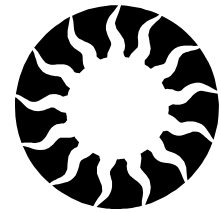


The Weather Watcher

of the Inland Northwest

www.weather.gov/Spokane



Impacts of the Lack of a Winter

An El Niño event was anticipated for this winter with mild temperatures and slightly below normal precipitation. Yet it had remained weak, even too weak to have projected an unusually dry winter with any statistical skill. There is also evidence that points to this El Niño not having played a major role in our winter weather. Through December 2004, there was a lack of persistent convection over the warm waters of the central equatorial Pacific, which had limited El Niño related impacts. Furthermore, according to the Climate Prediction Center (CPC), the weather for the Inland Northwest since early January was a result of unusual circulation patterns in the North Pacific Ocean that were not typical of El Niño events. This resulted in a lack of storm systems affecting the Inland Northwest, which is unusual for late winter. Although many folks did not mind the mild weather, the winter recreation community suffered with a short season. Now that spring is arriving, our attention will turn to the impacts of a record low snow pack.

Snow Pack

After significant snow in early January, a series

mainly in Washington, which normally receive plentiful precipitation, only saw less than a tenth of an inch. Chewelah, Quincy, Rosalia, and Smyrna recorded no precipitation in February! Davenport, Newport, Ritzville and Northport only saw a trace of precipitation for the month, while Spokane reported a measly 0.04 inches. These amounts easily shattered long standing records for the driest February. Since the water year began last October, precipitation has been well below normal across the area, although not nearly as dry as the record winter of 1976-77.

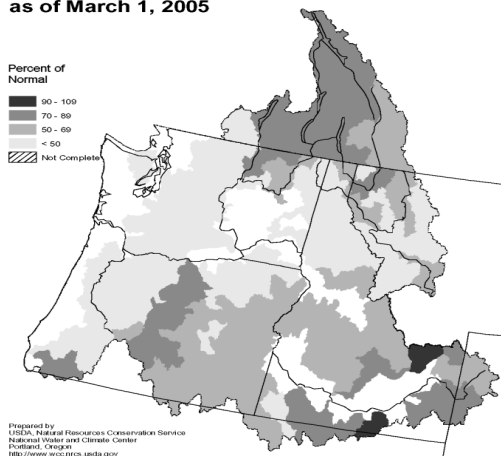
Water Supply

With the record low snow pack, water supply forecasts are bleak. The main stem of the Columbia River is in the best shape, thanks to a closer to average snow pack at the headwaters of the river in British Columbia. The forecast stream flow volume at Grand Coulee is about 80% of average. The forecasts are much lower on rivers with headwaters in Washington and Idaho. For example, forecast volumes on the Methow and inflow into Lake Chelan are only 30% of average. On the Spokane River, volumes are forecast at only 47% of average this spring and summer.

With the lack of water and dry conditions forecast, drought conditions will be felt across the region through this summer. This will make for low flows on area rivers and streams, impacting agriculture, local fish and wildlife, with an increased risk for wild fires. The potential for spring flooding is very low, however as spring and summer approach, the flash flood season begins. During the last period of similar weather conditions, in the summer of 2001, there were several flash floods in the region, even in the middle of the drought.

The CPC has issued the long range outlook for the Inland Northwest for the upcoming spring months which include a greater chance of above normal temperatures and a greater chance of below normal precipitation. In addition, the weak El Niño event will begin to fade back to neutral conditions by late spring. ☀ *Charles Ross & John Werner*

Pacific Northwest Mountain Snowpack as of March 1, 2005



of very warm storms brought an early snow melt to the mountains. Then the weather turned dry, and as of early March, there has not been a significant mountain snow fall in almost two months. This has resulted in record low water levels in the mountain snow pack. From the Cascade crest east to Idaho-Montana border, the mountain snow pack ranges from 15 to 40% of average.

