National Weather Service Dodge City Kansas

WILD WEST WEATHER

Fall/Winter 2017

IN THIS ISSUE

This newsletter is produced by the National Weather Service Office in Dodge City, KS. Comments & suggestions can be sent to:
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WILD WEST WEATHER (SO FAR) IN '17

By Jeff Hutton, Warning Coordination Meteorologist

JANUARY 13-16 ICE STORM

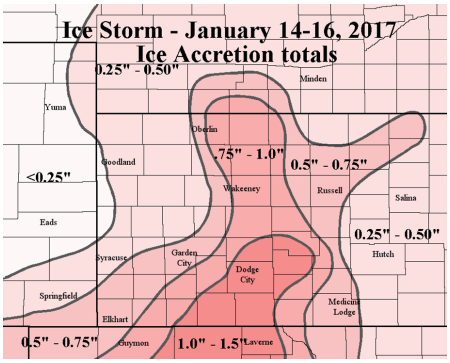
Photo by Laren Reynolds

A strong winter storm system affected much of central and southwest Kansas starting as early as Friday, January 13th, at some locations, and ended early Monday, January 16th, 2017. The greatest ice accretion did not occur until late Saturday evening on the 14th and continued into late afternoon on Sunday the 15th. Surface winds increased during Sunday evening and continued through much of Monday the 16th. Ice amounts of 1" to 1.5" accumulated in Dodge City, with Hays and Liberal receiving .75" to 1" of ice. Garden City and Elkhart received .5" to .75". A map showing ice accretion totals for the region is accompanying this story. Despite precipitation ending Sunday night, impacts were felt throughout the week due to multi-day power loss, school closings, tree and power line damage, etc.

Although accretions of ice were not as great as the December 2006 storm, the damage to trees, and subsequently power lines was centered on Ford County (Dodge City). One likely reason is that trees were in a weakened state due to the extreme drought of 2011, and the fact that there had not been significant icing in the decade preceding this storm.

Leading up to the storm, the main utility company in Dodge City (Victory Electric) had begun preparing for the storm based on forecasts. They started the process of acquiring supplies that would be needed based on the impacts expected.

The following two maps show approximate amounts of ice accretion and liquid water equivalent (ice melted down) that fell with the storm.



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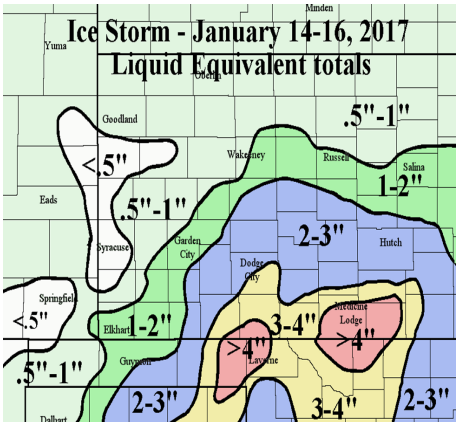


MARCH 6*7 WILDFIRES

On March 6, 2017 many devastating wildfires erupted across parts of Kansas, Oklahoma, and Texas. A strong low pressure center and tight pressure gradient and eventually a deeply mixed boundary layer produced strong surface winds. Winds also were very strong behind the associated cold front late in the day on the 6th. Winds picked up again on the 7th fanning residual fires. Many fires were started by downed power lines, many from weakened connections from the January ice storm. The fire on the south side of Dodge City was the result of a brush pile that had not been fully extinguished before the dry, warm winds began.

The largest and most costly fire occurred in Clark County. There were seven separate fires. Two moved near or through Englewood, originating in Oklahoma. Another consumed several homes just north of Ashland. Four other fires in northern Clark County consumed several homes initially, but became a monster fire as the cold front moved through. The fires subsided during the first night but flared up the following late morning and afternoon. There is still no real estimate of the number of dead cattle as many were never found. But estimates were large, from 3 to 9 thousand head. Total acres burned in just Clark County were estimated at 425,000. There were 31 homes destroyed and 6 damaged. There were a total of 108 outbuildings destroyed and 13 others that were damaged. Many miles of fencing were destroyed. Damage was estimated at $3 million.

Fire in Clark County. Photo by Clem Gerard

In Lane and Ness counties, a wildfire started after a power line disconnected from an outbuilding and fell to the ground. The fire spread very fast, and burned 20 outbuildings and damaged or destroyed thousands of fence posts. The fire was essentially under control by 9 PM on the 6th, but flared up the following day. At least 20,000 acres burned in Lane County, and a dozen structures were destroyed in Ness County.

In Hodgeman County, a fire quickly spread due to 50 to 60 mph winds. The ignition point north and west of Jetmore was the result of a downed power line. The fire consumed several homes and buildings. Total acres burned were approximately 18,000.

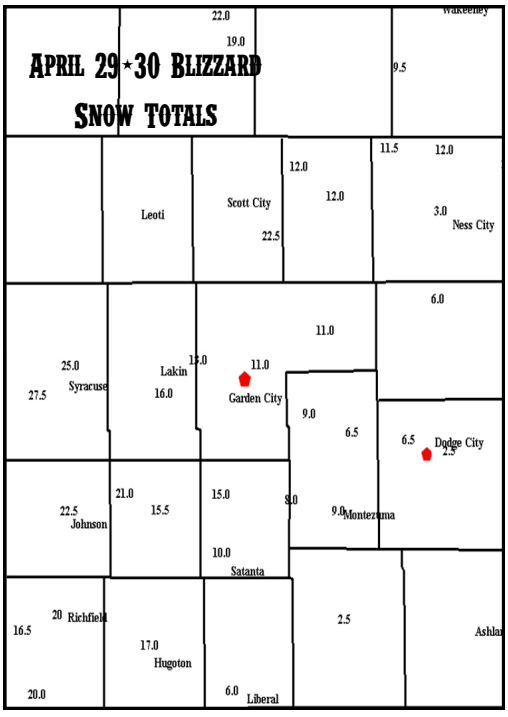
In Comanche County, a fire threatened Protection and the town was evacuated twice but never had damage within the city limits. Although the fire subsided late on the 6th, they flared again by late morning on the 7th.

