Reproducible Research Final Project

mt

Saturday, May 23, 2015

Synopsis

This report estabilished for comparison between all events in USA that causes human and Economic resources damages. The simulation resaults shows high health and Econonmic damage rate in events like Tornado, Flash Floods and TSTM winds.

Data

This project involves exploring the U.S. National Oceanic and Atmospheric Administration's (NOAA) storm database than could be downloaded from here: `https://d396qusza40orc.cloudfront.net/repdata%2Fdata%2FStormData.csv.bz2`

```
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
##
## The following object is masked from 'package:stats':
##
##     filter
##
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
StormData <- read.csv("repdata_data_StormData.csv",
    sep = ",")
```

With respect to population health

```
library(xtable)
newd <- gsub(" ", "", as.character(StormData$BGN_DATE))
newd <- gsub("0:00:00", "", newd)
newd <- as.Date(newd, format = "%m/%d/%Y")
StormData$BGN_DATE <- (factor(newd))

DataSample <- tbl_df(StormData)
By_EVTYPE <- group_by(DataSample, EVTYPE)
healthSum <- summarize(By_EVTYPE, TotalInjureis = sum(INJURIES),
```

```
    TotalDamage = sum(PROPDMG))
healthSum <- arrange(healthSum, desc(TotalInjureis),
    desc(TotalDamage))

options(xtable.comment = FALSE)
options(xtable.booktabs = TRUE)
xtable(head(By_EVTYPE[, 1:5]), caption = "First rows of mtcars")
```

	STATE__	BGN_DATE	BGN_TIME	TIME_ZONE	COUNTY
1	1.00	1950-04-18	0130	CST	97.00
2	1.00	1950-04-18	0145	CST	3.00
3	1.00	1951-02-20	1600	CST	57.00
4	1.00	1951-06-08	0900	CST	89.00
5	1.00	1951-11-15	1500	CST	43.00
6	1.00	1951-11-15	2000	CST	77.00

Table 1: First rows of mtcars

```
## Source: local data frame [6 x 2]
##
##              EVTYPE TotalDamage
## 1           TORNADO   3212258.2
## 2       FLASH FLOOD   1420124.6
## 3         TSTM WIND   1335965.6
## 4             FLOOD    899938.5
## 5 THUNDERSTORM WIND    876844.2
## 6              HAIL    688693.4
```

```
## \begin{table}[ht]
## \centering
## \begin{tabular}{rlrr}
##   \toprule
##  & EVTYPE & TotalInjureis & TotalDamage \\
##   \midrule
## 1 & TORNADO & 91346.00 & 3212258.16 \\
##   2 & TSTM WIND & 6957.00 & 1335965.61 \\
##   3 & FLOOD & 6789.00 & 899938.48 \\
##   4 & EXCESSIVE HEAT & 6525.00 & 1460.00 \\
##   5 & LIGHTNING & 5230.00 & 603351.78 \\
##   6 & HEAT & 2100.00 & 298.50 \\
##    \bottomrule
## \end{tabular}
## \caption{First rows of mtcars}
## \end{table}
```

```
##                EVTYPE Total.Injureis
## 1             TORNADO          91346
## 2           TSTM WIND           6957
## 3               FLOOD           6789
## 4      EXCESSIVE HEAT           6525
## 5           LIGHTNING           5230
## 6                HEAT           2100
## 7           ICE STORM           1975
## 8         FLASH FLOOD           1777
## 9   THUNDERSTORM WIND           1488
## 10              HAIL           1361
## 11       WINTER STORM           1321
## 12  HURRICANE/TYPHOON           1275
## 13          HIGH WIND           1137
## 14         HEAVY SNOW           1021
## 15           WILDFIRE            911
## 16 THUNDERSTORM WINDS            908
## 17           BLIZZARD            805
## 18                FOG            734
## 19   WILD/FOREST FIRE            545
## 20         DUST STORM            440
## 21             others           5883
```

```
events <- 20
others <- sum(healthSum$TotalInjureis[(events +
    1):nrow(healthSum)])
HeSum <- matrix(rep(0, 2 * (events + 1)), (events +
    1), 2)
HeSum[, 1] <- c(as.character(healthSum$EVTYPE[1:events]),
    "others")
HeSum[, 2] <- c(healthSum$TotalInjureis[1:events],
    others)
HeSum <- data.frame(HeSum)
colnames(HeSum) <- c("EVTYPE", "Total.Injureis")
HeSum
```

```
##                EVTYPE Total.Injureis
## 1             TORNADO          91346
## 2           TSTM WIND           6957
## 3               FLOOD           6789
## 4      EXCESSIVE HEAT           6525
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## 17           BLIZZARD            805
## 18                FOG            734
## 19   WILD/FOREST FIRE            545
## 20         DUST STORM            440
## 21             others           5883
```

```
events <- 21
others <- sum(EconomicSum$TotalDamage[(events +
    1):nrow(EconomicSum)])
EcSum <- matrix(rep(0, 2 * (events + 1)), (events +
    1), 2)
EcSum[, 1] <- c(as.character(EconomicSum$EVTYPE[1:events]),
    "others")
EcSum[, 2] <- c(EconomicSum$TotalDamage[1:events],
    others)
EcSum <- data.frame(EcSum)
colnames(EcSum) <- c("EVTYPE", "Total.Damage")
EcSum
```

```
##                  EVTYPE Total.Damage
## 1               TORNADO   3212258.16
## 2           FLASH FLOOD   1420124.59
## 3             TSTM WIND   1335965.61
## 4                 FLOOD    899938.48
## 5     THUNDERSTORM WIND    876844.17
## 6                  HAIL    688693.38
## 7             LIGHTNING    603351.78
## 8    THUNDERSTORM WINDS    446293.18
## 9             HIGH WIND    324731.56
## 10        WINTER STORM    132720.59
## 11          HEAVY SNOW    122251.99
## 12            WILDFIRE     84459.34
## 13           ICE STORM     66000.67
## 14         STRONG WIND     62993.81
## 15           HIGH WINDS        55625
## 16           HEAVY RAIN     50842.14
## 17       TROPICAL STORM     48423.68
```

```
## 18     WILD/FOREST FIRE     39344.95
## 19       FLASH FLOODING     28497.15
## 20 URBAN/SML STREAM FLD     26051.94
## 21             BLIZZARD     25318.48
## 22               others    333769.36
```

```
events <- 21
others <- sum(EconomicSum$TotalDamage[(events +
    1):nrow(EconomicSum)])
EcSum <- matrix(rep(0, 2 * (events + 1)), (events +
    1), 2)
EcSum[, 1] <- c(as.character(EconomicSum$EVTYPE[1:events]),
    "others")
EcSum[, 2] <- c(EconomicSum$TotalDamage[1:events],
    others)
EcSum <- data.frame(EcSum)
colnames(EcSum) <- c("EVTYPE", "Total.Damage")
EcSum
```

```
##                  EVTYPE Total.Damage
## 1               TORNADO   3212258.16
## 2           FLASH FLOOD   1420124.59
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## 22               others    333769.36
```

