Damages related with Storms and other severe weather events

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Synopsis

Storms and other severe weather events can cause both public health and economic problems for communities and municipalities. Many severe events can result in fatalities, injuries, and property damage, and preventing such outcomes to the extent possible is a key concern.

This project involves exploring the U.S. National Oceanic and Atmospheric Administration's (NOAA) storm database. This database tracks characteristics of major storms and weather events in the United States, including when and where they occur, as well as estimates of any fatalities, injuries, and property damage.

Assignment

The basic goal of this assignment is to explore the NOAA Storm Database and answer some basic questions about severe weather events. You must use the database to answer the questions below and show the code for your entire analysis. Your analysis can consist of tables, figures, or other summaries. You may use any R package you want to support your analysis.

Consider writing your report as if it were to be read by a government or municipal manager who might be responsible for preparing for severe weather events and will need to prioritize resources for different types of events. However, there is no need to make any specific recommendations in your report.

Data Processing

Since the size of the data is quite big the data.table package is used for faster and better efficiency reading library(data.table)

The data for this assignment comes in the form of a comma-separated-value file compressed via the bzip2 algorithm to reduce its size. You can download the file from the course web site:

Storm Data [47Mb]

There is also some documentation of the database available. Here you will find how some of the variables are constructed/defined.

National Weather Service Storm Data Documentation National Climatic Data Center Storm Events FAQ

The events in the database start in the year 1950 and end in November 2011. In the earlier years of the database there are generally fewer events recorded, most likely due to a lack of good records. More recent years should be considered more complete.

For sake of better columns class settings we define column classes when loading raw data.

```
colClasses=c("factor", "character", "character", "numeric", "character", "factor", "factor", "numeric", "character", "factor", "numeric", "character", "factor", "factor", "numeric", "character", "factor", "factor", "numeric", "character", "character", "header = TRUE, colClasses=colClasses, na.strings=NULL, data_colclasses=colClasses, na.strings=NULL, data_colclasses=colClasses, na.strings=NULL, data_colclasses=colClasses, na.strings=NULL, data_colclasses=colClasses, na.strings=NULL, data_colclasses=colClasses, na.strings=NULL, data_colclasses=colClasses, na.strings=NULL, data_colclasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=colClasses=
```

data summary

str(DT)

```
## Classes 'data.table' and 'data.frame': 902297 obs. of 37 variables:
   $ STATE__ : Factor w/ 70 levels "1.00","10.00",..: 1 1 1 1 1 1 1 1 1 1 ...
   $ BGN_DATE : chr "4/18/1950 0:00:00" "4/18/1950 0:00:00" "2/20/1951 0:00:00" "6/8/1951 0:00:00" .
                   "0130" "0145" "1600" "0900" ...
   $ BGN TIME : chr
                   "CST" "CST" "CST" "CST" ...
   $ TIME_ZONE : chr
   $ COUNTY
            : num 97 3 57 89 43 77 9 123 125 57 ...
## $ COUNTYNAME: chr "MOBILE" "BALDWIN" "FAYETTE" "MADISON" ...
            : Factor w/ 72 levels "AK", "AL", "AM", ...: 2 2 2 2 2 2 2 2 2 ...
## $ STATE
             ## $ EVTYPE
## $ BGN RANGE : num 0 0 0 0 0 0 0 0 0 ...
                   ...
## $ BGN AZI : chr
                   ...
## $ BGN_LOCATI: chr
                   ...
   $ END DATE : chr
##
                   ...
##
   $ END_TIME : chr
  $ COUNTY_END: chr
                   "0.00" "0.00" "0.00" "0.00" ...
                   ... ... ... ...
  $ COUNTYENDN: chr
   $ END_RANGE : num 0 0 0 0 0 0 0 0 0 ...
                   ...
  $ END_AZI : chr
                   "" "" "" ...
   $ END_LOCATI: chr
   $ LENGTH
            : num 14 2 0.1 0 0 1.5 1.5 0 3.3 2.3 ...
##
   $ WIDTH
             : num 100 150 123 100 150 177 33 33 100 100 ...
## $ F
             : Factor w/ 7 levels "","0","1","2",..: 5 4 4 4 4 4 4 3 5 5 ...
## $ MAG
             : Factor w/ 226 levels "0.00", "1.00", ...: 1 1 1 1 1 1 1 1 1 1 ...
## $ FATALITIES: num 0 0 0 0 0 0 0 1 0 ...
## $ INJURIES : num 15 0 2 2 2 6 1 0 14 0 ...
## $ PROPDMG : num 25 2.5 25 2.5 2.5 2.5 2.5 25 25 ...
## $ PROPDMGEXP: chr "K" "K" "K" "K" ...
   $ CROPDMG : num 0 0 0 0 0 0 0 0 0 ...
                   ...
## $ CROPDMGEXP: chr
                   ...
## $ WFO
          : chr
                   ...
## $ STATEOFFIC: chr
## $ ZONENAMES : chr "" "" "" ...
## $ LATITUDE : num 3040 3042 3340 3458 3412 ...
## $ LONGITUDE : num 8812 8755 8742 8626 8642 ...
## $ LATITUDE_E: num 3051 0 0 0 0 ...
## $ LONGITUDE_: num
                   8806 0 0 0 0 ...
                   ...
## $ REMARKS : chr
            : num 1 2 3 4 5 6 7 8 9 10 ...
## - attr(*, ".internal.selfref")=<externalptr>
```

Let's see first rows of the data table

head(DT)

```
##
                        BGN_DATE BGN_TIME TIME_ZONE COUNTY COUNTYNAME STATE
## 1:
                                                 CST
                                                         97
         1.00 4/18/1950 0:00:00
                                     0130
                                                                MOBILE
                                                                          AL
         1.00 4/18/1950 0:00:00
                                                 CST
## 2:
                                     0145
                                                          3
                                                               BALDWIN
                                                                          AL
## 3:
         1.00 2/20/1951 0:00:00
                                     1600
                                                 CST
                                                         57
                                                               FAYETTE
                                                                          AL
         1.00
              6/8/1951 0:00:00
                                     0900
                                                 CST
                                                         89
                                                               MADISON
                                                                          AL
         1.00 11/15/1951 0:00:00
                                     1500
                                                 CST
                                                         43
                                                               CULLMAN
                                                                          AL
         1.00 11/15/1951 0:00:00
                                     2000
                                                 CST
                                                         77 LAUDERDALE
       EVTYPE BGN_RANGE BGN_AZI BGN_LOCATI END_DATE END_TIME COUNTY_END
## 1: TORNADO
```

```
## 2: TORNADO
                                                                       0.00
## 3: TORNADO
                       0
                                                                       0.00
## 4: TORNADO
                       0
                                                                       0.00
                       0
## 5: TORNADO
                                                                       0.00
## 6: TORNADO
                       0
                                                                       0.00
      COUNTYENDN END RANGE END AZI END LOCATI LENGTH WIDTH F MAG FATALITIES
##
## 1:
                                                  14.0
                                                          100 3 0.00
## 2:
                          0
                                                    2.0
                                                          150 2 0.00
                                                                               0
## 3:
                          0
                                                    0.1
                                                          123 2 0.00
                                                                               0
                          0
                                                                               0
## 4:
                                                    0.0
                                                          100 2 0.00
## 5:
                          0
                                                    0.0
                                                          150 2 0.00
                                                                               0
                          0
                                                          177 2 0.00
                                                                               0
## 6:
                                                    1.5
      INJURIES PROPDMG PROPDMGEXP CROPDMG CROPDMGEXP WFO STATEOFFIC ZONENAMES
##
                   25.0
## 1:
            15
                                 K
                                          0
## 2:
             0
                   2.5
                                 K
                                          0
## 3:
             2
                   25.0
                                 K
                                          0
                                 K
## 4:
             2
                    2.5
                                          0
## 5:
                    2.5
                                 K
## 6:
                    2.5
                                 K
                                          0
             6
      LATITUDE LONGITUDE LATITUDE E LONGITUDE REMARKS REFNUM
##
## 1:
          3040
                     8812
                                3051
                                            8806
                                                               1
## 2:
          3042
                                   0
                                                               2
                     8755
                                   0
                                               0
                                                               3
## 3:
          3340
                     8742
                                   0
                                               0
                                                               4
## 4:
          3458
                     8626
                                                               5
## 5:
          3412
                     8642
                                   0
                                               0
          3450
                     8748
                                    0
We need to solve some problems with Begin date column thus packages for handling date and time classes
are loaded
library(lubridate)
library(reshape2)
DT[,BGN_DATE:=mdy(colsplit(string=DT$BGN_DATE, pattern=" ",names = c("Part1", "Part2"))$Part1)]
Check data problems are solved
head(DT[,BGN_DATE])
## [1] "1950-04-18" "1950-04-18" "1951-02-20" "1951-06-08" "1951-11-15"
## [6] "1951-11-15"
summary(DT$BGN DATE)
                      1st Qu.
                                    Median
                                                    Mean
                                                               3rd Qu.
## "1950-01-03" "1995-04-20" "2002-03-18" "1998-12-27" "2007-07-28"
##
           Max.
## "2011-11-30"
Remove not used columns so that the file size is more handy for computations
DT[,c("STATE__","BGN_TIME","TIME_ZONE","COUNTY","COUNTYNAME","BGN_RANGE","BGN_AZI","BGN_LOCATI","END_DA
str(DT)
## Classes 'data.table' and 'data.frame':
                                              902297 obs. of 11 variables:
## $ BGN_DATE : Date, format: "1950-04-18" "1950-04-18" ...
```

: Factor w/ 72 levels "AK", "AL", "AM", ...: 2 2 2 2 2 2 2 2 2 2 ...

\$ STATE

\$ EVTYPE

```
$ LENGTH
                : num 14 2 0.1 0 0 1.5 1.5 0 3.3 2.3 ...
##
   $ WIDTH
                : num 100 150 123 100 150 177 33 33 100 100 ...
                : Factor w/ 7 levels "","0","1","2",...: 5 4 4 4 4 4 4 3 5 5 ...
##
   $ F
  $ MAG
                : Factor w/ 226 levels "0.00", "1.00", ...: 1 1 1 1 1 1 1 1 1 1 ...
##
   $ FATALITIES: num 0 0 0 0 0 0 0 1 0 ...
  $ INJURIES : num 15 0 2 2 2 6 1 0 14 0 ...
##
  $ PROPDMG
               : num 25 2.5 25 2.5 2.5 2.5 2.5 2.5 25 25 ...
              : num 0000000000...
##
   $ CROPDMG
   - attr(*, ".internal.selfref")=<externalptr>
Agregate new month and year columns for better clasifications and summaries
DT[,MONTH:=month(BGN DATE)]
DT[,YEAR:=year(BGN_DATE)]
head(DT)
##
        BGN DATE STATE EVTYPE LENGTH WIDTH F MAG FATALITIES INJURIES
## 1: 1950-04-18
                    AL TORNADO
                                 14.0
                                        100 3 0.00
                                                             0
                                                                      15
## 2: 1950-04-18
                    AL TORNADO
                                  2.0
                                        150 2 0.00
                                                             0
                                                                       0
## 3: 1951-02-20
                                                                       2
                    AL TORNADO
                                   0.1
                                         123 2 0.00
                                                             0
## 4: 1951-06-08
                    AL TORNADO
                                  0.0
                                         100 2 0.00
                                                             0
                                                                       2
                                                                       2
## 5: 1951-11-15
                    AL TORNADO
                                   0.0
                                         150 2 0.00
                                                             0
## 6: 1951-11-15
                    AL TORNADO
                                   1.5
                                         177 2 0.00
                                                             0
                                                                       6
##
      PROPDMG CROPDMG MONTH YEAR
## 1:
         25.0
                    0
                          4 1950
## 2:
          2.5
                    0
                          4 1950
## 3:
         25.0
                    0
                          2 1951
## 4:
          2.5
                    0
                          6 1951
## 5:
          2.5
                    0
                         11 1951
## 6:
          2.5
                         11 1951
Replace NAs rows with 0 and check results
myNAs <- lapply(DT, function(x) which(is.na(x)))
{for(j in seq_along(DT)) if(length(myNAs[[j]]) > 0) set(DT, myNAs[[j]], j, 0)
}
sum(is.na(DT))
## [1] 0
anyNA(DT, recursive=TRUE)
## [1] FALSE
Set Keys in data table for fast ordering
setkey(DT,EVTYPE,YEAR)
```

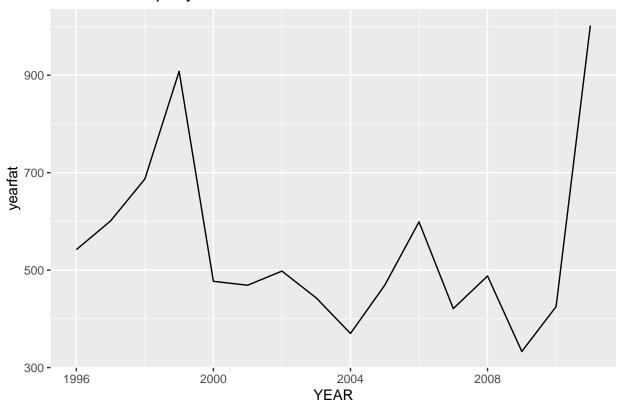
which types of events are most harmful to population health?

According to NOAA the data recording start from Jan. 1950. At that time they recorded one event type, tornado. They add more events gradually and only from Jan. 1996 they start recording all events type. Since our objective is comparing the effects of different weather events, do we need to include all years, even it has only single event type? We will cut data beginning 1996

Total Fatalities and Injuries per year and event type with corresponding means

```
ans1<-DT[,.(totalfat=sum(FATALITIES,na.rm = TRUE),totalinjur=sum(INJURIES,na.rm = TRUE),meanfat=mean(FA
##
                         EVTYPE YEAR totalfat totalinjur
##
                                                      705 0.0209846651
                        TORNADO 1996
                                            26
     1:
                                            22
##
     2:
                      TSTM WIND 1996
                                                      324 0.0022077270
##
                      LIGHTNING 1996
                                                      315 0.0579868709
     3:
                                            53
##
     4:
                   WINTER STORM 1996
                                            24
                                                      250 0.0551724138
##
    5:
                       BLIZZARD 1996
                                            23
                                                      170 0.1575342466
##
  ---
                  COASTAL FLOOD 2011
                                                        1 0.0106382979
## 488:
                                             1
                     HEAVY RAIN 2011
                                                        1 0.0009389671
## 489:
                                            1
## 490: EXTREME COLD/WIND CHILL 2011
                                            2
                                                        1 0.0129032258
## 491:
                 TROPICAL STORM 2011
                                            4
                                                        1 0.0251572327
## 492:
                COLD/WIND CHILL 2011
                                            21
                                                        1 0.3181818182
##
            meaninju
##
     1: 0.5690072639
##
     2: 0.0325137983
##
     3: 0.3446389497
##
     4: 0.5747126437
##
     5: 1.1643835616
##
## 488: 0.0106382979
## 489: 0.0009389671
## 490: 0.0064516129
## 491: 0.0062893082
## 492: 0.0151515152
Total Fatalities and Injuries per Year with corresponding means
ans2<-DT[YEAR>1995,.(yearfat=sum(FATALITIES,na.rm = TRUE),yearinjur=sum(INJURIES,na.rm = TRUE),yearmean
ans2
##
       YEAR yearfat yearinjur yearmeanfat yearmeaninju
## 1: 1996
                542
                         2717 0.016795786
                                             0.08419585
## 2: 1997
                601
                         3800 0.020955370
                                            0.13249651
## 3: 1998
                687
                        11177 0.018018254
                                           0.29314415
## 4: 1999
                908
                         5148 0.029019783
                                           0.16453067
## 5: 2000
                477
                         2803 0.013837719
                                            0.08131473
## 6: 2001
                         2721 0.013414564
                469
                                           0.07782736
## 7: 2002
                498
                         3155 0.013721654
                                           0.08693136
## 8: 2003
                                            0.07373214
                443
                         2931 0.011144093
## 9: 2004
                370
                         2426 0.009399690
                                            0.06163148
## 10: 2005
                469
                         1834 0.011969171
                                            0.04680482
## 11: 2006
                         3368 0.013603125
                599
                                            0.07648635
## 12: 2007
                421
                         2191 0.009725334
                                            0.05061332
## 13: 2008
                         2703 0.008767045
                488
                                            0.04856008
## 14: 2009
                333
                         1354 0.007268045
                                            0.02955235
## 15: 2010
                425
                         1855 0.008824568
                                            0.03851664
## 16: 2011
                         7792 0.016116061
                                            0.12532570
               1002
library(ggplot2)
ggplot(ans2)+geom_line(aes(x=YEAR,y=yearfat))+labs(title ="total fatalities per year")
```

total fatalities per year



Total Fatalities and Injuries per event type ordered decreasinggly

ans3<-DT[YEAR>1995,.(TOTFatal=sum(FATALITIES,na.rm = TRUE),TOTInjur=sum(INJURIES,na.rm = TRUE)),by=EVTY.

##		EVTYPE	TOTFatal	TOTInjur
##	1:	EXCESSIVE HEAT	1797	6391
##	2:	TORNADO	1511	20667
##	3:	FLASH FLOOD	887	1674
##	4:	LIGHTNING	651	4141
##	5:	FLOOD	414	6758
##				
##	512:	Wintry mix	0	0
##	513:	coastal flooding	0	0
##	514:	gradient wind	0	0
##	515:	small hail	0	0
##	516:	wet micoburst	0	0

Total Fatalities and Injuries by event type and State ordered decreasinggly

ans4<-DT[YEAR>1995,.(TOTFatal=sum(FATALITIES,na.rm = TRUE),TOTInjur=sum(INJURIES,na.rm = TRUE)),by=.(EVans4

```
EVTYPE STATE TOTFatal TOTInjur
##
##
      1:
                   TORNADO
                               AL
                                        335
                                                3231
##
      2:
           EXCESSIVE HEAT
                               IL
                                        330
                                                 352
##
      3:
           EXCESSIVE HEAT
                               PA
                                        292
                                                 320
##
      4:
           EXCESSIVE HEAT
                               TX
                                        259
                                                   10
                                        233
                                                2059
##
      5:
                   TORNADO
                               MO
```

```
##
## 3054: coastal flooding
                               TX
                                          0
                                                   0
## 3055:
             gradient wind
                                                   0
                               TX
                                          0
## 3056:
                               NY
                                          0
                                                   0
                small hail
## 3057:
                small hail
                               VT
                                          0
                                                   0
## 3058:
             wet micoburst
                               OR
                                          0
                                                   0
```

Total Fatalities and Injuries per State ordered decreasingly

ans5<-DT[YEAR>1995,.(TOTFatal=sum(FATALITIES,na.rm = TRUE),TOTInjur=sum(INJURIES,na.rm = TRUE)),by=STATens5

```
##
        STATE TOTFatal TOTInjur
##
    1:
           TX
                    756
                             9222
##
    2:
           IL
                    586
                             1328
##
    3:
           FL
                    544
                             2884
           MO
                    533
                             5960
##
    4:
##
    5:
                    498
                             2769
           CA
##
    6:
           PA
                    492
                             1450
    7:
                    449
                             3707
##
           AL
##
    8:
           TN
                    327
                             2385
##
    9:
           NY
                    268
                              908
## 10:
           NC
                    263
                             1378
## 11:
           AR
                    228
                             1656
## 12:
           OK
                    219
                             2375
## 13:
                              635
           AZ
                    175
## 14:
           GA
                    160
                             1666
## 15:
                             1217
           {\tt MS}
                    160
## 16:
           OH
                    158
                              895
## 17:
                    147
                              936
           NJ
## 18:
           CO
                    147
                              662
## 19:
                    144
           LA
                              812
## 20:
           MD
                    141
                             1293
## 21:
           KS
                    140
                              845
## 22:
           IN
                    133
                              835
## 23:
           SC
                    131
                              559
## 24:
                    130
                              979
           UT
## 25:
           WA
                    119
                              258
## 26:
           ΚY
                    117
                              850
## 27:
           VA
                    114
                              902
## 28:
           PR
                    111
                                50
## 29:
                    110
                             1195
           ΜI
## 30:
                    110
           WI
                              806
## 31:
           NV
                     89
                              205
## 32:
           GU
                     81
                              416
## 33:
           MN
                     72
                              513
## 34:
                     72
                              201
           OR
## 35:
           WV
                     67
                              124
## 36:
           ΑK
                     62
                              104
## 37:
           ΙA
                     61
                              984
## 38:
           NM
                     61
                              168
## 39:
           WY
                     52
                              309
## 40:
                     52
           MT
                              150
                     42
                              350
## 41:
           NE
## 42:
           ID
                     42
                              173
```

```
## 43:
           ND
                      41
                                265
## 44:
           AS
                      41
                                164
## 45:
           SD
                      36
                                473
                      35
## 46:
           CT
                                172
## 47:
           MA
                      34
                                687
## 48:
                      33
                                 81
           ΗI
## 49:
                      24
                                255
           DE
                      24
## 50:
           NH
                                139
## 51:
           ME
                      22
                                130
## 52:
                      19
           VT
                                 41
## 53:
           DC
                      13
                                369
                                 23
## 54:
                      12
           AN
                                 30
## 55:
           AM
                      10
                                  2
## 56:
                       7
           VI
## 57:
                       6
                                 25
           RI
## 58:
           PΖ
                       5
                                  3
## 59:
                       4
                                  2
           LM
## 60:
           GM
                       1
                                  0
## 61:
                       1
                                  0
           LS
## 62:
           PH
                       1
                                  0
## 63:
           LC
                       0
                                  0
## 64:
                       0
                                  0
           LH
                       0
                                  0
## 65:
           LE
## 66:
                       0
                                  0
           SL
                       0
                                  0
## 67:
           LO
## 68:
           PK
                       0
                                  0
##
   69:
           XX
                       0
                                  0
   70:
                       0
##
           PM
##
        STATE TOTFatal TOTInjur
```

which types of events have the greatest economic consequences?

In the new tables (post-2012), it looks like PROPDMGEXP is gone, and DAMAGE_PROPERTY contains the data that was previously separated into PROPDMG and PROPDMGEXP.

That explains why 20, 3 is now corrected into 203, and so on. Looks like the + and - were entered by under-trained staff to indicate that the damage is more than x or less than x.

So the conclusion is that the malformed rows are indeed caused by improper handling, and they were fixed during the 2012 update. My approach was to ignore all of them because these amounts are negligible when we are talking about sums that go into the billions.

Note: Looks like all data with EXP numeric values only happened in the range of 1994-1995 period which is very small compared to overall data.

Event Type frequencies per State ordered decreasingly

```
ans6<-DT[YEAR>1995,.(.N), by = .(EVTYPE,STATE)][order(STATE,-N)]
ans6
```

```
##
                              EVTYPE STATE
                                                N
##
      1:
                           HIGH WIND
                                         AK 1675
##
      2:
                            BLIZZARD
                                         AK
                                              865
##
      3:
                          HEAVY SNOW
                                         AK
                                              581
##
                               FLOOD
                                              208
      4:
                                         AK
##
      5:
                       WINTER STORM
                                         AK
                                              143
```

```
##
## 3054:
                        DUST DEVIL
                                             2
                                       WY
## 3055:
                 EXTREME WINDCHILL
                                              2
## 3056:
                      Blowing Snow
                                       WY
                                              1
## 3057:
                         ICE ROADS
                                       WY
                                              1
## 3058: MARINE THUNDERSTORM WIND
                                             2
                                       XX
Frequencies of event type ordered decreasingly
ans7<-DT[YEAR>1995,.(.N), by = .(EVTYPE)][order(-N)]
ans7
##
                    EVTYPE
##
                      HAIL 207715
     1:
##
                 TSTM WIND 128662
##
     3: THUNDERSTORM WIND
                           81402
              FLASH FLOOD
##
     4:
                            50999
##
     5:
                     FLOOD
                            24247
##
    ---
## 512:
            WIND AND WAVE
## 513:
               WINTER MIX
## 514:
                       {\tt WND}
                                 1
## 515:
               Wintry Mix
                                 1
## 516:
            wet micoburst
Number of events per State ordered decreasingly
ans8<-DT[YEAR>1995,.(.N), by = STATE][order(-N)]
ans8
##
       STATE
                  N
##
    1:
          TX 51335
##
    2:
          KS 38649
   3:
          OK 26980
##
##
   4:
          MO 25802
          IA 22712
##
    5:
##
    6:
          IL 21215
##
   7:
          NE 20955
##
   8:
          NC 19413
## 9:
          AR 18234
## 10:
          GA 18063
## 11:
          KY 17683
## 12:
          MN 17613
## 13:
          OH 17387
## 14:
          TN 17273
## 15:
          VA 17246
## 16:
          SD 16165
## 17:
          AL 16093
## 18:
          PA 15980
## 19:
          IN 15490
## 20:
          CO 15457
## 21:
          MS 15372
## 22:
          NY 15200
## 23:
          FL 15142
## 24:
          WI 14121
## 25:
          SC 12770
## 26:
          MI 12532
```

```
## 27:
           MT 12341
## 28:
           ND 10567
## 29:
           CA
               9873
## 30:
               9666
           LA
## 31:
           WV
               7185
## 32:
           NJ
               6649
## 33:
           MD
               6565
## 34:
           WY
               5453
## 35:
           GM
               5337
## 36:
           NM
               5172
## 37:
           AZ
               4755
## 38:
           MA
               4482
## 39:
               4355
           OR
## 40:
               4031
           ΑK
## 41:
           ME
               3687
## 42:
           ID
               3388
## 43:
           UT
               3262
## 44:
           AN
               3250
## 45:
           VT
               3046
## 46:
           WA
               3000
## 47:
           PR
               2753
## 48:
           NV
               2687
## 49:
           CT
               2624
## 50:
           ΗI
               2450
## 51:
           NH
               2441
## 52:
           AM
               1879
## 53:
           DE
               1571
## 54:
           LE
               1526
## 55:
           LM
               1347
## 56:
                 694
           RI
## 57:
           LH
                 654
## 58:
           DC
                 364
## 59:
           GU
                 302
## 60:
           VI
                 278
## 61:
           LC
                 274
## 62:
           LS
                 262
## 63:
           AS
                 251
## 64:
           PΖ
                  96
## 65:
           LO
                  70
## 66:
           PH
                  28
## 67:
           PK
                  23
                   7
## 68:
           SL
## 69:
           XX
                   2
## 70:
           PM
                   1
##
       STATE
```

Total property and crop damage per year with corresponding means

```
ans9<-DT[,.(TOTprpdmg=sum(PROPDMG,na.rm = TRUE),TOTcropdmg=sum(CROPDMG,na.rm = TRUE),meanprpdmg=mean(PR
ans9</pre>
```

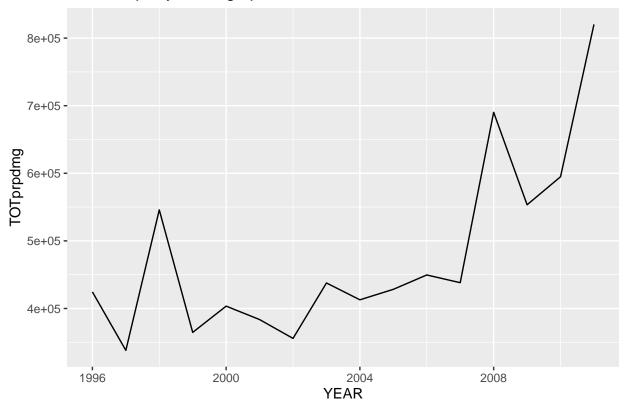
```
##
       YEAR TOTprpdmg TOTcropdmg meanprpdmg meancropdmg
##
    1: 1996
             424503.3
                         69291.90
                                   13.154736
                                                2.147254
    2: 1997
                        74074.56
                                                2.582795
##
             337999.5
                                   11.785200
    3: 1998
            545844.6
                       102235.21
                                  14.316110
                                                2.681368
```

```
##
    4: 1999
             364611.5
                         62707.15
                                   11.653026
                                                 2.004128
                         79413.61
##
    5: 2000
             403471.2
                                   11.704657
                                                 2.303780
##
    6: 2001
             383596.8
                         48248.35
                                   10.971820
                                                 1.380023
    7: 2002
             355741.3
                         49230.64
                                     9.801927
                                                 1.356478
##
##
       2003
             437754.9
                         52322.19
                                   11.012147
                                                 1.316215
    9: 2004
                                   10.487961
                                                 1.840281
##
             412837.6
                         72438.97
## 10: 2005
             428309.1
                         48443.05
                                   10.930714
                                                 1.236297
## 11: 2006
             449583.7
                         65850.56
                                   10.209921
                                                 1.495448
## 12: 2007
                                   10.121977
             438170.3
                         76768.00
                                                 1.773384
## 13: 2008
             690246.1
                        183821.00
                                   12.400448
                                                 3.302391
## 14: 2009
             553432.6
                         59683.00
                                   12.079197
                                                 1.302639
## 15: 2010
             594847.9
                         59014.00
                                   12.351237
                                                 1.225348
## 16: 2011
             820290.7
                         98311.00 13.193469
                                                 1.581224
```

Let's graphic the table above

ggplot(ans9)+geom_line(aes(x=YEAR,y=TOTprpdmg))+labs(title ="Total Property Damage per Year")

Total Property Damage per Year



Total property and crop damages per year by State and corresponding means ordered decreasingly

ans10<-DT[,.(TOTprpdmg=sum(PROPDMG,na.rm = TRUE),TOTcropdmg=sum(CROPDMG,na.rm = TRUE),meanprpdmg=mean(Pans10)

```
##
         YEAR STATE TOTprpdmg TOTcropdmg meanprpdmg meancropdmg
##
      1: 1996
                  TX
                      36001.07
                                   2571.93
                                              11.16312
                                                          0.7974977
##
      2: 1996
                  VA
                      27584.27
                                   8766.89
                                              26.42171
                                                          8.3974042
##
      3: 1996
                  NY
                      24998.46
                                    645.00
                                              28.56967
                                                          0.7371429
##
      4: 1996
                  ΙA
                      19055.90
                                   4156.60
                                              35.09374
                                                          7.6548803
      5: 1996
                                              28.63653
##
                  WΙ
                      18814.20
                                   4724.10
                                                          7.1904110
```

```
##
## 1006: 2011
                          0.00
                                      0.00
                                                         0.000000
                  LE
                                              0.00000
                  LC
                          0.00
                                      0.00
                                              0.00000
                                                         0.000000
## 1007: 2011
## 1008: 2011
                  LO
                          0.00
                                      0.00
                                              0.00000
                                                         0.000000
## 1009: 2011
                  XX
                          0.00
                                      0.00
                                              0.00000
                                                         0.000000
                                              0.00000
## 1010: 2011
                  PH
                          0.00
                                      0.00
                                                         0.000000
```

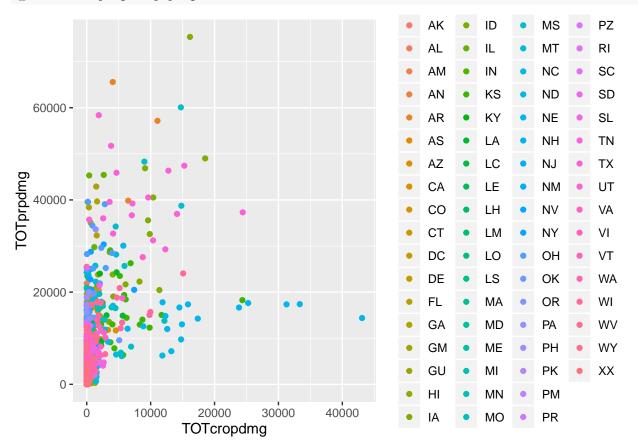
Total property and crop damages per by State and years with corresponding means ordered decreasingly

ans11<-DT[,.(TOTprpdmg=sum(PROPDMG,na.rm = TRUE),TOTcropdmg=sum(CROPDMG,na.rm = TRUE),meanprpdmg=mean(Pans11

```
##
         STATE YEAR TOTprpdmg TOTcropdmg meanprpdmg
##
      1:
             AK 1996
                         549.00
                                          0
                                               2.196000
##
      2:
             AK 1997
                         845.75
                                          0
                                               4.975000
##
      3:
             AK 1998
                         493.30
                                          0
                                               2.360287
             AK 1999
                        2187.00
                                               7.100649
##
      4:
                                          10
##
      5:
             AK 2000
                        2398.20
                                          5
                                               7.862951
##
## 1006:
             WY 2009
                        4024.00
                                         65
                                               7.874755
##
   1007:
             WY 2010
                        3291.40
                                        124
                                               4.412064
             WY 2011
                                       1390
## 1008:
                        5512.00
                                               7.408602
## 1009:
             XX 2009
                           0.00
                                          0
                                               0.00000
## 1010:
             XX 2011
                           0.00
                                          0
                                               0.000000
```

Let's graphic the table above

qplot(TOTcropdmg,TOTprpdmg,data=ans11,color=STATE)



Total property and crop damages by State ordered decreasingly

ans12<-DT[YEAR>1995,.(TOTprpdmg=sum(PROPDMG,na.rm = TRUE),TOTcropdmg=sum(CROPDMG,na.rm = TRUE)),by=STATens12

```
##
       STATE TOTprpdmg TOTcropdmg
##
    1:
          TX 627973.21
                         139299.84
    2:
          IA 465302.95
##
                          121546.47
##
    3:
          OH 398135.48
                           19704.65
    4:
##
          MS 357590.20
                           56017.79
##
    5:
          GA 354780.71
                            6890.26
##
    6:
          NY 271327.28
                           18236.55
    7:
          AL 255756.45
##
                           7479.54
##
    8:
          IL 254046.49
                           11732.02
##
    9:
          AR 241738.20
                           25648.13
## 10:
          FL 239133.89
                            9749.38
## 11:
          KS 232477.48
                          113334.87
## 12:
          NE 228885.95
                          288522.79
## 13:
          PA 225617.46
                            3448.90
## 14:
          WI 213111.63
                           69215.00
## 15:
          TN 209740.70
                           13389.20
## 16:
          MO 197675.62
                           14059.34
## 17:
          LA 192096.87
                           22907.33
## 18:
          KY 177800.33
                           7970.40
## 19:
          CA 177116.58
                           18899.71
## 20:
          NC 172110.72
                           21321.15
## 21:
          IN 168043.74
                            9562.00
## 22:
          OK 166770.42
                           9141.84
## 23:
          MI 161392.95
                           15019.05
## 24:
                           21335.64
          VA 151317.10
## 25:
          MN 144728.32
                           41455.75
## 26:
          WV 140495.11
                            3373.88
## 27:
          ND 124093.05
                           42820.61
## 28:
          SD
               93390.12
                           10607.22
## 29:
          SC
               86886.64
                            2461.80
## 30:
          VT
               75823.82
                            2640.00
## 31:
               72032.54
                            7039.81
          WA
## 32:
          MD
               69601.56
                            3447.70
## 33:
          AZ
               67882.94
                             859.00
## 34:
               67238.95
                            1312.00
          MA
## 35:
          NJ
               56844.02
                            1363.00
## 36:
          ME
               56072.95
                             135.00
## 37:
          CO
               54521.80
                            4673.50
## 38:
          NM
               43679.38
                            3931.67
## 39:
          NH
               41315.99
                             200.00
## 40:
          UT
               40276.06
                            3823.90
                             195.00
## 41:
          AK
               31284.01
## 42:
          MT
               30145.51
                            8526.80
## 43:
          PR
               29782.74
                            2357.60
## 44:
          WY
               29395.79
                            3340.10
## 45:
          NV
               24715.39
                             227.00
## 46:
          ID
               24562.73
                            1878.00
## 47:
          CT
               23982.25
                              30.00
## 48:
                            2227.30
          OR
               18127.81
                             530.10
## 49:
          DE
              14375.27
```

```
## 50:
                9385.34
                            5193.27
## 51:
                8628.40
                               0.00
          RΙ
## 52:
                5970.00
                            1947.33
## 53:
                5653.80
                              50.00
          MA
## 54:
          DC
                3297.50
                               5.00
## 55:
                2004.40
                             205.00
          VI
## 56:
          AS
                1949.50
                             564.00
## 57:
                1633.10
                               0.00
          LM
## 58:
          GM
                 606.04
                               0.00
## 59:
                 400.00
                               0.00
          LS
## 60:
          AN
                 294.00
                               0.00
## 61:
          PZ
                  76.00
                               0.00
## 62:
          LO
                  70.00
                               0.00
## 63:
          PΚ
                  31.00
                               0.00
## 64:
          LE
                  30.00
                               0.00
## 65:
          SL
                  15.00
                               0.00
## 66:
          LC
                   0.00
                               0.00
## 67:
          LH
                   0.00
                               0.00
## 68:
                   0.00
                               0.00
          PH
## 69:
          XX
                   0.00
                               0.00
## 70:
          PM
                   0.00
                               0.00
##
       STATE TOTprpdmg TOTcropdmg
Total property and crop damages by event type ordered decreasingly
ans13<-DT[YEAR>1995,.(TOTprpdmg=sum(PROPDMG,na.rm = TRUE),TOTcropdmg=sum(CROPDMG,na.rm = TRUE)),by=EVTY
ans13
##
                    EVTYPE TOTprpdmg TOTcropdmg
##
                 TSTM WIND 1330706.9
                                         109110.6
     1:
##
     2:
               FLASH FLOOD 1247562.5
                                         161066.7
##
     3:
                   TORNADO 1187878.2
                                         90128.5
```

```
##
     4: THUNDERSTORM WIND
                           862257.4
                                         66663.0
##
                     FLOOD
                            824936.7
     5:
                                        151826.2
##
   ---
## 512:
           Winter Weather
                                 0.0
                                             0.0
## 513:
                                 0.0
                                             0.0
               Wintry mix
## 514:
         coastal flooding
                                 0.0
                                             0.0
## 515:
                small hail
                                 0.0
                                             0.0
## 516:
            wet micoburst
                                 0.0
                                             0.0
```

Total economic damage by year

ans14<-DT[,.(TOTEconomicDMG=sum(PROPDMG+CROPDMG)),by=YEAR][YEAR>1995][order(YEAR)]
ans14

```
YEAR TOTEconomicDMG
##
##
    1: 1996
                  493795.2
##
    2: 1997
                  412074.1
  3: 1998
##
                  648079.9
  4: 1999
                  427318.7
##
##
    5: 2000
                  482884.8
  6: 2001
##
                  431845.1
  7: 2002
                  404972.0
   8: 2003
##
                  490077.0
##
   9: 2004
                  485276.6
## 10: 2005
                  476752.2
```

```
## 11: 2006 515434.2

## 12: 2007 514938.3

## 13: 2008 874067.1

## 14: 2009 613115.6

## 15: 2010 653861.9

## 16: 2011 918601.7
```

Total economic damage by State ordered decreasingly

ans15<-DT[YEAR>1995,.(TOTEconomicDMG=sum(PROPDMG+CROPDMG)),by=.(STATE)][order(-TOTEconomicDMG)] ans15

```
##
       STATE TOTEconomicDMG
##
    1:
           TX
                   767273.05
##
    2:
           ΙA
                   586849.42
##
    3:
          NE
                   517408.74
##
    4:
           OH
                   417840.13
##
    5:
                   413607.99
          MS
##
    6:
          GA
                   361670.97
    7:
##
                   345812.35
          KS
##
    8:
          NY
                   289563.83
##
   9:
                   282326.63
          WI
## 10:
                   267386.33
           AR
## 11:
                   265778.51
           IL
## 12:
                   263235.99
          AL
## 13:
                   248883.27
          FL
## 14:
          PA
                   229066.36
## 15:
                   223129.90
          TN
## 16:
          LA
                   215004.20
## 17:
          MO
                   211734.96
## 18:
                   196016.29
           CA
## 19:
          NC
                   193431.87
## 20:
          MN
                   186184.07
## 21:
          ΚY
                   185770.73
## 22:
           IN
                   177605.74
## 23:
          ΜI
                   176412.00
## 24:
           OK
                   175912.26
## 25:
           VA
                   172652.74
## 26:
                   166913.66
          ND
## 27:
          WV
                    143868.99
## 28:
                   103997.34
           SD
## 29:
           SC
                    89348.44
## 30:
                    79072.35
           WA
## 31:
          VT
                    78463.82
## 32:
          MD
                    73049.26
## 33:
          AZ
                    68741.94
## 34:
                     68550.95
          MA
## 35:
          CO
                    59195.30
## 36:
          NJ
                    58207.02
## 37:
          ME
                     56207.95
## 38:
          NM
                     47611.05
## 39:
                     44099.96
          UT
## 40:
          NH
                     41515.99
## 41:
                     38672.31
          ΜT
## 42:
          WY
                     32735.89
```

```
## 43:
           PR
                     32140.34
## 44:
           AK
                     31479.01
## 45:
           ID
                     26440.73
                     24942.39
## 46:
           NV
## 47:
           CT
                     24012.25
## 48:
                     20355.11
           OR
## 49:
                     14905.37
           DE
## 50:
           GU
                     14578.61
                      8628.40
## 51:
           RI
## 52:
           ΗI
                      7917.33
## 53:
           AM
                      5703.80
## 54:
           DC
                      3302.50
## 55:
           AS
                      2513.50
## 56:
           VI
                      2209.40
## 57:
                      1633.10
           LM
## 58:
           GM
                       606.04
## 59:
           LS
                       400.00
## 60:
           AN
                       294.00
## 61:
                        76.00
           PΖ
## 62:
           LO
                        70.00
## 63:
           PΚ
                        31.00
## 64:
           LE
                        30.00
                        15.00
## 65:
           SL
## 66:
                          0.00
           LC
## 67:
                         0.00
           LH
## 68:
           PH
                          0.00
## 69:
           XX
                          0.00
##
   70:
           PM
                          0.00
##
       STATE TOTEconomicDMG
```

Total economic damage by event type

ans16<-DT[YEAR>1995,.(TOTEconomicDMG=sum(PROPDMG+CROPDMG)),by=EVTYPE][order(-TOTEconomicDMG)] ans16

```
##
                   EVTYPE TOTEconomicDMG
##
     1:
                TSTM WIND
                                1439817.5
##
     2:
              FLASH FLOOD
                                1408629.2
                  TORNADO
##
     3:
                                1278006.7
##
     4:
                     HAIL
                                1073656.4
##
     5:
                    FLOOD
                                 976762.9
##
          Winter Weather
                                       0.0
## 512:
## 513:
               Wintry mix
                                       0.0
## 514: coastal flooding
                                       0.0
## 515:
               small hail
                                       0.0
## 516:
            wet micoburst
                                       0.0
```

Results

Across the United States, which types of events (as indicated in the EVTYPE variable) are most harmful with respect to population health? The most harmful events across USA for population health considering fatalities and injuries related are:

```
## EVTYPE TOTFatal TOTInjur
```

```
1: EXCESSIVE HEAT
##
                             1797
                                        6391
##
    2:
                TORNADO
                             1511
                                       20667
##
    3:
           FLASH FLOOD
                              887
                                        1674
    4:
             LIGHTNING
                                        4141
##
                              651
##
    5:
                  FLOOD
                              414
                                        6758
##
    6:
           RIP CURRENT
                              340
                                         209
##
    7:
             TSTM WIND
                              241
                                        3629
                                        1222
                   HEAT
                              237
##
    8:
##
    9:
             HIGH WIND
                              235
                                        1083
## 10:
             AVALANCHE
                              223
                                         156
```

Across the United States, which types of events have the greatest economic consequences? The events across USA with the greatest economic consequences considering property damage and crops damage are:

```
##
                   EVTYPE TOTprpdmg TOTcropdmg
                TSTM WIND 1330706.91
##
    1:
                                       109110.60
    2:
##
             FLASH FLOOD 1247562.54
                                       161066.71
##
    3:
                  TORNADO 1187878.23
                                        90128.50
       THUNDERSTORM WIND
##
                           862257.36
                                        66663.00
##
                    FLOOD
                           824936.71
                                       151826.18
    5:
##
    6:
                     HAIL
                           575317.28
                                       498339.12
                                         1903.44
##
    7:
               LIGHTNING
                           488561.85
##
    8:
                HIGH WIND
                           315098.06
                                        17268.21
            WINTER STORM
                           126910.49
                                         1963.99
##
    9:
## 10:
              HEAVY SNOW
                            89393.11
                                         1591.70
```

The event types causing more fatalities and injuries are:

```
##
                EVTYPE TOTFatal TOTInjur
##
    1: EXCESSIVE HEAT
                             1797
                                       6391
##
    2:
                             1511
                                      20667
               TORNADO
    3:
                              887
                                       1674
##
           FLASH FLOOD
##
    4:
             LIGHTNING
                              651
                                       4141
##
    5:
                  FLOOD
                              414
                                       6758
           RIP CURRENT
                                        209
##
    6:
                              340
##
    7:
             TSTM WIND
                              241
                                       3629
##
    8:
                   HEAT
                              237
                                       1222
##
    9:
             HIGH WIND
                              235
                                       1083
## 10:
             AVALANCHE
                              223
                                        156
```

The Event Types most frequent are:

```
EVTYPE
##
                                N
##
    1:
                     HAIL 207715
##
                TSTM WIND 128662
    3: THUNDERSTORM WIND
                            81402
##
##
    4:
              FLASH FLOOD
                            50999
##
    5:
                    FLOOD
                            24247
    6:
                  TORNADO
                            23154
##
    7:
                HIGH WIND
                            19907
##
##
    8:
               HEAVY SNOW
                            14000
##
    9:
                LIGHTNING
                            13203
               HEAVY RAIN
## 10:
                            11509
```

The States with more events are:

```
## STATE N
## 1: TX 51335
```

```
##
    2:
          KS 38649
##
    3:
          OK 26980
##
    4:
          MO 25802
           IA 22712
##
    5:
##
    6:
           IL 21215
##
    7:
          NE 20955
##
    8:
          NC 19413
## 9:
           AR 18234
## 10:
           GA 18063
```

The States with more economic damage are:

```
STATE TOTEconomicDMG
##
##
    1:
           TX
                     767273.1
    2:
##
                     586849.4
           ΙA
##
    3:
           NE
                     517408.7
##
    4:
           OH
                     417840.1
##
    5:
           MS
                     413608.0
##
    6:
           GA
                     361671.0
##
    7:
                     345812.3
           KS
##
    8:
           NY
                     289563.8
##
    9:
           WI
                     282326.6
## 10:
           AR
                     267386.3
## 11:
                     265778.5
           IL
## 12:
           AL
                     263236.0
## 13:
           FL
                     248883.3
## 14:
           PA
                     229066.4
## 15:
           TN
                     223129.9
```

