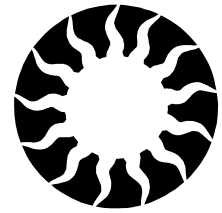


# The Weather Watcher of the Inland Northwest

[www.weather.gov/Spokane](http://www.weather.gov/Spokane)



## What's the Weather in Your Backyard?

Beginning in June, Washington state will join a growing number of states nationwide involved in the Community Collaborative Rain, Hail and Snow Network, or CoCoRaHS (pronounced *Cocoa Rawz*). CoCoRaHS is a non-profit, community-based network of volunteers of all ages and backgrounds working together to measure and report precipitation including rain, hail and snow. Meanwhile, work is still being done to set up a similar network in the state of Idaho.

**What is CoCoRaHS?** CoCoRaHS is a supplemental observation network that began in the late 1990s in Fort Collins, Colorado following a devastating flash flood. CoCoRaHS allows volunteer precipitation observers to collect and enter their rainfall, snowfall, hail and snow reports via a web-based system. The data supplement current observation networks and are displayed on maps that can be accessed by anyone 24/7 on the Web.

**Where do the precipitation reports go?** As we all know, precipitation can and does vary significantly across the Inland Northwest. Soon you will be able to submit your precipitation reports on the CoCoRaHS web site [www.cocorahs.org](http://www.cocorahs.org). The data are then displayed and organized for many end users, including the National Weather Service where the reports are received automatically.

**Will I receive official training and a rain gage?** There is an excellent on-line training module available on the CoCoRaHS web site. It will detail proper gage siting techniques as well as other program information. From time to time, we will conduct "live" training sessions and these will be advertised on the NWS Spokane web page. You will need to provide your own rain gage, which you can purchase through CoCoRaHS for less than \$30.

**Interested in becoming a CoCoRaHS observer?** Washington state CoCoRaHS will be managed by the State Climatologist Office, the UW Atmospheric Sciences Department, and National Weather Service offices in Spokane, Seattle, Portland and Pendleton. Although Washington state will not officially begin collecting and processing reports until June 2008, you can get a head start now by learning more about the program at the web site and downloading an application. ☼ *Kerry Jones*



*Note: If you are already reporting your data to NWS Spokane routinely as either a cooperative observer or through the amateur radio network, your data are being used as always. You are more than welcome to join CoCoRaHS, but it is not a requirement.*

## Spring Flood Outlook

The snowpack over the Inland Northwest is generally running 98 to 120% of normal with the highest amounts across the Panhandle and Blue mountains. About 85% of normal can be found along the east slopes of the North Cascades. The series of winter storms in late January and early February left a heavy low-mid elevation snowpack across the region. The recent mild temperatures and drier conditions during late February and early March have slowly melted the snow in these lower elevations, and reduced the water available for spring runoff. The flood potential still remains low for the main stem rivers and moderate for the smaller creeks and streams. Some river basins that are susceptible to increased snowmelt flows this spring include the St. Joe, the Spokane and Coeur d'Alene, and the Clearwater rivers. For the latest river stages and forecasts, please visit the River and Lakes link on the NWS web page at <http://ahps2.wrh.noaa.gov/ahps2/index.php?wfo=otx> ☼ *Royce Fontenot*

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### Editor's Notes

*The vernal equinox, otherwise known as the first day of Spring was March 20th. This marks when both day and night are equal. With the early switch to daylight savings, it feels like spring has arrived. But lingering piles of snow in sheltered yards and higher elevations still remain across a third of our forecast area. Snow showers are still possible for the next few months. Although any snow that does fall usually doesn't stick all day long. The calendar may say spring has arrived, but don't plant those pansies too soon. Spring is a long season in the Inland Northwest.*

*For any questions or comments on the newsletter, please contact Robin or Kerry at (509) 244-0110 extension 223 or email [nws.spokane@noaa.gov](mailto:nws.spokane@noaa.gov).*

*The main purpose of this publication is to keep our readers informed about our services and programs, and to recognize those who help us with our mission, including weather spotters, co-op observers, media, and emergency management.*

*All articles are written by the NWS staff. A special thanks to Ron Miller, Kerry Jones, and Royce Fontenot for their help with included articles.*

## An Overview of Winter 2007-2008

For most of you reading this article, you will agree that the winter of 2007/08 will go down as one of the more memorable ones. But as is often the case, not everyone in the Inland Northwest experienced an extreme winter. The reason for this is largely that a weather pattern which brings heavy snow to one location will bring dry weather to another location, and vice versa. Thus, a storm which brings lots of snow to Wenatchee may bring warm dry weather to Lewiston, while a heavy snow storm for the Palouse may result in sunny skies in Wenatchee.

