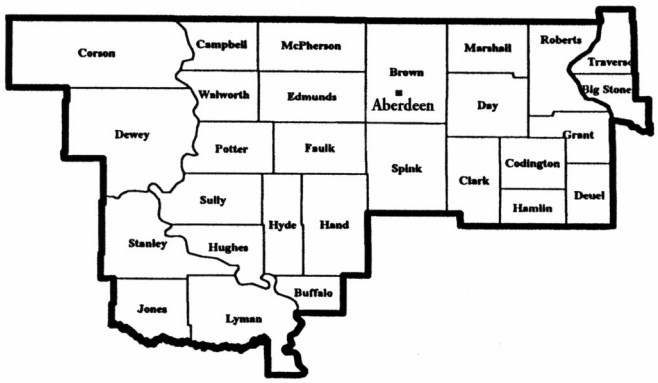

SKY SCANNER

National Weather Service Forecast Office
Aberdeen, South Dakota

April 2007

South Dakota Severe Weather Awareness Week
April 23rd-27th

Severe weather season is quickly approaching, and now is the time to begin thinking about severe weather safety. The week of April 23rd-27th has been designated Severe Weather Awareness Week in South Dakota. On Wednesday, April 25th, tests of the severe weather watch and warning products will be conducted. A test tornado watch will be issued at 10:00 am CDT...and will be followed by a test tornado warning at 10:15 am CDT. Sirens will sound in most locations. This is an excellent time for schools, businesses and households to practice their severe weather procedures.

Spotter Training sessions continue

The following spotter training session will be held over the coming weeks.

April 26th
Spink County
Redfield Courthouse
7:00 pm CDT

May 3rd
McPherson County
Eureka Fire Hall
7:00 pm CDT

May 7th
Traverse County, MN
Browns Valley Fire Hall
7:00 pm CDT

May 9th
Dewey County
Eagle Butte Fire Hall
7:00 pm CDT

May 10th
Faulk County
Faulkton Courthouse
7:00 pm CDT

May 21st
Campbell County
Pollock Legion Hall
7:00 pm CDT

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When significant or unusual weather events occur, give us a call! We're always happy to hear from the public, especially if you're calling to report hail, strong winds, or tornadoes. Don't wait until the next day...call us when it's happening.

El Nino is history...with a possible La Nina developing

by Dan Mohr

During the first part of the 2006-07 winter, a moderate El Niño was occurring in the central equatorial Pacific. A typical El Niño winter for central and north central South Dakota usually leads to above normal temperatures. The forecast for the winter was for an enhanced probability of above normal temperatures across our entire forecast area. Well, the first part of the winter across central and north central South Dakota was warm and dry, with the first significant snowfall not occurring until late December. El Niño then began to weaken quickly through the rest of the winter and has since dissipated into near-neutral conditions across the central equatorial Pacific. Due in part to the weakening El Niño, January and February had more normal winter-like conditions for our area with more frequent arctic intrusions and much more snowfall. From the end of January to almost the middle of February, the area was pretty much locked into bitter cold arctic air with several record cold temperatures set. At the end of February and into early March, significant snowfall occurred, especially across northeast South Dakota and west central Minnesota. Along with snowfall came widespread blizzard conditions across central, north central, and northeast South Dakota. With some unusual April snowfall across the area, seasonal snowfall totals rose to above normal across all of northeast South Dakota and west central Minnesota. Along with the snowfall, came some extreme cold in early April with record lows set at several locations. Thus, as the El Niño warm waters in the central equatorial Pacific Ocean faded away, so did our warm and dry conditions of early winter. Since January 1st of this year, precipitation across all of the area is above normal. This has allowed for an improvement in the drought conditions across central and north central South Dakota.

The present trend in surface and subsurface temperatures in the central equatorial Pacific Ocean, along with the location of thunderstorm activity and the surface winds, are all consistent with a Pacific cold (La Niña) episode developing. Most of the Climate Prediction Center's computer model forecasts indicate additional anomalous cooling during the next several months. Some of the models show a transition to La Niña (cold episode) during the May-July 2007 time period which is consistent with the observed trends in atmospheric and oceanic conditions. The affects a La Niña would have on the weather across our area for the summer is unclear. Usually, La Niña and El Niño episodes have their greatest affects on the winter jet stream flow, and thus the storm tracks and the resultant weather. The summertime affects of La Niña and El Niño are less evident with a much weaker jet stream.

CoCoRaHs is Coming to South Dakota

The Community Collaborative Rain, Hail, and Snow Network, also known as CoCoRaHS, will make its debut in South Dakota beginning this June.

