



NATIONAL WEATHER SERVICE - BISMARCK, NORTH DAKOTA

Inside this issue:

Welcome Message 1

What is an IMET? 1

A Historical Perspective on North Dakota Drought 2

The End of the Extreme Cold Experiment 3

Winter Weather Terminology 3

Severe Winter Weather Awareness Week 4

Winter 2012-2013 Climate Outlook 5

Staff Spotlight: Rich Kinney 5

NWS Mission and History 6

Staff Spotlight: Adam Jones 6



DAKOTA SKIES

NWS Bismarck

Building a weather-ready nation

Fall 2012

Welcome Message

by Tony Merriman

Welcome to the Fall edition of the Dakota Skies newsletter! This publication is issued twice each year, one in the spring and one in the fall. The content is produced by a team of meteorologists at the National Weather Service in Bismarck.

This newsletter's purpose is to heighten safety awareness for the coming severe weather season, whether it be summer or winter. Furthermore, other educational and useful information will be provided.

If you have any comments or questions about this publication, please feel free to contact us at 701-250-4224. Enjoy!



Map of the Bismarck County Warning Area (CWA). We issue warnings and forecasts for 36 counties in western and central North Dakota. The office is staffed 24 hours a day, seven days a week.

What is an IMET?

by Ken Simosko

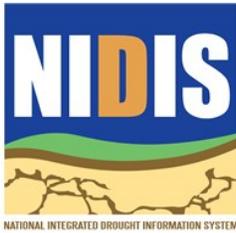
IMET stands for Incident METeorologist. An IMET is an individual from a National Weather



Service office who has received specialized training for providing on-site weather support for any hazard or incident. Most IMETs are used as part of the Incident Command System (ICS) during wildfires. The IMET provides around the clock weather support with up-to-date observations, weather forecasts, and briefings that keep the fire-fighting crews safe. In addition, the IMET works closely with a Fire Behavior ANALYST (FBAN). The FBAN takes the weather information from the IMET and projects how the fire will behave over the next couple of days out to a week. Accurate weather observations and forecasts are essential for effective fire behavior projections. One of the tools an IMET uses is an Atmospheric Theodolite Meteorological Unit (ATMU) (see image to the left). This instrument allows the IMET to follow a balloon several thousand feet above the wildfire in order to obtain wind speeds and directions above the surface.

One of the important duties that an IMET does is launch a Pilot Balloon, or PiBal. This measures wind speeds and directions above the ground. Helicopter pilots need to know how strong the winds are in order to keep safe while dumping water on fires. (Source: Eric Evenson, IMET)

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The National Integrated Drought Information System (NIDIS) was established in 2006 to help begin to move society from a reactive response to drought to a proactive stance. The NIDIS website is below:

<http://drought.gov>

“...the relative rankings of the 2012 drought do not come close to what is considered one of the more severe years of the dustbowl era.”



A Historical Perspective on North Dakota Drought

by Nathan Heinert and Allen Schlag

After the past few years of heavy snow, spring flooding, and plentiful summer rains, the current drought reminds us how fast we can flip from one extreme to another in North Dakota. Using the statewide precipitation rankings from the National Climatic Data Center going back to 1895 (118 years), here are some interesting statistics for the April to August timeframe.

Period	2012				1936			Record Year
	Annual Average (inches)	Rain (inches)	Departure (inches)	Rank	Rain (inches)	Departure (inches)	Rank	
August	2.10	1.74	-0.36	44 th Driest	1.41	-0.69	25 th Driest	Driest: 1961
Jul - Aug	4.70	3.78	-0.92	29 th Driest	2.03	-2.67	2 nd Driest	Driest: 1967
Jun - Aug	8.14	6.39	-1.75	19 th Driest	3.35	-4.79	1 st Driest	Driest: 1936
May - Aug	10.47	8.43	-2.04	20 th Driest	4.06	-6.41	1 st Driest	Driest: 1936
Apr - Aug	11.85	10.47	-1.38	35 th Driest	4.45	-7.40	1 st Driest	Driest: 1936

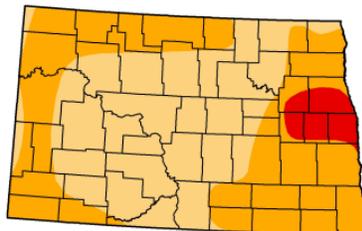
Adapted from NCDC climate statistics available at: [National Climatic Data Center](http://NationalClimaticDataCenter)

Data and rankings from the above table represent statewide conditions and somewhat different results are possible if looking at smaller, more regionalized areas of the state. However, the relative rankings of the 2012 drought do not come close to what is considered one of the more severe years of the dustbowl era. The relatively modest historical ranking for 2012, when combined with fairly abundant soil moisture available from the past few wet years, helps explain why this year has effectively been a dry spell with relatively minor impacts to surface waters and agriculture. One thing is for sure though, without a replenishment of deep soil moisture this fall, or a return to more “normal” precipitation patterns, impacts in 2013 could be significantly greater than those felt in 2012.

