Summary of Storm Data from 1950 to 2011 and its Costs

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Original Data

The original data is here and the National Weather Service Storm Data Documentation is here. The events in the database span from 1950 and end in November 2011. The data from earlier years is sparse with fewer recorded events. The data from more recent years is considered more complete.

Data Processing

Download and unzip the CSV file. Read the table into a data table representing the raw storm data.

```
StormData <- read.csv(file="repdata%2Fdata%2FStormData.csv", header=TRUE)
```

Data Analysis

The steps taken in the data analysis are the following:

1. Determine and summarize the worst storm type for fatalities and injuries for all the United States from 1950 to 2011.
2. Determine and summarize the worst storm type for property and crop damage in dollars for all the Unites States from 1950 to 2011.
3. For each state (which includes US States, marine regions, etc.), determine a maximum of the three most costly storms with respect to fatalities, injuries, property, and crop damage.

Results

Fatalities and Injuries

Determine the worst Storm Type for fatalities and injuries across the United States.

```
# For ease, create named vectors of the fatalities/injuries.
evtype <- unique(StormData$EVTYPE)
event.fatalities <- integer(length=length(evtype))
event.injuries   <- integer(length=length(evtype))
i <- 1
for( event in evtype ) {
  s <- sum(StormData[StormData$EVTYPE==event,]$FATALITIES)
  event.fatalities[i] <- s
  s <- sum(StormData[StormData$EVTYPE==event,]$INJURIES)
  event.injuries[i] <- s
  i <- i+1
```

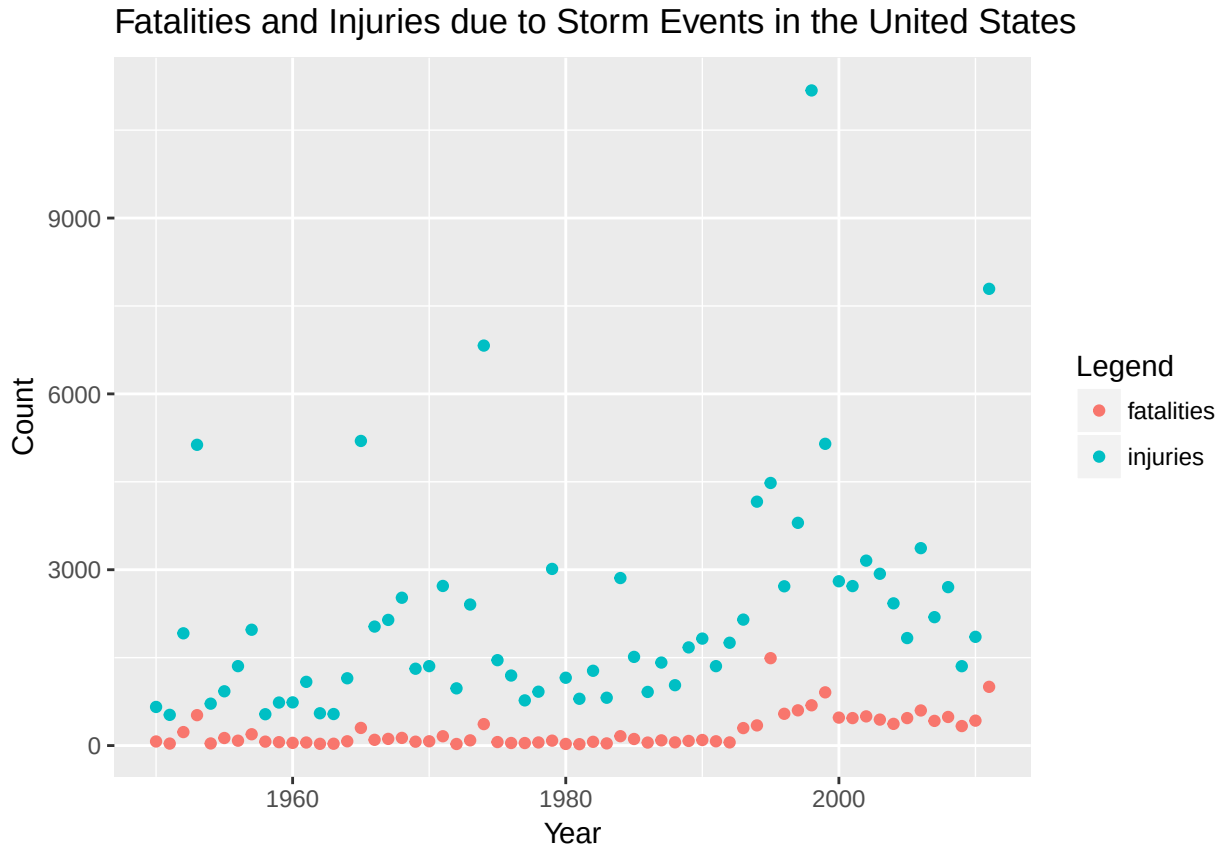
```
}
names(event.fatalities) <- unique(StormData$EVTYPE)
names(event.injuries) <- unique(StormData$EVTYPE)

# Get max fatalities and injuries...
worst.f <- which(event.fatalities==max(event.fatalities))
worst.i <- which(event.injuries==max(event.injuries))
worst.fatal.name <- names(event.fatalities[worst.f])
worst.injury.name <- names(event.injuries[worst.i])
print(sprintf("Event and Count: Worst Fatalities: %s=%d.  Worst Injuries: %s=%d",
      worst.fatal.name, as.integer(event.fatalities[worst.f]),
      worst.injury.name, as.integer(event.injuries[worst.i])))
```

```
## [1] "Event and Count: Worst Fatalities: TORNADO=5633.  Worst Injuries: TORNADO=91346"
```

The worst storm type is TORNADO with 5,633 fatalities and TORNADO with 91,346 injuries (total from 1950 to 2011).

The following plot shows injuries and fatalities across the United States for TORNADO events.

```
# Add a year column to StormData (since we will use it three times...)
StormData[["YEARY"]] <-
  as.numeric(format(as.Date(vapply(strsplit(as.character(StormData$BGN_DATE), split=" "),
                                   '[', 1, FUN.VALUE=character(1)), format="%m/%d/%Y"), "%Y"))
# Create a data.frame with the year and the sum of each years fatalities...
unique.years <- unique(StormData[["YEARY"]])
fatality.sum <- injury.sum <- numeric(length(unique.years))
i <- 1
for( y in unique.years ) {
  fatality.sum[i] = sum(StormData[StormData$YEARY==y,]$FATALITIES)
  injury.sum[i] = sum(StormData[StormData$YEARY==y,]$INJURIES)
  i <- i+1
}
plot.df <- data.frame(unique.years, fatality.sum, injury.sum)
colnames(plot.df) <- c("year", "fatalities", "injuries")
# Now create a ggplot using the data frame
library(ggplot2)
library(tidyr)
print(
  plot.df %>%
    gather(Legend,Count, fatalities, injuries) %>%
    ggplot(aes(x=year,y=Count,color=Legend)) + geom_point() +
    labs(x="Year") + ggtitle("Fatalities and Injuries due to Storm Events in the United States"))
```



Storm damage (property and crop)

Determine the worst Storm Type for property and crop damage in dollars across the United States.