In Ford County, a fire started at a burn pile near the racetrack in Dodge City. The fire burned at least two dozen structures, fences, trees, and a several vehicles. It initially spread northeast, and then quickly turned east and southeast as a cold front moved through the area. Visibility was near zero from blowing dirt as the fire progressed.

APRIL 29*30 BLIZZARD

An intense upper storm moved from the Four Corner region and interacted with unseasonably cold air to produce a major blizzard across western Kansas, dropping as much as 27 inches west of Syracuse. Cattle loss across western Kansas was estimated to be as much as 100,000 head. Many of the livestock were not found as a result of either being buried in canyons and washes, or wandering into Oklahoma.

One electric company alone had around $75 million in damages to its infrastructure, and it will take at least 3 years to fully repair. This unusual late spring storm was made more destructive by the weight of the snow, since it was very wet and driven by 50 to 60 mph wind gusts. All roads across the western fourth of the state were closed and impassable for one to two days. The following map shows max snow amounts across the region.



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AUGUST 10 DEVASTATING HAIL

Figure 4 . The white outline is the hail swath from August 10.

A very severe supercell thunderstorm moved across the I-70 corridor during the afternoon hours on August 10, 2017. Trego County was heavily impacted by the destruction that occurred with the storm.

The storm moved into far northwest Trego County around two pm and it moved to east of Cedar Bluff Reservoir shortly before three pm. There may have been a brief tornado about two miles north of WaKeeney but the damage that was observed across the county was from giant hail and widespread winds of 70 to 80 mph. At some locations southeast of WaKeeney, wind speeds could have easily reached 90 to 100 mph. Wind damage observed with the storm would be consistent in what is experienced in a category 1 and 2 hurricane!

Based on the scope of the damage produced by the storm, radar data, environmental conditions, and surface observations, the high winds were the result of a descending and accelerating rearflank downdraft containing torrential rainfall and very large hail. The winds could have possibly been accentuated by what is called a descending rear inflow jet.

The hail driven by the high wind caused much destruction, including numerous wildlife deaths. The scope of the hail damage could even be seen by weather satellite the following day, showing scarring of the earth and the extreme damage done to vegetation (fig 4).

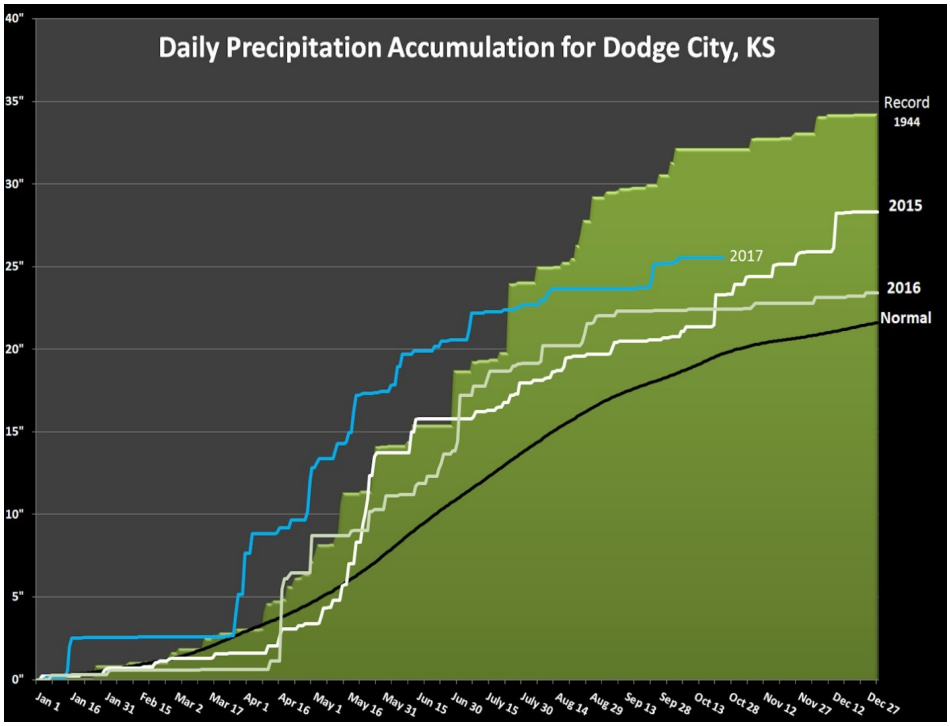
Hail damage to vehicles was extreme.

2017 PRECIPITATION

There have been wild swings in precipitation across Kansas so far for 2017. The ice storm in January brought copious amounts of precipitation. This was followed by an extended period of over 60 days that very little or no moisture fell! The spigot opened up in late March and continued into early summer, at least. Some areas got very dry during the summer while other locations, especially across far western Kansas, continued to experience wetness.

For Dodge City, the yearly precipitation accumulation far exceeded the wettest year on record (1944) until mid-summer and then it became rather dry. Regardless, even if no more precipitation falls, the yearly total at Dodge City will be above normal. This is the same case for much of Kansas. The yearly amount of precipitation, so far, is much above normal. In some places, precipitation is over twice (200 percent) of the yearly normal! Unfortunately, some areas are below normal for the same time period.

For the summer months of June, July and August, there were areas that were very dry and others that were very wet. It is quite a contrast from one location to the next.



The area in green is the record precipitation in Dodge City so far this year.

Winter Outlook for Western Kansas

By Larry Ruthi, Meteorologist in Charge

December 2017- February 2018

Seasonal forecasting in the central United States is always challenging, and this year is especially difficult as a consequence of weak or poorly defined large scale forcing mechanisms.

