YOUR NATIONAL WEATHER SERVICE SPOKANE QUARTERLY REPORT

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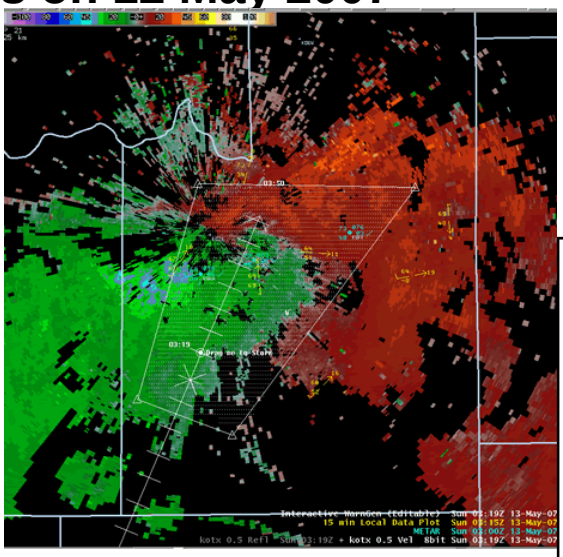
The Weather Watcher

of the Inland Northwest

www.weather.gov/Spokane

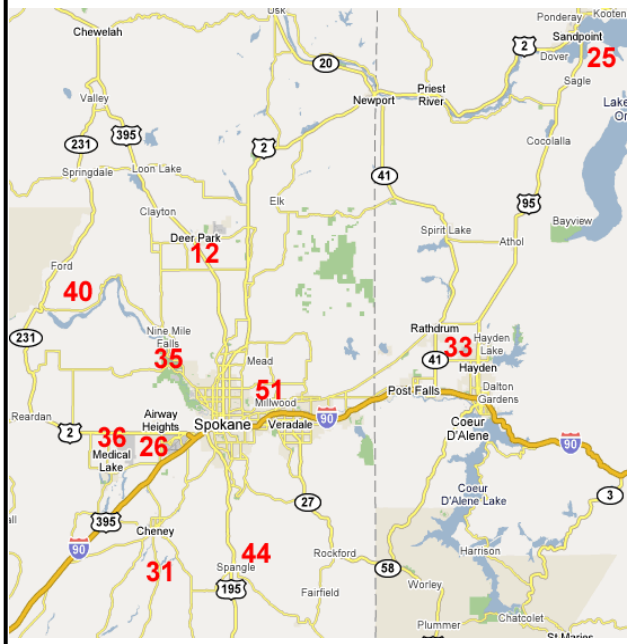
Gust Front Winds on 12 May 2007

This spring has been lacking in thunderstorm development, with only a handful of exciting convective events to mention. One such event occurred the evening of May 12th. It was mild day with above normal temperatures under a moistening southwest flow. A low pressure system off the coast of Washington was forecast to track across the region that night accompanied by a strong cold front. The afternoon sounding showed an unstable profile with the typical well-mixed boundary layer to just above 700 mb, and a fairly dry sub-cloud layer conducive to gusty outflows from showers or thunderstorms. It was determined that the main threat from this event was not going to be hail, heavy rain, or tornadoes. The main threat was strong gusty winds out of relatively dry thunderstorms.



Here is the Doppler radar velocity data of the thunderstorms over Spokane county during the eve of 6/12/07.

A line of weak convection developed over northeast Oregon and tracked north into southeast Washington during the evening hours. A loop of the radar velocity data showed the approaching winds ranging from 30 kts to over 45 kts by 8 pm around the Spokane area. The VAD Wind Profile (VWP) product showed the depth of the outflow winds reaching about 10,000 ft MSL (7500 ft AGL) at its maximum, with a peak wind of 30 kts near the ground. Spotter and automated reports indicated gusty winds over most areas. The strongest measured wind speed was 51 mph recorded at the Felts Field ASOS! Between 8 and 9 pm, severe thunderstorm warnings were issued for the gust front winds along this band of thunderstorms, across Spokane, Stevens, Pend Oreille, Kootenai, and Bonner counties. The winds quickly subsided as the thunderstorms pushed to the north late that evening. ☼ *Ron Miller*



Here is a map of the wind gusts received from this event.