Interpreting Property and Crop Damage Amounts

```
# Calculate property and crop damage.  We need to set up an exponent table
# because the exponents are crazy for these entries:
# K M   B m + 0 5 6 ? 4 2 3 h 7 H - 1 8 ? 0 2 B k K m M
# Some make absolutely no sense, so we have to guess them.
# The documentation is of no use for the strange entries.
available.exponents <- unique(c(as.character(unique(StormData$CROPDMGEXP)),
                                as.character(unique(StormData$PROPDMGEXP))))
writeLines(sprintf("All used exponents for cost values:\n%s",
                   paste(available.exponents, collapse=", ")))
```

```
## All used exponents for cost values:
## , M, K, m, B, ?, 0, k, 2, +, 5, 6, 4, 3, h, 7, H, -, 1, 8
```

```
# The following list includes all the above plus an extra small "b" for billions.
exponent.lookup <- list(K=3, M=6, "1"=1, "2"=2, "3"=3, "4"=4, "5"=5,
                        "6"=6, "7"=7, "8"=8, "9"=9, B=9, m=6,
                        "0"=1, "+"=1, "-"=1, k=3, b=9, "?"=1, h=3, H=3)
# Get something printable with kable
```

```
exponent.lookup.df <- data.frame(unlist(exponent.lookup))
colnames(exponent.lookup.df) <- c("Exponent Value")
```

Amounts are given as a number and an exponent. Unfortunately, exponents are not given in a clear and consistent manner in many cases. We have defined a lookup table for exponents of property and crop damage. While many of the values are defined in the documentation or are obvious, many are not. For example, what does "H" or "-" represent as exponents. In cases where a value cannot be determined, exponent values are set to "1". All values for exponents as used in further calculations and given here:

	Exponent Value
K	3
M	6
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
B	9
m	6
0	1
+	1
-	1
k	3
b	9
?	1
h	3
H	3

Given these assumptions, calculate property and cost damage.

```
l <- as.character(StormData$PROPDMGEXP)
l[which(l=="")] <- "1"
for( e in unique(l) ) {
  l[which(l==e)] <- exponent.lookup[[e]]
}
prop.damage <- StormData$PROPDMG * 10^(as.integer(l))
l <- as.character(StormData$CROPDMGEXP)
l[which(l=="")] <- "1"
for( e in unique(l) ) {
  l[which(l==e)] <- exponent.lookup[[e]]
}
crop.damage <- StormData$CROPDMG * 10^(as.integer(l))

# Store the property and crop damage values into the StormData data.frame as
# we will be using it from here on out.
StormData[["PROPDMGC"]] <- prop.damage
StormData[["CROPDMGC"]] <- crop.damage

event.prop.damage <- integer(length=length(evtype))
```

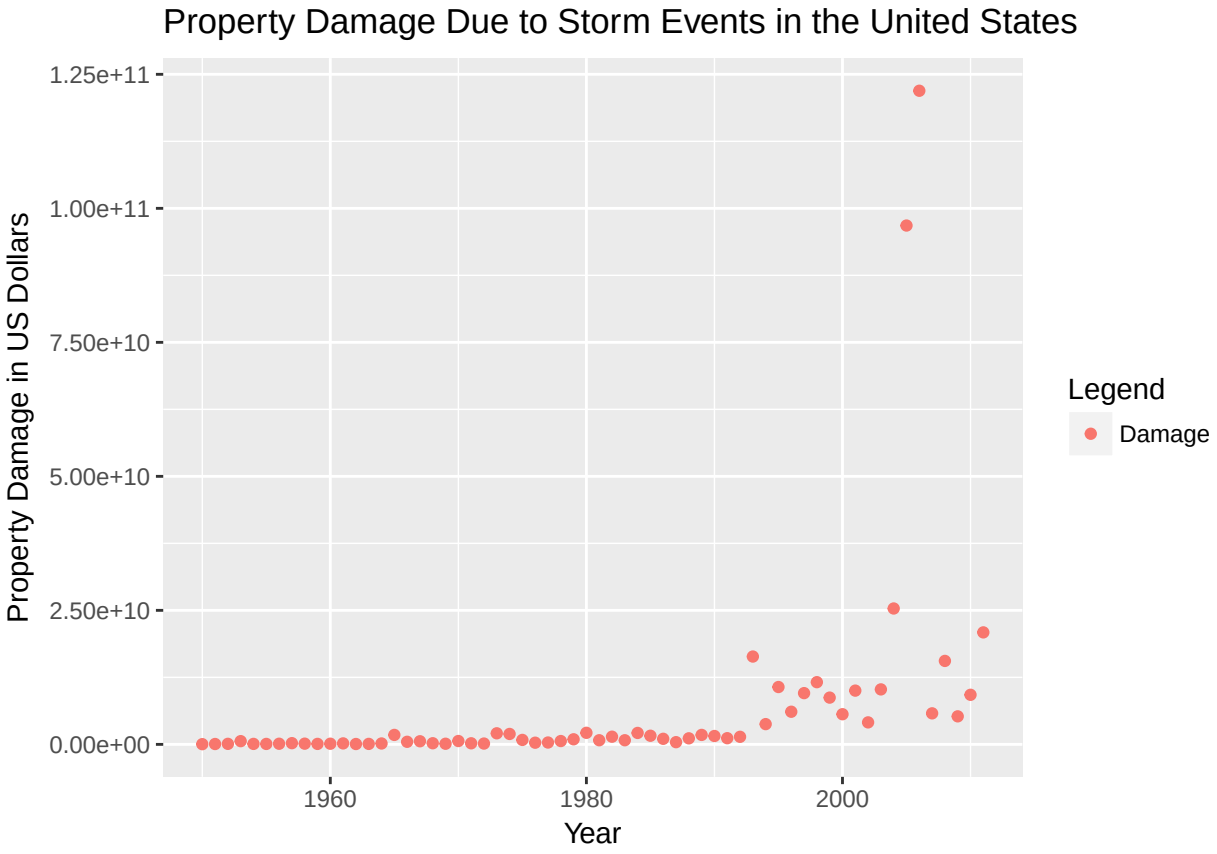
```
event.crop.damage <- integer(length=length(evtype))
i <- 1
for( event in evtype ) {
  s <- sum(StormData[StormData$EVTYPE==event,]$PROPDMGC)
  event.prop.damage[i] <- s
  s <- sum(StormData[StormData$EVTYPE==event,]$CROPDMGC)
  event.crop.damage[i] <- s
  i <- i+1
}
names(event.prop.damage) <- unique(StormData$EVTYPE)
names(event.crop.damage) <- unique(StormData$EVTYPE)

# Get max property damage...
worst.p <- which(event.prop.damage==max(event.prop.damage))
worst.c <- which(event.crop.damage==max(event.crop.damage))
worst.p.name <- names(event.prop.damage[worst.p])
worst.c.name <- names(event.crop.damage[worst.c])
writeLines(sprintf(
  "Event and Count:\nWorst Property Damage: %s=$%15.2f.\nWorst Crop Damage: %s=$%15.2f",
      worst.p.name, as.numeric(event.prop.damage[worst.p]),
      worst.c.name, as.numeric(event.crop.damage[worst.c])))
```

```
## Event and Count:
## Worst Property Damage: FLOOD=$144657709870.00.
## Worst Crop Damage: DROUGHT=$ 13972566000.00
```

For property damage, the worst storm type is FLOOD with 144,657,709,870 dollars damage. For crop damage, the worst storm type is DROUGHT with 13,972,566,000 dollars damage. Both values are the sum of all events from 1950 to 2011.

