

# Sage Winds

THE 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."*

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## Hydrology News by Jay Breidenbach, Senior Hydrologist

### Ideal Weather For Slow Snow Melt

The extremely deep snowpack which was present in Southwestern Idaho and Eastern Oregon at low elevations continued to melt very slowly through March and April. This ideal melt pattern which featured dry conditions when temperatures were above freezing and cold

conditions when additional precipitation fell allowed the region to escape flooding so far this spring. This scenario was difficult to imagine when snow depths reached their peak in early February. Many of our co-op observers and storm spotters reported that this was the deepest snow in recent memory reaching 50 inches deep in McCall, Donnelly,

and Cascade. Snow reached similar depths in the Weiser River valley near Council and Cambridge and was heavy enough to crush several buildings in the area. Snow in Halfway, Oregon and Gooding, Idaho also reached depths not seen since the winter of 1968-1969. See Figures 1-3.



Figure 1. Downtown Gooding, Idaho, Early February, 2008



Figure 2. Near Cambridge, Idaho, February 27th, 2008



Figure 3. Building crushed by snow in Cambridge, Idaho.

*“The threat of flooding is not as high as it was earlier in the spring”*

### Spring Flood Outlook

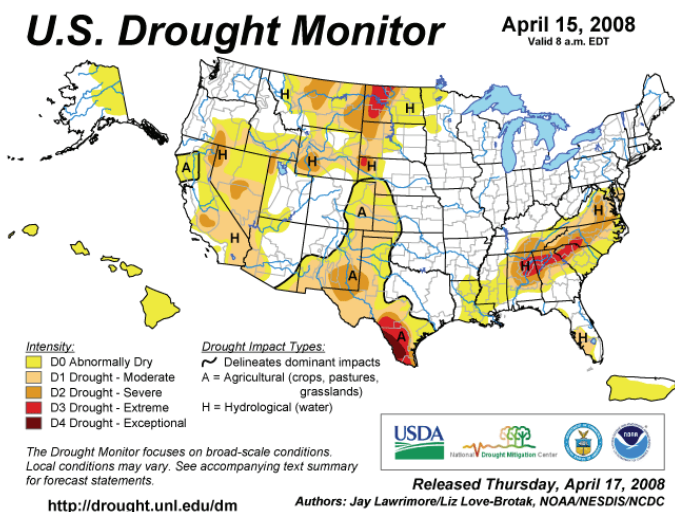
With an above normal snowpack still present in the mountains of southwestern Idaho and eastern Oregon, peak stream flows are likely to be higher than average. However, now that most of the low and middle elevation snow has melted, the threat of flooding is not as high as it was earlier in the spring. In fact, a historical analysis of the Weiser River, which is one of Idaho’s most flood-prone rivers shows that it very rare for flooding to occur after April 15<sup>th</sup>, even when snowpack is above normal.

Most reservoirs are expected to fill this year. While flooding of rivers below major reservoirs is not expected, the situation will be watched carefully. A major rain event, occurring at the same time inflow into the reservoirs reaches its peak in late May or early June could require additional flood control releases to keep reservoirs from getting too full.