Long term variations in sea surface temperatures have a significant effect on the location and strength of the winter jet stream and the most likely track of winter storms. Among the variations that have been found to affect the weather are El Nino/La Nina, the Pacific Decadal Oscillation and the Atlantic Multidecadal Oscillation, along with numerous smaller scale variations that can have a dramatic effect on weather for shorter time periods, such as the arctic oscillation.

The most widely publicized large scale forcing mechanism is the El Nino Southern Oscillation (ENSO), a variation in ocean temperatures in the equatorial Pacific Ocean. In El Nino years, ocean temperatures off the coast of South America are anomalously warm, and thunderstorm activity is more robust in the eastern tropical Pacific. In La Nina years, ocean temperatures are anomalously cool in the equatorial Pacific off the coast of South America, and tropical thunderstorms are concentrated more in the western Pacific. There was a strong El Nino in the winter of 2015-2016 that ended in the spring of 2016. Since that time, the tropical Pacific has been ENSO neutral, meaning that neither an El Nino nor La Nina has existed. It appears likely that a weak La Nina will evolve this winter and dissipate in the spring of 2018, but timing and strength of the La Nina remain somewhat uncertain. When a strong La Nina develops, the jet stream typically extends from the central Pacific over a broad upper level high in the Gulf of Alaska into western Canada then southeast into the Midwest. This favors colder than average temperatures in western Canada and the northern United States and wetter than average weather in the Pacific Northwest and the Midwest. Relatively warm and dry weather is favored in the southern United States. Kansas is on the boundary between the area in the northern United States that tends to be cool and the area in the southern part of the country that tends toward being warm and dry. An examination of past instances of La Nina reveals huge variations in seasonal temperature and precipitation patterns as a result of other factors that affect weather patterns.

> "After consideration of available data, the probability distribution of outcomes shifts toward slightly **above** average temperatures and **near to above** average precipitation in western Kansas."

Another large scale variation that affects the weather is the Pacific Decadal Oscillation (PDO), a pattern of temperatures in the northern Pacific Ocean. In the positive phase of the PDO, ocean temperatures off the west coast of Canada are warmer than average, and there is a large pool of cool water extending from Asia to the Gulf of Alaska. Once established, this pattern of ocean temperatures may persist for two or three decades before changing. The PDO is likely to remain positive for most of this winter, although it has shown a weakening trend since last spring. In a warm phase of the PDO, above average temperatures are favored in Alaska and western Canada with cooler than average temperatures in the southeastern United States. Precipitation tends to be above average in the southwest and southern plains. Note that this differs from the expected temperature and precipitation distribution with a La Nina.

The Atlantic Multidecadal Oscillation (AMO) is a variability in sea surface temperatures in the Atlantic basin. It changes on a time scale of several decades and has been positive since about 2000. The effects on winter temperature and precipitation in the United States are not well defined, but there is a positive correlation between dryness in the central United States and the positive phase of the AMO.

Competing signals from large scale forcing mechanisms enhance uncertainty in the seasonal forecast for the winter in the central United States. A review of historical data when forcing mechanisms were similar to those likely to exist this winter also assists with assessing the most likely outcome for the winter of 2017-2018. After consideration of available data, the probability distribution of outcomes shifts toward slightly above average temperatures and near to above average precipitation in western Kansas. With the persistent positive phase of the PDO and at least a weak La Nina, there probably will be a tendency toward upper level ridging in the eastern Pacific and western Canada with a few instances of upper level lows closing off in the southwestern United States and subsequently propagating to the Central Plains. Precipitation will demonstrate considerable variability depending on the paths taken by upper level lows.

Prepare: Don't let a winter storm take you by surprise

Before the storm strikes, make sure your home, office and vehicles are stocked with the supplies you might need. Winter preparedness tips and more information can be found at: www.nws.noaa.gov/om/winter.

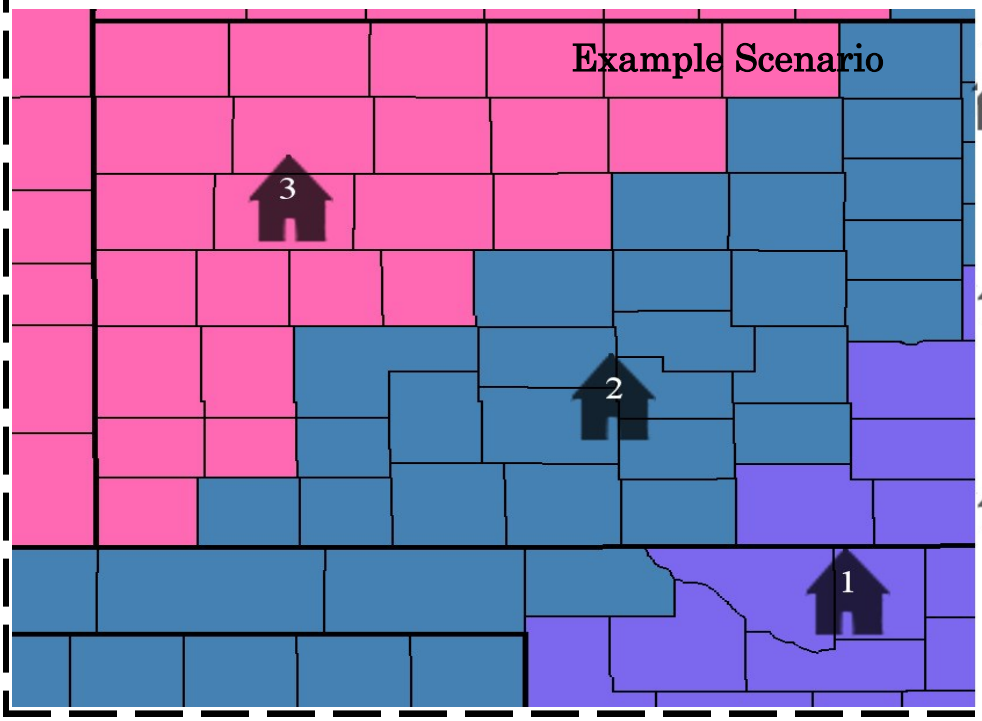
At Home and Work

Your primary concerns at home or work during a winter storm are loss of heat, power and telephone service and a shortage of supplies if storm conditions continue for more than a day. In either place, you should have available:

