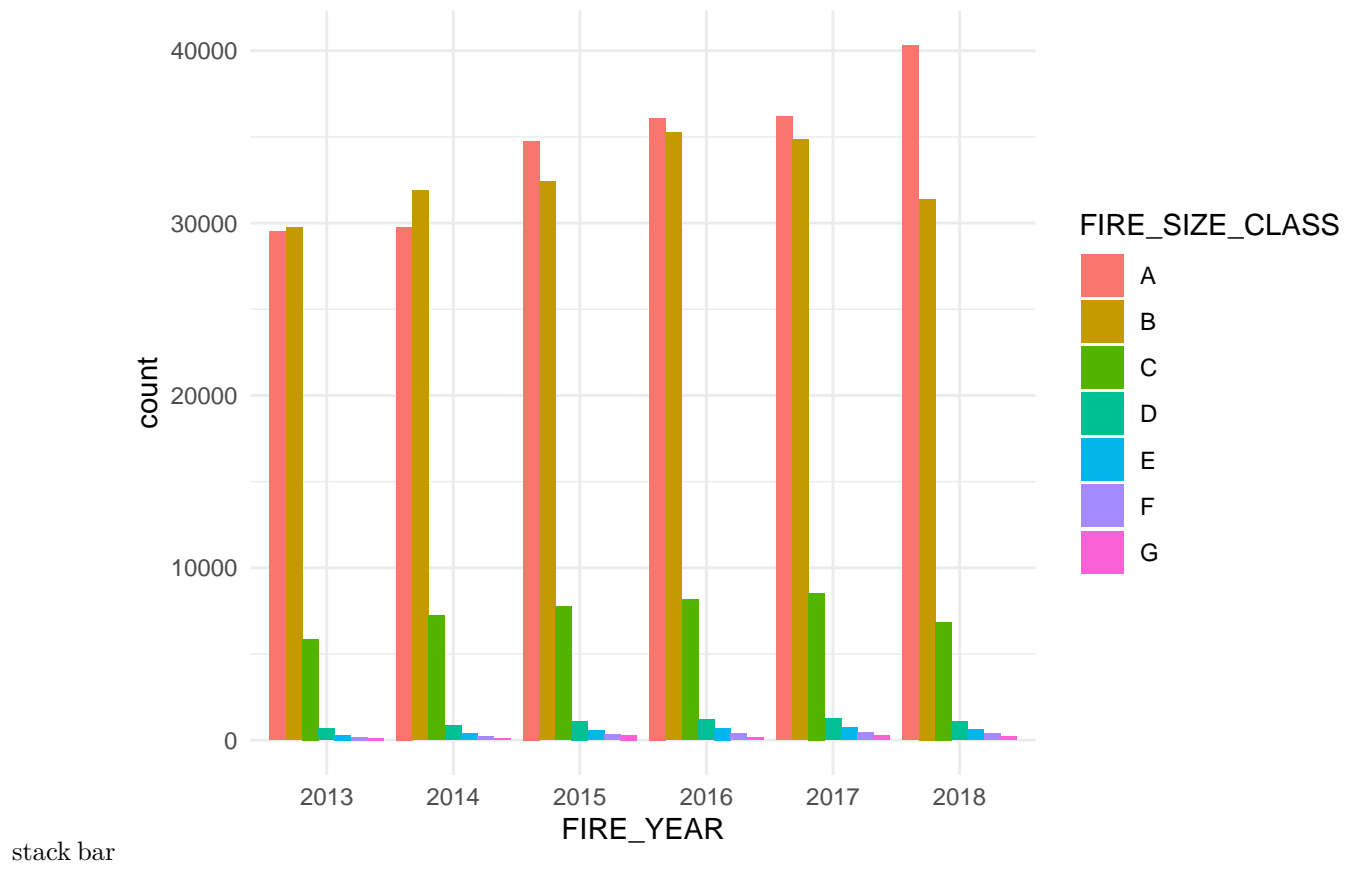
g + force_panelsizes(rows = unit(0.3, "in"),
  cols = unit(0.5, "in"))

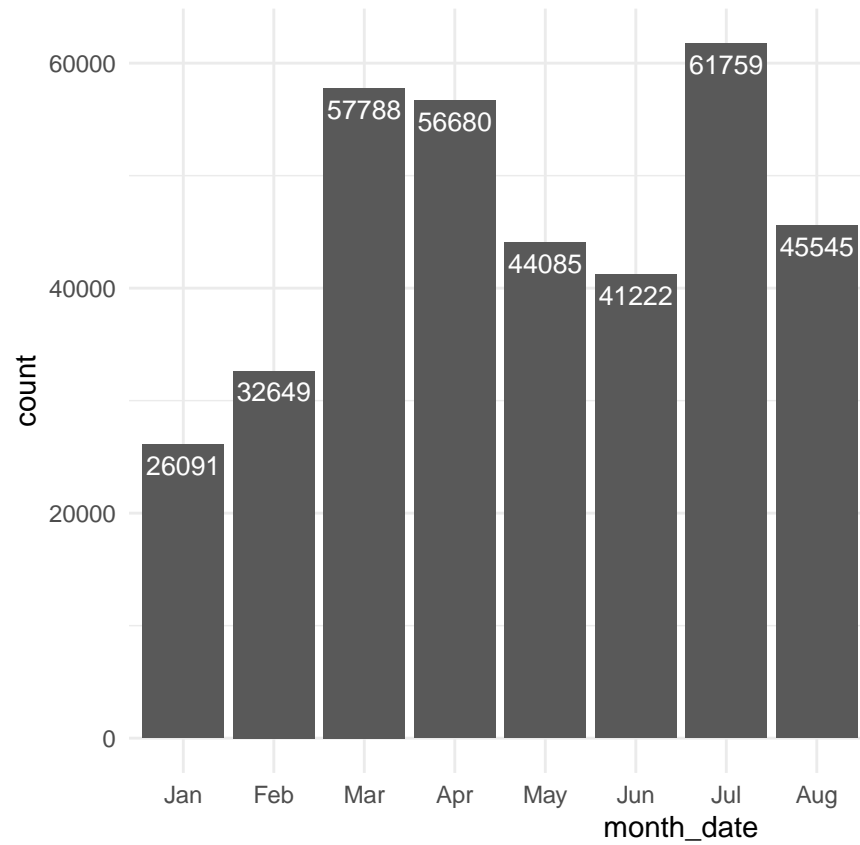
```





## 'summarise()' has grouped output by 'FIRE\_YEAR'. You