

CHAPTER 12

LIGHTNING

Although not significant in relation to other natural hazards, lightning remains a certain danger in Wyoming. Lightning is a sudden electrical discharge released from the atmosphere that follows a course from cloud to ground, cloud to cloud, or cloud to surrounding air, with light illuminating its path (**Figure 12.1**). Lightning’s unpredictable nature causes it to be one of the most feared weather elements.

In Wyoming, outdoor enthusiasts venturing to high and exposed areas should be especially cautious because rapid thunderstorm development with associated lightning can place even the most experienced climbers in jeopardy without warning. Hikers and climbers above the timberline should plan to be off exposed mountain tops and ridges by 1400 MST during the summer months to avoid being struck by lightning unless proper shelter is available (Wyoming Climate Atlas).

History

U.S. statistics show that one in 345,000 lightning flashes results in a death and one in 114,000 results in an injury. Wyoming ranks 36th in number of lightning fatalities, 33rd in injuries, and 40th in property damage from 1959 to 1994 according to the National Oceanic and Atmospheric Administration, National Severe Storms Laboratory (NOAA, NSSL). From 1937 to 2006 lightning has been responsible for 36 deaths, 104 injuries, over \$4.4 million in property damage, and \$22,750 in crop damage in Wyoming. Dollar damage estimates may include damage from associated severe weather, including precipitation and wildland fire. **Table 12.1** includes Wyoming lightning events that have caused deaths, injuries, and damage.



Figure 12.1—Lightning over Devils Tower, Wyoming, Mato Tipila (Bears Lodge) to the Lakota people. Photograph courtesy of Christopher McLeod.

Table 12.1—Recorded Lightning Events (1937 through 2006).

Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
5/24/1950		Albany	Rock River		1			One man was injured when struck by lightning near Rock River during a thunderstorm on the 24th
5/25/1956		Albany	Lookout 14 NE					At Lookout 14 NE a yearling heifer was killed by lightning on the 25th.
6/6/1961		Albany	Northwest of Laramie	1		2,750		Lightning struck a herd of sheep, killing the herder and 89 sheep.
7/7/1971		Albany	Laramie 10 WSW		1			Lightning struck near two men, injuring one of them.
6/20/1974		Albany	Hidden Valley		1	275		In Hidden Valley, Pole Mountain Division, Medicine Bow National Forest, lightning struck fiberglass sports car injuring the occupant, blowing out the tires, and starting a fire.
9/14/1981		Albany	Laramie					Repeated lightning strikes caused damage to Pacific Power & Light Company equipment causing extensive power outages. Minor flooding also caused by heavy rains from slow moving storms; 0.7 inch of rain was recorded east of Laramie
7/8/1982		Albany	Jelm Mountain			9,000		Lightning destroyed a \$7000 surge arrester at the University of Wyoming's infrared observatory on the 9656-foot summit of Jelm Mountain. A second strike on July 15 knocked out \$2000 worth of peripheral equipment.
7/9/1982		Albany	Jelm Mountain			Reported 8 July 1982		Lightning destroyed a \$7000 surge arrester at the University of Wyoming's infrared observatory on the 9656-foot summit of Jelm Mountain A second strike on July 15 knocked out \$2000 worth of peripheral equipment.
8/12/1982		Albany				275		Lightning caused a 2-acre grass fire 30 miles northwest of Wheatland on the Albany County line.
7/28/1987		Albany	Laramie (8E)			2750		Heavy thunderstorms rumbled into the city of Laramie during the afternoon. Several lightning strikes were reported in the city with a few trees damaged by lightning.
10/5/1988		Albany	25W Cheyenne					During the afternoon, lightning from a cluster of intense thunderstorms started an unknown number of trees on fire. These storms also produced 0.5 to 1 inch of rainfall in a short period of time.
6/26/1996		Albany	Laramie			4,000		Lightning struck several trees in Laramie. A 40-foot cottonwood tree was apparently uprooted by the lightning and fell onto a house. Another tree was struck by lightning and started a small fire in a nearby house.
7/7/1996		Albany	Laramie			2,000		Lightning struck and splintered a large tree in Laramie. A television and a VCR in a nearby house were also destroyed.

Table 12.1—Recorded Lightning Events (1937 through 2006).

Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
8/5/1996		Albany	25 W Wheatland			300,000		Lightning sparked a fire that consumed 5000 acres by the time it was contained on August 12. Several buildings were destroyed.
7/24/1999		Albany	Centennial	2				Lightning killed two hikers on Medicine Bow Peak northwest of Centennial, about 150 to 200 feet below the summit at an altitude just over 12,000 feet.
7/12/1962		Big Horn	Greybull		2	2,750		Two persons were injured when lightning struck the St. Jermain home.
7/13/1962		Big Horn	Big Horn Mountains		1			A bolt of lightning contributed to the injury of a woman horseback riding in the northern Big Horn Mountains.
7/19/1962		Big Horn	Big Horn Mountains		7			Lightning struck a tree and injured seven people in the Big Horn Mountains west of Buffalo.
7/16/1978		Big Horn			1	25		A 63-year-old man was struck by a bolt of lightning from a thunderstorm at Barry's Landing in the Big Horn Canyon National Recreation area. As the man was walking up the boat ramp toward his car a bolt of lightning hit him near the shoulders and exited through his feet. His wife claimed it "...blew the clothes off of him and burned holes in his socks." He was reported in "good condition" and expected to recover fully.
8/1/1994		Big Horn	Greybull			20,000		Lightning struck two homes in Greybull damaging the roofs and causing smoke damage.
8/18/1996		Big Horn	Burlington					11 head of cattle killed by lightning.
8/14/1963		Big Horn		1		275		Shepherd and horse killed by lightning in Big Horn Mountains northeast of Greybull.
8/18/1973		Big Horn	Big Horn County			27,500		Thunderstorms associated with high winds and intense lightning produced spotty crop and property damage throughout Big Horn County.
6/13/1957		Campbell	Gillette		1			About the 13th a shepherd near Gillette was knocked unconscious or stunned by lightning which struck his sheep wagon and set it afire. He recovered consciousness in time to extinguish the burning top of the wagon.
5/22/1978		Campbell	Gillette, 4 mi. S			200,000		This tornado caused only minor damage to one house; however, lightning from the same thunderstorm caused an explosion and fire to oil tank. Minor wind damage to fence, shed, and crops reported also.
7/27/1980		Campbell						Lightning caused a 3000-acre fire some 25 miles southeast of Gillette destroying timber and grazing land.
8/23/1986		Campbell	Reno Junction			27,500		At 1830 MST near Reno Junction, lightning struck two empty oil storage tanks, causing them to explode.

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Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
7/30/1987		Campbell	Savageton					A very strong thunderstorm developed near Savageton, about 40 miles southwest of Gillette, at 2045 MST. Lightning struck a home in Gillette and knocked a hole in the ceiling.
7/27/1988		Campbell						During the late afternoon, lightning from thunderstorms ignited three open range fires. Two of the fires were under control by the early morning of the 28th with the last estimated to be under control by about 1000 MST of the 28th.
7/21/1999		Campbell	Countywide					Eleven fires were started throughout the county due to lightning striking rangeland and hay bales. The largest fire reached 300 acres before firefighters were able to contain it.
7/27/2000		Campbell	Countywide					Lightning caused several small fires throughout the county. The largest was contained within 36 hours.
8/4/2001		Campbell	Wright to 10 N Gillette					During the 3-day period from the 4th through the 7th, lightning started 12 fires across Campbell County. Most of the fires burned between 0.5 and 5 acres, burning a total of 30 acres.
7/28/1975		Campbell and Johnson						Lightning created grass fires and burned one building to the ground during a prolonged dry spell. Detailed reports follow. The historic Lawzer-Hilite Post Office, located southeast of Gillette, was struck by lightning and burned to the ground. About 100 acres of grassland was burned on the Y Bar U Ranch, 20 miles east of Kaycee. A 40-acre grassfire started late on the afternoon of the 29th. The fire was on the Don Wyatt Ranch east of Buffalo. Lightning started a fire on Tisdale Mountain near the Natrona County line early on the morning of the 30th. About 10 acres of range land were destroyed.
7/26/1956		Carbon	South of Elk Mountain	1				Lightning killed one person south of Elk Mountain in Carbon County.
6/22/1966		Carbon	Baggs		1	275		Lightning struck and killed a horse, injuring the rider.
5/15/1969		Carbon	Medicine Bow		1	275		Lightning killed a horse and injured its rider.
6/2/1976		Carbon	Saratoga 33 NE	1				Lightning killed a ranch hand on the TA Ranch on Pass Creek Road at about 1500 MST.
7/30/1976		Carbon	Medicine Bow 5 SE	1				Lightning killed a 13-year-old boy while fishing at Chase Reservoir.
8/17/1986		Carbon	Saratoga				6,000	During the afternoon, a lightning-caused fire burned \$6000 worth of baled hay just southeast of Saratoga.