- Flashlight and extra batteries
- Battery-powered NOAA Weather Radio and portable radio to receive emergency information
- Extra food and water such as dried fruit, nuts and granola bars, and other food requiring no cooking or refrigeration.
- Extra prescription medicine
- Baby items such as diapers and formula
- First-aid supplies
- Heating fuel: refuel before you are empty; fuel carriers may not reach you for days after a winter storm
- Emergency heat source: fireplace, wood stove or space heater, properly ventilated to prevent a fire
- Fire extinguisher, smoke alarm; test smoke alarms once a month to ensure they work properly
- Extra pet food and warm shelter for pets
- Review generator safety. You should never run a generator in an enclosed space
- Make sure your carbon dioxide detector is working
- Home fires are common each winter when trying to stay warm. Review ways to keep your home and loved ones safe.

Prepare: Make sure you know the difference!

Winter weather related Warnings, Watches and Advisories are issued by your local National Weather Service office. Make sure you know the difference so you are prepared this winter.



Winter Storm Products

1 Winter Weather Advisory

Wintry weather expected. Exercise caution. Light amounts of wintry precipitation or blowing snow will cause slick conditions and could affect travel if precautions are not taken.

2 Winter Storm Watch

Snow, sleet, or ice possible! Be prepared! Confidence is medium that a winter storm could produce heavy snow, sleet, or freezing rain and cause significant impacts.

3 Winter Storm Warning

Snow, sleet, or ice expected! Take Action! Confidence is high that a winter storm will produce heavy snow, sleet or freezing rain and will cause significant impacts.

The Operational Improvements and Enhancements of GOES-16 Satellite

By Mike Umsheid, Lead Meteorologist

The GOES-16 (Geostationary Operational Environmental Satellite) is the first in a series of four next generation satellites that will vastly improve remote sensing of the atmosphere from space. The satellite launched in November 2016 was put into a non-operational test and evaluation status in early 2017. We received our first images here at NWS Dodge City in early March 2017, and only a few days later they were put into critical use, helping us diagnose the major wildfire outbreak of 6 March (see Image 1). The main component of the GOES-16 is its Advanced Baseline Imager (ABI), which has 16 spectral bands to remotely sense the atmosphere and surface. This is vastly improved over the previous generation of operational satellites GOES-13 and 15, which only have 5 bands.

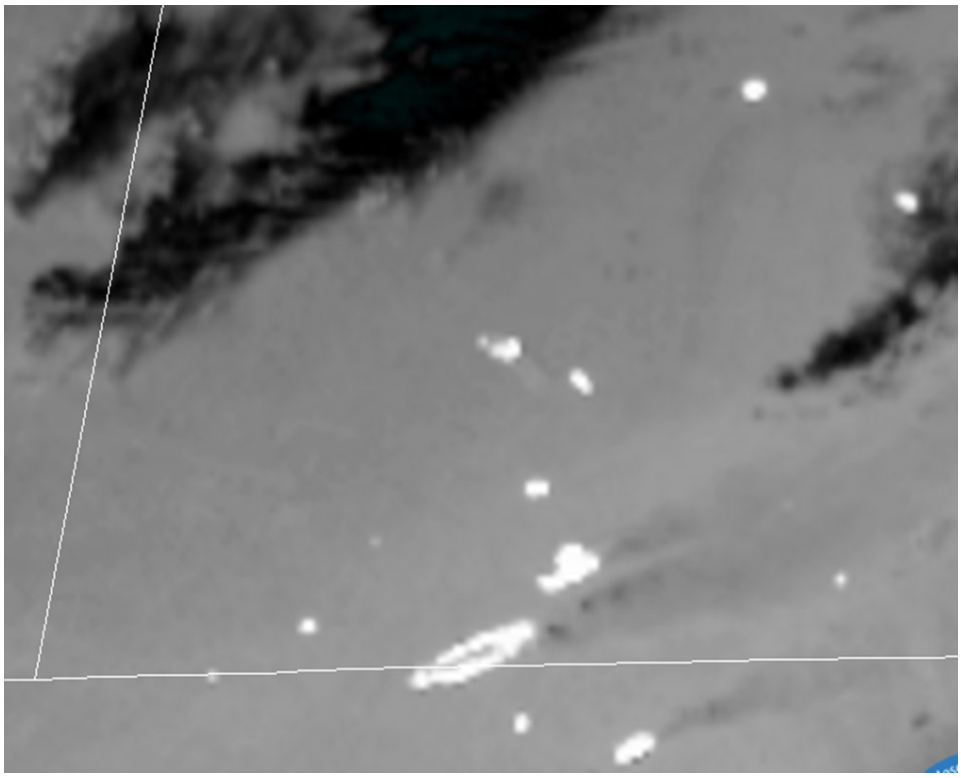


Image 1. *GOES-16 "Shortwave Window" Channel is excellent for depicting hot spots at the surface due to wildfires (white). This was certainly put on display during the massive wildfire outbreak in southwest Kansas on 6 March 2017.*

The GOES-16 ABI includes two visible bands, four near-infrared bands, and ten infrared bands. Of the ten infrared bands, three are within the main water vapor absorption region, so we now have three channels to look at for diagnosing mid and upper level water vapor instead of just one (see Image 2). This really enhances our capabilities of diagnosing small scale structures of storm systems as they approach the Great Plains, including phenomena like the elevated mixed layer (i.e. "the cap") when it comes to severe weather forecasting in the spring months.