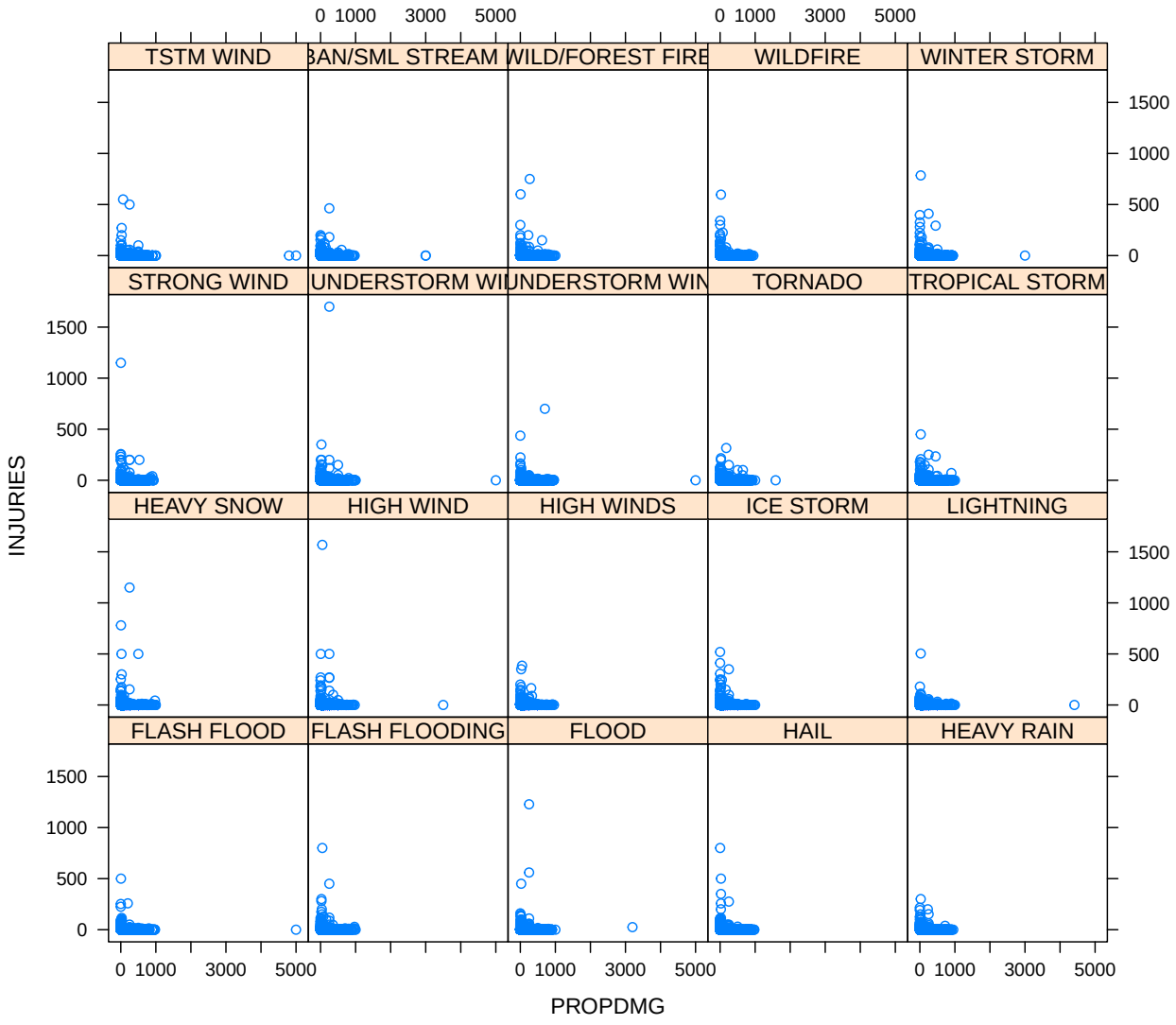
TSTM WIND
BAN/SML STREAM
WILD/FOREST FIRE
WILDFIRE
WINTER STORM
STRONG WIND
UNDERSTORM WI
UNDERSTORM WIN
TORNADO
TROPICAL STORM
HEAVY SNOW
HIGH WIND
HIGH WINDS
ICE STORM
LIGHTNING
FLASH FLOOD
FLASH FLOODING
FLOOD
HAIL
HEAVY RAIN
INJURIES
PROPDMG
0 1000 3000 5000
0 500 1000 1500