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Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
7/11/1994		Carbon			1			Lightning struck a truck's antenna at a fire site near Saratoga. The bolt traveled from the truck to the ground and over to another truck where a sheriff's deputy was sitting, slightly injuring the man.
6/14/1998		Carbon	7 E Rawlins		1			A motorcycle rider was hit by lightning as he was riding west on Interstate 80. He was struck in the back of the neck and the strike caused him to lose control of his motorcycle and crash into the median. The motorcyclist received a ruptured eardrum and burns to his eyes, chest, and shoulder. The victim was taken to the hospital for treatment and released.
8/10/1998		Carbon	15 S Arlington	1				A woman was killed by a lightning bolt while hiking in the Snowy Range. A friend that was hiking with her was injured. The two were trying to get to lower levels of the mountains after spotting the storm, but the storm caught them in the open. F51OU
9/17/2002		Carbon	12 S Encampment	1				Lightning struck a tree and woman standing under it at the Pickaroon Campground in Medicine Bow National Forest. F51UT
7/24/1973		Converse	Douglas, near	1		25		A 17-year-old boy and the horse he was riding were killed by lightning on a ranch just north of Douglas.
8/27/1973		Converse	Douglas	1		275		Lightning struck a tree which a man was leaning against, killing him instantly.
7/7/1976		Converse	Douglas 30 N	1				Lightning killed a cowboy, circumstances not known.
8/1/1984		Converse	Glenrock			2,750		Thunderstorm dumped 2 inches of rain in 30 minutes, or 3.2 inches total from 1.5-hour deluge at Glenrock in Converse County. Rain flooded basements of several houses, a car, and several businesses. Other minor damage due to flooding and lightning strikes.
7/11/1988		Converse	44N Douglas			27,500		Lightning from a thunderstorm struck a battery of six oil tanks near the town of Bill, 44 miles north of Douglas. Five out of the six tanks were damaged, four were ruptured. A spectacular explosion resulted and smoke from the fiery inferno could be seen a distance of at least 3 miles away. Since the fire was so intense, firefighters elected to let it burn itself out.
8/4/1990		Converse	10 NW Douglas			2,750		Lightning struck a house near old Fort Fetterman causing extensive damage.
7/21/1997		Converse	2 N Orin				5,000	Fire caused by lightning burned 500 acres of grass on a ranch near Orin.
9/1/1953		Crook	Sundance	1				One man was killed in an electrical storm near Sundance early in the month.

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8/7/1982		Crook				27,500		Lightning strikes caused two fires that burned 55 acres of timber and grass; 15 acres on the Ivan Policky ranch and 40 acres on the old Maurice Hauber ranch 1.5 miles from Devil's Tower.
8/5/1985		Crook	Moorcroft			2,750		Severe winds accompanying a thunderstorm knocked down light and power poles. Heavy lightning and only a very small amount of rain occurred.
7/18/1998		Crook	5 N Sundance					Lightning caused a 0.5-acre fire of pine trees and grass.
7/14/2000		Crook	Countywide					Lightning caused seven wildfires throughout the county. The largest was 400 acres.
7/27/2000		Crook	Countywide					Lightning caused five fires throughout the county. Four of the fires were small and easily contained. The fifth fire, northwest of Hulett, reached several hundred acres before crews had it under control.
8/10/2000		Crook	Countywide					Eighteen fires were started by lightning. The largest fire burned 4000 acres in the New Haven area and took several days to contain. The rest were contained within 24 hours.
7/8/2001		Crook	Devils Tower		2			
7/8/2001		Crook	New Haven					A thunderstorm moved across Crook County producing very large hail. Hail ranging in size from pennies to tennis balls pelted Devils Tower for 40 minutes. Four injuries (direct) were climbers on Devils Tower who were hit by hail. Two injuries (direct) were the result of a lightning strike. The injuries were not life threatening, and it is not known if medical attention was administered. Damage to several cars was reported as "significant."
7/9/2001		Crook	Moorcroft			250,000		Lightning struck a building in downtown Moorcroft. The fire ignited the building, a sporting goods store. Most of the building was destroyed.
8/15/2001		Crook	3 NE Moorcroft					Lightning ignited a fire around Keyhole Reservoir. The fire burned 172 acres.
5/22/1956		Fremont	Lander					At Lander three cows were killed by lightning on the 22nd.
6/9/1957		Fremont	Pavilion	1				About 8:00 p.m. of the 9th a man operating a tractor with ditching attachment was killed by lightning northeast of Pavilion.
7/14/1959		Fremont	6 miles West of Big Piney	1	2			Lightning killed one man and injured two others.
8/7/1961		Fremont	Lander 25 SE		1			Lightning struck a highway guardrail upon which a man was leaning, causing minor injuries.
5/15/1969		Fremont	Moneta		1	275		Lightning killed a horse and injured its rider.

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6/27/1970		Fremont	Crowheart		2	2,750		Lightning struck and killed a horse, injured the boy rider, knocked 3 other horses down, injured one of the riders, occurred in Crow Creek Basin on Black Mountain.
6/22/1972		Fremont	Lander		1			A member of a surveying crew was struck and injured by lightning on the Taft Ranch 8 miles east of Lander.
5/20/1976		Fremont	Arapahoe	1	1			Boy, aged ten, killed by lightning when it struck a tree that supported the rope swing he was playing on. His brother, playing a few feet away, was injured.
7/16/1979		Fremont		1				A woman was struck by lightning and killed instantly after she climbed to the top of 11,884-foot Pingora Peak, 28 miles west of Lander. Other members of the climbing party were not injured.
5/24/1980		Fremont						Winds gusting to 69 mph at 1700 MST blew two tractor-trailers off the road at South Pass, blocking traffic for several hours. Power failure in the Lander area left a hospital without power for 30 minutes. Lightning struck a transformer leaving about 500 county residents without power for 8 hours. In Moneta, winds gusted to 80 mph causing heavy damage to buildings.
6/1/1982		Fremont	Jeffrey City	1				It is speculated that lightning tore through an electrical panel being worked on, arced the tripped circuit breaker to electrocute a man at the Squaw Creek Mine about 1245 MST.
6/11/1988		Fremont	Countywide			2,750		Several thunderstorms moved through Fremont County during the afternoons of the 11th and 12th. At least 10 range fires were ignited by lightning strikes. The largest of these range fires occurred south of Jeffrey City and another near Copper Mountain. The Fremont County Fire Warden said that all the fires were put out in time before they got too large. These thunderstorms also produced isolated heavy rainfalls of 2.5 to 3 inches; 0.5-inch-diameter hail covered the ground northwest of Riverton during the afternoon of June 12th and caused crop damage to 80 acres of hay, 80 acres of grain, and 20 acres of corn. Additionally, fields of sugar beets and barley were damaged by the small hail. No flooding was reported with the heavy rainfall.