Precipitation

February 2005 was the driest February on record across the Inland Northwest. Several locations,

INSIDE THIS ISSUE:

Winter in Review	2
Staff News	3
Aviation Forecasts	3
Spotter Training	3
StormReady in Lewis	3
How Weather Works	4

Editor's Notes

Welcome to Spring, arriving on March 20th! Just a reminder, the Weather Watcher is available on our web page. If any of you are interested in not receiving a paper copy in the mail and would rather read it online, please send an email to wotx.webmaster@noaa.gov and your name will be taken off the newsletter mailing list.

If there is something you would like to see in the next newsletter or if you have comments about a past issue of the Weather Watcher, please contact Robin or Ken (509) 244-0110 extension 223.

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 close contacts. A special thanks to John Livingston, Ron Miller, John Werner, Charles Ross, Ken Holmes and Todd Lericos for their contributions.

The 2004-2005 Winter in Review

While this three month period is titled “Winter”, it hardly seems like we even had one this year. **December** started off on a normal foot. A couple of weather systems moved into the area during the first week. Spokane received a total of over 6” of snow during a four day period. The 8th was the snowiest day. Many locations north of Spokane, as well as in the Cascades and the Okanogan Valley, picked up around a foot of snow. Much of this snow quickly melted as temperatures warmed into the 40s and lower 50s. Little did we know at the time, that this would be all the measurable snow Spokane would receive for the month. Meanwhile, Lewiston hit a balmy 59°F on the 11th, just two degrees shy of the record for the day. In fact, Lewiston warmed to 32°F or above every day in December. Christmas wasn’t a white one for most folks in the Inland Northwest. A storm dropping down from Canada brought light rain to many locations, with up to 10” of snow near the Canadian border in the towns of Northport and Evans. When it was all over, the month of December was much warmer and drier than normal.

January was divided into two very distinct weather regimes. The first half resembled a typical winter. Temperatures remained at or below normal as snowstorms persisted from the 6th through the 9th. The result was about a foot of new snow on the ground for many locations. Then came the arctic air from Canada. Temperatures on the 14th and 15th struggled to make it into the teens with overnight lows below zero. Some of the coldest readings included -23°F at Priest Lake, -18°F at Chewelah, Republic, and at the Turnbull National Wildlife Refuge near Cheney, -16°F at Newport, -14°F at Bonners Ferry and Winthrop.

The cold spell was short lived as a warm Pacific storm pushed out the bitter arctic air. The high temperature in Lewiston on the 16th was 27°F. The next day the mercury jumped to 51°F! The exception to this quick warm up occurred in the valleys of the Cascades, where the dense sub-freezing air remained bolted to the valley floors. A Pacific warm front slid over this freezing dome of cold air. Warm air aloft melted the falling snow resulting in an ice storm on the 17th. Several locations in the Cascades reported ice accumulations of a quarter inch or more. While freezing rain is not uncommon in many parts of the Inland Northwest, it is very rare in the Cascades. As the temperatures warmed, ice jams on rivers in the Idaho Panhandle as well as in the Cascades resulted in minor flooding. Heavy rain near the crest of the Cascades also caused some significant river rises.

While the first half of January was cold and snowy, the second half of the month was anything but that. Spokane reported temperatures in the 40s on 12 of the last 14 days of the month. Lewiston hit the 60°F mark twice in the latter half of the month, making it the warmest last two weeks of January ever!

February can be summed up in one word: dry! It was the driest February on record for nearly every location in the Inland Northwest. A large area of high pressure remained parked over the region, shunting Pacific storms either well to our north into Canada or to our south into California. However, rather than the usual fog and low clouds we commonly see in this pattern, there was a persistent dry flow from the north which kept the fog at bay. This resulted in sunny warm days and clear cold nights, more reminiscent of October than February. ☀ *Ron Miller*