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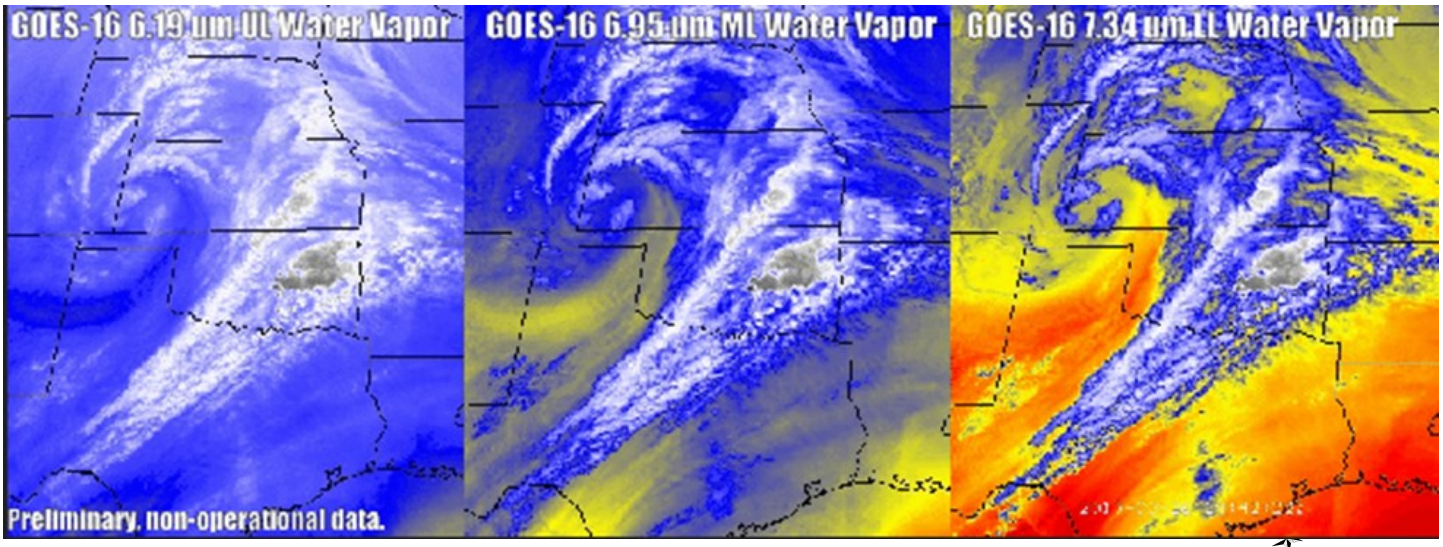

Image 2. *GOES-16 Advanced Baseline Imager (ABI) has 16 bands versus the 5 bands on our current operational GOES-13 and 15 satellites, including 3 water vapor bands .*

Perhaps the greatest improvement, and something we're most excited about with GOES-16, is resolution – both spatial and temporal. The standard visible satellite ("Red" Channel) band is now at 500-meter resolution (vs. the former 1-km), which allows us to really see incredible structures during daylight hours, including cumulonimbus clouds towering through the upper troposphere and features such as the "cirrus splash" in the stratosphere above the most severe convective storms (see Image 3). Not only that, we are now able to see these features in 5-minute increments on the Continental United States (CONUS) domain. The latency of this data into our AWIPS system is also vastly improved, as we can now get this data in a minute or less from the time the satellite made its scan. Speaking of temporal resolution, in addition to the CONUS domain, the GOES-16 also has two mesoscale sectors that are always active, covering some portion of the GOES-16 field of view. During many severe weather events, at least one of the mesoscale sectors will cover a region of greatest risk, allowing us one-minute imagery – which is faster than our fastest doppler radar scanning strategy of around 90 seconds!

Lastly, we have the capability to combine three ABI channels to produce what are called Red Green Blue Composites. For example, we can now much better distinguish low level water clouds from ice clouds at night, allowing us to better track the development of fog in an otherwise clear atmosphere (see Image 4). We can also, for the first time, see where atmospheric water vapor is pooling in areas of low level converging air. This gives us better confidence in pinpointing locations where the first thunderstorms may develop – day or night! All in all, we are very excited about this new dataset which has already aided in and improved severe storms forecasting on short time scales.

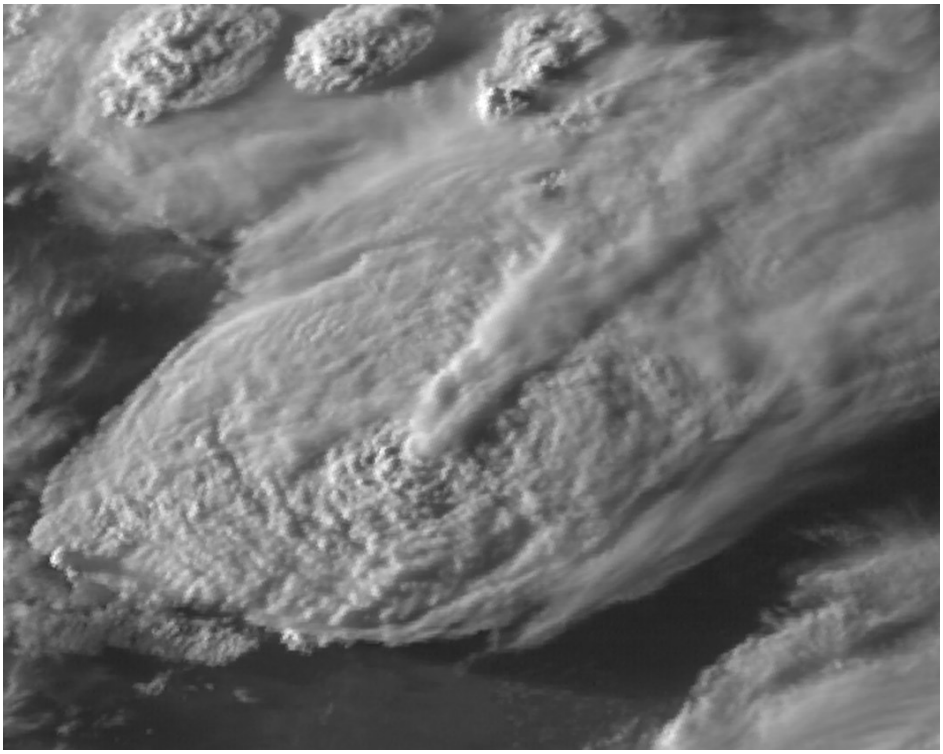

Image 3. *GOES-16 Visible "Red" Channel, at a 500-meter resolution, showing high detail of a severe thunderstorm, including a narrow feature known as a "cirrus splash" spreading northeast from the tallest cumulonimbus updraft, as shown here. This signature from GOES-16 indicates a very high probability of severe weather associated with this thunderstorm.*