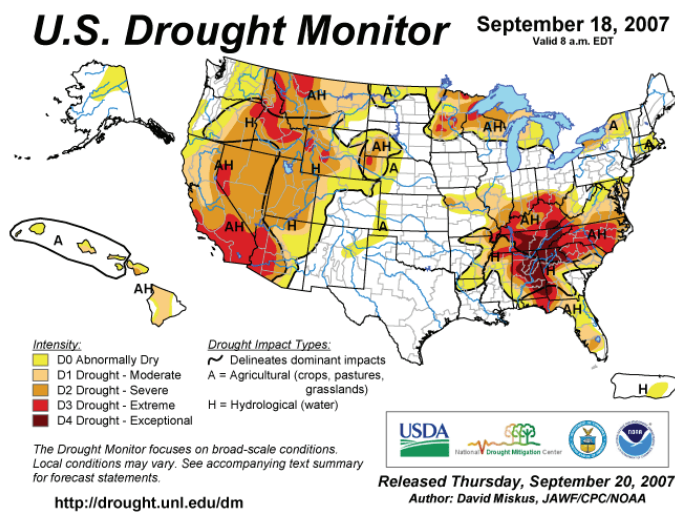


**Improving Water Supply Reduces Severity of Drought.**

Snow continued piling up at middle and higher elevations of Idaho through late April ensuring that Idaho will have normal to above normal water supplies this year. The large snowpack and additional precipitation expected this spring will significantly improve the drought situation which was present in Idaho last year. The only area of the state where spring and summer stream flow volumes are likely to be below 90 percent of normal is in the Snake River below American Falls reservoir. Precipitation deficits carried over from the 2007 water year will continue to have a negative effect on regulated stream flows as a portion of the water is used to replenish reservoirs in the upper Snake. A new web site located at <http://www.nwrfc.noaa.gov/westernwater> shows the latest water supply forecasts. The effect of the increased water supply on the long term drought situation can be seen by comparing drought conditions on April 15<sup>th</sup>, 2008 (figure 4) to drought conditions which were present in fall of 2007 when most of the area was in the grip of severe to extreme drought (figure 5).



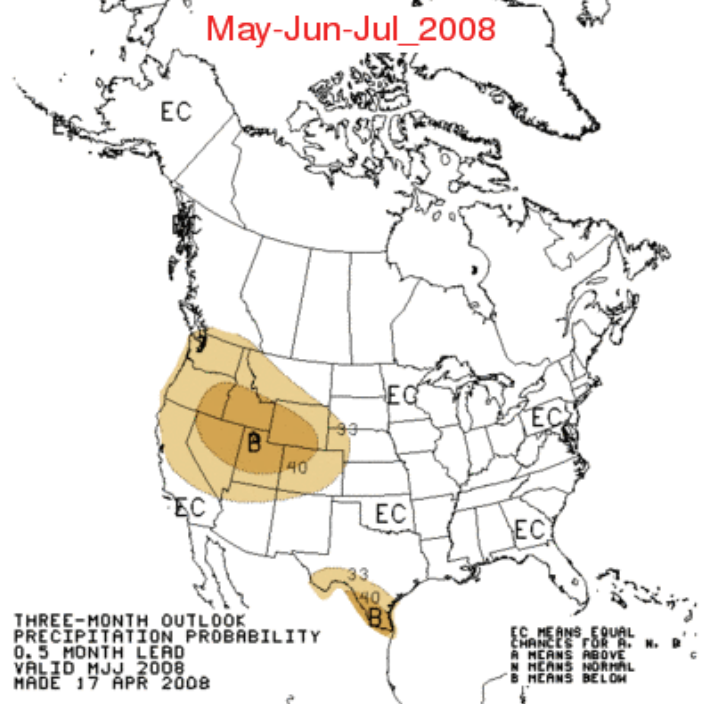
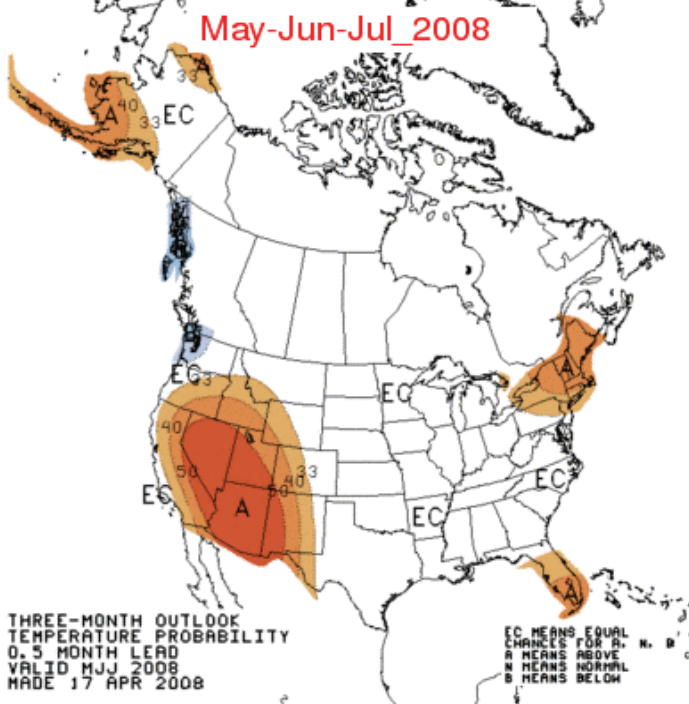
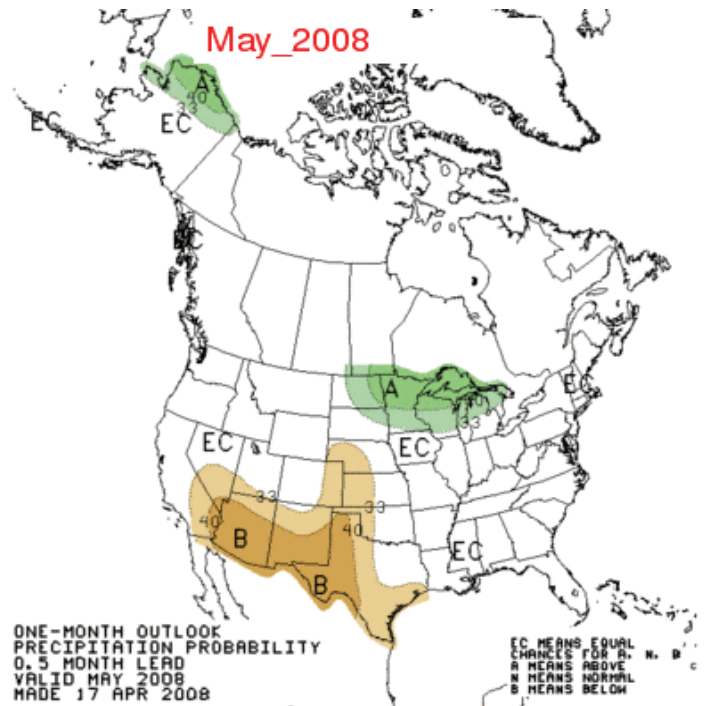
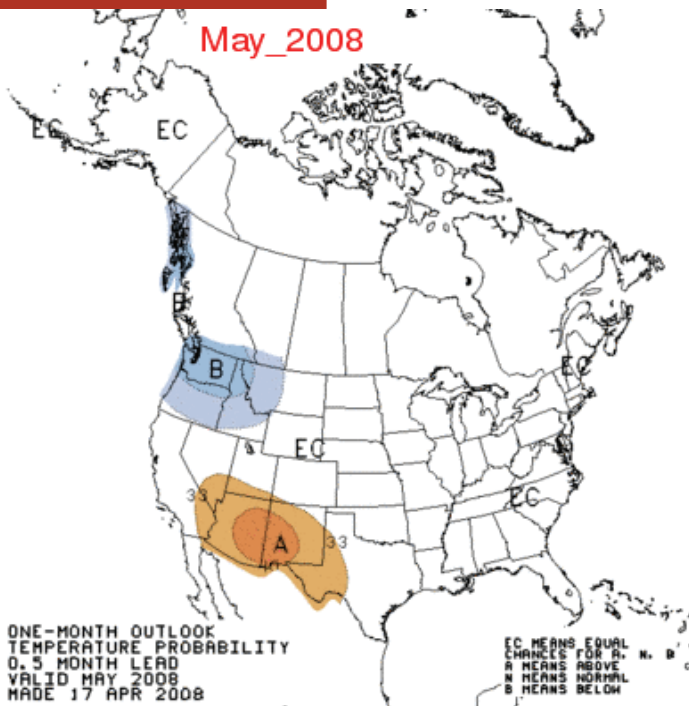
**Figure 4. Latest U.S. Drought Monitor shows a reduction in drought severity in Idaho and Oregon.**



