Extreme Climate, Weather and Meteorological Events Prior to Significant Anthropogenic Fossil Fuel Consumption

A Partial Listing

Compiled by Randall W. Carlson, 2009-2017

Extreme cyclonic storm, Dartmoor England – **Oct. 21, 1638:** Violent tornado like storm throwing fireballs demolishes a church while in service, killing about 50 parishioners, <u>spawns</u> legends attributing the freak storm to the devil.

Extreme hurricane strikes Guadeloupe – **Aug. 4, 1666**. Six foot thick rock walls are smashed to rubble by gigantic sea wave, dozens of ships demolished and sunk, thousands drown.

Savage Atlantic hurricane – **Nov. 1703:** Pounds coastal England for fourteen days. Giant waves flood the Thames River, some 300 ships and 30,000 sailors are lost in the storm. Many ships are thrown up onto the land by the huge waves, thousands of casualties and drowned cattle.

Severe hurricane sinks Spanish flotilla off coast of Florida – July 31, 1715: Preceded by a strange mist that envelops the fleet, 100 mph winds destroy a Spanish fleet of 11 treasure laden ships within 5 minutes, more than 1,000 men are killed.

Powerful cyclone, Bay of Bengal India – **Oct. 7, 1737:** Huge cyclone drives a 40 foot high storm wave across densely populated land near mouth of Hooghly River, engulfing seaport, destroying 20,000 ships and drowning 300,000 people.

Alabama struck by powerful back to back hurricanes -- 1740

Devastating drought induced famine in Hindustan, India - **1769** - **1770:** No rain for a year and a half wipes out entire province. 3,000,000 die of starvation and disease. When crops finally return no one remains to harvest them and they rot in the fields.

Powerful hurricane strikes North Carolina – **Sept. 1** – **3, 1772:** Eastern seaboard devastated under a massive hurricane, 15 large frigates ripped from their moorings and thrown inland for several miles.

Great hurricane, Caribbean – Oct. 10, 1780: Gigantic hurricane unleashes its fury across the West Indies. Every tree and building on the island of Barbados is destroyed, 6,000 are killed on Barbados alone. On Martinique 40 ships in a French fleet are demolished and 4,000 soldiers drown, 20 villages are completely destroyed along with 9,000 people. The storm, with 200+ mile per hour winds is so violent it actually causes earthquakes. As many as 22,000 people lose their lives. The 1780 hurricane season saw four separate extreme hurricanes that caused a minimum of 1000 deaths each. A total of more than 28,000 fatalities resulted.

Cyclone, Coringa, India – 1789: The storm surge from an intense cyclone kills 20,000.

Extreme hurricane blasts Savannah – **Sept. 12, 1804:** 100+ mile per hour winds flatten forests and a military fort, tossing 4,800 pound cannons hundreds of feet into the air. Sweeping north it

devastates Charleston, wrecking dozens of ships and sinking five. It continues north to New England crushing forests and houses along the way.

Massive forest fires in Maine, New Brunswick – Oct. 7-8, 1825: Multiple huge fires ravage the Northeastern Atlantic Seaboard. Whole towns are consumed by what has been described by survivors as hurricanes of fire. The flames were so intense that rivers began to boil, over 500 people lost their lives. Survivors thought that the end of the world had come. Mortality amongst bear, deer and other wildlife was extreme. Fire consumed some 3 million acres (over 4,600 square miles)

Hurricane, West Indies, Barbados, Louisiana – **Aug. 10-11, 1831:** Barbados is laid waste by intense, destructive storm that destroys virtually all trees and vegetation on the island. **1,500** killed, damage at \$7.5 million.

Cyclone, Coringa, India – **1839:** 40 foot waves crush 20,000 vessels, 300,000 killed.

Alabama again struck by back to back hurricanes - 1860

Savage Cyclone wipes out Calcutta, India – **Oct. 5, 1864:** Intense winds drive a 40 foot sea wave into Calcutta harbor, destroying more than 200 ships, submerging the city and instantly drowning more than 50,000 inhabitants. Destruction of the water system brings on disease which kills another 30,000 within a few weeks.