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6/12/1988		Fremont	Countywide					Several thunderstorms moved through Fremont County during the afternoons of the 11th and 12th. At least 10 range fires were ignited by lightning strikes. The largest of these range fires occurred south of Jeffrey City and another near Copper Mountain. The Fremont County Fire Warden said that all the fires were put out in time before they got too large. These thunderstorms also produced isolated heavy rainfalls of 2.5 to 3 inches; 0.5-inch-diameter hail covered the ground northwest of Riverton during the afternoon of June 12th and caused crop damage to 80 acres of hay, 80 acres of grain, and 20 acres of corn. Additionally, fields of sugar beets and barley were damaged by the small hail. No flooding was reported with the heavy rainfall.
6/12/1988		Fremont	8 NW Riverton					Several thunderstorms moved through Fremont County during the afternoons of the 11th and 12th. At least 10 range fires were ignited by lightning strikes. The largest of these range fires occurred south of Jeffrey City and another near Copper Mountain. The Fremont County Fire Warden said that all the fires were put out in time before they got too large. These thunderstorms also produced isolated heavy rainfalls of 2.5 to 3 inches; 0.5-inch-diameter hail covered the ground northwest of Riverton during the afternoon of June 12th and caused crop damage to 80 acres of hay, 80 acres of grain, and 20 acres of corn. Additionally, fields of sugar beets and barley were damaged by the small hail. No flooding was reported with the heavy rainfall.
7/10/1988		Fremont						Lightning from strong thunderstorms started at least two small fires in open country. There was a 1-acre sagebrush fire about 2 miles north of the Sweetwater rest stop on South Pass. Another fire was started in a hay field near Kinnear. Both fires were quickly controlled.
8/5/1988		Fremont	30NE Riverton					During the late afternoon, lightning from a thunderstorm ignited a fire that burned 7 acres. The blaze occurred on Copper Mountain.
7/15/1990		Fremont	N of Lander			2,750		Lightning struck a house just north of Lander around 1730 MST, causing extensive electrical damage.
8/11/1994		Fremont				40,000		Lightning did extensive damage to home on the Wind River Indian Reservation.
9/10/1999		Fremont	15 S Lander					Lightning-caused fire burned 600 acres of juniper and sagebrush.

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7/4/2001		Fremont	20 SE Lander			70,000		The Sheep Mountain fire was started by lightning. The fire burned 1500 acres. One fire truck was destroyed. The damage is estimated.
7/1/2002		Fremont	10 W Ft. Washakie					The South Fork Two wildfire was started by lightning. The fire burned 15,000 acres.
8/21/2002		Fremont	13 SW Jeffrey City					The Arapahoe wildfire was started by lightning. The fire burned 356 acres.
8/24/2002		Fremont	18 S Lander					The Pass Creek wildfire was started by lightning. The fire burned 13,000 acres.
8/10/1983		Fremont, Hot Springs, Washakie				2,750	5,000	A large area of severe thunderstorms rumbled through west central Wyoming. Hail 0.75 inch in diameter fell near Thermopolis and just northwest of Worland, causing extensive crop damage especially to beets. The storms also had very intense and frequent lightning that caused power outages and damages to homes and barns in the Riverton and Worland areas. Minor flash flooding was also reported near Riverton and Worland as 1 to 2 inches of rain fell.
5/31/1938		Goshen	Veteran, Huntley			5,000		Events of more that ordinary interest were the occurrence of three well defined tornadoes during the year. The first was reported in the vicinity of Veteran and Huntley, in Goshen County, during the early afternoon of May 31st. Farm buildings and equipment were destroyed with an estimated loss of more than \$5000.
7/14/1954		Goshen	Torrington	1				Lightning caused one death each in Sheridan and Torrington on July 14.
7/18/1957		Goshen	Torrington					At Torrington about 6 p.m. of the 18th lightning struck a residence, set it afire, and caused appreciable damage to both the house and its furnishings.
5/24/1961		Goshen	Lingle 6 E	1				A man was struck by lightning while plowing.
9/3/1997		Goshen	Torrington			1,000		Power pole damaged; reported by Torrington Police Department.
7/12/1995		Hot Springs				80,000		Lightning caused two structure fires 11 miles east of Lucerne. Both a house and a barn were destroyed.
7/28/2000		Hot Springs	35 NW Thermopolis					By the end of July, the "Enos Complex" fires had burned over 11,000 acres of limber pine, juniper, Douglas fir, sagebrush, and grass on mostly Bureau of Land Management (BLM) administered public lands. Started by lightning.
8/20/1963		Johnson			1			Man injured by lightning while leaning on truck, talking on 2-way radio at 4 Mile Ranch.
8/2/1974		Johnson	Buffalo 25 E	1	4			Lightning killed one fisherman and injured four others in party.

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8/5/1982		Johnson	Kaycee			2,750		Lightning ignited some dry timber on the west side of Gardner Mountain just east of Middle Spring on federal land. Six acres burned before the fire was declared out.
9/25/1995		Johnson			1			A 40-year-old man was struck by lightning, west of Buffalo. He was working on a water well at the time.
7/19/2003		Johnson	20 SW Buffalo					The Big Spring wildfire was started by dry lightning and was spread quickly by gusty winds. Eleven residences had to be evacuated in addition to six others that were protected. Billy Creek and Muddy Guard roads were closed as the fire approached. The fire continued until August 13 th and burned 6120 acres. The estimated cost of fighting the fire was \$5.7 million.
8/22/2006	8/28/2006	Johnson	Bighorn Mountains Southeast-Southeast Johnson County			65,000		Lightning caused the ignition of the Outlaw 2 wildfire approximately 20 miles southwest of Kaycee on Tuesday, August 22. The fire occurred near a famed area called Hole-in-the-Wall. The fire spread rapidly on Wednesday, August 23, growing from an estimated 300 acres on Tuesday to approximately 10,000 acres by midday Tuesday, August 24. An estimated 12,270 acres were destroyed by the fire. One outbuilding and a restored historic cabin dating to early Wyoming history in the 19th century were consumed by the fire. The cost of the firefighting efforts reached \$800,000.
4/3/1947		Laramie	Albin	1				A farmer living near Albin was struck by lightning and killed during a storm on the 3rd.
6/18/1950		Laramie	Cheyenne	1				One person was struck by lightning and killed near Cheyenne on the 18th.
8/9/1956	8/11/1956	Laramie	Horse Creek					At Horse Creek 2NW there was a "parade of thunderstorms" during the afternoons of the 9th, 10th and 11th, lightning struck and burned two haystacks.
5/29/1957		Laramie	Cheyenne					During the afternoon of the 29th lightning struck a residence in Cheyenne and caused considerable damage to the house and its furnishings. No one was injured.
6/2/1961		Laramie	Cheyenne		1			
6/28/1962		Laramie	Cheyenne		1			Man pulling plane into hangar injured when lightning struck.
7/12/1963		Laramie	Burns 5 N	1	1			Lightning struck and killed one man and injured another standing along side.
6/14/1965		Laramie	Cheyenne 25 W		1			Lightning struck and injured a fisherman at Crystal Lake Reservoir.
6/7/1969		Laramie	Cheyenne		1			Lightning injured woman golfer.

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8/21/1981		Laramie	Burns					Funnel cloud 3 miles west to 3 miles south of Burns, heavy rains, vivid lightning, and 0.25 inch of hail.
6/25/1982		Laramie	Cheyenne			800		Lightning strikes caused several small fires around 1800 MST causing an estimated \$800 damage. Three-quarters of an inch of rain fell in 20 minutes.
7/22/1986		Laramie	Cheyenne		1			A person was struck and injured by lightning at 1750 MST at Frontier Park, on the west side of Cheyenne.
7/18/1988		Laramie	Pine Bluffs					During the late afternoon and early evening, the combination of a strong upper-level through in northwest flow coupled with low-level upslope winds spawned an intense line of severe thunderstorms across extreme east and southeast Wyoming. The line moved slowly south while the individual cells progressed east-southeast. Laramie County was the hardest hit. At 1600 MST, a tornado touched down in open country about 20 miles northwest of Cheyenne. There were also numerous funnel clouds. As the parent thunderstorm moved east-southeast, numerous reports of small hail and very heavy rain were received throughout Laramie County. Even though Cheyenne was missed, golf ball-sized hail came within 9 miles north of the city. Between 1700 and 1800 MST, the Pine Bluffs area was raked by this same storm. Trees were uprooted, crops washed away, roofs of houses damaged, and damage was done to electrical appliances by lightning. In general, between 1615 and 1830 MST, Laramie County suffered wind, hail, and rain.