**Figure 5. U.S Drought Monitor showing severe to extreme drought near the end of last summer in Idaho and eastern Oregon.**

**LONG RANGE TEMPERATURE AND PRECIPITATION FORECASTS...**

Sea-surface temperatures in the tropical Pacific are below normal indicating La-Nina conditions continue. While La-Nina patterns generally result in above normal winter snowpack in Idaho during the winter months, they are not good predictors of future weather patterns during the late spring months. The official NWS Climate Prediction Center forecast indicates an increased probability of cooler conditions continuing through the rest of May. However, there is no preference for either wetter or drier than normal conditions after May 1<sup>st</sup>. Long term climate trends favor a return to hotter and drier than normal conditions during the early summer months and this is depicted in the latest 3 month climate outlook. (See page 4)



**Top:** One month temperature and precipitation outlooks for the month of May

**Bottom:** Three month temperature and precipitation outlooks for the period of May, June, and July

# 2007-2008 Winter Season Wrap-up by George Skari, Lead Forecaster

This was one of the coldest and snowiest winter seasons in many years over the region of southeast Oregon and southwest Idaho and the pattern has continued well into spring. Recently in April there has been record cold and unusually high snowpack for so late in the season over many areas.

So what was the reason for such an active weather pattern this season? After several years of drought conditions over eastern Oregon and southwest Idaho the winter season of 2007-2008 started with hope of above average precipitation and mountain snowpack. This optimism was due to a developing La Niña pattern in the central equatorial region of the Pacific Ocean. Early in the season it was not known just how strong La Niña would be, just that one was forming. La Niña usually is a strong signature of below normal temperatures and above normal precipitation for the Pacific Northwest and Intermountain West region.

