

Figures 1a and b: a) Departure from Normal Temperature (°F) and b) Percent of Normal Precipitation for September (source: HPRCC)

A warmer and drier than normal September kicked off fall, following a wetter and cooler than normal summer. September 2011 was the 3rd warmest and 12th driest on record, according to NCDC's climate at a glance. September is typically a transitional month in Oregon, from the warm and dry days of summer at the beginning of the month to cooler, cloudier days with an increased chance of precipitation toward the end of the month.

The above average temperatures in September were in part due to a heat wave that affected most of the state early in the month. Daily high temperatures remained above 90 °F in the Willamette Valley, approached 100 °F in the Rogue Valley and topped 100 °F in parts of Eastern Oregon. Both minimum and maximum temperatures were above normal for most of the month, providing an extra burst of warmth for those who felt shortchanged by the wet and cool start to the summer. Despite an average maximum temperature of 89.7 °F at Medford Rogue Valley Airport, which is 6.2°F above normal, the station did not top 100 °F in 2011, the first year that that this happened since 1989 and only the fifth time in station history. Medford has never broken 100 °F in October in its history.

Summer precipitation is important to help recharge streamflows and aid in wildfire suppression. The period from July to mid-late September was abnormally dry. Though the cool and wet spring delayed actual fire activity, the Oregon Department of Forestry said that the

conditions led to stimulated growth of grasses and brush, which act as fuel for wildfires. The dry and hot summer allowed the fires to burn, and several large fires borne from lightning strikes burned into September. A fire near Mt Hood, combined with the stagnant airmass as a result of the high pressure ridge over the region. A fall-like weather pattern appeared in the last week of September, bringing rain to the low elevations and some of the first fall reports of snow in the Oregon Cascades.

September 30 brought a close to the water year, and after last year's strong La Niña, it is unsurprising that water year totals were well above normal despite the absence of summer precipitation. La Niña conditions have returned and are expected to strengthen and persist into winter 2011-2012, according to NOAA. It is not unusual to see La Niña re-appear after a strong event, and it tilts the odds toward cool and wet, especially in western Oregon. "Wet" in the mountains typically means snow - and lots of it - usually welcome news to the ski community. Low elevation snow is always an option, but we can't accurately predict the where and when more than a few days out. We saw a few inches in the typically mild low elevation towns of Oregon last year, and there's always the possibility of more this year.

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Three-month outlook

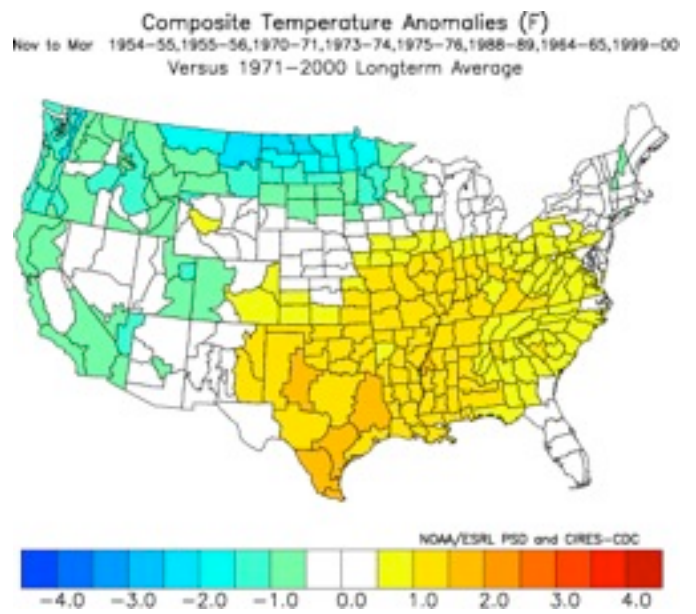
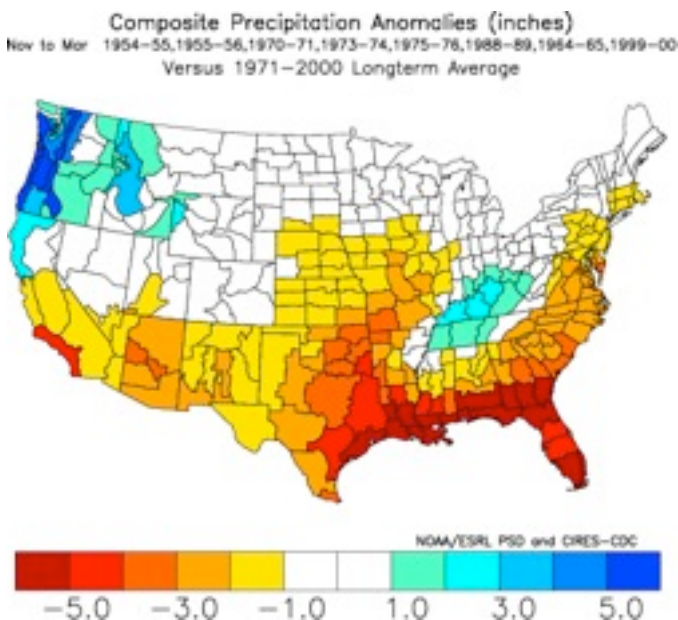