can override using the '.groups' argument.

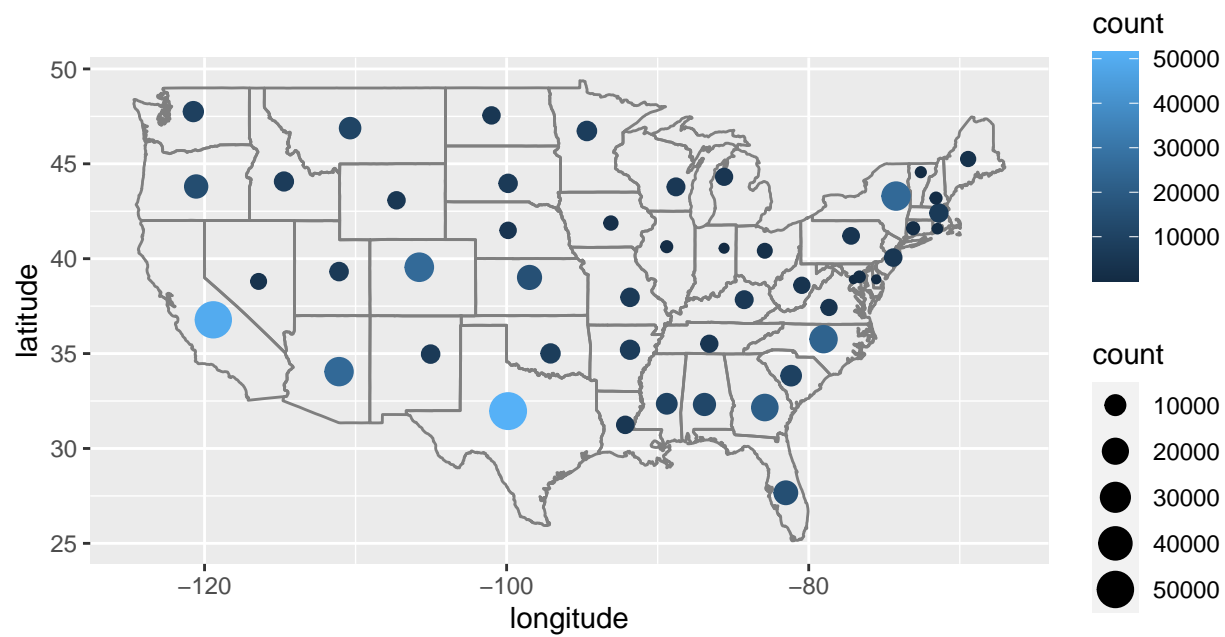




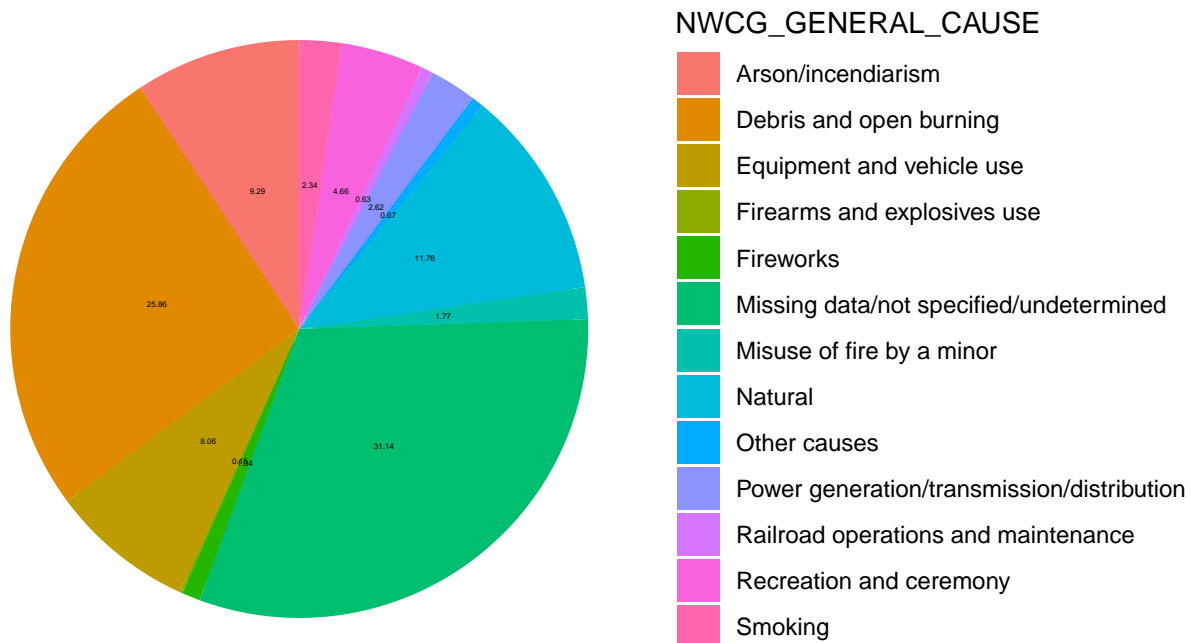
Which month do forest fires occur mostly? [IN US]

prepare data for the map chart

## 'summarise()' has grouped output by 'STATE', 'latitude'. You can override using the '.groups' argument







```
## Warning: ggrepel: 2 unlabeled data points (too many overlaps). Consider
## increasing max.overlaps
```

