Bio Corner

After five years of outstanding professional forecasting at the Weather Service Office in Spokane, forecaster Paul Frisbie is moving on. Paul was selected to be a senior forecaster at Grand Junction, Colorado and will report for duty by mid November. Paul we wish you the best in Grand Junction.

Although Paul's departure is a loss, the Spokane Office has gained others. One of the gains is Brenda Rheinecker has joined the Spokane staff as a Fire Weather Meteorologist. Brenda comes to Spokane after assignments in Peoria, Illinois and Cheyenne, Wyoming. She acquired a Bachelors degree in Meteorology from the University of Missouri in 1993. Brenda, the NWSO Spokane Staff welcomes you aboard!

La Niña and Flooding

As with historical weather results, there is no conclusive correlation between La Niña and flooding. While major flood events usually do not occur in the Pacific Northwest during El Niño years, no clear historical precedence has been associated with La Niña and flooding for our area of the country. Some La Niña years have brought significant flooding, while others have not. And, it's important to note that some of the biggest flooding this century occurred outside of La Niña events.

Most recently, the La Niña winter of 1995-96 produced widespread flooding in sections of the Idaho Panhandle and in the Wenatchee area. The years 1964-65 and 1971-72 also resulted in major flood episodes. However, other disastrous inundations over the past 100 or more years, such as the floods of 1894, 1933 and 1948 were not La Niña events.

It is obvious that La Niña years do tend to have a bias towards high water situations. Some degree of flooding has happened on many area rivers about 50% to 75% of the La Niñas during the last half of this century. Statistically, there is a better than average chance of some flooding this winter and spring. However there are currently no clear-cut indications that any flooding will be severe or not.

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WEATHER WATCHER

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Editor's Notes

The National Weather Service of Spokane is proud to provide this edition of the Weather Watcher. The focus of this issue is fall and winter weather, with information and articles ranging from AWIPS to La Niña and more.

The main purpose of this publication is to keep weather spotters and others informed about our services and programs, and to recognize spotters and others who help us accomplish our mission. We will continue to see many exciting changes in weather observing and forecasting over the next several months and years. Weather spotters and our friends in the emergency management and media communities will continue to be an extremely valuable part of our mission.

Remember, if you spot any severe weather in your area, please notify us immediately at either:

509-244-0435
1-800-483-4532

If there is something you would like to see in the next newsletter, please drop us a note at the address listed above.

AWIPS

During the third week of September, the National Weather Service in Spokane added yet another acronym to its arsenal and the final chapter to the multi-faceted modernization process, the highly awaited AWIPS system. AWIPS is not some sort of magical kitchen device, rather it is a complicated network of communications and computer processors which seamlessly meld together all the previous aspects of modernization. AWIPS stands for ***A***dvanced ***W***eather ***I***nteractive ***P***rocess ***S***ystem. This complex system ingests NEXRAD (radar) data, ASOS (observation) data, GOES (satellite) data, and numerical model data, which are processed by powerful on-station computers. The data is then disseminated over a Local Area Network (LAN) which then can be displayed by any of our four workstations. The graphics available at these workstations feature a dazzling array of colors which allow different meteorological fields to be displayed distinctly. Another major advancement is the ability to overlay different sources of data fields onto one another. For instance we can now overlay satellite data on top of model data which in turn allows us to determine the performance of a particular weather model. We can also overlay current observational data on top of real-time radar data to gain insight into the expected trends for thunderstorms or snow. These are just a couple of powerful things we can do on our new workstations, all in an effort to produce a more accurate forecast.

AWIPS also comes equipped with a powerful text editor and various scripts and macros which speed the issuance times of various text products. One notable advance is called WarnGen. This robust program allows us to issue a severe weather warning in just a fraction of the time it took just a couple of years ago. The process still starts with our identification of a storm's strength through the evaluation of the NEXRAD Radar data. If we determine a particular storm is severe, a forecast storm path on one of our graphics workstations is shown. If we concur with the forecast path, then WarnGen is off to work. It will make note of the counties and cities to be impacted during the selected time frame (generally 30-60 minutes) and assembles this data into a warning message. We then can see what sort of warning has been generated and if all looks fine, the warning is then sent to the appropriate authorities including the media, law enforcement officials and emergency managers. The warning is also sent to our new NOAA Weather Radio 2000 (NWR 2000) so it can immediately be included on the radio broadcast. AWIPS also has the capability of assisting us to compose other warning messages for flood and winter weather events.

