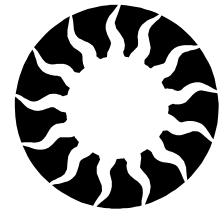


# The Weather Watcher

## of the Inland Northwest

www.wrh.noaa.gov/Spokane



## 2002 Skywarn Recognition Day

The 4th Annual SKYWARN Recognition Day took place on December 7th. This is the day that Amateur Radio operators, otherwise known as HAMs, set up stations at National Weather Service offices and contact other operators around the world. The event is sponsored by the American Radio Relay League and the National Weather Service. Almost 100 stations participated across the country. The purpose of the event is to “give thanks” and recognize the vital public service contribution that Amateur Radio operators make during severe and hazardous weather events. It strengthens the bond with the National Weather Service.

This year, SKYWARN Recognition Day coincided with Pearl Harbor Day. To honor the men and women who served their country on that day and throughout World War II, along with recognizing current veterans and military personnel, the National Weather Service offered a special Pearl Harbor Day endorsement. Each station transmitted a special weather message from approximately 1800 to 1900 UTC (11 am to noon Pacific time) about the time of the Pearl Harbor attack back in 1941. The message was the weather conditions reported in Honolulu right before the attack. “It was mostly sunny. The temperature was 75 degrees. Winds were from the northeast at 15 mph.”

The Spokane County ARES/RACES SKYWARN group participated in the SKYWARN Recognition Day from the National Weather Service office in Spokane. There were 27 HAMs that took shifts of at least 4 hours, some even worked the whole 24 hours of the event. They set up antennas and radios to make contacts all around the U.S. There were over 400 contacts nationwide including Russia, Italy and Australia along with at least 38 other National Weather Service offices.

For several decades now, HAMs have assisted the NWS by providing real-time reports during times of severe and hazardous weather. They have been an essential part of emergency communications locally during such events as Ice Storm, Fire Storm and the Mount St. Helens Eruption, along with supporting scheduled events such as parades and the Bloomsday Run. They provide a great service to the communities of the Inland Northwest. The “ground truth” information reported by HAMs plays a key role in aiding weather forecasters. This is especially true when examining storms and hazardous weather at greater distances from the Doppler weather radar. For more information, visit <http://hamradio.noaa.gov> ☀ Robin Fox & Mary Moore, AA7RT— Assistant Emergency Coordinator - Spokane County ARES/

R A C E S  
SKYWARN  
L i a i s o n

*The Spokane  
County ARES/  
RACES*

*Skywarn group  
hard at work on  
Skywarn Rec-  
ognition Day  
on Dec. 7th.*



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### Editor's Notes

Spotter training sessions were held this fall in Lewiston, Spokane and Spirit Lake with a total of 75 trained volunteers from eastern Washington and north Idaho.

Each session lasted about three hours with an excellent group of people. Additional spotter training meetings will be planned after the holiday season. Check the NWS Spokane homepage for the latest training schedule. If any spotters would like to request a meeting, please contact Ken Holmes (509)244-0110 x 223.

If there is something you would like to see in the next newsletter or if you have comments or questions about a previous issue of the *Weather Watcher*, please contact Robin Fox (509) 244-0110.

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

All articles are written by the NWS staff and their partners. A special thanks to Ron Miller, Mary Moore, Milt Maas and Stan Krenz.

# Measuring Snow

Winter is right around the corner and so too will be the snow. Here are some guidelines on measuring snowfall. Hopefully it will assist you in obtaining representative readings throughout the winter.

Snowfall is simply the amount of snow that has fallen in a given period of time, usually measured in tenths of an inch. While snowfall is most often measured every 12 or 24 hours, measurements can be taken at least every 6 hours during heavy snow events.

The best way to measure new snowfall is to collect it on a snow board. A snow board is nothing more than a 2-foot square piece of plywood, usually painted white. The board should be placed as level as possible, either on the ground or on top of existing snow pack in a location as free of obstructions as possible. Snow boards tend to be more accurate than using a deck, lawn or driveway. Be sure to "flag" your board so you can find it once snow-covered, and also have a ruler or yardstick handy. Clean off the snow board once a day after your measurement. If no snow board is available, almost any level surface can be used, as long as it is in a location where snow is free to accumulate.

"New" snow boards have just arrived at the NWS Spokane and will be mailed or delivered to all cooperative observers this winter. For more information on snow boards, contact Robert Bonner (509) 244-0110 x 225.

When blowing and drifting occurs, measure the snow at several locations, preferably spots that are free from drifting, and take the average value of the measurements. Keep in mind that it is an estimate and should be reported as such.