December 2007 got off to a slow start with the first two weeks of the month fairly dry and mild. This had skiers, winter recreation enthusiasts, and water managers a little worried about how the upcoming winter was going to turn out. However, by the middle of the month the pattern started to change with the approach of the holiday season into one of wetter and colder conditions. With a few exceptions, this active pattern has been nearly unbroken right through mid-April. Also, for the second straight year, there were no long periods of stagnant inversion conditions which keep valley locations locked in with low-cloud cover, dense fog, and very cold temperatures. The absence of these stagnant conditions can be attributed to the steady progression of weather systems across the region in what weather forecasters call a progressive pattern. Despite the cold and snowy conditions in mid-December, both Christmas

and New Years Eve were sunny with some snow cover making for a bright and white holiday period.

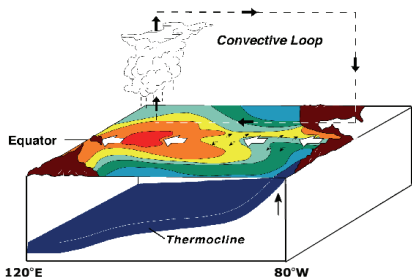
With the arrival of 2008, La Niña continued to strengthen into a moderate intensity episode. This continued to keep our forecast area in a very active pattern. One storm after another kept rolling through bringing abundant snowfall and persistent cold temperatures. Even valley locations were getting in on the act and road crews had a hard time maintaining and clearing roads as resources dwindled. The pattern only continued through March with some of the heaviest snow accumulations in years being reported by the end of the month. Some spotters and cooperative observers were reporting unprecedented snow depths and snow water equivalents. It was around mid-March when the Climate Prediction Center (CPC) declared La Niña as strong intensity and they forecast the effects over the continental United States would linger through much of the spring and possibly into early summer 2008.

The strong La Niña continued to bring very cold temperatures to the region during March and April, and in some cases, new record low temperatures were set. Despite the high snowpacks at high and low elevations, the threat of river flooding was held in check by the cold weather and stretches of dry weather. The combination of cold and recently drier weather was almost an ideal situation to prevent serious flooding.

To summarize, the winter of 2007-2008 will go down in the record book as active with storms, snow, and cold. Each month so far this year, temperatures have been below normal and snowfall above normal.

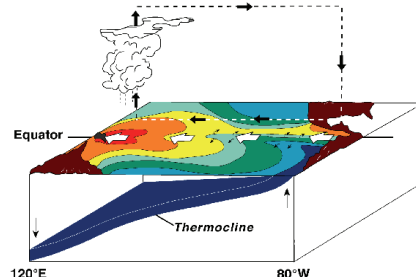
## What is La Niña? by Dawn Fishler, Meteorologist

La Niña is defined as cooler than normal sea-surface temperatures in the central and eastern tropical Pacific ocean that impact global weather patterns. La Niña conditions recur every few years and can persist for as long as two years. La Niña is caused by a build up of cooler-than-normal subsurface ocean water in the tropical Pacific. The eastward movement of atmospheric and oceanic waves help to bring the cold water to the surface through a complex series of events still being studied. This will, in time, help the easterly trade winds to strengthen, intensifying the cold upwelling off the coast of Peru and Ecuador, making the sea-surface temperatures (SSTs) drop below normal. La Niña, as with El Niño, affects the global circulation bringing wetter or drier conditions than normal, and warmer or cooler than normal conditions to various locations around the world.



**Left:** Normal conditions over the tropical Pacific

**Right:** La Niña conditions showing the colder sea-surface temperatures.



# CoCoRaHS, by Simone Lewis, Meteorologist

*Because every drop counts!*



*“Anyone with an enthusiasm for weather and a desire to serve their local community can participate.”*



An exciting new program has made its way to Oregon! The Community Collaborative Rain, Hail and Snow Network (CoCoRaHS), is a non-profit organization of volunteers who take daily measurements of rain, hail, and snowfall, and post their data online for a variety of organizations to view and utilize. The program began after a devastating flash flood hit Fort Collins, Colorado in July, 1997. Five people were killed, and over \$200 million worth of damages occurred as a result of this disaster. CoCoRaHS (established by the Colorado Climate Center at Colorado State University) was born from this disaster in order to provide scientists, local emergency managers, and the public with critical, sometimes lifesaving information regarding precipitation in their area.