U.S. Drought Monitor North Dakota

October 16, 2012
Valid 7 a.m. EST

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	50.36	4.78	0.00
Last Week (10/09/2012 map)	0.00	100.00	100.00	50.42	4.78	0.00
3 Months Ago (07/17/2012 map)	21.57	78.43	26.07	16.00	0.00	0.00
Start of Calendar Year (12/27/2011 map)	25.96	74.04	8.67	0.00	0.00	0.00
Start of Water Year (09/25/2012 map)	0.00	100.00	94.90	28.49	4.78	0.00
One Year Ago (10/11/2011 map)	91.39	8.61	0.00	0.00	0.00	0.00



Intensity:

- D0 Abnormally Dry
- D3 Drought - Extreme
- D1 Drought - Moderate
- D4 Drought - Exceptional
- D2 Drought - Severe

The information to the left shows the latest version of the Drought Monitor for North Dakota. You can track the drought across the country by accessing the link below:

<http://droughtmonitor.unl.edu>

(Image Source: NDMC)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://droughtmonitor.unl.edu>



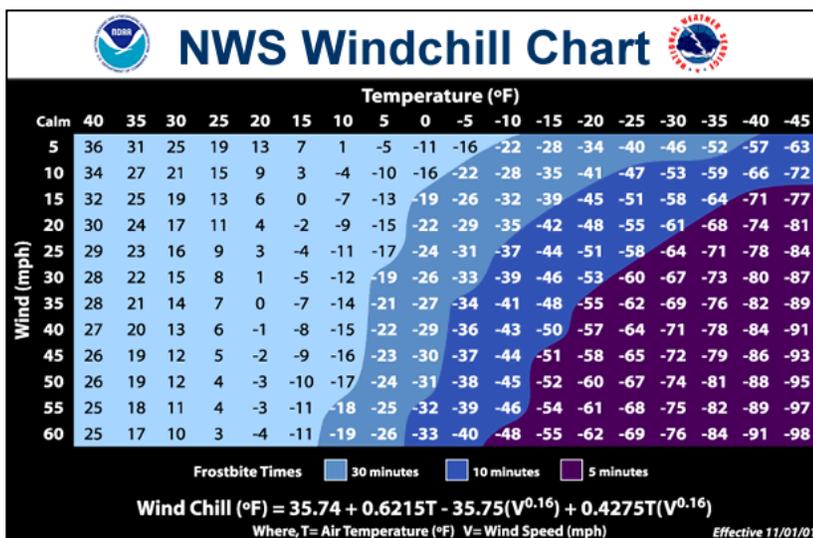
The End of the Extreme Cold Experiment

by Tony Merriman

The National Weather Service in Bismarck tested the concept of issuing Extreme Cold watches and warnings during the Winter 2011-2012 season. The reason was to cover instances when extremely cold temperatures occurred during times when there was no wind (as is sometimes the case in North Dakota). Therefore, an Extreme Cold warning was issued when either wind chills or ambient air temperatures of -30°F or below were expected, regardless of wind speed.

The experiment has since ended and it was decided that the National Weather Service in Bismarck will no longer issue Extreme Cold watches and warnings. Wind Chill watches, warnings, and advisories will return for the Winter 2012-2013 season. As a reminder, a Wind Chill Advisory is issued for wind chills -25°F to -39°F and winds 5 mph or greater. Wind Chill Warnings are issued for wind chills -40°F or colder with winds 5 mph or greater.

Wind Chill Hazard Criteria		
	Advisory	Warning
Wind Chill	-25°F to -39°F	-40°F or colder
Wind Speeds	5 mph or greater	5 mph or greater



The information to the left shows the wind chill temperatures of various combinations of wind speeds and ambient air temperatures. More information can be found at the following link:

<http://www.weather.gov/os/windchill/index.shtml>

(Source: NOAA)

“The National Weather Service in Bismarck will no longer issue Extreme Cold watches and warnings.”

Winter Weather Terminology

by Adam Jones

The National Weather Service issues a variety of watches, warnings and advisories during times of severe winter weather. Keep an ear out for the following terms this winter season:

Blizzard Warnings are issued for winds of 35 mph or higher AND visibility frequently below 1/4 mile in snow and/or blowing snow AND these conditions last for three (3) hours or longer. There is no set temperature requirement for a blizzard.

Winter Storm Warnings are issued for combination events, like snow mixed with sleet or freezing rain, or combined with wind and blowing snow. Generally, the criteria for a Winter Storm Warning is six inches of snow in 12 hours or less, or, eight inches of snow in 24 hours or less.

