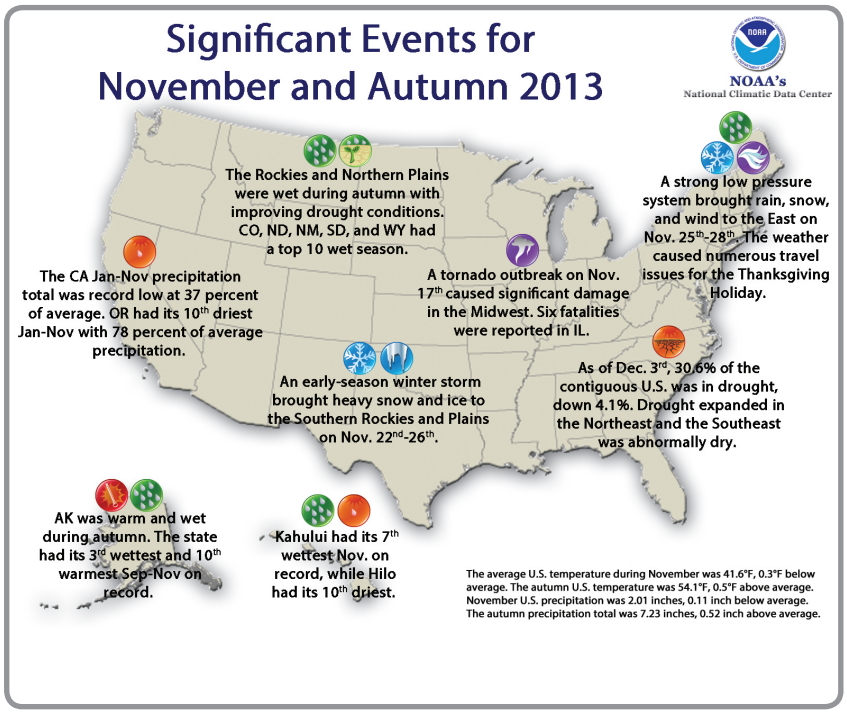
Quarterly Climate Impacts and Outlook

Alaska Region

December 2013

National - *Significant Events for September–November 2013*



Severe Weather Impacts Alaska this Autumn

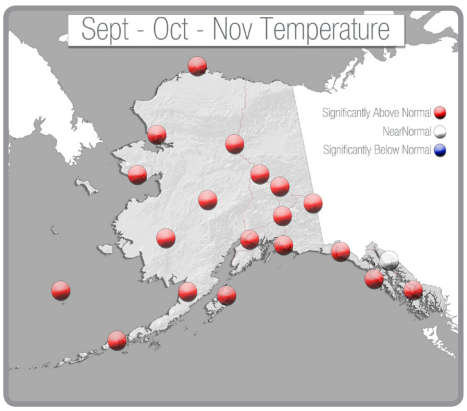
High-impact weather repeatedly struck Alaska in autumn 2013, with damaging winds, heavy rains, flooding, heavy snow, and even lack of rain having a significant impact on Alaskans.

A strong Bering Sea storm produced high winds over the eastern Aleutians on September 20. Winds gusted to 90 mph at the Dutch Harbor Airport and forced fishing vessels to seek shelter. The winds broke the anchor line of the Chaos, forcing the vessel ashore. The crew abandoned ship and were rescued by Coast Guard personnel on September 21.

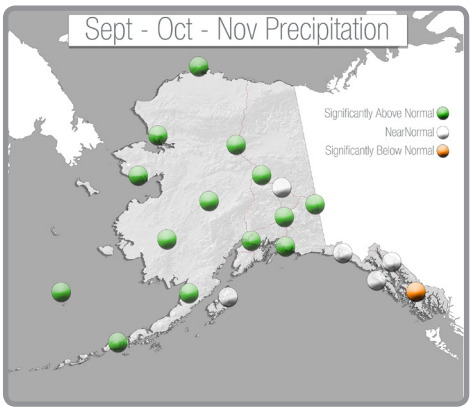
Regional - *Climate Overview for September–November 2013*

Temperature and Precipitation Anomalies

Alaska Statewide Temperature Anomalies
September–November 2013



Alaska Statewide Precipitation Anomalies
September–November 2013



October was the warmest on record for Alaska as whole, and the delayed snow cover and river ice formation hindered the start of winter subsistence activities over most of the Interior. Amazingly, a smoldering wildfire near Delta Junction grew by more than 300 acres just before Halloween due to a lack of snow cover and strong winds. Such fire growth so late in the autumn in the Interior is unprecedented. The persistently mild weather kept sea ice from developing in the Chukchi Sea near Alaska until well into November, and open water was seen at Barrow as late as November 10. Typical sea ice development is not usually this late.