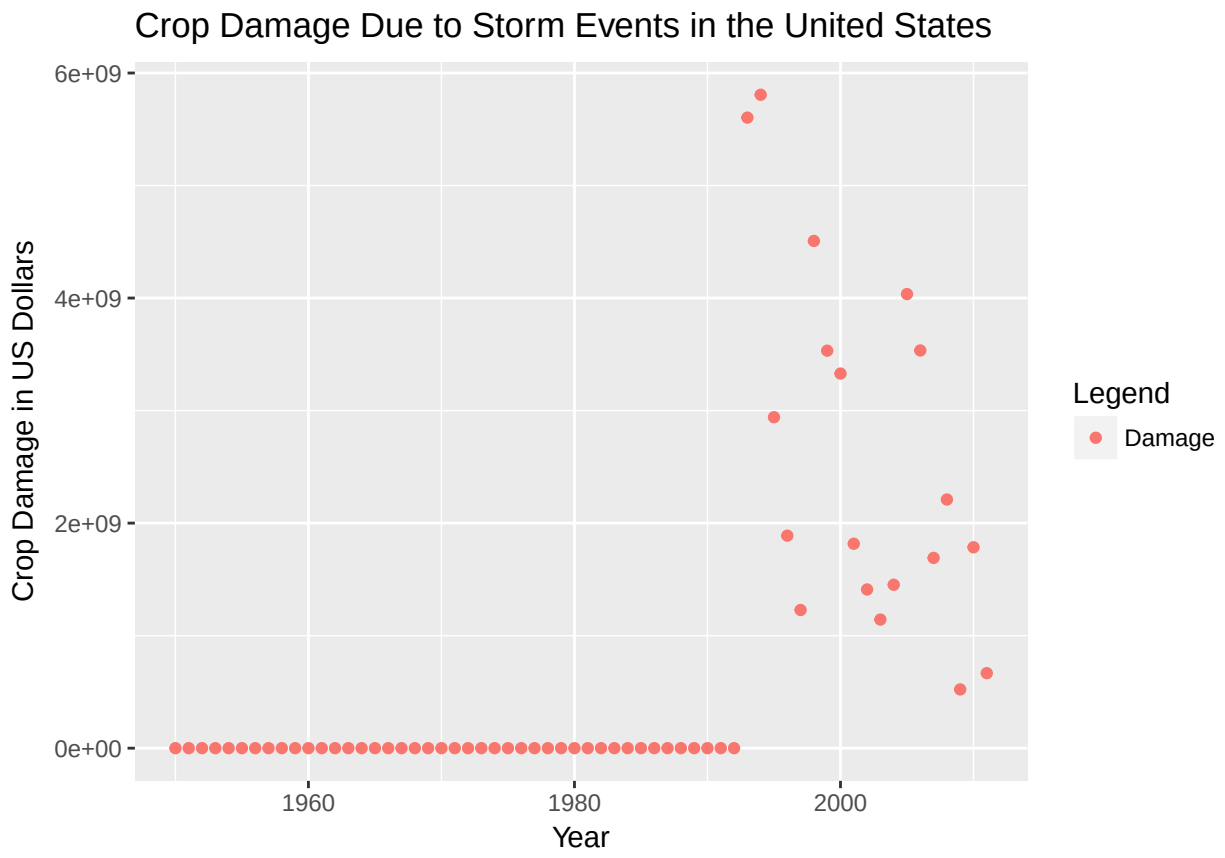
The following plot shows property damage across the United States for FLOOD events.

```
Damage <- numeric(length(unique.years))
i <- 1

for( y in unique.years ) {
  Damage[i] = sum(StormData[StormData$YEARY==y,]$PROPDMGC)
  i <- i+1
}
plot.df <- data.frame(unique.years, Damage)
colnames(plot.df) <- c("year", "Damage")
# Now create a ggplot with the data frame
print(
  plot.df %>%
    gather(Legend,Count, Damage) %>%
    ggplot(aes(x=year,y=Count,color=Legend)) + geom_point() +
    labs(x="Year", y="Property Damage in US Dollars") +
    ggtitle("Property Damage Due to Storm Events in the United States"))
```



The following plot shows cost damage across the United States for DROUGHT events.

```
Damage <- numeric(length(unique.years))
i <- 1
for( y in unique.years ) {
  Damage[i] = sum(StormData[StormData$YEARY==y,]$CROPDMGC)
  i <- i+1
}
#print(Damage)
plot.df <- data.frame(unique.years, Damage)
colnames(plot.df) <- c("year", "Damage")
# Now create a ggplot with the data frame
print(
  plot.df %>%
    gather(Legend,Count, Damage) %>%
    ggplot(aes(x=year,y=Count,color=Legend)) + geom_point() +
    labs(x="Year", y="Crop Damage in US Dollars") +
    ggtitle("Crop Damage Due to Storm Events in the United States"))
```



Body and Property Damage by State

States and their executive and legistlative bodies are responsible for risk assessment with respect to weather, storm, and other such events. Breaking down both life and property events to each state is helpful for state governments to understand what types of events are likely to occur in their states and what the potential risks and costs are for risk assessment planning. Breaking these values also can help the United States Congress to plan the budget to set aside funds for helping states in times of emergency.

```
# Extract data per state into its own frame
for(st in sort(unique(StormData$STATE))) {
  state.report <- StormData[StormData$STATE==st,]
# Then, get gather body and property damage for each "state"
  fatalities <- injuries <- properties <- crops <-
    vector(mode="numeric", length=length(unique(state.report$EVTYPE)))
  i <- 1
  wkevt <- unique(state.report$EVTYPE)
  for(ev in wkevt) {
    fatalities[i] <- sum(state.report[state.report$EVTYPE==ev,]$FATALITIES)
    injuries[i] <- sum(state.report[state.report$EVTYPE==ev,]$INJURIES)
    properties[i] <- sum(state.report[state.report$EVTYPE==ev,]$PROPDMGC)
    crops[i] <- sum(state.report[state.report$EVTYPE==ev,]$CROPDMGC)
    i <- i+1
  }
  names(fatalities) <- names(injuries) <- names(properties) <- names(crops) <- wkevt
  # Sort each
```

```
  fatalities <- sort(fatalities, decreasing=TRUE)
  injuries <- sort(injuries, decreasing=TRUE)
  properties <- sort(properties, decreasing=TRUE)
  crops <- sort(crops, decreasing=TRUE)
  # Create a nice report for each "state"
  cat("##", st, "\n")
  cat("###", "Events of Concern", "\n")
  cat(sprintf("%s  %s",
      "Top events for fatalities, injuries, property damage and crop damage (up to three).",
      "The data includes all recorded weather events from 1950 to November 2011."))

  mnrow <- ifelse(length(fatalities) < 3, length(fatalities), 3)
  df <- data.frame(c(prettyNum(unlist(fatalities[1:mnrow]),scientific=FALSE,big.mark=",")))
  colnames(df) <- c("Number of Fatalities")
  print(knitr::kable(df, caption="Fatalities (1950-2011)"))
  cat("\n")

  mnrow <- ifelse(length(injuries) < 3, length(injuries), 3)
  df <- data.frame(c(prettyNum(unlist(injuries[1:mnrow]),scientific=FALSE,big.mark=",")))
  colnames(df) <- c("Number of Injuries")
  print(knitr::kable(df, caption="Injuries (1950-2011)"))
  cat("\n")

  mnrow <- ifelse(length(properties) < 3, length(properties), 3)
  df <- data.frame(c(prettyNum(unlist(properties[1:mnrow]),scientific=FALSE,big.mark=",")))
  colnames(df) <- c("Property Damage ($)")
  print(knitr::kable(df, caption="Property Damage Costs (1950-2011)"))
  cat("\n")

  mnrow <- ifelse(length(crops) < 3, length(crops), 3)
  df <- data.frame(c(prettyNum(unlist(crops[1:mnrow]),scientific=FALSE,big.mark=",")))
  colnames(df) <- c("Crop Damage ($)")
  print(knitr::kable(df, caption="Crop Damage Costs (1950-2011)"))
  cat("\n")

}
```

AK

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 2: Fatalities (1950-2011)

	Number of Fatalities
AVALANCHE	33
BLIZZARD	7
MARINE MISHAP	7

Table 3: Injuries (1950-2011)

	Number of Injuries
ICE STORM	34
HIGH WIND	17
AVALANCHE	17

Table 4: Property Damage Costs (1950-2011)

	Property Damage ($)
FLOOD	157,131,940
HIGH WIND	35,994,150
COASTAL FLOOD	25,847,060

Table 5: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HIGH WIND	157,000
HEAVY SNOW	10,000
HIGH WINDS HEAVY RAINS	10,000

AL

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 6: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	617
TSTM WIND	31
LIGHTNING	28

Table 7: Injuries (1950-2011)

	Number of Injuries
TORNADO	7,929
TSTM WIND	336
LIGHTNING	154

Table 8: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	6,321,296,560
WINTER STORM	5,002,033,000
HURRICANE/TYPHOON	3,621,500,000

Table 9: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HEAT	400,100,000
TORNADO	56,797,500
EXTREME COLD	52,000,000

AM

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 10: Fatalities (1950-2011)

	Number of Fatalities
MARINE THUNDERSTORM WIND	6
MARINE TSTM WIND	3
MARINE STRONG WIND	1

Table 11: Injuries (1950-2011)

	Number of Injuries
MARINE THUNDERSTORM WIND	22
MARINE TSTM WIND	8
WATERSPOUT	0

Table 12: Property Damage Costs (1950-2011)

	Property Damage ($)
WATERSPOUT	5,102,000
MARINE TSTM WIND	500,000
MARINE THUNDERSTORM WIND	51,800

