

The Great Basin Spotter Newsletter

Winter 2008/2009 Edition

Volume 12, Issue 2

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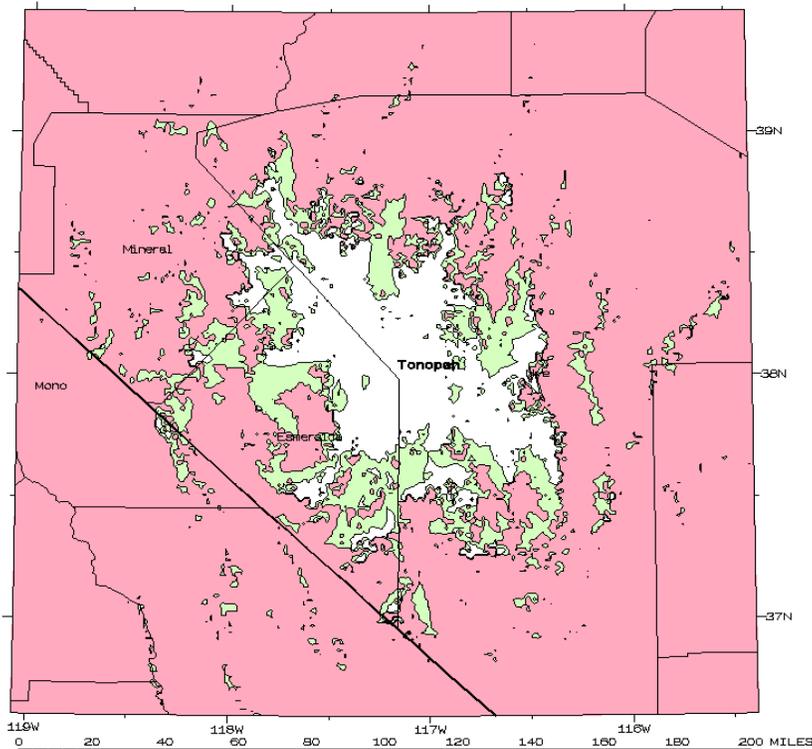
MIC Spotter Thank You Pg. 8

New NOAA All Hazards Weather Radio Station By Forecaster Jonathan McGee

The National Weather Service Office (NWS) in Elko is pleased to announce that NOAA All Hazards Radio Station WZ-2519 is now operational in Tonopah. The transmitter for this new station sits atop Mount Brock which is just south of town. WZ-2519, which operates at a frequency of 162.400 MHz, can be heard throughout western Nye County and also eastern Esmeralda County.

NOAA All Hazards Weather Radio (NAHR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office. NAHR includes 1000 transmitters, covering all 50 states. NAHR broadcasts official National Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week. Weather information for Tonopah and northern Nye County is generated by the NWS forecast office located in Elko.

NOAA Weather Radio
WZ2519 162.400 MHz
CS001Sep0908C



Working with the Federal Communication Commission's (FCC) Emergency Alert System, NAHR is an "All Hazards" radio network, making it your single source for comprehensive weather and emergency information. In conjunction with federal, state, and local emergency managers and other public officials, NAHR also broadcasts warning and post-event information for all types of hazards – including natural (such as earthquakes or avalanches), environmental (such as chemical releases or oil spills), and public safety (such as AMBER alerts or 911 telephone outages).

NAHR requires a special radio receiver or scanner capable of picking up the signal in order to be heard. However, these radios are relatively inexpensive and available from most electronic stores.

DANGER...AVALANCHE!