Great Bahama Hurricane of 1866 – Slams into Inagua Island with 145 mph winds, 16 foot storm surges drives ships onto reef heads, uproots great trees, and smashes buildings to the ground. At least 220 people perish when they are buried under rubble or are swept out to sea.

Multiple massive forest fires - Oct. 7-9, 1871: Massive fires rage over Wisconsin, Minnesota, Michigan and Iowa. Over 800 residents of the Wisconsin town of Peshtigo lost their lives as the firestorm swept over the town utterly consuming it in a matter of minutes. Devastating fires raged over at least 4 states during those few days. As many as 2000 people lost their lives in these fires. As the hurricanes of fire approached many people committed suicide, believing the Day of Judgement had come. Over 400 square miles of Wisconsin near Peshtigo was reduced to ash. 4 of the worst fires in American history occurred during the week of Oct. 7 to Oct. 14. (Including the Great Chicago Fire). A total of 3.8 million acres were destroyed by these fires.

Intense hurricane, Nova Scotia, Canada – **Aug. 24** – **25, 1873**: Utterly destroys the harbors of Nova Scotia, Cape Breton and Newfoundland. Over 1000 ships sink, or are torn apart. 600 lives are lost.

Cyclone, Backergunge, India – Oct. 31, 1876: Massive cyclone smashes into the Bay of Bengal region of India, instantly drowning 100,000 people, 100,000 additional deaths due to disease spread by the storm.

Freak gale of Feb. 21-22, 1879: Storm pushes massive waves against Gloucester, Massachusetts. 15 ships in the harbor are overturned by the intense wind, drowning 157 men.

Drought and massive famine, China - **1877** - **1878**: Failure of monsoons for three years straight triggers devastating famine in 4 provinces of northern China. Between 10 and 13 million perish.

Widespread cannibalism, suicides, mass death with millions of rotting corpses. Nearby provinces experience crop destroying floods.

Northwest coast of Australia (Queensland) hit by extreme Category 5 cyclone – Jan. 7, 1881: Winds up to 170 mph, pressure reading of 27.00 inches, every single building in the town of Cossack (over 1000) has its roof blown off, 19 ft storm surge smashes into the harbor destroying boats, killing at least 230 people, 30 foot storm waves destroy many fishing boats.

Great Bombay Cyclone – June 6, 1882: 110 mph winds with an 18-foot storm surge claim more than 100,000 lives in Bombay, India.

Devastating tornado, Iowa – **June 17, 1882:** Wipes away the towns of Grinnel, Mount Pleasant, Malcolm and Brooklyn, Iowa. Tornado cuts a swath over 90 miles long, moving at 56 miles per hour.

Massive Yellow River flood, China – Spring 1887: Heavy rains cause the Yellow River to burst its banks, 600 towns and villages washed away, 1500 villages inundated by 40 to 50 feet of water. Estimated deaths: 1.5 to 7 million.

Severe Hurricane, Louisiana – **Oct. 1, 1893:** Produces storm surge wave 12 feet high, many ships lost, millions in property damage, and 2,000 people killed.

Massive firestorms, Midwest U.S.A. – Sept. 1, 1894: Gigantic forest fires rage over 12,000 square miles of Minnesota, Wisconsin and Iowa. Hundreds of people lose their lives. One firestorm which wiped out the town of Hinckley, Minn. was 5 miles wide and 5 miles in height! In its passing it reduced a great pine forest of more than 100 square miles (4 million 3 hundred thousand acres) to nothing but ash.

Huge Tornado strikes St. Louis Missouri – May 27, 1896: Causes 255 deaths and 2.54 billion in damages adjusted for inflation.

Massive Yellow River flood, China – Spring 1887: Heavy rains cause the Yellow River to burst its banks, 600 towns and villages washed away, 1500 villages inundated by 40 to 50 feet of water. Estimated deaths: 1.5 to 7 million.

Drought induced famine, India – **1898:** Intense drought affects some 300,000 square miles of southern and western India and the Punjab, causes widespread crop failures two years in a row. More than a million people starve to death, over 60 million people are severely affected.