Table 13: Crop Damage Costs (1950-2011)

	Crop Damage ($)
MARINE THUNDERSTORM WIND	50,000
WATERSPOUT	0
MARINE TSTM WIND	0

AN

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 14: Fatalities (1950-2011)

	Number of Fatalities
MARINE TSTM WIND	6
MARINE STRONG WIND	4
MARINE HIGH WIND	1

Table 15: Injuries (1950-2011)

	Number of Injuries
MARINE STRONG WIND	18
MARINE THUNDERSTORM WIND	3
WATERSPOUT	1

Table 16: Property Damage Costs (1950-2011)

	Property Damage ($)
MARINE THUNDERSTORM WIND	169,000
MARINE HIGH WIND	85,000
MARINE TSTM WIND	20,000

Table 17: Crop Damage Costs (1950-2011)

	Crop Damage ($)
MARINE TSTM WIND	0
WATERSPOUT	0
MARINE HAIL	0

AR

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 18: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	379
FLASH FLOOD	49
EXCESSIVE HEAT	19

Table 19: Injuries (1950-2011)

	Number of Injuries
TORNADO	5,116
TSTM WIND	188
LIGHTNING	79

Table 20: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	2,590,007,310
ICE STORM	687,091,000
FLOOD	337,934,000

Table 21: Crop Damage Costs (1950-2011)

	Crop Damage ($)
FLOOD	141,065,000
HAIL	9,463,000
HURRICANE/TYPHOON	7,700,000

AS

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 22: Fatalities (1950-2011)

	Number of Fatalities
TSUNAMI	32

	Number of Fatalities
RIP CURRENT	4
FLASH FLOOD	4

Table 23: Injuries (1950-2011)

	Number of Injuries
TSUNAMI	129
HURRICANE/TYPHOON	20
HEAVY SURF/HIGH SURF	6

Table 24: Property Damage Costs (1950-2011)

	Property Damage ($)
TSUNAMI	81,000,000
HURRICANE/TYPHOON	60,050,000
FLASH FLOOD	50,362,000

Table 25: Crop Damage Costs (1950-2011)

	Crop Damage ($)
FLASH FLOOD	1,267,000
HURRICANE	500,000
TROPICAL STORM	500,000

AZ

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 26: Fatalities (1950-2011)

	Number of Fatalities
FLASH FLOOD	62
EXCESSIVE HEAT	55
LIGHTNING	18

Table 27: Injuries (1950-2011)

	Number of Injuries
DUST STORM	179
TSTM WIND	152
FLASH FLOOD	150

	Number of Injuries

Table 28: Property Damage Costs (1950-2011)

	Property Damage ($)
HAIL	2,828,908,700
TSTM WIND	383,328,100
WILDFIRE	222,285,000

Table 29: Crop Damage Costs (1950-2011)

	Crop Damage ($)
TROPICAL STORM	200,000,000
FLASH FLOOD	8,005,000
FLOOD	5,500,000

CA

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 30: Fatalities (1950-2011)

	Number of Fatalities
EXCESSIVE HEAT	110
FLASH FLOOD	36
HIGH SURF	35

Table 31: Injuries (1950-2011)

	Number of Injuries
WILDFIRE	623
FOG	408
WILD/FOREST FIRE	355

Table 32: Property Damage Costs (1950-2011)

	Property Damage ($)
FLOOD	116,751,420,000
WILDFIRE	3,452,953,830
WILD/FOREST FIRE	956,834,000

Table 33: Crop Damage Costs (1950-2011)

	Crop Damage ($)
EXTREME COLD	731,160,000
HEAVY RAIN	681,131,000
FLOOD	626,375,000

CO

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 34: Fatalities (1950-2011)

	Number of Fatalities
LIGHTNING	48
AVALANCHE	48
FLASH FLOOD	12

Table 35: Injuries (1950-2011)

	Number of Injuries
TORNADO	261
LIGHTNING	260
HAIL	121

Table 36: Property Damage Costs (1950-2011)

	Property Damage ($)
HAIL	1,426,944,800
FLASH FLOOD	411,428,075
TORNADO	287,529,440

Table 37: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HAIL	116,490,000
THUNDERSTORM WIND	18,065,000
Freeze	10,500,000

CT

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 38: Fatalities (1950-2011)

	Number of Fatalities
HIGH WIND	6
FLOOD	5
TORNADO	4

Table 39: Injuries (1950-2011)

	Number of Injuries
TORNADO	703
LIGHTNING	59
WINTER WEATHER	47

Table 40: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	596,236,620
TROPICAL STORM	60,004,000
FLOOD	29,358,000

Table 41: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HAIL	30,000
TORNADO	0
TSTM WIND	0

DC

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 42: Fatalities (1950-2011)

	Number of Fatalities
EXCESSIVE HEAT	20

	Number of Fatalities
TSTM WIND	2
COLD WEATHER	2

Table 43: Injuries (1950-2011)

	Number of Injuries
EXCESSIVE HEAT	316
TSTM WIND	15
LIGHTNING	12

Table 44: Property Damage Costs (1950-2011)

	Property Damage ($)
TROPICAL STORM	127,600,000
FLASH FLOOD	16,095,000
FLOOD	10,000,000

Table 45: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	5,000
HAIL	0
TSTM WIND	0

DE

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 46: Fatalities (1950-2011)

	Number of Fatalities
EXCESSIVE HEAT	7
FLASH FLOOD	6
WINTER STORM	5

Table 47: Injuries (1950-2011)

	Number of Injuries
TORNADO	73
HIGH SURF	63
EXCESSIVE HEAT	51

	Number of Injuries

Table 48: Property Damage Costs (1950-2011)

	Property Damage ($)
COASTAL FLOOD	40,150,000
FLASH FLOOD	27,654,000
TROPICAL STORM	17,750,000

Table 49: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	29,100,000
HAIL	300,000
THUNDERSTORM WIND	201,000

FL

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 50: Fatalities (1950-2011)

	Number of Fatalities
RIP CURRENT	172
TORNADO	161
LIGHTNING	123

Table 51: Injuries (1950-2011)

	Number of Injuries
TORNADO	3,340
LIGHTNING	858
HURRICANE/TYPHOON	802

Table 52: Property Damage Costs (1950-2011)

	Property Damage ($)
HURRICANE/TYPHOON	27,596,865,000
HURRICANE OPAL	3,104,571,000
HIGH WIND	3,089,931,000

Table 53: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HURRICANE/TYPHOON	955,200,000
FLOOD	679,507,500
FROST/FREEZE	483,150,000

GA

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 54: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	180
LIGHTNING	30
FLOOD	27

Table 55: Injuries (1950-2011)

	Number of Injuries
TORNADO	3,926
BLIZZARD	402
LIGHTNING	254

Table 56: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	3,261,026,670
FLOOD	528,577,250
HAIL	254,326,600

Table 57: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	717,285,000
FROST/FREEZE	160,500,000
BLIZZARD	105,000,000

GM

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 58: Fatalities (1950-2011)

	Number of Fatalities
MARINE THUNDERSTORM WIND	1
MARINE TSTM WIND	0
WATERSPOUT	0

Table 59: Injuries (1950-2011)

	Number of Injuries
MARINE TSTM WIND	0
WATERSPOUT	0
MARINE HAIL	0

Table 60: Property Damage Costs (1950-2011)

	Property Damage ($)
MARINE TSTM WIND	3,226,000
MARINE THUNDERSTORM WIND	166,100
WATERSPOUT	110,200

Table 61: Crop Damage Costs (1950-2011)

	Crop Damage ($)
MARINE TSTM WIND	0
WATERSPOUT	0
MARINE HAIL	0

GU

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 62: Fatalities (1950-2011)

	Number of Fatalities
RIP CURRENT	20

	Number of Fatalities
HEAVY RAIN	19
RIP CURRENTS	18

Table 63: Injuries (1950-2011)

	Number of Injuries
HURRICANE/TYPHOON	333
RIP CURRENTS	46
RIP CURRENT	9

Table 64: Property Damage Costs (1950-2011)

	Property Damage ($)
TYPHOON	600,230,000
HURRICANE/TYPHOON	212,690,000
HURRICANE	101,170,000