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Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
7/18/1988		Laramie	Pine Bluffs					During the late afternoon and early, the combination of a strong upper-level trough in northwest flow coupled with low-level upslope winds spawned an intense line of severe thunderstorms across extreme east and southeast Wyoming. The line moved slowly south while the individual cells progressed east-southeast. Laramie County was the hardest hit. At 1600 MST, a tornado touched down in open country about 20 miles northwest of Cheyenne. There were also numerous funnel clouds. As the parent thunderstorm moved east-southeast, numerous reports of small hail and very heavy rain were received throughout Laramie County. Even though Cheyenne was missed, golf ball-sized hail came within 9 miles north of the city. Between 1700 and 1800 MST, the Pine Bluffs area was raked by this same storm. Trees were uprooted, crops washed away, roofs of houses damaged, and damage was done to electrical appliances by lightning. In general, between 1615 and 1830 MST, Laramie County suffered wind, hail, and rain. Damaged crops included mostly wheat, but also potatoes, corn, and spring barley. The Albin area, 41 NE of Cheyenne, had 1 to 3 inches of rain, which flooded highways. Other counties of extreme east and southeast Wyoming also reported some severe weather, mostly from hail.
6/8/1996		Laramie	Cheyenne					Lightning caused damage in the Cheyenne area. Lightning knocked a chimney off of a house and split a tree, both in Cheyenne.
8/26/1957		Lincoln	Etna					Lightning struck a residence at Etna, a small town about 10 miles south of the Snake River Grand Canyon.
9/2/1961		Lincoln	Bear River Divide	1		275		A sheepherder and his horse were killed by lightning.
8/30/1967		Lincoln	Afton		1			Lightning injured a youth operating a tractor on a farm near Afton.
6/6/1969		Lincoln	Kemmerer 5 SW		1			Lightning injured open-pit-mine worker.
6/17/1969		Lincoln	Kemmerer 3 W		1			Security guard at power plant injured.
8/18/1982		Lincoln	Afton				2,750	Lightning hit and burned 50 tons of hay.
9/10/1997		Lincoln	Alpine		3			Three hunters struck by lightning up Red Canyon near Alpine.
7/4/2001		Lincoln	14 SE Alpine					The Greys River complex fire was started by lightning. Burned acres unknown. Ending location estimated.
8/18/2001		Lincoln	2 SW Alpine					The Alpine 2 fire was started by lightning and burned 475 acres. Ending location estimated.

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9/1/2002		Lincoln	20 N Kemmerer					The Commissary Ridge wildfire was started by lightning. The fire burned 3500 acres. Also, one summer home and one outbuilding were destroyed.
6/7/1950		Natrona	Casper	1				One person was struck by lightning and killed near Casper on the afternoon of the 7th
7/6/1957		Natrona	Casper					Lightning set fire to a storage tank in Casper on July 6, destroying over 10,000 barrels of oil.
8/13/1960		Natrona	Midwest		1			
6/5/1968		Natrona	Casper		2			Two men injured by lightning on the Casper municipal golf course.
9/10/1974		Natrona	Casper			275,000		A smoldering fire, set by lightning on the 8th, on the north slopes of Casper Mountain, exploded out of control because of strong dry winds on the 10th. The winds were estimated to exceed 60 mph at times in the area of the fire. The fire consumed almost 1000 acres of timber before it was finally contained on the evening of the 10th by fire fighters. The fire fighters were aided by decreasing, shifting winds and precipitation following a cold frontal passage.
6/23/1982		Natrona	Casper					Spectacular lightning storms hit Casper both nights causing power outages throughout the city. Heavy rains, 0.25-inch-diameter hail and flooding accompanied the second night's storm.
7/29/2000		Natrona	8 S Casper					By the end of July, the fire had consumed over 5000 acres of government and private land. Some homes evacuated. Started by lightning.
7/30/2001		Natrona	8 E Casper					The Cole Creek fire was started by lightning and burned approximately 1300 acres. Ending location estimated.
8/25/2002		Natrona	16 NW Arminto					The Bear Creek wildfire was started by lightning. The fire burned 806 acres.
5/8/2006	5/8/2006	Natrona	7 E Casper			65,000		Lightning struck the peak of a roof at a house on Platte River Road igniting a fire within the structure. Smoke quickly spread throughout the house and into the attic. A portion of the home's cement foundation was blown apart. The home's lone resident was not injured but did report that she felt the house shake when the bolt struck.

Table 12.1—Recorded Lightning Events (1937 through 2006).

Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
8/12/2006	8/23/2006	Natrona	Natrona County Lower Elevations-Casper Mountain			1,200,000		The Jackson Canyon Wildfire began shortly before noon on Saturday, August 12. The fire started in Jackson Canyon near Coal Mountain from a lightning strike. By Monday, August 14 the fire had spread to Casper Mountain and necessitated the evacuation of numerous homes and the closure of roads on the mountain. The fire spread to the north-facing slope of Casper Mountain early Tuesday, August 15 and threatened several subdivisions at the foot of the mountain. Additional evacuations and road closures occurred as the fire encroached on southwest Casper. The fire raged Wednesday and Thursday, August 16 and 17, as gusty southwest wind and low relative humidity were prevalent. A cold frontal passage Thursday evening brought northerly wind and relief from the low relative humidity. This helped firefighters gain the upper hand on the fire. By Sunday evening, August 20, roads to Casper Mountain were again opened and residents allowed to return home. The fire was contained and the incident management team demobilized by Wednesday morning, August 23. The fire consumed 11,756 acres of land, including seven cabins, one barn, and two outbuildings. Total cost of fighting the fire was estimated at \$3.8 million.
6/14/1982		Natrona, Converse	Casper, Douglas					Thunderstorms dumped 1.89 inches of rain in the Casper and Douglas areas between 1400 and 1500 MST in Casper causing local flooding. A funnel cloud was reported south of Casper Mountain at 1450 MST. Lighting caused a power outage at the Natrona County airport and 10 Mile Road areas from 1315 to 1530 MST.
7/26/1980		Natrona, Converse Counties						Lightning-caused fire consumed about a thousand acres of prime grazing and forest land on Piney Ridge, 15 miles east of Edgerton near the Natrona-Converse County line.
7/20/1957		Niobrara	Lusk					On the 20th, in the vicinity of Lusk, lightning struck a stack of new hay and completely burned it.
7/11/1988		Niobrara						As the thunderstorms responsible for the lightning fires moved east, 1-inch-diameter hail occurred in the open country of Niobrara County during the evening.
7/12/1995		Niobrara				4,000		Strong thunderstorm winds destroyed a garage just west of Lusk. Lightning caused a power outage for an hour in Lusk.

Table 12.1—Recorded Lightning Events (1937 through 2006).

Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
7/24/1997		Niobrara	Northern Niobrara County			5,000	3,000	Fire started in northern Niobrara County evening of the 24 th and was put out on the 26 th after firefighters logged 28 hours of duty and used 50,000-60,000 gallons of water; grass and cottonwood trees were consumed; no livestock lost.
9/11/1997		Niobrara	Lance Creek					Several small brush fires were started by dry lightning.
9/23/1962		Park	Cody		1			Bolt of lightning struck near a young girl on a bicycle, injuring her.
6/29/1966		Park	Cody		1			Lightning struck a tree injuring a boy sitting underneath.
8/19/1967		Park	Cody		4	275		Lightning struck very near four hikers on Ptarmigan Mountain, west of Cody, injuring the four, one seriously.
9/12/1968		Park	Powell		1			Grain combine struck by lightning just south of Powell, operator slightly injured.
6/27/1970		Park	Powell		1			Lightning injured a man as he was mowing his lawn.
7/2/1975		Park	Duane Rindahl's Ranch (on the South Fork)			2,750		Quarter horse killed by lightning bolt.
6/14/1982		Park	Cody					Lightning knocked out the power for half of Cody in the early morning. Heavy rain caused the closure of Highway 32 north of Emblem between Cody and Greybull.
6/19/1986		Park	Powell			10,000		Lightning struck the Powell water treatment plant, destroying an electrical transformer and damaging other electrical equipment. Damage estimates ran slightly more than \$10,000.
8/25/1986		Park	Cody			8,000		At 0345 MST, wind gusts to 69 mph were logged at the Cody airport with a thunderstorm. At 0430 MST, two eyewitnesses 4 miles east of Cody saw a tornado destroy a trailer house and a shed. Trees were uprooted and cars damaged by flying debris. During the afternoon, lightning did \$8000 damage to a TV transmitter near Cody.
7/1/1988	7/31/1988	Park, Teton				364,430		During the month of July, at least 59 fires were started by lightning from mostly high-based thunderstorms that produced little rainfall. These included very large forest fires such as the Clover Mist Blaze in Yellowstone National Park and the Lost Fire over the Big Horn Mountains of northern Wyoming. On a week-by-week basis, the breakdown of lightning fire is as follows. Before and including the 2nd, 14 lightning fires were started. During the 10th through the 16th, 18 such fires were reported. From the 17th through the 23rd, there were eight fires. Between the 24th and 30th, ten lightning blazes occurred.