Hurricane hits Florida, Oct. 2-3, 1898: Powerful hurricane slams into Florida. Giant oaks **are** snapped off like twigs, houses are blown down, vessels swept inland by massive rush of water.

Horrific drought in India –1899 – 1900: Millions die of starvation, millions more die of disease and prolonged famine.

Great Galveston Hurricane – **Sept. 8, 1900**: 150 mph winds, deadliest hurricane in U.S. history. Exact number of fatalities unknown but may have been as high as 12,000 people, some 20% of the islands population. The storm surge, over 15 feet in height washed over the entire island of utterly obliterating the city of Galveston. Over 3,600 homes were destroyed.

Violent typhoon, Hong Kong, China – Sept. 18, 1906: 10,000 are killed, Hong Kong is totally wrecked. One and two thousand ton ships are picked up by the winds and tossed about, other ships are demolished and sink.

Lethal famine in China in 1907: A poor harvest year is coupled with a massive storm that floods 40,000 square miles of prime agricultural land. 5000 people die in the storm, an estimated 25 million die of starvation in the subsequent harvest failures.

Hurricane gale, sinks 9,339 ton liner Waratah – **July 28, 1909:** 465 foot ship vanishes without a trace in a great storm. All 211 passengers and crew are lost.

Giant Hurricane smashes into Louisiana, Mississippi, and Alabama – Sept. 10 - 20, 1909: 350 killed, Mississippi River rises 3 feet when dikes give way, New Orleans inundated, several smaller towns utterly flattened.

Devastating forest fires in Idaho, Montana – **August 20, 1910**: Extreme forest fires decimate large areas of Idaho in particular. The firestorm came on as a gigantic tornado of fire, leaping over lakes, rivers and canyons as it swept through the forest at 70 miles per hour.

Gigantic fires incinerate north woods of Minnesota – **Oct. 7, 1910**: Known to history as the Baudette fire after the major town destroyed. 4 separate fires merged into one giant firestorm which consumed 300,000 acres of forest and at least a half dozen towns and villages in the Lake of the Woods region of Minnesota. 43 lives were lost.

Porcupine Fire, Ontario – **July, 1911**: Massive fire sweeps over 770 square miles of forest in Ontario, killing at least 70 people.

Enormous Floods, Yangtze River, China – Sept. 1911: Seven hundred square miles of 4 provinces and the city of Shanghai are inundated when the river bursts its embankments due to extreme rainfall, immediately drowning 100,000 people. Starvation soon kills another 100,000, more than half a million refugees.

Intense hurricane, Jamaica – Nov. 18, 1912: Multiple hurricanes pummel Jamaica in 1912. The fiercest has 120 mile per hour winds accompanied by massive tidal waves.

Mass Flooding, Ohio, Indiana, Illinois – March 25, 1913: Intense, prolonged rains cause swollen rivers in Ohio to burst their banks, breaching dikes and levees. Dayton, Ohio is under 12 feet of water, 125,000 residents take refuge on rooftops and up in trees. It is estimated that 18 billion tons of rainwater fall on Ohio over three days. 70,000 people instantly rendered homeless. 500 people die in floods which inundate over 1,000 miles of the Ohio River basin. 175,000 people are ultimately left homeless, \$147 million in damage.

Devastating floods, Otay Valley California – **Jan. 1916:** Massive, freakish rainfalls for several weeks, some measuring up to 395 cubic feet per second per square mile overwhelm the Otay and tributaries, breaking the Otay dam and releasing a flood that destroys millions of dollars worth of homes and crops.

Huge forest fire, Ontario Canada – **July 29, 1916**: Forest fire devastates multiple towns and communities in Ontario, Canada. 224 people die from burns or suffocation. History records this event as the Great Matheson Fire, after one of the towns obliterated by the flames.

Massive storm spawns multiple tornadoes, Midwest USA – May 26-27, 1917: Deadly tornadoes tear across Louisiana, Missouri, Illinois, Indiana, Kansas, Alabama, Arkansas and Tennessee. 350 killed, whole towns leveled.