Dopper Weather Radar

Radar, which stands for **RA**dio **D**etection **A**nd **R**anging, has been used to detect precipitation, and especially thunderstorms since the 1940s. The radar used by the National Weather Service is called the WSR-88D, which stands for **W**eather **S**urveillance **R**adar—19**88** **D**oppler with the year being when the prototype radar was first built. The NWS Doppler radar is able to not only detect precipitation, but wind speed and direction, meaning it can detect motions toward and away from the radar. When looking at a color velocity radar image, green is motion toward the radar and red is motion away from the radar. The scale on the image shows the brighter the colors, the stronger the wind speeds. For more information on Doppler Weather Radar, see http://www.srh.noaa.gov/jetstream/remote/doppler.htm ☼ *Robin Fox*

INSIDE THIS ISSUE:

Editor's Notes

Lightning Safety Awareness week is June 24-30th. It reminds us to play it safe around lightning. Keep in mind the 30 sec/30 min rule. If you can count 30 seconds between the lightning flash and the thunder (which equates to about 6 miles), you are in the danger zone and should remain in your safe shelter. Also remain in your safe shelter for up to 30 minutes after the storm has passed. This will give the storm enough distance to guard you from any random "bolts from the blue" or long distant lightning strikes. Lightning can strike up to 20 miles from the storm!

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.

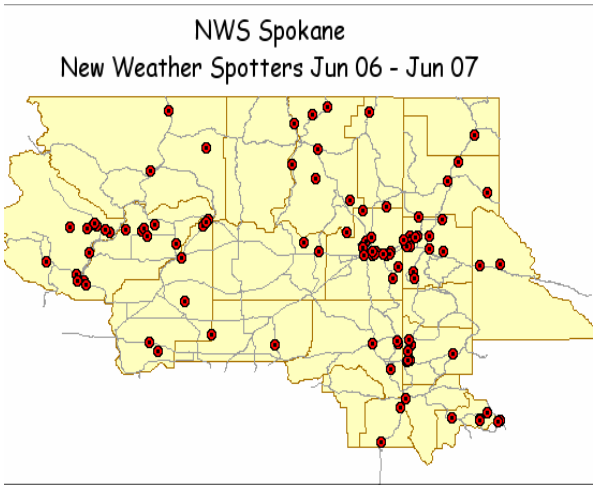
The main purpose of this publication is to keep our readers informed about our services and programs, and to recognize those who help us with our mission, including weather spotters, coop observers, media, and emergency management.

All articles are written by the NWS staff. A special thanks to Ron Miller, Kerry Jones, and Bob Tobin for their help.

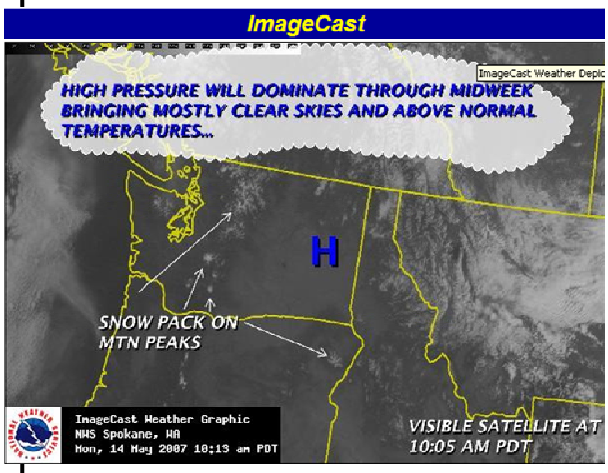
Spotter Corner

The spotter program has been rejuvenated over the past year, thanks in part to Kerry Jones and his ambitious spotter training schedule. Since last winter, there have been ten spotter meetings across our forecast area, in Okanogan, Leavenworth, Nez Perce, and Sandpoint to name a few. One hundred and seven new spotters have joined the ranks since last summer; this pushes our spotter total to 653 which is a very impressive achievement. Although our spring training is coming to a close, we will have a list of fall dates for spotter training coming soon. If you would like to have a spotter training in your area, please contact Kerry Jones to schedule. Remember to check our web page for the current spotter training dates or to just take an online refresher course. The Inland Northwest Spotter Guide will be getting a face lift this year, and we hope to roll it out by the fall spotter classes.

There are a few items to remember when reporting hail size. Avoid using "marble-size" as they can come in different circumferences. When reporting severe hail, which is ¾ of an inch, please use "**Penny-Size**" and NOT "dime-size." Penny size and larger are considered severe hail.