AWIPS has many more tools which will make the creation of forecasts and warnings much easier and less time consuming than they have been in the past. This extra time will afford us the ability to look at additional data fields which in turn will help us to produce more accurate forecasts and warnings. We are quite excited to work with this system and look forward to additional developments that will take place in the near future.

All articles are written by the Spokane NWS staff. A special thanks to Brian Avery, Bob Bonner, Roger Buckman, Todd Carter, Jon Fox, Robin Fox, Ken Holmes, John Livingston, Ron Miller, and Daran Rife for their contributions.

ON THE INSIDE .....
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A "*Thank You*" to the HAM Radio Operators

We, at the National Weather Service Office in Spokane, would like to take this opportunity to extend a big thank you to the HAM radio operators who provided hard work, support, and assistance during the severe weather events of the summer of 1998. Eastern Washington and northern Idaho had several severe weather outbreaks this past summer, and the HAM radio network provided us with accurate and timely information on storms that were developing in the area. The HAM radio operators were courteous, professional, and dedicated in assisting the severe weather warning process

While we have a host of fancy technology, we still rely heavily on "eyes-on" observations to verify what we see on radar and satellite. HAM radio operators play a critical role in that process. Their weather spotter reports often help forecasters make the decision on whether or not to issue a severe weather warning.

Thanks, and we look forward to working with you throughout the year!

1998 Summer Weather Recap

So, how hot was it? That question was a common one during this past summer in the Inland Northwest (as well as much of the rest of the country). Yes, it was a hot one to be sure. But just how does it stack up against past summers? The answer depends on what you use to "measure" how hot the summer was.

One way to measure the summer is by looking at the average temperature (average of the daily high and low temperatures) for the summer (June 21 - Sep 21). For Spokane, 1998 tied 1938 as the hottest summer ever (since 1881). Wenatchee also tied it's warmest summer (1967), with records at the airport only going back to 1959. But for Lewiston, 1998 ranks only 6th (of 118 years) on the all-time hot summer list, with 1938 holding the top honors.

Another way to examine how hot the summer was, is to look at the number of days the high temperature reached or exceeded 90° F. In Lewiston, the mercury reached 90° F 54 times this year, which was above average (44), but still well below the 1938 sizzler of 80. Wenatchee hit the 90° F mark 43 times in 1998, well above the average of 29 but falling short of the record of 57 in 1967. In Spokane, the temperature reached 90° F 39 times, and this tied the all-time record set in 1958.

As far as daily records, Spokane and Lewiston both set only one record high temperature all summer long. Wenatchee set 8 new record highs in 1998, but this is largely due to the shorter period of record. So 1998 wasn't necessarily known for it's remarkably hot days, as it was just consistently hot with very few breaks. The overnight low temperatures were also very warm, which prevented those non-air conditioned houses from cooling down at night.

While 1998 will be remembered as one of the hottest years ever, there were other notable weather events. In late May, a downpour over the mountains of northeast Washington washed away numerous bridges. This widespread event caused damage from the northern Cascades to the northern Panhandle. Some locations in Ferry county received over 5" of rain. During the evenings of July 9th and 10th, strong thunderstorms rolled through the area. Most of the damage was due to strong winds from the storms. Lewiston airport measured a gust of 63 mph on the 10th. There were also funnel clouds spotted in various locations but none of them touched down. Later in that same month, severe thunderstorms moved through the Moses Lake and Okanogan Valley areas.