The events types with more total economic damage are:

```
##
                   EVTYPE TOTEconomicDMG
##
    1:
                TSTM WIND
                               1439817.51
##
    2:
              FLASH FLOOD
                               1408629.25
##
    3:
                  TORNADO
                               1278006.73
##
    4:
                               1073656.40
                     HAIL
##
    5:
                    FLOOD
                                976762.89
##
    6: THUNDERSTORM WIND
                                928920.36
##
    7:
                LIGHTNING
                                490465.29
##
    8:
                HIGH WIND
                                332366.27
##
    9:
             WINTER STORM
                                128874.48
## 10:
               HEAVY SNOW
                                 90984.81
```

Apendix

Since the data size is to big for handling we will use Caret package to slice the sample data smaller for some linear regression models

```
# create training and test sets
inTrain <- createDataPartition(y=DT$FATALITIES,p=0.1, list=FALSE)
training<- DT[inTrain,]
testing<- DT[-inTrain,]</pre>
```

```
dim(training)
## [1] 90230
                13
dim(testing)
## [1] 812067
                  13
Some linear regression models are shown for statistical inference
lm1<-lm(FATALITIES~as.factor(EVTYPE),data =training)</pre>
summary(lm1)
##
## lm(formula = FATALITIES ~ as.factor(EVTYPE), data = training)
##
## Residuals:
     Min
              10 Median
                            30
                                  Max
## -5.800 -0.007 -0.003 0.000 33.914
##
## Coefficients:
##
                                                     Estimate Std. Error
## (Intercept)
                                                    5.450e-11 3.294e-01
## as.factor(EVTYPE) WIND
                                                    -5.445e-11 4.658e-01
## as.factor(EVTYPE)APACHE COUNTY
                                                    -5.461e-11 4.658e-01
## as.factor(EVTYPE)ASTRONOMICAL HIGH TIDE
                                                    -5.441e-11 3.429e-01
## as.factor(EVTYPE)ASTRONOMICAL LOW TIDE
                                                    -5.443e-11
                                                               3.375e-01
## as.factor(EVTYPE)AVALANCHE
                                                    4.286e-01 3.341e-01
## as.factor(EVTYPE)BLACK ICE
                                                    -5.447e-11 4.658e-01
                                                    3.488e-02 3.300e-01
## as.factor(EVTYPE)BLIZZARD
## as.factor(EVTYPE)BLIZZARD AND EXTREME WIND CHIL -5.451e-11 4.658e-01
## as.factor(EVTYPE)BLOW-OUT TIDES
                                                   -5.445e-11 4.658e-01
## as.factor(EVTYPE)BREAKUP FLOODING
                                                    -5.454e-11 4.658e-01
                                                    -5.452e-11 3.316e-01
## as.factor(EVTYPE)COASTAL FLOOD
## as.factor(EVTYPE)COASTAL FLOODING
                                                    -5.449e-11 3.418e-01
## as.factor(EVTYPE)COASTAL FLOODING/EROSION
                                                    -5.442e-11 4.658e-01
## as.factor(EVTYPE)COASTAL STORM
                                                    1.000e+00 4.658e-01
                                                    8.333e-01 3.558e-01
## as.factor(EVTYPE)COLD
## as.factor(EVTYPE)COLD TEMPERATURES
                                                    -5.448e-11 4.658e-01
## as.factor(EVTYPE)COLD WAVE
                                                    -5.447e-11 4.658e-01
## as.factor(EVTYPE)COLD WIND CHILL TEMPERATURES
                                                    -5.449e-11 4.658e-01
                                                    1.346e-01 3.326e-01
## as.factor(EVTYPE)COLD/WIND CHILL
## as.factor(EVTYPE)Coastal Flooding
                                                    -5.454e-11 3.683e-01
## as.factor(EVTYPE)Cold
                                                    -5.442e-11 4.034e-01
## as.factor(EVTYPE)Cold and Frost
                                                    -5.455e-11 4.658e-01
## as.factor(EVTYPE)DAMAGING FREEZE
                                                    -5.442e-11 4.658e-01
## as.factor(EVTYPE)DENSE FOG
                                                    2.174e-02 3.306e-01
## as.factor(EVTYPE)DENSE SMOKE
                                                    -5.442e-11 3.804e-01
## as.factor(EVTYPE)DROUGHT
                                                    -5.456e-11 3.301e-01
## as.factor(EVTYPE)DROUGHT/EXCESSIVE HEAT
                                                    -5.453e-11 4.658e-01
## as.factor(EVTYPE)DRY
                                                   -5.457e-11 4.034e-01
## as.factor(EVTYPE)DRY MICROBURST
                                                   -5.448e-11 3.429e-01
## as.factor(EVTYPE)DRY MICROBURST WINDS
                                                   -5.456e-11 4.658e-01
```

-5.445e-11 3.384e-01

as.factor(EVTYPE)DUST DEVIL

```
## as.factor(EVTYPE)DUST STORM
                                                   7.692e-02 3.357e-01
## as.factor(EVTYPE)DUST STORM/HIGH WINDS
                                                  -5.445e-11 4.658e-01
## as.factor(EVTYPE)DUSTSTORM
                                                  -5.444e-11 4.658e-01
                                                  -5.362e-11 4.034e-01
## as.factor(EVTYPE)Dust Devil
## as.factor(EVTYPE)EARLY FREEZE
                                                  -5.432e-11 4.658e-01
## as.factor(EVTYPE)EARLY SNOWFALL
                                                  -5.309e-11 4.658e-01
## as.factor(EVTYPE)EXCESSIVE HEAT
                                                  7.258e-01 3.303e-01
## as.factor(EVTYPE)EXCESSIVE RAINFALL
                                                  -5.328e-11 4.658e-01
## as.factor(EVTYPE)EXCESSIVE SNOW
                                                  -6.361e-11 3.683e-01
## as.factor(EVTYPE)EXCESSIVE WETNESS
                                                  -5.317e-11 4.658e-01
## as.factor(EVTYPE)EXTREME COLD
                                                   1.970e-01 3.319e-01
## as.factor(EVTYPE)EXTREME COLD/WIND CHILL
                                                   1.031e-01 3.311e-01
## as.factor(EVTYPE)EXTREME HEAT
                                                  -5.781e-11 4.658e-01
## as.factor(EVTYPE)EXTREME WINDCHILL
                                                   1.176e-01 3.390e-01
## as.factor(EVTYPE)EXTREME WINDCHILL TEMPERATURES -5.407e-11 3.804e-01
## as.factor(EVTYPE)Extended Cold
                                                   1.000e+00 4.658e-01
## as.factor(EVTYPE)FIRST SNOW
                                                  -5.248e-11 4.658e-01
## as.factor(EVTYPE)FLASH FLOOD
                                                   1.728e-02 3.294e-01
## as.factor(EVTYPE)FLASH FLOOD LANDSLIDES
                                                  -5.636e-11 4.658e-01
## as.factor(EVTYPE)FLASH FLOOD/
                                                  -5.094e-11 4.658e-01
## as.factor(EVTYPE)FLASH FLOOD/ STREET
                                                  -5.447e-11 4.658e-01
## as.factor(EVTYPE)FLASH FLOODING
                                                   1.333e-02 3.316e-01
## as.factor(EVTYPE)FLASH FLOODS
                                                   2.000e-01 3.608e-01
## as.factor(EVTYPE)FLOOD
                                                   2.212e-02 3.295e-01
## as.factor(EVTYPE)FLOOD WATCH/
                                                  -5.255e-11 4.658e-01
## as.factor(EVTYPE)FLOOD/FLASH FLOOD
                                                   1.754e-02 3.323e-01
## as.factor(EVTYPE)FLOOD/FLASH FLOODING
                                                  -5.740e-11 4.034e-01
                                                  -5.551e-11 4.658e-01
## as.factor(EVTYPE)FLOOD/RAIN/WIND
## as.factor(EVTYPE)FLOODING
                                                  -5.426e-11 3.429e-01
## as.factor(EVTYPE)FOG
                                                   3.922e-02 3.326e-01
## as.factor(EVTYPE)FREEZE
                                                  -5.426e-11 3.608e-01
## as.factor(EVTYPE)FREEZING DRIZZLE
                                                  -5.509e-11 4.034e-01
## as.factor(EVTYPE)FREEZING FOG
                                                  -5.421e-11 4.034e-01
## as.factor(EVTYPE)FREEZING RAIN
                                                   1.200e-01 3.359e-01
## as.factor(EVTYPE)FREEZING RAIN/SLEET
                                                  -5.446e-11 4.034e-01
## as.factor(EVTYPE)FROST
                                                  -5.462e-11 3.521e-01
## as.factor(EVTYPE)FROST/FREEZE
                                                  -5.425e-11 3.306e-01
## as.factor(EVTYPE)FUNNEL
                                                  -5.485e-11 3.804e-01
## as.factor(EVTYPE)FUNNEL CLOUD
                                                  -5.451e-11 3.296e-01
## as.factor(EVTYPE)FUNNEL CLOUDS
                                                  -5.456e-11 3.521e-01
## as.factor(EVTYPE)Flood/Flash Flood
                                                  -5.432e-11 4.658e-01
## as.factor(EVTYPE)Freezing Rain
                                                  -5.449e-11 4.658e-01
## as.factor(EVTYPE)GLAZE
                                                  -5.886e-11 4.034e-01
## as.factor(EVTYPE)GRADIENT WINDS
                                                  -5.429e-11 4.658e-01
## as.factor(EVTYPE)GUSTNADO
                                                  -5.438e-11 4.658e-01
## as.factor(EVTYPE)GUSTY WIND
                                                  -5.435e-11 3.804e-01
## as.factor(EVTYPE)GUSTY WIND/HVY RAIN
                                                  -5.427e-11 4.658e-01
## as.factor(EVTYPE)GUSTY WINDS
                                                  1.667e-01 3.558e-01
## as.factor(EVTYPE)Glaze
                                                  -5.435e-11 4.034e-01
## as.factor(EVTYPE)Gusty Winds
                                                  -5.437e-11 4.658e-01
## as.factor(EVTYPE)Gusty wind/rain
                                                  -5.464e-11 4.658e-01
                                                   3.486e-05 3.294e-01
## as.factor(EVTYPE)HAIL
## as.factor(EVTYPE)HAIL 0.75
                                                  -5.437e-11 3.804e-01
                                                  -5.457e-11 4.034e-01
## as.factor(EVTYPE)HAIL 100
```

```
-5.429e-11 4.034e-01
## as.factor(EVTYPE)HAIL 175
## as.factor(EVTYPE)HAIL 450
                                                  -5.433e-11 4.658e-01
                                                  -5.446e-11 4.034e-01
## as.factor(EVTYPE)HAIL 75
## as.factor(EVTYPE)HAIL/WIND
                                                  -5.441e-11 4.658e-01
## as.factor(EVTYPE)HARD FREEZE
                                                  -5.444e-11 4.658e-01
## as.factor(EVTYPE)HEAT
                                                  6.000e-01 3.317e-01
## as.factor(EVTYPE)HEAT WAVE
                                                  2.500e+00 3.410e-01
## as.factor(EVTYPE)HEAT/DROUGHT
                                                  -5.447e-11 4.658e-01
## as.factor(EVTYPE)HEAVY LAKE SNOW
                                                  -5.405e-11 3.683e-01
## as.factor(EVTYPE)HEAVY MIX
                                                  -5.471e-11 4.658e-01
## as.factor(EVTYPE)HEAVY RAIN
                                                   7.874e-03 3.295e-01
## as.factor(EVTYPE)HEAVY RAIN/SEVERE WEATHER
                                                  -5.421e-11 4.034e-01
## as.factor(EVTYPE)HEAVY RAIN/URBAN FLOOD
                                                  -5.445e-11 4.658e-01
## as.factor(EVTYPE)HEAVY RAINS
                                                  -5.442e-11 3.804e-01
## as.factor(EVTYPE)HEAVY RAINS/FLOODING
                                                  -5.450e-11 4.034e-01
                                                   2.000e+00 4.658e-01
## as.factor(EVTYPE)HEAVY SEAS
## as.factor(EVTYPE)HEAVY SNOW
                                                   5.013e-03 3.295e-01
## as.factor(EVTYPE)HEAVY SNOW AND ICE
                                                  -5.427e-11 4.658e-01
## as.factor(EVTYPE)HEAVY SNOW AND ICE STORM
                                                  -5.003e-11 4.658e-01
## as.factor(EVTYPE)HEAVY SNOW SQUALLS
                                                  -5.450e-11 3.608e-01
## as.factor(EVTYPE)HEAVY SNOW-SQUALLS
                                                  -5.432e-11 4.658e-01
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS
                                                  -5.470e-11 4.658e-01
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS/FREEZING -5.461e-11 4.658e-01
## as.factor(EVTYPE)HEAVY SNOW/ICE
                                                  -5.435e-11 4.658e-01
## as.factor(EVTYPE)HEAVY SURF
                                                   1.250e-01 3.494e-01
## as.factor(EVTYPE)HEAVY SURF/HIGH SURF
                                                   2.609e-01 3.365e-01
## as.factor(EVTYPE)HIGH
                                                  -5.456e-11 4.658e-01
## as.factor(EVTYPE)HIGH SEAS
                                                   3.333e-01 3.804e-01
## as.factor(EVTYPE)HIGH SURF
                                                   1.286e-01 3.317e-01
## as.factor(EVTYPE)HIGH SURF ADVISORY
                                                  -5.443e-11 4.658e-01
## as.factor(EVTYPE)HIGH WATER
                                                  -5.475e-11 4.658e-01
## as.factor(EVTYPE)HIGH WAVES
                                                  -5.432e-11 4.658e-01
## as.factor(EVTYPE)HIGH WIND
                                                   1.613e-02 3.295e-01
## as.factor(EVTYPE)HIGH WIND AND HEAVY SNOW
                                                  -5.454e-11 4.658e-01
                                                  -5.449e-11 4.658e-01
## as.factor(EVTYPE)HIGH WIND/ BLIZZARD
## as.factor(EVTYPE)HIGH WINDS
                                                   2.367e-02 3.304e-01
## as.factor(EVTYPE)HIGH WINDS 63
                                                  -5.443e-11 4.658e-01
## as.factor(EVTYPE)HIGH WINDS 66
                                                  -5.435e-11 4.658e-01
                                                   7.500e-01 3.375e-01
## as.factor(EVTYPE)HURRICANE
## as.factor(EVTYPE)HURRICANE OPAL/HIGH WINDS
                                                   2.000e+00 4.658e-01
## as.factor(EVTYPE)HURRICANE/TYPHOON
                                                   1.917e+00 3.429e-01
## as.factor(EVTYPE)Hail(0.75)
                                                  -5.469e-11 4.658e-01
## as.factor(EVTYPE)Heavy Rain
                                                  -5.462e-11 4.034e-01
## as.factor(EVTYPE)Heavy Rain and Wind
                                                  -5.453e-11 4.658e-01
## as.factor(EVTYPE)ICE
                                                  1.667e-01 3.558e-01
## as.factor(EVTYPE)ICE STORM
                                                   3.398e-02 3.302e-01
                                                  -5.454e-11 4.034e-01
## as.factor(EVTYPE)ICY ROADS
## as.factor(EVTYPE)Ice Fog
                                                  -5.461e-11 4.658e-01
## as.factor(EVTYPE)LACK OF SNOW
                                                  -5.439e-11 4.658e-01
## as.factor(EVTYPE)LAKE EFFECT SNOW
                                                  -5.466e-11 3.804e-01
## as.factor(EVTYPE)LAKE-EFFECT SNOW
                                                  -5.451e-11 3.316e-01
## as.factor(EVTYPE)LAKESHORE FLOOD
                                                  -5.459e-11 4.034e-01
## as.factor(EVTYPE)LANDSLIDE
                                                  -5.453e-11 3.322e-01
                                                  -5.461e-11 4.034e-01
## as.factor(EVTYPE)LANDSLIDES
```

```
## as.factor(EVTYPE)LATE FREEZE
                                                  -5.432e-11 4.658e-01
## as.factor(EVTYPE)LIGHT FREEZING RAIN
                                                  -5.468e-11 4.034e-01
## as.factor(EVTYPE)LIGHT SNOW
                                                  -5.450e-11 3.390e-01
## as.factor(EVTYPE)LIGHTING
                                                  -5.455e-11 4.658e-01
## as.factor(EVTYPE)LIGHTNING
                                                   5.367e-02 3.295e-01
## as.factor(EVTYPE)LOCAL FLOOD
                                                  -5.455e-11 4.658e-01
## as.factor(EVTYPE)LOW TEMPERATURE
                                                  1.000e+00 4.658e-01
                                                  -5.453e-11 4.034e-01
## as.factor(EVTYPE)Late Season Snowfall
## as.factor(EVTYPE)Light Snow
                                                   -5.470e-11 4.658e-01
## as.factor(EVTYPE)Light Snow/Flurries
                                                  -5.452e-11 4.658e-01
## as.factor(EVTYPE)MARINE HAIL
                                                   -5.441e-11 3.335e-01
## as.factor(EVTYPE)MARINE HIGH WIND
                                                   1.111e-01 3.472e-01
## as.factor(EVTYPE)MARINE STRONG WIND
                                                   4.286e-01 3.521e-01
## as.factor(EVTYPE)MARINE THUNDERSTORM WIND
                                                  -5.446e-11 3.297e-01
## as.factor(EVTYPE)MARINE TSTM WIND
                                                   -5.442e-11 3.297e-01
## as.factor(EVTYPE)MICROBURST WINDS
                                                   -5.471e-11 4.658e-01
## as.factor(EVTYPE)MIXED PRECIP
                                                   1.000e+00 4.658e-01
## as.factor(EVTYPE)MIXED PRECIPITATION
                                                   -5.454e-11 3.683e-01
## as.factor(EVTYPE)MODERATE SNOWFALL
                                                   -5.454e-11 3.472e-01
## as.factor(EVTYPE)MONTHLY PRECIPITATION
                                                   -5.453e-11 3.521e-01
## as.factor(EVTYPE)MUD SLIDE
                                                  -5.445e-11 4.658e-01
## as.factor(EVTYPE)MUDSLIDE
                                                  -5.443e-11 4.658e-01
                                                   1.000e+00 4.658e-01
## as.factor(EVTYPE)Marine Accident
## as.factor(EVTYPE)Microburst
                                                   -5.448e-11 4.658e-01
## as.factor(EVTYPE)Minor Flooding
                                                  -5.446e-11 4.658e-01
## as.factor(EVTYPE)Mixed Precipitation
                                                  -5.455e-11 4.658e-01
## as.factor(EVTYPE)Mudslide
                                                  -5.454e-11 4.034e-01
## as.factor(EVTYPE)NON SEVERE HAIL
                                                   -5.445e-11 4.658e-01
## as.factor(EVTYPE)OTHER
                                                  -5.453e-11 3.608e-01
## as.factor(EVTYPE)Other
                                                  -5.452e-11 4.658e-01
                                                   -5.450e-11 4.658e-01
## as.factor(EVTYPE)PATCHY DENSE FOG
## as.factor(EVTYPE)PROLONG COLD
                                                  -5.462e-11 4.034e-01
## as.factor(EVTYPE)PROLONG WARMTH
                                                  -5.464e-11 4.658e-01
## as.factor(EVTYPE)RAIN
                                                  -5.464e-11 3.804e-01
## as.factor(EVTYPE)RAIN/SNOW
                                                  -5.462e-11 4.658e-01
## as.factor(EVTYPE)RECORD COLD
                                                  -5.448e-11 4.658e-01
## as.factor(EVTYPE)RECORD COLD
                                                  -5.443e-11 3.804e-01
## as.factor(EVTYPE)RECORD HEAT
                                                  -5.454e-11 3.608e-01
## as.factor(EVTYPE)RECORD RAINFALL
                                                  -5.451e-11 4.034e-01
## as.factor(EVTYPE)RECORD SNOW
                                                  -5.468e-11 4.658e-01
## as.factor(EVTYPE)RECORD WARMTH
                                                  -5.456e-11 3.390e-01
## as.factor(EVTYPE)REMNANTS OF FLOYD
                                                  -5.435e-11 4.658e-01
## as.factor(EVTYPE)RIP CURRENT
                                                   7.925e-01 3.325e-01
## as.factor(EVTYPE)RIP CURRENTS
                                                   1.000e+00 3.345e-01
## as.factor(EVTYPE)RIVER FLOOD
                                                   -5.455e-11 3.441e-01
## as.factor(EVTYPE)RIVER FLOODING
                                                   -5.443e-11 4.034e-01
## as.factor(EVTYPE)Record Warmth
                                                   -5.447e-11 4.034e-01
## as.factor(EVTYPE)Record temperature
                                                  -5.455e-11 4.034e-01
## as.factor(EVTYPE)SEICHE
                                                  -5.438e-11 3.804e-01
## as.factor(EVTYPE)SEVERE COLD
                                                   -5.460e-11 4.658e-01
## as.factor(EVTYPE)SEVERE THUNDERSTORM
                                                  -5.454e-11 4.034e-01
## as.factor(EVTYPE)SEVERE THUNDERSTORMS
                                                  -5.441e-11 4.034e-01
## as.factor(EVTYPE)SLEET
                                                  -5.438e-11 4.034e-01
                                                  -5.457e-11 4.658e-01
## as.factor(EVTYPE)SLEET & FREEZING RAIN
```

```
## as.factor(EVTYPE)SMALL HAIL
                                                   -5.450e-11 3.472e-01
## as.factor(EVTYPE)SMALL STREAM FLOODING
                                                   -5.443e-11 4.658e-01
## as.factor(EVTYPE)SMALL STREAM/URBAN FLOOD
                                                   -5.445e-11 4.658e-01
## as.factor(EVTYPE)SMOKE
                                                   -5.464e-11 4.658e-01
## as.factor(EVTYPE)SNOW
                                                    2.778e-02 3.317e-01
## as.factor(EVTYPE)SNOW AND COLD
                                                   -5.440e-11 4.658e-01
## as.factor(EVTYPE)SNOW AND ICE
                                                   -5.456e-11 4.034e-01
                                                   -5.471e-11 4.658e-01
## as.factor(EVTYPE)SNOW AND SLEET
## as.factor(EVTYPE)SNOW SQUALL
                                                   -5.452e-11 4.658e-01
## as.factor(EVTYPE)SNOW SQUALLS
                                                   -5.453e-11 4.034e-01
## as.factor(EVTYPE)SNOW/BLOWING SNOW
                                                   -5.442e-11 3.804e-01
## as.factor(EVTYPE)SNOW/FREEZING RAIN
                                                   -5.453e-11 4.658e-01
## as.factor(EVTYPE)SNOW/SLEET
                                                   -5.444e-11 4.658e-01
## as.factor(EVTYPE)SNOW/SLEET/FREEZING RAIN
                                                   -5.463e-11 4.658e-01
## as.factor(EVTYPE)SNOW\\COLD
                                                   -5.453e-11 4.658e-01
## as.factor(EVTYPE)STORM SURGE
                                                   -5.447e-11 3.375e-01
## as.factor(EVTYPE)STORM SURGE/TIDE
                                                   -5.459e-11 3.441e-01
## as.factor(EVTYPE)STREET FLOOD
                                                   -5.452e-11 4.658e-01
## as.factor(EVTYPE)STRONG WIND
                                                   2.145e-02 3.298e-01
## as.factor(EVTYPE)STRONG WINDS
                                                   5.263e-02 3.380e-01
## as.factor(EVTYPE)Snow
                                                  -5.451e-11 4.034e-01
## as.factor(EVTYPE)Snow Squalls
                                                  1.000e+00 4.658e-01
## as.factor(EVTYPE)Snow and Ice
                                                  -5.448e-11 4.658e-01
## as.factor(EVTYPE)Strong Winds
                                                   -5.439e-11 4.658e-01
                                                  -5.439e-11 4.658e-01
## as.factor(EVTYPE)Summary of April 12
## as.factor(EVTYPE)Summary of July 29
                                                   -5.436e-11 4.658e-01
## as.factor(EVTYPE)Summary of July 3
                                                   -5.433e-11 4.658e-01
## as.factor(EVTYPE)Summary of June 11
                                                   -5.443e-11 4.658e-01
## as.factor(EVTYPE)Summary of March 14
                                                  -5.449e-11 4.658e-01
## as.factor(EVTYPE)Summary of May 10
                                                   -5.451e-11 4.658e-01
## as.factor(EVTYPE)Summary: October 31
                                                   -5.453e-11 4.658e-01
## as.factor(EVTYPE)THUNDEERSTORM WINDS
                                                   -5.448e-11 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM
                                                   -5.435e-11 3.521e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                   -5.445e-11 4.034e-01
## as.factor(EVTYPE)THUNDERSTORM WIND
                                                   2.044e-03 3.294e-01
## as.factor(EVTYPE)THUNDERSTORM WIND 56
                                                   -5.455e-11 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM WIND 60 MPH
                                                   -5.447e-11 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM WIND G60
                                                   -5.436e-11 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM WIND G61
                                                   -5.435e-11 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM WIND/ TREE
                                                   -5.454e-11 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM WIND/AWNING
                                                   -5.449e-11 4.658e-01
                                                   -5.452e-11 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM WIND/HAIL
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                    2.845e-03 3.295e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS 53
                                                   -5.465e-11 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS HAIL
                                                   -5.443e-11 3.472e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS.
                                                   -5.457e-11 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS/HAIL
                                                   -5.452e-11 4.034e-01
## as.factor(EVTYPE)THUNDERSTORM WINDSS
                                                   -5.454e-11 3.804e-01
## as.factor(EVTYPE)THUNDERSTORMS
                                                   -5.448e-11 4.658e-01
## as.factor(EVTYPE)THUNDERSTORMS WINDS
                                                   -5.445e-11 4.658e-01
## as.factor(EVTYPE)TIDAL FLOODING
                                                  -5.441e-11 4.658e-01
## as.factor(EVTYPE)TORNADO
                                                   8.568e-02 3.294e-01
## as.factor(EVTYPE)TORNADO DEBRIS
                                                  -5.445e-11 4.658e-01
                                                   -5.441e-11 4.034e-01
## as.factor(EVTYPE)TORNADO FO
```

```
## as.factor(EVTYPE)TORRENTIAL RAIN
                                                   -5.443e-11 4.658e-01
## as.factor(EVTYPE)TROPICAL DEPRESSION
                                                   -5.443e-11 3.521e-01
## as.factor(EVTYPE)TROPICAL STORM
                                                   7.143e-02 3.323e-01
## as.factor(EVTYPE)TSTM WIND
                                                   2.602e-03 3.294e-01
## as.factor(EVTYPE)TSTM WIND (G40)
                                                   -5.452e-11 4.034e-01
## as.factor(EVTYPE)TSTM WIND (G45)
                                                  -5.451e-11 4.034e-01
## as.factor(EVTYPE)TSTM WIND 51
                                                  -5.457e-11 4.658e-01
                                                   -5.452e-11 4.658e-01
## as.factor(EVTYPE)TSTM WIND 52
## as.factor(EVTYPE)TSTM WIND/HAIL
                                                   -5.449e-11 3.310e-01
## as.factor(EVTYPE)TSUNAMI
                                                  -5.448e-11 4.034e-01
## as.factor(EVTYPE)Temperature record
                                                   -5.441e-11 4.034e-01
## as.factor(EVTYPE)Tidal Flooding
                                                   -5.451e-11 4.658e-01
## as.factor(EVTYPE)UNSEASONABLY COLD
                                                   -5.450e-11 3.683e-01
## as.factor(EVTYPE)UNSEASONABLY COOL
                                                   -5.443e-11 4.034e-01
## as.factor(EVTYPE)UNSEASONABLY DRY
                                                   -5.449e-11 3.608e-01
## as.factor(EVTYPE)UNSEASONABLY HOT
                                                   -5.457e-11 4.658e-01
## as.factor(EVTYPE)UNSEASONABLY WARM
                                                   -5.449e-11 3.418e-01
## as.factor(EVTYPE)UNSEASONABLY WARM AND DRY
                                                   5.800e+00 3.608e-01
## as.factor(EVTYPE)UNSEASONABLY WET
                                                   -5.452e-11 4.034e-01
## as.factor(EVTYPE)UNSEASONAL RAIN
                                                   -5.449e-11 4.658e-01
## as.factor(EVTYPE)UNUSUAL WARMTH
                                                   -5.443e-11 4.034e-01
## as.factor(EVTYPE)UNUSUAL/RECORD WARMTH
                                                   -5.453e-11 4.658e-01
## as.factor(EVTYPE)UNUSUALLY COLD
                                                   -5.441e-11 4.658e-01
## as.factor(EVTYPE)URBAN AND SMALL STREAM FLOODIN 1.000e+00 4.658e-01
## as.factor(EVTYPE)URBAN FLOOD
                                                   -5.450e-11 3.359e-01
## as.factor(EVTYPE)URBAN FLOODING
                                                   -5.441e-11 3.418e-01
## as.factor(EVTYPE)URBAN SMALL STREAM FLOOD
                                                   -5.451e-11 4.658e-01
## as.factor(EVTYPE)URBAN/SMALL STREAM
                                                   -5.440e-11 4.658e-01
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   -5.448e-11 4.658e-01
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   -5.458e-11 4.034e-01
## as.factor(EVTYPE)URBAN/SML STREAM FLD
                                                    1.484e-02 3.299e-01
## as.factor(EVTYPE)URBAN/STREET FLOODING
                                                   -5.457e-11 4.658e-01
## as.factor(EVTYPE)Unseasonable Cold
                                                   -5.436e-11 4.658e-01
## as.factor(EVTYPE) VOLCANIC ASH
                                                   -5.450e-11 3.804e-01
## as.factor(EVTYPE) VOLCANIC ASHFALL
                                                   -5.441e-11 4.658e-01
## as.factor(EVTYPE)WATERSPOUT
                                                   -5.447e-11 3.299e-01
## as.factor(EVTYPE)WATERSPOUT FUNNEL CLOUD
                                                   -5.448e-11 4.658e-01
## as.factor(EVTYPE)WATERSPOUT-
                                                   -5.448e-11 4.658e-01
## as.factor(EVTYPE)WATERSPOUT/TORNADO
                                                   -5.447e-11 4.034e-01
## as.factor(EVTYPE)WATERSPOUTS
                                                   -5.449e-11 4.034e-01
## as.factor(EVTYPE)WET MICROBURST
                                                   -5.442e-11 4.658e-01
## as.factor(EVTYPE)WILD/FOREST FIRE
                                                   -5.448e-11 3.306e-01
## as.factor(EVTYPE)WILDFIRE
                                                   1.124e-02 3.300e-01
## as.factor(EVTYPE)WILDFIRES
                                                  -5.455e-11 4.658e-01
## as.factor(EVTYPE)WIND
                                                   1.562e-01 3.345e-01
## as.factor(EVTYPE)WIND ADVISORY
                                                   -5.444e-11 3.804e-01
## as.factor(EVTYPE)WIND CHILL
                                                   -5.446e-11 3.558e-01
## as.factor(EVTYPE)WIND DAMAGE
                                                  -5.440e-11 4.658e-01
## as.factor(EVTYPE)WINDS
                                                   -5.444e-11 4.658e-01
## as.factor(EVTYPE)WINTER MIX
                                                   -5.454e-11 4.658e-01
## as.factor(EVTYPE)WINTER STORM
                                                   2.379e-02 3.295e-01
## as.factor(EVTYPE)WINTER STORM/HIGH WIND
                                                  -5.446e-11 4.658e-01
## as.factor(EVTYPE)WINTER WEATHER
                                                   7.342e-03 3.296e-01
                                                   -5.458e-11 4.658e-01
## as.factor(EVTYPE)WINTER WEATHER MIX
```

```
5.217e-02 3.308e-01
## as.factor(EVTYPE)WINTER WEATHER/MIX
## as.factor(EVTYPE)WINTERY MIX
                                                   -5.449e-11 4.658e-01
## as.factor(EVTYPE)WINTRY MIX
                                                  -5.447e-11 3.418e-01
## as.factor(EVTYPE)Wet Month
                                                  -5.449e-11 4.658e-01
                                                   -5.561e-11 4.658e-01
## as.factor(EVTYPE)Wind
## as.factor(EVTYPE)Winter Weather
                                                  -5.405e-11 4.658e-01
## as.factor(EVTYPE)small hail
                                                  -5.413e-11 4.658e-01
##
                                                   t value Pr(>|t|)
## (Intercept)
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE) WIND
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)APACHE COUNTY
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)ASTRONOMICAL HIGH TIDE
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)ASTRONOMICAL LOW TIDE
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)AVALANCHE
                                                     1.283
                                                             0.1995
## as.factor(EVTYPE)BLACK ICE
                                                     0.000
                                                             1,0000
## as.factor(EVTYPE)BLIZZARD
                                                     0.106
                                                             0.9158
## as.factor(EVTYPE)BLIZZARD AND EXTREME WIND CHIL
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)BLOW-OUT TIDES
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)BREAKUP FLOODING
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)COASTAL FLOOD
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)COASTAL FLOODING
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)COASTAL FLOODING/EROSION
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)COASTAL STORM
                                                     2.147
                                                             0.0318 *
                                                             0.0192 *
## as.factor(EVTYPE)COLD
                                                     2.342
## as.factor(EVTYPE)COLD TEMPERATURES
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)COLD WAVE
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)COLD WIND CHILL TEMPERATURES
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)COLD/WIND CHILL
                                                     0.405
                                                             0.6856
## as.factor(EVTYPE)Coastal Flooding
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)Cold
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)Cold and Frost
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)DAMAGING FREEZE
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)DENSE FOG
                                                     0.066
                                                             0.9476
## as.factor(EVTYPE)DENSE SMOKE
                                                     0.000
                                                             1,0000
## as.factor(EVTYPE)DROUGHT
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)DROUGHT/EXCESSIVE HEAT
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)DRY
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)DRY MICROBURST
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)DRY MICROBURST WINDS
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)DUST DEVIL
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)DUST STORM
                                                    0.229
                                                             0.8187
## as.factor(EVTYPE)DUST STORM/HIGH WINDS
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)DUSTSTORM
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)Dust Devil
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)EARLY FREEZE
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)EARLY SNOWFALL
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)EXCESSIVE HEAT
                                                    2.197
                                                             0.0280 *
## as.factor(EVTYPE)EXCESSIVE RAINFALL
                                                   0.000
                                                             1.0000
## as.factor(EVTYPE)EXCESSIVE SNOW
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)EXCESSIVE WETNESS
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)EXTREME COLD
                                                     0.593
                                                             0.5529
## as.factor(EVTYPE)EXTREME COLD/WIND CHILL
                                                    0.311
                                                             0.7555
## as.factor(EVTYPE)EXTREME HEAT
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)EXTREME WINDCHILL
                                                    0.347
                                                             0.7285
```

```
## as.factor(EVTYPE)EXTREME WINDCHILL TEMPERATURES
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)Extended Cold
                                                      2.147
                                                              0.0318 *
                                                      0.000
## as.factor(EVTYPE)FIRST SNOW
                                                              1.0000
## as.factor(EVTYPE)FLASH FLOOD
                                                      0.052
                                                              0.9582
## as.factor(EVTYPE)FLASH FLOOD LANDSLIDES
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)FLASH FLOOD/
                                                     0.000
                                                              1.0000
## as.factor(EVTYPE)FLASH FLOOD/ STREET
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)FLASH FLOODING
                                                      0.040
                                                              0.9679
## as.factor(EVTYPE)FLASH FLOODS
                                                      0.554
                                                              0.5794
## as.factor(EVTYPE)FLOOD
                                                      0.067
                                                              0.9465
## as.factor(EVTYPE)FLOOD WATCH/
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)FLOOD/FLASH FLOOD
                                                      0.053
                                                              0.9579
## as.factor(EVTYPE)FLOOD/FLASH FLOODING
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)FLOOD/RAIN/WIND
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)FLOODING
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)FOG
                                                      0.118
                                                              0.9061
## as.factor(EVTYPE)FREEZE
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)FREEZING DRIZZLE
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)FREEZING FOG
                                                     0.000
                                                              1.0000
## as.factor(EVTYPE)FREEZING RAIN
                                                     0.357
                                                              0.7209
## as.factor(EVTYPE)FREEZING RAIN/SLEET
                                                     0.000
                                                              1.0000
## as.factor(EVTYPE)FROST
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)FROST/FREEZE
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)FUNNEL
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)FUNNEL CLOUD
                                                     0.000
                                                              1.0000
## as.factor(EVTYPE)FUNNEL CLOUDS
                                                     0.000
                                                              1.0000
## as.factor(EVTYPE)Flood/Flash Flood
                                                      0.000
                                                              1.0000
                                                      0.000
## as.factor(EVTYPE)Freezing Rain
                                                              1.0000
## as.factor(EVTYPE)GLAZE
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)GRADIENT WINDS
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)GUSTNADO
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)GUSTY WIND
                                                     0.000
                                                              1,0000
## as.factor(EVTYPE)GUSTY WIND/HVY RAIN
                                                     0.000
                                                              1.0000
## as.factor(EVTYPE)GUSTY WINDS
                                                      0.468
                                                              0.6395
## as.factor(EVTYPE)Glaze
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)Gusty Winds
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)Gusty wind/rain
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)HAIL
                                                      0.000
                                                              0.9999
## as.factor(EVTYPE)HAIL 0.75
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)HAIL 100
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)HAIL 175
                                                      0.000
                                                              1.0000
                                                              1.0000
## as.factor(EVTYPE)HAIL 450
                                                      0.000
## as.factor(EVTYPE)HAIL 75
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)HAIL/WIND
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)HARD FREEZE
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)HEAT
                                                      1.809
                                                              0.0705 .
## as.factor(EVTYPE)HEAT WAVE
                                                      7.332 2.28e-13 ***
## as.factor(EVTYPE)HEAT/DROUGHT
                                                     0.000
                                                              1.0000
## as.factor(EVTYPE)HEAVY LAKE SNOW
                                                      0.000
                                                              1,0000
## as.factor(EVTYPE)HEAVY MIX
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)HEAVY RAIN
                                                      0.024
                                                              0.9809
## as.factor(EVTYPE)HEAVY RAIN/SEVERE WEATHER
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)HEAVY RAIN/URBAN FLOOD
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)HEAVY RAINS
                                                      0.000
                                                              1.0000
```

```
## as.factor(EVTYPE)HEAVY RAINS/FLOODING
                                                   0.000
                                                             1.0000
                                                     4.293 1.76e-05 ***
## as.factor(EVTYPE)HEAVY SEAS
## as.factor(EVTYPE)HEAVY SNOW
                                                     0.015
                                                             0.9879
## as.factor(EVTYPE)HEAVY SNOW AND ICE
                                                     0.000
                                                             1 0000
## as.factor(EVTYPE)HEAVY SNOW AND ICE STORM
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)HEAVY SNOW SQUALLS
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)HEAVY SNOW-SQUALLS
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS/FREEZING 0.000
                                                             1.0000
## as.factor(EVTYPE)HEAVY SNOW/ICE
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)HEAVY SURF
                                                     0.358
                                                             0.7205
## as.factor(EVTYPE)HEAVY SURF/HIGH SURF
                                                     0.775
                                                             0.4382
## as.factor(EVTYPE)HIGH
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)HIGH SEAS
                                                     0.876
                                                             0.3808
## as.factor(EVTYPE)HIGH SURF
                                                     0.388
                                                             0.6983
## as.factor(EVTYPE)HIGH SURF ADVISORY
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)HIGH WATER
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)HIGH WAVES
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)HIGH WIND
                                                     0.049
                                                             0.9610
## as.factor(EVTYPE)HIGH WIND AND HEAVY SNOW
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)HIGH WIND/ BLIZZARD
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)HIGH WINDS
                                                     0.072
                                                             0.9429
## as.factor(EVTYPE)HIGH WINDS 63
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)HIGH WINDS 66
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)HURRICANE
                                                     2.222
                                                             0.0263 *
## as.factor(EVTYPE)HURRICANE OPAL/HIGH WINDS
                                                     4.293 1.76e-05 ***
## as.factor(EVTYPE)HURRICANE/TYPHOON
                                                     5.590 2.27e-08 ***
                                                     0.000
## as.factor(EVTYPE)Hail(0.75)
                                                             1.0000
                                                     0.000
## as.factor(EVTYPE)Heavy Rain
                                                             1.0000
## as.factor(EVTYPE)Heavy Rain and Wind
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)ICE
                                                     0.468
                                                             0.6395
## as.factor(EVTYPE)ICE STORM
                                                     0.103
                                                             0.9180
## as.factor(EVTYPE)ICY ROADS
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)Ice Fog
                                                     0.000
                                                             1,0000
## as.factor(EVTYPE)LACK OF SNOW
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)LAKE EFFECT SNOW
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)LAKE-EFFECT SNOW
                                                   0.000
                                                             1.0000
## as.factor(EVTYPE)LAKESHORE FLOOD
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)LANDSLIDE
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)LANDSLIDES
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)LATE FREEZE
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)LIGHT FREEZING RAIN
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)LIGHT SNOW
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)LIGHTING
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)LIGHTNING
                                                     0.163
                                                             0.8706
## as.factor(EVTYPE)LOCAL FLOOD
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)LOW TEMPERATURE
                                                     2.147
                                                             0.0318 *
## as.factor(EVTYPE)Late Season Snowfall
                                                   0.000
                                                             1.0000
## as.factor(EVTYPE)Light Snow
                                                     0.000
                                                             1,0000
## as.factor(EVTYPE)Light Snow/Flurries
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)MARINE HAIL
                                                   0.000
                                                             1.0000
## as.factor(EVTYPE)MARINE HIGH WIND
                                                   0.320
                                                             0.7490
## as.factor(EVTYPE)MARINE STRONG WIND
                                                    1.217
                                                             0.2236
## as.factor(EVTYPE)MARINE THUNDERSTORM WIND
                                               0.000
                                                             1.0000
```

```
## as.factor(EVTYPE)MARINE TSTM WIND
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)MICROBURST WINDS
                                                      0.000
                                                              1,0000
                                                     2.147
## as.factor(EVTYPE)MIXED PRECIP
                                                              0.0318 *
## as.factor(EVTYPE)MIXED PRECIPITATION
                                                     0.000
                                                              1 0000
## as.factor(EVTYPE)MODERATE SNOWFALL
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)MONTHLY PRECIPITATION
                                                     0.000
                                                              1.0000
## as.factor(EVTYPE)MUD SLIDE
                                                     0.000
                                                              1.0000
## as.factor(EVTYPE)MUDSLIDE
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)Marine Accident
                                                      2.147
                                                              0.0318 *
## as.factor(EVTYPE)Microburst
                                                     0.000
                                                              1.0000
## as.factor(EVTYPE)Minor Flooding
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)Mixed Precipitation
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)Mudslide
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)NON SEVERE HAIL
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)OTHER
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)Other
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)PATCHY DENSE FOG
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)PROLONG COLD
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)PROLONG WARMTH
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)RAIN
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)RAIN/SNOW
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)RECORD COLD
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)RECORD COLD
                                                     0.000
                                                              1.0000
## as.factor(EVTYPE)RECORD HEAT
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)RECORD RAINFALL
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)RECORD SNOW
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)RECORD WARMTH
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)REMNANTS OF FLOYD
                                                     0.000
                                                              1.0000
## as.factor(EVTYPE)RIP CURRENT
                                                     2.383
                                                              0.0172 *
## as.factor(EVTYPE)RIP CURRENTS
                                                     2.989
                                                              0.0028 **
## as.factor(EVTYPE)RIVER FLOOD
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)RIVER FLOODING
                                                      0.000
                                                              1,0000
## as.factor(EVTYPE)Record Warmth
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)Record temperature
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)SEICHE
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)SEVERE COLD
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)SEVERE THUNDERSTORM
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)SEVERE THUNDERSTORMS
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)SLEET
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)SLEET & FREEZING RAIN
                                                      0.000
                                                              1.0000
                                                      0.000
## as.factor(EVTYPE)SMALL HAIL
                                                              1.0000
## as.factor(EVTYPE)SMALL STREAM FLOODING
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)SMALL STREAM/URBAN FLOOD
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)SMOKE
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)SNOW
                                                      0.084
                                                              0.9333
## as.factor(EVTYPE)SNOW AND COLD
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)SNOW AND ICE
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)SNOW AND SLEET
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)SNOW SQUALL
                                                      0.000
                                                              1,0000
## as.factor(EVTYPE)SNOW SQUALLS
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)SNOW/BLOWING SNOW
                                                     0.000
                                                              1.0000
## as.factor(EVTYPE)SNOW/FREEZING RAIN
                                                     0.000
                                                              1.0000
## as.factor(EVTYPE)SNOW/SLEET
                                                      0.000
                                                              1.0000
## as.factor(EVTYPE)SNOW/SLEET/FREEZING RAIN
                                                    0.000
                                                              1.0000
```

```
## as.factor(EVTYPE)SNOW\\COLD
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)STORM SURGE
                                                      0.000
                                                               1,0000
## as.factor(EVTYPE)STORM SURGE/TIDE
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)STREET FLOOD
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)STRONG WIND
                                                      0.065
                                                               0.9482
## as.factor(EVTYPE)STRONG WINDS
                                                      0.156
                                                               0.8762
## as.factor(EVTYPE)Snow
                                                      0.000
                                                               1.0000
                                                      2.147
## as.factor(EVTYPE)Snow Squalls
                                                               0.0318 *
## as.factor(EVTYPE)Snow and Ice
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)Strong Winds
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)Summary of April 12
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)Summary of July 29
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)Summary of July 3
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)Summary of June 11
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)Summary of March 14
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)Summary of May 10
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)Summary: October 31
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)THUNDEERSTORM WINDS
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)THUNDERSTORM
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)THUNDERSTORM WIND
                                                      0.006
                                                               0.9950
## as.factor(EVTYPE)THUNDERSTORM WIND 56
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)THUNDERSTORM WIND 60 MPH
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)THUNDERSTORM WIND G60
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)THUNDERSTORM WIND G61
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)THUNDERSTORM WIND/ TREE
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)THUNDERSTORM WIND/AWNING
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)THUNDERSTORM WIND/HAIL
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                      0.009
                                                               0.9931
## as.factor(EVTYPE)THUNDERSTORM WINDS 53
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)THUNDERSTORM WINDS HAIL
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)THUNDERSTORM WINDS.
                                                      0.000
                                                               1,0000
## as.factor(EVTYPE)THUNDERSTORM WINDS/HAIL
                                                      0.000
                                                               1.0000
                                                               1.0000
## as.factor(EVTYPE)THUNDERSTORM WINDSS
                                                      0.000
## as.factor(EVTYPE)THUNDERSTORMS
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)THUNDERSTORMS WINDS
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)TIDAL FLOODING
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)TORNADO
                                                      0.260
                                                               0.7948
## as.factor(EVTYPE)TORNADO DEBRIS
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)TORNADO FO
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)TORRENTIAL RAIN
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)TROPICAL DEPRESSION
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)TROPICAL STORM
                                                      0.215
                                                               0.8298
## as.factor(EVTYPE)TSTM WIND
                                                      0.008
                                                               0.9937
## as.factor(EVTYPE)TSTM WIND (G40)
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)TSTM WIND (G45)
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)TSTM WIND 51
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)TSTM WIND 52
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)TSTM WIND/HAIL
                                                      0.000
                                                               1,0000
## as.factor(EVTYPE)TSUNAMI
                                                      0.000
                                                               1.0000
                                                      0.000
## as.factor(EVTYPE)Temperature record
                                                               1.0000
## as.factor(EVTYPE)Tidal Flooding
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)UNSEASONABLY COLD
                                                      0.000
                                                               1.0000
## as.factor(EVTYPE)UNSEASONABLY COOL
                                                      0.000
                                                               1.0000
```

```
## as.factor(EVTYPE)UNSEASONABLY DRY
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)UNSEASONABLY HOT
                                                     0.000
                                                             1.0000
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)UNSEASONABLY WARM
## as.factor(EVTYPE)UNSEASONABLY WARM AND DRY
                                                    16.073 < 2e-16 ***
## as.factor(EVTYPE)UNSEASONABLY WET
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)UNSEASONAL RAIN
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)UNUSUAL WARMTH
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)UNUSUAL/RECORD WARMTH
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)UNUSUALLY COLD
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)URBAN AND SMALL STREAM FLOODIN 2.147
                                                             0.0318 *
## as.factor(EVTYPE)URBAN FLOOD
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)URBAN FLOODING
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)URBAN SMALL STREAM FLOOD
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)URBAN/SMALL STREAM
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                     0.000
                                                             1,0000
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)URBAN/SML STREAM FLD
                                                    0.045
                                                             0.9641
## as.factor(EVTYPE)URBAN/STREET FLOODING
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)Unseasonable Cold
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE) VOLCANIC ASH
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)VOLCANIC ASHFALL
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)WATERSPOUT
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)WATERSPOUT FUNNEL CLOUD
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)WATERSPOUT-
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)WATERSPOUT/TORNADO
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)WATERSPOUTS
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)WET MICROBURST
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)WILD/FOREST FIRE
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)WILDFIRE
                                                    0.034
                                                             0.9728
## as.factor(EVTYPE)WILDFIRES
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)WIND
                                                    0.467
                                                             0.6404
## as.factor(EVTYPE)WIND ADVISORY
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)WIND CHILL
                                                    0.000
                                                             1.0000
                                                             1.0000
## as.factor(EVTYPE)WIND DAMAGE
                                                    0.000
## as.factor(EVTYPE)WINDS
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)WINTER MIX
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)WINTER STORM
                                                    0.072
                                                             0.9425
## as.factor(EVTYPE)WINTER STORM/HIGH WIND
                                                   0.000
                                                             1.0000
## as.factor(EVTYPE)WINTER WEATHER
                                                    0.022
                                                             0.9822
## as.factor(EVTYPE)WINTER WEATHER MIX
                                                    0.000
                                                             1.0000
## as.factor(EVTYPE)WINTER WEATHER/MIX
                                                    0.158
                                                             0.8747
                                                     0.000
## as.factor(EVTYPE)WINTERY MIX
                                                             1.0000
## as.factor(EVTYPE)WINTRY MIX
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)Wet Month
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)Wind
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)Winter Weather
                                                     0.000
                                                             1.0000
## as.factor(EVTYPE)small hail
                                                     0.000
                                                             1.0000
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1
## Residual standard error: 0.3294 on 89921 degrees of freedom
## Multiple R-squared: 0.05513, Adjusted R-squared: 0.05189
## F-statistic: 17.03 on 308 and 89921 DF, p-value: < 2.2e-16
```