When reporting wind without wind equipment (like most folks), you can simply refer to the Beaufort Scale to estimate the wind. It is based the movement of various outdoor items due to the wind. In addition, some Fujita scale values are included for comparison. Above all, **please call or send in your severe reports.** Don't assume the NWS is aware of your current weather conditions. ☼ *Robin Fox*



New on the Web

ImageCast is an image intended to depict interesting and useful information about meteorological and other atmospheric phenomena occurring at the time. Daily images are annotated with text and visual symbols depicting frontal boundaries, pressure systems, storm locations, temperatures, cloud cover, rain, and much more. It is updated at least three times a day and more frequently during changing weather conditions. To the see the latest image on the NWS Spokane web page, just click on the blue button on the upper right corner labeled *ImageCast*. Please let us know your comments on this new product and others at *nws.spokane@noaa.gov* ☼ *Ron Miller*

Beaufort Scale

Large branches in motion, whistling heard in telephone wires, umbrellas used with difficulty. **Breezy.**	25-31 mph
Whole trees in motion, inconvenience felt walking against the wind. **Windy.**	32-38 mph
Twigs breaking off trees, wind impedes walking, slight structural damage possible. **Very Windy.**	39-57 mph
Damage to chimneys and TV antenna, shallow rooted trees pushed over, structural damage.	**58-85 mph (F0)**
Peels surface off roofs, windows broken, light trailer houses pushed or overturned, moving automobiles pushed off roads	**85-109 mph (F1)**
Roofs torn off houses, weak buildings and trailer houses destroyed, large trees snapped and uprooted	**110-137 mph (F2)**
Severe damage, cars lifted off ground	**138-167 mph (F3)**

SPOTTER REPORTS: please call the NWS at (509) 244-0435
Or send Online at *http://espotter.weather.gov*

Review of Spring 2007

As is the case in most locations in the northern part of the country, spring weather is often changeable and can be downright lousy at times. While the temperatures are usually warming, the cloudy, windy, and showery weather is often not what people are looking for. This spring brought the Inland Northwest some beautiful weather to the region. Unfortunately, it also equated to some drier weather.

March - The wet and somewhat snowy February weather persisted into the first few days of March. Snow advisories were issued for much of the Idaho Panhandle and extreme eastern Washington on the first and second of March. Daytime temperatures were generally in the 30s and lower 40s. In fact, the Wenatchee airport failed to warm above freezing on the 2nd with a high of only 31 degrees. Temperatures quickly rebounded into the 50s and 60s by the end of the first week and largely stayed at or above normal for the remainder of the month. One cool and showery period, around the 26th , lowered snow levels below 4000 feet, bringing 2.3 inches of snow to Winchester in the southern Panhandle. This storm also brought Wenatchee nearly all of it's precipitation for the whole month. It was the 11th driest March out of 48 years of record keeping. The first thunderstorms of the season occurred on the last day of the month in the Columbia Basin.

April- Similar to March, the first few days of April were cool and unsettled. Scattered light snow showers were observed mainly north and east of Spokane on the 2nd of the month. The first "warm spell" of the spring arrived shortly after this, as temperatures warmed into the lower 70s for the first time at many locations. As usual, these warm ups are short-lived and followed by a cool and wetter period. The cold front that swept through the area on the 9th brought a few thunderstorms as well as some gusty winds. The strongest winds observed were 54 mph near Vantage and 48 mph at Uniontown. As April came to a close it was becoming obvious that we were in for a dry spring. The 2-month total of 0.21" at Wenatchee was the 2nd driest March/April on record.

May- While better known for flowers and Mother's Day, May in the Inland Northwest is often filled with several wet, cloudy and cool days. It's actually the wettest month in Lewiston. But this year May was noteworthy for its sunny skies and mild temperatures. Instead of the typical swings between 80s one day and 50s the next, temperatures were generally in the 60s and 70s throughout the month. Similar to the two preceding months, May started out on a cool and wet note, then the weather quickly warmed with abundant sunshine. A mainly dry cold front moved through on the 12th, causing the development of a few dry thunderstorms near the Spokane area. One storm produced a wind gust to 51 mph at the Spokane Felts Field airport. But the cool temperatures only lasted a day or two as high pressure built into the area for more sunshine and warmth.