**December** started with a blanket of snow over most of the area. This snow had quickly accumulated in the last few days of November. But just as quickly as it accumulated, it melted as the weather pattern changed. Warm air from the Pacific moved into the region. Priest Rapids Dam (near Hanford) recorded a balmy 63° on the 3<sup>rd</sup>. Heavy rain accompanied the warm air with 1 to 2 inches falling on the same day. The exception to this was in the lee of the Cascades where the cold air remained in place long enough to keep the precipitation as snow longer before changing to rain. Holden Village received 27" of snow in 24 hours ending on the morning of the 3<sup>rd</sup>, while Stehakin and Plain picked up a foot and a half of snow.

This warm weather pattern was short-lived and the snow machine started up once again. None of the storms were especially strong, but they were all snow. A storm on the 10<sup>th</sup> of the month dumped 4-5" on the Palouse. Another storm on the 15<sup>th</sup> brought 4-6" to some locations in the Cascades and Okanogan Valley. A third storm on the 17<sup>th</sup> dropped 4-6" to the valleys north and east of Spokane. More snow fell on the 18<sup>th</sup> with just about everyone seeing another 3-6" of snow. And so it went for the rest of the month. By the end of December, just about everyone had several inches of snow on the ground. Spokane Airport reported measurable snow on 18 days (none of which amounted to 2" or more), compared to an average of 8 days. Spokane hadn't seen that many snowy days in any month since the very snowy January 1969.

**January** snows kept coming. Yet unlike December, the storms in January packed a bigger punch. Four to ten inches of snow fell in the Cascade valleys on the 4<sup>th</sup>, and a widespread 5-10" of snow fell in the Spokane metro-area and northern valleys on the 9<sup>th</sup>. High pressure built into the area for a brief break during the middle of the month. This eventually opened the door to the lone Canadian air mass of the winter. As the arctic front came in, it brought with it a few inches of fresh snow to many locations. Strong northeast winds resulting in drifting snow over the Palouse and Columbia Basin. Then the temperatures dropped to their coldest readings of the winter. Nighttime readings dropped into the single digits and below zero on the 21<sup>st</sup> through the 27<sup>th</sup>. The coldest reports included -14 at Mansfield, -13 at Omak, and -11 at Priest Lake, George, Mazama, and Twisp.

A somewhat unusual winter storm set up over the

area for the weekend of the 26<sup>th</sup>/27<sup>th</sup>. A low pressure system off the California coast sent moisture into the area from the south. This collided with a cold front moving in from the northern Gulf of Alaska. The front stalled over eastern Washington through the weekend bringing heavy snow to many locations. Spokane airport recorded 13.7" of snow in approximately 30 hours, while some of the outlying locations of the metro area received over 20" for the two-day storm. As the storm exited the region the Palouse picked up more heavy snow with 7" falling in Moscow. In Lewiston 6.3" of snow fell, making it one of the snowiest days in recent memory. The month ended with one more wallop, another 5-8" of snow falling in the Panhandle and extreme eastern Washington. Strong winds from the southwest caused considerable drifting snow on the Palouse. When it was all over, 40.0" of snow had fallen at Spokane airport, making it the snowiest month since December 1996.

**February** continued the parade of snow storms. A widespread snowfall of 4-7" in the Panhandle and extreme eastern Washington on the 7<sup>th</sup> was followed by very strong winds. Peak winds from this event included 59 mph at Lewiston, 54 mph at Pullman, 48 mph at Spokane airport, and 61 mph at Beverly (near Vantage). This caused considerable drifting over the Palouse and western Spokane County, closing numerous roads. By this point the winter was looking very long to many. But suddenly, the weather pattern changed. High pressure moved over the area and the snow essentially stopped for the remainder of the month. A few weak systems moved through the high pressure but they only brought light amounts of rain or snow to the area. ☼ *Ron Miller*

Walls of snow on 2/8 north of Moscow, ID.