lm2<-lm(INJURIES~as.factor(EVTYPE),data = training)</pre>

summary(lm2)

```
##
## Call:
## lm(formula = INJURIES ~ as.factor(EVTYPE), data = training)
## Residuals:
##
     Min
             1Q Median
                            3Q
                                  Max
  -14.29 -0.03 -0.03
                         0.00 549.77
##
## Coefficients:
##
                                                     Estimate Std. Error
## (Intercept)
                                                   -6.425e-11 4.568e+00
## as.factor(EVTYPE) WIND
                                                    6.284e-11 6.460e+00
## as.factor(EVTYPE)APACHE COUNTY
                                                    6.545e-11 6.460e+00
## as.factor(EVTYPE)ASTRONOMICAL HIGH TIDE
                                                    6.442e-11 4.754e+00
## as.factor(EVTYPE)ASTRONOMICAL LOW TIDE
                                                    6.342e-11 4.681e+00
## as.factor(EVTYPE)AVALANCHE
                                                    8.286e-01 4.633e+00
## as.factor(EVTYPE)BLACK ICE
                                                    6.417e-11 6.460e+00
## as.factor(EVTYPE)BLIZZARD
                                                    9.690e-02 4.577e+00
## as.factor(EVTYPE)BLIZZARD AND EXTREME WIND CHIL 6.468e-11 6.460e+00
## as.factor(EVTYPE)BLOW-OUT TIDES
                                                    6.437e-11 6.460e+00
## as.factor(EVTYPE)BREAKUP FLOODING
                                                    6.366e-11 6.460e+00
## as.factor(EVTYPE)COASTAL FLOOD
                                                    6.469e-11 4.598e+00
## as.factor(EVTYPE)COASTAL FLOODING
                                                    6.471e-11 4.740e+00
## as.factor(EVTYPE)COASTAL FLOODING/EROSION
                                                    6.481e-11 6.460e+00
## as.factor(EVTYPE)COASTAL STORM
                                                    1.000e+00 6.460e+00
## as.factor(EVTYPE)COLD
                                                    2.000e+00 4.934e+00
## as.factor(EVTYPE)COLD TEMPERATURES
                                                    6.351e-11 6.460e+00
## as.factor(EVTYPE)COLD WAVE
                                                    6.496e-11 6.460e+00
## as.factor(EVTYPE)COLD WIND CHILL TEMPERATURES
                                                    6.491e-11 6.460e+00
## as.factor(EVTYPE)COLD/WIND CHILL
                                                    1.923e-01 4.612e+00
## as.factor(EVTYPE)Coastal Flooding
                                                    6.480e-11 5.107e+00
## as.factor(EVTYPE)Cold
                                                    6.456e-11 5.595e+00
## as.factor(EVTYPE)Cold and Frost
                                                    6.474e-11 6.460e+00
## as.factor(EVTYPE)DAMAGING FREEZE
                                                    6.476e-11 6.460e+00
                                                    2.536e-01 4.584e+00
## as.factor(EVTYPE)DENSE FOG
## as.factor(EVTYPE)DENSE SMOKE
                                                    6.383e-11 5.275e+00
## as.factor(EVTYPE)DROUGHT
                                                    6.465e-11 4.577e+00
                                                    6.470e-11 6.460e+00
## as.factor(EVTYPE)DROUGHT/EXCESSIVE HEAT
## as.factor(EVTYPE)DRY
                                                    6.473e-11 5.595e+00
## as.factor(EVTYPE)DRY MICROBURST
                                                    6.478e-11 4.754e+00
## as.factor(EVTYPE)DRY MICROBURST WINDS
                                                    6.425e-11 6.460e+00
## as.factor(EVTYPE)DUST DEVIL
                                                    6.405e-11 4.693e+00
## as.factor(EVTYPE)DUST STORM
                                                    1.077e+00 4.655e+00
## as.factor(EVTYPE)DUST STORM/HIGH WINDS
                                                    6.376e-11 6.460e+00
## as.factor(EVTYPE)DUSTSTORM
                                                    6.489e-11 6.460e+00
## as.factor(EVTYPE)Dust Devil
                                                    6.465e-11 5.595e+00
## as.factor(EVTYPE)EARLY FREEZE
                                                    7.967e-11 6.460e+00
## as.factor(EVTYPE)EARLY SNOWFALL
                                                    6.435e-11 6.460e+00
## as.factor(EVTYPE)EXCESSIVE HEAT
                                                   5.108e+00 4.580e+00
## as.factor(EVTYPE)EXCESSIVE RAINFALL
                                                    6.412e-11 6.460e+00
```

```
6.421e-11 5.107e+00
## as.factor(EVTYPE)EXCESSIVE SNOW
## as.factor(EVTYPE)EXCESSIVE WETNESS
                                                   6.398e-11 6.460e+00
## as.factor(EVTYPE)EXTREME COLD
                                                   1.515e-02 4.602e+00
## as.factor(EVTYPE)EXTREME COLD/WIND CHILL
                                                   1.031e-02 4.591e+00
## as.factor(EVTYPE)EXTREME HEAT
                                                   6.506e-11 6.460e+00
## as.factor(EVTYPE)EXTREME WINDCHILL
                                                   6.504e-11 4.700e+00
## as.factor(EVTYPE)EXTREME WINDCHILL TEMPERATURES 6.184e-11 5.275e+00
                                                   6.193e-11 6.460e+00
## as.factor(EVTYPE)Extended Cold
## as.factor(EVTYPE)FIRST SNOW
                                                   6.095e-11 6.460e+00
## as.factor(EVTYPE)FLASH FLOOD
                                                   4.856e-02 4.568e+00
## as.factor(EVTYPE)FLASH FLOOD LANDSLIDES
                                                   6.282e-11 6.460e+00
## as.factor(EVTYPE)FLASH FLOOD/
                                                   6.547e-11 6.460e+00
## as.factor(EVTYPE)FLASH FLOOD/ STREET
                                                   6.367e-11 6.460e+00
## as.factor(EVTYPE)FLASH FLOODING
                                                   1.333e-02 4.598e+00
## as.factor(EVTYPE)FLASH FLOODS
                                                   6.358e-11 5.004e+00
                                                   2.282e-01 4.569e+00
## as.factor(EVTYPE)FLOOD
## as.factor(EVTYPE)FLOOD WATCH/
                                                   6.430e-11 6.460e+00
## as.factor(EVTYPE)FLOOD/FLASH FLOOD
                                                   7.018e-02 4.608e+00
## as.factor(EVTYPE)FLOOD/FLASH FLOODING
                                                   6.270e-11 5.595e+00
                                                   6.720e-11 6.460e+00
## as.factor(EVTYPE)FLOOD/RAIN/WIND
                                                   6.447e-11 4.754e+00
## as.factor(EVTYPE)FL00DING
## as.factor(EVTYPE)FOG
                                                   4.706e-01 4.612e+00
                                                   6.384e-11 5.004e+00
## as.factor(EVTYPE)FREEZE
                                                   5.000e-01 5.595e+00
## as.factor(EVTYPE)FREEZING DRIZZLE
## as.factor(EVTYPE)FREEZING FOG
                                                   6.419e-11 5.595e+00
## as.factor(EVTYPE)FREEZING RAIN
                                                   6.383e-11 4.658e+00
## as.factor(EVTYPE)FREEZING RAIN/SLEET
                                                   6.612e-11 5.595e+00
## as.factor(EVTYPE)FROST
                                                   6.496e-11 4.883e+00
## as.factor(EVTYPE)FROST/FREEZE
                                                   6.491e-11 4.585e+00
## as.factor(EVTYPE)FUNNEL
                                                   6.439e-11 5.275e+00
                                                   6.480e-11 4.571e+00
## as.factor(EVTYPE)FUNNEL CLOUD
## as.factor(EVTYPE)FUNNEL CLOUDS
                                                   6.439e-11 4.883e+00
## as.factor(EVTYPE)Flood/Flash Flood
                                                   6.287e-11 6.460e+00
## as.factor(EVTYPE)Freezing Rain
                                                   6.331e-11 6.460e+00
                                                   6.373e-11 5.595e+00
## as.factor(EVTYPE)GLAZE
## as.factor(EVTYPE)GRADIENT WINDS
                                                   6.527e-11 6.460e+00
## as.factor(EVTYPE)GUSTNADO
                                                   6.377e-11 6.460e+00
## as.factor(EVTYPE)GUSTY WIND
                                                   6.350e-11 5.275e+00
                                                   6.393e-11 6.460e+00
## as.factor(EVTYPE)GUSTY WIND/HVY RAIN
## as.factor(EVTYPE)GUSTY WINDS
                                                   6.398e-11 4.934e+00
## as.factor(EVTYPE)Glaze
                                                   6.461e-11 5.595e+00
                                                   6.442e-11 6.460e+00
## as.factor(EVTYPE)Gusty Winds
## as.factor(EVTYPE)Gusty wind/rain
                                                   6.440e-11 6.460e+00
## as.factor(EVTYPE)HAIL
                                                   3.765e-03 4.568e+00
## as.factor(EVTYPE)HAIL 0.75
                                                   6.399e-11 5.275e+00
                                                   6.408e-11 5.595e+00
## as.factor(EVTYPE)HAIL 100
                                                   6.453e-11 5.595e+00
## as.factor(EVTYPE)HAIL 175
## as.factor(EVTYPE)HAIL 450
                                                   6.433e-11 6.460e+00
## as.factor(EVTYPE)HAIL 75
                                                   6.429e-11 5.595e+00
                                                   6.363e-11 6.460e+00
## as.factor(EVTYPE)HAIL/WIND
## as.factor(EVTYPE)HARD FREEZE
                                                   6.527e-11 6.460e+00
## as.factor(EVTYPE)HEAT
                                                   5.400e+00 4.600e+00
## as.factor(EVTYPE)HEAT WAVE
                                                   1.429e+01 4.728e+00
                                                   6.348e-11 6.460e+00
## as.factor(EVTYPE)HEAT/DROUGHT
```

```
## as.factor(EVTYPE)HEAVY LAKE SNOW
                                                   6.311e-11 5.107e+00
## as.factor(EVTYPE)HEAVY MIX
                                                   6.333e-11 6.460e+00
## as.factor(EVTYPE)HEAVY RAIN
                                                   2.625e-02 4.570e+00
## as.factor(EVTYPE)HEAVY RAIN/SEVERE WEATHER
                                                   6.443e-11 5.595e+00
                                                              6.460e+00
## as.factor(EVTYPE)HEAVY RAIN/URBAN FLOOD
                                                   6.162e-11
## as.factor(EVTYPE)HEAVY RAINS
                                                   6.415e-11 5.275e+00
## as.factor(EVTYPE)HEAVY RAINS/FLOODING
                                                   6.384e-11 5.595e+00
## as.factor(EVTYPE)HEAVY SEAS
                                                   6.331e-11 6.460e+00
## as.factor(EVTYPE)HEAVY SNOW
                                                   2.381e-02 4.569e+00
## as.factor(EVTYPE)HEAVY SNOW AND ICE
                                                   7.440e-11 6.460e+00
## as.factor(EVTYPE)HEAVY SNOW AND ICE STORM
                                                   5.773e-11 6.460e+00
## as.factor(EVTYPE)HEAVY SNOW SQUALLS
                                                   6.421e-11 5.004e+00
## as.factor(EVTYPE)HEAVY SNOW-SQUALLS
                                                   6.283e-11
                                                              6.460e+00
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS
                                                   6.442e-11 6.460e+00
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS/FREEZING
                                                   6.552e-11
                                                              6.460e+00
## as.factor(EVTYPE)HEAVY SNOW/ICE
                                                   6.529e-11
                                                              6.460e+00
## as.factor(EVTYPE)HEAVY SURF
                                                   6.403e-11 4.845e+00
## as.factor(EVTYPE)HEAVY SURF/HIGH SURF
                                                   8.696e-01 4.666e+00
## as.factor(EVTYPE)HIGH
                                                   1.000e+00 6.460e+00
## as.factor(EVTYPE)HIGH SEAS
                                                   6.667e-01 5.275e+00
## as.factor(EVTYPE)HIGH SURF
                                                   2.857e-01 4.600e+00
## as.factor(EVTYPE)HIGH SURF ADVISORY
                                                   6.392e-11 6.460e+00
## as.factor(EVTYPE)HIGH WATER
                                                   6.390e-11 6.460e+00
## as.factor(EVTYPE)HIGH WAVES
                                                   6.407e-11 6.460e+00
## as.factor(EVTYPE)HIGH WIND
                                                   9.482e-02 4.569e+00
## as.factor(EVTYPE)HIGH WIND AND HEAVY SNOW
                                                   6.535e-11 6.460e+00
## as.factor(EVTYPE)HIGH WIND/ BLIZZARD
                                                   6.377e-11 6.460e+00
                                                   1.538e-01 4.581e+00
## as.factor(EVTYPE)HIGH WINDS
## as.factor(EVTYPE)HIGH WINDS 63
                                                   6.301e-11 6.460e+00
## as.factor(EVTYPE)HIGH WINDS 66
                                                   6.432e-11 6.460e+00
## as.factor(EVTYPE)HURRICANE
                                                   2.500e-01 4.681e+00
## as.factor(EVTYPE)HURRICANE OPAL/HIGH WINDS
                                                   6.459e-11 6.460e+00
## as.factor(EVTYPE)HURRICANE/TYPHOON
                                                   8.917e+00 4.754e+00
## as.factor(EVTYPE)Hail(0.75)
                                                   6.466e-11 6.460e+00
## as.factor(EVTYPE)Heavy Rain
                                                   6.464e-11 5.595e+00
## as.factor(EVTYPE)Heavy Rain and Wind
                                                   6.279e-11 6.460e+00
## as.factor(EVTYPE)ICE
                                                   6.452e-11 4.934e+00
## as.factor(EVTYPE)ICE STORM
                                                   8.738e-02 4.579e+00
## as.factor(EVTYPE)ICY ROADS
                                                   1.000e+00 5.595e+00
## as.factor(EVTYPE)Ice Fog
                                                   6.439e-11 6.460e+00
## as.factor(EVTYPE)LACK OF SNOW
                                                   6.561e-11 6.460e+00
## as.factor(EVTYPE)LAKE EFFECT SNOW
                                                   6.455e-11 5.275e+00
## as.factor(EVTYPE)LAKE-EFFECT SNOW
                                                   6.401e-11 4.599e+00
## as.factor(EVTYPE)LAKESHORE FLOOD
                                                   6.345e-11 5.595e+00
## as.factor(EVTYPE)LANDSLIDE
                                                   6.369e-11 4.607e+00
## as.factor(EVTYPE)LANDSLIDES
                                                   6.401e-11
                                                              5.595e+00
## as.factor(EVTYPE)LATE FREEZE
                                                   6.445e-11
                                                              6.460e+00
## as.factor(EVTYPE)LIGHT FREEZING RAIN
                                                   6.385e-11 5.595e+00
## as.factor(EVTYPE)LIGHT SNOW
                                                   6.350e-11 4.700e+00
## as.factor(EVTYPE)LIGHTING
                                                   6.523e-11 6.460e+00
## as.factor(EVTYPE)LIGHTNING
                                                   3.431e-01 4.569e+00
## as.factor(EVTYPE)LOCAL FLOOD
                                                   6.353e-11 6.460e+00
## as.factor(EVTYPE)LOW TEMPERATURE
                                                   6.494e-11 6.460e+00
## as.factor(EVTYPE)Late Season Snowfall
                                                   6.427e-11 5.595e+00
```

```
## as.factor(EVTYPE)Light Snow
                                                   6.398e-11 6.460e+00
## as.factor(EVTYPE)Light Snow/Flurries
                                                   6.335e-11 6.460e+00
## as.factor(EVTYPE)MARINE HAIL
                                                   6.486e-11 4.625e+00
## as.factor(EVTYPE)MARINE HIGH WIND
                                                   1.111e-01 4.815e+00
## as.factor(EVTYPE)MARINE STRONG WIND
                                                   1.000e+00 4.883e+00
## as.factor(EVTYPE)MARINE THUNDERSTORM WIND
                                                   6.366e-11 4.572e+00
## as.factor(EVTYPE)MARINE TSTM WIND
                                                   6.472e-11 4.572e+00
## as.factor(EVTYPE)MICROBURST WINDS
                                                   6.365e-11 6.460e+00
## as.factor(EVTYPE)MIXED PRECIP
                                                   1.000e+00 6.460e+00
## as.factor(EVTYPE)MIXED PRECIPITATION
                                                   6.326e-11 5.107e+00
## as.factor(EVTYPE)MODERATE SNOWFALL
                                                   6.414e-11 4.815e+00
## as.factor(EVTYPE)MONTHLY PRECIPITATION
                                                   6.438e-11 4.883e+00
## as.factor(EVTYPE)MUD SLIDE
                                                   6.458e-11 6.460e+00
## as.factor(EVTYPE)MUDSLIDE
                                                   6.465e-11 6.460e+00
## as.factor(EVTYPE)Marine Accident
                                                   2.000e+00 6.460e+00
## as.factor(EVTYPE)Microburst
                                                   6.376e-11
                                                              6.460e+00
## as.factor(EVTYPE)Minor Flooding
                                                   6.385e-11 6.460e+00
## as.factor(EVTYPE)Mixed Precipitation
                                                   6.469e-11 6.460e+00
## as.factor(EVTYPE)Mudslide
                                                   1.000e+00 5.595e+00
## as.factor(EVTYPE)NON SEVERE HAIL
                                                   6.293e-11 6.460e+00
## as.factor(EVTYPE)OTHER
                                                   6.366e-11 5.004e+00
## as.factor(EVTYPE)Other
                                                   6.487e-11 6.460e+00
## as.factor(EVTYPE)PATCHY DENSE FOG
                                                   6.411e-11 6.460e+00
## as.factor(EVTYPE)PROLONG COLD
                                                   6.496e-11 5.595e+00
## as.factor(EVTYPE)PROLONG WARMTH
                                                   6.454e-11 6.460e+00
## as.factor(EVTYPE)RAIN
                                                   6.369e-11 5.275e+00
## as.factor(EVTYPE)RAIN/SNOW
                                                   6.341e-11 6.460e+00
## as.factor(EVTYPE)RECORD COLD
                                                   6.472e-11 6.460e+00
## as.factor(EVTYPE)RECORD COLD
                                                   6.359e-11 5.275e+00
## as.factor(EVTYPE)RECORD HEAT
                                                   6.465e-11 5.004e+00
                                                   6.389e-11 5.595e+00
## as.factor(EVTYPE)RECORD RAINFALL
## as.factor(EVTYPE)RECORD SNOW
                                                   6.452e-11 6.460e+00
## as.factor(EVTYPE)RECORD WARMTH
                                                   6.351e-11 4.700e+00
## as.factor(EVTYPE)REMNANTS OF FLOYD
                                                   6.373e-11 6.460e+00
## as.factor(EVTYPE)RIP CURRENT
                                                   4.151e-01 4.611e+00
## as.factor(EVTYPE)RIP CURRENTS
                                                   4.375e-01 4.639e+00
## as.factor(EVTYPE)RIVER FLOOD
                                                   6.428e-11 4.771e+00
## as.factor(EVTYPE)RIVER FLOODING
                                                   6.523e-11 5.595e+00
## as.factor(EVTYPE)Record Warmth
                                                   6.425e-11 5.595e+00
## as.factor(EVTYPE)Record temperature
                                                   6.448e-11 5.595e+00
## as.factor(EVTYPE)SEICHE
                                                   6.439e-11 5.275e+00
## as.factor(EVTYPE)SEVERE COLD
                                                   6.340e-11 6.460e+00
## as.factor(EVTYPE)SEVERE THUNDERSTORM
                                                   6.381e-11 5.595e+00
## as.factor(EVTYPE)SEVERE THUNDERSTORMS
                                                   6.348e-11 5.595e+00
## as.factor(EVTYPE)SLEET
                                                   6.457e-11 5.595e+00
## as.factor(EVTYPE)SLEET & FREEZING RAIN
                                                   6.290e-11 6.460e+00
## as.factor(EVTYPE)SMALL HAIL
                                                   6.355e-11 4.815e+00
## as.factor(EVTYPE)SMALL STREAM FLOODING
                                                   6.491e-11 6.460e+00
## as.factor(EVTYPE)SMALL STREAM/URBAN FLOOD
                                                   6.378e-11 6.460e+00
## as.factor(EVTYPE)SMOKE
                                                   6.350e-11 6.460e+00
                                                   1.111e-01 4.600e+00
## as.factor(EVTYPE)SNOW
## as.factor(EVTYPE)SNOW AND COLD
                                                   6.373e-11 6.460e+00
## as.factor(EVTYPE)SNOW AND ICE
                                                   6.448e-11 5.595e+00
                                                   6.363e-11 6.460e+00
## as.factor(EVTYPE)SNOW AND SLEET
```

```
## as.factor(EVTYPE)SNOW SQUALL
                                                   6.327e-11 6.460e+00
                                                   6.441e-11 5.595e+00
## as.factor(EVTYPE)SNOW SQUALLS
## as.factor(EVTYPE)SNOW/BLOWING SNOW
                                                   6.357e-11 5.275e+00
## as.factor(EVTYPE)SNOW/FREEZING RAIN
                                                   6.525e-11 6.460e+00
## as.factor(EVTYPE)SNOW/SLEET
                                                    6.393e-11 6.460e+00
## as.factor(EVTYPE)SNOW/SLEET/FREEZING RAIN
                                                    6.357e-11 6.460e+00
## as.factor(EVTYPE)SNOW\\COLD
                                                    6.572e-11 6.460e+00
## as.factor(EVTYPE)STORM SURGE
                                                    1.000e-01 4.681e+00
## as.factor(EVTYPE)STORM SURGE/TIDE
                                                    6.453e-11 4.771e+00
## as.factor(EVTYPE)STREET FLOOD
                                                    6.376e-11 6.460e+00
## as.factor(EVTYPE)STRONG WIND
                                                    4.826e-02 4.574e+00
## as.factor(EVTYPE)STRONG WINDS
                                                    6.350e-11 4.687e+00
## as.factor(EVTYPE)Snow
                                                    6.419e-11 5.595e+00
                                                    6.336e-11 6.460e+00
## as.factor(EVTYPE)Snow Squalls
## as.factor(EVTYPE)Snow and Ice
                                                    6.450e-11 6.460e+00
## as.factor(EVTYPE)Strong Winds
                                                    6.333e-11 6.460e+00
## as.factor(EVTYPE)Summary of April 12
                                                    6.456e-11 6.460e+00
## as.factor(EVTYPE)Summary of July 29
                                                   6.437e-11 6.460e+00
## as.factor(EVTYPE)Summary of July 3
                                                   6.588e-11 6.460e+00
## as.factor(EVTYPE)Summary of June 11
                                                    6.486e-11 6.460e+00
## as.factor(EVTYPE)Summary of March 14
                                                    6.498e-11 6.460e+00
## as.factor(EVTYPE)Summary of May 10
                                                    6.468e-11 6.460e+00
## as.factor(EVTYPE)Summary: October 31
                                                    6.485e-11 6.460e+00
## as.factor(EVTYPE)THUNDEERSTORM WINDS
                                                    6.377e-11 6.460e+00
## as.factor(EVTYPE)THUNDERSTORM
                                                    6.436e-11 4.883e+00
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                    5.000e+00 5.595e+00
## as.factor(EVTYPE)THUNDERSTORM WIND
                                                    1.648e-02 4.568e+00
## as.factor(EVTYPE)THUNDERSTORM WIND 56
                                                    6.378e-11 6.460e+00
## as.factor(EVTYPE)THUNDERSTORM WIND 60 MPH
                                                    6.505e-11 6.460e+00
## as.factor(EVTYPE)THUNDERSTORM WIND G60
                                                    6.452e-11 6.460e+00
## as.factor(EVTYPE)THUNDERSTORM WIND G61
                                                    6.372e-11 6.460e+00
## as.factor(EVTYPE)THUNDERSTORM WIND/ TREE
                                                    6.383e-11 6.460e+00
## as.factor(EVTYPE)THUNDERSTORM WIND/AWNING
                                                    6.469e-11 6.460e+00
## as.factor(EVTYPE)THUNDERSTORM WIND/HAIL
                                                    6.439e-11 6.460e+00
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                    3.177e-02 4.569e+00
## as.factor(EVTYPE)THUNDERSTORM WINDS 53
                                                    6.390e-11 6.460e+00
## as.factor(EVTYPE)THUNDERSTORM WINDS HAIL
                                                    6.508e-11 4.815e+00
## as.factor(EVTYPE)THUNDERSTORM WINDS.
                                                    6.348e-11 6.460e+00
## as.factor(EVTYPE)THUNDERSTORM WINDS/HAIL
                                                    6.521e-11 5.595e+00
## as.factor(EVTYPE)THUNDERSTORM WINDSS
                                                    6.443e-11 5.275e+00
## as.factor(EVTYPE)THUNDERSTORMS
                                                    6.437e-11 6.460e+00
## as.factor(EVTYPE)THUNDERSTORMS WINDS
                                                    6.487e-11 6.460e+00
## as.factor(EVTYPE)TIDAL FLOODING
                                                    6.457e-11 6.460e+00
## as.factor(EVTYPE)TORNADO
                                                    1.402e+00 4.568e+00
## as.factor(EVTYPE)TORNADO DEBRIS
                                                    6.367e-11 6.460e+00
## as.factor(EVTYPE)TORNADO FO
                                                    6.360e-11 5.595e+00
## as.factor(EVTYPE)TORRENTIAL RAIN
                                                    6.397e-11 6.460e+00
## as.factor(EVTYPE)TROPICAL DEPRESSION
                                                    6.375e-11 4.883e+00
                                                    1.786e-02 4.609e+00
## as.factor(EVTYPE)TROPICAL STORM
## as.factor(EVTYPE)TSTM WIND
                                                    2.990e-02 4.568e+00
## as.factor(EVTYPE)TSTM WIND (G40)
                                                   6.374e-11 5.595e+00
## as.factor(EVTYPE)TSTM WIND (G45)
                                                   6.350e-11 5.595e+00
## as.factor(EVTYPE)TSTM WIND 51
                                                   6.354e-11 6.460e+00
                                                   6.358e-11 6.460e+00
## as.factor(EVTYPE)TSTM WIND 52
```

```
## as.factor(EVTYPE)TSTM WIND/HAIL
                                                   6.367e-11 4.590e+00
                                                   6.365e-11 5.595e+00
## as.factor(EVTYPE)TSUNAMI
## as.factor(EVTYPE)Temperature record
                                                   6.367e-11 5.595e+00
## as.factor(EVTYPE)Tidal Flooding
                                                   6.356e-11 6.460e+00
## as.factor(EVTYPE)UNSEASONABLY COLD
                                                   6.370e-11 5.107e+00
## as.factor(EVTYPE)UNSEASONABLY COOL
                                                   6.376e-11 5.595e+00
## as.factor(EVTYPE)UNSEASONABLY DRY
                                                   6.373e-11 5.004e+00
## as.factor(EVTYPE)UNSEASONABLY HOT
                                                   6.386e-11 6.460e+00
## as.factor(EVTYPE)UNSEASONABLY WARM
                                                   6.369e-11 4.740e+00
## as.factor(EVTYPE)UNSEASONABLY WARM AND DRY
                                                   6.372e-11 5.004e+00
## as.factor(EVTYPE)UNSEASONABLY WET
                                                   6.347e-11 5.595e+00
## as.factor(EVTYPE)UNSEASONAL RAIN
                                                   6.378e-11 6.460e+00
## as.factor(EVTYPE)UNUSUAL WARMTH
                                                   6.373e-11 5.595e+00
## as.factor(EVTYPE)UNUSUAL/RECORD WARMTH
                                                   6.375e-11 6.460e+00
## as.factor(EVTYPE)UNUSUALLY COLD
                                                   6.381e-11 6.460e+00
## as.factor(EVTYPE)URBAN AND SMALL STREAM FLOODIN
                                                   6.373e-11
                                                              6.460e+00
## as.factor(EVTYPE)URBAN FLOOD
                                                    6.364e-11 4.658e+00
## as.factor(EVTYPE)URBAN FLOODING
                                                   6.359e-11 4.740e+00
                                                   6.365e-11 6.460e+00
## as.factor(EVTYPE)URBAN SMALL STREAM FLOOD
## as.factor(EVTYPE)URBAN/SMALL STREAM
                                                   6.351e-11 6.460e+00
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   6.383e-11 6.460e+00
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   6.366e-11 5.595e+00
## as.factor(EVTYPE)URBAN/SML STREAM FLD
                                                   3.264e-02 4.575e+00
## as.factor(EVTYPE)URBAN/STREET FLOODING
                                                   6.359e-11 6.460e+00
## as.factor(EVTYPE)Unseasonable Cold
                                                   6.375e-11 6.460e+00
## as.factor(EVTYPE)VOLCANIC ASH
                                                   6.356e-11 5.275e+00
## as.factor(EVTYPE)VOLCANIC ASHFALL
                                                   6.380e-11 6.460e+00
                                                   2.762e-03 4.574e+00
## as.factor(EVTYPE)WATERSPOUT
## as.factor(EVTYPE)WATERSPOUT FUNNEL CLOUD
                                                   6.368e-11 6.460e+00
## as.factor(EVTYPE)WATERSPOUT-
                                                   6.384e-11 6.460e+00
## as.factor(EVTYPE)WATERSPOUT/TORNADO
                                                    1.500e+00 5.595e+00
## as.factor(EVTYPE)WATERSPOUTS
                                                   6.359e-11 5.595e+00
## as.factor(EVTYPE)WET MICROBURST
                                                   6.390e-11 6.460e+00
## as.factor(EVTYPE)WILD/FOREST FIRE
                                                   4.786e-01 4.584e+00
## as.factor(EVTYPE)WILDFIRE
                                                   2.135e-01 4.576e+00
## as.factor(EVTYPE)WILDFIRES
                                                   6.361e-11 6.460e+00
## as.factor(EVTYPE)WIND
                                                   1.563e-01 4.639e+00
## as.factor(EVTYPE)WIND ADVISORY
                                                   6.366e-11 5.275e+00
## as.factor(EVTYPE)WIND CHILL
                                                   6.368e-11 4.934e+00
## as.factor(EVTYPE)WIND DAMAGE
                                                   6.377e-11 6.460e+00
## as.factor(EVTYPE)WINDS
                                                   6.341e-11 6.460e+00
## as.factor(EVTYPE)WINTER MIX
                                                   6.378e-11 6.460e+00
                                                   4.141e-02 4.570e+00
## as.factor(EVTYPE)WINTER STORM
## as.factor(EVTYPE)WINTER STORM/HIGH WIND
                                                   6.396e-11 6.460e+00
## as.factor(EVTYPE)WINTER WEATHER
                                                   9.104e-02 4.571e+00
                                                   6.370e-11 6.460e+00
## as.factor(EVTYPE)WINTER WEATHER MIX
## as.factor(EVTYPE)WINTER WEATHER/MIX
                                                   1.391e-01 4.588e+00
## as.factor(EVTYPE)WINTERY MIX
                                                   6.381e-11 6.460e+00
## as.factor(EVTYPE)WINTRY MIX
                                                   5.538e+00 4.740e+00
## as.factor(EVTYPE)Wet Month
                                                   6.332e-11 6.460e+00
## as.factor(EVTYPE)Wind
                                                   6.306e-11 6.460e+00
## as.factor(EVTYPE)Winter Weather
                                                   6.298e-11 6.460e+00
## as.factor(EVTYPE)small hail
                                                   6.334e-11 6.460e+00
##
                                                   t value Pr(>|t|)
```

```
## (Intercept)
                                                    0.000 1.00000
## as.factor(EVTYPE) WIND
                                                    0.000 1.00000
## as.factor(EVTYPE)APACHE COUNTY
                                                    0.000 1.00000
## as.factor(EVTYPE)ASTRONOMICAL HIGH TIDE
                                                    0.000 1.00000
## as.factor(EVTYPE)ASTRONOMICAL LOW TIDE
                                                    0.000 1.00000
## as.factor(EVTYPE)AVALANCHE
                                                    0.179 0.85805
## as.factor(EVTYPE)BLACK ICE
                                                    0.000 1.00000
## as.factor(EVTYPE)BLIZZARD
                                                    0.021 0.98311
## as.factor(EVTYPE)BLIZZARD AND EXTREME WIND CHIL
                                                  0.000 1.00000
## as.factor(EVTYPE)BLOW-OUT TIDES
                                                    0.000 1.00000
## as.factor(EVTYPE)BREAKUP FLOODING
                                                    0.000 1.00000
## as.factor(EVTYPE)COASTAL FLOOD
                                                    0.000 1.00000
## as.factor(EVTYPE)COASTAL FLOODING
                                                    0.000 1.00000
## as.factor(EVTYPE)COASTAL FLOODING/EROSION
                                                    0.000 1.00000
## as.factor(EVTYPE)COASTAL STORM
                                                    0.155 0.87698
## as.factor(EVTYPE)COLD
                                                    0.405
                                                           0.68521
## as.factor(EVTYPE)COLD TEMPERATURES
                                                    0.000 1.00000
## as.factor(EVTYPE)COLD WAVE
                                                    0.000 1.00000
## as.factor(EVTYPE)COLD WIND CHILL TEMPERATURES
                                                    0.000 1.00000
## as.factor(EVTYPE)COLD/WIND CHILL
                                                    0.042 0.96674
## as.factor(EVTYPE)Coastal Flooding
                                                    0.000 1.00000
## as.factor(EVTYPE)Cold
                                                    0.000 1.00000
## as.factor(EVTYPE)Cold and Frost
                                                   0.000 1.00000
## as.factor(EVTYPE)DAMAGING FREEZE
                                                   0.000 1.00000
## as.factor(EVTYPE)DENSE FOG
                                                   0.055 0.95588
## as.factor(EVTYPE)DENSE SMOKE
                                                   0.000 1.00000
## as.factor(EVTYPE)DROUGHT
                                                    0.000 1.00000
## as.factor(EVTYPE)DROUGHT/EXCESSIVE HEAT
                                                    0.000 1.00000
## as.factor(EVTYPE)DRY
                                                    0.000 1.00000
## as.factor(EVTYPE)DRY MICROBURST
                                                    0.000 1.00000
## as.factor(EVTYPE)DRY MICROBURST WINDS
                                                   0.000 1.00000
## as.factor(EVTYPE)DUST DEVIL
                                                   0.000 1.00000
## as.factor(EVTYPE)DUST STORM
                                                   0.231 0.81704
## as.factor(EVTYPE)DUST STORM/HIGH WINDS
                                                  0.000 1.00000
## as.factor(EVTYPE)DUSTSTORM
                                                   0.000 1.00000
## as.factor(EVTYPE)Dust Devil
                                                  0.000 1.00000
## as.factor(EVTYPE)EARLY FREEZE
                                                  0.000 1.00000
## as.factor(EVTYPE)EARLY SNOWFALL
                                                  0.000 1.00000
## as.factor(EVTYPE)EXCESSIVE HEAT
                                                   1.115 0.26479
## as.factor(EVTYPE)EXCESSIVE RAINFALL
                                                  0.000 1.00000
## as.factor(EVTYPE)EXCESSIVE SNOW
                                                  0.000 1.00000
## as.factor(EVTYPE)EXCESSIVE WETNESS
                                                   0.000 1.00000
## as.factor(EVTYPE)EXTREME COLD
                                                   0.003 0.99737
## as.factor(EVTYPE)EXTREME COLD/WIND CHILL
                                                    0.002 0.99821
## as.factor(EVTYPE)EXTREME HEAT
                                                    0.000 1.00000
## as.factor(EVTYPE)EXTREME WINDCHILL
                                                    0.000 1.00000
## as.factor(EVTYPE)EXTREME WINDCHILL TEMPERATURES
                                                   0.000 1.00000
## as.factor(EVTYPE)Extended Cold
                                                    0.000 1.00000
## as.factor(EVTYPE)FIRST SNOW
                                                    0.000 1.00000
## as.factor(EVTYPE)FLASH FLOOD
                                                    0.011 0.99152
                                                    0.000 1.00000
## as.factor(EVTYPE)FLASH FLOOD LANDSLIDES
## as.factor(EVTYPE)FLASH FLOOD/
                                                    0.000 1.00000
## as.factor(EVTYPE)FLASH FLOOD/ STREET
                                                   0.000 1.00000
## as.factor(EVTYPE)FLASH FLOODING
                                                    0.003 0.99769
```

```
## as.factor(EVTYPE)FLASH FLOODS
                                                   0.000 1.00000
## as.factor(EVTYPE)FLOOD
                                                   0.050 0.96017
## as.factor(EVTYPE)FLOOD WATCH/
                                                 0.000 1.00000
## as.factor(EVTYPE)FLOOD/FLASH FLOOD
                                                 0.015 0.98785
## as.factor(EVTYPE)FLOOD/FLASH FLOODING
                                                 0.000 1.00000
## as.factor(EVTYPE)FLOOD/RAIN/WIND
                                                  0.000 1.00000
## as.factor(EVTYPE)FLOODING
                                                  0.000 1.00000
## as.factor(EVTYPE)FOG
                                                   0.102 0.91874
## as.factor(EVTYPE)FREEZE
                                                   0.000 1.00000
## as.factor(EVTYPE)FREEZING DRIZZLE
                                                 0.089 0.92879
## as.factor(EVTYPE)FREEZING FOG
                                                 0.000 1.00000
                                                 0.000 1.00000
## as.factor(EVTYPE)FREEZING RAIN
## as.factor(EVTYPE)FREEZING RAIN/SLEET
                                                  0.000 1.00000
## as.factor(EVTYPE)FROST
                                                  0.000 1.00000
## as.factor(EVTYPE)FROST/FREEZE
                                                  0.000 1.00000
## as.factor(EVTYPE)FUNNEL
                                                  0.000 1.00000
## as.factor(EVTYPE)FUNNEL CLOUD
                                                 0.000 1.00000
## as.factor(EVTYPE)FUNNEL CLOUDS
                                                 0.000 1.00000
## as.factor(EVTYPE)Flood/Flash Flood
                                                 0.000 1.00000
                                                 0.000 1.00000
## as.factor(EVTYPE)Freezing Rain
## as.factor(EVTYPE)GLAZE
                                                   0.000 1.00000
## as.factor(EVTYPE)GRADIENT WINDS
                                                  0.000 1.00000
## as.factor(EVTYPE)GUSTNADO
                                                  0.000 1.00000
## as.factor(EVTYPE)GUSTY WIND
                                                   0.000 1.00000
## as.factor(EVTYPE)GUSTY WIND/HVY RAIN
                                                 0.000 1.00000
## as.factor(EVTYPE)GUSTY WINDS
                                                 0.000 1.00000
## as.factor(EVTYPE)Glaze
                                                 0.000 1.00000
## as.factor(EVTYPE)Gusty Winds
                                                  0.000 1.00000
## as.factor(EVTYPE)Gusty wind/rain
                                                 0.000 1.00000
## as.factor(EVTYPE)HAIL
                                                  0.001 0.99934
## as.factor(EVTYPE)HAIL 0.75
                                                   0.000 1.00000
## as.factor(EVTYPE)HAIL 100
                                                  0.000 1.00000
## as.factor(EVTYPE)HAIL 175
                                                 0.000 1.00000
## as.factor(EVTYPE)HAIL 450
                                                 0.000 1.00000
                                                  0.000 1.00000
## as.factor(EVTYPE)HAIL 75
## as.factor(EVTYPE)HAIL/WIND
                                                  0.000 1.00000
## as.factor(EVTYPE)HARD FREEZE
                                                 0.000 1.00000
## as.factor(EVTYPE)HEAT
                                                  1.174 0.24048
## as.factor(EVTYPE)HEAT WAVE
                                                   3.021 0.00252 **
## as.factor(EVTYPE)HEAT/DROUGHT
                                                 0.000 1.00000
## as.factor(EVTYPE)HEAVY LAKE SNOW
                                                 0.000 1.00000
## as.factor(EVTYPE)HEAVY MIX
                                                  0.000 1.00000
## as.factor(EVTYPE)HEAVY RAIN
                                                   0.006 0.99542
## as.factor(EVTYPE)HEAVY RAIN/SEVERE WEATHER
                                                   0.000 1.00000
## as.factor(EVTYPE)HEAVY RAIN/URBAN FLOOD
                                                   0.000 1.00000
## as.factor(EVTYPE)HEAVY RAINS
                                                   0.000 1.00000
## as.factor(EVTYPE)HEAVY RAINS/FLOODING
                                                   0.000 1.00000
## as.factor(EVTYPE)HEAVY SEAS
                                                   0.000 1.00000
## as.factor(EVTYPE)HEAVY SNOW
                                                  0.005 0.99584
## as.factor(EVTYPE)HEAVY SNOW AND ICE
                                                   0.000 1.00000
## as.factor(EVTYPE)HEAVY SNOW AND ICE STORM
                                                 0.000 1.00000
## as.factor(EVTYPE)HEAVY SNOW SQUALLS
                                                  0.000 1.00000
## as.factor(EVTYPE)HEAVY SNOW-SQUALLS
                                                  0.000 1.00000
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS
                                                 0.000 1.00000
```

```
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS/FREEZING 0.000 1.00000
## as.factor(EVTYPE)HEAVY SNOW/ICE
                                                    0.000 1.00000
## as.factor(EVTYPE)HEAVY SURF
                                                    0.000 1.00000
## as.factor(EVTYPE)HEAVY SURF/HIGH SURF
                                                   0.186 0.85217
## as.factor(EVTYPE)HIGH
                                                    0.155 0.87698
## as.factor(EVTYPE)HIGH SEAS
                                                   0.126 0.89942
## as.factor(EVTYPE)HIGH SURF
                                                   0.062 0.95048
                                                   0.000 1.00000
## as.factor(EVTYPE)HIGH SURF ADVISORY
## as.factor(EVTYPE)HIGH WATER
                                                   0.000 1.00000
                                                   0.000 1.00000
## as.factor(EVTYPE)HIGH WAVES
## as.factor(EVTYPE)HIGH WIND
                                                   0.021 0.98344
## as.factor(EVTYPE)HIGH WIND AND HEAVY SNOW
                                                   0.000 1.00000
## as.factor(EVTYPE)HIGH WIND/ BLIZZARD
                                                   0.000 1.00000
                                                   0.034 0.97321
## as.factor(EVTYPE)HIGH WINDS
## as.factor(EVTYPE)HIGH WINDS 63
                                                   0.000 1.00000
## as.factor(EVTYPE)HIGH WINDS 66
                                                    0.000 1.00000
## as.factor(EVTYPE)HURRICANE
                                                   0.053 0.95740
## as.factor(EVTYPE)HURRICANE OPAL/HIGH WINDS
                                                    0.000 1.00000
                                                   1.875 0.06073
## as.factor(EVTYPE)HURRICANE/TYPHOON
## as.factor(EVTYPE)Hail(0.75)
                                                   0.000 1.00000
## as.factor(EVTYPE)Heavy Rain
                                                   0.000 1.00000
## as.factor(EVTYPE)Heavy Rain and Wind
                                                   0.000 1.00000
## as.factor(EVTYPE)ICE
                                                   0.000 1.00000
## as.factor(EVTYPE)ICE STORM
                                                   0.019 0.98478
## as.factor(EVTYPE)ICY ROADS
                                                   0.179 0.85814
## as.factor(EVTYPE)Ice Fog
                                                  0.000 1.00000
## as.factor(EVTYPE)LACK OF SNOW
                                                  0.000 1.00000
## as.factor(EVTYPE)LAKE EFFECT SNOW
                                                  0.000 1.00000
## as.factor(EVTYPE)LAKE-EFFECT SNOW
                                                  0.000 1.00000
## as.factor(EVTYPE)LAKESHORE FLOOD
                                                  0.000 1.00000
## as.factor(EVTYPE)LANDSLIDE
                                                   0.000 1.00000
## as.factor(EVTYPE)LANDSLIDES
                                                   0.000 1.00000
## as.factor(EVTYPE)LATE FREEZE
                                                  0.000 1.00000
## as.factor(EVTYPE)LIGHT FREEZING RAIN
                                                  0.000 1.00000
## as.factor(EVTYPE)LIGHT SNOW
                                                   0.000 1.00000
## as.factor(EVTYPE)LIGHTING
                                                   0.000 1.00000
## as.factor(EVTYPE)LIGHTNING
                                                  0.075 0.94014
## as.factor(EVTYPE)LOCAL FLOOD
                                                  0.000 1.00000
## as.factor(EVTYPE)LOW TEMPERATURE
                                                   0.000 1.00000
## as.factor(EVTYPE)Late Season Snowfall
                                                 0.000 1.00000
## as.factor(EVTYPE)Light Snow
                                                  0.000 1.00000
## as.factor(EVTYPE)Light Snow/Flurries
                                                 0.000 1.00000
## as.factor(EVTYPE)MARINE HAIL
                                                  0.000 1.00000
## as.factor(EVTYPE)MARINE HIGH WIND
                                                  0.023 0.98159
## as.factor(EVTYPE)MARINE STRONG WIND
                                                   0.205 0.83774
## as.factor(EVTYPE)MARINE THUNDERSTORM WIND
                                                   0.000 1.00000
## as.factor(EVTYPE)MARINE TSTM WIND
                                                   0.000 1.00000
## as.factor(EVTYPE)MICROBURST WINDS
                                                   0.000 1.00000
## as.factor(EVTYPE)MIXED PRECIP
                                                   0.155 0.87698
## as.factor(EVTYPE)MIXED PRECIPITATION
                                                   0.000 1.00000