Winter Weather Statistics				
Wenatchee Airport	Dec	Jan	Feb	Total
Avg High Temp	37.6	31.5	44.4	37.8
Departure from Norm	+4.1	-2.4	+5.8	+2.5
Avg Low Temp	29.5	23.2	27.0	26.6
Departure from Norm	+6.6	+1.4	+0.3	+2.8
Total Precip	1.02	1.00	0.18	2.20
Departure from Norm	-0.41	-0.14	-0.68	-1.23
Lewiston Airport	Dec	Jan	Feb	Total
Avg High Temp	43.9	44.2	49.8	46.0
Departure from Norm	+4.7	+4.8	+4.2	+4.6
Avg Low Temp	31.8	31.7	28.5	30.7
Departure from Norm	+3.3	+3.8	-2.7	+1.5
Total Precip	0.86	0.31	0.19	1.36
Departure from Norm	-0.19	-0.83	-0.76	-1.78
Spokane Airport	Dec	Jan	Feb	Total
Avg High Temp	36.4	34.5	44.7	38.3
Departure from Norm	+3.6	+1.7	+5.4	+3.6
Avg Low Temp	27.4	22.1	24.4	24.7
Departure from Norm	+5.8	+0.4	-1.3	+1.6
Total Precip	1.34	1.15	0.04	2.53
Departure from Norm	-0.91	-0.67	-1.47	-3.05
Total Snow	6.5	14.9	T	21.4
Departure from Norm	-8.6	+0.7	-6.7	-14.6

Answer: Both Antarctica and the Atacama Desert in Chile are ranked as the driest spots with a 0.01” or less of precipitation a year.

NWS Spokane

Meteorologist In Charge

John Livingston

Administrative Assistant

Meg Layh

Warning Coordination Meteorologist

Ken Holmes

Science Operations Officer

Ron Miller

Data Acquisition Program Manager

Robert Bonner

Service Hydrologist

Charles Ross

Information Technology Officer

Todd Carter

Lead Forecasters

Jon Fox Claudia Cox
Robin Fox
Matt Fugazzi
Bob Tobin

General Forecasters

Tracy Cox
Rocco Pelatti
Paul Bos
Todd Lericos
John Werner
Laurie Koch

Hydro-Meteorological Technicians & Intern

Stan Savoy Milt Maas
Verne Ballard
Jeffrey Coté

Electronic System Analyst

Electronic Technicians

Paul Kozan
Robert Sumpter

Facilities Technician

Mike Belarde

NWS Spokane Staff News

There have been several staff changes in the last several months. With the departure of Lyle Hammer in January, a new forecaster was hired, Laurie Koch. Laurie worked in the Spokane NWS office several years ago as a summer intern while she was attending college. She hails from the Spokane area, and will be returning "home" this month. Welcome Back Laurie!

Robert "Bubba" Cummings, the Electronic System Analyst, took a new position in the Reno NWS office. Bubba began at the Spokane office almost ten years ago with the radar installation and the office modernization. Good Luck to Bubba and the Cummings family!

Two new arrivals were also celebrated this winter. Todd Carter, Information Technology Officer, and Jill had a baby boy, Jared, on Dec 15th. Charles Ross, Service Hydrologist, and wife Julia also had a baby boy, Davis, on Jan 24th. Both families are thriving and doing well. ☀

Aviation Forecasts for the Palouse this Spring

The National Weather Service (NWS) in Spokane will begin a Terminal Aerodrome Forecast (TAF) for the Pullman-Moscow Regional Airport (PUW) on Tuesday May 3rd, 2005. This is in support of the increasing number of commercial and private operations at this facility and a \$1.8 million runway expansion to accommodate larger commercial aircraft.

A NWS TAF is a forecast for the aviation community that consists of the expected weather conditions at the airport over a 24 hour period. These weather conditions include wind, visibility, weather type, cloud cover and cloud height. Currently, NWS Spokane maintains six additional TAFs for area airports across the Inland Northwest, which include Spokane International (GEG), Spokane Felts Field (SFF), Coeur d'Alene (COE), Lewiston-Nez Perce County (LWS), Grant County International (MWH) and Pangborn Memorial (EAT). ☀ *Todd Lericos*

Spotter Training Seminar is scheduled for Tuesday, March 24th in Colfax, WA at the Public Service Building. While more spotter training meetings will be scheduled in the near future, an online spotter training presentation is available on the NWS Spokane web page.