Ice Storm Warnings are issued when significant and damaging freezing rain is expected (a quarter

inch or more of ice accumulation).

Winter Weather Advisories are issued for combination events (snow with freezing rain or sleet, or snow with wind and blowing snow) when warning criteria is not expected to be met. Generally, Winter Weather Advisories are issued for 3-5 inches of snow.

Freezing Rain Advisories are issued when mainly freezing rain (less than a quarter inch of ice accumulation) is forecast but warning criteria is not expected to be met.

Watches are issued a day or two before a potential high-impact severe winter weather event.

For more details, go to: <http://www.crh.noaa.gov/bis/winter.php>



The picture above was taken on January 19, 2011 when the low temperature fell to -24°F in Bismarck.

(Source: Tony Merriman)



NOAA Weather Radio All Hazards acts as an alarm clock for severe weather. It alerts you immediately that a warning has been issued for your area.

“A survival kit may mean the difference between an inconvenient and a life-threatening situation.”



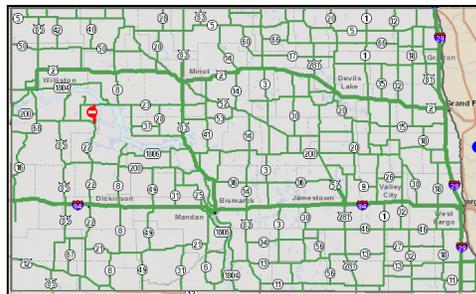
Severe Winter Weather Awareness Week: Oct. 29 - Nov. 2

by Adam Jones More details at: <http://www.crh.noaa.gov/bis/winter.php>

Winter conditions in North Dakota can be unpredictable. The following precautions may help you avoid an unpleasant or dangerous situation when traveling or at home.

Winter Driving Tips

Winterizing your vehicle can enhance your winter weather driving safety. Before driving this winter, make sure your vehicle's battery is fully charged, that your wiper blades are in good working condition, and that the windshield washer reservoir is filled with antifreeze washer fluid. Check your vehicle's exhaust system to make sure it has no leaks. Keep your gasoline tank full to minimize water in the tank and provide the maximum advantage in case of trouble. Make sure your lights are clean and turned on to increase your visibility to other motorists and snowplow operators. Slow down and drive according to the conditions and never drive through "white-outs". Most winter crashes are caused by driving too fast for conditions. Check the road conditions BEFORE you travel by visiting the NDDOT Travel Information Map below or calling 511. Let someone know when you depart, your route, and expected arrival time at your destination.



(Source: NDDOT) North Dakota Road Conditions can found at the following link: <http://www.dot.nd.gov/travel-info-v2/>

Pack a Winter Survival Kit

A survival kit may mean the difference between an inconvenient and a life-threatening situation. The following are some key items to have in a kit.

- Blankets and warm clothing.
- Sources of heat, such as multiple candles, and matches.
- Food, such as hard candy, jellybeans, raisins, nuts, candy bars, dehydrated fruit, and jerky.
- A bright cloth and whistle to signal for help.
- A first aid kit, shovel, nylon rope, a radio, a cell phone, and flashlight with extra batteries.
- A gallon of water per person.

What to do if You Become Stranded

If you become stranded, stay with the vehicle and do not try to walk away from the vehicle. Tie a brightly colored cloth to the antenna. This will make your vehicle more visible to rescuers. Make sure the exhaust pipe is not blocked and run the engine for about 10 minutes each hour for heat with a window open slightly for fresh air. Do not let all occupants sleep at the same time. Be sure someone stays awake!



Stranded Vehicle (Source: NOAA)

Keep Safe at Home

Winter weather can also affect you at home. Run a trickle of water through faucets to help prevent pipes from freezing. Install carbon monoxide alarms in central locations on every level of your home and outside sleeping areas to provide early warning of accumulating carbon monoxide. All fuel-burning equipment should be vented to the outside and kept clear. If your home loses power or heat during periods of extreme cold, go to a designated shelter.

Cold-Related Emergencies

Frostbite and hypothermia are two dangerous and potentially life-threatening emergencies. Protect yourself from frostbite and hypothermia by wearing warm, loose-fitting, lightweight clothing in several layers. Stay indoors, if possible.