                                                   0.000 1.00000
## as.factor(EVTYPE)MODERATE SNOWFALL
## as.factor(EVTYPE)MONTHLY PRECIPITATION
                                                   0.000 1.00000
## as.factor(EVTYPE)MUD SLIDE
                                                   0.000 1.00000
                                                   0.000 1.00000
## as.factor(EVTYPE)MUDSLIDE
```

```
## as.factor(EVTYPE)Marine Accident
                                                    0.310 0.75687
## as.factor(EVTYPE)Microburst
                                                    0.000 1.00000
## as.factor(EVTYPE)Minor Flooding
                                                   0.000 1.00000
## as.factor(EVTYPE)Mixed Precipitation
                                                   0.000 1.00000
## as.factor(EVTYPE)Mudslide
                                                    0.179 0.85814
## as.factor(EVTYPE)NON SEVERE HAIL
                                                   0.000 1.00000
## as.factor(EVTYPE)OTHER
                                                   0.000 1.00000
## as.factor(EVTYPE)Other
                                                    0.000 1.00000
## as.factor(EVTYPE)PATCHY DENSE FOG
                                                    0.000 1.00000
## as.factor(EVTYPE)PROLONG COLD
                                                   0.000 1.00000
## as.factor(EVTYPE)PROLONG WARMTH
                                                   0.000 1.00000
## as.factor(EVTYPE)RAIN
                                                   0.000 1.00000
                                                    0.000 1.00000
## as.factor(EVTYPE)RAIN/SNOW
                                                 0.000 1.0000

0.000 1.0000

0.000 1.0000

0.000 1.00000
## as.factor(EVTYPE)RECORD COLD
## as.factor(EVTYPE)RECORD COLD
## as.factor(EVTYPE)RECORD HEAT
## as.factor(EVTYPE)RECORD RAINFALL
## as.factor(EVTYPE)RECORD SNOW
                                                   0.000 1.00000
## as.factor(EVTYPE)RECORD WARMTH
                                                   0.000 1.00000
## as.factor(EVTYPE)REMNANTS OF FLOYD
                                                    0.000 1.00000
                                                   0.090 0.92827
## as.factor(EVTYPE)RIP CURRENT
## as.factor(EVTYPE)RIP CURRENTS
                                                   0.094 0.92486
## as.factor(EVTYPE)RIVER FLOOD
                                                   0.000 1.00000
## as.factor(EVTYPE)RIVER FLOODING
                                                   0.000 1.00000
                                                  0.000 1.00000
0.000 1.00000
## as.factor(EVTYPE)Record Warmth
## as.factor(EVTYPE)Record temperature
                                                   0.000 1.00000
## as.factor(EVTYPE)SEICHE
## as.factor(EVTYPE)SEVERE COLD
                                                    0.000 1.00000
                                                   0.000 1.00000
## as.factor(EVTYPE)SEVERE THUNDERSTORM
## as.factor(EVTYPE)SEVERE THUNDERSTORMS
                                                   0.000 1.00000
## as.factor(EVTYPE)SLEET
                                                     0.000 1.00000
## as.factor(EVTYPE)SLEET & FREEZING RAIN
                                                    0.000 1.00000
## as.factor(EVTYPE)SMALL HAIL
                                                     0.000 1.00000
## as.factor(EVTYPE)SMALL STREAM FLOODING
                                                     0.000 1.00000
## as.factor(EVTYPE)SMALL STREAM/URBAN FLOOD
                                                     0.000 1.00000
## as.factor(EVTYPE)SMOKE
                                                     0.000 1.00000
## as.factor(EVTYPE)SNOW
                                                     0.024 0.98073
## as.factor(EVTYPE)SNOW AND COLD
                                                    0.000 1.00000
## as.factor(EVTYPE)SNOW AND ICE
                                                   0.000 1.00000
                                                   0.000 1.00000
## as.factor(EVTYPE)SNOW AND SLEET
                                                  0.000 1.00000
0.000 1.00000
0.000 1.00000
0.000 1.00000
## as.factor(EVTYPE)SNOW SQUALL
## as.factor(EVTYPE)SNOW SQUALLS
## as.factor(EVTYPE)SNOW/BLOWING SNOW
## as.factor(EVTYPE)SNOW/FREEZING RAIN
## as.factor(EVTYPE)SNOW/SLEET
                                                    0.000 1.00000
## as.factor(EVTYPE)SNOW/SLEET/FREEZING RAIN
                                                    0.000 1.00000
## as.factor(EVTYPE)SNOW\\COLD
                                                     0.000 1.00000
## as.factor(EVTYPE)STORM SURGE
                                                   0.021 0.98296
## as.factor(EVTYPE)STORM SURGE/TIDE
                                                   0.000 1.00000
## as.factor(EVTYPE)STREET FLOOD
                                                   0.000 1.00000
## as.factor(EVTYPE)STRONG WIND
                                                    0.011 0.99158
## as.factor(EVTYPE)STRONG WINDS
                                                     0.000 1.00000
## as.factor(EVTYPE)Snow
                                                    0.000 1.00000
## as.factor(EVTYPE)Snow Squalls
                                                    0.000 1.00000
```

```
## as.factor(EVTYPE)Snow and Ice
                                                   0.000 1.00000
## as.factor(EVTYPE)Strong Winds
                                                    0.000 1.00000
## as.factor(EVTYPE)Summary of April 12
                                                  0.000 1.00000
## as.factor(EVTYPE)Summary of July 29
                                                  0.000 1.00000
## as.factor(EVTYPE)Summary of July 3
                                                   0.000 1.00000
## as.factor(EVTYPE)Summary of June 11
                                                   0.000 1.00000
## as.factor(EVTYPE)Summary of March 14
                                                  0.000 1.00000
## as.factor(EVTYPE)Summary of May 10
                                                    0.000 1.00000
## as.factor(EVTYPE)Summary: October 31
                                                    0.000 1.00000
## as.factor(EVTYPE)THUNDEERSTORM WINDS
                                                   0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM
                                                   0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                  0.894 0.37147
## as.factor(EVTYPE)THUNDERSTORM WIND
                                                    0.004 0.99712
## as.factor(EVTYPE)THUNDERSTORM WIND 56
                                                    0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WIND 60 MPH
                                                    0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WIND G60
                                                    0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WIND G61
                                                    0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WIND/ TREE
                                                    0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WIND/AWNING
                                                    0.000 1.00000
                                                    0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WIND/HAIL
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                    0.007 0.99445
## as.factor(EVTYPE)THUNDERSTORM WINDS 53
                                                    0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WINDS HAIL
                                                    0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WINDS.
                                                    0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WINDS/HAIL
                                                    0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WINDSS
                                                    0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORMS
                                                    0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORMS WINDS
                                                    0.000 1.00000
## as.factor(EVTYPE)TIDAL FLOODING
                                                    0.000 1.00000
## as.factor(EVTYPE)TORNADO
                                                    0.307 0.75888
## as.factor(EVTYPE)TORNADO DEBRIS
                                                    0.000 1.00000
## as.factor(EVTYPE)TORNADO FO
                                                   0.000 1.00000
## as.factor(EVTYPE)TORRENTIAL RAIN
                                                  0.000 1.00000
                                                  0.000 1.00000
## as.factor(EVTYPE)TROPICAL DEPRESSION
                                                 0.004 0.99691
0.007 0.99478
0.000 1.00000
0.000 1.00000
## as.factor(EVTYPE)TROPICAL STORM
## as.factor(EVTYPE)TSTM WIND
## as.factor(EVTYPE)TSTM WIND (G40)
## as.factor(EVTYPE)TSTM WIND (G45)
## as.factor(EVTYPE)TSTM WIND 51
                                                   0.000 1.00000
                                                  0.000 1.00000
## as.factor(EVTYPE)TSTM WIND 52
## as.factor(EVTYPE)TSTM WIND/HAIL
                                                  0.000 1.00000
## as.factor(EVTYPE)TSUNAMI
                                                  0.000 1.00000
## as.factor(EVTYPE)Temperature record
                                                  0.000 1.00000
## as.factor(EVTYPE)Tidal Flooding
                                                  0.000 1.00000
## as.factor(EVTYPE)UNSEASONABLY COLD
                                                   0.000 1.00000
## as.factor(EVTYPE)UNSEASONABLY COOL
                                                    0.000 1.00000
## as.factor(EVTYPE)UNSEASONABLY DRY
                                                    0.000 1.00000
## as.factor(EVTYPE)UNSEASONABLY HOT
                                                    0.000 1.00000
## as.factor(EVTYPE)UNSEASONABLY WARM
                                                    0.000 1.00000
## as.factor(EVTYPE)UNSEASONABLY WARM AND DRY
                                                    0.000 1.00000
## as.factor(EVTYPE)UNSEASONABLY WET
                                                    0.000 1.00000
## as.factor(EVTYPE)UNSEASONAL RAIN
                                                    0.000 1.00000
## as.factor(EVTYPE)UNUSUAL WARMTH
                                                    0.000 1.00000
## as.factor(EVTYPE)UNUSUAL/RECORD WARMTH
                                                    0.000 1.00000
```

```
## as.factor(EVTYPE)UNUSUALLY COLD
                                                    0.000 1.00000
## as.factor(EVTYPE)URBAN AND SMALL STREAM FLOODIN 0.000 1.00000
## as.factor(EVTYPE)URBAN FLOOD
                                                    0.000 1.00000
## as.factor(EVTYPE)URBAN FLOODING
                                                   0.000 1.00000
## as.factor(EVTYPE)URBAN SMALL STREAM FLOOD
                                                   0.000 1.00000
## as.factor(EVTYPE)URBAN/SMALL STREAM
                                                   0.000 1.00000
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   0.000 1.00000
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   0.000 1.00000
## as.factor(EVTYPE)URBAN/SML STREAM FLD
                                                   0.007 0.99431
## as.factor(EVTYPE)URBAN/STREET FLOODING
                                                  0.000 1.00000
## as.factor(EVTYPE)Unseasonable Cold
                                                   0.000 1.00000
## as.factor(EVTYPE) VOLCANIC ASH
                                                   0.000 1.00000
## as.factor(EVTYPE)VOLCANIC ASHFALL
                                                   0.000 1.00000
## as.factor(EVTYPE)WATERSPOUT
                                                   0.001 0.99952
## as.factor(EVTYPE)WATERSPOUT FUNNEL CLOUD
                                                   0.000 1.00000
## as.factor(EVTYPE)WATERSPOUT-
                                                   0.000 1.00000
## as.factor(EVTYPE)WATERSPOUT/TORNADO
                                                   0.268 0.78861
## as.factor(EVTYPE)WATERSPOUTS
                                                  0.000 1.00000
## as.factor(EVTYPE)WET MICROBURST
                                                   0.000 1.00000
## as.factor(EVTYPE)WILD/FOREST FIRE
                                                   0.104 0.91686
## as.factor(EVTYPE)WILDFIRE
                                                   0.047 0.96279
## as.factor(EVTYPE)WILDFIRES
                                                   0.000 1.00000
## as.factor(EVTYPE)WIND
                                                   0.034 0.97313
## as.factor(EVTYPE)WIND ADVISORY
                                                   0.000 1.00000
## as.factor(EVTYPE)WIND CHILL
                                                  0.000 1.00000
## as.factor(EVTYPE)WIND DAMAGE
                                                  0.000 1.00000
## as.factor(EVTYPE)WINDS
                                                  0.000 1.00000
## as.factor(EVTYPE)WINTER MIX
                                                   0.000 1.00000
## as.factor(EVTYPE)WINTER STORM
                                                  0.009 0.99277
## as.factor(EVTYPE)WINTER STORM/HIGH WIND
                                                  0.000 1.00000
## as.factor(EVTYPE)WINTER WEATHER
                                                   0.020 0.98411
## as.factor(EVTYPE)WINTER WEATHER MIX
                                                   0.000 1.00000
                                                   0.030 0.97581
## as.factor(EVTYPE)WINTER WEATHER/MIX
## as.factor(EVTYPE)WINTERY MIX
                                                   0.000 1.00000
## as.factor(EVTYPE)WINTRY MIX
                                                   1.168 0.24266
                                                   0.000 1.00000
## as.factor(EVTYPE)Wet Month
## as.factor(EVTYPE)Wind
                                                   0.000 1.00000
## as.factor(EVTYPE)Winter Weather
                                                   0.000 1.00000
## as.factor(EVTYPE)small hail
                                                    0.000 1.00000
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1
## Residual standard error: 4.568 on 89921 degrees of freedom
## Multiple R-squared: 0.01146, Adjusted R-squared: 0.008077
## F-statistic: 3.385 on 308 and 89921 DF, p-value: < 2.2e-16
lm3<-lm(FATALITIES~as.factor(EVTYPE)+PROPDMG+as.factor(STATE),data=training)
summary(lm3)
##
## Call:
## lm(formula = FATALITIES ~ as.factor(EVTYPE) + PROPDMG + as.factor(STATE),
##
      data = training)
##
```

```
## Residuals:
     Min
             10 Median
                            30
                                 Max
## -5.831 -0.018 -0.004 0.004 33.899
##
## Coefficients:
##
                                                    Estimate Std. Error
## (Intercept)
                                                   -5.827e-03 3.298e-01
                                                   -1.643e-02 4.660e-01
## as.factor(EVTYPE) WIND
## as.factor(EVTYPE)APACHE COUNTY
                                                   -3.717e-02 4.659e-01
## as.factor(EVTYPE)ASTRONOMICAL HIGH TIDE
                                                   6.187e-03 3.428e-01
## as.factor(EVTYPE)ASTRONOMICAL LOW TIDE
                                                    2.237e-02 3.376e-01
## as.factor(EVTYPE)AVALANCHE
                                                   4.274e-01 3.341e-01
## as.factor(EVTYPE)BLACK ICE
                                                   -1.339e-02 4.658e-01
## as.factor(EVTYPE)BLIZZARD
                                                    3.180e-02 3.300e-01
## as.factor(EVTYPE)BLIZZARD AND EXTREME WIND CHIL -1.916e-03 4.658e-01
## as.factor(EVTYPE)BLOW-OUT TIDES
                                                    8.069e-02 4.664e-01
## as.factor(EVTYPE)BREAKUP FLOODING
                                                    3.384e-03 4.660e-01
## as.factor(EVTYPE)COASTAL FLOOD
                                                   3.121e-03 3.315e-01
## as.factor(EVTYPE)COASTAL FLOODING
                                                   -8.468e-03 3.418e-01
## as.factor(EVTYPE)COASTAL FLOODING/EROSION
                                                   8.069e-02 4.664e-01
## as.factor(EVTYPE)COASTAL STORM
                                                   9.904e-01 4.658e-01
## as.factor(EVTYPE)COLD
                                                   8.303e-01 3.559e-01
## as.factor(EVTYPE)COLD TEMPERATURES
                                                   -3.084e-03 4.661e-01
## as.factor(EVTYPE)COLD WAVE
                                                   -1.495e-02 4.657e-01
## as.factor(EVTYPE)COLD WIND CHILL TEMPERATURES
                                                   -9.374e-03 4.660e-01
## as.factor(EVTYPE)COLD/WIND CHILL
                                                   1.255e-01 3.325e-01
## as.factor(EVTYPE)Coastal Flooding
                                                    3.636e-02 3.684e-01
## as.factor(EVTYPE)Cold
                                                   -1.139e-02 4.034e-01
## as.factor(EVTYPE)Cold and Frost
                                                   -1.405e-02 4.658e-01
## as.factor(EVTYPE)DAMAGING FREEZE
                                                   -6.738e-03 4.660e-01
## as.factor(EVTYPE)DENSE FOG
                                                    1.324e-02 3.305e-01
## as.factor(EVTYPE)DENSE SMOKE
                                                   -1.698e-02 3.804e-01
## as.factor(EVTYPE)DROUGHT
                                                   -7.053e-03 3.300e-01
## as.factor(EVTYPE)DROUGHT/EXCESSIVE HEAT
                                                   -3.549e-03 4.659e-01
## as.factor(EVTYPE)DRY
                                                   -1.704e-02 4.035e-01
## as.factor(EVTYPE)DRY MICROBURST
                                                   -4.642e-03 3.428e-01
## as.factor(EVTYPE)DRY MICROBURST WINDS
                                                   5.277e-05 4.658e-01
## as.factor(EVTYPE)DUST DEVIL
                                                   -1.178e-02 3.384e-01
## as.factor(EVTYPE)DUST STORM
                                                   5.444e-02 3.357e-01
## as.factor(EVTYPE)DUST STORM/HIGH WINDS
                                                   -1.361e-02 4.658e-01
## as.factor(EVTYPE)DUSTSTORM
                                                   -1.643e-02 4.660e-01
## as.factor(EVTYPE)Dust Devil
                                                   -8.846e-03 4.035e-01
## as.factor(EVTYPE)EARLY FREEZE
                                                   -1.916e-03 4.658e-01
## as.factor(EVTYPE)EARLY SNOWFALL
                                                  -7.538e-03 4.658e-01
## as.factor(EVTYPE)EXCESSIVE HEAT
                                                   7.140e-01 3.302e-01
                                                   -4.962e-03 4.657e-01
## as.factor(EVTYPE)EXCESSIVE RAINFALL
## as.factor(EVTYPE)EXCESSIVE SNOW
                                                   -1.903e-02 3.683e-01
## as.factor(EVTYPE)EXCESSIVE WETNESS
                                                   -1.018e-03 4.658e-01
## as.factor(EVTYPE)EXTREME COLD
                                                   1.835e-01 3.318e-01
## as.factor(EVTYPE)EXTREME COLD/WIND CHILL
                                                    9.576e-02 3.310e-01
                                                   8.388e-03 4.659e-01
## as.factor(EVTYPE)EXTREME HEAT
## as.factor(EVTYPE)EXTREME WINDCHILL
                                                    1.162e-01 3.390e-01
## as.factor(EVTYPE)EXTREME WINDCHILL TEMPERATURES -7.277e-03 3.805e-01
                                                    9.567e-01 4.658e-01
## as.factor(EVTYPE)Extended Cold
```

```
## as.factor(EVTYPE)FIRST SNOW
                                                    8.069e-02 4.664e-01
## as.factor(EVTYPE)FLASH FLOOD
                                                    1.824e-03 3.294e-01
                                                   -9.928e-03 4.661e-01
## as.factor(EVTYPE)FLASH FLOOD LANDSLIDES
## as.factor(EVTYPE)FLASH FLOOD/
                                                   -7.813e-02 4.659e-01
## as.factor(EVTYPE)FLASH FLOOD/ STREET
                                                   -1.363e-02 4.658e-01
## as.factor(EVTYPE)FLASH FLOODING
                                                   4.269e-04 3.315e-01
## as.factor(EVTYPE)FLASH FLOODS
                                                    1.633e-01 3.609e-01
## as.factor(EVTYPE)FLOOD
                                                   7.532e-03 3.294e-01
## as.factor(EVTYPE)FLOOD WATCH/
                                                   5.827e-03 4.660e-01
## as.factor(EVTYPE)FLOOD/FLASH FLOOD
                                                   -7.194e-03 3.322e-01
## as.factor(EVTYPE)FLOOD/FLASH FLOODING
                                                   -1.210e-02 4.034e-01
## as.factor(EVTYPE)FLOOD/RAIN/WIND
                                                   -1.704e-02 4.658e-01
## as.factor(EVTYPE)FLOODING
                                                   -9.077e-03 3.428e-01
## as.factor(EVTYPE)FOG
                                                   2.841e-02 3.326e-01
## as.factor(EVTYPE)FREEZE
                                                   -5.089e-11 3.607e-01
## as.factor(EVTYPE)FREEZING DRIZZLE
                                                   -1.823e-02 4.034e-01
## as.factor(EVTYPE)FREEZING FOG
                                                   -1.371e-02 4.034e-01
## as.factor(EVTYPE)FREEZING RAIN
                                                   1.089e-01 3.359e-01
## as.factor(EVTYPE)FREEZING RAIN/SLEET
                                                   -1.339e-02 4.034e-01
## as.factor(EVTYPE)FROST
                                                   -1.575e-02 3.521e-01
## as.factor(EVTYPE)FROST/FREEZE
                                                   -8.495e-03 3.306e-01
## as.factor(EVTYPE)FUNNEL
                                                   -6.402e-03 3.803e-01
## as.factor(EVTYPE)FUNNEL CLOUD
                                                   -7.778e-03 3.296e-01
## as.factor(EVTYPE)FUNNEL CLOUDS
                                                   -1.154e-04 3.521e-01
## as.factor(EVTYPE)Flood/Flash Flood
                                                  -3.331e-03 4.658e-01
## as.factor(EVTYPE)Freezing Rain
                                                   -1.339e-02 4.658e-01
## as.factor(EVTYPE)GLAZE
                                                   -6.970e-03 4.034e-01
## as.factor(EVTYPE)GRADIENT WINDS
                                                   -2.408e-02 4.658e-01
## as.factor(EVTYPE)GUSTNADO
                                                  -1.140e-03 4.658e-01
## as.factor(EVTYPE)GUSTY WIND
                                                   8.903e-03 3.807e-01
## as.factor(EVTYPE)GUSTY WIND/HVY RAIN
                                                   -5.333e-03 4.658e-01
## as.factor(EVTYPE)GUSTY WINDS
                                                   1.634e-01 3.558e-01
## as.factor(EVTYPE)Glaze
                                                  -1.128e-02 4.034e-01
                                                   -1.577e-02 4.659e-01
## as.factor(EVTYPE)Gusty Winds
## as.factor(EVTYPE)Gusty wind/rain
                                                   -5.333e-03 4.658e-01
## as.factor(EVTYPE)HAIL
                                                  -1.031e-02 3.294e-01
## as.factor(EVTYPE)HAIL 0.75
                                                  -4.962e-03 3.803e-01
## as.factor(EVTYPE)HAIL 100
                                                   -4.542e-03 4.034e-01
## as.factor(EVTYPE)HAIL 175
                                                   -7.661e-03 4.034e-01
## as.factor(EVTYPE)HAIL 450
                                                   -6.427e-03 4.657e-01
## as.factor(EVTYPE)HAIL 75
                                                   -3.176e-02 4.034e-01
## as.factor(EVTYPE)HAIL/WIND
                                                   -7.743e-03 4.658e-01
## as.factor(EVTYPE)HARD FREEZE
                                                   -5.110e-11 4.657e-01
## as.factor(EVTYPE)HEAT
                                                   5.896e-01 3.317e-01
## as.factor(EVTYPE)HEAT WAVE
                                                    2.499e+00 3.409e-01
## as.factor(EVTYPE)HEAT/DROUGHT
                                                   8.580e-04 4.660e-01
## as.factor(EVTYPE)HEAVY LAKE SNOW
                                                   -1.033e-02 3.683e-01
## as.factor(EVTYPE)HEAVY MIX
                                                   -9.570e-03 4.658e-01
## as.factor(EVTYPE)HEAVY RAIN
                                                    4.179e-03 3.295e-01
## as.factor(EVTYPE)HEAVY RAIN/SEVERE WEATHER
                                                   -2.316e-02 4.034e-01
## as.factor(EVTYPE)HEAVY RAIN/URBAN FLOOD
                                                   -3.819e-03 4.661e-01
## as.factor(EVTYPE)HEAVY RAINS
                                                   -6.267e-03 3.804e-01
## as.factor(EVTYPE)HEAVY RAINS/FLOODING
                                                   -4.074e-02 4.035e-01
## as.factor(EVTYPE)HEAVY SEAS
                                                    1.995e+00 4.658e-01
```

```
## as.factor(EVTYPE)HEAVY SNOW
                                                   -4.719e-03 3.295e-01
## as.factor(EVTYPE)HEAVY SNOW AND ICE
                                                   -7.538e-03 4.658e-01
## as.factor(EVTYPE)HEAVY SNOW AND ICE STORM
                                                  -9.374e-03 4.660e-01
## as.factor(EVTYPE)HEAVY SNOW SQUALLS
                                                  -1.807e-02 3.608e-01
## as.factor(EVTYPE)HEAVY SNOW-SQUALLS
                                                   -1.017e-02 4.658e-01
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS
                                                   5.277e-05 4.658e-01
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS/FREEZING 5.827e-03 4.660e-01
## as.factor(EVTYPE)HEAVY SNOW/ICE
                                                   -8.760e-02 4.659e-01
## as.factor(EVTYPE)HEAVY SURF
                                                   1.073e-01 3.494e-01
## as.factor(EVTYPE)HEAVY SURF/HIGH SURF
                                                   2.921e-01 3.369e-01
## as.factor(EVTYPE)HIGH
                                                   -1.704e-02 4.658e-01
## as.factor(EVTYPE)HIGH SEAS
                                                   3.333e-01 3.808e-01
## as.factor(EVTYPE)HIGH SURF
                                                   1.575e-01 3.321e-01
## as.factor(EVTYPE)HIGH SURF ADVISORY
                                                   8.502e-02 4.718e-01
## as.factor(EVTYPE)HIGH WATER
                                                   -3.258e-02 4.658e-01
## as.factor(EVTYPE)HIGH WAVES
                                                   8.732e-03 4.659e-01
## as.factor(EVTYPE)HIGH WIND
                                                   7.202e-03 3.294e-01
## as.factor(EVTYPE)HIGH WIND AND HEAVY SNOW
                                                   5.827e-03 4.660e-01
## as.factor(EVTYPE)HIGH WIND/ BLIZZARD
                                                   5.827e-03 4.660e-01
## as.factor(EVTYPE)HIGH WINDS
                                                   1.421e-02 3.303e-01
                                                   5.277e-05 4.658e-01
## as.factor(EVTYPE)HIGH WINDS 63
## as.factor(EVTYPE)HIGH WINDS 66
                                                   5.277e-05 4.658e-01
## as.factor(EVTYPE)HURRICANE
                                                   7.364e-01 3.375e-01
## as.factor(EVTYPE)HURRICANE OPAL/HIGH WINDS
                                                   1.977e+00 4.658e-01
## as.factor(EVTYPE)HURRICANE/TYPHOON
                                                   1.916e+00 3.429e-01
## as.factor(EVTYPE)Hail(0.75)
                                                   -7.993e-03 4.660e-01
## as.factor(EVTYPE)Heavy Rain
                                                   4.471e-02 4.036e-01
                                                   8.069e-02 4.664e-01
## as.factor(EVTYPE)Heavy Rain and Wind
## as.factor(EVTYPE)ICE
                                                   1.448e-01 3.557e-01
## as.factor(EVTYPE)ICE STORM
                                                   1.681e-02 3.301e-01
## as.factor(EVTYPE)ICY ROADS
                                                   -4.361e-03 4.034e-01
## as.factor(EVTYPE)Ice Fog
                                                  -6.402e-03 4.657e-01
## as.factor(EVTYPE)LACK OF SNOW
                                                  -9.558e-03 4.658e-01
## as.factor(EVTYPE)LAKE EFFECT SNOW
                                                  -1.007e-02 3.803e-01
## as.factor(EVTYPE)LAKE-EFFECT SNOW
                                                  -1.682e-02 3.316e-01
## as.factor(EVTYPE)LAKESHORE FLOOD
                                                  -4.727e-03 4.034e-01
## as.factor(EVTYPE)LANDSLIDE
                                                  -9.526e-03 3.323e-01
## as.factor(EVTYPE)LANDSLIDES
                                                  -3.819e-03 4.038e-01
## as.factor(EVTYPE)LATE FREEZE
                                                   -7.497e-03 4.658e-01
## as.factor(EVTYPE)LIGHT FREEZING RAIN
                                                  -1.361e-02 4.034e-01
## as.factor(EVTYPE)LIGHT SNOW
                                                  -1.336e-02 3.391e-01
## as.factor(EVTYPE)LIGHTING
                                                  -2.307e-02 4.658e-01
## as.factor(EVTYPE)LIGHTNING
                                                   3.969e-02 3.294e-01
## as.factor(EVTYPE)LOCAL FLOOD
                                                  -1.704e-02 4.658e-01
## as.factor(EVTYPE)LOW TEMPERATURE
                                                   9.929e-01 4.658e-01
## as.factor(EVTYPE)Late Season Snowfall
                                                  -2.107e-02 4.034e-01
                                                   -1.078e-02 4.658e-01
## as.factor(EVTYPE)Light Snow
## as.factor(EVTYPE)Light Snow/Flurries
                                                   8.388e-03 4.659e-01
## as.factor(EVTYPE)MARINE HAIL
                                                   5.069e-04 3.362e-01
## as.factor(EVTYPE)MARINE HIGH WIND
                                                   1.020e-01 3.496e-01
## as.factor(EVTYPE)MARINE STRONG WIND
                                                   3.887e-01 3.579e-01
## as.factor(EVTYPE)MARINE THUNDERSTORM WIND
                                                  -1.412e-03 3.316e-01
## as.factor(EVTYPE)MARINE TSTM WIND
                                                  -3.617e-04 3.315e-01
## as.factor(EVTYPE)MICROBURST WINDS
                                                   5.277e-05 4.658e-01
```

```
## as.factor(EVTYPE)MIXED PRECIP
                                                   9.904e-01 4.658e-01
## as.factor(EVTYPE)MIXED PRECIPITATION
                                                   -1.390e-02 3.684e-01
                                                   -7.277e-03 3.474e-01
## as.factor(EVTYPE)MODERATE SNOWFALL
## as.factor(EVTYPE)MONTHLY PRECIPITATION
                                                   -1.191e-02 3.521e-01
## as.factor(EVTYPE)MUD SLIDE
                                                   -9.191e-02 4.659e-01
## as.factor(EVTYPE)MUDSLIDE
                                                   -1.339e-02 4.658e-01
## as.factor(EVTYPE)Marine Accident
                                                   9.769e-01 4.658e-01
                                                   -7.993e-03 4.660e-01
## as.factor(EVTYPE)Microburst
## as.factor(EVTYPE)Minor Flooding
                                                   5.827e-03 4.660e-01
## as.factor(EVTYPE)Mixed Precipitation
                                                   -3.160e-02 4.660e-01
## as.factor(EVTYPE)Mudslide
                                                   -1.221e-02 4.035e-01
## as.factor(EVTYPE)NON SEVERE HAIL
                                                   -1.018e-03 4.658e-01
## as.factor(EVTYPE)OTHER
                                                   -1.282e-02 3.608e-01
## as.factor(EVTYPE)Other
                                                   -8.907e-03 4.658e-01
## as.factor(EVTYPE)PATCHY DENSE FOG
                                                   -7.139e-03 4.658e-01
## as.factor(EVTYPE)PROLONG COLD
                                                   -9.571e-03 4.034e-01
## as.factor(EVTYPE)PROLONG WARMTH
                                                   -5.089e-03 4.658e-01
## as.factor(EVTYPE)RAIN
                                                   -1.991e-02 3.804e-01
## as.factor(EVTYPE)RAIN/SNOW
                                                   -1.704e-02 4.658e-01
## as.factor(EVTYPE)RECORD COLD
                                                   8.732e-03 4.659e-01
## as.factor(EVTYPE)RECORD COLD
                                                  -1.080e-02 3.804e-01
## as.factor(EVTYPE)RECORD HEAT
                                                  -1.211e-02 3.608e-01
## as.factor(EVTYPE)RECORD RAINFALL
                                                   -1.540e-03 4.034e-01
## as.factor(EVTYPE)RECORD SNOW
                                                   -7.065e-02 4.659e-01
## as.factor(EVTYPE)RECORD WARMTH
                                                  -4.648e-03 3.389e-01
## as.factor(EVTYPE)REMNANTS OF FLOYD
                                                   -9.374e-03 4.660e-01
## as.factor(EVTYPE)RIP CURRENT
                                                   7.983e-01 3.324e-01
## as.factor(EVTYPE)RIP CURRENTS
                                                   1.002e+00
                                                               3.344e-01
## as.factor(EVTYPE)RIVER FLOOD
                                                  -6.610e-03 3.439e-01
## as.factor(EVTYPE)RIVER FLOODING
                                                   -1.049e-02 4.034e-01
## as.factor(EVTYPE)Record Warmth
                                                   -1.405e-02 4.035e-01
## as.factor(EVTYPE)Record temperature
                                                   -1.327e-02 4.037e-01
## as.factor(EVTYPE)SEICHE
                                                   -3.803e-02 3.804e-01
## as.factor(EVTYPE)SEVERE COLD
                                                   -3.082e-02 4.658e-01
## as.factor(EVTYPE)SEVERE THUNDERSTORM
                                                   -1.179e-02 4.034e-01
## as.factor(EVTYPE)SEVERE THUNDERSTORMS
                                                   -6.402e-03 4.034e-01
## as.factor(EVTYPE)SLEET
                                                   -1.018e-03 4.034e-01
## as.factor(EVTYPE)SLEET & FREEZING RAIN
                                                   -7.139e-03 4.658e-01
## as.factor(EVTYPE)SMALL HAIL
                                                   -1.287e-02
                                                               3.473e-01
## as.factor(EVTYPE)SMALL STREAM FLOODING
                                                   -6.738e-03 4.660e-01
## as.factor(EVTYPE)SMALL STREAM/URBAN FLOOD
                                                   -3.082e-02 4.658e-01
## as.factor(EVTYPE)SMOKE
                                                   -5.126e-11 4.657e-01
## as.factor(EVTYPE)SNOW
                                                    1.694e-02 3.316e-01
## as.factor(EVTYPE)SNOW AND COLD
                                                   -1.405e-02 4.658e-01
## as.factor(EVTYPE)SNOW AND ICE
                                                   -7.231e-03 4.034e-01
                                                   -3.331e-03 4.658e-01
## as.factor(EVTYPE)SNOW AND SLEET
## as.factor(EVTYPE)SNOW SQUALL
                                                   -1.567e-02 4.658e-01
## as.factor(EVTYPE)SNOW SQUALLS
                                                   -2.574e-03 4.035e-01
## as.factor(EVTYPE)SNOW/BLOWING SNOW
                                                   -7.999e-03 3.803e-01
## as.factor(EVTYPE)SNOW/FREEZING RAIN
                                                   -3.082e-02 4.658e-01
## as.factor(EVTYPE)SNOW/SLEET
                                                   -1.329e-02 4.660e-01
## as.factor(EVTYPE)SNOW/SLEET/FREEZING RAIN
                                                   -3.082e-02 4.658e-01
## as.factor(EVTYPE)SNOW\\COLD
                                                   -1.405e-02 4.658e-01
## as.factor(EVTYPE)STORM SURGE
                                                   -2.176e-02 3.375e-01
```

```
## as.factor(EVTYPE)STORM SURGE/TIDE
                                                   6.435e-03 3.440e-01
## as.factor(EVTYPE)STREET FLOOD
                                                   -4.962e-03 4.657e-01
## as.factor(EVTYPE)STRONG WIND
                                                   9.864e-03 3.298e-01
## as.factor(EVTYPE)STRONG WINDS
                                                   4.684e-02 3.381e-01
## as.factor(EVTYPE)Snow
                                                  -1.425e-02 4.034e-01
## as.factor(EVTYPE)Snow Squalls
                                                   9.818e-01 4.660e-01
## as.factor(EVTYPE)Snow and Ice
                                                  -1.339e-02 4.658e-01
## as.factor(EVTYPE)Strong Winds
                                                  -1.916e-03 4.658e-01
## as.factor(EVTYPE)Summary of April 12
                                                   -1.444e-02 4.657e-01
## as.factor(EVTYPE)Summary of July 29
                                                  -1.444e-02 4.657e-01
## as.factor(EVTYPE)Summary of July 3
                                                   -1.444e-02 4.657e-01
## as.factor(EVTYPE)Summary of June 11
                                                   -1.444e-02 4.657e-01
## as.factor(EVTYPE)Summary of March 14
                                                   -1.444e-02 4.657e-01
## as.factor(EVTYPE)Summary of May 10
                                                   -1.444e-02 4.657e-01
## as.factor(EVTYPE)Summary: October 31
                                                   -1.444e-02 4.657e-01
## as.factor(EVTYPE)THUNDEERSTORM WINDS
                                                   -7.139e-03 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM
                                                   -1.663e-02 3.521e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                   -1.198e-02 4.034e-01
## as.factor(EVTYPE)THUNDERSTORM WIND
                                                   -1.133e-02 3.294e-01
## as.factor(EVTYPE)THUNDERSTORM WIND 56
                                                   -7.139e-03 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM WIND 60 MPH
                                                   -1.339e-02 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM WIND G60
                                                   -2.681e-03 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM WIND G61
                                                   -3.258e-02 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM WIND/ TREE
                                                   -1.351e-02 4.658e-01
                                                   -1.363e-02 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM WIND/AWNING
## as.factor(EVTYPE)THUNDERSTORM WIND/HAIL
                                                   -1.964e-02 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                   -1.234e-02 3.294e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS 53
                                                    8.388e-03 4.659e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS HAIL
                                                   -2.106e-02 3.472e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS.
                                                   -8.108e-03 4.658e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS/HAIL
                                                   -2.184e-02 4.034e-01
## as.factor(EVTYPE)THUNDERSTORM WINDSS
                                                   -7.325e-03
                                                              3.803e-01
## as.factor(EVTYPE)THUNDERSTORMS
                                                   -1.704e-02 4.658e-01
## as.factor(EVTYPE)THUNDERSTORMS WINDS
                                                   -1.339e-02 4.658e-01
## as.factor(EVTYPE)TIDAL FLOODING
                                                   -3.258e-02 4.658e-01
## as.factor(EVTYPE)TORNADO
                                                    6.871e-02 3.294e-01
## as.factor(EVTYPE)TORNADO DEBRIS
                                                   -3.549e-03 4.659e-01
## as.factor(EVTYPE)TORNADO FO
                                                   -1.899e-02 4.034e-01
## as.factor(EVTYPE)TORRENTIAL RAIN
                                                   -1.339e-02 4.658e-01
## as.factor(EVTYPE)TROPICAL DEPRESSION
                                                  -1.023e-02 3.522e-01
## as.factor(EVTYPE)TROPICAL STORM
                                                   5.998e-02 3.323e-01
## as.factor(EVTYPE)TSTM WIND
                                                  -1.045e-02 3.294e-01
## as.factor(EVTYPE)TSTM WIND (G40)
                                                  -6.720e-04 4.033e-01
## as.factor(EVTYPE)TSTM WIND (G45)
                                                  -6.109e-04 4.033e-01
## as.factor(EVTYPE)TSTM WIND 51
                                                   -4.962e-03 4.657e-01
## as.factor(EVTYPE)TSTM WIND 52
                                                   -1.444e-02 4.657e-01
## as.factor(EVTYPE)TSTM WIND/HAIL
                                                   -1.201e-02 3.310e-01
## as.factor(EVTYPE)TSUNAMI
                                                   3.236e-02 4.051e-01
## as.factor(EVTYPE)Temperature record
                                                   5.827e-03 4.037e-01
## as.factor(EVTYPE)Tidal Flooding
                                                   -3.258e-02 4.658e-01
## as.factor(EVTYPE)UNSEASONABLY COLD
                                                   9.758e-03
                                                              3.685e-01
## as.factor(EVTYPE)UNSEASONABLY COOL
                                                  -1.210e-02 4.034e-01
## as.factor(EVTYPE)UNSEASONABLY DRY
                                                   1.466e-02 3.609e-01
## as.factor(EVTYPE)UNSEASONABLY HOT
                                                   -3.258e-02 4.658e-01
```

```
## as.factor(EVTYPE)UNSEASONABLY WARM
                                                   4.034e-04 3.418e-01
## as.factor(EVTYPE)UNSEASONABLY WARM AND DRY
                                                   5.798e+00 3.608e-01
## as.factor(EVTYPE)UNSEASONABLY WET
                                                   4.454e-02 4.036e-01
## as.factor(EVTYPE)UNSEASONAL RAIN
                                                   -1.704e-02 4.658e-01
## as.factor(EVTYPE)UNUSUAL WARMTH
                                                   -2.289e-02 4.034e-01
## as.factor(EVTYPE)UNUSUAL/RECORD WARMTH
                                                   -9.374e-03 4.660e-01
## as.factor(EVTYPE)UNUSUALLY COLD
                                                   -7.743e-03 4.658e-01
## as.factor(EVTYPE)URBAN AND SMALL STREAM FLOODIN 9.851e-01 4.658e-01
## as.factor(EVTYPE)URBAN FLOOD
                                                   -1.481e-02 3.359e-01
## as.factor(EVTYPE)URBAN FLOODING
                                                   -1.284e-02 3.418e-01
## as.factor(EVTYPE)URBAN SMALL STREAM FLOOD
                                                   -3.819e-03 4.661e-01
## as.factor(EVTYPE)URBAN/SMALL STREAM
                                                   -4.430e-03 4.661e-01
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   -1.495e-02 4.657e-01
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   -7.477e-03 4.033e-01
## as.factor(EVTYPE)URBAN/SML STREAM FLD
                                                   9.160e-03 3.298e-01
## as.factor(EVTYPE)URBAN/STREET FLOODING
                                                   -3.084e-03 4.661e-01
## as.factor(EVTYPE)Unseasonable Cold
                                                   -1.018e-03 4.658e-01
## as.factor(EVTYPE) VOLCANIC ASH
                                                   7.474e-04 3.809e-01
## as.factor(EVTYPE)VOLCANIC ASHFALL
                                                   2.250e-02 4.694e-01
## as.factor(EVTYPE)WATERSPOUT
                                                   -1.426e-03
                                                              3.303e-01
## as.factor(EVTYPE)WATERSPOUT FUNNEL CLOUD
                                                   -3.819e-03 4.661e-01
## as.factor(EVTYPE)WATERSPOUT-
                                                   -5.108e-11 4.657e-01
## as.factor(EVTYPE)WATERSPOUT/TORNADO
                                                   -3.665e-03 4.033e-01
## as.factor(EVTYPE)WATERSPOUTS
                                                   -1.046e-02 4.034e-01
## as.factor(EVTYPE)WET MICROBURST
                                                   -1.704e-02 4.658e-01
## as.factor(EVTYPE)WILD/FOREST FIRE
                                                   -9.123e-03 3.305e-01
## as.factor(EVTYPE)WILDFIRE
                                                   2.266e-03 3.300e-01
## as.factor(EVTYPE)WILDFIRES
                                                  -1.643e-02 4.660e-01
## as.factor(EVTYPE)WIND
                                                   1.515e-01 3.345e-01
## as.factor(EVTYPE)WIND ADVISORY
                                                   4.296e-02 3.810e-01
## as.factor(EVTYPE)WIND CHILL
                                                   -4.553e-04 3.559e-01
## as.factor(EVTYPE)WIND DAMAGE
                                                   -7.139e-03 4.658e-01
## as.factor(EVTYPE)WINDS
                                                   -7.993e-03 4.660e-01
## as.factor(EVTYPE)WINTER MIX
                                                   -1.405e-02 4.658e-01
## as.factor(EVTYPE)WINTER STORM
                                                   1.460e-02
                                                              3.295e-01
## as.factor(EVTYPE)WINTER STORM/HIGH WIND
                                                  -1.704e-02 4.658e-01
## as.factor(EVTYPE)WINTER WEATHER
                                                   4.662e-04 3.296e-01
## as.factor(EVTYPE)WINTER WEATHER MIX
                                                  -1.704e-02 4.658e-01
## as.factor(EVTYPE)WINTER WEATHER/MIX
                                                   4.453e-02 3.308e-01
## as.factor(EVTYPE)WINTERY MIX
                                                  -1.952e-03 4.661e-01
## as.factor(EVTYPE)WINTRY MIX
                                                   4.263e-04 3.418e-01
## as.factor(EVTYPE)Wet Month
                                                   8.388e-03 4.659e-01
## as.factor(EVTYPE)Wind
                                                  -1.704e-02 4.658e-01
## as.factor(EVTYPE)Winter Weather
                                                  -3.549e-03 4.659e-01
## as.factor(EVTYPE)small hail
                                                   -1.327e-02 4.660e-01
## PROPDMG
                                                   1.222e-04 1.979e-05
## as.factor(STATE)AL
                                                   2.889e-02 1.859e-02
## as.factor(STATE)AM
                                                   6.936e-03 4.340e-02
## as.factor(STATE)AN
                                                   1.107e-02 4.481e-02
## as.factor(STATE)AR
                                                   3.524e-02 1.838e-02
## as.factor(STATE)AS
                                                   -7.919e-02 7.766e-02
## as.factor(STATE)AZ
                                                   4.239e-02 2.171e-02
## as.factor(STATE)CA
                                                   2.286e-02 1.989e-02
                                                   5.774e-03 1.863e-02
## as.factor(STATE)CO
```