Catastrophic fire, Minnesota and Wisconsin – Oct. 13-15, 1918: Over 50 smaller fires merge into one giant firestorm. Over 1000 people die, 52,000 are injured or displaced. A quarter million acres is incinerated, the town of Cloquet, Minnesota is virtually erased. Property damage in 2017 U.S. dollars exceeded \$1.16 billion. There were many examples of mass death, witnesses report piles of bodies in various places where they were undoubtedly seeking refuge.

Hurricane, Corpus Christi, Texas – **Sept. 14, 1919**: Massive storm swallows 10 ships, the Spanish liner *Valbanera* being the largest, with 400 passengers and 88 crew members, 16 foot waves engulf Corpus Christi.

Dozens of savage tornados strike Illinois, Mississippi, Alabama, Tennessee, Georgia, North Dakota and Nebraska – March 28, 1920: Chicago suffers massive destruction, over 220 deaths are recorded throughout the region.

Tornado swarm devastates southern U.S. – April 15 – 16, 1921: 30 tornadoes over two days cause widespread damage.

Massive snowstorm, Eastern U.S.A. – **Jan. 27** – **29, 1922:** Rages from South Carolina to Massachusetts, buildings collapse from the weight of snow, theater in Wash. D.C. collapses killing 98 people.

Giant Tornado – **Missouri, March 18, 1925:** Mile wide tornado begins its rampage in Annapolis, Missouri, cuts a swath for 219 miles to Petersburg, Indiana, 689 people killed, more than one half billion dollars in damages.

Indian River Florida Hurricane, July 26, 1926: High winds and seas sweeping houses, docks, boat onto land, uproots massive trees

Hurricane, Florida – **Sept. 15** – **22, 1926:** Florida again devastated from Miami to Palm Beach, 450 killed, thousands injured, 140 mph winds, nearly 20,000 homes demolished or unroofed, over 100 million in damages. (Equivalent to \$7.2 billion in 2016 dollars.) Entire town of Fort Lauderdale was submerged under 3 feet of water.

Hurricane, Cuba – **Oct. 20, 1926**: 130 mph winds kill 650 people, 25 foot waves, 10,000 homeless and \$100 million in damages

Enormous cluster of tornadoes in Midwest U.S.A. – **May 9, 1927:** 36 tornadoes in one day ravage the states of Oklahoma, Kansas, Texas, and Missouri. Town of Poplar Bluff, Missouri is wiped off the map by a tornado traveling over 50 mph.

Huge killer hurricane – **Sept. 10** – **16, 1928:** Extraordinarily powerful hurricane with diameter of 230 miles and <u>eyewall winds of 500 mph</u> devastates the Lesser Antilles, the Bahamas, Florida and Atlantic coast of the USA up to Cape Hatteras. Every building in Guadeloupe is flattened, 284,000 are rendered homeless in Puerto Rico. 21 miles of dikes around Lake Okeechobee, Florida are destroyed, flooding large areas and killing thousands.

Key Largo Hurricane of 1929: 150 mph winds, causes enormous damage in Nassau, Bahamas

Powerful hurricane batters Belize – **Sept. 10, 1931:** 132 mph winds pulverize dozens of ships, flooding Belize and drowning 1,500 people in a matter of minutes.

Decade of the 1930s: Devastating drought affects North American heartland from 1931 through the end of the decade. Most severe years are from 1934 to 1936.

Devastating tornadoes, Alabama – March 21-22, 1932: At least one dozen violent tornadoes devastate 5 states in addition to Alabama, including Georgia, Tennessee, South Carolina, Kentucky and Virginia. Hundreds of homes demolished, 268 killed.

Bahamas struck by 5 major hurricanes – 1933.

Two intense hurricanes strike east coast of Florida, July and September, 1933. Extensive damage.

Massive hurricane pounds El Salvador and Western Honduras – June 8, 1934: Many ships sink, massive downpour of rain, rivers overrun their banks by 45 feet, thousands drown.

Extreme drought in Nevada – **Summer, 1934:** Worst drought in state history devastates livestock industry, Lake Tahoe at its all-time lowest, Lake Washoe completely dries up.