When snow falls at temperatures near or above freezing, this causes it to melt as it falls. Obviously this leads to accumulations significantly less than the actual amount of snowfall. The best way to estimate snowfall when this occurs

is to collect the snow in a rain gauge. Measure the amount of water in hundredths of an inch, and multiply it by 10 to get the estimated snowfall. For example, one tenth of an inch of water would equate to about one inch of snowfall. For those of you who have an eight-inch rain gauge, please remember to remove the funnel and inner measuring tube before the snow

flies.

Snow depth is how much snow has collected on the exposed ground. It is usually measured once a day and reflects the average value of how deep the snow pack is. Snow depth is reported to the nearest whole inch. Sometimes situations exist where snow cover is patchy. Under these circumstances, use good judgment. Estimate the total coverage of snow and reduce the snow depth in the snow covered areas accordingly.

Unfortunately, getting an accurate measure of snowfall and even snow depth is not always a simple task. Drifting, blowing, melting, and settling all play a role in complicating the task

of obtaining an accurate measurement. For more information, visit <http://www.coop.nws.noaa.gov/Publications/snowguid.htm>. ☀ Stan Krenz DAPM - NWS Missoula & Milt Maas.

**The First Day of Winter begins December 21st at 5:15 pm.**

## Avg Annual Snow

Spokane	42"
Moses Lake	13"
Wenatchee	28"
Holden Village	250"
Othello	4"
Mullan	112"
Lewiston	16"

## Staff News

After 37 1/2 years of combined military and civil service, Irv Haynes, Hydro-meteorological Technician and head of the Cooperative Program for the Inland Northwest, will hang up his weather hat and retire on Jan 3, 2003. Irv's NWS career has taken him around the West, to the snow at Stampede Pass, to the coast in Eureka, CA and to the desert of Phoenix, along with stops along the way at Great Falls, Medford, Havre, and Mount Shasta City. Currently his post-retirement plans are still in the works, but he and his wife Linda plan on taking vacations to warmer climates. Good Luck Irv! ☀ Robin Fox

## A Cold and Dry Autumn

The autumn months in the Inland Northwest are typically known for their sunny days, clear cool nights, and an increasing frequency of weather fronts. The fall of 2002 had it's share of the first two, but was lacking in the weather fronts. All three months saw precipitation well below average. While this is not unusual for September and even October, usually by November we start getting our fair share of rain and snow but not this year!

### SEPTEMBER

The weather this September could be classified as pretty average, albeit a bit drier than normal. Temperatures bounced up and down which is typical for the month. One week temperatures barely reached 70°F, then a few days later the mercury soared back into the 80s and lower 90s.

### OCTOBER

After some light rain in the first few days of October, a dry Canadian air mass moved into the area on the 11<sup>th</sup>. The low temperature at Spokane on the 12<sup>th</sup> was only 19°F, which was the coldest it had ever been so early in the Fall. Temperatures rebounded under cloudless skies during the middle of the month. High temperatures were commonly in the 60s with lows dipping into the 20s and 30s. On the 28<sup>th</sup>, a very strong cold front moved down from Canada. This front brought rain to the Inland Northwest with more the 4" of snow to Winchester, ID. This front also brought very cold air behind it. On the morning of the 30<sup>th</sup> numerous daily low temperature records were broken, but the low temperatures on the 31<sup>st</sup> were quite noteworthy. Wenatchee and Lewiston both dropped to 15°F, while Spokane plummeted to 7°F. At all three locations, this was not only the coldest temperatures so early in the Fall, but also the record low temperatures for the entire month of October! Outlying locations such as Priest Lake and Turnbull National Wildlife Refuge (south of Cheney) actually dropped below 0°F on that morning.

### NOVEMBER

The cold weather continued into the first week of November as a large ridge of high pressure was firmly locked over the western U.S. Eventually the Pacific jet stream was able to break down the ridge and the storm door was open. From the 7<sup>th</sup> through the 21<sup>st</sup> the Inland Northwest received several rain storms. Temperatures were very mild with daytime highs in the 40s and 50s while lows remaining above freezing. As the month was drawing to a close, high pressure once again became the dominant weather feature over the area. Luckily the air flow was from the north, which kept the area clear of fog for a beautiful Thanksgiving weekend.

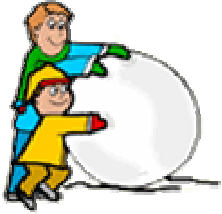
The big weather story was definitely the lack of precipitation. In fact, for the period Jan 1<sup>st</sup> - Nov 30<sup>th</sup>, Wenatchee had received only 3.75" of precipitation, which is the driest

ever since weather records began at Pangborn Field in 1959. Lewiston and Spokane had their 16<sup>th</sup> and 19<sup>th</sup> driest years respectively, with their records dating back to 1881.