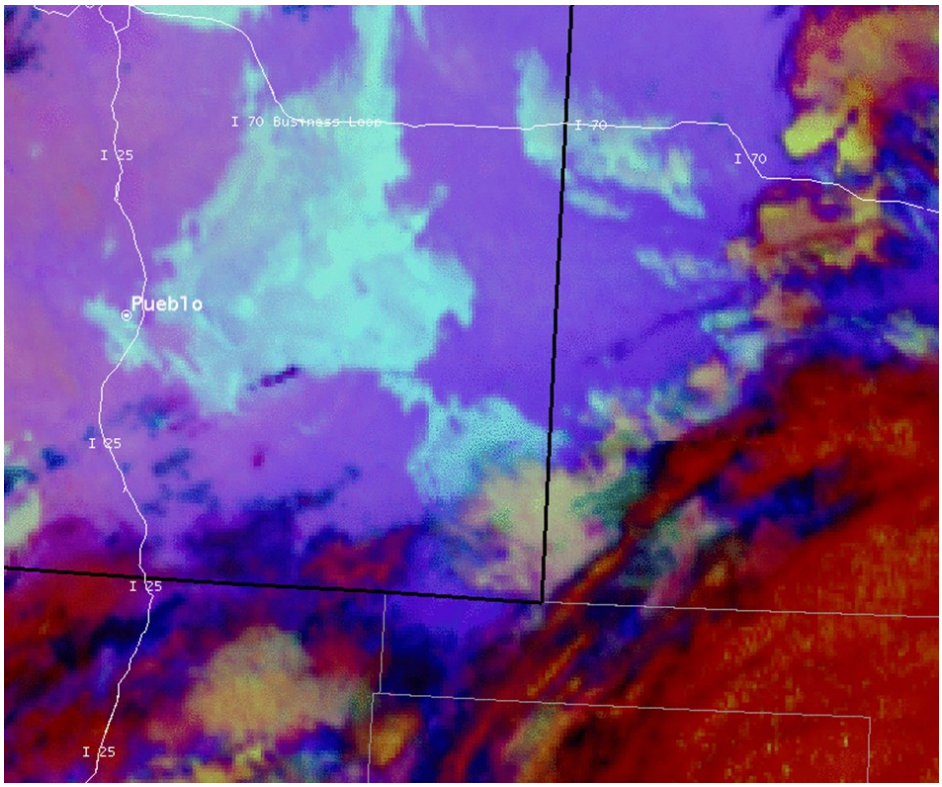

Image 4. *GOES-16 RGB Composite called "Nighttime Microphysics" allows us to better distinguish very low stratus clouds and fog (cyan, east of Pueblo) from other higher level ice clouds (darker maroon, bottom right) at night.*

Dodge City NWS Office Outreach

High Plains Conference

The High Plains Chapter of the American Meteorological Society and the National Weather Association held its 19th High Plains Conference on Meteorology and Climatology in Dodge City, Kansas, on August 9-10. WFO Dodge City hosted the two-day conference, which was attended by thirty six people representing ten NWS offices, two students and two private sector employees.

KEMA Conference

Warning Coordination Meteorologist Jeff Hutton represented the Dodge City NWS office at the Kansas Emergency Management Association Annual Conference in September, which helps build relationships between first responders and the National Weather Service.

3i Show

We had a booth at the 3i Show once again. And we were excited to have a special guest visit, KSN Chief Meteorologist Lisa Teachman! The Van de Graaff generator was used to teach lightning safety, and the meteorologists were there to answer any weather questions. Visit our booth at the upcoming Winter Expo!

Spotter Talks

Every spring, the Dodge City NWS offers spotter talks in all 27 counties in our Warning Area. It's a great way to learn more about severe weather, and get to know your NWS staff. We will update our Facebook, Twitter and web pages with our 2018 schedule in the spring.

Dodge City Days Parade

NWS Dodge City staff members participated in the 57th Dodge City Days Western Parade on 29 July. Following the 2017 parade theme, the float stressed, "Don't Let Weather Raise a Ruckus" by utilizing NWS services.

Integrated Weather Team

The Dodge City office participated in the State Integrated Weather Team in Jan., which promotes collaboration and communication between all weather partners and first responders in order to save lives and property.

Ag Safety Days & County Fairs

This summer, our forecasters brought the Van de Graaff generator to eight grade-school Ag Safety Days to demonstrate lightning safety. We also had a booths at several county fairs to educate the public on lightning safety and NWS products.

Weather Radio Programing Event

The Dodge City office participated in NOAA Weather Radio programming events this spring, in cooperation with KAKE TV and Dillons. It's a great opportunity to meet-and-greet with meteorologists and, of course, get your weather radio programmed. Watch our Facebook and Twitter accounts for future programming events!

Dodge City Participates in the Tornado Warning Improvement Project

The Dodge City National Weather Service office is participating in the Tornado Warning Improvement Project (TWIP) as an effort to enhance warning decision expertise and reduce false alarms during possible tornadic weather.

The TWIP was created within the National Weather Service Central Region to develop consistent warning decision making methods involving storms capable of producing tornadoes. A team of forecasters and Science and Operations Officers (SOOs), including Dodge City's SOO **Aaron Johnson**, have come together to develop and deliver expert-level, continuing education curriculum for tornado warning decision making to our meteorologists. Team members were selected from diverse geographic locations, but encompassing all types of severe weather associated with tornadoes. Each of these types of tornadoes presents unique challenges to the warning forecasters.