CoCoRaHS is a unique, non-profit, community-based network of volunteers of all ages and backgrounds working together to measure and map precipitation (rain, hail and snow). By using low-cost measurement tools, stressing training and education, and utilizing an interactive Web-site, CoCoRaHS aim is to provide the highest quality data for natural resource, education and research applications.

Where did the CoCoRaHS Network originate??

The network originated with the Colorado Climate Center at Colorado State University in 1998 thanks in part to the Fort Collins flood a year prior. In the years since, CoCoRaHS has expanded rapidly with over 3,500 observers in seventeen states. Folks in many parts of the country have shown interest in having their state join the CoCoRaHS Network in the not too distant future.

Who can participate??

This is a community project. Everyone can help, young, old, and in-between. The only requirements are an enthusiasm for watching and reporting weather conditions and a desire to learn more about how weather can effect and impact our lives.

What will our volunteer observers be doing??

Each time a rain, hail or snow storm crosses your area, volunteers take measurements of precipitation from as many locations as possible. These precipitation reports are then recorded on our Web site www.cocorahs.org. The data are then displayed and organized for many of our end users to analyze and apply to daily situations ranging from water resource analysis and severe storm warnings to neighbors comparing how much rain fell in their backyards.

Who uses CoCoRaHS??

CoCoRaHS is used by a wide variety of organizations and individuals. The National Weather Service, other meteorologists, hydrologists, emergency managers, city utilities (water supply, water conservation, storm water), insurance adjusters, USDA, engineers, mosquito control, ranchers and farmers, outdoor & recreation interests, teachers, students, and neighbors in the community are just some examples of those who visit our Web site and use our data.

What do we hope to accomplish??

CoCoRaHS has several goals. 1) provide accurate high-quality precipitation data for our many end users on a timely basis; 2) increasing the density of precipitation data available throughout the country by encouraging volunteer weather observing; 3) encouraging citizens to have fun participating in meteorological science and heightening their awareness about weather; 4) providing enrichment activities in water and weather resources for teachers, educators and the community at large to name a few.

What benefits are there in volunteering??

One of the neat things about participating in this network is coming away with the feeling that you have made an important contribution that helps others. By providing your daily observation, you help to fill in a piece of the weather puzzle that affects many across your area in one way or another. You also will have the chance to make some new friends as you do something important and learn some new things along the way. In some areas, activities are organized for network participants including training sessions, field trips, special speakers, picnics, pot-luck dinners, and photography contests just to name a few.

How can I sign up??

Look for additional information on how to sign up to participate in the very near future. South Dakota hopes to begin their network in June of this year. In the meantime, be sure to visit the CoCoRaHS website to learn more about this exciting new opportunity.

www.cocorahs.org

5th Anniversary of Brown County Tornadoes

by Scott Doering

June 23, 2002 - A powerful supercell thunderstorm produced six tornadoes from eastern McPherson County and across northern Brown County during the evening hours of June 23rd.

The first tornado was relatively weak, an F0, and touched down briefly 6.4 miles northeast of Leola and resulted in no damage.

The second tornado, an F1, touched down 8.5 miles northeast of Leola and crossed over into Brown County where it dissipated 9 miles northwest of Barnard. This tornado brought down many trees and a barn and caused damage to the siding and the roof of a farmhouse in McPherson County and caused no damage in Brown County.

A third weak satellite tornado (F0) occurred following the dissipation of the second tornado and resulted in no damage.

The fourth tornado was a strong F3, developed 6 miles west of Barnard and moved east and dissipated 3 miles southeast of Barnard. This tornado brought down some high power lines along with a support tower and tossed a pickup truck 100 yards into a group of trees. The pickup truck was totaled. The tornado caused extensive damage to two farmhouses, several farm buildings, and farm equipment. One farmhouse lost its garage and most of its roof with many trees completely snapped off down low and debarked.

The fifth tornado developed 5 miles southeast of Barnard and became a violent F4 tornado. This tornado caused damage to one farmhouse, several outbuildings, trees, and equipment as it moved northeast and strengthened. The tornado then completely demolished two unoccupied homes, several outbuildings, and many trees, along with destroying or damaging some farm equipment before dissipating 7.6 miles northeast of Barnard. A sixth weak satellite tornado (F0) occurred with this violent tornado and caused no damage. This was the first F4 tornado recorded in Brown county and one of few recorded in South Dakota. The estimated width of this tornado was 900 yards and a length of 9 miles. Softball size hail was also observed just south of Barnard damaging a law officer's vehicle. The total estimated property loss exceeded a million dollars

The largest of the six tornadoes.