Figures 2a and b. Three-Month Outlook (October, November, December) for a) temperature and b) Precipitation for the Pacific Northwest from Climate Prediction Center/NOAA

NOAA's three month outlook from the Climate Prediction Center for the months of October, November, December reveals equal chances of above or below average temperatures across Oregon (figure 2a). In terms of precipitation for the same period, the greatest chance for above average precipitation is in western Oregon, with a slightly lesser chance of above average precipitation in central Oregon with equal chances of above or below average precipitation across extreme northeastern Oregon (figure 2b). The above average precipitation expected in western Oregon reflects La Niña. More on the return of La Niña below.

La Niña returns

La Niña conditions returned in September 2011, and NOAA expects it to gradually strengthen and continue through the winter. This event follows last year's strong La Niña event, likely responsible for above average snowpack and a cool and wet spring in the Pacific Northwest. It's not unusual to have back-to-back La Niña events, and this one is not as strong as it was in September of 2010. According to NOAA's Climate Prediction Center, a weaker La Niña has occurred in 3 of the 5 multi-year La Niñas since 1950, so little can be said about the potential strength of this event based on the multi-year event alone. NCEP models predict a gradual weakening to a weak to moderate strength event. The pictures below show precipitation (left) and temperature right anomalies from November - March.



Figures 3 a and b - composite precipitation and temperature anomalies vs the 1971-2000 normals for the entire US, from NOAA/ESRL

September Station Records

note: due to differing practices in issuing Record Event Reports (RERs) by the NWS offices that cover Oregon as well as space constraints, we will only report records broken or tied at Automated Surface Observation Systems (ASOS) stations here. For a full listing of station records that includes COOP stations that immediately report to NCDC, please check out this link: <http://www.ncdc.noaa.gov/extremes/records/>

Minimum temperatures

Station	Date	New Record	Old Record (year)	Records began
Madras 2N	1-Sep	37	38 (2010)	1952
Madras 2N	3-Sep	36 (TIED)	36 (1980)	1952
Pendleton ARPT	3-Sep	41 (TIED)	41 (2000)	1934
Madras 2N	4-Sep	36	37 (2000)	1952

Maximum temperatures

Station	Date	New Record	Old Record (year)	Records began
Meacham	8-Sep	88	85 (1969)	1929
Redmond	9-Sep	94	93 (1993)	1941
Troutdale	10-Sep	92 (TIED)	92 (1997)	1948
The Dalles	10-Sep	100	98 (1990)	1929
Redmond	11-Sep	95	93 (1948)	1941
The Dalles	11-Sep	102	95 (1996)	1929
Meacham	12-Sep	88	87 (1948)	1929
Pendleton ARPT	12-Sep	94 (TIED)	94 (1959)	1934
Redmond	23-Sep	94	92 (1994)	1948
Burns	23-Sep	90	89 (1987)	1939
Meacham	24-Sep	90	88 (1952)	1929
Redmond	24-Sep	94	93 (1952)	1941
Burns	24-Sep	91	90 (2009)	1939