Blowing and drifting snow (Source: NOAA)

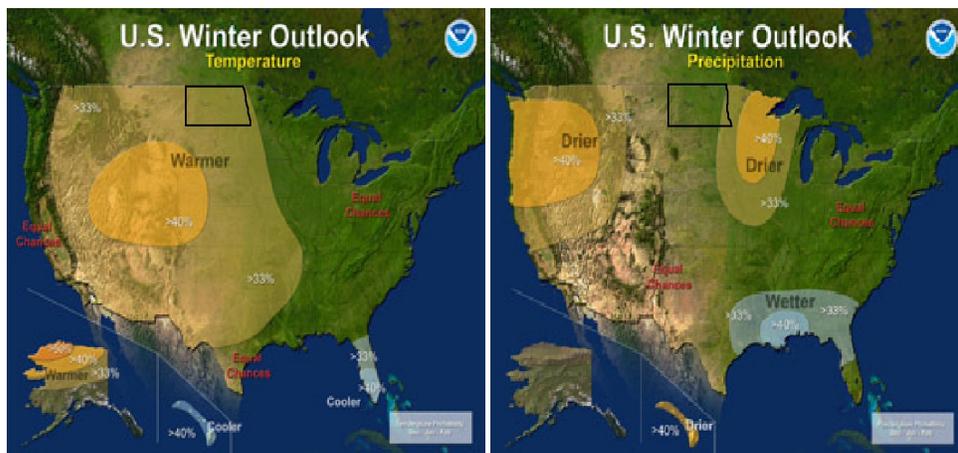
Winter 2012-2013 Climate Outlook

by Michael Mathews

The chances for El Nino developing this winter have decreased substantially, though a weak El Nino is still possible. Based on this, The Climate Prediction Center (CPC) is forecasting that above normal temperatures are favored for the upcoming winter months of December, January, and February across the entire state of North Dakota.

The CPC is also forecasting near normal precipitation in central and western North Dakota, with below average precipitation favored in parts of the east. Therefore, it is likely a majority of North Dakota will experience close to normal amounts of snow this winter. For more information visit

www.cpc.ncep.noaa.gov



Winter months of December, January and February				
	Climate Normals		Last December - February	
	Average Temperature (°F)	Snowfall (inches)	Average Temperature (°F)	Snowfall (inches)
Bismarck	15.7	26.3	23.3	12.5
Dickinson	18.2	15.6	23.6	Missing
Jamestown	13.1	25.3	21.7	13.2
Minot	14.9	23.4	23.5	21.2
Williston	13.9	25.2	22.1	6.5

Staff Spotlight: Rich Kinney

by Rich Kinney



Rich has been a Lead Forecaster in Bismarck since August 2009. He began his National Weather Service career in Davenport, Iowa in 1998 as a Meteorologist in Training, before moving on to Des Moines, Iowa as a General Forecaster in 2002.

Rich was born in Red Oak, Iowa and grew up in several communities in Iowa and Illinois. He attended the University of Iowa and earned a Bachelor of Science degree in Journalism and Mass Communication. He then worked for several years in the radio industry as a News and Sports Director.

Rich decided to undertake a career change and earned a Bachelor of Science degree in Meteorology, graduating from Western Illinois University with honors in 1996. He worked at a private weather firm before beginning his career in the National Weather Service.

Rich has been married to Jennifer for 22 years and has four children, spanning elementary school to college. In addition to family activities, his hobbies include watching University of Iowa sports, playing on the office Weather Ready Yetis basketball team, listening to music, restoring vintage equipment, collecting hats, politics, and hunting.





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Dakota Skies Team**

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Building a weather ready nation

National Weather Service Mission Statement:

The National Weather Service (NWS) 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.

Brief National Weather Service History:

The National Weather Service has its beginnings in the early history of the United States. Weather has always been important to the citizenry of this country, and this was especially true during the 17th and 18th centuries. The beginning of the National Weather Service we know today started on February 9th, 1870, when President Ulysses S. Grant signed a joint resolution of Congress authorizing the Secretary of War to establish a national weather service.

Social Media Links

Twitter: [@NWSBismarck](http://twitter.com/NWSBismarck)

Facebook: <http://www.facebook.com/US.NationalWeatherService.Bismarck.gov>

On the Web

<http://www.weather.gov/bis>

Staff Spotlight: Adam Jones

by Corey King



Adam Jones became part of the National Weather Service (NWS) Bismarck team in July of this year as one of our Meteorologist Interns.

Adam was born and raised in Kansas City, Missouri and has

been interested in weather ever since he was a child. His interest in weather and desire to be a meteorologist was solidified when a local TV meteorologist in Kansas City gave a weather presentation at his school, and after a tornado went over his house on May 3rd 2003. Fascinated by weather, and in particular severe summer weather, Adam decided to study meteorology at the University of Oklahoma.

Adam's career with the National Weather Service began with an internship at the National Weather Service Central Region Headquarters in Kansas City, Missouri. Later he worked at

the Weather Forecast Office in Pleasant Hill, Missouri in the Student Career Experience Program (SCEP). He continued as a SCEP student at the Pleasant Hill office until he graduated from college in May 2012.

Besides his interest in weather, Adam enjoys hunting, fishing, camping, boating and snow skiing.