Table 12.1—Recorded Lightning Events (1937 through 2006).

Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
								Finally, on the 31st, there were four fires. According to the BLM for Wyoming, 3644.3 acres were torched with an estimated lost resource value of \$364,430. This does not include the fires started by lightning in Yellowstone National Park because this information is not yet available. July 1, 1988 - Park, Teton, Carbon, Sweetwater, Natrona, July 3, 1988 - Park, Teton, Sweetwater, Sheridan, Natrona, Fremont, Albany, Laramie, Crook, Johnson , July 10, 1988 - Park, Teton, Sweetwater, Fremont, Johnson, Laramie, Washakie, Converse, Natrona, July 17, 1988 - Park, Teton, Fremont, Sweetwater, Washakie, Natrona , July 24, 1988 - Park, Teton, Uinta, Johnson, Sublette, July 31, 1988 – Park, Teton
8/1/1988	8/31/1988	Park, Teton, Campbell, Crook, Natrona, Sweetwater, Weston				415,900		With the continuation of the hot, dry weather, at least 29 fires were started by lightning during the month of August. The thunderstorms that were responsible for the ignitions were generally high-based and produced little rainfall. Most of these fires were relatively small, less than 100 acres. However, the Dorn #2 fire, located in Washakie County, on August 14th, grew to 1514 acres. The largest blaze was the Fern fire, located in Yellowstone National Park. That fire occurred on August 5th. The Fern fire torched 2000 acres before it burned into the Clover Mist blaze (another fire ignited by lightning during the previous month of July). On a week-by-week basis, the breakdown of lightning fires is as follows. From the 1st to the 6th, there were ten such blazes. Between the 7th and 13th, another ten lightning fires occurred. During the 14th to the 20th, six fires were reported. Finally, from the 21st through the 2nd, there were three blazes. According to the BLM for Wyoming, 4159 acres were torched with an estimated lost resource value of \$415,900. That figure does not include the fires started by lightning in Yellowstone National Park because this information is not yet available.
8/7/1988		Park, Teton, Converse, Sweetwater, Lincoln, Carbon				Same as 1 August 1988		With the continuation of the hot, dry weather, at least 29 fires were started by lightning during the month of August. The thunderstorms that were responsible for the ignitions were generally high-based and produced little rainfall. Most of these fires were relatively small, less than 100 acres. However, the Dorn #2 fire, located in Washakie County, on August 14th, grew to 1514 acres. The largest blaze was the Fern fire, located in Yellowstone National Park. That fire occurred on August 5th. The Fern fire torched 2000 acres before it burned into the Clover Mist blaze (another fire ignited by lightning during the

Table 12.1—Recorded Lightning Events (1937 through 2006).

Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
								previous month of July). On a week-by-week basis, the breakdown of lightning fires is as follows. From the 1st to the 6th, there were ten such blazes. Between the 7th and 13th, another ten lightning fires occurred. During the 14th to the 20th, six fires were reported. Finally, from the 21st through the 2nd, there were three blazes. According to the BLM for Wyoming, 4159 acres were torched with an estimated lost resource value of \$415,900. That figure does not include the fires started by lightning in Yellowstone National Park because this information is not yet available.
5/18/1994		Park						A lightning and hail storm left 380 homes in Park County without electricity for several hours. Workers were pelted with golf ball-sized hail as they tried to restore power.
8/6/1994		Park						Lightning-caused fires consumed over 7500 acres in Yellowstone National Park. The Tern Fire started August 6th in Pelican Valley and reached 4728 acres; the Raven Creek fire started August 12th and had consumed 3000 acres. The fires were contained by the end of the month.
9/8/1995		Park and Big Horn				15,000		Thunderstorms moved from the Absarokas to the Big Horns. The storms produced strong winds and lightning, knocking out power in the area for up to 3.5 hours east of Lovell. About 1750 feet of line was downed by strong winds west of Lovell. Four inches of hail fell in Meeteetse and winds also felled a tree.
8/1/2000		Park	65 W Cody		5			Campers injured near Yellowstone Lake in Yellowstone National Park.
7/28/2001		Park	41 W Wapiti					The Arthur fire was started by lightning. The fire had burned 1500 acres and was not fully contained by the end of July.
8/1/2001		Park	41 W Wapiti					The Arthur fire was started by lightning. The fire burned 2800 acres. Ending location estimated.
8/18/2001		Park	13 S Meeteetse					The Renner Draw complex fire was started by lightning. The fire burned 2800 acres. Ending location estimated.
7/7/2002		Park	50 NW Wapiti					The Broad wildfire was started by lightning. The fire burned 9140 acres in Yellowstone National Park 20 miles southeast of Mammoth.
7/16/2003		Park	30 NW Cody					Dry lightning and gusty winds started the Deep Lake wildfire on July 16. On July 17, fifteen boy scouts had to be rescued via helicopter as the fire approached Deep Lake. The fire burned 6886 acres. The estimated cost to fight the fire was \$1.3 million.

Table 12.1—Recorded Lightning Events (1937 through 2006).

Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
7/18/2003		Park	30 NNW Pahaska Tepee					The Amethyst wildfire was started by dry lightning. Several nature trails had to be closed. A total of 315 acres were burned. The estimated cost of fighting the fire was \$650,000.
8/16/2003		Park	30 W Cody					Dry lightning ignited the Blackwater wildfire on August 16. Ten residential and two commercial buildings needed protection as the wildfire approached. The fire burned 6805 acres and cost an estimated \$1.1 million to fight.
8/18/2003		Park	25 SW Cody					The Boulder Basin wildfire was ignited on August 18 by lightning. A cold front moved through the area on August 21 bringing gusty winds that caused the fire to spread from 20 acres to 6000 acres within a day. Twenty-five residences and 20 commercial buildings had to be protected from the fire. A total of 11,553 acres were burned. The estimated cost of fighting the fire was \$1.7 million.
8/19/1957		Platte	Wheatland					About 3:30 p.m. hail and lightning caused considerable damage about 4 miles southwest of Wheatland along a 3-mile stretch.
7/13/1962		Platte	Guernsey		1	25		Lightning struck the jeep a National Guardsman was sitting in at Camp Guernsey.
6/5/1977		Platte	Guernsey		6			Six National Guardsmen injured when lightning struck building near them.
8/18/1982		Platte	Wheatland			12,500		Lightning struck one of the Laramie River Station Power Plant's cooling towers igniting the fiberglass cowling around a fan. The blaze triggered the tower's automatic sprinkler system. Damages were estimated at \$10,000 to \$15,000.
7/24/1997		Platte	10 SW Glendo				1,000	Fire burned 50 acres of timber on a ranch south of Horseshoe Creek and west of I-25; same fire started up again 7/26 and burned additional 150 acres of timber before containment.
7/14/1954		Sheridan	Sheridan	1				Lightning caused one death each in Sheridan and Torrington on July 14.
6/25/1955	6/27/1955	Sheridan						Severe lightning caused a shutdown for about 2 hours of the main generator of the Acme power plant, which supplies electricity for Sheridan, beginning about 5:30 p.m. on the 25th. Lightning caused further power trouble at 12:30 a.m. the 26th when two transmission lines were parted. At 2:00 a.m. the 27th two substation transformers were burned out by lightning at the Big Horn Coal Co. tipple between Acme and Ranchester.
9/12/1968		Sheridan	Sheridan		2			Lightning injured two boys playing beneath house trailer on south edge of Sheridan.

Table 12.1—Recorded Lightning Events (1937 through 2006).

Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
6/16/1977		Sheridan	Sheridan			2,750		One- to two-inch hail did damage to houses, cars, crops, etc.; lightning killed one horse.
7/15/1988		Sheridan						Nine open field fires were started by lightning from a thunderstorm during the evening. This included a 15-acre fire in the Big Horn National Forest.
8/11/1988		Sheridan	18N Leiter					Lightning strikes from thunderstorms caused two separate grass fires during the late afternoon. During that same night, the blazes merged and at least 10,000 acres of grass were torched by the following day. The fire was contained during the 12th.
8/22/1994		Sheridan	Sheridan			300,000		A lightning-created fire consumed 15,000 acres north and northeast of Clearmont.
7/11/1988		Sheridan, Campbell, Weston						During the afternoon, lightning from thunderstorms ignited numerous open field grass and timber fires. Sheridan County reported nine such blazes, including one that torched 1000 acres. In the Thunder Basin National Grasslands, on the border of Campbell and Weston counties, fire burned more than 1000 acres of combined federal and private land before being contained.
8/31/1957		Sublette	Bondurant					Lightning at 7:00 a.m. at Bondurant struck the barn of the cooperative observer and burned it to the ground.
7/15/1968		Sublette	Daniel 16 W	1		275		Rancher struck by lightning while riding a horse rounding up cattle. The horse was also killed.
6/8/2001		Sublette	35 S Pinedale		4			Oil field workers.
7/13/2002		Sublette	12 W Daniel					The Mule wildfire was started by lightning. The fire burned 3932 acres.
6/16/2003		Sublette	40 SE Pinedale	1	1			Lightning struck two hikers twice. After the first strike, they awaited for the storm to pass. They were then struck a second time as they waited. M20OU
6/17/1966		Sweetwater	Rock Springs		1			Postman injured by lightning strike.
9/1/1970		Sweetwater	Rock Springs	1				Ranch worker killed by lightning on Kinney Rim, 46 miles southeast of Rock Springs.
8/16/1973		Sweetwater	Green River		6			Lightning struck a crane at a chemical plant just west of Green River. Six men were treated for minor injuries.
8/9/1974		Sweetwater	Bairoil 20 W		1			Man injured while standing by truck when it was struck by lightning. Two men in truck injured.
5/23/1976		Sweetwater	Rock Springs		1			A lady was struck by lightning on a golf course. She was tending the flag on a green and her putter was also touching the ground.

Table 12.1—Recorded Lightning Events (1937 through 2006).

Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
9/27/1988		Sweetwater	Rock Springs			3,000		During the afternoon, lightning associated with intense thunderstorms ignited a 30-acre fire near Rock Springs. It burned in open country and resulted in a lost resource value of about \$3000.
8/22/1994		Sweetwater	Rock Springs			50,000		Lightning ignited the Little Mountain fire. This fire burned 2500 acres approximately 50 miles southwest of Rock Springs.
8/6/1995		Sweetwater						Lightning started a 300-acre fire, 20 miles south of Rock Springs.
8/22/1995		Sweetwater				1,000		Thunderstorms produced heavy rain in Dead Horse Canyon. The rainfall caused minor flooding in Rock Springs. In addition, lightning from the thunderstorms knocked out power to a part of Rock Springs, including the airport, for 2.5 hours.
7/6/2001		Sweetwater	45 S Rock Spgs					The Gap fire was started by lightning. The fire burned 1300 acres. Ending location estimated.
7/26/2002		Sweetwater	27 S Rock Springs					The Pepper wildfire was started by lightning. The fire burned 1027 acres.
8/11/2002		Sweetwater	19 S Rock Springs					The Vegence wildfire was started by lightning. The fire burned 600 acres.
7/19/1948		Teton	Jackson	1				A small boy was struck by lightning and killed near Jackson on the 19th.
9/11/1967		Teton	Jackson 10 S		2			Lightning struck two road construction workers causing minor injuries.
8/7/1977		Teton		1	1			A boy, 8 years old, was killed and a young lady, 26, injured while on a hiking trip 15 miles northeast of Jackson on the Gros Ventre River drainage.
8/30/1985		Teton				140,000		A blaze sparked by a lightning strike burned 1080 acres in Grand Teton National Park, destroying 10 cabins and inflicting an estimated \$140,000 worth of damage.
6/9/1987		Teton	Jackson (27NE)			350,000		Lightning strikes near the Gros Ventre River destroyed a \$350,000 home.
8/28/1994		Teton	Moose			60,000		Lightning started the Mormon Row fire in the Antelope Flats area on the 28th and the fire grew quickly to 3200 acres by the end of the month.
7/20/1999		Teton	19 NNW Jackson		1			Person struck by lightning on Table Mountain.
8/5/1999		Teton	10 NNW Jackson Arpt		2			Two people struck by lightning on the Grand Teton.

Table 12.1—Recorded Lightning Events (1937 through 2006).

Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
6/22/2002		Teton	3 W Moran		5			A boat was hit by lightning. The lightning blasted a hole in the boat floor.
7/26/2003		Teton	20 N Jackson	1	5			One person died and five were seriously injured when they were struck by lightning while climbing Grand Teton. F25OU
8/10/2003		Teton	3 S Moose					The Blacktail wildfire was started by lightning on August 10. On August 11, Gros Ventre Campground had to be evacuated as the fire approached. Smoke impacted air traffic at Jackson Airport and Highway 26/89/91 was temporarily closed on August 12. The fire burned 2650 acres.
8/11/2003		Teton	10 E Fishing Bridge					The East wildfire, located near the East Entrance of Yellowstone National Park, was started on August 11 by lightning. Thirty-one residences and 43 commercial buildings needed protection as gusty winds caused rapid fire growth. The wildfire burned four private vehicles. On August 15, the East Entrance of Yellowstone National Park was closed, only to be opened temporarily, 3 hours in the morning and 3 hours in the afternoon, from August 29-31. The fire burned 23,500 acres. The estimated cost of fighting the fire was \$6.6 million.
6/21/2005		Teton	23 W Fishing Bridge		11			Lightning struck about 15 yards from a boardwalk encircling Old Faithful Geyser in Yellowstone National Park. The strike injured eleven bystanders who were awaiting the eruption of the famous geyser. One of the victims, a 12-year-old boy, received immediate CPR and was resuscitated. He was then taken by helicopter to a regional medical center.
8/4/2006	8/15/2006	Teton	Teton & Gros Ventre Mountains					The Purdy Fire, located 24 miles east of Kelly in Teton County, was ignited by lightning on Friday, August 4. The fire was initially allowed to burn in an effort to benefit forest resources in the area (Wildland Fire Use Incident). The fire increased in size from 1300 acres on Sunday morning, August 13 to 4980 acres on Monday morning, August 14 due to dry and windy conditions. The fire grew steadily over the next several days and crossed the Continental Divide on the afternoon of Tuesday, August 15. Rapid fire growth was again experienced between Wednesday, August 23 and Friday, August 25 when the fire expanded from 11,300 acres to 18,900 acres in size. At this time, the fire began to threaten homes in the Union Pass area, approximately 21 miles west of Dubois in Fremont County. No structures were lost in the incident. Final containment was achieved on Wednesday, September 20. The fire torched 22,613 acres, approximately 12,000 acres on the Bridger-Teton National Forest and the remainder on the Shoshone National Forest. Total firefighting costs reached

Table 12.1—Recorded Lightning Events (1937 through 2006).

Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
								\$10.6 million.
8/21/1988		Teton, Park, Sweetwater				Reported on 1 August 1988		With the continuation of the hot, dry weather, at least 29 fires were started by lightning during the month of August. The thunderstorms that were responsible for the ignitions were generally high-based and produced little rainfall. Most of these fires were relatively small, less than 100 acres. However, the Dorn #2 fire, located in Washakie County, on August 14th, grew to 1514 acres. The largest blaze was the Fern fire, located in Yellowstone National Park. That fire occurred on August 5th. The Fern fire torched 2000 acres before it burned into the Clover Mist blaze (another fire ignited by lightning during the previous month of July). On a week-by-week basis, the breakdown of lightning fires is as follows. From the 1st to the 6th, there were ten such blazes. Between the 7th and 13th, another ten lightning fires occurred. During the 14th to the 20th, six fires were reported. Finally, from the 21st through the 29th, there were three blazes. According to the BLM for Wyoming, 4159 acres were torched with and estimated lost resource value of \$415,900. That figure does not include the fires started by lightning in Yellowstone National Park because this information is not yet available.
8/14/1988		Teton, Park, Sweetwater, Lincoln, Fremont, Washakie, Hot Springs				Reported on 1 August 1988		With the continuation of the hot, dry weather, at least 29 fires were started by lightning during the month of August. The thunderstorms that were responsible for the ignitions were generally high-based and produced little rainfall. Most of these fires were relatively small, less than 100 acres. However, the Dorn #2 fire, located in Washakie County, on August 14th, grew to 1514 acres. The largest blaze was the Fern fire, located in Yellowstone National Park. That fire occurred on August 5th. The Fern fire torched 2000 acres before it burned into the Clover Mist blaze (another fire ignited by lightning during the previous month of July). On a week-by-week basis, the breakdown of lightning fires is as follows. From the 1st to the 6th, there were ten such blazes. Between the 7th and 13th, another ten lightning fires occurred. During the 14th to the 20th, six fires were reported. Finally, from the 21st through the 29th, there were three blazes. According to the BLM for Wyoming, 4159 acres were torched with and estimated lost resource value of \$415,900. That figure does not include the fires started by lightning in Yellowstone National Park because this information is not yet available.
8/3/1953		Uinta	Ft. Bridger	1				One man was killed by lightning near Ft. Bridger on the 3rd.