Table 65: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HURRICANE	100,480,000
HURRICANE/TYPHOON	4,270,000
STORM SURGE/TIDE	850,000

HI

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 66: Fatalities (1950-2011)

	Number of Fatalities
HIGH SURF	21
FLASH FLOOD	10
HEAVY SURF/HIGH SURF	4

Table 67: Injuries (1950-2011)

	Number of Injuries
STRONG WIND	20
HIGH SURF	18
HEAVY SURF/HIGH SURF	10

	Number of Injuries

Table 68: Property Damage Costs (1950-2011)

	Property Damage ($)
FLASH FLOOD	156,508,000
TSUNAMI	14,200,000
Heavy Rain/High Surf	13,500,000

Table 69: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HIGH WIND	2,600,000
WILDFIRE	2,265,000
Heavy Rain/High Surf	1,500,000

IA

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 70: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	81
TSTM WIND	9
LIGHTNING	9

Table 71: Injuries (1950-2011)

	Number of Injuries
TORNADO	2,208
TSTM WIND	220
HAIL	134

Table 72: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	2,286,576,650
FLOOD	1,381,403,000
DROUGHT	645,150,000

Table 73: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	2,009,630,000
FLOOD	1,588,826,000
HAIL	294,938,450

ID

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 74: Fatalities (1950-2011)

	Number of Fatalities
AVALANCHE	16
TSTM WIND	8
LIGHTNING	7

Table 75: Injuries (1950-2011)

	Number of Injuries
THUNDERSTORM WIND	74
TSTM WIND	66
LIGHTNING	26

Table 76: Property Damage Costs (1950-2011)

	Property Damage ($)
FLOOD	114,192,000
HEAVY RAIN	50,840,000
FLASH FLOOD	14,767,000

Table 77: Crop Damage Costs (1950-2011)

	Crop Damage ($)
TSTM WIND/HAIL	6,002,000
FROST	5,000,000
COOL AND WET	5,000,000

IL

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 78: Fatalities (1950-2011)

	Number of Fatalities
HEAT	653
EXCESSIVE HEAT	330
TORNADO	203

Table 79: Injuries (1950-2011)

	Number of Injuries
TORNADO	4,145
TSTM WIND	381
EXCESSIVE HEAT	352

Table 80: Property Damage Costs (1950-2011)

	Property Damage ($)
RIVER FLOOD	5,021,900,000
TORNADO	1,780,613,840
FLASH FLOOD	796,675,550

Table 81: Crop Damage Costs (1950-2011)

	Crop Damage ($)
RIVER FLOOD	5,012,500,000
DROUGHT	284,570,000
TSTM WIND	91,499,000

IN

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 82: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	252

	Number of Fatalities
FLOOD	24
FLASH FLOOD	18

Table 83: Injuries (1950-2011)

	Number of Injuries
TORNADO	4,224
TSTM WIND	207
LIGHTNING	89

Table 84: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	2,594,793,890
FLOOD	848,982,750
FLASH FLOOD	318,731,200

Table 85: Crop Damage Costs (1950-2011)

	Crop Damage ($)
FLOOD	698,198,000
FLASH FLOOD	92,709,500
DROUGHT	73,000,000

KS

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 86: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	236
FLASH FLOOD	16
ICE STORM	16

Table 87: Injuries (1950-2011)

	Number of Injuries
TORNADO	2,721
TSTM WIND	268
HAIL	121

	Number of Injuries

Table 88: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	2,669,890,670
HAIL	506,525,350
FLASH FLOOD	295,417,350

Table 89: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HAIL	259,405,300
DROUGHT	155,954,000
FLOOD	86,789,000

KY

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 90: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	125
FLASH FLOOD	40
FLOOD	19

Table 91: Injuries (1950-2011)

	Number of Injuries
TORNADO	2,806
TSTM WIND	249
EXCESSIVE HEAT	138

Table 92: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	888,768,680
HAIL	611,068,100
FLOOD	547,811,000

Table 93: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	226,000,000
FLASH FLOOD	22,136,500
HIGH WIND	15,300,000

LA

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 94: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	153
EXCESSIVE HEAT	55
LIGHTNING	24

Table 95: Injuries (1950-2011)

	Number of Injuries
TORNADO	2,637
TSTM WIND	244
LIGHTNING	117

Table 96: Property Damage Costs (1950-2011)

	Property Damage ($)
STORM SURGE	31,742,735,000
HURRICANE/TYPHOON	20,995,910,000
HEAVY RAIN/SEVERE WEATHER	2,500,000,000

Table 97: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	587,430,000
HURRICANE	338,000,000
TROPICAL STORM	154,600,000

LC

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 98: Fatalities (1950-2011)

	Number of Fatalities
MARINE TSTM WIND	0
MARINE HAIL	0
MARINE THUNDERSTORM WIND	0

Table 99: Injuries (1950-2011)

	Number of Injuries
MARINE TSTM WIND	0
MARINE HAIL	0
MARINE THUNDERSTORM WIND	0

Table 100: Property Damage Costs (1950-2011)

	Property Damage ($)
MARINE TSTM WIND	0
MARINE HAIL	0
MARINE THUNDERSTORM WIND	0

Table 101: Crop Damage Costs (1950-2011)

	Crop Damage ($)
MARINE TSTM WIND	0
MARINE HAIL	0
MARINE THUNDERSTORM WIND	0

LE

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 102: Fatalities (1950-2011)

	Number of Fatalities
MARINE TSTM WIND	0

	Number of Fatalities
WATERSPOUT	0
MARINE HAIL	0

Table 103: Injuries (1950-2011)

	Number of Injuries
MARINE TSTM WIND	0
WATERSPOUT	0
MARINE HAIL	0

Table 104: Property Damage Costs (1950-2011)

	Property Damage ($)
MARINE THUNDERSTORM WIND	25,000
MARINE TSTM WIND	5,000
WATERSPOUT	0

Table 105: Crop Damage Costs (1950-2011)

	Crop Damage ($)
MARINE TSTM WIND	0
WATERSPOUT	0
MARINE HAIL	0

LH

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 106: Fatalities (1950-2011)

	Number of Fatalities
WATERSPOUT	0
MARINE TSTM WIND	0
MARINE HAIL	0

Table 107: Injuries (1950-2011)

	Number of Injuries
WATERSPOUT	0
MARINE TSTM WIND	0
MARINE HAIL	0

	Number of Injuries

Table 108: Property Damage Costs (1950-2011)

	Property Damage ($)
WATERSPOUT	0
MARINE TSTM WIND	0
MARINE HAIL	0

Table 109: Crop Damage Costs (1950-2011)

	Crop Damage ($)
WATERSPOUT	0
MARINE TSTM WIND	0
MARINE HAIL	0

LM

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 110: Fatalities (1950-2011)

	Number of Fatalities
MARINE STRONG WIND	2
MARINE THUNDERSTORM WIND	2
MARINE TSTM WIND	0

Table 111: Injuries (1950-2011)

	Number of Injuries
MARINE STRONG WIND	1
MARINE THUNDERSTORM WIND	1
MARINE TSTM WIND	0

Table 112: Property Damage Costs (1950-2011)

	Property Damage ($)
MARINE TSTM WIND	1,205,000
MARINE HIGH WIND	1,110,000
MARINE STRONG WIND	312,600

Table 113: Crop Damage Costs (1950-2011)

	Crop Damage ($)
MARINE TSTM WIND	0
WATERSPOUT	0
MARINE HAIL	0

LO

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 114: Fatalities (1950-2011)

	Number of Fatalities
MARINE TSTM WIND	0
WATERSPOUT	0
MARINE THUNDERSTORM WIND	0

Table 115: Injuries (1950-2011)

	Number of Injuries
MARINE TSTM WIND	0
WATERSPOUT	0
MARINE THUNDERSTORM WIND	0

Table 116: Property Damage Costs (1950-2011)

	Property Damage ($)
MARINE TSTM WIND	50,000
MARINE THUNDERSTORM WIND	20,000
WATERSPOUT	0

Table 117: Crop Damage Costs (1950-2011)