The first significant storm system of the season moved into the area by the end of May. A deep low pressure system moved onshore over northern Oregon. This set up a favorable pattern for Wenatchee to finally get some much needed rain. The 2-day total of 1.51" was the wettest two day rain event in May ever observed since airport records began in 1959. As the storm moved out of the area, a line of thunderstorms developed over northeast Washington on the 21st , and moved southward over the Spokane area. The Spokane Airport received 1.11" of rainfall from these storms. The cold temperatures resulted in snow over the mountains, with 6-10" of snow reported in the Cascades and Idaho mountains.

While the wet event in late May made up for the large precipitation deficit in many locations, the Lewiston area was still well below average at the end of the month. The 3-month total of 2.16 was just over half of their normal amount. This was the 7th driest spring on record for Lewiston, with records going all the way back to 1881. ☼ *Ronald Miller*

Spring Weather Statistics

Wenatchee Airport	Mar	Apr	May	Total
Avg High Temp	54.4	62.0	73.6	63.8
Departure from Norm	+1.9	-0.9	+2.1	+1.0
Avg Low Temp	35.2	40.7	48.3	41.3
Departure from Norm	+1.5	+0.8	+0.7	+1.0
Total Precip	0.16	0.05	1.82	2.03
Departure from Norm	-0.52	-0.42	+1.21	+0.27
Lewiston Airport	**Mar**	**Apr**	**May**	**Total**
Avg High Temp	58.4	63.0	73.6	65.0
Departure from Norm	+4.6	+1.4	+3.7	+3.2
Avg Low Temp	38.8	40.2	47.3	42.1
Departure from Norm	+3.2	-0.4	+0.4	+1.1
Total Precip	0.77	0.57	0.82	2.16
Departure from Norm	-0.35	-0.74	-0.74	-1.83
Spokane Airport	**Mar**	**Apr**	**May**	**Total**
Avg High Temp	51.5	57.1	68.5	59.1
Departure from Norm	+2.9	-0.4	+2.3	+1.6
Avg Low Temp	33.9	36.0	43.9	37.9
Departure from Norm	+3.5	+0.5	+1.3	+1.7
Total Precip	1.00	0.50	1.62	3.12
Departure from Norm	-0.53	-0.78	+0.02	-1.29

Summer Outlook

The NWS Climatic Prediction Center indicates that the Inland Northwest is in for a warm and dry summer. There is a good signal for warmer than normal temperatures and below normal precipitation for June, July and August.

Answer: The fall of 1996. Prior to that, limited radar data was used from the local FAA radar on Mica Peak!

Remember your Summer Spotter Checklist

Funnel Cloud or **Tornado**

Hail– pea size or larger

Strong Winds— 30 mph+ or damage

Flooding—of any kind

Reduced Visibility — under a mile due to rain, dust or fog, 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.

Outlook for Fire Season 2007

As is usually the case in the Inland Northwest, precipitation totals have fluctuated wildly from place to place through the winter and early spring. Most areas received abundant moisture in the Fall of 2006 and again in February 2007. Looking at water year totals since October 1st , the Inland Northwest is at or above normal for the year. While comparing precipitation amounts since January 1st , it shows most areas have received below normal precipitation with the exception along the Washington Cascades. The record setting high temperatures at the end of May and the first few days of June quickly changed to a cooler, wetter pattern. The upper level pattern is expected to remain progressive through much of June, reflecting in a series of cool, wet weather systems moving across the region. July and August should be typically warm and dry.

Current live fuel moistures are showing most areas well into the green up with many of the lower elevation areas showing this year's growth is already curing. Fuel moistures are expected to drop to near critical values by late June or early July depending on elevation. This should be a little ahead of normal.

The potential for a large active fire season depends upon the drying of fuels during the peak months of July and August combined with the frequency of lightning. All indications are that Pacific Northwest should see a normal to slightly above normal convective season. One to two episodes of dry lightning are possible, with the first episode typically around the middle of July. Large timber fires will be possible in eastern Washington, even at higher elevations after the middle of July. The Inland Northwest has the potential to experience a number of fire starts. ☼ *Bob Tobin*

*This vivid **Double Rainbow** or "twinned" rainbow was visible in the Spokane area on the afternoon of May 22, 2007. For more technical information on rainbows, see http://www.atoptics.co.uk/rainbows/twin1.htm* ☼ *Kerry Jones*

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Trivia: What year was Spokane's WSR-88D installed?