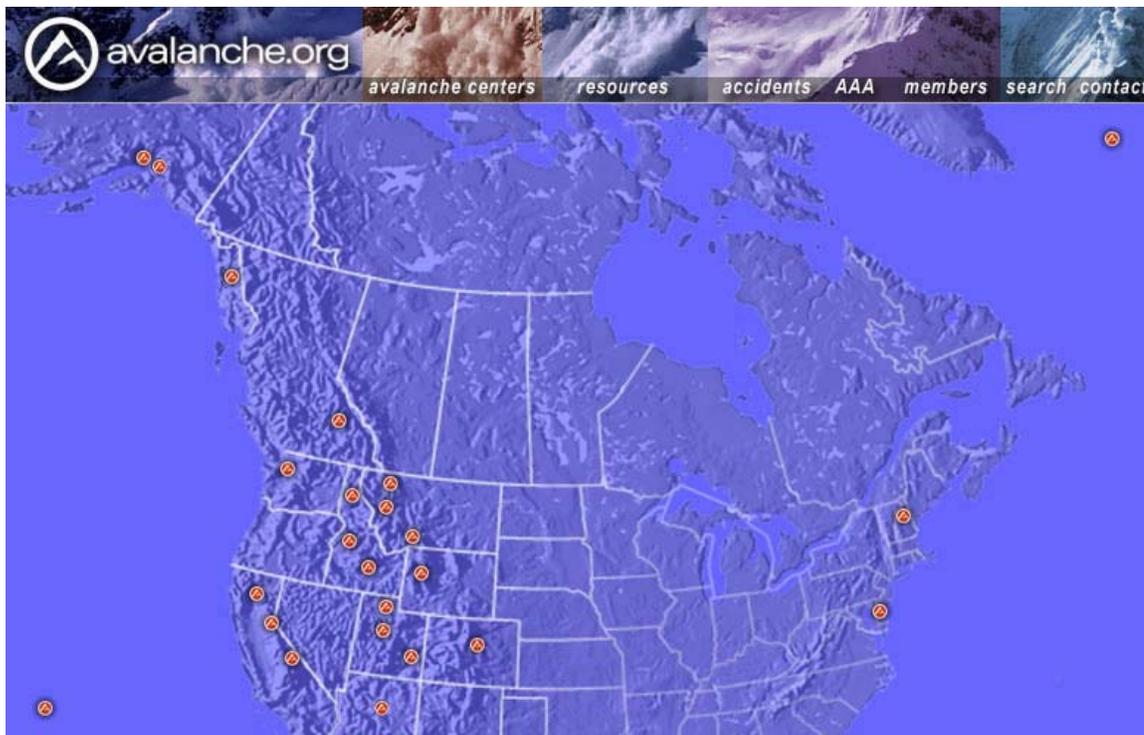
By Lead Forecaster Larry Whitworth

Much has been in the news lately about avalanches and the danger has hit home for many locals this young winter season. There are certain weather conditions that make this phenomenon more likely and avalanches occur every year at many ski areas, including the Ruby Mountains of northern Nevada. However many people are unaware of the true cause of an avalanche. If you intend to venture into an area that is prone to avalanches, there are resources available to help determine the threat. Arming yourself with the latest information may save you or your friend's life.

Wind is the most common root cause of avalanches since it can create massive loading of snow on the lee-side of mountains. If the snow piles up too fast for the snowpack underneath to adjust, the entire snowpack can fracture due to the added weight. Rapid warming or rain-on-snow are secondary conditions that are less frequently attributed to avalanches.

There are at least three widely-held myths associated with the cause of an avalanche. Loud noise is often errantly believed to cause a break-away of snow resulting in an avalanche. While it is not entirely impossible for a sonic boom or the rumble of low-flying aircraft to create a slide, 90% of avalanche fatalities occur due to added weight on the snowpack by a victim or victim's party. Another common misnomer is that avalanches strike without warning. Warning signs can include a rapid build-up of snow due to strong winds, a warming trend, or rainfall that can increase the weight of a snowpack. A third myth is the belief that avalanches are always composed of loose snow. The majority of fatalities are a result of "plates" of snow that slide down the mountain at an average speed of 80 mph.

Snow season can be fun if you play it safe. Practice safety by tapping the wealth of information available before venturing into an avalanche-prone area. The United States Forest Service (USFS) offers avalanche tips and training through their website: <http://www.fsavalanche.com/>. The USFS also sponsors another website containing valuable information on avalanche activity: <http://www.avalanche.org/>. Both of these sites provide contact information for the many Avalanche Centers across the nation.



Nearly all western states experienced avalanche fatalities in December 2008 through early January 2009. Be aware of the avalanche potential for the area you plan to visit. There is much information available to allow you to enjoy the winter season safely.