шш	f+ (OTATE) OT	7 770 - 00	0 500- 00
		7.779e-03	2.520e-02
##	as.factor(STATE)DC	-4.363e-02	5.546e-02
##	as.factor(STATE)DE	-7.487e-02	2.977e-02
##	as.factor(STATE)FL	5.827e-03	1.867e-02
##	as.factor(STATE)GA	9.158e-03	1.849e-02
##	as.factor(STATE)GM	5.077e-03	4.084e-02
##	as.factor(STATE)GU	-8.249e-02	6.258e-02
##	as.factor(STATE)HI	-3.714e-02	2.947e-02
##	as.factor(STATE)IA	6.845e-03	1.821e-02
	as.factor(STATE)ID	1.256e-02	
##			2.296e-02
##	as.factor(STATE)IL	3.665e-02	1.832e-02
##	as.factor(STATE)IN	2.991e-02	1.865e-02
##	as.factor(STATE)KS	1.079e-02	1.784e-02
##	as.factor(STATE)KY	1.357e-02	1.860e-02
##	as.factor(STATE)LA	2.077e-02	1.903e-02
##	as.factor(STATE)LC	6.232e-03	8.395e-02
##	as.factor(STATE)LE	6.294e-03	4.964e-02
##	as.factor(STATE)LH	6.323e-03	6.178e-02
##	as.factor(STATE)LM	-5.127e-04	4.991e-02
##	as.factor(STATE)LO	6.894e-03	1.935e-01
##	as.factor(STATE)LS	6.485e-03	7.500e-02
##	as.factor(STATE)MA	-2.905e-03	2.214e-02
##	as.factor(STATE)MD	9.376e-03	2.060e-02
##	as.factor(STATE)ME	1.520e-02	2.325e-02
##	as.factor(STATE)MI	1.615e-02	1.892e-02
##	as.factor(STATE)MN	1.337e-02	1.850e-02
##	as.factor(STATE)MO	2.078e-02	1.811e-02
##	as.factor(STATE)MS	3.690e-02	1.866e-02
##	as.factor(STATE)MT	1.332e-02	1.904e-02
##	as.factor(STATE)NC	1.921e-02	1.845e-02
##	as.factor(STATE)ND	6.827e-03	1.930e-02
##	as.factor(STATE)NE	8.508e-03	1.825e-02
##	as.factor(STATE)NH	8.911e-03	2.634e-02
##	as.factor(STATE)NJ	-2.560e-03	2.084e-02
##	as.factor(STATE)NM	1.216e-02	2.092e-02
	as.factor(STATE)NV	1.715e-02	2.581e-02
	as.factor(STATE)NY	1.539e-02	1.865e-02
	as.factor(STATE)OH		
##		2.012e-02	1.846e-02
##	as.factor(STATE)OK	2.027e-02	1.794e-02
##	as.factor(STATE)OR	1.382e-02	2.246e-02
##	as.factor(STATE)PA	3.841e-02	1.860e-02
##	as.factor(STATE)PH	7.254e-03	1.927e-01
##	as.factor(STATE)PK	7.240e-03	3.320e-01
##	as.factor(STATE)PM	7.254e-03	3.308e-01
##	as.factor(STATE)PR	9.647e-03	2.595e-02
##	as.factor(STATE)PZ	9.742e-02	1.328e-01
##	as.factor(STATE)RI	-6.941e-03	4.044e-02
##	as.factor(STATE)SC	1.297e-02	1.902e-02
##	as.factor(STATE)SD	7.743e-03	1.851e-02
##	as.factor(STATE)SL	5.320e-03	2.432e-01
##	as.factor(STATE)TN	2.540e-02	1.867e-02
##	as.factor(STATE)TX	1.223e-02	1.762e-02
##	as.factor(STATE)UT	4.969e-03	2.384e-02
##	as.factor(STATE)VA	1.092e-02	1.860e-02

```
-1.667e-02 6.098e-02
## as.factor(STATE)VI
## as.factor(STATE)VT
                                                   1.910e-02 2.419e-02
## as.factor(STATE)WA
                                                   2.226e-02 2.413e-02
                                                   1.473e-02 1.879e-02
## as.factor(STATE)WI
## as.factor(STATE)WV
                                                   1.988e-02 2.036e-02
## as.factor(STATE)WY
                                                   1.018e-03 2.086e-02
                                                  t value Pr(>|t|)
                                                   -0.018 0.98590
## (Intercept)
## as.factor(EVTYPE) WIND
                                                   -0.035 0.97187
## as.factor(EVTYPE)APACHE COUNTY
                                                  -0.080 0.93641
## as.factor(EVTYPE)ASTRONOMICAL HIGH TIDE
                                                  0.018 0.98560
## as.factor(EVTYPE)ASTRONOMICAL LOW TIDE
                                                   0.066 0.94718
## as.factor(EVTYPE)AVALANCHE
                                                   1.279 0.20076
## as.factor(EVTYPE)BLACK ICE
                                                   -0.029 0.97707
## as.factor(EVTYPE)BLIZZARD
                                                   0.096 0.92325
## as.factor(EVTYPE)BLIZZARD AND EXTREME WIND CHIL -0.004 0.99672
## as.factor(EVTYPE)BLOW-OUT TIDES
                                                    0.173 0.86263
## as.factor(EVTYPE)BREAKUP FLOODING
                                                   0.007 0.99421
                                                   0.009 0.99249
## as.factor(EVTYPE)COASTAL FLOOD
## as.factor(EVTYPE)COASTAL FLOODING
                                                   -0.025 0.98023
## as.factor(EVTYPE)COASTAL FLOODING/EROSION
                                                  0.173 0.86263
## as.factor(EVTYPE)COASTAL STORM
                                                   2.126 0.03347 *
## as.factor(EVTYPE)COLD
                                                   2.333 0.01963 *
## as.factor(EVTYPE)COLD TEMPERATURES
                                                   -0.007 0.99472
## as.factor(EVTYPE)COLD WAVE
                                                   -0.032 0.97439
## as.factor(EVTYPE)COLD WIND CHILL TEMPERATURES
                                                -0.020 0.98395
## as.factor(EVTYPE)COLD/WIND CHILL
                                                   0.377 0.70585
                                                   0.099 0.92139
## as.factor(EVTYPE)Coastal Flooding
                                                   -0.028 0.97748
## as.factor(EVTYPE)Cold
## as.factor(EVTYPE)Cold and Frost
                                                   -0.030 0.97593
## as.factor(EVTYPE)DAMAGING FREEZE
                                                   -0.014 0.98846
## as.factor(EVTYPE)DENSE FOG
                                                   0.040 0.96805
## as.factor(EVTYPE)DENSE SMOKE
                                                   -0.045 0.96439
## as.factor(EVTYPE)DROUGHT
                                                   -0.021 0.98295
## as.factor(EVTYPE)DROUGHT/EXCESSIVE HEAT
                                                   -0.008 0.99392
## as.factor(EVTYPE)DRY
                                                   -0.042 0.96632
## as.factor(EVTYPE)DRY MICROBURST
                                                   -0.014 0.98920
## as.factor(EVTYPE)DRY MICROBURST WINDS
                                                   0.000 0.99991
## as.factor(EVTYPE)DUST DEVIL
                                                   -0.035 0.97223
## as.factor(EVTYPE)DUST STORM
                                                   0.162 0.87116
## as.factor(EVTYPE)DUST STORM/HIGH WINDS
                                                   -0.029 0.97670
## as.factor(EVTYPE)DUSTSTORM
                                                   -0.035 0.97187
## as.factor(EVTYPE)Dust Devil
                                                   -0.022 0.98251
## as.factor(EVTYPE)EARLY FREEZE
                                                   -0.004 0.99672
## as.factor(EVTYPE)EARLY SNOWFALL
                                                   -0.016 0.98709
                                                   2.162 0.03061 *
## as.factor(EVTYPE)EXCESSIVE HEAT
## as.factor(EVTYPE)EXCESSIVE RAINFALL
                                                   -0.011 0.99150
## as.factor(EVTYPE)EXCESSIVE SNOW
                                                  -0.052 0.95880
## as.factor(EVTYPE)EXCESSIVE WETNESS
                                                   -0.002 0.99826
                                                   0.553 0.58019
## as.factor(EVTYPE)EXTREME COLD
## as.factor(EVTYPE)EXTREME COLD/WIND CHILL
                                                   0.289 0.77238
## as.factor(EVTYPE)EXTREME HEAT
                                                   0.018 0.98564
## as.factor(EVTYPE)EXTREME WINDCHILL
                                                    0.343 0.73172
## as.factor(EVTYPE)EXTREME WINDCHILL TEMPERATURES -0.019 0.98474
```

```
## as.factor(EVTYPE)Extended Cold
                                                  2.054 0.03998 *
## as.factor(EVTYPE)FIRST SNOW
                                                   0.173 0.86263
## as.factor(EVTYPE)FLASH FLOOD
                                                   0.006 0.99558
## as.factor(EVTYPE)FLASH FLOOD LANDSLIDES
                                                  -0.021 0.98301
                                                  -0.168 0.86684
## as.factor(EVTYPE)FLASH FLOOD/
                                                 -0.029 0.97665
## as.factor(EVTYPE)FLASH FLOOD/ STREET
## as.factor(EVTYPE)FLASH FLOODING
                                                  0.001 0.99897
## as.factor(EVTYPE)FLASH FLOODS
                                                  0.453 0.65085
## as.factor(EVTYPE)FLOOD
                                                   0.023 0.98176
## as.factor(EVTYPE)FLOOD WATCH/
                                                  0.013 0.99002
## as.factor(EVTYPE)FLOOD/FLASH FLOOD
                                                 -0.022 0.98273
## as.factor(EVTYPE)FLOOD/FLASH FLOODING
                                                  -0.030 0.97608
                                                  -0.037 0.97082
## as.factor(EVTYPE)FLOOD/RAIN/WIND
## as.factor(EVTYPE)FLOODING
                                                  -0.026 0.97887
## as.factor(EVTYPE)FOG
                                                   0.085 0.93191
## as.factor(EVTYPE)FREEZE
                                                   0.000 1.00000
## as.factor(EVTYPE)FREEZING DRIZZLE
                                                  -0.045 0.96395
## as.factor(EVTYPE)FREEZING FOG
                                                 -0.034 0.97289
## as.factor(EVTYPE)FREEZING RAIN
                                                  0.324 0.74571
## as.factor(EVTYPE)FREEZING RAIN/SLEET
                                                  -0.033 0.97353
                                                  -0.045 0.96432
## as.factor(EVTYPE)FROST
## as.factor(EVTYPE)FROST/FREEZE
                                                  -0.026 0.97950
                                                  -0.017 0.98657
## as.factor(EVTYPE)FUNNEL
## as.factor(EVTYPE)FUNNEL CLOUD
                                                  -0.024 0.98117
## as.factor(EVTYPE)FUNNEL CLOUDS
                                                  0.000 0.99974
## as.factor(EVTYPE)Flood/Flash Flood
                                                  -0.007 0.99429
## as.factor(EVTYPE)Freezing Rain
                                                  -0.029 0.97707
## as.factor(EVTYPE)GLAZE
                                                  -0.017 0.98621
                                                  -0.052 0.95877
## as.factor(EVTYPE)GRADIENT WINDS
## as.factor(EVTYPE)GUSTNADO
                                                  -0.002 0.99805
## as.factor(EVTYPE)GUSTY WIND
                                                  0.023 0.98134
## as.factor(EVTYPE)GUSTY WIND/HVY RAIN
                                                  -0.011 0.99086
## as.factor(EVTYPE)GUSTY WINDS
                                                  0.459 0.64617
## as.factor(EVTYPE)Glaze
                                                  -0.028 0.97770
## as.factor(EVTYPE)Gusty Winds
                                                  -0.034 0.97300
## as.factor(EVTYPE)Gusty wind/rain
                                                  -0.011 0.99086
## as.factor(EVTYPE)HAIL
                                                  -0.031 0.97502
## as.factor(EVTYPE)HAIL 0.75
                                                  -0.013 0.98959
                                                  -0.011 0.99102
## as.factor(EVTYPE)HAIL 100
                                                  -0.019 0.98485
## as.factor(EVTYPE)HAIL 175
## as.factor(EVTYPE)HAIL 450
                                                  -0.014 0.98899
## as.factor(EVTYPE)HAIL 75
                                                  -0.079 0.93724
## as.factor(EVTYPE)HAIL/WIND
                                                  -0.017 0.98674
## as.factor(EVTYPE)HARD FREEZE
                                                  0.000 1.00000
## as.factor(EVTYPE)HEAT
                                                   1.778 0.07546 .
                                                   7.331 2.31e-13 ***
## as.factor(EVTYPE)HEAT WAVE
## as.factor(EVTYPE)HEAT/DROUGHT
                                                   0.002 0.99853
## as.factor(EVTYPE)HEAVY LAKE SNOW
                                                  -0.028 0.97763
## as.factor(EVTYPE)HEAVY MIX
                                                  -0.021 0.98361
                                                   0.013 0.98988
## as.factor(EVTYPE)HEAVY RAIN
                                                  -0.057 0.95421
## as.factor(EVTYPE)HEAVY RAIN/SEVERE WEATHER
## as.factor(EVTYPE)HEAVY RAIN/URBAN FLOOD
                                                  -0.008 0.99346
## as.factor(EVTYPE)HEAVY RAINS
                                                  -0.016 0.98685
                                                  -0.101 0.91957
## as.factor(EVTYPE)HEAVY RAINS/FLOODING
```

```
## as.factor(EVTYPE)HEAVY SEAS
                                                4.283 1.85e-05 ***
## as.factor(EVTYPE)HEAVY SNOW
                                               -0.014 0.98857
## as.factor(EVTYPE)HEAVY SNOW AND ICE
                                               -0.016 0.98709
## as.factor(EVTYPE)HEAVY SNOW AND ICE STORM
                                               -0.020 0.98395
## as.factor(EVTYPE)HEAVY SNOW SQUALLS
                                               -0.050 0.96005
## as.factor(EVTYPE)HEAVY SNOW-SQUALLS
                                               -0.022 0.98258
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS
                                               0.000 0.99991
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS/FREEZING 0.013 0.99002
## as.factor(EVTYPE)HEAVY SNOW/ICE -0.188 0.85086
## as.factor(EVTYPE)HEAVY SURF
                                               0.307 0.75875
## as.factor(EVTYPE)HEAVY SURF/HIGH SURF
                                               0.867 0.38594
                                               -0.037 0.97082
## as.factor(EVTYPE)HIGH
                                               0.875 0.38154
## as.factor(EVTYPE)HIGH SEAS
## as.factor(EVTYPE)HIGH SURF
                                                0.474 0.63530
## as.factor(EVTYPE)HIGH SURF ADVISORY
                                               0.180 0.85701
                                              -0.070 0.94424
0.019 0.98505
## as.factor(EVTYPE)HIGH WATER
## as.factor(EVTYPE)HIGH WAVES
                                               0.022 0.98256
## as.factor(EVTYPE)HIGH WIND
                                               0.013 0.99002
## as.factor(EVTYPE)HIGH WIND AND HEAVY SNOW
                                               0.013 0.99002
## as.factor(EVTYPE)HIGH WIND/ BLIZZARD
                                               0.043 0.96570
## as.factor(EVTYPE)HIGH WINDS
                                              0.000 0.99991
0.000 0.99991
## as.factor(EVTYPE)HIGH WINDS 63
## as.factor(EVTYPE)HIGH WINDS 66
                                                2.182 0.02912 *
## as.factor(EVTYPE)HURRICANE
                                               4.244 2.19e-05 ***
## as.factor(EVTYPE)HURRICANE OPAL/HIGH WINDS
## as.factor(EVTYPE)HURRICANE/TYPHOON
                                                5.588 2.31e-08 ***
## as.factor(EVTYPE)Hail(0.75)
                                               -0.017 0.98631
                                               0.111 0.91178
## as.factor(EVTYPE)Heavy Rain
                                            0.173 0.86263
## as.factor(EVTYPE)Heavy Rain and Wind
                                               0.407 0.68404
## as.factor(EVTYPE)ICE
                                                0.051 0.95940
## as.factor(EVTYPE)ICE STORM
                                              -0.011 0.99137
## as.factor(EVTYPE)ICY ROADS
## as.factor(EVTYPE)Ice Fog
                                              -0.014 0.98903
## as.factor(EVTYPE)LACK OF SNOW
                                              -0.021 0.98363
                                              -0.026 0.97888
## as.factor(EVTYPE)LAKE EFFECT SNOW
## as.factor(EVTYPE)LAKE-EFFECT SNOW
                                              -0.051 0.95954
## as.factor(EVTYPE)LAKESHORE FLOOD
                                              -0.012 0.99065
## as.factor(EVTYPE)LANDSLIDE
                                               -0.029 0.97713
                                               -0.009 0.99245
## as.factor(EVTYPE)LANDSLIDES
                                               -0.016 0.98716
## as.factor(EVTYPE)LATE FREEZE
## as.factor(EVTYPE)LIGHT FREEZING RAIN
                                               -0.034 0.97308
## as.factor(EVTYPE)LIGHT SNOW
                                               -0.039 0.96857
## as.factor(EVTYPE)LIGHTING
                                               -0.050 0.96050
## as.factor(EVTYPE)LIGHTNING
                                                0.120 0.90410
## as.factor(EVTYPE)LOCAL FLOOD
                                               -0.037 0.97082
## as.factor(EVTYPE)LOW TEMPERATURE
                                                2.132 0.03304 *
                                            -0.052 0.95834
## as.factor(EVTYPE)Late Season Snowfall
## as.factor(EVTYPE)Light Snow
                                               -0.023 0.98154
                                               0.018 0.98564
0.002 0.99880
## as.factor(EVTYPE)Light Snow/Flurries
## as.factor(EVTYPE)MARINE HAIL
                                               0.292 0.77046
## as.factor(EVTYPE)MARINE HIGH WIND
## as.factor(EVTYPE)MARINE STRONG WIND
                                                1.086 0.27740
## as.factor(EVTYPE)MARINE THUNDERSTORM WIND -0.004 0.99660
## as.factor(EVTYPE)MARINE TSTM WIND
                                                -0.001 0.99913
```

```
0.000 0.99991
## as.factor(EVTYPE)MICROBURST WINDS
## as.factor(EVTYPE)MIXED PRECIP
                                                   2.126 0.03347 *
                                                  -0.038 0.96991
## as.factor(EVTYPE)MIXED PRECIPITATION
## as.factor(EVTYPE)MODERATE SNOWFALL
                                                  -0.021 0.98329
## as.factor(EVTYPE)MONTHLY PRECIPITATION
                                                   -0.034 0.97303
## as.factor(EVTYPE)MUD SLIDE
                                                   -0.197 0.84360
## as.factor(EVTYPE)MUDSLIDE
                                                   -0.029 0.97707
## as.factor(EVTYPE)Marine Accident
                                                   2.097 0.03600 *
## as.factor(EVTYPE)Microburst
                                                   -0.017 0.98631
## as.factor(EVTYPE)Minor Flooding
                                                  0.013 0.99002
## as.factor(EVTYPE)Mixed Precipitation
                                                   -0.068 0.94595
                                                   -0.030 0.97585
## as.factor(EVTYPE)Mudslide
## as.factor(EVTYPE)NON SEVERE HAIL
                                                   -0.002 0.99826
## as.factor(EVTYPE)OTHER
                                                   -0.036 0.97165
## as.factor(EVTYPE)Other
                                                   -0.019 0.98474
## as.factor(EVTYPE)PATCHY DENSE FOG
                                                   -0.015 0.98777
## as.factor(EVTYPE)PROLONG COLD
                                                   -0.024 0.98107
## as.factor(EVTYPE)PROLONG WARMTH
                                                   -0.011 0.99128
## as.factor(EVTYPE)RAIN
                                                   -0.052 0.95824
                                                   -0.037 0.97082
## as.factor(EVTYPE)RAIN/SNOW
                                                   0.019 0.98505
## as.factor(EVTYPE)RECORD COLD
## as.factor(EVTYPE)RECORD COLD
                                                  -0.028 0.97736
                                                   -0.034 0.97323
## as.factor(EVTYPE)RECORD HEAT
## as.factor(EVTYPE)RECORD RAINFALL
                                                   -0.004 0.99695
## as.factor(EVTYPE)RECORD SNOW
                                                  -0.152 0.87947
## as.factor(EVTYPE)RECORD WARMTH
                                                   -0.014 0.98906
## as.factor(EVTYPE)REMNANTS OF FLOYD
                                                  -0.020 0.98395
                                                   2.401 0.01633 *
## as.factor(EVTYPE)RIP CURRENT
## as.factor(EVTYPE)RIP CURRENTS
                                                   2.995 0.00275 **
## as.factor(EVTYPE)RIVER FLOOD
                                                   -0.019 0.98467
                                                   -0.026 0.97926
## as.factor(EVTYPE)RIVER FLOODING
## as.factor(EVTYPE)Record Warmth
                                                   -0.035 0.97221
## as.factor(EVTYPE)Record temperature
                                                   -0.033 0.97378
## as.factor(EVTYPE)SEICHE
                                                   -0.100 0.92037
                                                   -0.066 0.94724
## as.factor(EVTYPE)SEVERE COLD
## as.factor(EVTYPE)SEVERE THUNDERSTORM
                                                   -0.029 0.97668
## as.factor(EVTYPE)SEVERE THUNDERSTORMS
                                                   -0.016 0.98734
## as.factor(EVTYPE)SLEET
                                                   -0.003 0.99799
## as.factor(EVTYPE)SLEET & FREEZING RAIN
                                                   -0.015 0.98777
## as.factor(EVTYPE)SMALL HAIL
                                                   -0.037 0.97044
## as.factor(EVTYPE)SMALL STREAM FLOODING
                                                   -0.014 0.98846
## as.factor(EVTYPE)SMALL STREAM/URBAN FLOOD
                                                   -0.066 0.94724
## as.factor(EVTYPE)SMOKE
                                                   0.000 1.00000
## as.factor(EVTYPE)SNOW
                                                   0.051 0.95926
## as.factor(EVTYPE)SNOW AND COLD
                                                   -0.030 0.97593
## as.factor(EVTYPE)SNOW AND ICE
                                                   -0.018 0.98570
## as.factor(EVTYPE)SNOW AND SLEET
                                                   -0.007 0.99429
## as.factor(EVTYPE)SNOW SQUALL
                                                   -0.034 0.97317
## as.factor(EVTYPE)SNOW SQUALLS
                                                   -0.006 0.99491
## as.factor(EVTYPE)SNOW/BLOWING SNOW
                                                   -0.021 0.98322
                                                   -0.066 0.94724
## as.factor(EVTYPE)SNOW/FREEZING RAIN
## as.factor(EVTYPE)SNOW/SLEET
                                                   -0.029 0.97724
## as.factor(EVTYPE)SNOW/SLEET/FREEZING RAIN
                                                   -0.066 0.94724
                                                   -0.030 0.97593
## as.factor(EVTYPE)SNOW\\COLD
```

```
## as.factor(EVTYPE)STORM SURGE
                                                 -0.064 0.94858
## as.factor(EVTYPE)STORM SURGE/TIDE
                                                  0.019 0.98508
## as.factor(EVTYPE)STREET FLOOD
                                                 -0.011 0.99150
## as.factor(EVTYPE)STRONG WIND
                                                  0.030 0.97614
                                                  0.139 0.88979
## as.factor(EVTYPE)STRONG WINDS
## as.factor(EVTYPE)Snow
                                                 -0.035 0.97182
## as.factor(EVTYPE)Snow Squalls
                                                  2.107 0.03513 *
## as.factor(EVTYPE)Snow and Ice
                                                 -0.029 0.97707
                                                  -0.004 0.99672
## as.factor(EVTYPE)Strong Winds
## as.factor(EVTYPE)Summary of April 12
                                                 -0.031 0.97526
## as.factor(EVTYPE)Summary of July 29
                                                 -0.031 0.97526
## as.factor(EVTYPE)Summary of July 3
                                                  -0.031 0.97526
## as.factor(EVTYPE)Summary of June 11
                                                  -0.031 0.97526
## as.factor(EVTYPE)Summary of March 14
                                                  -0.031 0.97526
## as.factor(EVTYPE)Summary of May 10
                                                  -0.031 0.97526
                                                  -0.031 0.97526
## as.factor(EVTYPE)Summary: October 31
## as.factor(EVTYPE)THUNDEERSTORM WINDS
                                                  -0.015 0.98777
## as.factor(EVTYPE)THUNDERSTORM
                                                  -0.047 0.96233
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                  -0.030 0.97631
                                                  -0.034 0.97255
## as.factor(EVTYPE)THUNDERSTORM WIND
                                                  -0.015 0.98777
## as.factor(EVTYPE)THUNDERSTORM WIND 56
## as.factor(EVTYPE)THUNDERSTORM WIND 60 MPH
                                                  -0.029 0.97707
## as.factor(EVTYPE)THUNDERSTORM WIND G60
                                                  -0.006 0.99541
## as.factor(EVTYPE)THUNDERSTORM WIND G61
                                                  -0.070 0.94424
## as.factor(EVTYPE)THUNDERSTORM WIND/ TREE
                                                  -0.029 0.97686
## as.factor(EVTYPE)THUNDERSTORM WIND/AWNING
                                                  -0.029 0.97665
## as.factor(EVTYPE)THUNDERSTORM WIND/HAIL
                                                  -0.042 0.96637
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                  -0.037 0.97012
## as.factor(EVTYPE)THUNDERSTORM WINDS 53
                                                  0.018 0.98564
## as.factor(EVTYPE)THUNDERSTORM WINDS HAIL
                                                  -0.061 0.95162
                                                  -0.017 0.98611
## as.factor(EVTYPE)THUNDERSTORM WINDS.
## as.factor(EVTYPE)THUNDERSTORM WINDS/HAIL
                                                  -0.054 0.95682
## as.factor(EVTYPE)THUNDERSTORM WINDSS
                                                  -0.019 0.98463
## as.factor(EVTYPE)THUNDERSTORMS
                                                  -0.037 0.97082
                                                  -0.029 0.97707
## as.factor(EVTYPE)THUNDERSTORMS WINDS
## as.factor(EVTYPE)TIDAL FLOODING
                                                  -0.070 0.94424
## as.factor(EVTYPE)TORNADO
                                                   0.209 0.83475
## as.factor(EVTYPE)TORNADO DEBRIS
                                                  -0.008 0.99392
                                                  -0.047 0.96245
## as.factor(EVTYPE)TORNADO FO
## as.factor(EVTYPE)TORRENTIAL RAIN
                                                  -0.029 0.97707
## as.factor(EVTYPE)TROPICAL DEPRESSION
                                                 -0.029 0.97683
## as.factor(EVTYPE)TROPICAL STORM
                                                  0.180 0.85676
## as.factor(EVTYPE)TSTM WIND
                                                  -0.032 0.97468
## as.factor(EVTYPE)TSTM WIND (G40)
                                                 -0.002 0.99867
## as.factor(EVTYPE)TSTM WIND (G45)
                                                  -0.002 0.99879
## as.factor(EVTYPE)TSTM WIND 51
                                                  -0.011 0.99150
                                                  -0.031 0.97526
## as.factor(EVTYPE)TSTM WIND 52
## as.factor(EVTYPE)TSTM WIND/HAIL
                                                 -0.036 0.97105
## as.factor(EVTYPE)TSUNAMI
                                                  0.080 0.93633
                                                  0.014 0.98848
## as.factor(EVTYPE)Temperature record
                                                 -0.070 0.94424
## as.factor(EVTYPE)Tidal Flooding
## as.factor(EVTYPE)UNSEASONABLY COLD
                                                  0.026 0.97887
## as.factor(EVTYPE)UNSEASONABLY COOL
                                                 -0.030 0.97608
## as.factor(EVTYPE)UNSEASONABLY DRY
                                                  0.041 0.96761
```

```
## as.factor(EVTYPE)UNSEASONABLY HOT
                                                   -0.070 0.94424
## as.factor(EVTYPE)UNSEASONABLY WARM
                                                   0.001 0.99906
## as.factor(EVTYPE)UNSEASONABLY WARM AND DRY
                                                   16.069 < 2e-16 ***
## as.factor(EVTYPE)UNSEASONABLY WET
                                                   0.110 0.91212
## as.factor(EVTYPE)UNSEASONAL RAIN
                                                   -0.037 0.97082
## as.factor(EVTYPE)UNUSUAL WARMTH
                                                   -0.057 0.95475
## as.factor(EVTYPE)UNUSUAL/RECORD WARMTH
                                                   -0.020 0.98395
                                                   -0.017 0.98674
## as.factor(EVTYPE)UNUSUALLY COLD
## as.factor(EVTYPE)URBAN AND SMALL STREAM FLOODIN
                                                   2.115 0.03445 *
## as.factor(EVTYPE)URBAN FLOOD
                                                   -0.044 0.96483
## as.factor(EVTYPE)URBAN FLOODING
                                                   -0.038 0.97004
## as.factor(EVTYPE)URBAN SMALL STREAM FLOOD
                                                   -0.008 0.99346
## as.factor(EVTYPE)URBAN/SMALL STREAM
                                                   -0.010 0.99242
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   -0.032 0.97439
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   -0.019 0.98521
                                                   0.028 0.97784
## as.factor(EVTYPE)URBAN/SML STREAM FLD
## as.factor(EVTYPE)URBAN/STREET FLOODING
                                                   -0.007 0.99472
## as.factor(EVTYPE)Unseasonable Cold
                                                   -0.002 0.99826
## as.factor(EVTYPE)VOLCANIC ASH
                                                   0.002 0.99843
## as.factor(EVTYPE)VOLCANIC ASHFALL
                                                   0.048 0.96177
## as.factor(EVTYPE)WATERSPOUT
                                                   -0.004 0.99655
## as.factor(EVTYPE)WATERSPOUT FUNNEL CLOUD
                                                   -0.008 0.99346
## as.factor(EVTYPE)WATERSPOUT-
                                                   0.000 1.00000
## as.factor(EVTYPE)WATERSPOUT/TORNADO
                                                   -0.009 0.99275
## as.factor(EVTYPE)WATERSPOUTS
                                                   -0.026 0.97931
## as.factor(EVTYPE)WET MICROBURST
                                                   -0.037 0.97082
## as.factor(EVTYPE)WILD/FOREST FIRE
                                                   -0.028 0.97798
## as.factor(EVTYPE)WILDFIRE
                                                   0.007 0.99452
                                                   -0.035 0.97187
## as.factor(EVTYPE)WILDFIRES
## as.factor(EVTYPE)WIND
                                                   0.453 0.65065
                                                   0.113 0.91022
## as.factor(EVTYPE)WIND ADVISORY
## as.factor(EVTYPE)WIND CHILL
                                                   -0.001 0.99898
## as.factor(EVTYPE)WIND DAMAGE
                                                   -0.015 0.98777
## as.factor(EVTYPE)WINDS
                                                   -0.017 0.98631
                                                   -0.030 0.97593
## as.factor(EVTYPE)WINTER MIX
## as.factor(EVTYPE)WINTER STORM
                                                   0.044 0.96466
## as.factor(EVTYPE)WINTER STORM/HIGH WIND
                                                  -0.037 0.97082
## as.factor(EVTYPE)WINTER WEATHER
                                                   0.001 0.99887
                                                   -0.037 0.97082
## as.factor(EVTYPE)WINTER WEATHER MIX
## as.factor(EVTYPE)WINTER WEATHER/MIX
                                                   0.135 0.89291
## as.factor(EVTYPE)WINTERY MIX
                                                   -0.004 0.99666
## as.factor(EVTYPE)WINTRY MIX
                                                   0.001 0.99900
                                                   0.018 0.98564
## as.factor(EVTYPE)Wet Month
## as.factor(EVTYPE)Wind
                                                   -0.037 0.97082
                                                   -0.008 0.99392
## as.factor(EVTYPE)Winter Weather
## as.factor(EVTYPE)small hail
                                                   -0.028 0.97728
## PROPDMG
                                                    6.174 6.71e-10 ***
## as.factor(STATE)AL
                                                   1.554 0.12018
## as.factor(STATE)AM
                                                    0.160 0.87302
                                                    0.247 0.80492
## as.factor(STATE)AN
## as.factor(STATE)AR
                                                   1.918 0.05517 .
## as.factor(STATE)AS
                                                   -1.020 0.30786
## as.factor(STATE)AZ
                                                   1.952 0.05092 .
                                                   1.150 0.25031
## as.factor(STATE)CA
```

```
## as.factor(STATE)CO
                                                      0.310 0.75664
## as.factor(STATE)CT
                                                      0.309 0.75759
## as.factor(STATE)DC
                                                     -0.787
                                                             0.43143
## as.factor(STATE)DE
                                                     -2.515
                                                             0.01190 *
## as.factor(STATE)FL
                                                      0.312
                                                             0.75500
## as.factor(STATE)GA
                                                      0.495
                                                             0.62040
## as.factor(STATE)GM
                                                      0.124
                                                             0.90108
                                                     -1.318
                                                             0.18747
## as.factor(STATE)GU
## as.factor(STATE)HI
                                                     -1.260
                                                             0.20768
## as.factor(STATE)IA
                                                      0.376 0.70701
## as.factor(STATE)ID
                                                      0.547
                                                             0.58414
## as.factor(STATE)IL
                                                      2.001 0.04543
## as.factor(STATE)IN
                                                      1.604
                                                             0.10878
## as.factor(STATE)KS
                                                      0.605
                                                             0.54522
## as.factor(STATE)KY
                                                      0.729
                                                             0.46570
## as.factor(STATE)LA
                                                      1.091
                                                             0.27519
## as.factor(STATE)LC
                                                      0.074
                                                             0.94082
## as.factor(STATE)LE
                                                      0.127
                                                             0.89912
## as.factor(STATE)LH
                                                      0.102 0.91848
## as.factor(STATE)LM
                                                     -0.010
                                                             0.99180
                                                      0.036
## as.factor(STATE)LO
                                                             0.97159
## as.factor(STATE)LS
                                                      0.086
                                                             0.93110
## as.factor(STATE)MA
                                                     -0.131
                                                             0.89564
## as.factor(STATE)MD
                                                      0.455
                                                             0.64901
## as.factor(STATE)ME
                                                      0.654 0.51319
## as.factor(STATE)MI
                                                      0.854
                                                             0.39314
## as.factor(STATE)MN
                                                      0.722
                                                             0.47002
## as.factor(STATE)MO
                                                      1.147
                                                             0.25131
## as.factor(STATE)MS
                                                      1.977
                                                             0.04801 *
## as.factor(STATE)MT
                                                      0.700
                                                             0.48418
## as.factor(STATE)NC
                                                      1.041
                                                             0.29778
## as.factor(STATE)ND
                                                      0.354
                                                             0.72359
## as.factor(STATE)NE
                                                      0.466
                                                             0.64111
## as.factor(STATE)NH
                                                      0.338
                                                             0.73516
## as.factor(STATE)NJ
                                                     -0.123
                                                             0.90222
                                                             0.56100
## as.factor(STATE)NM
                                                      0.581
## as.factor(STATE)NV
                                                      0.665
                                                             0.50628
## as.factor(STATE)NY
                                                      0.825
                                                             0.40944
## as.factor(STATE)OH
                                                      1.090
                                                             0.27575
                                                      1.130 0.25850
## as.factor(STATE)OK
## as.factor(STATE)OR
                                                      0.615
                                                             0.53836
## as.factor(STATE)PA
                                                      2.065 0.03892
## as.factor(STATE)PH
                                                      0.038
                                                             0.96998
## as.factor(STATE)PK
                                                      0.022
                                                             0.98260
## as.factor(STATE)PM
                                                      0.022
                                                             0.98251
                                                      0.372
                                                             0.71004
## as.factor(STATE)PR
## as.factor(STATE)PZ
                                                      0.734
                                                             0.46316
## as.factor(STATE)RI
                                                     -0.172 0.86372
## as.factor(STATE)SC
                                                      0.682
                                                             0.49542
## as.factor(STATE)SD
                                                      0.418
                                                             0.67572
## as.factor(STATE)SL
                                                      0.022
                                                             0.98255
## as.factor(STATE)TN
                                                      1.360
                                                             0.17377
## as.factor(STATE)TX
                                                      0.694
                                                             0.48769
## as.factor(STATE)UT
                                                      0.208 0.83491
```

```
## as.factor(STATE)VA
                                                    0.587 0.55730
## as.factor(STATE)VI
                                                   -0.273 0.78461
## as.factor(STATE)VT
                                                    0.790 0.42978
                                                    0.923 0.35621
## as.factor(STATE)WA
## as.factor(STATE)WI
                                                    0.784 0.43291
## as.factor(STATE)WV
                                                    0.976 0.32890
## as.factor(STATE)WY
                                                    0.049 0.96109
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1
## Residual standard error: 0.3293 on 89852 degrees of freedom
## Multiple R-squared: 0.05663, Adjusted R-squared: 0.05267
## F-statistic: 14.31 on 377 and 89852 DF, p-value: < 2.2e-16
lm4<-update(lm3,FATALITIES~as.factor(EVTYPE)+PROPDMG+as.factor(STATE)+as.factor(F)+as.factor(MAG))
summary(lm4)
##
## Call:
## lm(formula = FATALITIES ~ as.factor(EVTYPE) + PROPDMG + as.factor(STATE) +
##
      as.factor(F) + as.factor(MAG), data = training)
## Residuals:
      Min
               1Q Median
                               30
## -5.8298 -0.0129 -0.0013 0.0033 31.4242
## Coefficients:
##
                                                    Estimate Std. Error
## (Intercept)
                                                  -1.767e-02 3.146e-01
## as.factor(EVTYPE) WIND
                                                  -5.240e-03 4.446e-01
## as.factor(EVTYPE)APACHE COUNTY
                                                  -2.593e-02 4.444e-01
## as.factor(EVTYPE)ASTRONOMICAL HIGH TIDE
                                                   1.569e-02 3.270e-01
## as.factor(EVTYPE)ASTRONOMICAL LOW TIDE
                                                  3.345e-02 3.221e-01
## as.factor(EVTYPE)AVALANCHE
                                                  4.364e-01 3.187e-01
                                                  -3.032e-03 4.443e-01
## as.factor(EVTYPE)BLACK ICE
## as.factor(EVTYPE)BLIZZARD
                                                   4.426e-02 3.148e-01
## as.factor(EVTYPE)BLIZZARD AND EXTREME WIND CHIL 6.932e-03 4.443e-01
## as.factor(EVTYPE)BLOW-OUT TIDES
                                                   9.113e-02 4.448e-01
## as.factor(EVTYPE)BREAKUP FLOODING
                                                   1.618e-02 4.445e-01
## as.factor(EVTYPE)COASTAL FLOOD
                                                   1.509e-02 3.162e-01
## as.factor(EVTYPE)COASTAL FLOODING
                                                   4.378e-03 3.260e-01
## as.factor(EVTYPE)COASTAL FLOODING/EROSION
                                                   9.113e-02 4.448e-01
## as.factor(EVTYPE)COASTAL STORM
                                                   1.004e+00 4.443e-01
## as.factor(EVTYPE)COLD
                                                   8.425e-01 3.395e-01
## as.factor(EVTYPE)COLD TEMPERATURES
                                                   8.429e-03 4.446e-01
                                                  -4.961e-04 4.443e-01
## as.factor(EVTYPE)COLD WAVE
## as.factor(EVTYPE)COLD WIND CHILL TEMPERATURES
                                                   1.067e-03 4.445e-01
## as.factor(EVTYPE)COLD/WIND CHILL
                                                   1.382e-01 3.172e-01
## as.factor(EVTYPE)Coastal Flooding
                                                   4.729e-02 3.514e-01
                                                   6.582e-04 3.848e-01
## as.factor(EVTYPE)Cold
## as.factor(EVTYPE)Cold and Frost
                                                  -3.301e-03 4.444e-01
## as.factor(EVTYPE)DAMAGING FREEZE
                                                  3.457e-03 4.445e-01
## as.factor(EVTYPE)DENSE FOG
                                                  2.505e-02 3.153e-01
## as.factor(EVTYPE)DENSE SMOKE
                                                  -4.266e-03 3.628e-01
```

```
4.192e-03 3.148e-01
## as.factor(EVTYPE)DROUGHT
## as.factor(EVTYPE)DROUGHT/EXCESSIVE HEAT
                                                   5.849e-03 4.444e-01
                                                  -7.655e-03 3.849e-01
## as.factor(EVTYPE)DRY
## as.factor(EVTYPE)DRY MICROBURST
                                                   3.542e-03 3.270e-01
## as.factor(EVTYPE)DRY MICROBURST WINDS
                                                   5.361e-03 4.443e-01
## as.factor(EVTYPE)DUST DEVIL
                                                  -4.934e-04 3.228e-01
## as.factor(EVTYPE)DUST STORM
                                                  6.538e-02 3.202e-01
## as.factor(EVTYPE)DUST STORM/HIGH WINDS
                                                  -4.928e-03 4.446e-01
## as.factor(EVTYPE)DUSTSTORM
                                                  -5.240e-03 4.446e-01
                                                   2.327e-03 3.849e-01
## as.factor(EVTYPE)Dust Devil
## as.factor(EVTYPE)EARLY FREEZE
                                                   6.932e-03 4.443e-01
## as.factor(EVTYPE)EARLY SNOWFALL
                                                   7.340e-03 4.443e-01
## as.factor(EVTYPE)EXCESSIVE HEAT
                                                   7.272e-01 3.150e-01
## as.factor(EVTYPE)EXCESSIVE RAINFALL
                                                   8.252e-03 4.443e-01
## as.factor(EVTYPE)EXCESSIVE SNOW
                                                  -2.040e-03 3.513e-01
## as.factor(EVTYPE)EXCESSIVE WETNESS
                                                   2.016e-02 4.443e-01
## as.factor(EVTYPE)EXTREME COLD
                                                   1.959e-01 3.165e-01
## as.factor(EVTYPE)EXTREME COLD/WIND CHILL
                                                   1.070e-01 3.158e-01
## as.factor(EVTYPE)EXTREME HEAT
                                                   1.938e-02 4.444e-01
## as.factor(EVTYPE)EXTREME WINDCHILL
                                                   1.267e-01 3.233e-01
## as.factor(EVTYPE)EXTREME WINDCHILL TEMPERATURES 3.521e-03 3.629e-01
## as.factor(EVTYPE)Extended Cold
                                                   9.786e-01 4.443e-01
                                                   9.113e-02 4.448e-01
## as.factor(EVTYPE)FIRST SNOW
## as.factor(EVTYPE)FLASH FLOOD
                                                   1.589e-02 3.142e-01
## as.factor(EVTYPE)FLASH FLOOD LANDSLIDES
                                                   6.492e-03 4.446e-01
## as.factor(EVTYPE)FLASH FLOOD/
                                                  -4.485e-02 4.445e-01
## as.factor(EVTYPE)FLASH FLOOD/ STREET
                                                  -3.181e-03 4.443e-01
## as.factor(EVTYPE)FLASH FLOODING
                                                   1.405e-02 3.163e-01
## as.factor(EVTYPE)FLASH FLOODS
                                                   1.850e-01 3.442e-01
## as.factor(EVTYPE)FLOOD
                                                   2.266e-02 3.142e-01
## as.factor(EVTYPE)FLOOD WATCH/
                                                   1.767e-02 4.445e-01
## as.factor(EVTYPE)FLOOD/FLASH FLOOD
                                                   7.123e-03 3.169e-01
## as.factor(EVTYPE)FLOOD/FLASH FLOODING
                                                   6.985e-05 3.848e-01
## as.factor(EVTYPE)FLOOD/RAIN/WIND
                                                  -7.655e-03 4.444e-01
## as.factor(EVTYPE)FLOODING
                                                   5.882e-03 3.270e-01
## as.factor(EVTYPE)FOG
                                                   3.914e-02 3.172e-01
## as.factor(EVTYPE)FREEZE
                                                  -5.238e-11 3.441e-01
## as.factor(EVTYPE)FREEZING DRIZZLE
                                                  -1.865e-03 3.848e-01
## as.factor(EVTYPE)FREEZING FOG
                                                  4.817e-03 3.848e-01
## as.factor(EVTYPE)FREEZING RAIN
                                                   1.246e-01 3.204e-01
## as.factor(EVTYPE)FREEZING RAIN/SLEET
                                                  -3.032e-03 3.848e-01
## as.factor(EVTYPE)FROST
                                                  -3.968e-03 3.359e-01
## as.factor(EVTYPE)FROST/FREEZE
                                                   1.792e-03 3.153e-01
## as.factor(EVTYPE)FUNNEL
                                                   3.166e-03 3.628e-01
## as.factor(EVTYPE)FUNNEL CLOUD
                                                   3.420e-03 3.144e-01
                                                   1.030e-02 3.358e-01
## as.factor(EVTYPE)FUNNEL CLOUDS
## as.factor(EVTYPE)Flood/Flash Flood
                                                   7.455e-03 4.443e-01
## as.factor(EVTYPE)Freezing Rain
                                                  -3.032e-03 4.443e-01
## as.factor(EVTYPE)GLAZE
                                                   5.253e-03 3.848e-01
                                                   2.178e-03 4.443e-01
## as.factor(EVTYPE)GRADIENT WINDS
## as.factor(EVTYPE)GUSTNADO
                                                   2.009e-02 4.443e-01
## as.factor(EVTYPE)GUSTY WIND
                                                   2.085e-02 3.631e-01
## as.factor(EVTYPE)GUSTY WIND/HVY RAIN
                                                  5.388e-03 4.443e-01
                                                   1.748e-01 3.395e-01
## as.factor(EVTYPE)GUSTY WINDS
```

```
3.531e-03 3.848e-01
## as.factor(EVTYPE)Glaze
## as.factor(EVTYPE)Gusty Winds
                                                  -1.589e-03 4.444e-01
## as.factor(EVTYPE)Gusty wind/rain
                                                 5.388e-03 4.443e-01
## as.factor(EVTYPE)HAIL
                                                 -1.706e-03 3.149e-01
## as.factor(EVTYPE)HAIL 0.75
                                                  8.252e-03 3.628e-01
## as.factor(EVTYPE)HAIL 100
                                                  5.923e-03 3.848e-01
## as.factor(EVTYPE)HAIL 175
                                                  3.300e-03 3.848e-01
                                                  3.151e-03 4.443e-01
## as.factor(EVTYPE)HAIL 450
## as.factor(EVTYPE)HAIL 75
                                                  -1.955e-02 3.848e-01
## as.factor(EVTYPE)HAIL/WIND
                                                  5.213e-03 4.443e-01
## as.factor(EVTYPE)HARD FREEZE
                                                  -5.262e-11 4.442e-01
                                                   6.016e-01 3.164e-01
## as.factor(EVTYPE)HEAT
## as.factor(EVTYPE)HEAT WAVE
                                                   2.511e+00 3.252e-01
## as.factor(EVTYPE)HEAT/DROUGHT
                                                  1.117e-02 4.445e-01
## as.factor(EVTYPE)HEAVY LAKE SNOW
                                                   7.708e-03 3.513e-01
## as.factor(EVTYPE)HEAVY MIX
                                                   3.717e-03 4.443e-01
## as.factor(EVTYPE)HEAVY RAIN
                                                   1.592e-02 3.143e-01
## as.factor(EVTYPE)HEAVY RAIN/SEVERE WEATHER
                                                  -8.344e-03 3.848e-01
## as.factor(EVTYPE)HEAVY RAIN/URBAN FLOOD
                                                  1.021e-02 4.446e-01
## as.factor(EVTYPE)HEAVY RAINS
                                                  5.378e-03 3.628e-01
## as.factor(EVTYPE)HEAVY RAINS/FLOODING
                                                  -1.732e-02 3.849e-01
## as.factor(EVTYPE)HEAVY SEAS
                                                  2.006e+00 4.443e-01
                                                   6.939e-03 3.143e-01
## as.factor(EVTYPE)HEAVY SNOW
## as.factor(EVTYPE)HEAVY SNOW AND ICE
                                                   7.340e-03 4.443e-01
## as.factor(EVTYPE)HEAVY SNOW AND ICE STORM
                                                 1.067e-03 4.445e-01
## as.factor(EVTYPE)HEAVY SNOW SQUALLS
                                                  -3.249e-03 3.442e-01
## as.factor(EVTYPE)HEAVY SNOW-SQUALLS
                                                   3.353e-03 4.443e-01
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS
                                                   5.361e-03 4.443e-01
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS/FREEZING 1.767e-02 4.445e-01
## as.factor(EVTYPE)HEAVY SNOW/ICE
                                                  -4.503e-02 4.444e-01
                                                   1.182e-01 3.333e-01
## as.factor(EVTYPE)HEAVY SURF
## as.factor(EVTYPE)HEAVY SURF/HIGH SURF
                                                   3.030e-01 3.213e-01
## as.factor(EVTYPE)HIGH
                                                  -7.655e-03 4.444e-01
## as.factor(EVTYPE)HIGH SEAS
                                                  3.448e-01 3.633e-01
                                                  1.689e-01 3.168e-01
## as.factor(EVTYPE)HIGH SURF
## as.factor(EVTYPE)HIGH SURF ADVISORY
                                                  9.704e-02 4.501e-01
## as.factor(EVTYPE)HIGH WATER
                                                 -1.924e-02 4.443e-01
## as.factor(EVTYPE)HIGH WAVES
                                                  1.779e-02 4.444e-01
                                                   1.784e-02 3.143e-01
## as.factor(EVTYPE)HIGH WIND
## as.factor(EVTYPE)HIGH WIND AND HEAVY SNOW
                                                   1.767e-02 4.445e-01
## as.factor(EVTYPE)HIGH WIND/ BLIZZARD
                                                   1.767e-02 4.445e-01
## as.factor(EVTYPE)HIGH WINDS
                                                   2.574e-02 3.151e-01
## as.factor(EVTYPE)HIGH WINDS 63
                                                   5.361e-03 4.443e-01
## as.factor(EVTYPE)HIGH WINDS 66
                                                   5.361e-03 4.443e-01
## as.factor(EVTYPE)HURRICANE
                                                   7.519e-01 3.220e-01
## as.factor(EVTYPE)HURRICANE OPAL/HIGH WINDS
                                                   1.993e+00 4.443e-01
## as.factor(EVTYPE)HURRICANE/TYPHOON
                                                   1.927e+00 3.270e-01
## as.factor(EVTYPE)Hail(0.75)
                                                   2.532e-03 4.445e-01
## as.factor(EVTYPE)Heavy Rain
                                                   5.446e-02 3.850e-01
## as.factor(EVTYPE)Heavy Rain and Wind
                                                   9.113e-02 4.448e-01
## as.factor(EVTYPE)ICE
                                                   1.606e-01 3.393e-01
## as.factor(EVTYPE)ICE STORM
                                                   3.214e-02 3.149e-01
## as.factor(EVTYPE)ICY ROADS
                                                   7.658e-03 3.848e-01
                                                   3.166e-03 4.443e-01
## as.factor(EVTYPE)Ice Fog
```

```
## as.factor(EVTYPE)LACK OF SNOW
                                                   3.724e-03 4.443e-01
## as.factor(EVTYPE)LAKE EFFECT SNOW
                                                   6.380e-03 3.628e-01
## as.factor(EVTYPE)LAKE-EFFECT SNOW
                                                   1.407e-03 3.163e-01
## as.factor(EVTYPE)LAKESHORE FLOOD
                                                   7.136e-03 3.848e-01
## as.factor(EVTYPE)LANDSLIDE
                                                   2.920e-03
                                                              3.170e-01
## as.factor(EVTYPE)LANDSLIDES
                                                   1.021e-02 3.852e-01
## as.factor(EVTYPE)LATE FREEZE
                                                   3.114e-03 4.443e-01
                                                  -4.126e-04 3.848e-01
## as.factor(EVTYPE)LIGHT FREEZING RAIN
## as.factor(EVTYPE)LIGHT SNOW
                                                   -7.050e-04
                                                              3.234e-01
## as.factor(EVTYPE)LIGHTING
                                                  -7.410e-03 4.443e-01
## as.factor(EVTYPE)LIGHTNING
                                                   5.296e-02 3.143e-01
## as.factor(EVTYPE)LOCAL FLOOD
                                                  -7.655e-03 4.444e-01
## as.factor(EVTYPE)LOW TEMPERATURE
                                                   1.003e+00 4.443e-01
## as.factor(EVTYPE)Late Season Snowfall
                                                  -7.758e-03 3.848e-01
## as.factor(EVTYPE)Light Snow
                                                   2.981e-03 4.443e-01
## as.factor(EVTYPE)Light Snow/Flurries
                                                   1.938e-02 4.444e-01
## as.factor(EVTYPE)MARINE HAIL
                                                   4.808e-04 3.214e-01
## as.factor(EVTYPE)MARINE HIGH WIND
                                                   9.569e-02 3.337e-01
## as.factor(EVTYPE)MARINE STRONG WIND
                                                   3.081e-01 3.424e-01
## as.factor(EVTYPE)MARINE THUNDERSTORM WIND
                                                   7.894e-04
                                                              3.166e-01
## as.factor(EVTYPE)MARINE TSTM WIND
                                                   2.690e-05 3.165e-01
## as.factor(EVTYPE)MICROBURST WINDS
                                                   5.361e-03 4.443e-01
                                                   1.004e+00 4.443e-01
## as.factor(EVTYPE)MIXED PRECIP
## as.factor(EVTYPE)MIXED PRECIPITATION
                                                   -1.421e-03 3.514e-01
## as.factor(EVTYPE)MODERATE SNOWFALL
                                                   3.521e-03 3.314e-01
## as.factor(EVTYPE)MONTHLY PRECIPITATION
                                                  -4.076e-04 3.359e-01
## as.factor(EVTYPE)MUD SLIDE
                                                   -5.698e-02 4.444e-01
## as.factor(EVTYPE)MUDSLIDE
                                                   -3.032e-03 4.443e-01
## as.factor(EVTYPE)Marine Accident
                                                   9.886e-01 4.444e-01
## as.factor(EVTYPE)Microburst
                                                   2.532e-03 4.445e-01
## as.factor(EVTYPE)Minor Flooding
                                                   1.767e-02 4.445e-01
## as.factor(EVTYPE)Mixed Precipitation
                                                  -1.303e-02 4.445e-01
## as.factor(EVTYPE)Mudslide
                                                  -1.354e-03 3.849e-01
## as.factor(EVTYPE)NON SEVERE HAIL
                                                   2.016e-02 4.443e-01
## as.factor(EVTYPE)OTHER
                                                   -9.962e-05
                                                              3.442e-01
## as.factor(EVTYPE)Other
                                                   3.441e-03 4.443e-01
## as.factor(EVTYPE)PATCHY DENSE FOG
                                                   3.139e-03 4.443e-01
## as.factor(EVTYPE)PROLONG COLD
                                                   1.118e-03 3.848e-01
## as.factor(EVTYPE)PROLONG WARMTH
                                                   5.537e-03 4.443e-01
## as.factor(EVTYPE)RAIN
                                                   -7.878e-03 3.628e-01
## as.factor(EVTYPE)RAIN/SNOW
                                                   -7.655e-03 4.444e-01
## as.factor(EVTYPE)RECORD COLD
                                                   1.779e-02 4.444e-01
## as.factor(EVTYPE)RECORD COLD
                                                   1.859e-03 3.628e-01
## as.factor(EVTYPE)RECORD HEAT
                                                   1.919e-04 3.442e-01
## as.factor(EVTYPE)RECORD RAINFALL
                                                   1.056e-02 3.848e-01
## as.factor(EVTYPE)RECORD SNOW
                                                   -3.347e-02 4.444e-01
                                                   7.160e-03 3.233e-01
## as.factor(EVTYPE)RECORD WARMTH
## as.factor(EVTYPE)REMNANTS OF FLOYD
                                                   1.067e-03 4.445e-01
## as.factor(EVTYPE)RIP CURRENT
                                                   8.042e-01 3.171e-01
## as.factor(EVTYPE)RIP CURRENTS
                                                   1.008e+00 3.190e-01
## as.factor(EVTYPE)RIVER FLOOD
                                                   9.255e-04 3.281e-01
## as.factor(EVTYPE)RIVER FLOODING
                                                   5.601e-04 3.848e-01
## as.factor(EVTYPE)Record Warmth
                                                  -3.301e-03 3.849e-01
## as.factor(EVTYPE)Record temperature
                                                  -1.872e-03 3.851e-01
```

```
## as.factor(EVTYPE)SEICHE
                                                   -1.208e-02 3.629e-01
## as.factor(EVTYPE)SEVERE COLD
                                                   -1.979e-02 4.443e-01
                                                   -2.289e-03 3.848e-01
## as.factor(EVTYPE)SEVERE THUNDERSTORM
## as.factor(EVTYPE)SEVERE THUNDERSTORMS
                                                   3.166e-03 3.848e-01
## as.factor(EVTYPE)SLEET
                                                    2.016e-02 3.848e-01
## as.factor(EVTYPE)SLEET & FREEZING RAIN
                                                    3.139e-03 4.443e-01
## as.factor(EVTYPE)SMALL HAIL
                                                   -1.401e-03 3.313e-01
## as.factor(EVTYPE)SMALL STREAM FLOODING
                                                    3.457e-03 4.445e-01
## as.factor(EVTYPE)SMALL STREAM/URBAN FLOOD
                                                   -1.979e-02 4.443e-01
## as.factor(EVTYPE)SMOKE
                                                   -5.275e-11 4.442e-01
## as.factor(EVTYPE)SNOW
                                                    2.955e-02 3.163e-01
## as.factor(EVTYPE)SNOW AND COLD
                                                   -3.301e-03 4.444e-01
## as.factor(EVTYPE)SNOW AND ICE
                                                    3.302e-03 3.848e-01
## as.factor(EVTYPE)SNOW AND SLEET
                                                   7.455e-03 4.443e-01
## as.factor(EVTYPE)SNOW SQUALL
                                                   5.416e-06 4.443e-01
## as.factor(EVTYPE)SNOW SQUALLS
                                                   7.775e-03 3.849e-01
## as.factor(EVTYPE)SNOW/BLOWING SNOW
                                                   7.626e-03 3.628e-01
## as.factor(EVTYPE)SNOW/FREEZING RAIN
                                                  -1.979e-02 4.443e-01
## as.factor(EVTYPE)SNOW/SLEET
                                                   -1.887e-03 4.445e-01
## as.factor(EVTYPE)SNOW/SLEET/FREEZING RAIN
                                                   -1.979e-02 4.443e-01
## as.factor(EVTYPE)SNOW\\COLD
                                                   -3.301e-03 4.444e-01
## as.factor(EVTYPE)STORM SURGE
                                                   -6.679e-03 3.219e-01
## as.factor(EVTYPE)STORM SURGE/TIDE
                                                   1.478e-02 3.281e-01
## as.factor(EVTYPE)STREET FLOOD
                                                   8.252e-03 4.443e-01
## as.factor(EVTYPE)STRONG WIND
                                                   1.141e-02 3.149e-01
## as.factor(EVTYPE)STRONG WINDS
                                                   5.790e-02 3.225e-01
## as.factor(EVTYPE)Snow
                                                    2.092e-04 3.848e-01
                                                   9.952e-01 4.445e-01
## as.factor(EVTYPE)Snow Squalls
## as.factor(EVTYPE)Snow and Ice
                                                  -3.032e-03 4.443e-01
## as.factor(EVTYPE)Strong Winds
                                                   6.932e-03 4.443e-01
## as.factor(EVTYPE)Summary of April 12
                                                    3.720e-03 4.443e-01
## as.factor(EVTYPE)Summary of July 29
                                                    3.720e-03 4.443e-01
## as.factor(EVTYPE)Summary of July 3
                                                    3.720e-03 4.443e-01
                                                    3.720e-03 4.443e-01
## as.factor(EVTYPE)Summary of June 11
## as.factor(EVTYPE)Summary of March 14
                                                    3.720e-03
                                                              4.443e-01
## as.factor(EVTYPE)Summary of May 10
                                                   3.720e-03 4.443e-01
## as.factor(EVTYPE)Summary: October 31
                                                   3.720e-03 4.443e-01
## as.factor(EVTYPE)THUNDEERSTORM WINDS
                                                   3.139e-03 4.443e-01
## as.factor(EVTYPE)THUNDERSTORM
                                                   -5.042e-03 3.359e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                    2.817e-03 3.848e-01
## as.factor(EVTYPE)THUNDERSTORM WIND
                                                    2.301e-03 3.142e-01
## as.factor(EVTYPE)THUNDERSTORM WIND 56
                                                    3.139e-03 4.443e-01
                                                   -3.032e-03 4.443e-01
## as.factor(EVTYPE)THUNDERSTORM WIND 60 MPH
## as.factor(EVTYPE)THUNDERSTORM WIND G60
                                                   8.681e-03 4.443e-01
## as.factor(EVTYPE)THUNDERSTORM WIND G61
                                                   -1.924e-02 4.443e-01
## as.factor(EVTYPE)THUNDERSTORM WIND/ TREE
                                                   -3.106e-03 4.443e-01
## as.factor(EVTYPE)THUNDERSTORM WIND/AWNING
                                                   -3.181e-03 4.443e-01
## as.factor(EVTYPE)THUNDERSTORM WIND/HAIL
                                                   -5.999e-03 4.443e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                    1.371e-03 3.142e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS 53
                                                    1.938e-02 4.444e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS HAIL
                                                   -7.804e-03 3.317e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS.
                                                   2.742e-03 4.443e-01
## as.factor(EVTYPE)THUNDERSTORM WINDS/HAIL
                                                   -6.140e-03 3.849e-01
## as.factor(EVTYPE)THUNDERSTORM WINDSS
                                                   4.424e-03 3.628e-01
```

```
## as.factor(EVTYPE)THUNDERSTORMS
                                                   -7.655e-03 4.444e-01
## as.factor(EVTYPE)THUNDERSTORMS WINDS
                                                   -3.032e-03 4.443e-01
## as.factor(EVTYPE)TIDAL FLOODING
                                                   -1.924e-02 4.443e-01
## as.factor(EVTYPE)TORNADO
                                                   3.439e-03 3.151e-01
## as.factor(EVTYPE)TORNADO DEBRIS
                                                   5.849e-03 4.444e-01
## as.factor(EVTYPE)TORNADO FO
                                                   -8.335e-03 3.848e-01
## as.factor(EVTYPE)TORRENTIAL RAIN
                                                   -3.032e-03 4.443e-01
## as.factor(EVTYPE)TROPICAL DEPRESSION
                                                   2.545e-03 3.360e-01
## as.factor(EVTYPE)TROPICAL STORM
                                                   7.366e-02
                                                               3.170e-01
## as.factor(EVTYPE)TSTM WIND
                                                   3.038e-03 3.142e-01
## as.factor(EVTYPE)TSTM WIND (G40)
                                                   -4.091e-04 3.847e-01
## as.factor(EVTYPE)TSTM WIND (G45)
                                                   -3.719e-04
                                                              3.847e-01
## as.factor(EVTYPE)TSTM WIND 51
                                                   8.252e-03 4.443e-01
## as.factor(EVTYPE)TSTM WIND 52
                                                    3.720e-03 4.443e-01
## as.factor(EVTYPE)TSTM WIND/HAIL
                                                   -1.682e-03
                                                              3.157e-01
## as.factor(EVTYPE)TSUNAMI
                                                    4.370e-02
                                                               3.865e-01
                                                    1.767e-02
## as.factor(EVTYPE)Temperature record
                                                              3.851e-01
## as.factor(EVTYPE)Tidal Flooding
                                                   -1.924e-02 4.443e-01
## as.factor(EVTYPE)UNSEASONABLY COLD
                                                   2.045e-02 3.515e-01
## as.factor(EVTYPE)UNSEASONABLY COOL
                                                   6.985e-05
                                                              3.848e-01
## as.factor(EVTYPE)UNSEASONABLY DRY
                                                    2.601e-02 3.442e-01
## as.factor(EVTYPE)UNSEASONABLY HOT
                                                   -1.924e-02 4.443e-01
## as.factor(EVTYPE)UNSEASONABLY WARM
                                                    1.128e-02 3.261e-01
## as.factor(EVTYPE)UNSEASONABLY WARM AND DRY
                                                    5.811e+00 3.442e-01
## as.factor(EVTYPE)UNSEASONABLY WET
                                                    5.525e-02 3.850e-01
## as.factor(EVTYPE)UNSEASONAL RAIN
                                                   -7.655e-03 4.444e-01
## as.factor(EVTYPE)UNUSUAL WARMTH
                                                   -1.015e-02
                                                              3.848e-01
## as.factor(EVTYPE)UNUSUAL/RECORD WARMTH
                                                    1.067e-03 4.445e-01
## as.factor(EVTYPE)UNUSUALLY COLD
                                                    5.213e-03 4.443e-01
## as.factor(EVTYPE)URBAN AND SMALL STREAM FLOODIN 9.974e-01 4.443e-01
## as.factor(EVTYPE)URBAN FLOOD
                                                    4.260e-03
                                                               3.204e-01
## as.factor(EVTYPE)URBAN FLOODING
                                                    8.248e-03
                                                               3.260e-01
## as.factor(EVTYPE)URBAN SMALL STREAM FLOOD
                                                    1.021e-02 4.446e-01
## as.factor(EVTYPE)URBAN/SMALL STREAM
                                                    9.839e-03 4.446e-01
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   -4.961e-04
                                                              4.443e-01
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   -2.481e-04
                                                              3.847e-01
## as.factor(EVTYPE)URBAN/SML STREAM FLD
                                                    2.110e-02 3.146e-01
## as.factor(EVTYPE)URBAN/STREET FLOODING
                                                    8.429e-03 4.446e-01
## as.factor(EVTYPE)Unseasonable Cold
                                                    2.016e-02 4.443e-01
## as.factor(EVTYPE) VOLCANIC ASH
                                                    1.263e-02 3.633e-01
## as.factor(EVTYPE) VOLCANIC ASHFALL
                                                    3.291e-02 4.477e-01
## as.factor(EVTYPE)WATERSPOUT
                                                    3.366e-03 3.151e-01
## as.factor(EVTYPE)WATERSPOUT FUNNEL CLOUD
                                                    1.021e-02 4.446e-01
## as.factor(EVTYPE)WATERSPOUT-
                                                   -5.257e-11 4.442e-01
## as.factor(EVTYPE)WATERSPOUT/TORNADO
                                                   -2.231e-03 3.847e-01
## as.factor(EVTYPE)WATERSPOUTS
                                                    2.154e-03
                                                              3.848e-01
## as.factor(EVTYPE)WET MICROBURST
                                                   -7.655e-03
                                                              4.444e-01
## as.factor(EVTYPE)WILD/FOREST FIRE
                                                   7.176e-04 3.153e-01
## as.factor(EVTYPE)WILDFIRE
                                                    1.329e-02 3.148e-01
## as.factor(EVTYPE)WILDFIRES
                                                   -5.240e-03 4.446e-01
## as.factor(EVTYPE)WIND
                                                    1.634e-01 3.191e-01
## as.factor(EVTYPE)WIND ADVISORY
                                                   5.385e-02 3.635e-01
## as.factor(EVTYPE)WIND CHILL
                                                   1.056e-02 3.395e-01
## as.factor(EVTYPE)WIND DAMAGE
                                                   3.139e-03 4.443e-01
```

```
## as.factor(EVTYPE)WINDS
                                                    2.532e-03 4.445e-01
## as.factor(EVTYPE)WINTER MIX
                                                   -3.301e-03 4.444e-01
## as.factor(EVTYPE)WINTER STORM
                                                    2.664e-02 3.143e-01
## as.factor(EVTYPE)WINTER STORM/HIGH WIND
                                                   -7.655e-03 4.444e-01
## as.factor(EVTYPE)WINTER WEATHER
                                                    1.275e-02
                                                               3.144e-01
## as.factor(EVTYPE)WINTER WEATHER MIX
                                                   -7.655e-03 4.444e-01
## as.factor(EVTYPE)WINTER WEATHER/MIX
                                                    5.540e-02 3.155e-01
                                                    9.242e-03 4.446e-01
## as.factor(EVTYPE)WINTERY MIX
## as.factor(EVTYPE)WINTRY MIX
                                                    1.198e-02 3.261e-01
                                                    1.938e-02 4.444e-01
## as.factor(EVTYPE)Wet Month
## as.factor(EVTYPE)Wind
                                                   -4.329e-03 4.452e-01
## as.factor(EVTYPE)Winter Weather
                                                    5.849e-03 4.444e-01
## as.factor(EVTYPE)small hail
                                                   -3.817e-01 4.610e-01
## PROPDMG
                                                    7.438e-05 1.925e-05
## as.factor(STATE)AL
                                                    2.508e-02 1.785e-02
## as.factor(STATE)AM
                                                    1.446e-02 4.145e-02
                                                    1.703e-02 4.295e-02
## as.factor(STATE)AN
## as.factor(STATE)AR
                                                    2.927e-02 1.765e-02
## as.factor(STATE)AS
                                                   -7.937e-02 7.411e-02
## as.factor(STATE)AZ
                                                    4.323e-02 2.081e-02
## as.factor(STATE)CA
                                                    2.533e-02 1.907e-02
## as.factor(STATE)CO
                                                    1.231e-02 1.788e-02
                                                    8.428e-03 2.413e-02
## as.factor(STATE)CT
## as.factor(STATE)DC
                                                   -4.498e-02 5.295e-02
## as.factor(STATE)DE
                                                   -7.346e-02 2.847e-02
## as.factor(STATE)FL
                                                    1.767e-02 1.792e-02
## as.factor(STATE)GA
                                                    1.021e-02 1.777e-02
## as.factor(STATE)GM
                                                    1.322e-02
                                                               3.902e-02
## as.factor(STATE)GU
                                                   -8.059e-02 5.973e-02
## as.factor(STATE)HI
                                                   -3.618e-02 2.819e-02
## as.factor(STATE)IA
                                                   -2.490e-03 1.748e-02
## as.factor(STATE)ID
                                                    1.421e-02 2.199e-02
## as.factor(STATE)IL
                                                    3.746e-02 1.759e-02
## as.factor(STATE)IN
                                                    1.549e-02 1.790e-02
## as.factor(STATE)KS
                                                    9.418e-03 1.713e-02
## as.factor(STATE)KY
                                                    1.246e-02 1.786e-02
## as.factor(STATE)LA
                                                    2.023e-02 1.826e-02
## as.factor(STATE)LC
                                                    1.638e-02 8.032e-02
## as.factor(STATE)LE
                                                    1.041e-02 4.898e-02
## as.factor(STATE)LH
                                                    1.546e-02 5.922e-02
                                                    5.100e-03 4.779e-02
## as.factor(STATE)LM
## as.factor(STATE)LO
                                                    1.593e-02 1.854e-01
## as.factor(STATE)LS
                                                    1.562e-02 7.180e-02
## as.factor(STATE)MA
                                                   -1.244e-04 2.124e-02
## as.factor(STATE)MD
                                                    1.182e-02 1.976e-02
                                                    1.660e-02 2.228e-02
## as.factor(STATE)ME
## as.factor(STATE)MI
                                                    9.962e-03 1.816e-02
## as.factor(STATE)MN
                                                    1.033e-02 1.775e-02
## as.factor(STATE)MO
                                                    1.817e-02 1.739e-02
## as.factor(STATE)MS
                                                    3.161e-02 1.792e-02
## as.factor(STATE)MT
                                                    1.456e-02 1.827e-02
## as.factor(STATE)NC
                                                    2.070e-02 1.773e-02
## as.factor(STATE)ND
                                                    9.038e-03 1.852e-02
                                                    8.989e-03 1.752e-02
## as.factor(STATE)NE
```