Typhoon hits Osaka, Japan – Sept. 21, 1934: 125 mile per hour winds devastate Osaka, more than 80 schools are demolished killing 420 children and injuring 1000. 200 patients at a Leper hospital are swept away in the wind, 3,082 factories are destroyed, and over 4,000 residents die in the storm.

Extreme hurricane devastates Florida Keys – **Sept. 2, 1935:** Many villages wiped out by **250 mph winds and 20 to 30 foot waves**. Hundreds killed. Barometer plunges to 26.35, the lowest ever recorded in the Western Hemisphere. Witnesses say the air was thick with flying debris and dead bodies. Hundreds of WWI veterans in a road building camp are literally blown away by the wind.

Hurricanes, West Indies – **1935:** 4 massive hurricanes devastate the West Indies in 1935. One of these hurricanes kills more than 2,000 people in Haiti alone on October 22.

Major drought followed by famine, West China – 1936: 5 million people die

North American cold wave – Jan. – Feb. 1936: Intense, record breaking cold paralyzes Midwest, affects all of North America.

Worst heat wave on record in North America – Late June – early Sept, 1936: Record breaking cold wave is followed by extreme heat wave. North Dakota reaches 121°, Ontario and Manitoba set still standing records of 110°. Heat records are set in Texas, Oklahoma, Kansas, Minnesota, Michigan, N. Dakota, S. Dakota, Pennsylvania, Louisiana, Nebraska, Wisconsin, W. Virginia, and New Jersey. 5000 heat related deaths.

"The Great New England Hurricane" – Sept. 17 – 21, 1938: Gigantic storm with 186 mph winds causes enormous damage to Long Island, New York and southern New England. Almost 600 killed or missing, nearly 14,000 buildings destroyed, more than 2,500 boats sunk. Almost one half billion dollars in damages. 60,000 left homeless. This was the ninth major hurricane to have struck New England since record keeping began.

Tornados, Charleston, South Carolina – Sept. 29, 1938: From 6:45 A.M. to 8:30 A.M, 5 tornados at once descend on Charleston and surrounding area causing widespread damage and causing extensive casualties and injuries.

Black Friday Bushfire, Australia – **Jan. 13, 1939**: Some 7,800 square miles of Australian bush is incinerated. Over 1000 homes and log mills were destroyed. Ash fell as far as 2000 miles away.

Great Floods and famine, China – **Sept.** - **Nov. 1939:** A series of giant floods inundate northern provinces destroying grain and rice crops. 25 million rendered destitute, large swaths of land under 10 feet of water. Subsequent famine kills 200,000 over the next 3 months.

Giant Cyclone over Michigan and northern plains –Nov. 11 - 12, 1940: Furious cyclonic storm sinks 69 ships in Lake Michigan, kills 73 in the state of Michigan.

Devastating drought strikes China from 1941 through 1942: Exceptional winds, hailstorms and locust plagues descend upon China's breadbasket region. Grain harvests collapse, 3 million Chinese die of starvation by the end of 1943, millions become refugees.

Cyclone hits Bengal, India – **Oct. 16, 1942:** Powerful cyclone with 150 mph winds devastates the province of Bengal. 40,000 are killed when the storm hits Calcutta. Many villages completely flattened.

Violent typhoon, Philippines – **Dec. 17** – **18, 1944:** 150 mph winds ravage the Philippines, catching the American Third Fleet with 100 foot waves, sending 3 destroyers to the bottom, drowning 790 sailors and damaging all 28 surviving ships.

Eleven powerful hurricanes strike Florida between 1944 and 1950.

Huge, intense wild fire – **Acadia National Park** – **Oct. 25-27, 1947:** Fire consumes over 320 square miles of forest, decimates the town of Bar Harbor.

Massive flood on Columbia River — May-June, 1948: Aggravated by 3 days of intense rainfall, below normal temperatures delay snow melt in nearby mountain ranges, resulting in a flood in excess of 1 million cfs in Columbia Valley. Flood erases the city of Vanport Oregon, causing 19,000 to flee with only the clothes on their backs.

Chapleau-Mississagi fire of May-June, 1948: Huge forest fire destroys over 1000 square miles in Ontario, Canada. Smoke from the fire was so dense that street lights came on during the daytime as far away as Texas.