Avalanche Fatalities 2008-2009

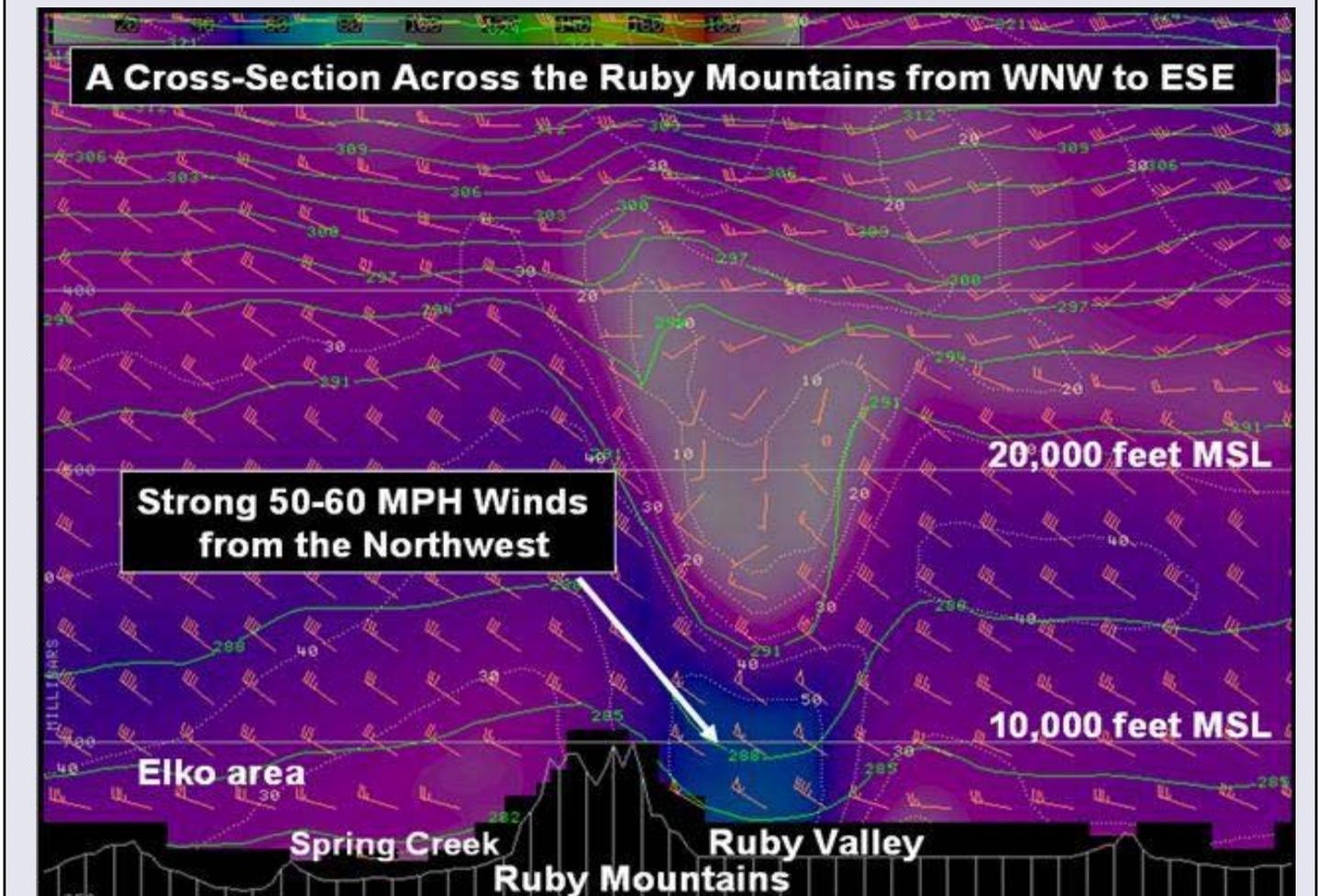
| Date | Place | Fatalities | State | Country | Activity | Summary |
|----------------------------|---|------------|-------|---------|------------|--|
| 2009-01-02 | -Main Vein- Ice Climb; Shoshone National Forest | 1 | WY | USA | CLIMB | 1 ice climber caught and killed |
| 2008-12-29 | Moffat Basin area | 1 | UT | USA | SNOWMOBILE | 1 snowmobiler caught, buried, and killed |
| 2008-12-29 | The Headwall | 0 | WY | USA | OTHER | 7 involved, some partially buried, all rescued. |
| 2008-12-28 | Brown Bear Basin near Harts Pass | 1 | WA | USA | SNOWMOBILE | 1 snowmobiler caught, buried, and killed |
| 2008-12-27 | Paintbrush Area; Jackson Hole | 1 | WY | USA | SKI | 2 skiers caught, 1 buried and killed |
| 2008-12-27 | Gravel Mountain - Grand Lake Area | 2 | CO | USA | SNOWMOBILE | 2 snowmobilers caught, buried, and killed |
| 2008-12-26 | North of Little Water Peak | 0 | UT | USA | SKI | 1 skier caught, buried, and rescued alive by companions |
| 2008-12-25 | Poulsen's Gully- Squaw Valley Ski Area | 1 | CA | USA | SKI | 1 skier caught, buried, and killed |
| 2008-12-24 | Logan Peak - South Rodeo Grounds | 2 | UT | USA | SNOWMOBILE | 3 involved, 2 caught, buried, and killed |
| 2008-12-17 | NW of Crested Butte - Happy Chutes | 1 | CO | USA | SNOWBOARD | 1 snowboarder caught, buried, and killed |
| 2008-12-14 | Richmond Ridge | 1 | CO | USA | SKI | 1 skier caught, buried, and killed |
| 2008-12-14 | Mt. Baldy, Snowbird Ski Resort | 1 | UT | USA | SKI | One skier caught, carried, buried, died later in the hospital. |
| 2008-12-14 | Red Pine Lake Area | 0 | UT | USA | SKI | 1 skier caught, carried, and injured |