##	as.factor(STATE)NH	9.241e-03	2.522e-02
##	as.factor(STATE)NJ	-1.710e-03	1.998e-02
##	as.factor(STATE)NM	1.620e-02	2.006e-02
##	as.factor(STATE)NV	1.804e-02	2.473e-02
##	as.factor(STATE)NY	1.395e-02	1.791e-02
##	as.factor(STATE)OH	1.807e-02	1.774e-02
##	as.factor(STATE)OK	1.395e-02	1.722e-02
##	as.factor(STATE)OR	1.514e-02	2.153e-02
##	as.factor(STATE)PA	3.691e-02	1.787e-02
##	as.factor(STATE)PH	1.430e-02	1.839e-01
##	as.factor(STATE)PK	1.983e-02	3.170e-01
##	as.factor(STATE)PM	1.430e-02	3.156e-01
##	as.factor(STATE)PR	7.459e-03	2.484e-02
##	as.factor(STATE)PZ	6.968e-02	1.280e-01
##	as.factor(STATE)RI	-5.818e-03	3.863e-02
##	as.factor(STATE)SC	1.453e-02	1.828e-02
##	as.factor(STATE)SD	1.074e-02	1.777e-02
##	as.factor(STATE)SL	1.324e-02	2.320e-01
##	as.factor(STATE)TN	2.363e-02	1.793e-02
##	as.factor(STATE)TX	1.450e-02	1.692e-02
##	as.factor(STATE)UT	6.498e-03	2.283e-02
##	as.factor(STATE)VA	1.213e-02	1.786e-02
##	as.factor(STATE)VI	-1.524e-02	5.822e-02
##	as.factor(STATE)VT	1.954e-02	2.317e-02
##	as.factor(STATE)WA	2.291e-02	2.311e-02
##	as.factor(STATE)WI	1.423e-02	1.803e-02
##	as.factor(STATE)WV	2.097e-02	1.954e-02
##	as.factor(STATE)WY	6.233e-03	2.000e-02
##	as.factor(F)0	-1.727e-03	2.483e-02
##	as.factor(F)1	7.199e-03	2.403e 02 2.510e-02
##	as.factor(F)2	2.363e-02	2.613e-02
		3.699e-01	2.013e-02 2.991e-02
##	as.factor(F)3	2.559e+00	
##	as.factor(F)4	2.831e+00	3.815e-02
##	as.factor(F)5		7.787e-02
##	as.factor(MAG)1.00	3.929e-03	2.187e-02
	as.factor(MAG)100.00	4.487e-03	2.156e-02
	as.factor(MAG)101.00	-8.565e-03	2.224e-01
	as.factor(MAG)103.00	-4.278e-03	3.141e-01
	as.factor(MAG)104.00	-2.088e-03	1.572e-01
##	as.factor(MAG)105.00	-1.248e-02	3.143e-01
##	as.factor(MAG)106.00	-1.714e-04	3.146e-01
##	as.factor(MAG)110.00	6.695e-03	1.579e-01
##	as.factor(MAG)111.00	-1.384e-02	2.222e-01
##	as.factor(MAG)112.00	2.105e-03	1.827e-01
##	as.factor(MAG)113.00	7.067e-03	3.149e-01
##	as.factor(MAG)115.00	-5.510e-03	2.231e-01
##	as.factor(MAG)116.00	-1.473e-02	3.143e-01
##	as.factor(MAG)120.00	-3.708e-03	2.232e-01
##	as.factor(MAG)125.00	4.687e-03	2.469e-02
##	as.factor(MAG)139.00	-2.403e-03	3.146e-01
##	as.factor(MAG)140.00	8.639e-03	3.149e-01
##	as.factor(MAG)150.00	5.604e-03	2.393e-02
##	as.factor(MAG)160.00	4.845e-03	3.149e-01
##	as.factor(MAG)165.00	9.162e-03	3.149e-01