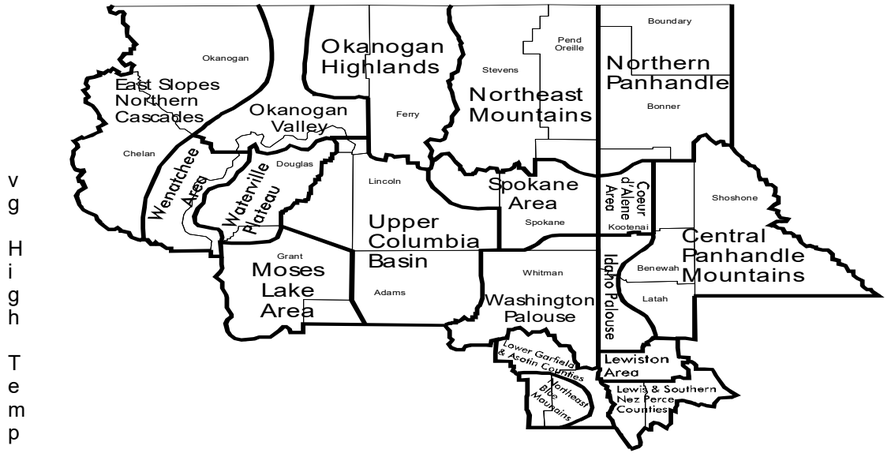
Wenatchee (Airport)

	May	Jun	Jul	Aug	Sept
A					
v					
g					
H					
i					
g					
h					
T					
e					
m					
p					

Forecast Zones

In order to better serve the people of eastern Washington and north Idaho, the National Weather Service in Spokane developed a new configuration for the forecast zones used in many of our products (this configuration is based on similarities with terrian and climate). In the old system there were several problems that made accurate forecasting difficult and forced the products to be too long. Specifically in the old configuration, the Lewiston valley and the Idaho Palouse including Moscow and St. Maries were in the same zone. Now they are each in a separate zone. Another deficiency in the old system was that the Wenatchee valley and the Waterville area were together in one zone. Now they are seperate, as the Waterville Plateau is now a zone unto itself. Yet another problem was the Columbia Basin where Othello and Royal City were in the same zone as Davenport and Wilbur. The new system has these very different areas in separate zones.

Ideally our forecast zones would be set up on a county and sub-county basis. We continue to get feedback like "outlying areas have different weather than downtown", " the weather patterns are completely different 10 miles down (or up) river", and "our valley gets more snow than the next one over". And while time and workload won't allow us to forecast for very small areas, our new configuration better addresses differences in climatology, population, and other important factors. We are confident this new configuration will allow us to better serve the people in our county warning and forecast area. We would be interested in your feedback on our new zones.



La Niña

Last winter we all learned a new weather term: El Niño. This year, it's La Niña. As most of us learned, El Niño is the term used to describe a phenomena where the sea surface temperatures of the equatorial Pacific become anomalously warm. This in turn affects the general circulation patterns of the atmosphere, and thus, alters the weather. For those of us in the Inland Northwest, the result of El Niño is nearly always a mild winter. But now, all that warm water is gone and has been replaced by colder than normal water. (The transition from El Niño in one winter to La Niña is not uncommon, but doesn't always happen). So since warm water meant a mild winter for us, does cold water add up to a cold winter?

Unfortunately, La Niña doesn't give the clear-cut results that El Niño does. Looking back 50 years, there have been 8 La Niña winters. Only 3 of those winters were colder than average, and 2 were actually warmer than average. Moreover, none of the 8 coldest winters since 1948 were La Niña winters. Thus, there is no clear signal on the temperature outlook for this coming winter. However, 6 of the 8 La Niñas have been wetter than average, and 5 of the 8 have been snowier than average. Still, of the 8 snowiest winters in the past 50 years, only 2 of them were La Niñas. So while there does appear to be a good chance of the 1998/99 winter being wetter and snowier than average, it is still not a "sure bet." Current NWS forecasts for the winter of 1998/99 are for a increased likelihood of above normal precipitation. For temperature, though, there is an equal chance of above, below, or near normal conditions. See the winter outlook graphics on the previous page for more details.

One needs to keep in mind that these records and forecasts are for an entire winter. As a result, a winter forecast of 'wetter than normal' doesn't preclude the possibility of a drier than normal month within that winter. And stretch of sub-zero weather may still occur in a "warmer than normal" winter.