### NWS Spokane

#### Meteorologist In Charge

John Livingston

#### Administrative Assistant

Rose Tibbitts

#### Warning Coordination Meteorologist

Kerry Jones

#### Science Operations Officer

Ron Miller

#### Data Acquisition Program Manager

Robert Bonner

#### Service Hydrologist

Royce Fontenot

#### Information Technology Officer

Todd Carter

#### Lead Forecasters

Jon Fox

Matt Fugazzi

Bob Tobin

Greg Koch

Paul Bos

#### General Forecasters

Robin Fox

Rocco Pelatti

Laurie Nisbet

Jeremy Wolf

Jeffrey Coté

Mike Fries Ellie Kelch

#### Hydro-Meteorological Technicians & Intern

Stan Savoy Milt Maas

Verne Ballard

Steve Bodnar

#### Electronic System Analyst

Dwight Williams

#### Electronic Technicians

Paul Kozsan Ray Grant

#### Facilities Technician

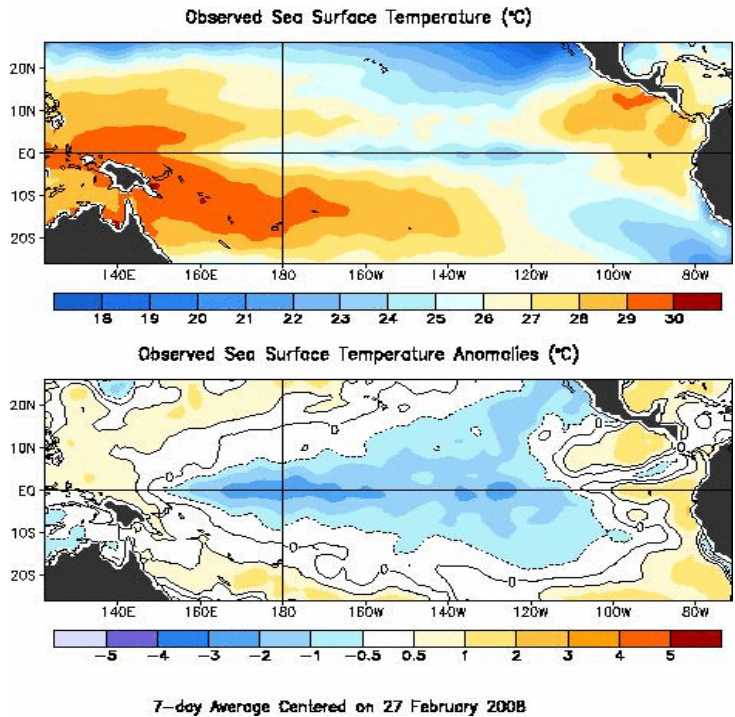
Mike Belarde

# The Effects of La Niña

The big question is...what caused all the snow? What made this winter so much snowier compared with recent winters? In general the answer is - a very strong La Niña episode. La Niña is a condition where the sea surface temperatures in the equatorial Pacific ocean are cooler than normal. See the pair of figures to the right for details. This change in the ocean can translate to changes in the atmosphere and the track of storm systems during a season.

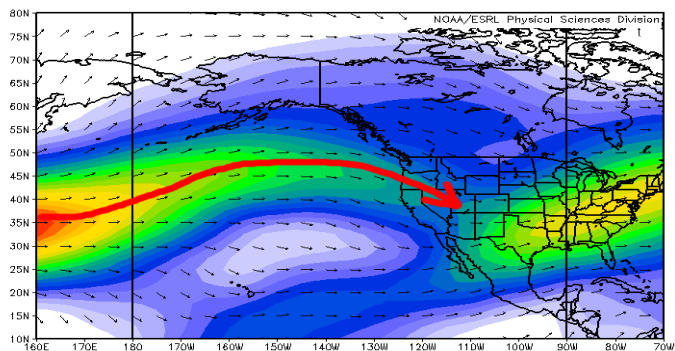
While strong La Niñas are not a sure bet of snowy winters in the Inland Northwest, they do tend to be colder and wetter more often than not. The last time we had a strong La Niña event was in 1998-1999, when Mt. Baker Ski Area set the seasonal snowfall record of 1,140 inches. But in the lower elevations, recent La Niñas have not been particularly snowy.

In a typical winter, the Pacific storms typically approach our area



from the southwest. While this can bring heavy snow to our area, eventually the warm winds from the southwest will change the snow to rain, or at least melt the snow that has fallen. This helps to keep our snow packs relatively low in the lower elevations.