		4 050 00	0 4 7 0 00
	as.factor(MAG)175.00	4.253e-03	2.170e-02
	as.factor(MAG)176.00	4.872e-03	3.148e-01
		9.958e-03	3.148e-01
		7.067e-03	3.149e-01
##	as.factor(MAG)2.00	4.025e-03	2.366e-02
##	as.factor(MAG)200.00	4.900e-03	2.544e-02
##	as.factor(MAG)22.00	-2.572e-02	3.149e-01
##	as.factor(MAG)225.00	3.359e-03	6.885e-02
##	as.factor(MAG)25.00	3.798e-01	1.221e-01
##	as.factor(MAG)250.00	5.303e-03	2.927e-02
##	as.factor(MAG)260.00	2.075e-02	3.149e-01
##	as.factor(MAG)27.00	-1.198e-02	3.149e-01
		3.302e-03	2.523e-02
		-3.127e-02	3.149e-01
		2.984e-03	3.314e-02
		3.267e-01	9.691e-02
		6.799e-03	3.683e-02
		-1.499e-03	1.410e-01
	as.factor(MAG)32.00	-4.886e-03	1.575e-01
	4	6.193e-03	1.585e-01
		1.759e-01	1.417e-01
		8.695e-03 7.934e-03	3.071e-02
			2.212e-02
		6.088e-03	7.513e-02
		5.241e-04	2.955e-02
		-7.667e-03	3.143e-01
		-6.085e-03	3.111e-02
		4.925e-03	2.231e-01
		4.153e-04	3.963e-02
		-5.473e-02	3.150e-01
##		-3.326e-03	2.735e-02
##		-1.641e-02	3.143e-01
		-1.646e-03	6.946e-02
		6.998e-03	2.686e-02
		3.255e-03	4.988e-02
		9.927e-03	
	as.factor(MAG)42.00	1.079e-03	4.420e-02
##	as.factor(MAG)425.00	6.037e-03	7.909e-02
##	as.factor(MAG)43.00	-9.387e-03	2.850e-02
##	as.factor(MAG)44.00	-1.278e-03	5.579e-02
##	as.factor(MAG)45.00	1.309e-02	2.866e-02
##	as.factor(MAG)450.00	2.496e-03	4.775e-02
##	as.factor(MAG)46.00	-9.084e-04	5.434e-02
##	as.factor(MAG)460.00	-7.286e-03	3.143e-01
##	as.factor(MAG)47.00	-7.980e-03	5.704e-02
##	as.factor(MAG)475.00	7.692e-03	2.231e-01
##	as.factor(MAG)48.00	2.292e-02	4.115e-02
##	as.factor(MAG)49.00	-7.393e-03	5.211e-02
##		3.684e-03	1.826e-01
##		-2.945e-03	5.152e-03
##	. ()	4.893e-03	1.421e-01
	(4.322e-03	1.591e-02
		1.155e-03	5.899e-03
	as.factor(MAG)53.00	-2.644e-04	1.433e-02
		2.0110 04	1.1000 02

```
## as.factor(MAG)54.00
                                                    -4.917e-04 1.594e-02
## as.factor(MAG)55.00
                                                    -2.704e-03
                                                                8.321e-03
                                                                3.149e-01
## as.factor(MAG)550.00
                                                    -4.918e-03
## as.factor(MAG)56.00
                                                    -4.404e-04
                                                                1 003e-02
## as.factor(MAG)57.00
                                                    -9.629e-04
                                                                1.617e-02
## as.factor(MAG)58.00
                                                     7.974e-06
                                                                2.018e-02
## as.factor(MAG)59.00
                                                    -4.506e-03
                                                                2.698e-02
                                                                3.148e-01
## as.factor(MAG)6.00
                                                     4.724e-03
## as.factor(MAG)60.00
                                                    -6.129e-04
                                                                8.577e-03
## as.factor(MAG)600.00
                                                     1.017e-02
                                                                2.231e-01
## as.factor(MAG)61.00
                                                     1.038e-02
                                                                8.933e-03
## as.factor(MAG)62.00
                                                    -5.368e-03
                                                                2.530e-02
## as.factor(MAG)63.00
                                                     8.124e-03
                                                                2.544e-02
## as.factor(MAG)64.00
                                                    -3.619e-03
                                                                3.371e-02
## as.factor(MAG)65.00
                                                    -2.038e-03
                                                                1.210e-02
## as.factor(MAG)66.00
                                                    -2.756e-03
                                                                4.260e-02
## as.factor(MAG)67.00
                                                                4.305e-02
                                                    -3.559e-03
## as.factor(MAG)68.00
                                                     9.460e-03
                                                                3.919e-02
## as.factor(MAG)69.00
                                                    -1.075e-03
                                                                2.789e-02
## as.factor(MAG)70.00
                                                     4.773e-03
                                                                1.336e-02
## as.factor(MAG)71.00
                                                    -4.515e-03
                                                                5.332e-02
## as.factor(MAG)72.00
                                                    -5.233e-03
                                                                5.658e-02
## as.factor(MAG)73.00
                                                     4.057e-02
                                                                6.877e-02
## as.factor(MAG)74.00
                                                     1.349e-02
                                                                3.885e-02
## as.factor(MAG)75.00
                                                     3.947e-03
                                                                2.124e-02
## as.factor(MAG)76.00
                                                    -4.743e-03
                                                                6.713e-02
## as.factor(MAG)77.00
                                                    -5.559e-03
                                                                6.869e-02
                                                    -7.367e-03
## as.factor(MAG)78.00
                                                                3.167e-02
## as.factor(MAG)79.00
                                                    -4.256e-03
                                                                9.952e-02
## as.factor(MAG)8.00
                                                    -5.474e-03
                                                                3.144e-01
## as.factor(MAG)80.00
                                                    -1.813e-03
                                                                3.594e-02
## as.factor(MAG)81.00
                                                     1.436e-01
                                                                9.177e-02
## as.factor(MAG)82.00
                                                    -8.728e-03
                                                                8.407e-02
## as.factor(MAG)83.00
                                                    -1.083e-02
                                                                6.712e-02
## as.factor(MAG)84.00
                                                    -6.491e-03
                                                                1.112e-01
## as.factor(MAG)85.00
                                                     2.831e-02
                                                               5.952e-02
## as.factor(MAG)86.00
                                                     2.775e-01
                                                                1.188e-01
## as.factor(MAG)87.00
                                                    -1.968e-03
                                                               4.290e-02
## as.factor(MAG)88.00
                                                     4.407e-03
                                                                2.191e-02
## as.factor(MAG)89.00
                                                    -6.404e-03
                                                               3.144e-01
                                                    -1.432e-02 2.225e-01
## as.factor(MAG)9.00
## as.factor(MAG)90.00
                                                    -8.389e-03 6.569e-02
## as.factor(MAG)91.00
                                                    -5.635e-03
                                                                1.112e-01
## as.factor(MAG)92.00
                                                     4.915e-01
                                                                2.227e-01
## as.factor(MAG)93.00
                                                    -1.178e-03
                                                                3.141e-01
## as.factor(MAG)94.00
                                                     4.302e-03
                                                                3.142e-01
## as.factor(MAG)95.00
                                                    -3.979e-03
                                                                1.188e-01
## as.factor(MAG)96.00
                                                    -8.576e-03 1.112e-01
   as.factor(MAG)98.00
                                                    -6.775e-03 1.816e-01
                                                    t value Pr(>|t|)
##
   (Intercept)
                                                     -0.056 0.955209
## as.factor(EVTYPE) WIND
                                                     -0.012 0.990596
## as.factor(EVTYPE)APACHE COUNTY
                                                     -0.058 0.953468
## as.factor(EVTYPE)ASTRONOMICAL HIGH TIDE
                                                      0.048 0.961730
```

```
## as.factor(EVTYPE)ASTRONOMICAL LOW TIDE
                                                 0.104 0.917266
## as.factor(EVTYPE)AVALANCHE
                                                  1.369 0.170862
## as.factor(EVTYPE)BLACK ICE
                                                 -0.007 0.994555
## as.factor(EVTYPE)BLIZZARD
                                                  0.141 0.888198
## as.factor(EVTYPE)BLIZZARD AND EXTREME WIND CHIL 0.016 0.987551
## as.factor(EVTYPE)BLOW-OUT TIDES
                                                 0.205 0.837691
## as.factor(EVTYPE)BREAKUP FLOODING
                                                 0.036 0.970962
## as.factor(EVTYPE)COASTAL FLOOD
                                                 0.048 0.961940
## as.factor(EVTYPE)COASTAL FLOODING
                                                 0.013 0.989285
                                                0.205 0.837691
## as.factor(EVTYPE)COASTAL FLOODING/EROSION
## as.factor(EVTYPE)COASTAL STORM
                                                 2.259 0.023877 *
                                                  2.482 0.013070 *
## as.factor(EVTYPE)COLD
## as.factor(EVTYPE)COLD TEMPERATURES
                                                  0.019 0.984876
## as.factor(EVTYPE)COLD WAVE
                                                 -0.001 0.999109
## as.factor(EVTYPE)COLD WIND CHILL TEMPERATURES 0.002 0.998084
## as.factor(EVTYPE)COLD/WIND CHILL
                                                  0.436 0.663086
## as.factor(EVTYPE)Coastal Flooding
                                                 0.135 0.892964
## as.factor(EVTYPE)Cold
                                                 0.002 0.998635
## as.factor(EVTYPE)Cold and Frost
                                                -0.007 0.994073
## as.factor(EVTYPE)DAMAGING FREEZE
                                                  0.008 0.993795
                                                 0.079 0.936666
## as.factor(EVTYPE)DENSE FOG
## as.factor(EVTYPE)DENSE SMOKE
                                                -0.012 0.990620
## as.factor(EVTYPE)DROUGHT
                                                  0.013 0.989375
## as.factor(EVTYPE)DROUGHT/EXCESSIVE HEAT
                                                 0.013 0.989497
## as.factor(EVTYPE)DRY
                                                 -0.020 0.984131
## as.factor(EVTYPE)DRY MICROBURST
                                                 0.011 0.991359
## as.factor(EVTYPE)DRY MICROBURST WINDS
                                                 0.012 0.990373
## as.factor(EVTYPE)DUST DEVIL
                                                 -0.002 0.998780
## as.factor(EVTYPE)DUST STORM
                                                 0.204 0.838218
## as.factor(EVTYPE)DUST STORM/HIGH WINDS
                                                -0.011 0.991157
## as.factor(EVTYPE)DUSTSTORM
                                                -0.012 0.990596
                                                 0.006 0.995177
## as.factor(EVTYPE)Dust Devil
## as.factor(EVTYPE)EARLY FREEZE
                                                 0.016 0.987551
## as.factor(EVTYPE)EARLY SNOWFALL
                                                 0.017 0.986819
                                                 2.309 0.020966 *
## as.factor(EVTYPE)EXCESSIVE HEAT
## as.factor(EVTYPE)EXCESSIVE RAINFALL
                                                 0.019 0.985181
## as.factor(EVTYPE)EXCESSIVE SNOW
                                                -0.006 0.995367
## as.factor(EVTYPE)EXCESSIVE WETNESS
                                                 0.045 0.963807
## as.factor(EVTYPE)EXTREME COLD
                                                  0.619 0.535990
## as.factor(EVTYPE)EXTREME COLD/WIND CHILL
                                                0.339 0.734731
## as.factor(EVTYPE)EXTREME HEAT
                                                 0.044 0.965214
## as.factor(EVTYPE)EXTREME WINDCHILL
                                                  0.392 0.695244
## as.factor(EVTYPE)EXTREME WINDCHILL TEMPERATURES 0.010 0.992259
## as.factor(EVTYPE)Extended Cold
                                                 2.203 0.027623 *
## as.factor(EVTYPE)FIRST SNOW
                                                 0.205 0.837691
## as.factor(EVTYPE)FLASH FLOOD
                                                 0.051 0.959657
## as.factor(EVTYPE)FLASH FLOOD LANDSLIDES
                                                 0.015 0.988350
## as.factor(EVTYPE)FLASH FLOOD/
                                                 -0.101 0.919630
## as.factor(EVTYPE)FLASH FLOOD/ STREET
                                                -0.007 0.994288
## as.factor(EVTYPE)FLASH FLOODING
                                                  0.044 0.964554
## as.factor(EVTYPE)FLASH FLOODS
                                                  0.537 0.591090
## as.factor(EVTYPE)FLOOD
                                                 0.072 0.942513
## as.factor(EVTYPE)FLOOD WATCH/
                                                 0.040 0.968294
## as.factor(EVTYPE)FL00D/FLASH FL00D
                                                  0.022 0.982069
```

```
0.000 0.999855
## as.factor(EVTYPE)FLOOD/FLASH FLOODING
## as.factor(EVTYPE)FLOOD/RAIN/WIND
                                                -0.017 0.986255
## as.factor(EVTYPE)FLOODING
                                                0.018 0.985649
## as.factor(EVTYPE)FOG
                                                0.123 0.901810
## as.factor(EVTYPE)FREEZE
                                                 0.000 1.000000
## as.factor(EVTYPE)FREEZING DRIZZLE
                                               -0.005 0.996133
## as.factor(EVTYPE)FREEZING FOG
                                                0.013 0.990012
## as.factor(EVTYPE)FREEZING RAIN
                                                0.389 0.697271
## as.factor(EVTYPE)FREEZING RAIN/SLEET
                                               -0.008 0.993713
## as.factor(EVTYPE)FROST
                                                -0.012 0.990576
## as.factor(EVTYPE)FROST/FREEZE
                                                0.006 0.995466
## as.factor(EVTYPE)FUNNEL
                                                0.009 0.993036
                                                0.011 0.991319
## as.factor(EVTYPE)FUNNEL CLOUD
## as.factor(EVTYPE)FUNNEL CLOUDS
                                                0.031 0.975532
## as.factor(EVTYPE)Flood/Flash Flood
                                                0.017 0.986612
                                               -0.007 0.994555
## as.factor(EVTYPE)Freezing Rain
## as.factor(EVTYPE)GLAZE
                                                0.014 0.989107
## as.factor(EVTYPE)GRADIENT WINDS
                                                0.005 0.996089
## as.factor(EVTYPE)GUSTNADO
                                                0.045 0.963940
                                                0.057 0.954212
## as.factor(EVTYPE)GUSTY WIND
## as.factor(EVTYPE)GUSTY WIND/HVY RAIN
                                               0.012 0.990324
## as.factor(EVTYPE)GUSTY WINDS
                                                0.515 0.606559
## as.factor(EVTYPE)Glaze
                                                0.009 0.992677
                                               -0.004 0.997148
## as.factor(EVTYPE)Gusty Winds
## as.factor(EVTYPE)Gusty wind/rain
                                                0.012 0.990324
## as.factor(EVTYPE)HAIL
                                               -0.005 0.995676
## as.factor(EVTYPE)HAIL 0.75
                                                0.023 0.981853
## as.factor(EVTYPE)HAIL 100
                                                0.015 0.987717
## as.factor(EVTYPE)HAIL 175
                                                0.009 0.993157
## as.factor(EVTYPE)HAIL 450
                                                0.007 0.994341
                                               -0.051 0.959467
## as.factor(EVTYPE)HAIL 75
## as.factor(EVTYPE)HAIL/WIND
                                                0.012 0.990639
## as.factor(EVTYPE)HARD FREEZE
                                                0.000 1.000000
## as.factor(EVTYPE)HEAT
                                                1.901 0.057241 .
                                                7.721 1.17e-14 ***
## as.factor(EVTYPE)HEAT WAVE
                                               0.025 0.979949
## as.factor(EVTYPE)HEAT/DROUGHT
## as.factor(EVTYPE)HEAVY LAKE SNOW
                                                0.022 0.982495
## as.factor(EVTYPE)HEAVY MIX
                                                0.008 0.993325
## as.factor(EVTYPE)HEAVY RAIN
                                                 0.051 0.959607
## as.factor(EVTYPE)HEAVY RAIN/SEVERE WEATHER -0.022 0.982700
## as.factor(EVTYPE)HEAVY RAIN/URBAN FLOOD
                                                0.023 0.981678
                                                0.015 0.988174
## as.factor(EVTYPE)HEAVY RAINS
## as.factor(EVTYPE)HEAVY RAINS/FLOODING
                                               -0.045 0.964112
## as.factor(EVTYPE)HEAVY SEAS
                                                4.514 6.37e-06 ***
## as.factor(EVTYPE)HEAVY SNOW
                                                0.022 0.982384
## as.factor(EVTYPE)HEAVY SNOW AND ICE
                                                0.017 0.986819
                                               0.002 0.998084
## as.factor(EVTYPE)HEAVY SNOW AND ICE STORM
## as.factor(EVTYPE)HEAVY SNOW SQUALLS
                                                -0.009 0.992469
## as.factor(EVTYPE)HEAVY SNOW-SQUALLS
                                                0.008 0.993979
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS
                                                0.012 0.990373
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS/FREEZING 0.040 0.968294
## as.factor(EVTYPE)HEAVY SNOW/ICE
                                  -0.101 0.919302
## as.factor(EVTYPE)HEAVY SURF
                                                0.355 0.722929
## as.factor(EVTYPE)HEAVY SURF/HIGH SURF
                                       0.943 0.345719
```

```
## as.factor(EVTYPE)HIGH
                                                  -0.017 0.986255
## as.factor(EVTYPE)HIGH SEAS
                                                   0.949 0.342592
## as.factor(EVTYPE)HIGH SURF
                                                  0.533 0.593944
## as.factor(EVTYPE)HIGH SURF ADVISORY
                                                  0.216 0.829288
                                                 -0.043 0.965457
## as.factor(EVTYPE)HIGH WATER
## as.factor(EVTYPE)HIGH WAVES
                                                 0.040 0.968063
## as.factor(EVTYPE)HIGH WIND
                                                 0.057 0.954729
## as.factor(EVTYPE)HIGH WIND AND HEAVY SNOW 0.040 0.968294
## as.factor(EVTYPE)HIGH WIND/ BLIZZARD
                                                 0.040 0.968294
## as.factor(EVTYPE)HIGH WINDS
                                                 0.082 0.934894
## as.factor(EVTYPE)HIGH WINDS 63
                                                 0.012 0.990373
## as.factor(EVTYPE)HIGH WINDS 66
                                                 0.012 0.990373
## as.factor(EVTYPE)HURRICANE
                                                 2.335 0.019537 *
                                             4.485 7.30e-06 ***
## as.factor(EVTYPE)HURRICANE OPAL/HIGH WINDS
## as.factor(EVTYPE)HURRICANE/TYPHOON
                                                 5.893 3.81e-09 ***
## as.factor(EVTYPE)Hail(0.75)
                                                 0.006 0.995454
                                                 0.141 0.887502
## as.factor(EVTYPE)Heavy Rain
                                                 0.205 0.837691
## as.factor(EVTYPE)Heavy Rain and Wind
## as.factor(EVTYPE)ICE
                                                 0.473 0.635995
                                                 0.102 0.918706
## as.factor(EVTYPE)ICE STORM
                                                0.020 0.984121
0.007 0.994314
0.008 0.993311
0.018 0.985968
## as.factor(EVTYPE)ICY ROADS
## as.factor(EVTYPE)Ice Fog
## as.factor(EVTYPE)LACK OF SNOW
## as.factor(EVTYPE)LAKE EFFECT SNOW
## as.factor(EVTYPE)LAKE-EFFECT SNOW
                                                 0.004 0.996451
## as.factor(EVTYPE)LAKESHORE FLOOD
                                                 0.019 0.985202
## as.factor(EVTYPE)LANDSLIDE
                                                 0.009 0.992651
## as.factor(EVTYPE)LANDSLIDES
                                                 0.027 0.978851
## as.factor(EVTYPE)LATE FREEZE
                                                 0.007 0.994409
                                            -0.001 0.999145
## as.factor(EVTYPE)LIGHT FREEZING RAIN
                                                 -0.002 0.998261
## as.factor(EVTYPE)LIGHT SNOW
                                                 -0.017 0.986693
## as.factor(EVTYPE)LIGHTING
## as.factor(EVTYPE)LIGHTNING
                                                 0.169 0.866159
## as.factor(EVTYPE)LOCAL FLOOD
                                                 -0.017 0.986255
## as.factor(EVTYPE)LOW TEMPERATURE
                                                  2.258 0.023962 *
## as.factor(EVTYPE)Late Season Snowfall
                                                -0.020 0.983913
## as.factor(EVTYPE)Light Snow
                                                 0.007 0.994647
                                              0.044 0.965214
0.001 0.998806
## as.factor(EVTYPE)Light Snow/Flurries
## as.factor(EVTYPE)MARINE HAIL
                                                 0.287 0.774320
## as.factor(EVTYPE)MARINE HIGH WIND
## as.factor(EVTYPE)MARINE STRONG WIND
                                                 0.900 0.368208
## as.factor(EVTYPE)MARINE THUNDERSTORM WIND
                                                 0.002 0.998010
## as.factor(EVTYPE)MARINE TSTM WIND
                                                 0.000 0.999932
## as.factor(EVTYPE)MICROBURST WINDS
                                                 0.012 0.990373
## as.factor(EVTYPE)MIXED PRECIP
                                                 2.259 0.023877 *
                                              -0.004 0.996774
## as.factor(EVTYPE)MIXED PRECIPITATION
                                                  0.011 0.991522
## as.factor(EVTYPE)MODERATE SNOWFALL
## as.factor(EVTYPE)MONTHLY PRECIPITATION
                                                -0.001 0.999032
## as.factor(EVTYPE)MUD SLIDE
                                                 -0.128 0.897965
## as.factor(EVTYPE)MUDSLIDE
                                                 -0.007 0.994555
                                                 2.225 0.026093 *
## as.factor(EVTYPE)Marine Accident
## as.factor(EVTYPE)Microburst
                                                 0.006 0.995454
## as.factor(EVTYPE)Minor Flooding
                                                 0.040 0.968294
                                         -0.029 0.976619
## as.factor(EVTYPE)Mixed Precipitation
```

```
## as.factor(EVTYPE)Mudslide
                                                               -0.004 0.997194
## as.factor(EVTYPE)NON SEVERE HAIL
                                                                 0.045 0.963807
## as.factor(EVTYPE)OTHER
                                                                0.000 0.999769
## as.factor(EVTYPE)Other
                                                                0.008 0.993820
                                                         0.007 0.994363
0.003 0.997682
0.012 0.990056
## as.factor(EVTYPE)PATCHY DENSE FOG
## as.factor(EVTYPE)PROLONG COLD
## as.factor(EVTYPE)PROLONG WARMTH
                                                            -0.022 0.982677
-0.017 0.986255
## as.factor(EVTYPE)RAIN
## as.factor(EVTYPE)RAIN/SNOW
                                                               0.040 0.968063
## as.factor(EVTYPE)RECORD COLD
                                                         0.040 0.968063

0.005 0.995912

0.001 0.999555

0.027 0.978118

-0.075 0.939971

0.022 0.982332

0.002 0.998084

2.536 0.011211 *

3.160 0.001579 **

0.003 0.997749

0.001 0.998839

-0.009 0.993156

-0.005 0.996122
## as.factor(EVTYPE)RECORD COLD
## as.factor(EVTYPE)RECORD HEAT
## as.factor(EVTYPE)RECORD RAINFALL
## as.factor(EVTYPE)RECORD SNOW
## as.factor(EVTYPE)RECORD WARMTH
## as.factor(EVTYPE)REMNANTS OF FLOYD
## as.factor(EVTYPE)RIP CURRENT
## as.factor(EVTYPE)RIP CURRENTS
## as.factor(EVTYPE)RIVER FLOOD
## as.factor(EVTYPE)RIVER FLOODING
## as.factor(EVTYPE)Record Warmth
                                                        -0.005 0.996122
-0.033 0.973438
## as.factor(EVTYPE)Record temperature
## as.factor(EVTYPE)SEICHE
                                                               -0.045 0.964463
## as.factor(EVTYPE)SEVERE COLD
## as.factor(EVTYPE)SEVERE THUNDERSTORM
                                                               -0.006 0.995253
## as.factor(EVTYPE)SEVERE THUNDERSTORMS
                                                               0.008 0.993435
## as.factor(EVTYPE)SLEET
                                                                0.052 0.958215
                                                           0.007 0.00
-0.004 0.996626
## as.factor(EVTYPE)SLEET & FREEZING RAIN
## as.factor(EVTYPE)SMALL HAIL
## as.factor(EVTYPE)SMALL STREAM FLOODING

## as.factor(EVTYPE)SMALL STREAM/URBAN FLOOD

-0.045 0.964463
                                                                 0.000 1.000000
## as.factor(EVTYPE)SMOKE
## as.factor(EVTYPE)SNOW
                                                                0.093 0.925583
## as.factor(EVTYPE)SNOW AND COLD
                                                               -0.007 0.994073
                                                             0.009 0.993154
0.017 0.986612
## as.factor(EVTYPE)SNOW AND ICE
## as.factor(EVTYPE)SNOW AND SLEET
## as.factor(EVTYPE)SNOW SQUALL
                                                               0.000 0.999990
## as.factor(EVTYPE)SNOW/BLOWING SNOW

## as.factor(EVTYPE)SNOW/FREEZING RAIN

-0.045 0.964463
-0.004 0.996614
## as.factor(EVTYPE)SNOW SQUALLS
                                                                0.020 0.983882
## as.factor(EVTYPE)SNOW/SLEET
                                                               -0.004 0.996614
## as.factor(EVTYPE)SNOW/SLEET/FREEZING RAIN -0.045 0.964463
## as.factor(EVTYPE)SNOW\\COLD
                                                               -0.007 0.994073
## as.factor(EVTYPE)STORM SURGE
                                                               -0.021 0.983447
## as.factor(EVTYPE)STORM SURGE/TIDE
                                                                0.045 0.964066
## as.factor(EVTYPE)STREET FLOOD
                                                                0.019 0.985181
## as.factor(EVTYPE)STRONG WIND
                                                                0.036 0.971106
## as.factor(EVTYPE)STRONG WINDS

## as.factor(EVTYPE)Snow

## as.factor(EVTYPE)Snow Squalls

## as.factor(EVTYPE)Snow and Ice

## as.factor(EVTYPE)Strong Winds

## as.factor(EVTYPE)Summary of April 12

## as.factor(EVTYPE)Summary of July 29

## as.factor(EVTYPE)Summary of July 29

## as.factor(EVTYPE)Summary of July 29
```

```
## as.factor(EVTYPE)Summary of July 3
                                                   0.008 0.993320
## as.factor(EVTYPE)Summary of June 11
                                                   0.008 0.993320
## as.factor(EVTYPE)Summary of March 14
                                                  0.008 0.993320
## as.factor(EVTYPE)Summary of May 10
                                                   0.008 0.993320
## as.factor(EVTYPE)Summary: October 31
                                                    0.008 0.993320
## as.factor(EVTYPE)THUNDEERSTORM WINDS
                                                   0.007 0.994363
## as.factor(EVTYPE)THUNDERSTORM
                                                  -0.015 0.988023
                                                   0.007 0.994159
## as.factor(EVTYPE)THUNDERSTORM WINDS
## as.factor(EVTYPE)THUNDERSTORM WIND
                                                   0.007 0.994157
## as.factor(EVTYPE)THUNDERSTORM WIND 56
                                                   0.007 0.994363
## as.factor(EVTYPE)THUNDERSTORM WIND 60 MPH
                                                   -0.007 0.994555
## as.factor(EVTYPE)THUNDERSTORM WIND G60
                                                    0.020 0.984411
## as.factor(EVTYPE)THUNDERSTORM WIND G61
                                                   -0.043 0.965457
## as.factor(EVTYPE)THUNDERSTORM WIND/ TREE
                                                   -0.007 0.994421
## as.factor(EVTYPE)THUNDERSTORM WIND/AWNING
                                                   -0.007 0.994288
## as.factor(EVTYPE)THUNDERSTORM WIND/HAIL
                                                   -0.014 0.989227
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                    0.004 0.996518
## as.factor(EVTYPE)THUNDERSTORM WINDS 53
                                                   0.044 0.965214
## as.factor(EVTYPE)THUNDERSTORM WINDS HAIL
                                                   -0.024 0.981232
## as.factor(EVTYPE)THUNDERSTORM WINDS.
                                                    0.006 0.995077
## as.factor(EVTYPE)THUNDERSTORM WINDS/HAIL
                                                   -0.016 0.987274
## as.factor(EVTYPE)THUNDERSTORM WINDSS
                                                    0.012 0.990271
## as.factor(EVTYPE)THUNDERSTORMS
                                                   -0.017 0.986255
## as.factor(EVTYPE)THUNDERSTORMS WINDS
                                                   -0.007 0.994555
## as.factor(EVTYPE)TIDAL FLOODING
                                                  -0.043 0.965457
## as.factor(EVTYPE)TORNADO
                                                   0.011 0.991291
## as.factor(EVTYPE)TORNADO DEBRIS
                                                   0.013 0.989497
## as.factor(EVTYPE)TORNADO FO
                                                   -0.022 0.982717
## as.factor(EVTYPE)TORRENTIAL RAIN
                                                   -0.007 0.994555
## as.factor(EVTYPE)TROPICAL DEPRESSION
                                                   0.008 0.993955
## as.factor(EVTYPE)TROPICAL STORM
                                                    0.232 0.816246
## as.factor(EVTYPE)TSTM WIND
                                                    0.010 0.992284
## as.factor(EVTYPE)TSTM WIND (G40)
                                                   -0.001 0.999151
                                                  -0.001 0.999229
## as.factor(EVTYPE)TSTM WIND (G45)
## as.factor(EVTYPE)TSTM WIND 51
                                                    0.019 0.985181
## as.factor(EVTYPE)TSTM WIND 52
                                                   0.008 0.993320
## as.factor(EVTYPE)TSTM WIND/HAIL
                                                  -0.005 0.995750
## as.factor(EVTYPE)TSUNAMI
                                                   0.113 0.909961
## as.factor(EVTYPE)Temperature record
                                                   0.046 0.963402
                                                  -0.043 0.965457
## as.factor(EVTYPE)Tidal Flooding
## as.factor(EVTYPE)UNSEASONABLY COLD
                                                   0.058 0.953602
## as.factor(EVTYPE)UNSEASONABLY COOL
                                                   0.000 0.999855
## as.factor(EVTYPE)UNSEASONABLY DRY
                                                    0.076 0.939781
## as.factor(EVTYPE)UNSEASONABLY HOT
                                                   -0.043 0.965457
## as.factor(EVTYPE)UNSEASONABLY WARM
                                                    0.035 0.972401
## as.factor(EVTYPE)UNSEASONABLY WARM AND DRY
                                                   16.881 < 2e-16 ***
## as.factor(EVTYPE)UNSEASONABLY WET
                                                    0.144 0.885871
## as.factor(EVTYPE)UNSEASONAL RAIN
                                                   -0.017 0.986255
## as.factor(EVTYPE)UNUSUAL WARMTH
                                                   -0.026 0.978964
## as.factor(EVTYPE)UNUSUAL/RECORD WARMTH
                                                    0.002 0.998084
                                                    0.012 0.990639
## as.factor(EVTYPE)UNUSUALLY COLD
## as.factor(EVTYPE)URBAN AND SMALL STREAM FLOODIN 2.245 0.024774 *
## as.factor(EVTYPE)URBAN FLOOD
                                                    0.013 0.989392
## as.factor(EVTYPE)URBAN FLOODING
                                                    0.025 0.979819
```

```
## as.factor(EVTYPE)URBAN SMALL STREAM FLOOD
                                                   0.023 0.981678
## as.factor(EVTYPE)URBAN/SMALL STREAM
                                                    0.022 0.982345
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   -0.001 0.999109
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   -0.001 0.999486
## as.factor(EVTYPE)URBAN/SML STREAM FLD
                                                    0.067 0.946524
## as.factor(EVTYPE)URBAN/STREET FLOODING
                                                   0.019 0.984876
## as.factor(EVTYPE)Unseasonable Cold
                                                    0.045 0.963807
                                                    0.035 0.972275
## as.factor(EVTYPE) VOLCANIC ASH
## as.factor(EVTYPE)VOLCANIC ASHFALL
                                                    0.074 0.941404
## as.factor(EVTYPE)WATERSPOUT
                                                    0.011 0.991477
## as.factor(EVTYPE)WATERSPOUT FUNNEL CLOUD
                                                    0.023 0.981678
## as.factor(EVTYPE)WATERSPOUT-
                                                    0.000 1.000000
## as.factor(EVTYPE)WATERSPOUT/TORNADO
                                                   -0.006 0.995372
## as.factor(EVTYPE)WATERSPOUTS
                                                    0.006 0.995533
## as.factor(EVTYPE)WET MICROBURST
                                                   -0.017 0.986255
## as.factor(EVTYPE)WILD/FOREST FIRE
                                                    0.002 0.998184
## as.factor(EVTYPE)WILDFIRE
                                                    0.042 0.966314
## as.factor(EVTYPE)WILDFIRES
                                                   -0.012 0.990596
## as.factor(EVTYPE)WIND
                                                    0.512 0.608562
## as.factor(EVTYPE)WIND ADVISORY
                                                    0.148 0.882215
## as.factor(EVTYPE)WIND CHILL
                                                    0.031 0.975179
## as.factor(EVTYPE)WIND DAMAGE
                                                    0.007 0.994363
## as.factor(EVTYPE)WINDS
                                                   0.006 0.995454
## as.factor(EVTYPE)WINTER MIX
                                                   -0.007 0.994073
## as.factor(EVTYPE)WINTER STORM
                                                   0.085 0.932462
## as.factor(EVTYPE)WINTER STORM/HIGH WIND
                                                  -0.017 0.986255
## as.factor(EVTYPE)WINTER WEATHER
                                                    0.041 0.967663
## as.factor(EVTYPE)WINTER WEATHER MIX
                                                   -0.017 0.986255
## as.factor(EVTYPE)WINTER WEATHER/MIX
                                                    0.176 0.860626
## as.factor(EVTYPE)WINTERY MIX
                                                    0.021 0.983416
## as.factor(EVTYPE)WINTRY MIX
                                                    0.037 0.970705
## as.factor(EVTYPE)Wet Month
                                                    0.044 0.965214
## as.factor(EVTYPE)Wind
                                                   -0.010 0.992241
## as.factor(EVTYPE)Winter Weather
                                                    0.013 0.989497
## as.factor(EVTYPE)small hail
                                                   -0.828 0.407687
## PROPDMG
                                                    3.864 0.000112 ***
## as.factor(STATE)AL
                                                    1.405 0.160101
## as.factor(STATE)AM
                                                    0.349 0.727175
## as.factor(STATE)AN
                                                     0.397 0.691715
## as.factor(STATE)AR
                                                    1.658 0.097267 .
## as.factor(STATE)AS
                                                    -1.071 0.284190
## as.factor(STATE)AZ
                                                     2.077 0.037785 *
## as.factor(STATE)CA
                                                    1.328 0.184134
## as.factor(STATE)CO
                                                    0.688 0.491143
## as.factor(STATE)CT
                                                     0.349 0.726902
## as.factor(STATE)DC
                                                    -0.849 0.395636
## as.factor(STATE)DE
                                                    -2.580 0.009880 **
## as.factor(STATE)FL
                                                    0.986 0.324223
## as.factor(STATE)GA
                                                    0.575 0.565327
## as.factor(STATE)GM
                                                    0.339 0.734727
## as.factor(STATE)GU
                                                    -1.349 0.177283
## as.factor(STATE)HI
                                                    -1.284 0.199291
## as.factor(STATE)IA
                                                    -0.142 0.886750
## as.factor(STATE)ID
                                                    0.646 0.518014
```

```
## as.factor(STATE)IL
                                                       2.130 0.033138 *
## as.factor(STATE)IN
                                                       0.865 0.386835
## as.factor(STATE)KS
                                                       0.550 0.582366
## as.factor(STATE)KY
                                                       0.697 0.485492
## as.factor(STATE)LA
                                                       1.108 0.268049
## as.factor(STATE)LC
                                                       0.204 0.838452
## as.factor(STATE)LE
                                                       0.212 0.831757
## as.factor(STATE)LH
                                                       0.261 0.794110
## as.factor(STATE)LM
                                                       0.107 0.915021
## as.factor(STATE)LO
                                                       0.086 0.931537
## as.factor(STATE)LS
                                                       0.218 0.827770
## as.factor(STATE)MA
                                                      -0.006 0.995326
## as.factor(STATE)MD
                                                       0.598 0.549644
## as.factor(STATE)ME
                                                       0.745 0.456139
## as.factor(STATE)MI
                                                       0.548 0.583362
## as.factor(STATE)MN
                                                       0.582 0.560686
## as.factor(STATE)MO
                                                       1.045 0.296227
## as.factor(STATE)MS
                                                       1.764 0.077700
## as.factor(STATE)MT
                                                       0.797 0.425492
## as.factor(STATE)NC
                                                       1.168 0.242898
## as.factor(STATE)ND
                                                       0.488 0.625514
## as.factor(STATE)NE
                                                       0.513 0.607888
## as.factor(STATE)NH
                                                       0.366 0.714048
## as.factor(STATE)NJ
                                                      -0.086 0.931795
## as.factor(STATE)NM
                                                       0.808 0.419187
## as.factor(STATE)NV
                                                       0.729 0.465742
## as.factor(STATE)NY
                                                       0.779 0.436258
## as.factor(STATE)OH
                                                       1.019 0.308355
## as.factor(STATE)OK
                                                       0.810 0.418001
## as.factor(STATE)OR
                                                       0.703 0.481996
## as.factor(STATE)PA
                                                       2.066 0.038863 *
## as.factor(STATE)PH
                                                       0.078 0.937990
## as.factor(STATE)PK
                                                       0.063 0.950136
## as.factor(STATE)PM
                                                       0.045 0.963844
## as.factor(STATE)PR
                                                       0.300 0.763992
## as.factor(STATE)PZ
                                                       0.544 0.586179
## as.factor(STATE)RI
                                                      -0.151 0.880287
## as.factor(STATE)SC
                                                       0.795 0.426559
## as.factor(STATE)SD
                                                       0.604 0.545664
                                                       0.057 0.954487
## as.factor(STATE)SL
## as.factor(STATE)TN
                                                       1.318 0.187618
## as.factor(STATE)TX
                                                       0.857 0.391407
## as.factor(STATE)UT
                                                       0.285 0.775926
## as.factor(STATE)VA
                                                       0.679 0.497019
## as.factor(STATE)VI
                                                      -0.262 0.793521
                                                       0.843 0.399017
## as.factor(STATE)VT
## as.factor(STATE)WA
                                                       0.991 0.321590
## as.factor(STATE)WI
                                                       0.789 0.430056
## as.factor(STATE)WV
                                                       1.073 0.283070
                                                       0.312 0.755325
## as.factor(STATE)WY
## as.factor(F)0
                                                      -0.070 0.944552
## as.factor(F)1
                                                      0.287 0.774216
## as.factor(F)2
                                                      0.904 0.365828
                                                      12.367 < 2e-16 ***
## as.factor(F)3
```

```
## as.factor(F)4
                                                     67.079 < 2e-16 ***
## as.factor(F)5
                                                     36.354 < 2e-16 ***
## as.factor(MAG)1.00
                                                      0.180 0.857407
                                                      0.208 0.835153
## as.factor(MAG)100.00
## as.factor(MAG)101.00
                                                     -0.039 0.969277
## as.factor(MAG)103.00
                                                     -0.014 0.989135
## as.factor(MAG)104.00
                                                     -0.013 0.989402
## as.factor(MAG)105.00
                                                     -0.040 0.968323
## as.factor(MAG)106.00
                                                     -0.001 0.999565
                                                      0.042 0.966174
## as.factor(MAG)110.00
## as.factor(MAG)111.00
                                                     -0.062 0.950342
## as.factor(MAG)112.00
                                                      0.012 0.990805
                                                      0.022 0.982093
## as.factor(MAG)113.00
## as.factor(MAG)115.00
                                                     -0.025 0.980300
## as.factor(MAG)116.00
                                                     -0.047 0.962625
## as.factor(MAG)120.00
                                                     -0.017 0.986744
## as.factor(MAG)125.00
                                                      0.190 0.849455
## as.factor(MAG)139.00
                                                     -0.008 0.993905
## as.factor(MAG)140.00
                                                      0.027 0.978112
## as.factor(MAG)150.00
                                                      0.234 0.814843
## as.factor(MAG)160.00
                                                      0.015 0.987724
## as.factor(MAG)165.00
                                                      0.029 0.976787
## as.factor(MAG)175.00
                                                      0.196 0.844651
## as.factor(MAG)176.00
                                                      0.015 0.987652
## as.factor(MAG)180.00
                                                      0.032 0.974768
## as.factor(MAG)188.00
                                                      0.022 0.982093
## as.factor(MAG)2.00
                                                      0.170 0.864888
## as.factor(MAG)200.00
                                                      0.193 0.847247
## as.factor(MAG)22.00
                                                     -0.082 0.934901
## as.factor(MAG)225.00
                                                      0.049 0.961096
## as.factor(MAG)25.00
                                                      3.112 0.001860 **
## as.factor(MAG)250.00
                                                      0.181 0.856232
## as.factor(MAG)260.00
                                                      0.066 0.947454
## as.factor(MAG)27.00
                                                     -0.038 0.969658
## as.factor(MAG)275.00
                                                      0.131 0.895894
## as.factor(MAG)29.00
                                                     -0.099 0.920879
## as.factor(MAG)3.00
                                                      0.090 0.928262
## as.factor(MAG)30.00
                                                      3.371 0.000750 ***
## as.factor(MAG)300.00
                                                      0.185 0.853532
                                                     -0.011 0.991521
## as.factor(MAG)31.00
## as.factor(MAG)32.00
                                                     -0.031 0.975247
## as.factor(MAG)325.00
                                                      0.039 0.968832
## as.factor(MAG)33.00
                                                      1.242 0.214404
## as.factor(MAG)34.00
                                                      0.283 0.777044
## as.factor(MAG)35.00
                                                      0.359 0.719796
                                                      0.081 0.935414
## as.factor(MAG)350.00
## as.factor(MAG)36.00
                                                      0.018 0.985851
## as.factor(MAG)360.00
                                                     -0.024 0.980537
## as.factor(MAG)37.00
                                                     -0.196 0.844955
## as.factor(MAG)375.00
                                                      0.022 0.982393
## as.factor(MAG)38.00
                                                      0.010 0.991640
## as.factor(MAG)380.00
                                                     -0.174 0.862088
## as.factor(MAG)39.00
                                                     -0.122 0.903212
## as.factor(MAG)396.00
                                                     -0.052 0.958346
```

	as.factor(MAG)4.00	-0.024 0.981091
	as.factor(MAG)40.00	0.261 0.794465
	as.factor(MAG)400.00	0.065 0.947979
	as.factor(MAG)41.00	0.264 0.791902
	as.factor(MAG)42.00	0.024 0.980525
	as.factor(MAG)425.00	0.076 0.939154
	as.factor(MAG)43.00	-0.329 0.741907
	as.factor(MAG)44.00	-0.023 0.981727
	as.factor(MAG)45.00	0.457 0.647870
	as.factor(MAG)450.00	0.052 0.958312
	as.factor(MAG)46.00	-0.017 0.986664
	as.factor(MAG)460.00	-0.023 0.981507
	as.factor(MAG)47.00	-0.140 0.888739
##	as.factor(MAG)475.00	0.034 0.972499
##	as.factor(MAG)48.00	0.557 0.577484
##	as.factor(MAG)49.00	-0.142 0.887189
##	as.factor(MAG)5.00	0.020 0.983903
	as.factor(MAG)50.00	-0.572 0.567568
##	as.factor(MAG)500.00	0.034 0.972525
##	as.factor(MAG)51.00	0.272 0.785860
##	as.factor(MAG)52.00	0.196 0.844761
##	as.factor(MAG)53.00	-0.018 0.985278
##	as.factor(MAG)54.00	-0.031 0.975397
##	as.factor(MAG)55.00	-0.325 0.745210
##	as.factor(MAG)550.00	-0.016 0.987537
##	as.factor(MAG)56.00	-0.044 0.964974
##	as.factor(MAG)57.00	-0.060 0.952530
##	as.factor(MAG)58.00	0.000 0.999685
##	as.factor(MAG)59.00	-0.167 0.867371
##	as.factor(MAG)6.00	0.015 0.988029
##	as.factor(MAG)60.00	-0.071 0.943028
##	as.factor(MAG)600.00	0.046 0.963637
##	as.factor(MAG)61.00	1.162 0.245143
##	as.factor(MAG)62.00	-0.212 0.831945
##	as.factor(MAG)63.00	0.319 0.749481
##	as.factor(MAG)64.00	-0.107 0.914496
##	as.factor(MAG)65.00	-0.168 0.866219
##	as.factor(MAG)66.00	-0.065 0.948419
##	as.factor(MAG)67.00	-0.083 0.934117
##	as.factor(MAG)68.00	0.241 0.809274
##	as.factor(MAG)69.00	-0.039 0.969268
##	as.factor(MAG)70.00	0.357 0.720799
##	as.factor(MAG)71.00	-0.085 0.932513
##	as.factor(MAG)72.00	-0.092 0.926307
##	as.factor(MAG)73.00	0.590 0.555273
##	as.factor(MAG)74.00	0.347 0.728397
##	as.factor(MAG)75.00	0.186 0.852561
##	as.factor(MAG)76.00	-0.071 0.943668
##	as.factor(MAG)77.00	-0.081 0.935502
##	as.factor(MAG)78.00	-0.233 0.816062
##	as.factor(MAG)79.00	-0.043 0.965887
##	as.factor(MAG)8.00	-0.017 0.986109
##	as.factor(MAG)80.00	-0.050 0.959754
##	as.factor(MAG)81.00	1.565 0.117669

```
## as.factor(MAG)82.00
                                                    -0.104 0.917311
## as.factor(MAG)83.00
                                                    -0.161 0.871859
## as.factor(MAG)84.00
                                                    -0.058 0.953450
## as.factor(MAG)85.00
                                                     0.476 0.634282
## as.factor(MAG)86.00
                                                     2.336 0.019486 *
## as.factor(MAG)87.00
                                                    -0.046 0.963411
## as.factor(MAG)88.00
                                                     0.201 0.840548
## as.factor(MAG)89.00
                                                    -0.020 0.983749
## as.factor(MAG)9.00
                                                    -0.064 0.948667
## as.factor(MAG)90.00
                                                    -0.128 0.898377
## as.factor(MAG)91.00
                                                    -0.051 0.959594
## as.factor(MAG)92.00
                                                     2.207 0.027341 *
## as.factor(MAG)93.00
                                                    -0.004 0.997008
## as.factor(MAG)94.00
                                                     0.014 0.989075
## as.factor(MAG)95.00
                                                    -0.033 0.973284
## as.factor(MAG)96.00
                                                    -0.077 0.938537
## as.factor(MAG)98.00
                                                    -0.037 0.970244
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1
## Residual standard error: 0.3141 on 89723 degrees of freedom
## Multiple R-squared: 0.1428, Adjusted R-squared: 0.138
## F-statistic: 29.55 on 506 and 89723 DF, p-value: < 2.2e-16
The anova analysis shows wich variables improve the prediction model for Prob>(F) lower than 0.05
anova(lm1,lm3,lm4)
## Analysis of Variance Table
## Model 1: FATALITIES ~ as.factor(EVTYPE)
## Model 2: FATALITIES ~ as.factor(EVTYPE) + PROPDMG + as.factor(STATE)
## Model 3: FATALITIES ~ as.factor(EVTYPE) + PROPDMG + as.factor(STATE) +
       as.factor(F) + as.factor(MAG)
##
##
     Res.Df
               RSS Df Sum of Sq
                                            Pr(>F)
## 1 89921 9757.1
## 2 89852 9741.6 69
                           15.46 2.2714 9.176e-09 ***
## 3 89723 8851.3 129
                          890.38 69.9657 < 2.2e-16 ***
## Signif. codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1
PCA analysis
Train2<-prcomp(training[,-c("BGN_DATE","STATE","EVTYPE","F","MAG")],tol=0.04,retx = TRUE,center = TRUE,</pre>
summary(Train2)
## Importance of components:
                             PC1
                                    PC2
                                           PC3
                                                  PC4
                                                         PC5
                                                                PC6
                                                                         PC7
## Standard deviation
                          1.3010 1.0869 1.0309 1.0011 0.9797 0.9515 0.88420
## Proportion of Variance 0.2116 0.1477 0.1328 0.1253 0.1200 0.1132 0.09773
## Cumulative Proportion 0.2116 0.3592 0.4921 0.6174 0.7373 0.8505 0.94825
##
                              PC8
## Standard deviation
                          0.64342
## Proportion of Variance 0.05175
## Cumulative Proportion 1.00000
```