The Enhanced Fujita Scale

by Dave Hintz

In February 2007, the National Weather Service implemented the new "Enhanced Fujita" or "EF" scale to use when ranking tornados. This replaces the old "F" scale that had been in place since the early 1970's.

Problems with the old F-scale

Through the years, it became apparent that there were some weaknesses associated with the old F-scale. First was that it was highly subjective. What one person would see as F4 or higher damage, another person would only see as F2 damage. There were no set guidelines to go by for estimating the winds based on damage seen. Another problem was applying a rating to a tornado when no damage occurred. For example…say a ¾ mile wide tornado cuts a swath through pasture land before lifting. How would it be rated? Also, studies have shown that a well constructed house will be completely destroyed by winds less than 260mph. Thus…the winds for F4 and F5 tornados are over estimated.

Enter the new EF-scale

In 2001, a forum was held to address the weaknesses and misuses of the old scale. Representatives from the National Weather Service, insurance companies, private industry, construction engineers and the weather research community were all invited to the forum. What came out of the forum was the Enhanced Fujita or "EF" scale. The EF-scale uses 28 damage indicators (DI), ranging from barns and outbuildings, to big department stores, to softwood and hardwood trees, and everything in between. By using the 28 DI's, it is hoped that a better representation of tornadic wind speeds will be achieved. Not only can the new EF-Scale be used for tornado events, it can be used to estimate the wind speeds during straight line wind events as well. The old F-scale historical database has also been converted over to the new EF-Scale. It was highly important not to lose that valuable database.

Links for further information

Below are some links that go much more in detail describing the new EF-Scale, how it came about, and comparisons between the two scales with respect to wind speed.

http://www.spc.noaa.gov/efscale/
http://www.wind.ttu.edu/EFScale.pdf

New Employees

Jennifer Zeltwanger
Warning Coordination Meteorologist

Greetings! I am the new Warning Coordination Meteorologist here in Aberdeen. I am originally from central Wisconsin and am very happy to be back in the Midwest. I graduated from the University of Wisconsin-Madison with a Bachelor's Degree in Atmospheric and Oceanic Science. My first job with the National Weather Service was as in intern in Elko, NV. I then spent four and a half years in Glasgow, MT, first as a general forecaster, then as a lead forecaster. I am married to another Weather Service employee, Jeff Zeltwanger, Information Technology Officer. We have a Boston Terrier named Homer, with another puppy on the way soon. We are very excited and happy to be in Aberdeen, and we are looking forward to exploring the area more. Stop by the office anytime to say hello!

Jeff Zeltwanger
Information Technology Officer

Hi! My name is Jeff Zeltwanger and I am the new Information Technology Officer at the National Weather Service in Aberdeen. I grew up in Hancock, MN (between Benson and Morris) and received my bachelor's degree in atmospheric sciences from the University of North Dakota in Grand Forks. I spent time working for the National Weather Service in North Platte, NE, Billings, MT, and Glasgow, MT before returning home to the upper Midwest. My wife, who is the new Warning Coordination Meteorologist at the office, and I have been married for almost three years. We are looking forward to living in this area and meeting all of you.

Nicholas Eckstein
General Forecaster

Originally from Ohio, Nick graduated from Bowling Green State University in 2003 with a Bachelor of Science degree in mathematics and geography. He has also attended The University of Washington in Seattle and Northern Illinois University as an undergraduate student, and the State University of New York at Albany as a graduate student. He has internship experience at the National Severe Storms Laboratory in Norman, Oklahoma and the Atmospheric Turbulence and Diffusion Laboratory in Oak Ridge, Tennessee. Most recently, Nick worked as a Geographer and Supervisory Survey Statistician with the Chicago Region of the United States Census Bureau from 2005–2006.