Members of the team are collaborating with leading researchers to bring the latest advancements in science into the Weather Forecast Office (WFO) and the tornado warning process. Effective training methods will be utilized in order to bring the latest scientific understanding of tornado development quickly to forecasters making the warning decisions.

The team will also explore ways to improve Decision Support Services specifically related to tornado messaging. Finding ways to communicate complicated scientific information effectively to the public, media, emergency officials and others is key to the ultimate goal of saving lives when seconds count.

Cooperative Observers

This section is dedicated to information directed towards our Cooperative Observing Program

Station Visits

Annual station visits will be made this fall and the rest in the spring. The outside temperature units will be cleaned and the rain gauges leveled. The automated rain gauges were winterized during the first week in October. If you need any supplies or need equipment moved or worked on give us a call at 1-800-824-9943. Ask for Jesse Lee. If I am not in the office you can leave a message and I will get back to you. If you have any questions at all feel free to call or e-mail me. My e-mail address is jesse.lee@noaa.gov

Awards Presented

Russell Oestereich of Sun City was presented with a 10 year Length of Service Award in July. Congratulations to Russell.

John Lehman of Coldwater has won the Thomas Jefferson Award, which is the highest award that a Cooperative Weather Observer can receive. The award will likely be presented sometime in early December. Congratulations to John and his wife Helen.

Upcoming length of service awards:

- 30 years for **Nanc Burns** of Meade, **W.F. & Paula Greenway** of McCracken and **Lance & Gloria Morgan** of Alexander.
- 25 years for **Darrell Woods** of Kalvesta and **Chris Lawless** in rural southeastern Comanche County.
- 20 years for **Pam Wetzel** near Offerle.
- 15 years for **Swede Holmgren** of Ellis.
- 10 years for **Steve Barker** of Satanta.

Brad Hinkle

Brad Hinkle, who was the observer for Liberal from 1994 until 2016, passed away earlier this year. Our condolences go out to his family.

8 inch standard rain gauges

Since we are coming up on the winter season, you can go ahead and remove the inner tube and the funnel on top.

WXCODER

For those who do not use the weather coder program, you can use it if you have a computer with internet and want to report your weather data every day. This is a website where you can enter your data and it would allow us to incorporate your station data in our daily report. If you are interested in using this program please give me a call and I will set you up with an account. For those who routinely use the program and still mail in their weather forms, you do not have to mail in the form. We can download the form here at the office. At the end of the month when you are done, check over your data to see if you have any missing temperature, precipitation or snow data entries. Please enter those if you have the data that is missing. If it is missing, please enter a M.

Jesse Lee, Observing Program Leader
National Weather Service
Dodge City KS

Cooperative Observers Continued on next page...

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FOR OUR COOPERATIVE OBSERVERS...

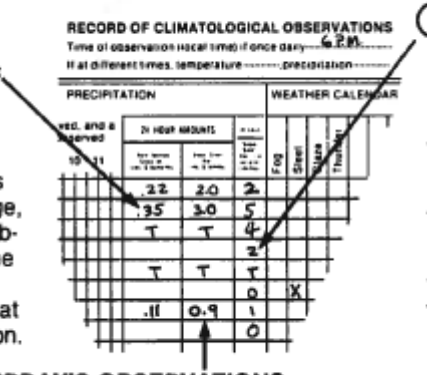
SNOW MEASUREMENT GUIDE

OBSERVERS WITH NON-RECORDING GAGES RECORD THREE MEASUREMENTS WHEN IT SNOWS

(1.) WATER IN THE SNOW

Record in this column to inches and hundredths.

Melt contents of gage and measure like rain. If high winds have blown snow out of the gage, the outer container is used to obtain a substitute sample from the snow on the ground where the depth represents the amount that fell since yesterday's observation.



(3.) DEPTH OF SNOW ON THE GROUND AT OBSERVATION TIME

Record in this column to nearest inch--if less than ½ inch, record "T".

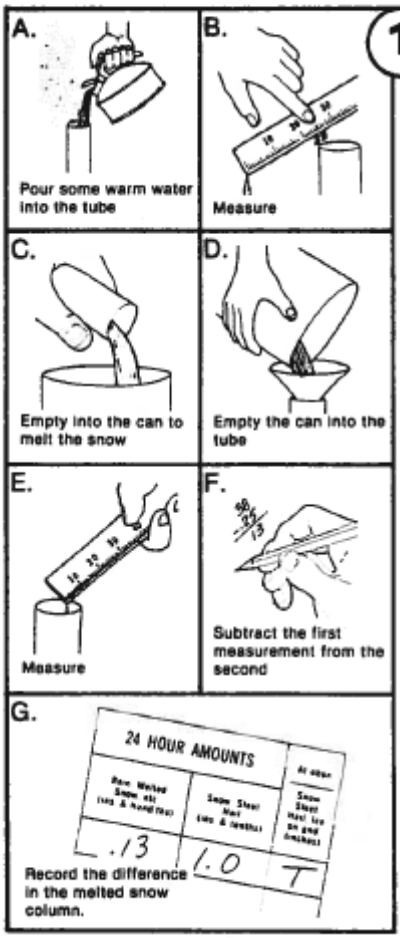
Any time there is snow on the ground at observation time record average depth on ground at observation time. Include old snow as well as newly fallen snow.

(2.) SNOWFALL SINCE YESTERDAY'S OBSERVATIONS

Record in this column to the nearest 0.1 inch.