Hurricanes – **1951**: 12 large hurricanes in the season, the worst being Charlie on Aug. 17. 125 mph winds destroy every wooden structure on the island of Jamaica and break apart dozens of ships, damage is so widespread that recovery takes 5 years.

Hurricane winds, dike failure, destructive floods, Netherlands – Feb. 1, 1953: 100 mph winds breach 50 dikes, flooding a half million acres, drowning 1,835 people and a half million head of livestock and poultry. The same storm kills hundreds of people in England and Belgium.

Hurricane Carol, East Coast USA – Aug. 26 – 31, 1954: 135 mile per hour winds smash into Virginia, Maryland, Delaware, New Jersey, New York, Connecticut, Rhode Island, Massachusetts,

New Hampshire and Maine. 60 dead, thousands of homes smashed, cars tossed into the sea, giant sea waves, \$460 million in damages.

Typhoons sweep over Japan – **1954:** 15 powerful, deadly typhoons sweep over Japan in one year in 1954. A typhoon of Sept. 26 has winds so powerful they capsize a 4,300-ton ferry boat, dumping more than 1000 passengers into the sea and drowning them all.

9 powerful Typhoons strike Japan during 1955 season.

Connie and Diane, east coast USA – **Aug. 4** – **18, 1955**: Back to back hurricanes pound east coast of U.S. Particularly hard hit are the Carolinas, Delaware, New York, Virginia, Maryland. 125 mph winds, ten foot swells, torrential rains, 310 dead.

Hurricane Janet, Gulf of Mexico – **Sept. 22** – **28, 1955:** Monster sized hurricane with 114 mph winds devastates vast areas of coastal Mexico, Honduras over six day period. Over 500 killed, 60,000 left homeless. Every one of 10,000 coconut trees are snapped off by the wind on Swan Island. Hundreds of people die from snakebites by poisonous snakes washed into villages by overflowing rivers.

Massive blizzards, extreme cold in Europe – Feb. of 1956: 907 persons lose their lives to the extreme weather.

Typhoon Wanda, Yangtze area of China – **Aug. 2, 1956:** Following upon the worst heat wave in a century, massive typhoon devastates multiple provinces, killing 1,960, destroying 38,000 homes.

Powerful hurricane, Grenada – **Sept. 22, 1956:** Winds up to 127 mph destroy every building on the island of Grenada, leaving some 250 dead, 40,000 rendered homeless.

Hurricane Audrey – **June 27** – **30, 1957:** Early season hurricane with 105 mph winds catches people in the bayous and lowlands of Texas and Louisiana off guard. The town of Cameron, Louisiana is utterly demolished when Gulf waters surge 25 miles inland. Storm steamrolls north to Ohio before dissipating, destroying 40,000 homes and killing 524.

Typhoon Ida, Japan – Sept. 27 – 28, 1958: Intense typhoon with 100 mph winds demolishes 244 bridges, washes away 1,000 homes, spawning over 1,800 landslides. 1800 people killed or missing, 120,000 acres of rice paddies drowned, 10,000 rendered homeless.

Hurricane Donna – Sept. 4 – 12, 1960: Furious storm with 150 mph winds, gusting up to 180 mph, devastates Puerto Rico, Florida Keys, moves up East Coast to Gulf of St. Lawrence. 143 killed, thousands of buildings demolished.

Two great cyclones obliterate East Pakistan – Oct. 1960: An estimated 14,000 people lose their lives to the storms. Winds reach 120 mph.

Hurricane Hattie – **Oct. 31, 1961:** 200 mph winds engulf Belize, 10 foot tidal waves. At least 400 people killed, thousands injured.

Hurricane winds in the North Sea Feb. 17, 1962 – Causes massive, record flooding along Germany's coast. Over 500 people die, 500,000 left homeless.

Gigantic cyclone devastates East Pakistan on May 28 – 29, 1963: Winds of 150 mph pummel the countryside for 15 hours. Estimated 1 million homes destroyed, 300,000 left homeless, 22,000 dead, whole islands swept bare, tidal waves reached inland up to 3 miles, 4 ocean liners swept half a mile inland and dumped.