As previously mentioned, precipitation data is used by a wide variety of organizations for a

variety of reasons. For example, your local National Weather Service office in Boise will use the data to aid in decisions on the issuance of watch and warning products for potentially life-threatening weather. The precipitation data you record would also help us verify our forecasts, and be used in research so we may gain a better understanding of the local weather patterns that affect southeast Oregon. Local emergency managers can also use the data to prepare for potential disasters in their communities, thereby saving both lives and property. Other groups that use and benefit from CoCoRaHS data include individuals who make water management and irrigation decisions, engineers, insurance adjusters, the United States Department of Agriculture, mosquito control personnel, ranchers and farmers, and schools.

CoCoRaHS is a community based volunteer project. Anyone with an

enthusiasm for weather and a desire to serve their local community can participate. All that is required is internet access, and a rain gage (a limited supply is available from the National Weather Service in Boise, check for availability). For additional details on the program, or to join CoCoRaHS, visit the website

[www.cocorahs.org](http://www.cocorahs.org). To join CoCoRaHS, click on the link “Join CoCoRaHS” to fill out the registration form (you will need the latitude and longitude of your location). You will be assigned a station number, and will be contacted by the station administrator and/or the National Weather Service office in Boise, Idaho in order to welcome you to the program, and to assist you with any questions or concerns you may have. Volunteers for the program do not have to be current weather spotters for the National Weather Service. Therefore, this is an ideal program for your friends,

**COMMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK**  
*"Because every drop counts"*

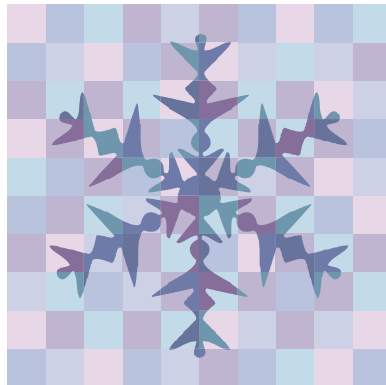
neighbors, and even local school groups to participate in. A short training presentation is provided on the website under the link "Training Slide Show". Local training sessions will also be offered in the near future at various spotter meetings (volunteers will be notified of training sessions). Questions concerning the program can also be

directed to either George Skari ([George.Skari@noaa.gov](mailto:George.Skari@noaa.gov)) or Simone Lewis ([Simone.Lewis@noaa.gov](mailto:Simone.Lewis@noaa.gov)) at the National Weather Service in Boise, Idaho (208-334-9860).

For those of you who are interested in the program, but live in Idaho, the program will not be implemented in Idaho until 2009. Check the National Weather Service website

in Boise, Idaho ([www.wrh.noaa.gov/boi](http://www.wrh.noaa.gov/boi)), or future editions of the spotter newsletter for upcoming information involving this program.

So why join CoCoRaHS? Well, why not? CoCoRaHS is a great way to help the National Weather Service, local emergency managers, and your community! Join us today!



**Are You Interested in a COLOR Newsletter?!?**

Then please send us your email address! Not only will you get a color copy of the newsletter twice a year, but you will also be helping to save trees. Don't worry, if you prefer a paper copy or do not have an email address, then you will still

receive a paper copy in the mail.

Another important consideration is keeping your contact information up-to-date. If your address or phone number has changed, then please send a message

to Dawn Fishler at the contact information listed on the back page.

As always, your information will be kept strictly confidential. Thank you for your help!

# Share Your Severe Weather Story!

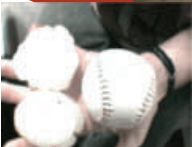


Cloud-to-ground lightning over the city of Boise

*Spotter Reports are a critical part of the warning decision making process and we appreciate all you do to help us save lives and property!*



Pictures of severe weather throughout southeast Oregon and southwest Idaho



In our last newsletter I asked if any spotters were interested in sharing their severe weather stories and I was lucky enough to have a spotter from Baker City, Oregon share his! Please see page 9 for his story.

Have you experienced an extreme weather event while living in Southwest Idaho or Southeast Oregon? Do you want to share your story with others? Then please send

us your story! It may be published in upcoming newsletters just like the one on the adjacent page.

We are looking for extreme weather stories including, but not limited to, wind storms (thunderstorm driven or otherwise), tornadoes, flooding of any kind, heavy snowfall, hail, lightning-caused fires, etc.

There are not your

ordinary events, but storms that are unusual and/or had a significant impact.