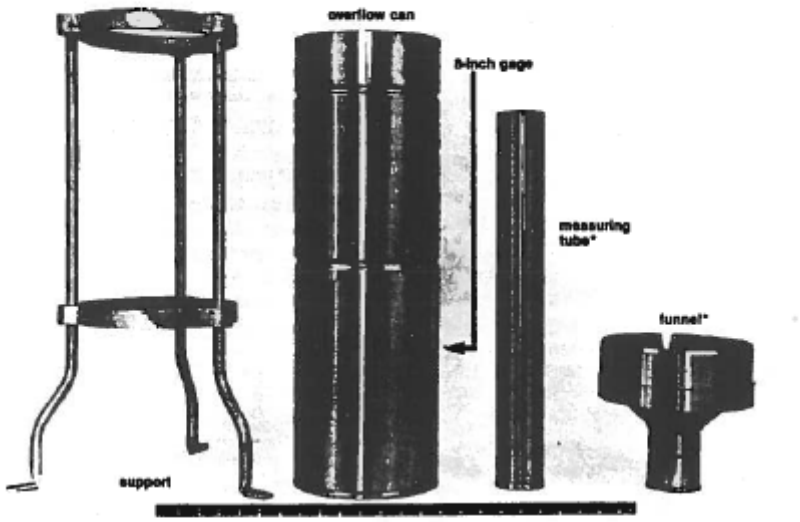
Find some place where the freshly fallen snow is least drifted and is about average depth for the locality. Measure the depth of the snow which fell since yesterday's observation. Report an estimate if the snow melted before observation time.

When significant amounts of new snowfall have occurred round off to the nearest inch and record as, for example, 2.0 and 3.0. (Record as 2.0 not 2, 3.0 not 3).



1

At the beginning of the snowfall season only the 8-inch gage can is exposed to catch the snow. The funnel and measuring tube are removed at the beginning of the snowfall season. The measuring tube is used to measure the water from the melted snow.



*removed during winter months

snow won't fall in representative quantity into the gage if the funnel and measuring tube are not removed.

(See reverse side for steps 2 and 3)

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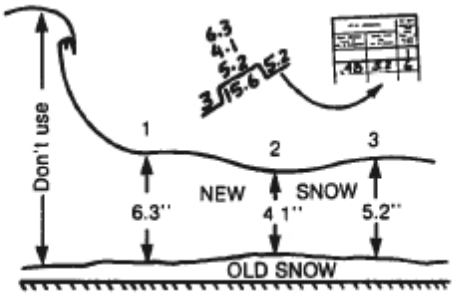
[Click here for a COCORAHs guide to snow reporting.]

2 TO MEASURE SNOWFALL SINCE YESTERDAY'S OBSERVATIONS

1. If the snow melts as it falls, enter a trace for snowfall.

2. Measure each new snow. Use good judgment in selecting spots where the snow is least affected by drifting.

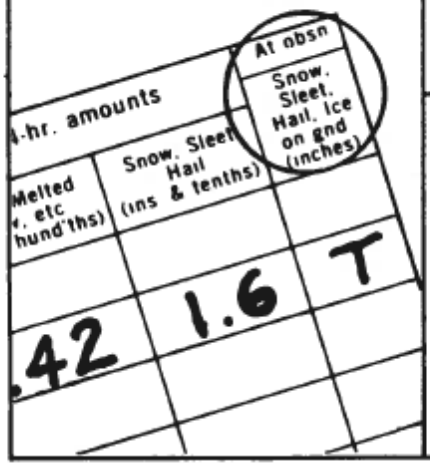


3. When possible, take several measurements where the snow is least affected by drifting (don't include deep drifts) and average.

4. If the snow has blown out of the can or the "catch" is not good, cut a "biscuit" with the can where the snow is near the average and melt the biscuit for the water equivalent.

3 SNOW DEPTH

Entry in this column is the measurement to the nearest whole inch of all snow, sleet, ice and hail remaining on the ground at your regular observation every 24 hours.



24-hr amounts		At obsn
.32	T	0

Rain and snow mixed; snow melted as it fell.

24-hr amounts		At obsn
		T
.16	2.0	0

2.0 inches of new snow fell, containing .16 water--snow melted before time of observation.

24-hr amounts		At obsn
		T
		T
.27	1.8	2
		1
		T

1.8 inches snow and ice pellets containing .27 water. 2 inches on ground at observation time.

24-hr amounts		At obsn
1.58	T	T

1.58 inches rain fell and also a trace of hail; hail had not melted at observation time.

24-hr amounts		At obsn
2.31		2

Rain fell and froze causing 2 inches ice (glaze on ground at observation time).

24-hr amounts		At obsn
T	T	
T	T	T

Two snows are recorded here--both are traces. The first one melted before observation time; the latter did not melt before observation time.

National Weather Service

Dodge City

104 Airport Rd.

Dodge City, KS 67801

620-225-6514

Your *National Weather Service provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy. NWS data and products form a national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community.*

Welcome New Dodge City NWS Employees!

Curt Lutz– Electronics Technician

Curt retired from the Air Force after 21 years of service. He was assigned in Europe three times, the Caribbean three times, South America four times, Turkey Northern No Fly Zone during the 1st Gulf war, and state-side in Delaware, South Carolina, and Utah. Curt has worked the past 14 years in the Weather Service at the weather forecast office (WFO) Monterey, WFO Riverton, & now WFO Dodge City.

Curt has been married for 28 years to his wife Michelle. They have eight kids, two girls and six boys, ranging in age from 17 to 35. They also have one three-year-old granddaughter Maisy. Curt enjoys Sunday School teaching and learning, time with family, physical fitness, reading, & the outdoors He is excited to have finally purchased a home near Dodge City!

Richard Lowe – Meteorologist Intern

Richard was raised in a small town south of Fort Worth, TX called Joshua. He grew up watching David Finfrock forecasting weather on the news. His passion for weather grew from there. He attended Texas A&M University to earn a degree in Meteorology. Richard started his career working as a meteorologist for NASA's Columbia Scientific Balloon Facility in Palestine, TX. After a year, he joined the Air Force as a weather officer for six years. He then worked for Colt International in Houston, TX as a meteorologist and flight planner before coming to Dodge City to work for the National Weather Service. Richard and his wife, Jennifer, have three children, a recently born granddaughter, a dog, and four cats. They are happy to be in historic Dodge City and look forward to many great adventures in southwestern Kansas.