Anthony Gionta
Meteorologist Intern

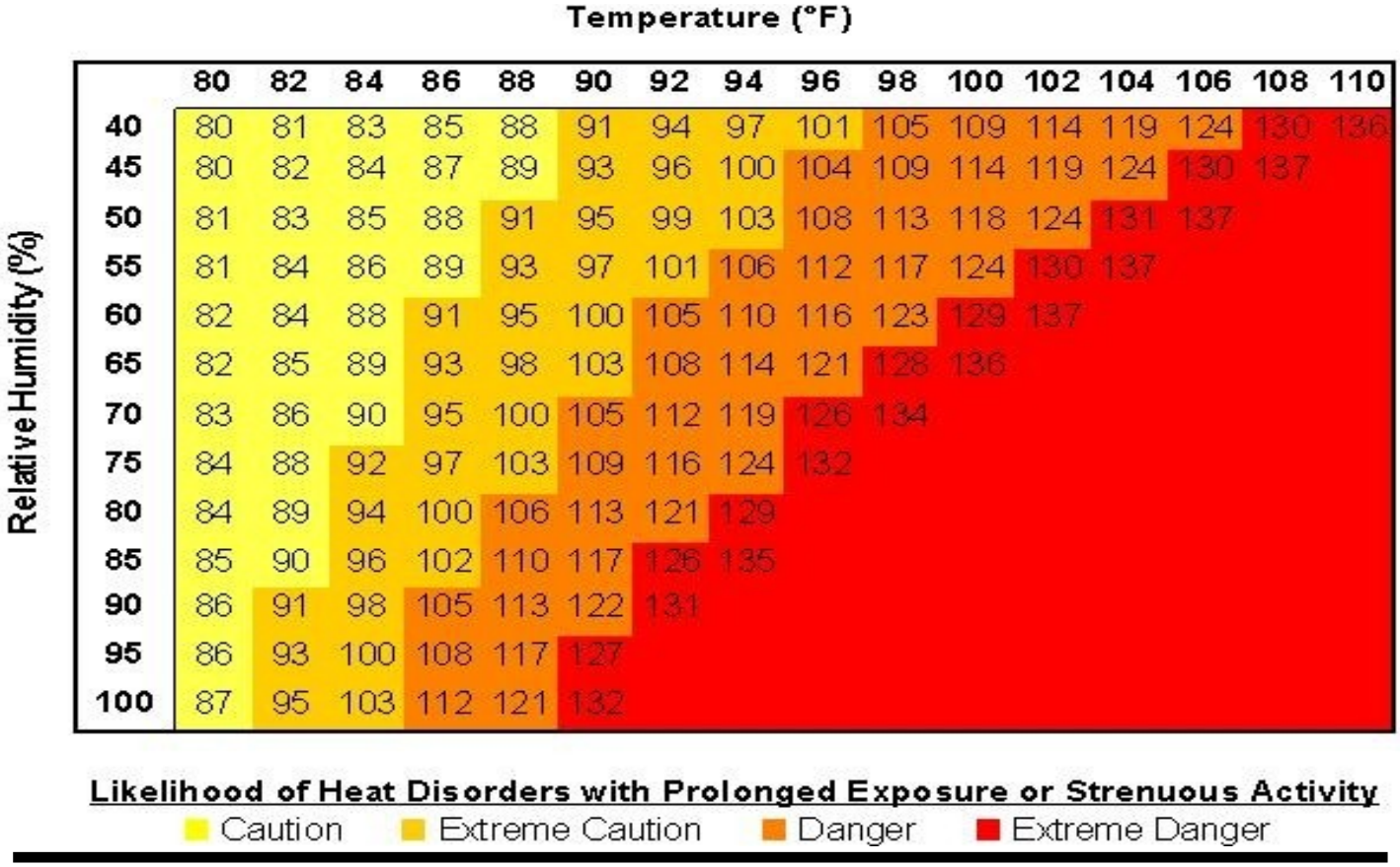
Anthony was born and raised north of Pittsburgh, in western Pennsylvania. His interest in weather dates back to his childhood, as he was intrigued by severe weather phenomena at a young age. Anthony decided to pursue meteorology upon graduation from North Hills High School in 2000. He studied meteorology at Penn State University, graduating with his bachelor's degree in December 2005.

Anthony has been a member of the PA Air National Guard's 146th Weather Flight for over seven years. He currently holds the rank of Technical Sergeant and the title of Forecaster Craftsman. Anthony has served three tours of duty in the Global War on Terrorism (twice overseas and once stateside), all as an operational forecaster. He served in both Operations Enduring Freedom and Iraqi Freedom as an aviation detachment forecaster, special duty forecaster, and lead forecaster in charge of a Special Operations Weather Team.

Ron Crouch
Electronics Technician

Ron is a native of Panama Canal Zone, Panama. He enlisted in the United States Navy where he served as a Fire Controlmen on board the USS John S. McCain (DDG-56) in Yokosuka, Japan , the USS Roosevelt (DDG -80) in Mayport, Florida, and the USS Chafee (DDG-90) in Pearl Harbor, Hawaii. While in the Navy, he earned a degree in Electronic Technology Engineering from Grantham University. He is married with two daughters, Christine and Ashley. Before he joined the electronic team of the Aberdeen National Weather Service, Ron served as Mobile Sensor Radar Engineer for Raytheon Technical Service Co.

Heat Index Chart



National Weather Service
824 Brown Co 14 S
Aberdeen SD 57401

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PENALTY FOR PRIVATE USE, $300

An optimist is the human personification of spring.

~Susan J Bissonette

We're on the Internet
www.weather.gov/aberdeen