For the winter of 2007/08, the jet stream was oriented much differently. Pacific storms approached the area from the northwest, coming out of the northern Gulf of Alaska. Not only did these storms have more cold air to bring snow instead of rain, they didn't bring any warm air in their wake to melt the snow. See image below. The weather pattern changed dramatically in the middle of February as high pressure shunted the jet stream well north of our area,



steering the storms into northwestern Canada. La Niña conditions are expected to continue well into spring. The Climate Prediction Center's long range forecast is trending toward normal temperatures and precipitation for Spring 2008. ☼ Ron Miller

Winter Weather Statistics				
Wenatchee Water Plant	Dec	Jan	Feb	Total
Avg High Temp	34.4	30.2	45.2	36.6
Departure from Norm	-1.3	-4.9	+2.4	-1.3
Avg Low Temp	24.8	17.9	27.8	23.5
Departure from Norm	-0.4	-5.3	+0.4	-1.8
Total Precip	1.81	0.94	1.00	3.75
Departure from Norm	+0.29	-0.41	+0.06	-0.06
Total Snowfall	8.5	10.8	3.5	22.8
Departure from Norm	-2.1	+1.5	-0.7	-1.3
Lewiston Airport	Dec	Jan	Feb	Total
Avg High Temp	41.4	39.7	49.0	43.4
Departure from Norm	+2.2	+0.3	+3.4	+2.0
Avg Low Temp	31.0	26.2	33.6	30.3
Departure from Norm	+2.5	-1.7	+2.4	+1.1
Total Precip	0.36	0.75	0.42	1.53
Departure from Norm	-0.69	-0.39	-0.53	-1.61
Total Snowfall	3.2	7.0	T	10.2
Departure from Norm	-1.6	+1.3	-2.2	-2.5
Spokane Airport	Dec	Jan	Feb	Total
Avg High Temp	33.3	31.2	38.2	34.3
Departure from Norm	+0.5	-1.6	-1.0	-0.7
Avg Low Temp	23.6	18.2	25.5	22.4
Departure from Norm	+2.0	-3.5	-0.2	-0.4
Total Precip	3.72	3.18	0.93	7.83
Departure from Norm	+1.47	+1.36	-0.58	+2.25
Total snowfall	20.1	40.0	9.0	69.1
Departure from Norm	+5.0	+25.8	+2.3	+33.1

**SPOTTER REPORTS:**  
 Phone: (509) 244-0435  
 Online: <http://spotter.weather.gov>

## Remember your Spring Spotter Checklist

### Funnel Cloud or Tornado

**Hail:** pea size or larger

**Reduced Visibility:**  
under a mile due to rain, dust or fog, etc.

### Any Flooding

**Strong Winds:**  
30 mph+ or damage

**Snow:** 2" in the valleys  
6" in the mountains

**Heavy Rain:**  
Showery: 1/2" + in 1 hr  
Steady Rain: 1"+ in 12 hrs  
or 1.5"+ in 24 hrs

**Travel Problems or Any Damage:** due to severe or hazardous weather.

## Staff News

Administrative Assistant Meg Layh has transferred to different federal department and is no longer with the National Weather Service. Rose Tibbitts has been hired for the position and will start in mid March. Rose worked at the Spokane office for several years before the birth of her daughter. Good luck Meg! Welcome back Rose! ☀ *Robin Fox*

### Spring Outlook - near normal temperatures and precipitation for the Inland Northwest

## Upcoming Dates

check [www.weather.gov/spokane](http://www.weather.gov/spokane) for the latest schedule

- 3/25 - 2:30 pm - Spotter training - Moses Lake  
3953 Airway Dr. NE Bldg 1
- 3/25 - 6:30 pm - Spotter training - Ephrata  
124 Enterprise St. SE
- 3/27 - 4:00 pm - Spotter training - Colfax  
Public Services Bldg - Main Street
- 4/1-30 - All Hazards Awareness Month - Washington
- 4/19 - 10:30pm - Earth Day Festival - Spokane  
Riverfront Park
- 4/26 - 11:20pm - Arbor Day Festival - Spokane  
Finch Arboretum
- 4/28-5/2 - Air Quality Awareness Week
- 5/4-10 - Severe Weather Awareness Week

## Spotter Corner

What a busy winter! A big thanks to all of you for the hundreds of spotter reports we received over the past several months. NWS Spokane totaled 500 winter weather watches, warnings, and advisories from late October through early March. Whether it be by phone or spotter, your reports on snow, ice, and wind were invaluable, and helped us keep our forecasts and statements current.

We have also accumulated quite a collection of weather-related pictures and images from this winter. Thanks for sending them. They help us in verifying warnings, training, and local storm studies.

It's time to switch gears. Spring weather and thunderstorm season is fast approaching. New and improved weather spotter guides will be available and sent to all registered weather spotters by late spring.

Spotter training schedules are updated. There are a few sessions set for Moses Lake, Ephrata, and Colfax for late March. Additional sessions will be scheduled in April and May. Please check the top news on the NWS web page for the latest schedule at [www.weather.gov/spokane](http://www.weather.gov/spokane) ☀ *RFox*

## The Weather Watcher

Of the Inland Northwest



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**Trivia: What is the average last freeze in the Spokane area?**