Destructive tornadoes, Midwest USA – **April 11, 1965:** Some 50 intense storms across the Midwest spawn at least 35 or more tornadoes that devastate large areas in Indiana, Michigan, Wisconsin, Illinois, Ohio within about 12 hours. Widespread associated flooding in 7 states including Minnesota and Montana. 271 persons killed, hundreds of millions of dollars in damage.

Hurricane Inez, Caribbean - **Sept. 24** - **30, 1966:** The Dominican Republic, Haiti and Cuba are devastated by 160 mph winds. Thousands are killed by being washed into mountain gorges in Haiti, creating vast piles of corpses. Hundreds more are killed throughout Cuba and the Dominican Republic.

Intense storm, destructive flood, Florence Italy – **Nov. 4-6, 1966:** 90 mph winds combined with torrential rains engulf the Arno and Po rivers causing massive floods to overwhelm Florence and Venice, destroying millions of dollars' worth of art and priceless historic documents, 13,000 shops and killing 113 people.

Record Floods in Gujarat India – **Aug. 7 - 14, 1968:** More than 1,000 people drown, vast areas of land submerged under 10 feet of water for more than a week. 80,000 head of cattle drown, carcasses rot in the streets.

Intense rains, landslides in Southern California – **Jan. 18** – **26, 1969:** Powerful storm dumps torrential rains on Southern California, causes massive landslides which kill 95 people. More than 100 boats sink, \$138 million in damage.

Hurricane Camille, Southern U.S. – **Aug. 17 - 19, 1969:** Costliest storm up to this date in the U.S., 220 mph winds devastate Louisiana and Mississippi, thousands left homeless, over 1 billion dollars in damages. Storm stalls over Virginia, dumping up to 46 to 50 inches of rain in only 6 hours over the headwaters of the James River. Nelson County, VA is virtually erased when an estimated 630 million tons of rainwater is dumped on it by the storm. 1000's of landslides and dead and rotting animal carcasses as a result. Noise from storm measured at 120 decibels.

SOURCES:

Calder, Nigel (1974) **The Weather Machine: How Our Weather Works and why it is Changing**. Penguin Books, Ltd.

Doehring, Fred; et al. (1994) **Florida Hurricanes and Tropical Storms – 1871 – 1993: An Historical Survey**. Florida Sea Grant College, Technical Paper – 71, June, 1994

Drye, Willie (2002) **Storm of the Century: The Labor Day Hurricane of 1935**. National Geographic Society

Eliot, J. (1888) **Cyclones of the Bay of Bengal**. Calcutta: Superintendent of the Government Printing Office

Fassig, Oliver L. (1913) Hurricanes of the West Indies. Washington, D.C.: U.S. Weather Bureau

Flora, Snowden, D. (1953) **Tornados of the United States**. Norman Oklahoma: University of Oklahoma Press.

Gray, R. W. (1933) "Florida Hurricanes." Monthly Weather Review 61, August.

Holbrook, Stewart Hall (1943) **Burning an Empire: The Story of American Forest Fires**. The Macmillan Company.

Kraft, R. H. (1966) "Great Hurricanes 1955—1965" Mariners Weather Log, November

Larsen, Lawrence H. (1984) Wall of Flames: The Minnesota Forest Fire of 1894 (1984) The North Dakota Institute for Regional Studies.

Longshore, David (1998) Encyclopedia of hurricanes, typhoons, and cyclones. Facts On File, Inc.

Miller, Don & Cohen, Stan (1978) **The Big Burn: The Northwest's Great Forest Fire of 1910** Pictorial Histories Pub. Co. Missoula, Montana

Nash, Jay Robert (1977) **Darkest Hours: The Great Book of Worldwide Disasters – From Ancient Times to the Present**. Wallaby Edition by Pocket Books.

Readers Digest (1989) **Great Disasters: Dramatic True Stories of Nature's Awesome Powers**. Ed. By Kaari Wood

Russell, Thomas H. (1913) Flood and Cyclone Disasters. Chicago: Thomas H. Morrison.

http://usnews.nbcnews.com/_news/2013/05/20/18382450-six-of-the-worst-twisters-in-us-history