	Crop Damage ($)
MARINE TSTM WIND	0
WATERSPOUT	0
MARINE THUNDERSTORM WIND	0

LS

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 118: Fatalities (1950-2011)

	Number of Fatalities
MARINE STRONG WIND	1
WATERSPOUT	0
MARINE TSTM WIND	0

Table 119: Injuries (1950-2011)

	Number of Injuries
WATERSPOUT	0
MARINE TSTM WIND	0
MARINE HAIL	0

Table 120: Property Damage Costs (1950-2011)

	Property Damage ($)
MARINE TSTM WIND	400,000
WATERSPOUT	0
MARINE HAIL	0

Table 121: Crop Damage Costs (1950-2011)

	Crop Damage ($)
WATERSPOUT	0
MARINE TSTM WIND	0
MARINE HAIL	0

MA

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 122: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	108

	Number of Fatalities
TSTM WIND	8
LIGHTNING	6

Table 123: Injuries (1950-2011)

	Number of Injuries
TORNADO	1,758
LIGHTNING	171
TSTM WIND	97

Table 124: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	756,039,370
FLOOD	227,335,000
HEAVY SNOW	73,974,000

Table 125: Crop Damage Costs (1950-2011)

	Crop Damage ($)
THUNDERSTORM WIND	1,250,000
HAIL	100,000
TSTM WIND	10,000

MD

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 126: Fatalities (1950-2011)

	Number of Fatalities
EXCESSIVE HEAT	88
LIGHTNING	13
FLASH FLOOD	12

Table 127: Injuries (1950-2011)

	Number of Injuries
EXCESSIVE HEAT	461
TORNADO	314
TROPICAL STORM	200

	Number of Injuries

Table 128: Property Damage Costs (1950-2011)

	Property Damage ($)
TROPICAL STORM	538,505,000
TORNADO	331,924,500
FLOOD	67,444,000

Table 129: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	99,720,000
HEAT WAVE	4,700,000
AGRICULTURAL FREEZE	1,480,000

ME

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 130: Fatalities (1950-2011)

	Number of Fatalities
LIGHTNING	6
FLOOD	4
STRONG WINDS	3

Table 131: Injuries (1950-2011)

	Number of Injuries
LIGHTNING	70
FOG	24
TORNADO	19

Table 132: Property Damage Costs (1950-2011)

	Property Damage ($)
ICE STORM	318,230,000
FLOOD	120,673,700
FLASH FLOOD	62,800,000

Table 133: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HEAVY RAINS	500,000
HAIL	130,000
FLASH FLOOD	5,000

MH

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 134: Fatalities (1950-2011)

	Number of Fatalities
HIGH SURF	0

Table 135: Injuries (1950-2011)

	Number of Injuries
HIGH SURF	1

Table 136: Property Damage Costs (1950-2011)

	Property Damage ($)
HIGH SURF	5,000,000

Table 137: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HIGH SURF	0

MI

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 138: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	243

	Number of Fatalities
TSTM WIND	40
LIGHTNING	19

Table 139: Injuries (1950-2011)

	Number of Injuries
TORNADO	3,362
TSTM WIND	322
HEAT	315

Table 140: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	1,071,765,550
HAIL	287,678,800
TSTM WIND	240,281,950

Table 141: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	150,000,000
TSTM WIND	39,223,000
HAIL	20,024,000

MN

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 142: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	99
FLASH FLOOD	13
EXCESSIVE HEAT	13

Table 143: Injuries (1950-2011)

	Number of Injuries
TORNADO	1,976
TSTM WIND	92
LIGHTNING	70

	Number of Injuries

Table 144: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	1,903,701,140
FLOOD	1,293,248,800
HAIL	923,515,700

Table 145: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HAIL	140,700,800
FLOOD	104,715,000
TSTM WIND	28,108,550

MO

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 146: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	388
EXCESSIVE HEAT	190
FLASH FLOOD	72

Table 147: Injuries (1950-2011)

	Number of Injuries
TORNADO	4,330
EXCESSIVE HEAT	3,525
HEAT	660

Table 148: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	4,800,631,770
HAIL	1,136,027,370
FLASH FLOOD	679,421,230

Table 149: Crop Damage Costs (1950-2011)

	Crop Damage ($)
FLOOD	593,040,000
FLASH FLOOD	62,693,300
DROUGHT	30,835,000

MS

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 150: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	450
EXCESSIVE HEAT	24
LIGHTNING	16

Table 151: Injuries (1950-2011)

	Number of Injuries
TORNADO	6,244
TSTM WIND	216
HURRICANE/TYPHOON	104

Table 152: Property Damage Costs (1950-2011)

	Property Damage ($)
HURRICANE/TYPHOON	13,492,735,000
STORM SURGE	11,265,030,000
TORNADO	2,441,964,530

Table 153: Crop Damage Costs (1950-2011)

	Crop Damage ($)
ICE STORM	5,000,060,000
HURRICANE/TYPHOON	1,514,980,800
TORNADO	54,135,000

MT

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 154: Fatalities (1950-2011)

	Number of Fatalities
LIGHTNING	9
AVALANCHE	8
FLOOD	5

Table 155: Injuries (1950-2011)

	Number of Injuries
WILD/FOREST FIRE	33
LIGHTNING	30
TSTM WIND	23

Table 156: Property Damage Costs (1950-2011)

	Property Damage ($)
HAIL	94,729,700
TORNADO	86,600,150
FLOOD	38,020,400

Table 157: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HAIL	34,345,000
THUNDERSTORM WIND	6,019,000
ICE JAM FLOODING	5,000,000

NC

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 158: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	126

	Number of Fatalities
FLASH FLOOD	38
LIGHTNING	29

Table 159: Injuries (1950-2011)

	Number of Injuries
TORNADO	2,536
LIGHTNING	278
WINTER STORM	191

Table 160: Property Damage Costs (1950-2011)

	Property Damage ($)
HURRICANE	4,979,861,000
TORNADO	1,551,333,680
FLASH FLOOD	788,463,050

Table 161: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HURRICANE	1,425,130,000
FLASH FLOOD	149,850,000
HIGH WIND	140,094,000

ND

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 162: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	25
BLIZZARD	9
FLOOD	5

Table 163: Injuries (1950-2011)

	Number of Injuries
TORNADO	326
BLIZZARD	97
TSTM WIND	47

	Number of Injuries

Table 164: Property Damage Costs (1950-2011)

	Property Damage ($)
FLOOD	3,916,842,000
HAIL	472,663,600
BLIZZARD	224,558,000

Table 165: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HAIL	189,355,030
THUNDERSTORM WIND	175,603,000
FLOOD	72,960,000

NE

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 166: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	54
WINTER STORM	11
LIGHTNING	6

Table 167: Injuries (1950-2011)

	Number of Injuries
TORNADO	1,158
HAIL	93
TSTM WIND	85

Table 168: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	1,718,164,710
HAIL	920,898,250
FLASH FLOOD	97,992,700

Table 169: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HAIL	737,993,650
DROUGHT	720,000,000
DAMAGING FREEZE	262,000,000

NH

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 170: Fatalities (1950-2011)

	Number of Fatalities
TSTM WIND	6
FLASH FLOOD	4
EXTREME COLD	4

Table 171: Injuries (1950-2011)

	Number of Injuries
LIGHTNING	85
TORNADO	30
TSTM WIND	30

Table 172: Property Damage Costs (1950-2011)

	Property Damage ($)
ICE STORM	64,934,000
FLOOD	61,313,270
FLASH FLOOD	36,898,000

Table 173: Crop Damage Costs (1950-2011)

	Crop Damage ($)
FLOOD	200,000
TORNADO	0
TSTM WIND	0

NJ

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 174: Fatalities (1950-2011)

	Number of Fatalities
EXCESSIVE HEAT	39
FLOOD	19
LIGHTNING	15

Table 175: Injuries (1950-2011)

	Number of Injuries
EXCESSIVE HEAT	300
FLASH FLOOD	190
TSTM WIND	168

Table 176: Property Damage Costs (1950-2011)

	Property Damage ($)
FLOOD	2,111,650,000
FLASH FLOOD	733,210,000
TORNADO	79,214,250