If you are interested in sharing, please send an email to [Dawn.Fishler@noaa.gov](mailto:Dawn.Fishler@noaa.gov) or a letter to the contact information listed on the last page of the newsletter. Please state whether you mind sharing your name and city/town or if you prefer to remain anonymous.

## How Spotter Reports Are Used by Josh Smith, Meteorologist

You may have wondered what National Weather Service (NWS) does with your spotter weather reports other than the obvious answer of finding out what type of weather is happening at your location at a particular time. Yes, real-time weather information is extremely valuable to forecasters, especially from rural areas where there are no automated weather stations, but the NWS also use these reports in other ways. Most of the spotter reports

received are transmitted via the internet to media, private partners and other government agencies such as local television/radio stations, The Weather Channel, and Department of Transportation. This not only allows for mass dissemination of critical weather information, but gives forecasters a better sense of what's actually occurring during a storm event. In turn, National Weather Service (NWS) forecasters can make critical changes to the forecast and watch/warning

products if the event is unfolding differently than expected. After a storm, spotter reports along with other weather data are used in our storm verification program. This is a way for the NWS forecasters to see how well they forecast the storm event. So whether it's how much snow has fallen in the winter or the size of hail in the summer, your reports of severe weather have become an integral part of forecast and weather warning process at the (NWS). We appreciate your support.



# Heat Burst at the Steens Mountains

*A spotter contribution by Blaine Kenney, Communications Unit Leader (Ret.), Baker City, OR*

In 1998, the Blue Mountain Interagency Fire team experienced severe nighttime winds on the Skull Creek Incident south of the Roaring Springs Ranch at the Steens Mountains south of Burns, Oregon.

A sudden windstorm swept the fire camp in the dark at 11 pm. The winds were severe enough to blow a kitchen tent on top of an adjoining dining tent. One twenty-foot camp tent rose about 20-30 feet before landing upside down about 150 feet away; firefighters held it from going further. The paperwork contents of the tent were scattered a half mile downwind. Some quick-thinking firefighters saved the communications tent by piling batteries on the base rails and standing on them. The tent was bumping up and down and people were hanging loose to avoid going for a ride if the tent flew away. Anything light that wasn't held down in the entire camp went with the wind. In the dark it was hard to gauge the wind speed, but from the size of the things moving around I felt it was well over 70 mph.

This weather event met the definition of a heat burst (See: Parzybok, Tye W., *Weather Extremes*, Mountain Press Publishing Company, pp 209-211). There had been a threat of high-based thunderstorms during the late afternoon. The virga began to dissipate at sundown but cumulus groups continued to drift toward us from the west. These arriving cells apparently brought cooled pools of air at their bases. As the updraft energy failed the cooled air began to sink towards the ground. This cool air obviously received significant compressional heating. Although slowed somewhat from a typical downburst descending, warming air reached dangerous speeds. Air temperatures rose dramatically in a very short time. We were too busy hanging on and dodging flying objects to think about thermometers.

Heat bursts are probably rare in the high desert and seldom noted when present because they are usually nighttime events in very sparsely populated areas. We are probably more familiar with the daytime downbursts associated with virga and dry thunderstorms. They daytime events usually bring rapid cooling with the sudden wind event. The nighttime events seems to come from a much higher altitude and can receive much more compressional heating. We went from a chilly high desert night to balmy temperatures in minutes.

One can only imagine the damage and danger if this sort of event were to cross an active fire-line. Firefighters camped out higher on the slopes of the Steens Mountains experienced no wind and temperature change.

## What is a Heat Burst? *By Dawn Fishler, Meteorologist*

A heat burst is a rare atmospheric phenomenon characterized by gusty winds and a rapid increase in temperature and a decrease in dew point. It typically occurs in the nighttime hours and is associated with decaying thunderstorms. Two important characteristics of a heat burst are that the air must start its descent from fairly high up and the environmental air aloft needs to be very dry. When precipitation falls into a dry layer aloft it evaporates and cools the surrounding air high in the atmosphere making it more dense than its surroundings. The

parcel descends rapidly, warming due to compression and reaches the surface, similar to a downburst. What makes a heat burst so rare is that this downdraft must reach extremely high velocities to offset the fact that the air parcel is becoming warmer and thus less dense than the environmental air it is falling into. Temperatures can rise by more than 20° F in just a few minutes. Heat bursts are also characterized by extremely dry air and are sometimes associated with very strong, even damaging, winds.