Table 12.1—Recorded Lightning Events (1937 through 2006).

Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
6/5/1969		Washakie	Worland 25 W	1	1	275		Lightning killed one boy and injured another while they were herding cattle.
7/5/1994		Washakie	Worland			9,000		A lightning bolt struck a stack of hay and set it on fire near Worland. Nearly 300 tons of hay were destroyed at an estimated loss of \$9000.
7/10/1994		Washakie	Worland					Lightning struck a barn in Worland, causing a fire that destroyed the barn, a combine, and an adjacent garage.
1/1/1947		Weston	Newcastle					A report has been received where lightning struck and burned a hay stack near Newcastle.
8/11/1956		Weston	Upton					At Upton on the 11th several cattle were killed by lightning.
8/24/1956	8/25/1956	Weston	Weston 1 E					Prairie fires were set by lightning in several places in the vicinity of Weston 1 E
8/16/1982		Weston	Upton			27,500		A lightning-caused fire destroyed 800 acres of grass land 45 miles south of Upton
4/7/1994		Weston			1			Lightning struck a pastor while riding a horse near Newcastle. The horse was killed and the man hospitalized due to burns and a fractured eardrum.
5/13/1994		Weston	10 N Upton					Ten calves and three cows were killed on a ranch 10 miles north of Upton by a bolt of lightning.
7/27/2000		Weston	Countywide					Lightning caused four small fires. Crews contained fires within several hours of ignition.
8/1/2001		Weston	1 E Newcastle to 3 E Newcastle					Lightning ignited a fire east of Newcastle in Weston County. This fire blew up and crossed the state line into Custer County in South Dakota. The fire began in Weston County, Wyoming, however most of the 26,800 acres burned occurred across the state line in South Dakota.
8/17/1957		Yellowstone	Yellowstone					Lightning caused fires in Yellowstone Park
8/7/1975			Yellowstone Park	1				Man struck by lightning while canoeing on Lewis Lake, thrown into water and either killed by lightning or drowned.
7/30/1987			Gillette			5,000		A very strong thunderstorm developed near Savageton, about 40 miles southwest of Gillette, at 2045 MST. This storm at Savageton drenched the town with 1.5 inches of rain in 35 minutes along with 1.5-inch-diameter hail. The storm later moved northeast during the next few hours and damaged structures in the south and east sections of Gillette. As the thunderstorm moved into Gillette, 50 to 60 mph winds raked the area along with 1.5 inches of rain in 1 hour. This storm destroyed one unoccupied home. Other damages included numerous horse stalls destroyed, sections of roofs partially

Table 12.1—Recorded Lightning Events (1937 through 2006).

Start Date	End Date	County	Location	Death	Injuries	Estimated property damage (USD)	Estimated crop damage (USD)	Information
								destroyed, and many city and state road signs severely damaged. Also, lightning struck a home in Gillette and knocked a hole in the ceiling. Many streets and a few apartments were flooded due to the torrential rains between 2100 and 2200 MST. Later that night the very strong thunderstorm moved into Crook County with heavy rain and 0.5-inch-diameter hail west of Moorcroft.

Wyoming State Government Property Loss Analysis

Historically Wyoming property has experienced 131 damaging lightening events totaling \$328,000 in damage through the 307-month period from August, 1985 through February, 2011. If we can assume past experience will continue into the future, the state can anticipate 5 damaging lightening events to its structures each year ([131 events / 307 months = .43 each month] * 12 months = 5.16 events annually). Given the number of anticipated annual damaging hail events and based on past experience, damages of \$12,829 can be anticipated annually ([\$328,197.26 / 307 months] * 12 months = \$12,828.60). Reference State Building Insurance Claims Appendix.

Impacts

Nationwide lightning strikes are routinely monitored by Vaisala, Inc. with accuracies to within a 0.625-mile (1 kilometer) resolution. For the period of 1998 through 2000, the Wyoming annual lightning strike frequency is depicted in **Figure 12.2**. Clearly the eastern plains have more than three times the cloud to ground lightning strikes as does the western half of the state. Platte, Weston, Crook, and parts of Campbell, Niobrara, and Laramie counties are the most active in the state. These values probably vary by 50% in a year depending on whether there is a drought or enhanced monsoonal flow. However, the locations of maximum and minimum strikes do not change much from year to year. In 1998 the state's precipitation average was well above normal, in 1999 near normal, and in 2000 was below normal (Wyoming Climate Atlas).

Lightning is the leading cause of wildland fires in Wyoming (**Figure 12.3**), and indirectly is responsible for millions of dollars worth of fire damage. Whether in a drought or wet period, Wyoming's hot and windy summers can cause rapid changes to the fire risk over grasslands and forests. In **Figure 12.4**, a 31-year record of lightning-caused wildfires as well as the percent of lightning-induced wildfires is shown. The worst events occurred in July and August 1988, when, according to the U.S. Bureau of Land Management, lightning ignited 29 fires, setting 4159 acres ablaze, resulting in a total of \$780,330 (\$1,458,700 in 2010 USD) in damage.

Future impacts

Future impacts from lightning are difficult to determine because of the erratic nature of storms. However, historical trends demonstrate that lightning will continue to be the leading cause of wildland fires in the state, and it will maintain dominance in the eastern plains of Wyoming.

Given the greater likelihood of lightning in the eastern plans of Wyoming, the counties most likely to be impacted by lightning and the potentially resulting wildland fire are Crook, Weston, Niobrara, Goshen, Laramie, Platte, Converse and Campbell Counties. However, as documented by the Average Flash Density Map (**Figure 12.2, Page 12.26**) all counties are subject to lightning. The following map and table outline the vulnerability of populations within each county, based upon the composition and density of the population. You will note the vulnerability of the population in the eastern portions of the state are in the low to medium-low ranges, with the exception of Laramie County.

Due to the nature of lightning, those at greatest risk for life-threatening lightning hazard impacts fall within two categories: those enjoying outdoor activities and those in poor health who rely on

electricity. Outdoorsmen are susceptible to direct lightning strikes and/or to wildfire started by lightning. Individuals reliant on electricity to meet day-to-day health needs, those reliant on oxygen machines for example, may be impacted by lightning because of lightning-caused power outages. Both of these groups most vulnerable to lightning are more susceptible to serious injury or death. Additional impacts exist to proper located in areas susceptible to wildland fire, which is addressed in the ‘Wildland Fire’ Chapter in this plan. While Wyoming’s population continues to grow, as documented by the 2010 census, development has no impact on locations where lightning may strike. It does have the potential to impact damage resulting from lightning-caused wildland fire. This, too, will be addressed in the Wildland Fire chapter.

Local Mitigation Plan Risk Assessments

A review of Wyoming’s local plans reflects recognition of the hazard lightning represents to their residents. However, the counties reflect it is considered to be a low-ranking hazard overall. The local plans have utilized data researched and available to them through the State Multi-Hazard Mitigation Plan. You will note the lack of definitive loss potential information, with several counties indicating loss potentials are difficult to determine, others providing state-level loss information, and several others rely on historic loss totals, with no attention to individual event losses.

Below is a table outlining information mined from the local plans’ expansive soil hazard sections. The table shows little documentation available of historical incidents of damage caused by expansive soil within each county’s borders as outlined in their plans. Further, the table extrapolates, based on population impacted, probability of occurrence within their borders, and property impacted, the risk perceived by each county relative to expansive soil hazards.