Local Model Helps Identify Strong Downslope Wind Events By Science Operations Officer Ryan Knutsvig

Last winter, the NWS in Elko installed a local model suite called the Weather Research and Forecasting Model (WRF). There are two model cores that can be run using this package. One of the model cores, the Advanced Research WRF (ARW), has shown promise in its ability to forecast strong downslope wind events, especially in the lee of the Ruby Mountains and East Humboldt Range.

This model simulates the downward transfer of momentum on the lee side of this mountain range quite well. Conditions have to be just right for a strong downslope event. A temperature inversion (temperature increasing with height) just above the ridge top level and strong cross-barrier flow are two key ingredients to seeing 60+ mph wind gusts in the lee of a mountain range with significant relief.

The hope is that the WRF ARW will help forecasters identify these strong downslope wind events. Recent research at the NWS in Elko has revealed that the WRF ARW has the ability to forecast these events accurately, but also that there is some false alarming by the model as well. The goal over the rest of this winter and spring is to investigate when this model will handle these events appropriately. In the meantime, spotter reports of strong winds will be very helpful in validating the value of this model.



Skywarn Recognition Day Observed in Elko

By Forecaster Jonathan McGee

The 10th annual SKYWARN Recognition Day held in December was a huge success nationwide, and also locally, thanks to the efforts of the Elko Amateur Radio Club. SKYWARN Recognition Day, developed in 1999 by the National Weather Service (NWS) and the American Radio Relay League (ARRL), celebrates the contributions that volunteer SKYWARN radio operators make to the National Weather Service.

During this 24-hour event held back on December 6th, amateur radio operators visited their local NWS office and worked as a team to contact other amateur radio operators across the country. More than 15,000 contacts were made among the 108 NWS offices that participated in the 2008 event. Locally, the Elko Amateur Radio Club made 430 contacts with participants in 44 different states which was the 6th highest total among the 108 participating NWS offices.

Locally, this was the 7th straight year that the Elko Amateur Radio Club has participated in SKYWARN Recognition Day along with the National Weather Service Forecast office in Elko. The Elko Amateur Radio Club members donated their own equipment and time to set up a transmitting site at the Elko NWS Forecast Office.



So, why does the National Weather Service and the American Radio Relay League cosponsor this event? Well, the NWS and the ARRL both recognize the importance that amateur radio operators provide during severe weather. Many NWS offices acquire real-time weather information from amateur radio operators in the field, which provides vital ground truth information during significant severe weather events. These operators, for example, may report the position of a tornado, the height of flood waters, or damaging wind speeds during hurricanes. All of this information is critical to the mission of the NWS, which is to preserve life and property. SKYWARN Recognition Day celebrates this special contribution made by amateur radio operators.

2008 Year in Review

By Forecaster Ray Martin

The year 2008 was another interesting year around the region. Here's a look at how 2008 turned out for three of the larger communities within our region.



In Elko, 2008 was most notable for the excessive snowfall. The actual average temperature of 45.9 degrees was only 0.5 degrees below the 1971-2000 climatological average of 46.4 degrees.

The total precipitation of 8.06 inches was 1.53 inches below the 1971-2000 climatological average of 9.59 inches. While this is a bit on the dry side, it is not extreme compared to previous years.

Total snowfall from January through December was 55.4 inches, which was 18.3 inches above the 1971-2000 climatological average of 37.1 inches. This makes 2008 the 18th snowiest calendar year on record, with records dating back to 1888.

In Ely, 2008 was most notable for the lack of precipitation. The actual average temperature of 44.4 degrees was 0.4 degrees below the 1971-2000 climatological average of 44.8 degrees. The total precipitation of 5.49 inches was 4.46 inches below the 1971-2000 climatological average of 9.95 inches. This makes 2008 rank as the 11th driest year on record, with records dating back to 1893. Snowfall records for Ely are incomplete for 2008, but what data is available suggests an unremarkable year.