Table 177: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	80,000,000
HAIL	17,112,000
TSTM WIND	1,200,000

NM

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 178: Fatalities (1950-2011)

	Number of Fatalities
FLASH FLOOD	16

	Number of Fatalities
LIGHTNING	12
HIGH WIND	8

Table 179: Injuries (1950-2011)

	Number of Injuries
TORNADO	155
LIGHTNING	52
HAIL	40

Table 180: Property Damage Costs (1950-2011)

	Property Damage ($)
WILD/FOREST FIRE	1,509,700,000
HAIL	124,469,850
WILDFIRES	100,000,000

Table 181: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	14,400,000
HAIL	7,073,600
FLASH FLOOD	5,380,000

NV

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 182: Fatalities (1950-2011)

	Number of Fatalities
HEAT	54
EXCESSIVE HEAT	13
TSTM WIND	4

Table 183: Injuries (1950-2011)

	Number of Injuries
FLOOD	50
DUST STORM	49
HIGH WIND	33

	Number of Injuries

Table 184: Property Damage Costs (1950-2011)

	Property Damage ($)
FLOOD	677,945,000
FLASH FLOOD	59,319,100
THUNDERSTORM WIND	51,769,200

Table 185: Crop Damage Costs (1950-2011)

	Crop Damage ($)
FLOOD	6,000,000
HAIL	100,000
HIGH WIND	100,000

NY

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 186: Fatalities (1950-2011)

	Number of Fatalities
EXCESSIVE HEAT	93
FLASH FLOOD	38
TSTM WIND	27

Table 187: Injuries (1950-2011)

	Number of Injuries
TORNADO	315
TSTM WIND	278
LIGHTNING	244

Table 188: Property Damage Costs (1950-2011)

	Property Damage ($)
FLASH FLOOD	1,831,088,500
FLOOD	1,326,149,490
TORNADO	466,573,840

Table 189: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	100,200,000
HAIL	87,375,600
TSTM WIND	11,387,000

OH

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 190: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	191
FLASH FLOOD	34
LIGHTNING	32

Table 191: Injuries (1950-2011)

	Number of Injuries
TORNADO	4,438
ICE STORM	1,652
TSTM WIND	221

Table 192: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	2,279,857,790
FLASH FLOOD	1,307,961,720
WINTER STORM	927,810,000

Table 193: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	200,000,000
FLOOD	88,853,000
FLASH FLOOD	43,255,000

OK

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 194: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	296
EXCESSIVE HEAT	63
FLASH FLOOD	32

Table 195: Injuries (1950-2011)

	Number of Injuries
TORNADO	4,829
TSTM WIND	191
FLASH FLOOD	170

Table 196: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	3,268,708,260
THUNDERSTORM WIND	775,240,750
ICE STORM	688,090,000

Table 197: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	1,097,040,000
TORNADO	50,556,550
FLOOD	50,260,000

OR

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 198: Fatalities (1950-2011)

	Number of Fatalities
HIGH WIND	19

	Number of Fatalities
FLOOD	16
HIGH SURF	12

Table 199: Injuries (1950-2011)

	Number of Injuries
HIGH WIND	50
ICE STORM	33
HEAVY SNOW	22

Table 200: Property Damage Costs (1950-2011)

	Property Damage ($)
FLOOD	722,172,500
HIGH WIND	108,649,650
HAIL	52,607,700

Table 201: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HAIL	36,028,000
DROUGHT	22,600,000
FLOOD	18,860,000

PA

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 202: Fatalities (1950-2011)

	Number of Fatalities
EXCESSIVE HEAT	359
HEAT WAVE	107
TORNADO	82

Table 203: Injuries (1950-2011)

	Number of Injuries
TORNADO	1,241
EXCESSIVE HEAT	320
HEAVY SNOW	303

	Number of Injuries

Table 204: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	1,789,038,400
FLASH FLOOD	1,410,799,570
FLOOD	1,078,667,000

Table 205: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	539,400,000
EXTREME COLD	25,000,000
UNSEASONABLY COLD	25,000,000

PH

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 206: Fatalities (1950-2011)

	Number of Fatalities
MARINE STRONG WIND	1
WATERSPOUT	0
MARINE TSTM WIND	0

Table 207: Injuries (1950-2011)

	Number of Injuries
WATERSPOUT	0
MARINE TSTM WIND	0
MARINE STRONG WIND	0

Table 208: Property Damage Costs (1950-2011)

	Property Damage ($)
WATERSPOUT	0
MARINE TSTM WIND	0
MARINE STRONG WIND	0

Table 209: Crop Damage Costs (1950-2011)

	Crop Damage ($)
WATERSPOUT	0
MARINE TSTM WIND	0
MARINE STRONG WIND	0

PK

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 210: Fatalities (1950-2011)

	Number of Fatalities
MARINE TSTM WIND	0
MARINE HIGH WIND	0
WATERSPOUT	0

Table 211: Injuries (1950-2011)

	Number of Injuries
MARINE TSTM WIND	0
MARINE HIGH WIND	0
WATERSPOUT	0

Table 212: Property Damage Costs (1950-2011)

	Property Damage ($)
MARINE HIGH WIND	31,000
MARINE TSTM WIND	0
WATERSPOUT	0

Table 213: Crop Damage Costs (1950-2011)

	Crop Damage ($)
MARINE TSTM WIND	0
MARINE HIGH WIND	0
WATERSPOUT	0

PM

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 214: Fatalities (1950-2011)

	Number of Fatalities
WATERSPOUT	0

Table 215: Injuries (1950-2011)

	Number of Injuries
WATERSPOUT	0

Table 216: Property Damage Costs (1950-2011)

	Property Damage ($)
WATERSPOUT	0

Table 217: Crop Damage Costs (1950-2011)

	Crop Damage ($)
WATERSPOUT	0

PR

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 218: Fatalities (1950-2011)

	Number of Fatalities
FLASH FLOOD	34
HURRICANE	19
HEAVY RAIN	13

Table 219: Injuries (1950-2011)

	Number of Injuries
HEAVY RAIN	10

	Number of Injuries
HIGH SURF	9
THUNDERSTORM WIND	7

Table 220: Property Damage Costs (1950-2011)

	Property Damage ($)
HURRICANE	1,824,431,000
FLASH FLOOD	198,087,650
FLOOD	113,589,000

Table 221: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HURRICANE	451,000,000
TROPICAL STORM	103,605,000
FLOOD	48,000,000

PZ

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 222: Fatalities (1950-2011)

	Number of Fatalities
MARINE STRONG WIND	5
WATERSPOUT	0
MARINE TSTM WIND	0

Table 223: Injuries (1950-2011)

	Number of Injuries
MARINE STRONG WIND	3
WATERSPOUT	0
MARINE TSTM WIND	0

Table 224: Property Damage Costs (1950-2011)

	Property Damage ($)
MARINE STRONG WIND	76,000
WATERSPOUT	0
MARINE TSTM WIND	0

	Property Damage ($)

Table 225: Crop Damage Costs (1950-2011)

	Crop Damage ($)
WATERSPOUT	0
MARINE TSTM WIND	0
MARINE STRONG WIND	0

RI

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 226: Fatalities (1950-2011)

	Number of Fatalities
HEAT	2
HIGH SURF	2
LIGHTNING	1

Table 227: Injuries (1950-2011)

	Number of Injuries
TORNADO	23
LIGHTNING	17
HIGH WIND	5

Table 228: Property Damage Costs (1950-2011)

	Property Damage ($)
FLOOD	92,860,000
HEAVY SNOW	11,340,000
HIGH WINDS	5,050,000

Table 229: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HAIL	0
TSTM WIND	0
TORNADO	0

SC

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 230: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	59
EXCESSIVE HEAT	29
LIGHTNING	24

Table 231: Injuries (1950-2011)

	Number of Injuries
TORNADO	1,314
TSTM WIND	185
LIGHTNING	105

Table 232: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	531,505,190
ICE STORM	153,207,500
HIGH WINDS/COLD	110,500,000

Table 233: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HURRICANE	20,300,000
EXTREME COLD	20,050,000
DROUGHT	20,000,000

SD

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 234: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	18