Snow has also been hard to come by. On the morning of December 10th, the Spokane Airport received its first measurable snow. The average date for this to occur is November 15<sup>th</sup>. Back in the winter of 1901/02 the first snowfall didn't occur until Jan 19<sup>th</sup>. Since that was back when the observation was downtown, a more realistic comparison would be for the years since 1947 when the observation was taken at the airport. Using that time range (1947-2001), the latest it has ever been to get the first measurable snow was December 4th, 1954. In other words, this has been the latest it has ever taken for the Spokane Airport to receive its first measurable snow. Mountain snow pack is also well below average. As of the first of December, snow pack in the Idaho Panhandle and eastern Washington mountains was 30-40% of what it should be at this time of year. ☀ *Ron Miller*

## Fall Weather Statistics

Wenatchee Airport	Sept.	Oct.	Nov.	Total
Avg High Temp	76.4	62.1	46.6	61.7
Departure from Norm	-0.1	+0.4	+2.7	+1.0
Avg Low Temp	51.4	37.7	31.5	40.2
Departure from Norm	+0.4	-2.4	+1.1	-0.3
Total Precip	0.07	0.07	0.70	0.84
Departure from Norm	-0.36	-0.38	-0.45	-1.19
Lewiston Airport	Sept.	Oct.	Nov.	Total
Avg High Temp	77.6	59.8	49.6	62.3
Departure from Norm	+0.9	-2.2	+2.8	+0.5
Avg Low Temp	50.7	35.6	33.6	40.0
Departure from Norm	-0.2	-5.6	-0.5	-2.1
Total Precip	0.4	0.77	0.74	1.91
Departure from Norm	-0.4	-0.19	-0.47	-1.06
Spokane Airport	Sept.	Oct.	Nov.	Total
Avg High Temp	72.2	56.5	45.2	58.0
Departure from Norm	-0.3	-2.0	+4.1	+0.6
Avg Low Temp	44.7	29.3	28.3	34.1
Departure from Norm	-1.2	-4.3	-0.4	-2.0
Total Precip	0.55	0.18	1.65	2.38
Departure from Norm	-0.21	-0.88	-0.59	-1.68
Total Snowfall	0	0	0	0
Departure from Norm	0	-0.3	-6.4	-6.7



Spotter reports are just as valuable in the winter. Remember, the NWS wants your reports especially on:

- **Snow—especially 2" or more**
- **Strong Wind or Wind Damage**
- **Freezing Rain and Icing**
- **Heavy Rain and Flooding**

*\*Please note, the online spotter report system has been discontinued until further notice. Please phone in your reports. Thanks!*

Come visit the NWS booth at the NW Game Fish Show at the Spokane Fairgrounds on Jan 10-12th, 2003.

## Digital Forecasts

By the end of next year, the NWS will be making available a limited number of computer-generated forecast grids of weather elements, like cloud cover or max temperature, in what is being called the NWS National Digital Forecast Database (NDFD). In addition, a few national graphics produced from these grids will be available, such as temperature and probability of precipitation. The NDFD contains a seamless mosaic of digital forecasts from NWS field offices working in collaboration with the National Centers for Environmental Prediction (NCEP).

The database will be made available to all customers and partners, both public and private, and will allow them to create a wide range of text, graphic, and image products of their own. With time, a wider array of computer-generated forecast weather elements will be available in the database as will a larger set of graphical presentations. For more information, visit <http://www.weather.gov/ndfd/ndfdindex.htm> ☀

## Winter Highlights

**WINTER STORM WATCH:** Severe winter conditions of heavy snow or ice are possible within the next day or two. Prepare now!

**WINTER STORM WARNING:** Severe winter conditions have begun or are about to begin in your area. Stay indoors!

**BLIZZARD WARNING:** Snow and strong winds will combine to produce a blinding snow (near zero visibility), deep drifts, and life-threatening wind chill. Seek refuge immediately!

**SNOW ADVISORY:** Snow is expected to cause significant inconveniences and may be hazardous. If caution is exercised, these situations should not become life-threatening. The greatest hazard is often to motorists.

The Winter Outlook for December through February is above normal temperatures and at to below normal precipitation across the Inland Northwest.

## The Weather Watcher Of the Inland Northwest



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Trivia: What are some of the average annual snow amounts in the Inland Northwest?

**HAPPY HOLIDAYS**  
from NWS Spokane