# Are you Getting the Most Out of Our Website?

By Megan Thimmesch, Meteorologist



*"We are here to serve you! All observations, forecasts, and outlooks...can be found on our website!"*

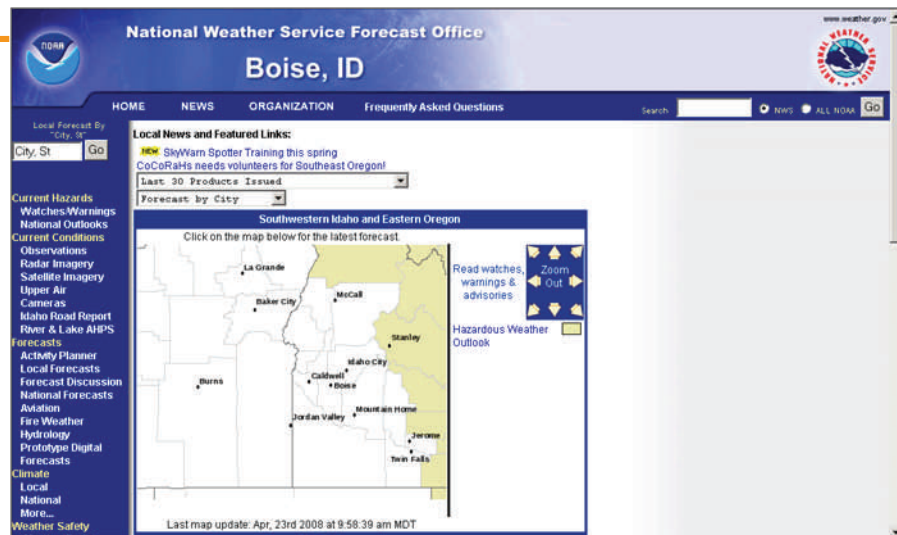
Weather.gov/Boise



Our mission, at the National Weather Service, is to provide 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. In other words, we're here to serve you! All observations, forecasts, and outlooks made by our forecast office, affiliates, or volunteer observers can be found on our website at [www.weather.gov/boise](http://www.weather.gov/boise). Our website contains a wealth of information, just waiting to be used by you, the public. All watches, warnings, and advisories are visually displayed on our main page and can be easily viewed by pointing

and clicking on your location. We also issue a Hazardous Weather Outlook for Southeast Oregon and Southwest Idaho, which visually highlights regions in which hazardous weather is anticipated days in advance. All regularly disseminated information, including forecasts and observations, can be accessed by our website's master menu. Allow this menu (far left column) to lead you! Want to know yesterday's high temperature in Burns, Oregon? Go to the Climate Section of the Master Menu and choose "Local". This page includes daily and monthly climate information for Burns, Baker City, Ontario, Boise, McCall, Twin Falls, and Jerome. By choosing a different Menu Tab, you can track down temperature and precipitation normals for certain sites as well. Want to know how much rain has fallen in Boise over the past day? Look under the Current Conditions

Section of the Master Menu and choose "Observations". This page will allow you to view current and recent observations taken by automated weather stations. Want to find recent storm reports? Local storm reports can be found under "Observations" as well. (including those taken by you, the spotter!) Want to learn safe lightning practices? Go to Weather Safety- "Lightning". Want to know meteorological reasoning behind tomorrow's forecast? Read the current Forecast Discussion. It's all there. Lastly, current events are highlighted at the top of our main page. Our most recent news includes Skywarn Training information and news regarding the addition of Southeast Oregon to the Community Collaborative Rain Hail and Snow Network (CoCoRaHS). Feel free to check it out!



# National Severe Weather Workshop, by Stephen Parker, Lead Forecaster



Each year, a National Severe Weather Workshop is held in Norman, Oklahoma. This year's was held from March 6-8. The workshop is designed so that folks from the National Weather Service (NWS), the Emergency Manager (EM) and Spotter communities, and Broadcast Meteorologists can come together, share information, and discuss ways to better serve the public through enhanced communication. This year, over 400 people attended. They came from all over the United States and several foreign countries. The author attended as the Western Region Coordinator for the workshop for the second time in a row.

It was an informative and interesting three days. Presentations ranged from radar advances to western fires to satellite applications, and they were presented from perspectives ranging from NWS offices to TV stations to EM offices. It is always beneficial to "walk a mile in someone else's shoes" and learn what they go through during severe weather events. What follows is a short summary of some of the more Western-oriented and interesting talks presented at the workshop.