In Winnemucca, 2008 was most notable for the lack of precipitation. The actual average temperature of 48.8 was 0.4 degrees below the 1971-2000 climatological average of 49.2 degrees. The total precipitation of 5.59 inches was 2.73 inches below the 1971-2000 climatological average of 8.32 inches. This makes 2008 rank as the 18th driest year on record, with records dating back to 1877. Snowfall records for Winnemucca are incomplete for 2008, but what data is available suggests an unremarkable year.



For those of you interested in our facility, feel free to give us a call and we can schedule a tour.

We can show you the weather balloon launch in the afternoon or demonstrate how we forecast the weather. For more information, contact our new

Warning Coordination Meteorologist Michael Fitzsimmons at 775-778-6716.

Spotter Contact Reminder

Spotter reports of severe or near severe weather are critical to our forecast and warning operations. We appreciate the efforts of all of the spotters who support our mission. As a reminder, here are the recommended reporting criteria and contact information:

Please contact the NWS Elko office at **775-778-6720** or **866-326-5364** if any of the following are observed. If in doubt, please call anyway.

| Observation | Criteria for Reporting |
|---|---|
| Funnel cloud | Not touching the ground (<i>Be sure that you observe rotation</i>) |
| Tornado | Funnel touching the ground (<i>**Be sure to identify rotation in the feature since there are many lookalike clouds that are often mistaken for tornadoes</i>) |
| Heavy Rain | 1/2 inch or more per hour (or flooding) |
| Hail | Quarter inch in diameter or greater |
| Heavy Snow or Blizzard | 2 inches or more of snowfall in less than 12 hours. Extensive blowing and drifting snow. |
| Damage, Deaths or Injuries due to weather | |



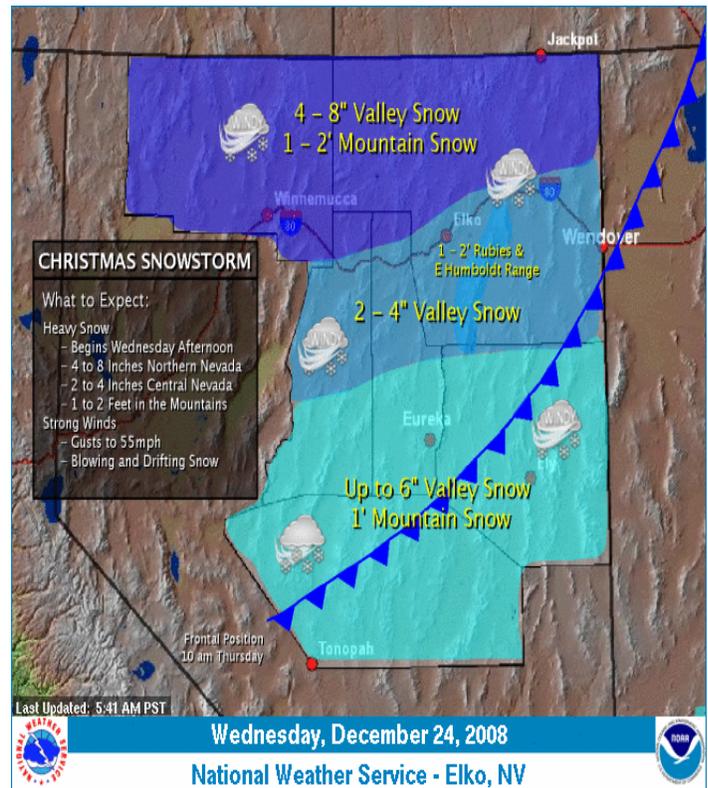
Meteorologist-in-Charge Kevin Baker says:

Thank You COOP Weather Observers!



I want to thank all of our weather spotters and observers for their support in 2008. Your reports help us verify our warning and advisory products, allowing us to learn from our mistakes and gain insight into local weather patterns and climate. We appreciate your support, and I want to wish everyone a Happy New Year!

You may have noticed some changes in our web page recently. During active weather patterns we are adding a graphic on the front page of our web site that provides some details to the evolving weather pattern. During major weather events, you will often see a weather story "Image Cast" that shows where and when significant weather is expected. The goal is to provide decision support assistance tools, so emergency managers and the general public can make informed decisions for travel and other important activities. Hopefully, these tools will enhance public safety and provide valuable information, which is easily accessible. In the coming months, our office plans to become more involved with emergency managers and provide additional decision support with tools such as NWS Chat and pre-storm weather briefings over the Internet.



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