Please visit <http://www.weather.gov/spokane/spotter/train.php> for details.

StormReady in Lewis County Idaho

Officials from NOAA's National Weather Service (NWS) recognized Lewis County Idaho and the cities of Nezperce, Kamiah, Craigmont and Winchester by naming them among the agency's "StormReady" communities.

StormReady encourages communities to take a new, proactive approach to improving local hazardous weather operations and public awareness. The nationwide community preparedness program uses a grassroots approach to help communities develop plans to handle local severe weather and flooding threats. The program is voluntary and provides communities with clear-cut advice from a partnership forged between the local NWS weather forecast office and state and local emergency managers. StormReady started in 1999 with seven communities in the Tulsa, Okla., area. There are now over 820 StormReady communities in 47 states.



The ceremony took place in the county court house in Nezperce on Monday March 7th at 10 am. Officials from Lewis County and the cities of Nezperce, Kamiah, Craigmont, and Winchester were presented with special plaques and StormReady signs to recognize their important accomplishment. The StormReady recognition will be in effect for three years. ☀ *Ken Holmes*

Please call the NWS with spotter reports at (509) 244-0435 or 1-800-483-4532

Remember your Spring Spotter Checklist

Funnel Cloud/Tornado

Hail—pea size or larger

Strong Winds—30 mph+ or damage

Any Flooding

Reduced Visibility — under a mile due to snow, fog, rain, etc.

**Heavy Rain— Showery— 1/2+” an hour
Steady Rain- 1” in 12 hrs
or 1.5”+ in 24 hrs**

Travel Problems or Any Damage due to hazardous weather.

How the Weather Works—DROUGHT

A drought occurs when a region receives much less precipitation than it would normally receive over a period of a few months, a season or more. This can affect many things including water supplies, agriculture and wildfire danger. The NWS does not declare the beginning or end of a drought, state government is charged with this responsibility. The NWS is intimately involved in measuring the parameters that define a drought and providing long range precipitation and water supply forecasts that help state, local and other federal agencies plan for and mitigate the effects of drought.

According to the American Meteorological Society, “Meteorological and climatological drought is defined in terms of the departure from normal and the duration of the event. Drought is a slow-onset phenomenon that usually takes at least three months to develop and may last for several seasons or years.” Other ways of defining and characterizing drought are hydrologic, agricultural and socio-economic.

Due to the significantly below normal precipitation and the record breaking low snowpack, the Governor of Washington State declared a Drought Emergency on Thursday March 10th. This puts a drought action plan in motion that is meant to mitigate drought effects on water supply for municipalities and agriculture, provide more resources for wildland fire fighting and sustain fisheries in low flow conditions. NWS data are an integral part of defining and characterizing drought. Daily observations from our

Cooperative Observers are the key to defining our climate. Hot or cold, wet or dry, this important data set is watched by many users on a daily, monthly and seasonal basis. Other data that is important in assessing drought comes from the Department of Agriculture National Resource Conservation Service who keeps measurements on snowpack. Another big player is the Department of Interior US Geologic Survey who operates many of the stream and river gauges across the west.

The NWS and our parent organization the National Oceanic and Atmospheric Administration (NOAA) are also partners in the “Drought Monitor” project. This is a joint venture between us and the US Department of Agriculture, and the University of Nebraska-Lincoln. Each week a new graphic product is issued showing the severity and type of drought over the US. For the product issued on March 8th much of area was shown in a severe drought, with moderate drought in some sections. This product shows whether the impacts are agricultural, hydrologic or both. For our area at this time the impacts area characterized as both agricultural and hydrologic. For more information and updates on drought, visit our web page at www.weather.gov/spokane ☀ *John Livingston*

The Weather Watcher

Of the Inland Northwest



National Weather Service
2601 N Rambo Rd
Spokane, WA 99224
(509)-244-0110

Trivia: Where are the driest spots on Earth?