	Number of Fatalities
ICE STORM	8
BLIZZARD	6

Table 235: Injuries (1950-2011)

	Number of Injuries
TORNADO	452
TSTM WIND	77
ICE STORM	67

Table 236: Property Damage Costs (1950-2011)

	Property Damage ($)
TORNADO	231,213,780
HAIL	97,992,050
FLASH FLOOD	94,233,200

Table 237: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HAIL	64,274,050
FLASH FLOOD	50,765,500
FLOOD	28,171,000

SL

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 238: Fatalities (1950-2011)

	Number of Fatalities
MARINE TSTM WIND	0
MARINE HAIL	0

Table 239: Injuries (1950-2011)

	Number of Injuries
MARINE TSTM WIND	0
MARINE HAIL	0

Table 240: Property Damage Costs (1950-2011)

	Property Damage ($)
MARINE TSTM WIND	15,000
MARINE HAIL	0

Table 241: Crop Damage Costs (1950-2011)

	Crop Damage ($)
MARINE TSTM WIND	0
MARINE HAIL	0

ST

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 242: Fatalities (1950-2011)

	Number of Fatalities
STRONG WINDS	0

Table 243: Injuries (1950-2011)

	Number of Injuries
STRONG WINDS	0

Table 244: Property Damage Costs (1950-2011)

	Property Damage ($)
STRONG WINDS	0

Table 245: Crop Damage Costs (1950-2011)

	Crop Damage ($)
STRONG WINDS	0

TN

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 246: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	368
FLOOD	35
EXCESSIVE HEAT	21

Table 247: Injuries (1950-2011)

	Number of Injuries
TORNADO	4,748
TSTM WIND	190
LIGHTNING	108

Table 248: Property Damage Costs (1950-2011)

	Property Damage ($)
FLOOD	4,245,346,300
TORNADO	1,541,799,890
FLASH FLOOD	360,268,370

Table 249: Crop Damage Costs (1950-2011)

	Crop Damage ($)
TSTM WIND	9,146,500
WINTER STORM	5,000,000
FLOOD	4,197,000

TX

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 250: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	538

	Number of Fatalities
EXCESSIVE HEAT	269
FLASH FLOOD	177

Table 251: Injuries (1950-2011)

	Number of Injuries
TORNADO	8,207
FLOOD	6,338
FLASH FLOOD	587

Table 252: Property Damage Costs (1950-2011)

	Property Damage ($)
TROPICAL STORM	5,491,193,000
STORM SURGE/TIDE	4,500,385,000
TORNADO	3,720,875,840

Table 253: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	6,373,438,000
HAIL	456,694,600
WILDFIRE	161,796,400

UT

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 254: Fatalities (1950-2011)

	Number of Fatalities
AVALANCHE	44
LIGHTNING	22
WINTER STORM	20

Table 255: Injuries (1950-2011)

	Number of Injuries
WINTER STORM	415
HEAVY SNOW	259
TORNADO	91

	Number of Injuries

Table 256: Property Damage Costs (1950-2011)

	Property Damage ($)
FLOOD	331,761,500
TORNADO	174,812,920
HEAVY SNOW	54,460,750

Table 257: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HIGH WIND	1,110,000
HIGH WINDS	1,000,000
FLASH FLOOD	823,700

VA

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 258: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	36
FLASH FLOOD	29
LIGHTNING	22

Table 259: Injuries (1950-2011)

	Number of Injuries
TORNADO	914
EXCESSIVE HEAT	230
TSTM WIND	131

Table 260: Property Damage Costs (1950-2011)

	Property Damage ($)
HURRICANE/TYPHOON	512,000,000
TORNADO	439,239,250
FLASH FLOOD	237,396,970

Table 261: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	297,480,000
HURRICANE	45,410,000
FLOOD/FLASH FLOOD	39,879,000

VI

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 262: Fatalities (1950-2011)

	Number of Fatalities
HIGH SURF	3
RIP CURRENTS	2
HIGH SEAS	1

Table 263: Injuries (1950-2011)

	Number of Injuries
RIP CURRENTS	1
LIGHTNING	1
FLOOD	0

Table 264: Property Damage Costs (1950-2011)

	Property Damage ($)
HURRICANE	28,220,000
TROPICAL STORM	6,250,000
FLASH FLOOD	1,960,000

Table 265: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	200,000
TROPICAL STORM	5,000
FLOOD	0

VT

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 266: Fatalities (1950-2011)

	Number of Fatalities
FLOOD	4
TSTM WIND	3
FLASH FLOOD	3

Table 267: Injuries (1950-2011)

	Number of Injuries
TSTM WIND	24
TORNADO	10
THUNDERSTORM WINDS	10

Table 268: Property Damage Costs (1950-2011)

	Property Damage ($)
FLOOD	1,100,484,000
FLASH FLOOD	325,039,000
WINTER STORM	15,564,650

Table 269: Crop Damage Costs (1950-2011)

	Crop Damage ($)
FLASH FLOOD	14,725,000
FLOOD	11,950,000
FROST	5,000,000

WA

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 270: Fatalities (1950-2011)

	Number of Fatalities
AVALANCHE	35

	Number of Fatalities
HIGH WIND	34
HEAVY SNOW	8

Table 271: Injuries (1950-2011)

	Number of Injuries
TORNADO	303
HIGH WIND	73
ICE	72

Table 272: Property Damage Costs (1950-2011)

	Property Damage ($)
FLOOD	212,683,000
HEAVY RAIN	189,855,500
HIGH WIND	148,408,000

Table 273: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HAIL	209,501,000
FROST/FREEZE	205,020,000
WILD/FOREST FIRE	82,756,000

WI

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 274: Fatalities (1950-2011)

	Number of Fatalities
TORNADO	96
EXTREME HEAT	67
EXCESSIVE HEAT	27

Table 275: Injuries (1950-2011)

	Number of Injuries
TORNADO	1,601
TSTM WIND	166
LIGHTNING	120

	Number of Injuries

Table 276: Property Damage Costs (1950-2011)

	Property Damage ($)
HAIL	961,723,350
TORNADO	958,093,080
FLASH FLOOD	837,156,860

Table 277: Crop Damage Costs (1950-2011)

	Crop Damage ($)
FLOOD	466,888,500
FLASH FLOOD	350,690,000
HAIL	56,132,850

WV

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 278: Fatalities (1950-2011)

	Number of Fatalities
FLASH FLOOD	24
FLOOD	13
TSTM WIND	10

Table 279: Injuries (1950-2011)

	Number of Injuries
TSTM WIND	142
TORNADO	114
LIGHTNING	48

Table 280: Property Damage Costs (1950-2011)

	Property Damage ($)
FLASH FLOOD	485,226,100
FLOOD	273,982,000
HEAVY SNOW	68,887,000

Table 281: Crop Damage Costs (1950-2011)

	Crop Damage ($)
DROUGHT	19,746,000
AGRICULTURAL FREEZE	9,380,000
TORNADO	2,306,000

WY

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 282: Fatalities (1950-2011)

	Number of Fatalities
AVALANCHE	23
LIGHTNING	8
WINTER STORM	6

Table 283: Injuries (1950-2011)

	Number of Injuries
WINTER STORM	119
TORNADO	101
LIGHTNING	72

Table 284: Property Damage Costs (1950-2011)

	Property Damage ($)
HAIL	111,226,700
TORNADO	47,617,110
FLOOD	15,739,500

Table 285: Crop Damage Costs (1950-2011)

	Crop Damage ($)
HAIL	1,881,200
FLOOD	1,140,000
EXTREME COLD	150,000

XX

Events of Concern

Top events for fatalities, injuries, property damage and crop damage (up to three). The data includes all recorded weather events from 1950 to November 2011.

Table 286: Fatalities (1950-2011)

	Number of Fatalities
MARINE THUNDERSTORM WIND	0

Table 287: Injuries (1950-2011)

	Number of Injuries
MARINE THUNDERSTORM WIND	0

Table 288: Property Damage Costs (1950-2011)

	Property Damage ($)
MARINE THUNDERSTORM WIND	0

Table 289: Crop Damage Costs (1950-2011)

	Crop Damage ($)
MARINE THUNDERSTORM WIND	0