Precipitation (liquid water equivalent)

Station	Date	New Record	Old Record (year)	Records began
Astoria	26-Sep	1.18 in	.82 in (1948)	1949

Table 1. Individual daily station records for selected ASOS stations around Oregon. Data available at NCDC US Records and NWS Office Record Event Reports

Water year 2010-2011

Station	Water Year 2011 (in.)	avg annual precip (1981-2010)	departure from normal
Portland	44.74	36.10	8.64
Astoria	81.43	68.36	13.07
Eugene	39.75	45.06	-5.31
Salem	46.06	39.31	6.75
Medford	21.93	18.97	2.96
North Bend	52.58	63.38	-10.8
Roseburg	38.63	32.76	5.87
Baker City	12.73	11.00	1.73
Burns	15.3	10.85	4.45
Ontario	12.06	9.69	2.37
Rome	13.94	8.28	5.66
Pendleton	16.65	12.30	4.35
Meacham	46.48	32.4	14.08
Redmond	9.81	8.63	1.18

The water year runs from October 1 - September 30. 2011 water year totals were mostly above normal across the state - with the exception of Eugene and North Bend, which were 5.31" and 10.8" below normal, respectively. The graph below shows Portland's accumulated precipitation (dark green) against the normal (bright green). Accumulated precipitation was above normal for the entire year after mid-October of last year. Portland, along with other stations, reached their normal accumulated water year total by the end of March, only halfway through the actual water year. An especially wet spring helped boost totals further above normal.

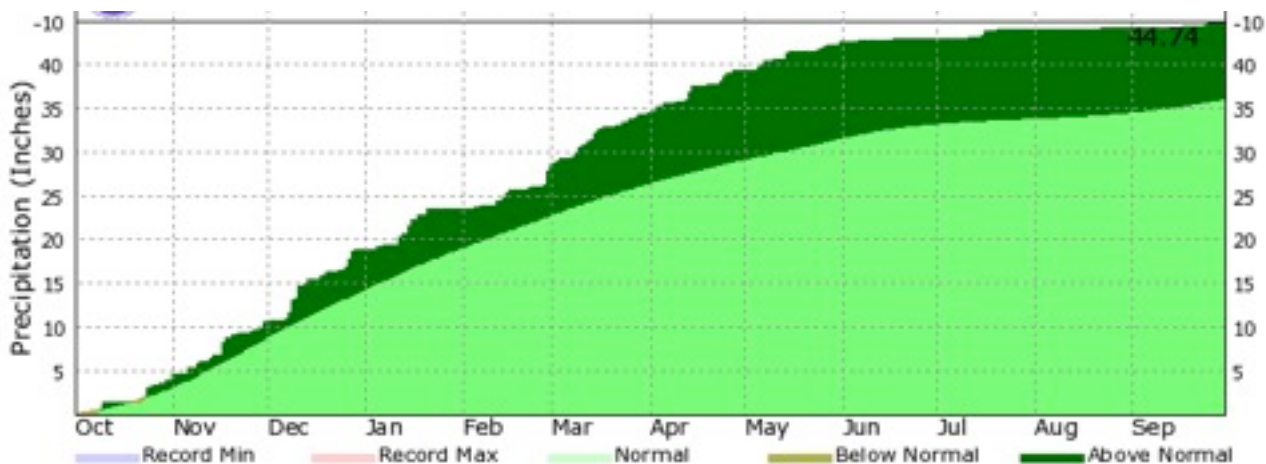


Figure 4. Portland accumulated precipitation for Water Year 2011 against the station normal