lm5<-lm(PROPDMG~as.factor(EVTYPE),data = training)</pre>

summary(lm5)

```
##
## Call:
## lm(formula = PROPDMG ~ as.factor(EVTYPE), data = training)
## Residuals:
##
     Min
             1Q Median
                            3Q
                                  Max
  -250.0
            -9.7 -3.8
                          -2.4 3489.6
##
##
## Coefficients:
##
                                                     Estimate Std. Error
## (Intercept)
                                                    2.156e-09 5.570e+01
## as.factor(EVTYPE) WIND
                                                   -2.161e-09 7.877e+01
                                                   5.000e+00 7.877e+01
## as.factor(EVTYPE)APACHE COUNTY
## as.factor(EVTYPE)ASTRONOMICAL HIGH TIDE
                                                   -2.126e-09 5.797e+01
## as.factor(EVTYPE)ASTRONOMICAL LOW TIDE
                                                   -2.225e-09 5.707e+01
## as.factor(EVTYPE)AVALANCHE
                                                   8.557e+00 5.649e+01
## as.factor(EVTYPE)BLACK ICE
                                                   -2.142e-09 7.877e+01
## as.factor(EVTYPE)BLIZZARD
                                                    1.257e+01 5.580e+01
## as.factor(EVTYPE)BLIZZARD AND EXTREME WIND CHIL -2.126e-09 7.877e+01
## as.factor(EVTYPE)BLOW-OUT TIDES
                                                   -2.152e-09 7.877e+01
                                                   2.000e+01 7.877e+01
## as.factor(EVTYPE)BREAKUP FLOODING
## as.factor(EVTYPE)COASTAL FLOOD
                                                    2.490e+01 5.606e+01
## as.factor(EVTYPE)COASTAL FLOODING
                                                   4.419e+01 5.780e+01
## as.factor(EVTYPE)COASTAL FLOODING/EROSION
                                                   -2.138e-09 7.877e+01
## as.factor(EVTYPE)COASTAL STORM
                                                   -2.114e-09 7.877e+01
## as.factor(EVTYPE)COLD
                                                   -2.127e-09 6.016e+01
## as.factor(EVTYPE)COLD TEMPERATURES
                                                   -2.187e-09 7.877e+01
## as.factor(EVTYPE)COLD WAVE
                                                   -2.091e-09 7.877e+01
## as.factor(EVTYPE)COLD WIND CHILL TEMPERATURES
                                                   -2.158e-09 7.877e+01
                                                   4.808e-01 5.623e+01
## as.factor(EVTYPE)COLD/WIND CHILL
## as.factor(EVTYPE)Coastal Flooding
                                                   -2.135e-09 6.227e+01
## as.factor(EVTYPE)Cold
                                                   4.000e+00 6.821e+01
## as.factor(EVTYPE)Cold and Frost
                                                   -2.173e-09 7.877e+01
## as.factor(EVTYPE)DAMAGING FREEZE
                                                   -2.165e-09 7.877e+01
## as.factor(EVTYPE)DENSE FOG
                                                    6.341e+00 5.590e+01
## as.factor(EVTYPE)DENSE SMOKE
                                                    3.333e+01 6.431e+01
## as.factor(EVTYPE)DROUGHT
                                                    2.815e+00 5.581e+01
## as.factor(EVTYPE)DROUGHT/EXCESSIVE HEAT
                                                   -2.105e-09 7.877e+01
## as.factor(EVTYPE)DRY
                                                   -2.200e-09 6.821e+01
## as.factor(EVTYPE)DRY MICROBURST
                                                   1.417e+01 5.797e+01
## as.factor(EVTYPE)DRY MICROBURST WINDS
                                                   -2.150e-09 7.877e+01
## as.factor(EVTYPE)DUST DEVIL
                                                   3.972e+00 5.722e+01
## as.factor(EVTYPE)DUST STORM
                                                    1.231e+01 5.676e+01
## as.factor(EVTYPE)DUST STORM/HIGH WINDS
                                                   5.000e+01 7.877e+01
## as.factor(EVTYPE)DUSTSTORM
                                                   -2.124e-09 7.877e+01
## as.factor(EVTYPE)Dust Devil
                                                   5.000e+00 6.821e+01
## as.factor(EVTYPE)EARLY FREEZE
                                                  -2.123e-09 7.877e+01
## as.factor(EVTYPE)EARLY SNOWFALL
                                                  -2.129e-09 7.877e+01
## as.factor(EVTYPE)EXCESSIVE HEAT
                                                   1.344e-01 5.585e+01
## as.factor(EVTYPE)EXCESSIVE RAINFALL
                                                  -2.252e-09 7.877e+01
```

```
7.750e+01 6.227e+01
## as.factor(EVTYPE)EXCESSIVE SNOW
## as.factor(EVTYPE)EXCESSIVE WETNESS
                                                -2.031e-09 7.877e+01
## as.factor(EVTYPE)EXTREME COLD
                                                  1.439e+00 5.612e+01
## as.factor(EVTYPE)EXTREME COLD/WIND CHILL
                                                  6.186e+00 5.598e+01
## as.factor(EVTYPE)EXTREME HEAT
                                                  -2.113e-09 7.877e+01
## as.factor(EVTYPE)EXTREME WINDCHILL
                                                  -2.178e-09 5.731e+01
## as.factor(EVTYPE)EXTREME WINDCHILL TEMPERATURES -2.180e-09 6.431e+01
## as.factor(EVTYPE)Extended Cold
                                                   1.000e+02 7.877e+01
## as.factor(EVTYPE)FIRST SNOW
                                                  -2.245e-09 7.877e+01
## as.factor(EVTYPE)FLASH FLOOD
                                                   2.524e+01 5.570e+01
## as.factor(EVTYPE)FLASH FLOOD LANDSLIDES
                                                   5.000e+01 7.877e+01
## as.factor(EVTYPE)FLASH FLOOD/
                                                   5.000e+02 7.877e+01
## as.factor(EVTYPE)FLASH FLOOD/ STREET
                                                   2.000e+00 7.877e+01
## as.factor(EVTYPE)FLASH FLOODING
                                                   3.106e+01 5.607e+01
## as.factor(EVTYPE)FLASH FLOODS
                                                   2.004e+02 6.101e+01
## as.factor(EVTYPE)FLOOD
                                                   3.307e+01 5.571e+01
## as.factor(EVTYPE)FLOOD WATCH/
                                                  -2.177e-09 7.877e+01
## as.factor(EVTYPE)FLOOD/FLASH FLOOD
                                                  3.832e+01 5.618e+01
## as.factor(EVTYPE)FLOOD/FLASH FLOODING
                                                  -2.219e-09 6.821e+01
                                                  -2.195e-09 7.877e+01
## as.factor(EVTYPE)FLOOD/RAIN/WIND
## as.factor(EVTYPE)FLOODING
                                                   1.542e+01 5.797e+01
## as.factor(EVTYPE)FOG
                                                  7.353e+00 5.624e+01
                                                  -2.161e-09 6.101e+01
## as.factor(EVTYPE)FREEZE
## as.factor(EVTYPE)FREEZING DRIZZLE
                                                   1.000e+01 6.821e+01
## as.factor(EVTYPE)FREEZING FOG
                                                  -2.138e-09 6.821e+01
## as.factor(EVTYPE)FREEZING RAIN
                                                  4.421e+01 5.680e+01
## as.factor(EVTYPE)FREEZING RAIN/SLEET
                                                  -2.087e-09 6.821e+01
## as.factor(EVTYPE)FROST
                                                  -2.131e-09 5.954e+01
## as.factor(EVTYPE)FROST/FREEZE
                                                   4.478e-01 5.590e+01
## as.factor(EVTYPE)FUNNEL
                                                  -2.123e-09 6.431e+01
                                                  -2.118e-09 5.573e+01
## as.factor(EVTYPE)FUNNEL CLOUD
## as.factor(EVTYPE)FUNNEL CLOUDS
                                                  -2.169e-09 5.954e+01
## as.factor(EVTYPE)Flood/Flash Flood
                                                  -2.120e-09 7.877e+01
## as.factor(EVTYPE)Freezing Rain
                                                  -2.174e-09 7.877e+01
## as.factor(EVTYPE)GLAZE
                                                  -1.868e-09 6.821e+01
## as.factor(EVTYPE)GRADIENT WINDS
                                                  -2.137e-09 7.877e+01
## as.factor(EVTYPE)GUSTNADO
                                                  1.000e+00 7.877e+01
## as.factor(EVTYPE)GUSTY WIND
                                                   1.167e+01 6.431e+01
## as.factor(EVTYPE)GUSTY WIND/HVY RAIN
                                                   2.000e+00 7.877e+01
## as.factor(EVTYPE)GUSTY WINDS
                                                   3.333e+00 6.016e+01
## as.factor(EVTYPE)Glaze
                                                   2.500e+01 6.821e+01
## as.factor(EVTYPE)Gusty Winds
                                                   1.000e+02 7.877e+01
## as.factor(EVTYPE)Gusty wind/rain
                                                   2.000e+00 7.877e+01
## as.factor(EVTYPE)HAIL
                                                   2.401e+00 5.570e+01
## as.factor(EVTYPE)HAIL 0.75
                                                  -2.193e-09 6.431e+01
## as.factor(EVTYPE)HAIL 100
                                                  -2.129e-09 6.821e+01
                                                   5.000e-02 6.821e+01
## as.factor(EVTYPE)HAIL 175
## as.factor(EVTYPE)HAIL 450
                                                   2.000e-01 7.877e+01
## as.factor(EVTYPE)HAIL 75
                                                  5.000e-01 6.821e+01
                                                  -2.139e-09 7.877e+01
## as.factor(EVTYPE)HAIL/WIND
## as.factor(EVTYPE)HARD FREEZE
                                                  -2.173e-09 7.877e+01
## as.factor(EVTYPE)HEAT
                                                  7.143e-02 5.609e+01
## as.factor(EVTYPE)HEAT WAVE
                                                  1.429e-01 5.765e+01
                                                  -2.090e-09 7.877e+01
## as.factor(EVTYPE)HEAT/DROUGHT
```

```
## as.factor(EVTYPE)HEAVY LAKE SNOW
                                                   -2.168e-09 6.227e+01
## as.factor(EVTYPE)HEAVY MIX
                                                    1.000e-01 7.877e+01
## as.factor(EVTYPE)HEAVY RAIN
                                                    3.660e+00 5.572e+01
## as.factor(EVTYPE)HEAVY RAIN/SEVERE WEATHER
                                                    1.250e+00 6.821e+01
## as.factor(EVTYPE)HEAVY RAIN/URBAN FLOOD
                                                   -2.148e-09
                                                              7.877e+01
## as.factor(EVTYPE)HEAVY RAINS
                                                    3.017e+00 6.431e+01
## as.factor(EVTYPE)HEAVY RAINS/FLOODING
                                                    2.750e+02 6.821e+01
## as.factor(EVTYPE)HEAVY SEAS
                                                   -2.141e-09
                                                              7.877e+01
## as.factor(EVTYPE)HEAVY SNOW
                                                    8.730e+00
                                                              5.571e+01
## as.factor(EVTYPE)HEAVY SNOW AND ICE
                                                   -2.279e-09
                                                              7.877e+01
## as.factor(EVTYPE)HEAVY SNOW AND ICE STORM
                                                   -2.184e-09 7.877e+01
## as.factor(EVTYPE)HEAVY SNOW SQUALLS
                                                    3.200e+01
                                                              6.101e+01
## as.factor(EVTYPE)HEAVY SNOW-SQUALLS
                                                    5.000e+00
                                                              7.877e+01
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS
                                                   -2.108e-09 7.877e+01
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS/FREEZING -2.108e-09 7.877e+01
## as.factor(EVTYPE)HEAVY SNOW/ICE
                                                    6.000e+02
                                                              7.877e+01
## as.factor(EVTYPE)HEAVY SURF
                                                    1.875e+01 5.907e+01
## as.factor(EVTYPE)HEAVY SURF/HIGH SURF
                                                    1.109e+01 5.689e+01
## as.factor(EVTYPE)HIGH
                                                   -2.172e-09 7.877e+01
## as.factor(EVTYPE)HIGH SEAS
                                                    5.000e+00 6.431e+01
## as.factor(EVTYPE)HIGH SURF
                                                    1.480e+01 5.609e+01
## as.factor(EVTYPE)HIGH SURF ADVISORY
                                                   -2.488e-09 7.877e+01
## as.factor(EVTYPE)HIGH WATER
                                                   -8.724e-10 7.877e+01
## as.factor(EVTYPE)HIGH WAVES
                                                   -2.155e-09
                                                              7.877e+01
## as.factor(EVTYPE)HIGH WIND
                                                   1.690e+01 5.571e+01
## as.factor(EVTYPE)HIGH WIND AND HEAVY SNOW
                                                   -2.118e-09 7.877e+01
## as.factor(EVTYPE)HIGH WIND/ BLIZZARD
                                                   -2.164e-09 7.877e+01
## as.factor(EVTYPE)HIGH WINDS
                                                    3.135e+01 5.586e+01
## as.factor(EVTYPE)HIGH WINDS 63
                                                   -2.183e-09 7.877e+01
## as.factor(EVTYPE)HIGH WINDS 66
                                                   -2.124e-09 7.877e+01
## as.factor(EVTYPE)HURRICANE
                                                    1.071e+02 5.707e+01
## as.factor(EVTYPE)HURRICANE OPAL/HIGH WINDS
                                                    1.000e-01 7.877e+01
## as.factor(EVTYPE)HURRICANE/TYPHOON
                                                    3.671e+01 5.797e+01
## as.factor(EVTYPE)Hail(0.75)
                                                   -2.124e-09 7.877e+01
## as.factor(EVTYPE)Heavy Rain
                                                   -2.066e-09
                                                              6.821e+01
## as.factor(EVTYPE)Heavy Rain and Wind
                                                   -2.145e-09 7.877e+01
## as.factor(EVTYPE)ICE
                                                   8.333e+01 6.016e+01
## as.factor(EVTYPE)ICE STORM
                                                   4.568e+01 5.583e+01
## as.factor(EVTYPE)ICY ROADS
                                                    1.375e+01
                                                              6.821e+01
## as.factor(EVTYPE)Ice Fog
                                                   -2.117e-09 7.877e+01
## as.factor(EVTYPE)LACK OF SNOW
                                                   -2.189e-09 7.877e+01
## as.factor(EVTYPE)LAKE EFFECT SNOW
                                                   -2.112e-09 6.431e+01
## as.factor(EVTYPE)LAKE-EFFECT SNOW
                                                   2.388e+01 5.607e+01
## as.factor(EVTYPE)LAKESHORE FLOOD
                                                  -2.166e-09 6.821e+01
## as.factor(EVTYPE)LANDSLIDE
                                                   1.172e+01 5.617e+01
## as.factor(EVTYPE)LANDSLIDES
                                                   -2.103e-09
                                                              6.821e+01
## as.factor(EVTYPE)LATE FREEZE
                                                   -2.127e-09
                                                              7.877e+01
## as.factor(EVTYPE)LIGHT FREEZING RAIN
                                                   1.800e+01 6.821e+01
## as.factor(EVTYPE)LIGHT SNOW
                                                   1.459e+01 5.731e+01
## as.factor(EVTYPE)LIGHTING
                                                   -2.124e-09 7.877e+01
## as.factor(EVTYPE)LIGHTNING
                                                   3.761e+01 5.571e+01
## as.factor(EVTYPE)LOCAL FLOOD
                                                  -2.128e-09 7.877e+01
## as.factor(EVTYPE)LOW TEMPERATURE
                                                  -2.143e-09 7.877e+01
## as.factor(EVTYPE)Late Season Snowfall
                                                   -2.170e-09 6.821e+01
```

```
## as.factor(EVTYPE)Light Snow
                                                   1.000e+01 7.877e+01
## as.factor(EVTYPE)Light Snow/Flurries
                                                  -2.101e-09 7.877e+01
                                                   -2.129e-09 5.639e+01
## as.factor(EVTYPE)MARINE HAIL
## as.factor(EVTYPE)MARINE HIGH WIND
                                                    1.122e+01 5.871e+01
## as.factor(EVTYPE)MARINE STRONG WIND
                                                    8.144e+00
                                                              5.954e+01
## as.factor(EVTYPE)MARINE THUNDERSTORM WIND
                                                    2.060e-01 5.575e+01
## as.factor(EVTYPE)MARINE TSTM WIND
                                                    1.284e-01 5.574e+01
## as.factor(EVTYPE)MICROBURST WINDS
                                                   -2.152e-09 7.877e+01
## as.factor(EVTYPE)MIXED PRECIP
                                                   -2.165e-09
                                                              7.877e+01
## as.factor(EVTYPE)MIXED PRECIPITATION
                                                    1.275e+01 6.227e+01
## as.factor(EVTYPE)MODERATE SNOWFALL
                                                   -2.132e-09 5.871e+01
## as.factor(EVTYPE)MONTHLY PRECIPITATION
                                                   -2.149e-09 5.954e+01
## as.factor(EVTYPE)MUD SLIDE
                                                    5.000e+02 7.877e+01
## as.factor(EVTYPE)MUDSLIDE
                                                   -2.199e-09 7.877e+01
## as.factor(EVTYPE)Marine Accident
                                                   5.000e+01 7.877e+01
## as.factor(EVTYPE)Microburst
                                                   -2.113e-09
                                                              7.877e+01
## as.factor(EVTYPE)Minor Flooding
                                                   -2.125e-09 7.877e+01
## as.factor(EVTYPE)Mixed Precipitation
                                                   1.500e+02 7.877e+01
## as.factor(EVTYPE)Mudslide
                                                   -2.086e-09 6.821e+01
## as.factor(EVTYPE)NON SEVERE HAIL
                                                   -2.125e-09 7.877e+01
## as.factor(EVTYPE)OTHER
                                                    1.000e+00 6.101e+01
## as.factor(EVTYPE)Other
                                                   -2.158e-09 7.877e+01
## as.factor(EVTYPE)PATCHY DENSE FOG
                                                   -2.146e-09 7.877e+01
## as.factor(EVTYPE)PROLONG COLD
                                                   -2.116e-09
                                                              6.821e+01
## as.factor(EVTYPE)PROLONG WARMTH
                                                   -2.135e-09 7.877e+01
## as.factor(EVTYPE)RAIN
                                                   3.333e+01 6.431e+01
## as.factor(EVTYPE)RAIN/SNOW
                                                   -2.159e-09
                                                              7.877e+01
## as.factor(EVTYPE)RECORD COLD
                                                  -2.207e-09
                                                              7.877e+01
## as.factor(EVTYPE)RECORD COLD
                                                  -2.212e-09 6.431e+01
## as.factor(EVTYPE)RECORD HEAT
                                                  -2.117e-09 6.101e+01
## as.factor(EVTYPE)RECORD RAINFALL
                                                   -2.090e-09
                                                              6.821e+01
## as.factor(EVTYPE)RECORD SNOW
                                                   5.000e+02 7.877e+01
## as.factor(EVTYPE)RECORD WARMTH
                                                   -2.140e-09 5.731e+01
## as.factor(EVTYPE)REMNANTS OF FLOYD
                                                   -2.115e-09 7.877e+01
## as.factor(EVTYPE)RIP CURRENT
                                                   -2.156e-09 5.622e+01
## as.factor(EVTYPE)RIP CURRENTS
                                                  -2.174e-09 5.656e+01
## as.factor(EVTYPE)RIVER FLOOD
                                                   2.264e+01 5.817e+01
## as.factor(EVTYPE)RIVER FLOODING
                                                   7.500e+00 6.821e+01
## as.factor(EVTYPE)Record Warmth
                                                   -2.105e-09
                                                              6.821e+01
## as.factor(EVTYPE)Record temperature
                                                   -2.172e-09 6.821e+01
## as.factor(EVTYPE)SEICHE
                                                    2.750e+02 6.431e+01
## as.factor(EVTYPE)SEVERE COLD
                                                   -2.143e-09 7.877e+01
## as.factor(EVTYPE)SEVERE THUNDERSTORM
                                                    6.000e-01 6.821e+01
## as.factor(EVTYPE)SEVERE THUNDERSTORMS
                                                   -2.111e-09 6.821e+01
## as.factor(EVTYPE)SLEET
                                                   -2.134e-09 6.821e+01
## as.factor(EVTYPE)SLEET & FREEZING RAIN
                                                   -2.138e-09 7.877e+01
## as.factor(EVTYPE)SMALL HAIL
                                                   -2.172e-09
                                                              5.871e+01
## as.factor(EVTYPE)SMALL STREAM FLOODING
                                                   -2.147e-09 7.877e+01
## as.factor(EVTYPE)SMALL STREAM/URBAN FLOOD
                                                   -2.142e-09 7.877e+01
## as.factor(EVTYPE)SMOKE
                                                   -2.096e-09
                                                              7.877e+01
## as.factor(EVTYPE)SNOW
                                                   9.931e+00 5.608e+01
## as.factor(EVTYPE)SNOW AND COLD
                                                   -2.112e-09 7.877e+01
## as.factor(EVTYPE)SNOW AND ICE
                                                  -2.197e-09 6.821e+01
## as.factor(EVTYPE)SNOW AND SLEET
                                                   -2.123e-09 7.877e+01
```

```
## as.factor(EVTYPE)SNOW SQUALL
                                                    5.000e+01 7.877e+01
## as.factor(EVTYPE)SNOW SQUALLS
                                                    2.500e+00 6.821e+01
## as.factor(EVTYPE)SNOW/BLOWING SNOW
                                                   1.667e+01 6.431e+01
## as.factor(EVTYPE)SNOW/FREEZING RAIN
                                                   -2.170e-09 7.877e+01
## as.factor(EVTYPE)SNOW/SLEET
                                                    2.000e-01 7.877e+01
## as.factor(EVTYPE)SNOW/SLEET/FREEZING RAIN
                                                   -2.107e-09 7.877e+01
## as.factor(EVTYPE)SNOW\\COLD
                                                   -2.189e-09 7.877e+01
## as.factor(EVTYPE)STORM SURGE
                                                   1.029e+02 5.707e+01
## as.factor(EVTYPE)STORM SURGE/TIDE
                                                   1.145e+01 5.817e+01
## as.factor(EVTYPE)STREET FLOOD
                                                   -2.133e-09 7.877e+01
## as.factor(EVTYPE)STRONG WIND
                                                   1.489e+01 5.577e+01
## as.factor(EVTYPE)STRONG WINDS
                                                   4.737e+00 5.714e+01
## as.factor(EVTYPE)Snow
                                                  -2.205e-09 6.821e+01
## as.factor(EVTYPE)Snow Squalls
                                                   4.000e+01 7.877e+01
## as.factor(EVTYPE)Snow and Ice
                                                  -2.139e-09 7.877e+01
## as.factor(EVTYPE)Strong Winds
                                                   -2.160e-09
                                                              7.877e+01
## as.factor(EVTYPE)Summary of April 12
                                                  -2.169e-09 7.877e+01
## as.factor(EVTYPE)Summary of July 29
                                                  -2.152e-09 7.877e+01
## as.factor(EVTYPE)Summary of July 3
                                                  -2.165e-09 7.877e+01
## as.factor(EVTYPE)Summary of June 11
                                                   -2.123e-09
                                                              7.877e+01
## as.factor(EVTYPE)Summary of March 14
                                                  -2.119e-09 7.877e+01
## as.factor(EVTYPE)Summary of May 10
                                                   -2.156e-09 7.877e+01
## as.factor(EVTYPE)Summary: October 31
                                                   -2.148e-09 7.877e+01
## as.factor(EVTYPE)THUNDEERSTORM WINDS
                                                   -2.143e-09 7.877e+01
## as.factor(EVTYPE)THUNDERSTORM
                                                    2.858e+01 5.954e+01
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                    2.500e+00 6.821e+01
## as.factor(EVTYPE)THUNDERSTORM WIND
                                                    1.040e+01 5.570e+01
## as.factor(EVTYPE)THUNDERSTORM WIND 56
                                                   -2.125e-09 7.877e+01
## as.factor(EVTYPE)THUNDERSTORM WIND 60 MPH
                                                   -2.123e-09 7.877e+01
## as.factor(EVTYPE)THUNDERSTORM WIND G60
                                                   -2.179e-09 7.877e+01
## as.factor(EVTYPE)THUNDERSTORM WIND G61
                                                   -2.084e-09 7.877e+01
## as.factor(EVTYPE)THUNDERSTORM WIND/ TREE
                                                    1.000e+00 7.877e+01
## as.factor(EVTYPE)THUNDERSTORM WIND/AWNING
                                                    2.000e+00 7.877e+01
## as.factor(EVTYPE)THUNDERSTORM WIND/HAIL
                                                    5.000e-01 7.877e+01
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                    1.915e+01 5.571e+01
## as.factor(EVTYPE)THUNDERSTORM WINDS 53
                                                   -2.120e-09 7.877e+01
## as.factor(EVTYPE)THUNDERSTORM WINDS HAIL
                                                    1.789e+01 5.871e+01
## as.factor(EVTYPE)THUNDERSTORM WINDS.
                                                    5.000e+00 7.877e+01
## as.factor(EVTYPE)THUNDERSTORM WINDS/HAIL
                                                    2.750e+01 6.821e+01
## as.factor(EVTYPE)THUNDERSTORM WINDSS
                                                    1.833e+00 6.431e+01
## as.factor(EVTYPE)THUNDERSTORMS
                                                   -2.114e-09 7.877e+01
## as.factor(EVTYPE)THUNDERSTORMS WINDS
                                                   -2.055e-09 7.877e+01
## as.factor(EVTYPE)TIDAL FLOODING
                                                   -2.130e-09 7.877e+01
## as.factor(EVTYPE)TORNADO
                                                    5.230e+01 5.570e+01
## as.factor(EVTYPE)TORNADO DEBRIS
                                                   -2.130e-09 7.877e+01
## as.factor(EVTYPE)TORNADO FO
                                                   1.000e-01 6.821e+01
## as.factor(EVTYPE)TORRENTIAL RAIN
                                                   -2.104e-09 7.877e+01
## as.factor(EVTYPE)TROPICAL DEPRESSION
                                                   5.714e+00 5.954e+01
## as.factor(EVTYPE)TROPICAL STORM
                                                   5.759e+01 5.619e+01
## as.factor(EVTYPE)TSTM WIND
                                                   5.776e+00 5.570e+01
## as.factor(EVTYPE)TSTM WIND (G40)
                                                  5.500e+00 6.821e+01
## as.factor(EVTYPE)TSTM WIND (G45)
                                                  5.000e+00 6.821e+01
## as.factor(EVTYPE)TSTM WIND 51
                                                  -2.129e-09 7.877e+01
## as.factor(EVTYPE)TSTM WIND 52
                                                  -2.150e-09 7.877e+01
```

```
## as.factor(EVTYPE)TSTM WIND/HAIL
                                                   8.400e+00 5.597e+01
## as.factor(EVTYPE)TSUNAMI
                                                   1.330e+01 6.821e+01
## as.factor(EVTYPE)Temperature record
                                                   -2.122e-09 6.821e+01
## as.factor(EVTYPE)Tidal Flooding
                                                   -2.133e-09 7.877e+01
                                                              6.227e+01
## as.factor(EVTYPE)UNSEASONABLY COLD
                                                   -2.133e-09
## as.factor(EVTYPE)UNSEASONABLY COOL
                                                  -2.147e-09 6.821e+01
## as.factor(EVTYPE)UNSEASONABLY DRY
                                                  -2.138e-09 6.101e+01
## as.factor(EVTYPE)UNSEASONABLY HOT
                                                   -2.117e-09 7.877e+01
## as.factor(EVTYPE)UNSEASONABLY WARM
                                                   -2.144e-09
                                                              5.780e+01
## as.factor(EVTYPE)UNSEASONABLY WARM AND DRY
                                                   -2.141e-09 6.101e+01
## as.factor(EVTYPE)UNSEASONABLY WET
                                                   -2.136e-09
                                                              6.821e+01
## as.factor(EVTYPE)UNSEASONAL RAIN
                                                   -2.169e-09
                                                              7.877e+01
## as.factor(EVTYPE)UNUSUAL WARMTH
                                                   -2.143e-09 6.821e+01
## as.factor(EVTYPE)UNUSUAL/RECORD WARMTH
                                                   -2.163e-09 7.877e+01
## as.factor(EVTYPE)UNUSUALLY COLD
                                                   -2.160e-09 7.877e+01
## as.factor(EVTYPE)URBAN AND SMALL STREAM FLOODIN -2.164e-09
                                                              7.877e+01
## as.factor(EVTYPE)URBAN FLOOD
                                                   6.972e+01 5.680e+01
## as.factor(EVTYPE)URBAN FLOODING
                                                   5.627e+01 5.780e+01
## as.factor(EVTYPE)URBAN SMALL STREAM FLOOD
                                                   -2.163e-09 7.877e+01
## as.factor(EVTYPE)URBAN/SMALL STREAM
                                                   5.000e+00 7.877e+01
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   -2.151e-09 7.877e+01
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
                                                   -2.130e-09 6.821e+01
## as.factor(EVTYPE)URBAN/SML STREAM FLD
                                                   7.045e+00 5.578e+01
## as.factor(EVTYPE)URBAN/STREET FLOODING
                                                   -2.166e-09
                                                              7.877e+01
## as.factor(EVTYPE)Unseasonable Cold
                                                   -2.165e-09 7.877e+01
## as.factor(EVTYPE)VOLCANIC ASH
                                                   -2.136e-09 6.431e+01
## as.factor(EVTYPE)VOLCANIC ASHFALL
                                                   -2.162e-09 7.877e+01
## as.factor(EVTYPE)WATERSPOUT
                                                   1.892e-01 5.577e+01
## as.factor(EVTYPE)WATERSPOUT FUNNEL CLOUD
                                                   -2.145e-09 7.877e+01
## as.factor(EVTYPE)WATERSPOUT-
                                                   -2.145e-09 7.877e+01
## as.factor(EVTYPE)WATERSPOUT/TORNADO
                                                   3.000e+01 6.821e+01
## as.factor(EVTYPE)WATERSPOUTS
                                                   -2.122e-09
                                                              6.821e+01
## as.factor(EVTYPE)WET MICROBURST
                                                   -2.134e-09 7.877e+01
## as.factor(EVTYPE)WILD/FOREST FIRE
                                                   2.663e+01 5.589e+01
## as.factor(EVTYPE)WILDFIRE
                                                   1.855e+01
                                                              5.580e+01
## as.factor(EVTYPE)WILDFIRES
                                                  -2.130e-09 7.877e+01
## as.factor(EVTYPE)WIND
                                                   1.203e+01 5.656e+01
## as.factor(EVTYPE)WIND ADVISORY
                                                   -2.137e-09 6.431e+01
## as.factor(EVTYPE)WIND CHILL
                                                   -2.133e-09
                                                              6.016e+01
## as.factor(EVTYPE)WIND DAMAGE
                                                  -2.135e-09 7.877e+01
## as.factor(EVTYPE)WINDS
                                                   -2.100e-09 7.877e+01
## as.factor(EVTYPE)WINTER MIX
                                                   -2.156e-09 7.877e+01
## as.factor(EVTYPE)WINTER STORM
                                                   9.689e+00 5.572e+01
## as.factor(EVTYPE)WINTER STORM/HIGH WIND
                                                  -2.150e-09 7.877e+01
## as.factor(EVTYPE)WINTER WEATHER
                                                   8.228e-01 5.574e+01
## as.factor(EVTYPE)WINTER WEATHER MIX
                                                   -2.176e-09
                                                              7.877e+01
## as.factor(EVTYPE)WINTER WEATHER/MIX
                                                   6.522e+00
                                                              5.594e+01
## as.factor(EVTYPE)WINTERY MIX
                                                   -2.170e-09 7.877e+01
## as.factor(EVTYPE)WINTRY MIX
                                                   -2.142e-09 5.780e+01
## as.factor(EVTYPE)Wet Month
                                                   -2.136e-09
                                                              7.877e+01
## as.factor(EVTYPE)Wind
                                                  -2.111e-09 7.877e+01
## as.factor(EVTYPE)Winter Weather
                                                  -2.136e-09 7.877e+01
## as.factor(EVTYPE)small hail
                                                  -2.129e-09 7.877e+01
##
                                                  t value Pr(>|t|)
```

```
## (Intercept)
                                                    0.000 1.00000
## as.factor(EVTYPE) WIND
                                                    0.000 1.00000
## as.factor(EVTYPE)APACHE COUNTY
                                                    0.063 0.94939
## as.factor(EVTYPE)ASTRONOMICAL HIGH TIDE
                                                   0.000 1.00000
## as.factor(EVTYPE)ASTRONOMICAL LOW TIDE
                                                   0.000 1.00000
## as.factor(EVTYPE)AVALANCHE
                                                   0.151 0.87959
## as.factor(EVTYPE)BLACK ICE
                                                    0.000 1.00000
## as.factor(EVTYPE)BLIZZARD
                                                    0.225 0.82176
## as.factor(EVTYPE)BLIZZARD AND EXTREME WIND CHIL 0.000 1.00000
                                                    0.000 1.00000
## as.factor(EVTYPE)BLOW-OUT TIDES
## as.factor(EVTYPE)BREAKUP FLOODING
                                                   0.254 0.79956
## as.factor(EVTYPE)COASTAL FLOOD
                                                   0.444 0.65688
## as.factor(EVTYPE)COASTAL FLOODING
                                                   0.765 0.44452
## as.factor(EVTYPE)COASTAL FLOODING/EROSION
                                                    0.000 1.00000
## as.factor(EVTYPE)COASTAL STORM
                                                    0.000 1.00000
## as.factor(EVTYPE)COLD
                                                    0.000 1.00000
## as.factor(EVTYPE)COLD TEMPERATURES
                                                    0.000 1.00000
## as.factor(EVTYPE)COLD WAVE
                                                    0.000 1.00000
## as.factor(EVTYPE)COLD WIND CHILL TEMPERATURES
                                                   0.000 1.00000
## as.factor(EVTYPE)COLD/WIND CHILL
                                                   0.009 0.99318
## as.factor(EVTYPE)Coastal Flooding
                                                   0.000 1.00000
## as.factor(EVTYPE)Cold
                                                   0.059 0.95324
## as.factor(EVTYPE)Cold and Frost
                                                   0.000 1.00000
## as.factor(EVTYPE)DAMAGING FREEZE
                                                   0.000 1.00000
## as.factor(EVTYPE)DENSE FOG
                                                  0.113 0.90969
## as.factor(EVTYPE)DENSE SMOKE
                                                  0.518 0.60425
## as.factor(EVTYPE)DROUGHT
                                                   0.050 0.95978
## as.factor(EVTYPE)DROUGHT/EXCESSIVE HEAT
                                                   0.000 1.00000
## as.factor(EVTYPE)DRY
                                                   0.000 1.00000
## as.factor(EVTYPE)DRY MICROBURST
                                                   0.244 0.80694
## as.factor(EVTYPE)DRY MICROBURST WINDS
                                                  0.000 1.00000
## as.factor(EVTYPE)DUST DEVIL
                                                   0.069 0.94466
## as.factor(EVTYPE)DUST STORM
                                                  0.217 0.82833
## as.factor(EVTYPE)DUST STORM/HIGH WINDS
                                                  0.635 0.52557
## as.factor(EVTYPE)DUSTSTORM
                                                  0.000 1.00000
                                                  0.073 0.94157
## as.factor(EVTYPE)Dust Devil
## as.factor(EVTYPE)EARLY FREEZE
                                                  0.000 1.00000
## as.factor(EVTYPE)EARLY SNOWFALL
                                                  0.000 1.00000
## as.factor(EVTYPE)EXCESSIVE HEAT
                                                   0.002 0.99808
## as.factor(EVTYPE)EXCESSIVE RAINFALL
                                                  0.000 1.00000
## as.factor(EVTYPE)EXCESSIVE SNOW
                                                  1.245 0.21329
## as.factor(EVTYPE)EXCESSIVE WETNESS
                                                  0.000 1.00000
## as.factor(EVTYPE)EXTREME COLD
                                                   0.026 0.97954
## as.factor(EVTYPE)EXTREME COLD/WIND CHILL
                                                   0.110 0.91202
## as.factor(EVTYPE)EXTREME HEAT
                                                   0.000 1.00000
## as.factor(EVTYPE)EXTREME WINDCHILL
                                                    0.000 1.00000
## as.factor(EVTYPE)EXTREME WINDCHILL TEMPERATURES 0.000 1.00000
## as.factor(EVTYPE)Extended Cold
                                                    1.270 0.20424
## as.factor(EVTYPE)FIRST SNOW
                                                    0.000 1.00000
## as.factor(EVTYPE)FLASH FLOOD
                                                    0.453 0.65045
## as.factor(EVTYPE)FLASH FLOOD LANDSLIDES
                                                   0.635 0.52557
## as.factor(EVTYPE)FLASH FLOOD/
                                                   6.348 2.19e-10 ***
## as.factor(EVTYPE)FLASH FLOOD/ STREET
                                                  0.025 0.97974
## as.factor(EVTYPE)FLASH FLOODING
                                                   0.554 0.57958
```

```
## as.factor(EVTYPE)FLASH FLOODS
                                                  3.285 0.00102 **
## as.factor(EVTYPE)FLOOD
                                                  0.594 0.55276
                                                0.000 1.00000
## as.factor(EVTYPE)FLOOD WATCH/
## as.factor(EVTYPE)FLOOD/FLASH FLOOD
                                                0.682 0.49525
                                                0.000 1.00000
## as.factor(EVTYPE)FLOOD/FLASH FLOODING
## as.factor(EVTYPE)FLOOD/RAIN/WIND
                                                0.000 1.00000
## as.factor(EVTYPE)FLOODING
                                                 0.266 0.79029
## as.factor(EVTYPE)FOG
                                                 0.131 0.89598
## as.factor(EVTYPE)FREEZE
                                                 0.000 1.00000
## as.factor(EVTYPE)FREEZING DRIZZLE
                                                0.147 0.88345
## as.factor(EVTYPE)FREEZING FOG
                                                0.000 1.00000
## as.factor(EVTYPE)FREEZING RAIN
                                                0.778 0.43638
                                                0.000 1.00000
## as.factor(EVTYPE)FREEZING RAIN/SLEET
## as.factor(EVTYPE)FROST
                                                0.000 1.00000
## as.factor(EVTYPE)FROST/FREEZE
                                                0.008 0.99361
## as.factor(EVTYPE)FUNNEL
                                                 0.000 1.00000
## as.factor(EVTYPE)FUNNEL CLOUD
                                                0.000 1.00000
                                                0.000 1.00000
## as.factor(EVTYPE)FUNNEL CLOUDS
                                                0.000 1.00000
## as.factor(EVTYPE)Flood/Flash Flood
                                                0.000 1.00000
## as.factor(EVTYPE)Freezing Rain
## as.factor(EVTYPE)GLAZE
                                                0.000 1.00000
## as.factor(EVTYPE)GRADIENT WINDS
                                                 0.000 1.00000
                                                0.013 0.98987
## as.factor(EVTYPE)GUSTNADO
## as.factor(EVTYPE)GUSTY WIND
                                                 0.181 0.85605
## as.factor(EVTYPE)GUSTY WIND/HVY RAIN
                                                0.025 0.97974
## as.factor(EVTYPE)GUSTY WINDS
                                                0.055 0.95581
## as.factor(EVTYPE)Glaze
                                                0.366 0.71400
## as.factor(EVTYPE)Gusty Winds
                                                 1.270 0.20424
                                                0.025 0.97974
## as.factor(EVTYPE)Gusty wind/rain
## as.factor(EVTYPE)HAIL
                                                 0.043 0.96561
                                                  0.000 1.00000
## as.factor(EVTYPE)HAIL 0.75
## as.factor(EVTYPE)HAIL 100
                                                0.000 1.00000
## as.factor(EVTYPE)HAIL 175
                                                0.001 0.99942
## as.factor(EVTYPE)HAIL 450
                                                0.003 0.99797
                                                0.007 0.99415
## as.factor(EVTYPE)HAIL 75
## as.factor(EVTYPE)HAIL/WIND
                                                0.000 1.00000
## as.factor(EVTYPE)HARD FREEZE
                                                0.000 1.00000
## as.factor(EVTYPE)HEAT
                                                0.001 0.99898
## as.factor(EVTYPE)HEAT WAVE
                                                 0.002 0.99802
## as.factor(EVTYPE)HEAT/DROUGHT
                                                0.000 1.00000
## as.factor(EVTYPE)HEAVY LAKE SNOW
                                                0.000 1.00000
                                                 0.001 0.99899
## as.factor(EVTYPE)HEAVY MIX
## as.factor(EVTYPE)HEAVY RAIN
                                                  0.066 0.94763
## as.factor(EVTYPE)HEAVY RAIN/SEVERE WEATHER
                                                0.018 0.98538
## as.factor(EVTYPE)HEAVY RAIN/URBAN FLOOD
                                                0.000 1.00000
                                                  0.047 0.96259
## as.factor(EVTYPE)HEAVY RAINS
## as.factor(EVTYPE)HEAVY RAINS/FLOODING
                                                 4.031 5.55e-05 ***
## as.factor(EVTYPE)HEAVY SEAS
                                                 0.000 1.00000
## as.factor(EVTYPE)HEAVY SNOW
                                                0.157 0.87548
## as.factor(EVTYPE)HEAVY SNOW AND ICE
                                                0.000 1.00000
## as.factor(EVTYPE)HEAVY SNOW AND ICE STORM
                                                0.000 1.00000
## as.factor(EVTYPE)HEAVY SNOW SQUALLS
                                                0.524 0.59994
## as.factor(EVTYPE)HEAVY SNOW-SQUALLS
                                                 0.063 0.94939
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS
                                              0.000 1.00000
```

```
## as.factor(EVTYPE)HEAVY SNOW/HIGH WINDS/FREEZING 0.000 1.00000
## as.factor(EVTYPE)HEAVY SNOW/ICE
                                                   7.617 2.61e-14 ***
## as.factor(EVTYPE)HEAVY SURF
                                                  0.317 0.75095
## as.factor(EVTYPE)HEAVY SURF/HIGH SURF
                                                  0.195 0.84550
## as.factor(EVTYPE)HIGH
                                                   0.000 1.00000
## as.factor(EVTYPE)HIGH SEAS
                                                   0.078 0.93803
## as.factor(EVTYPE)HIGH SURF
                                                  0.264 0.79196
## as.factor(EVTYPE)HIGH SURF ADVISORY
                                                  0.000 1.00000
## as.factor(EVTYPE)HIGH WATER
                                                   0.000 1.00000
## as.factor(EVTYPE)HIGH WAVES
                                                  0.000 1.00000
## as.factor(EVTYPE)HIGH WIND
                                                  0.303 0.76159
                                                  0.000 1.00000
## as.factor(EVTYPE)HIGH WIND AND HEAVY SNOW
## as.factor(EVTYPE)HIGH WIND/ BLIZZARD
                                                   0.000 1.00000
## as.factor(EVTYPE)HIGH WINDS
                                                  0.561 0.57469
## as.factor(EVTYPE)HIGH WINDS 63
                                                  0.000 1.00000
## as.factor(EVTYPE)HIGH WINDS 66
                                                   0.000 1.00000
## as.factor(EVTYPE)HURRICANE
                                                   1.877 0.06047 .
## as.factor(EVTYPE)HURRICANE OPAL/HIGH WINDS
                                                   0.001 0.99899
## as.factor(EVTYPE)HURRICANE/TYPHOON
                                                   0.633 0.52651
                                                   0.000 1.00000
## as.factor(EVTYPE)Hail(0.75)
## as.factor(EVTYPE)Heavy Rain
                                                  0.000 1.00000
## as.factor(EVTYPE)Heavy Rain and Wind
                                                 0.000 1.00000
                                                  1.385 0.16599
## as.factor(EVTYPE)ICE
## as.factor(EVTYPE)ICE STORM
                                                  0.818 0.41322
                                                  0.202 0.84025
## as.factor(EVTYPE)ICY ROADS
## as.factor(EVTYPE)Ice Fog
                                                 0.000 1.00000
## as.factor(EVTYPE)LACK OF SNOW
                                                 0.000 1.00000
                                                 0.000 1.00000
0.426 0.67021
## as.factor(EVTYPE)LAKE EFFECT SNOW
## as.factor(EVTYPE)LAKE-EFFECT SNOW
## as.factor(EVTYPE)LAKESHORE FLOOD
                                                 0.000 1.00000
                                                 0.209 0.83480
## as.factor(EVTYPE)LANDSLIDE
                                                 0.000 1.00000
## as.factor(EVTYPE)LANDSLIDES
                                                 0.000 1.00000
## as.factor(EVTYPE)LATE FREEZE
                                                 0.264 0.79188
## as.factor(EVTYPE)LIGHT FREEZING RAIN
                                                 0.255 0.79908
## as.factor(EVTYPE)LIGHT SNOW
                                                  0.000 1.00000
## as.factor(EVTYPE)LIGHTING
## as.factor(EVTYPE)LIGHTNING
                                                 0.675 0.49966
## as.factor(EVTYPE)LOCAL FLOOD
                                                 0.000 1.00000
                                                  0.000 1.00000
## as.factor(EVTYPE)LOW TEMPERATURE
                                                0.000 1.00000
## as.factor(EVTYPE)Late Season Snowfall
## as.factor(EVTYPE)Light Snow
                                                 0.127 0.89897
                                                 0.000 1.00000
0.000 1.00000
0.191 0.84841
## as.factor(EVTYPE)Light Snow/Flurries
## as.factor(EVTYPE)MARINE HAIL
## as.factor(EVTYPE)MARINE HIGH WIND
## as.factor(EVTYPE)MARINE STRONG WIND
                                                  0.137 0.89120
## as.factor(EVTYPE)MARINE THUNDERSTORM WIND
                                                 0.004 0.99705
## as.factor(EVTYPE)MARINE TSTM WIND
                                                   0.002 0.99816
## as.factor(EVTYPE)MICROBURST WINDS
                                                  0.000 1.00000
## as.factor(EVTYPE)MIXED PRECIP
                                                 0.000 1.00000
                                                 0.205 0.83777
## as.factor(EVTYPE)MIXED PRECIPITATION
## as.factor(EVTYPE)MODERATE SNOWFALL
                                                  0.000 1.00000
## as.factor(EVTYPE)MONTHLY PRECIPITATION
                                                  0.000 1.00000
## as.factor(EVTYPE)MUD SLIDE
                                                   6.348 2.19e-10 ***
                                                   0.000 1.00000
## as.factor(EVTYPE)MUDSLIDE
```

```
## as.factor(EVTYPE)Marine Accident
                                                   0.635 0.52557
## as.factor(EVTYPE)Microburst
                                                   0.000 1.00000
## as.factor(EVTYPE)Minor Flooding
                                                  0.000 1.00000
## as.factor(EVTYPE)Mixed Precipitation
                                                   1.904 0.05687
## as.factor(EVTYPE)Mudslide
                                                  0.000 1.00000
## as.factor(EVTYPE)NON SEVERE HAIL
                                                  0.000 1.00000
## as.factor(EVTYPE)OTHER
                                                  0.016 0.98692
## as.factor(EVTYPE)Other
                                                   0.000 1.00000
## as.factor(EVTYPE)PATCHY DENSE FOG
                                                   0.000 1.00000
## as.factor(EVTYPE)PROLONG COLD
                                                  0.000 1.00000
## as.factor(EVTYPE)PROLONG WARMTH
                                                  0.000 1.00000
## as.factor(EVTYPE)RAIN
                                                  0.518 0.60425
                                                   0.000 1.00000
## as.factor(EVTYPE)RAIN/SNOW
                                                 0.000 1.00000
0.000 1.00000
0.000 1.00000
## as.factor(EVTYPE)RECORD COLD
## as.factor(EVTYPE)RECORD COLD
## as.factor(EVTYPE)RECORD HEAT
## as.factor(EVTYPE)RECORD RAINFALL
                                                  0.000 1.00000
## as.factor(EVTYPE)RECORD SNOW
                                                  6.348 2.19e-10 ***
## as.factor(EVTYPE)RECORD WARMTH
                                                  0.000 1.00000
## as.factor(EVTYPE)REMNANTS OF FLOYD
                                                   0.000 1.00000
## as.factor(EVTYPE)RIP CURRENT
                                                  0.000 1.00000
## as.factor(EVTYPE)RIP CURRENTS
                                                  0.000 1.00000
## as.factor(EVTYPE)RIVER FLOOD
                                                  0.389 0.69719
## as.factor(EVTYPE)RIVER FLOODING
                                                   0.110 0.91245
## as.factor(EVTYPE)Record Warmth
                                                  0.000 1.00000
## as.factor(EVTYPE)Record temperature
                                                  0.000 1.00000
## as.factor(EVTYPE)SEICHE
                                                  4.276 1.90e-05 ***
## as.factor(EVTYPE)SEVERE COLD
                                                  0.000 1.00000
                                                  0.009 0.99298
## as.factor(EVTYPE)SEVERE THUNDERSTORM
## as.factor(EVTYPE)SEVERE THUNDERSTORMS
                                                  0.000 1.00000
## as.factor(EVTYPE)SLEET
                                                   0.000 1.00000
## as.factor(EVTYPE)SLEET & FREEZING RAIN
                                                   0.000 1.00000
## as.factor(EVTYPE)SMALL HAIL
                                                   0.000 1.00000
## as.factor(EVTYPE)SMALL STREAM FLOODING
                                                    0.000 1.00000
## as.factor(EVTYPE)SMALL STREAM/URBAN FLOOD
                                                    0.000 1.00000
## as.factor(EVTYPE)SMOKE
                                                    0.000 1.00000
## as.factor(EVTYPE)SNOW
                                                    0.177 0.85945
## as.factor(EVTYPE)SNOW AND COLD
                                                   0.000 1.00000
## as.factor(EVTYPE)SNOW AND ICE
                                                   0.000 1.00000
## as.factor(EVTYPE)SNOW AND SLEET
                                                  0.000 1.00000
## as.factor(EVTYPE)SNOW SQUALL
                                                  0.635 0.52557
                                                  0.037 0.97076
## as.factor(EVTYPE)SNOW SQUALLS
                                                 0.259 0.79552
0.000 1.00000
## as.factor(EVTYPE)SNOW/BLOWING SNOW
## as.factor(EVTYPE)SNOW/FREEZING RAIN
## as.factor(EVTYPE)SNOW/SLEET
                                                   0.003 0.99797
## as.factor(EVTYPE)SNOW/SLEET/FREEZING RAIN
                                                   0.000 1.00000
## as.factor(EVTYPE)SNOW\\COLD
                                                    0.000 1.00000
## as.factor(EVTYPE)STORM SURGE
                                                   1.804 0.07131
## as.factor(EVTYPE)STORM SURGE/TIDE
                                                  0.197 0.84390
## as.factor(EVTYPE)STREET FLOOD
                                                  0.000 1.00000
## as.factor(EVTYPE)STRONG WIND
                                                   0.267 0.78948
## as.factor(EVTYPE)STRONG WINDS
                                                   0.083 0.93394
## as.factor(EVTYPE)Snow
                                                   0.000 1.00000
## as.factor(EVTYPE)Snow Squalls
                                                   0.508 0.61157
```

```
## as.factor(EVTYPE)Snow and Ice
                                                  0.000 1.00000
                                                  0.000 1.00000
## as.factor(EVTYPE)Strong Winds
## as.factor(EVTYPE)Summary of April 12
                                                 0.000 1.00000
## as.factor(EVTYPE)Summary of July 29
                                                 0.000 1.00000
## as.factor(EVTYPE)Summary of July 3
                                                  0.000 1.00000
## as.factor(EVTYPE)Summary of June 11
                                                  0.000 1.00000
## as.factor(EVTYPE)Summary of March 14
                                                 0.000 1.00000
## as.factor(EVTYPE)Summary of May 10
                                                   0.000 1.00000
## as.factor(EVTYPE)Summary: October 31
                                                   0.000 1.00000
## as.factor(EVTYPE)THUNDEERSTORM WINDS
                                                  0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM
                                                  0.480 0.63125
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                 0.037 0.97076
## as.factor(EVTYPE)THUNDERSTORM WIND
                                                  0.187 0.85190
## as.factor(EVTYPE)THUNDERSTORM WIND 56
                                                  0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WIND 60 MPH
                                                   0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WIND G60
                                                   0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WIND G61
                                                   0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WIND/ TREE
                                                   0.013 0.98987
## as.factor(EVTYPE)THUNDERSTORM WIND/AWNING
                                                   0.025 0.97974
                                                   0.006 0.99494
## as.factor(EVTYPE)THUNDERSTORM WIND/HAIL
## as.factor(EVTYPE)THUNDERSTORM WINDS
                                                   0.344 0.73102
## as.factor(EVTYPE)THUNDERSTORM WINDS 53
                                                   0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORM WINDS HAIL
                                                  0.305 0.76059
## as.factor(EVTYPE)THUNDERSTORM WINDS.
                                                   0.063 0.94939
## as.factor(EVTYPE)THUNDERSTORM WINDS/HAIL
                                                  0.403 0.68684
## as.factor(EVTYPE)THUNDERSTORM WINDSS
                                                  0.029 0.97726
## as.factor(EVTYPE)THUNDERSTORMS
                                                  0.000 1.00000
## as.factor(EVTYPE)THUNDERSTORMS WINDS
                                                  0.000 1.00000
## as.factor(EVTYPE)TIDAL FLOODING
                                                  0.000 1.00000
## as.factor(EVTYPE)TORNADO
                                                  0.939 0.34777
## as.factor(EVTYPE)TORNADO DEBRIS
                                                  0.000 1.00000
                                                 0.001 0.99883
## as.factor(EVTYPE)TORNADO FO
## as.factor(EVTYPE)TORRENTIAL RAIN
                                                 0.000 1.00000
                                                 0.096 0.92354
1.025 0.30540
0.104 0.91740
## as.factor(EVTYPE)TROPICAL DEPRESSION
## as.factor(EVTYPE)TROPICAL STORM
## as.factor(EVTYPE)TSTM WIND
## as.factor(EVTYPE)TSTM WIND (G40)
                                                 0.081 0.93574
## as.factor(EVTYPE)TSTM WIND (G45)
                                                 0.073 0.94157
## as.factor(EVTYPE)TSTM WIND 51
                                                  0.000 1.00000
                                                  0.000 1.00000
## as.factor(EVTYPE)TSTM WIND 52
## as.factor(EVTYPE)TSTM WIND/HAIL
                                                  0.150 0.88070
## as.factor(EVTYPE)TSUNAMI
                                                  0.195 0.84541
## as.factor(EVTYPE)Temperature record
                                                  0.000 1.00000
## as.factor(EVTYPE)Tidal Flooding
                                                  0.000 1.00000
## as.factor(EVTYPE)UNSEASONABLY COLD
                                                  0.000 1.00000
## as.factor(EVTYPE)UNSEASONABLY COOL
                                                   0.000 1.00000
## as.factor(EVTYPE)UNSEASONABLY DRY
                                                   0.000 1.00000
## as.factor(EVTYPE)UNSEASONABLY HOT
                                                   0.000 1.00000
## as.factor(EVTYPE)UNSEASONABLY WARM
                                                    0.000 1.00000
## as.factor(EVTYPE)UNSEASONABLY WARM AND DRY
                                                    0.000 1.00000
## as.factor(EVTYPE)UNSEASONABLY WET
                                                    0.000 1.00000
## as.factor(EVTYPE)UNSEASONAL RAIN
                                                   0.000 1.00000
## as.factor(EVTYPE)UNUSUAL WARMTH
                                                   0.000 1.00000
## as.factor(EVTYPE)UNUSUAL/RECORD WARMTH
                                                  0.000 1.00000
```

```
0.000 1.00000
## as.factor(EVTYPE)UNUSUALLY COLD
## as.factor(EVTYPE)URBAN AND SMALL STREAM FLOODIN 0.000 1.00000
## as.factor(EVTYPE)URBAN FLOOD
                                                 1.227 0.21965
## as.factor(EVTYPE)URBAN FLOODING
                                                 0.974 0.33026
                                                 0.000 1.00000
## as.factor(EVTYPE)URBAN SMALL STREAM FLOOD
## as.factor(EVTYPE)URBAN/SMALL STREAM
                                                 0.063 0.94939
                                              0.000 1.00000
0.000 1.00000
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
## as.factor(EVTYPE)URBAN/SMALL STREAM FLOOD
## as.factor(EVTYPE)URBAN/SML STREAM FLD
                                                  0.126 0.89950
## as.factor(EVTYPE)URBAN/STREET FLOODING
                                                0.000 1.00000
## as.factor(EVTYPE)Unseasonable Cold
                                                 0.000 1.00000
                                                 0.000 1.00000
## as.factor(EVTYPE) VOLCANIC ASH
                                                 0.000 1.00000
## as.factor(EVTYPE)VOLCANIC ASHFALL
## as.factor(EVTYPE)WATERSPOUT
                                                 0.003 0.99729
                                               0.000 1.00000
## as.factor(EVTYPE)WATERSPOUT FUNNEL CLOUD
## as.factor(EVTYPE)WATERSPOUT-
                                                  0.000 1.00000
## as.factor(EVTYPE)WATERSPOUT/TORNADO
                                              0.440 0.66009
                                                0.000 1.00000
0.000 1.00000
0.476 0.63379
## as.factor(EVTYPE)WATERSPOUTS
## as.factor(EVTYPE)WET MICROBURST
## as.factor(EVTYPE)WILD/FOREST FIRE
                                                 0.332 0.73954
## as.factor(EVTYPE)WILDFIRE
## as.factor(EVTYPE)WILDFIRES
                                                 0.000 1.00000
                                                 0.213 0.83155
## as.factor(EVTYPE)WIND
## as.factor(EVTYPE)WIND ADVISORY
                                                 0.000 1.00000
                                                 0.000 1.00000
## as.factor(EVTYPE)WIND CHILL
## as.factor(EVTYPE)WIND DAMAGE
                                                 0.000 1.00000
## as.factor(EVTYPE)WINDS
                                                 0.000 1.00000
## as.factor(EVTYPE)WINTER MIX
                                                0.000 1.00000
## as.factor(EVTYPE)WINTER STORM
                                                 0.174 0.86195
                                              0.000 1.00000
## as.factor(EVTYPE)WINTER STORM/HIGH WIND
                                                 0.015 0.98822
## as.factor(EVTYPE)WINTER WEATHER
                                                 0.000 1.00000
## as.factor(EVTYPE)WINTER WEATHER MIX
## as.factor(EVTYPE)WINTER WEATHER/MIX
                                                 0.117 0.90719
## as.factor(EVTYPE)WINTERY MIX
                                                 0.000 1.00000
                                                  0.000 1.00000
## as.factor(EVTYPE)WINTRY MIX
## as.factor(EVTYPE)Wet Month
                                                  0.000 1.00000
## as.factor(EVTYPE)Wind
                                                 0.000 1.00000
## as.factor(EVTYPE)Winter Weather
                                                  0.000 1.00000
## as.factor(EVTYPE)small hail
                                                  0.000 1.00000
## ---
## Signif. codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1
## Residual standard error: 55.7 on 89921 degrees of freedom
## Multiple R-squared: 0.06743, Adjusted R-squared: 0.06423
## F-statistic: 21.11 on 308 and 89921 DF, p-value: < 2.2e-16
```