**Lightning
Information Mined from Local Plans**

COUNTY	Plan Y/N	Year Approved	Included in Plan	Rank-High, Medium, Low	Loss Potential	Previous Incident(s)
ALBANY	Y	2010	Y	Low	Difficult to Determine	15 -36 deaths-44 injuries
BIG HORN	Approvable	2010	N			
CAMPBELL	Expired	2005	Y	Low	\$2.3 million because of lightning-generated fire	9-No deaths or injuries
CARBON	Y	2008	Y	Low	Not enough info.	Y-1 every 3.4 yrs
CONVERSE	N/Draft	2005			Incomplete Information	
CROOK	N/Draft	2003	Y		State-level Info from State Plan	
FREMONT	Expired	2005	N			
GOSHEN	Y	2007	Y	Low	State-level Info from State Plan	
HOT SPRINGS	N					
JOHNSON	Y	2008	Y	High	Uncertain but sure	Multiple
LARAMIE	Expired	2005	N			
LINCOLN	Y	2006	Y	Low	\$ Tens of thousands	Multiple
NATRONA	Approvable	2010	Y	Medium-High	Not Stated	Multiple
NIOBRARA	Y	2009	Y	Low	Not Stated	Y-1 every 2 yrs
PARK	Y	2006	Y	Low	Historic-\$636,00 from 1959-2003	Y-1 every 2 yrs
PLATTE	Expired	2004	N			
SHERIDAN	Y	2009	Y	Low	Difficult to Determine	Y-1 every 6 yrs
SUBLETTE	Y	2008	Y	Low	Difficult to Determine	2 deaths-1 injury
SWEETWATER	N					
TETON	Y	2009	Y	Medium	historic- \$2.13 million	3 deaths-25 injured
UINTA	N/Draft	2011	N			
WASHAKIE	Expired	2005	N			
WESTON	N					
NORTHERN ARAPAHO TRIBE	N					
EASTERN SHOSHONE TRIBE	N					

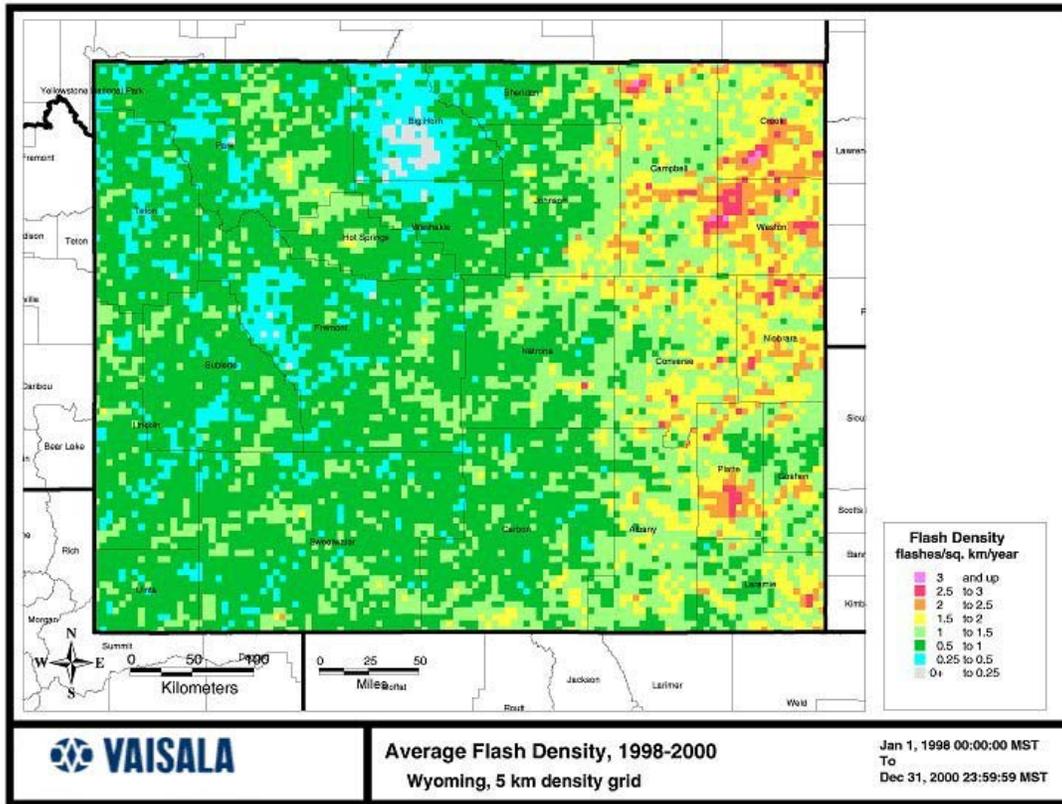


Figure 12.2—Average annual lightning flash density for 1998-2000 over Wyoming. Each pixel represents 5 km². Illustration courtesy of Vaisala Inc.



Figure 12.3—Lightning and wildland fire. Claimed to be taken by a fireman in Wyoming associated with the USDA, September 8, 2003. Photograph courtesy of <http://freenergynews.com/Tangent/Wyoming_fire-starter.htm>.

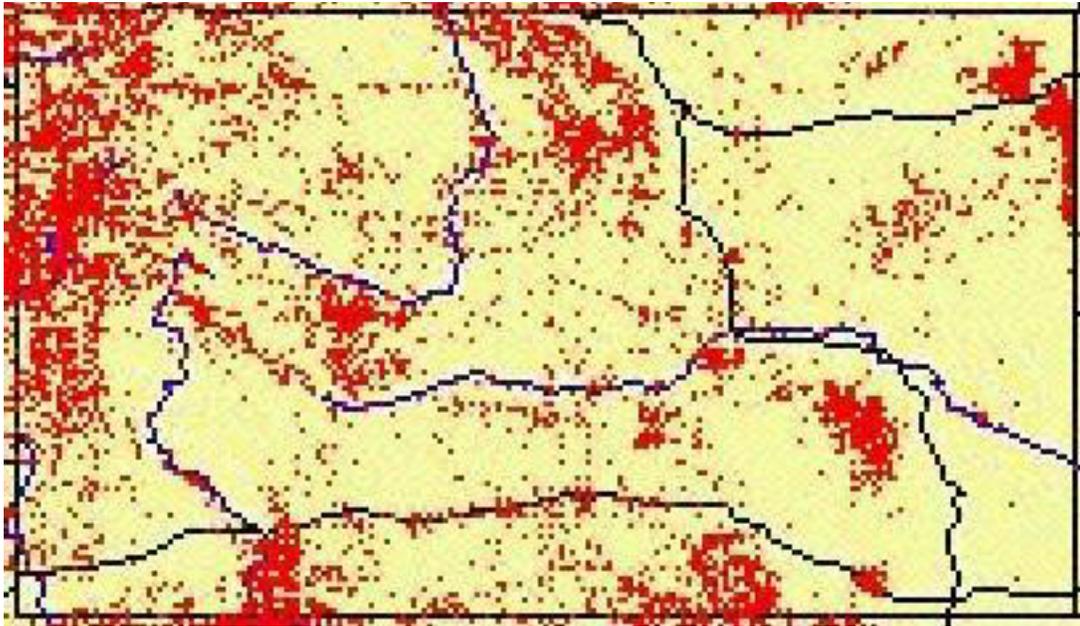


Figure 12.4—Wyoming lightning induced fire source points (1970 through 2000). Illustration courtesy of Wyoming Climate Atlas.

Proposed state mitigation projects

The following mitigation projects have been proposed by state, federal, and local entities in the process of generating the Wyoming Multi-Hazard Mitigation Plan. Chapter 22 has all proposed mitigation projects.

- Subscribe to lightning monitoring system such as Vaisala.
- Provide all-hazards weather radios to all residences in Wyoming.
- Identify and inspect shelters in hazard prone areas.
- Research feasibility and costs of adding new frontage roads /detour routes to I-80, I-90, and I-25 to prevent significant delay in traffic flow and resultant economic loss and possible loss of life.
- Provide hazards info to shelters, emergency facilities in public buildings, campgrounds, and phone books.
- Provide emergency phones at strategic locations with direct lines to emergency dispatch services.
- Develop reseeding plans for losses due to all hazard events.
- GIS training for local jurisdictions with emphasis on hazards recognition and analysis for application to mitigation planning.
- Investigate opportunities for developing or improving warning systems as a means to reduce loss of life, damage to property, and economic losses.
- Education programs encompassing multi-hazard insurance for business, resident and government application.
- Education programs encompassing multi-hazard mitigation for business, resident and government application.

- Planning studies regarding transportation of essential and/or key personnel during all hazard events.
- Continue outreach to counties on identifying cost effective and feasible mitigation projects.
- Promote Continuity of Operations and Continuity of Government, statewide.
- Maintain and continue to expand hazards databases that were generated for the State Hazard Mitigation Plan. Seek new sources of information.
- Identify, document, and advertise all volunteer agency's locations and contact information.