**Southern California Fires of Oct 2007 and Forecast Operations at NWS San Diego:** Jim Purpura, the Meteorologist in Charge of the San Diego area NWS office, presented an excellent talk on the major fires near San Diego last fall. The fires came within 4000 feet of the office, and 40% of the staff had to evacuate their homes. Finally they were forced to close their office, and Jim and their top computer guru went to their primary backup office to help. At the same time, the Warning Coordination Meteorologist and two forecasters went to the EOC (Emergency Operations Center) for several days, including a stint of about 24 hours straight at one critical point. Many valuable lessons were learned from this event, and better planning for office evacuations has resulted.

**Storm-Based Warnings:** John Ferree, of the Warning Decision Training Branch, gave an overview of our new way of warning. We no longer warn for entire counties. Now we warn a much smaller area along and just ahead of the path of the storm. John stressed that we have achieved a much lower false alarm rate because of the smaller area warned. He also noted that this effect was largest in the West (where the counties are generally the largest). In addition, we are in the process of adding a new standard of coding protocol into our warning products to help users receive and display the data.

**Lake Tahoe on Fire: The Angora Incident:** Jim Wallman, one of the IMETs (Incident METeorologists) who worked the Lake Tahoe Fire, gave a fantastic talk on what was a very high profile fire in 2007. He discussed the unique problems that occur when a large number of residences (over 250) and commercial structures (about 75) are destroyed. He also gave live interviews for several national news services/channels. The fire was started by an illegal campfire, and fanned by extremely strong winds and low relative humidity. This should act as a reminder for everyone – always be careful, and legal, with your burning.

**Unique Support Aspects of the 2007 Castle Rock Wildfire in Ketchum/Sun Valley, Idaho:** Brian Waranauskas of the NWS office in Pocatello gave an excellent talk on the support their office provided for the high-visibility fire in the Ketchum/Sun Valley resort area last year. Because of the high-dollar properties (and famous people) involved, there was a great deal of press coverage. There were also some changes in typical fire management protocol. For example, they went from a Type 2 crew (next to largest type of crew) up to a Type 1 crew (largest type) even though the fire was relatively small in areal coverage. In addition, the fire was declared, "...the National Forest Service's top priority", thanks to phone calls from Gov. Otter and other politicians. The Pocatello office remained heavily involved throughout the fire, providing support to the IMET who was working at the fire site.

If you are interested in attending next year's workshop in early March, 2009, please contact Stephen Parker at the NWS office in Boise. It will be a great learning experience, and an awful lot of fun, too. Emergency Management folks in particular will benefit from the experience. You may even give a talk concerning an event in your area or a part of your program that you feel may benefit others, and I will be happy to work with you on it. Please consider this opportunity.



## Tell Your Friends! We're Always Looking for Spotters!

While we always welcome volunteers from any part of Southeast Oregon and Southwest Idaho, we especially need spotters:

### -Idaho:

**Ada County:** Southern half

**Adams, Boise, Camas, Gooding, Jerome, Owyhee Counties:** Anywhere

**Elmore County:** Outside of Mountain Home

**Gem County:** Outside of Emmett

**Payette County:** Outside of Fruitland, New Plymouth and Payette

**Twin Falls County:** West and SW of Kimberly, Cottonwood Creek, and Rock Creek Basin

**Valley County:** Rural areas (away from Hwy 55)

**Washington County:** Rural areas (away from Hwy 95)

### -Oregon:

**Baker, Harney, and Malheur Counties:** Anywhere

### National Weather Service

3833 S Development Ave

Building 3807

Boise, ID 83705

Phone: 208-334-9860

Fax: 208-334-1662

Recorded Forecast: 208-342-6569

E-mail: Dawn.Fishler@noaa.gov

**Working Together To Save Lives**



**Additional Idaho and Southeast Oregon Dates TBA! Check [www.weather.gov/boise](http://www.weather.gov/boise) for details!**

## Upcoming Spotter Training Dates

Date	Time	City	Location
Tuesday May 13, 2008	7:00 pm MDT	<b>Twin Falls, ID</b>	3rd Floor Twin Falls County Courthouse Twin Falls, Idaho
Wednesday May 14, 2008	6:00 pm MDT	<b>Cascade, ID</b>	Cascade Fire Station 109 East Pine St. Cascade, Idaho
Thursday May 29, 2008	6:00 pm MDT	<b>Payette, ID</b>	Payette County Courthouse 1130 3rd Ave N. Payette, Idaho
Wednesday Jun 4, 2008	6:00 pm MDT	<b>Boise, ID</b>	Ada County Sheriff's office 7200 Barrister Boise, Idaho