Heavy rains during September and October from a series of storms following very similar tracks produced flooding in parts of the Kenai Peninsula Borough. Especially hard hit was the Seward area, where multiple washouts were caused by the 30 inches of rain that fell during these two months. Those storms also produced several bouts of strong winds in parts of the Anchorage area, at times gusting past 80 mph, toppling trees, and knocking out power to some neighborhoods.

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Regional Highlight - *Seasonal Anomalies*

Alaska Seasonal and Subseasonal Anomalies

Season: **September-November 2013**

	Temperature (Standardized Anomaly)				Precipitation (1981-2010 **Percentile Rank**) Note: 0% means drier & 100% means wetter than any in 1981-2010			
	September	October	November	SON	September	October	November	SON
Barrow	-0.2	1.1	0.9	0.9	92%	93%	92%	96%
Bettles	-0.4	2.1	-0.2	1.0	58%	100%	98%	99%
Fairbanks	-0.3	2.2	0.5	1.3	90%	36%	100%	96%
Northway	0.0	2.1	0.5	1.4	77%	77%	99%	84%
Nome	-0.9	1.8	0.4	0.7	43%	99%	80%	85%
Bethel	-0.4	1.9	0.5	1.1	49%	99%	86%	91%
Saint Paul	-0.2	1.4	0.7	0.8	57%	68%	74%	68%
Cold Bay	1.0	3.5	1.4	2.5	54%	78%	40%	74%
McGrath	-0.7	2.3	1.1	1.8	87%	100%	54%	96%
Denali NP	-0.2	1.9	0.2	1.1	77%	82%	95%	92%
Gulkana	0.6	2.3	0.0	1.3	88%	49%	98%	92%
Anchorage	-0.3	2.0	-0.1	0.9	95%	87%	84%	100%
Kodiak	0.5	1.7	0.8	1.2	50%	68%	20%	50%
Yakutat	1.5	1.7	-0.3	0.7	40%	67%	17%	39%
Juneau	1.4	1.5	-0.6	0.2	35%	72%	61%	57%
Annette	1.4	0.8	0.0	0.7	38%	11%	61%	17%

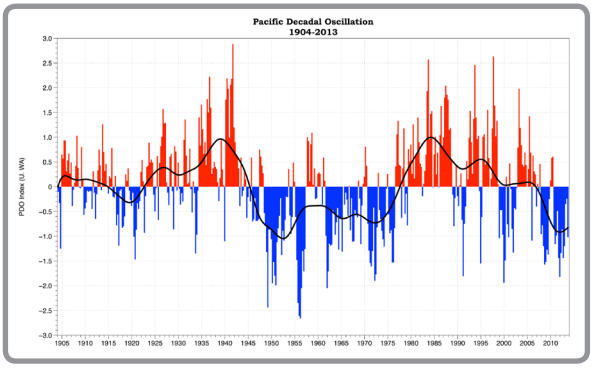
Color fills show temperatures (red, blue) and precipitation (green, orange) that are significantly above or below normal.

This chart shows the monthly and seasonal temperatures and precipitation for some long term climate station compared to the 1981-2010 normal. Temperatures have been adjusted to reflect a common scale that accounts for differences in variation between inland and coastal locations. Precipitation is ranked against values observed in the 1981-2010 period.

Autumn Storms

The most damaging storms were a series of fast moving low pressure systems that tracked across the Bering Sea and western Alaska in November. Many communities in western Alaska suffered significant coastal flooding damage from these storms. Worst hit was Kotlik, where both fresh and wastewater facilities were seriously damaged and a few houses severely damaged. Unalakleet also sustained damage to its water system and had severe erosion along the beach. Multiple communities in the region were declared State Disaster zones. The same storm complex brought freezing rain and snow followed by several hours of unusually strong winds to the Fairbanks area, which left nearly a third of Golden Valley Electric Cooperative's 31,000 customers without power as trees fell onto power lines. Several thousand remained without power two days later as temperatures dropped below zero following the storm. Driving conditions in the Interior will remain difficult for months, as the resulting ice cover will not clear from many secondary roads until spring. The Anchorage and Mat-Su Valleys were hit by a major ice storm in late November that caused many auto accidents, including school buses sliding off the road. While snow was not heavy in most areas, Valdez, Alaska's snowiest town, saw the earliest two-foot snowfall in more than 50 years when 24.4 inches of snow piled up on November 10.

Regional Outlook - *for Winter 2013*



The Pacific Decadal Oscillation Index is a measure of how sea surface temperature differ from normal in the north Pacific Ocean. Overall winter temperatures in Alaska, especially south of the Brooks Range, tend to reflect the PDO Index, trending toward above normal when the index is positive and below normal when the index is negative. The forecast for winter 2013-14 is for a negative index value.

Southeast Alaska was spared the worst of the stormy weather, but in the southern Southeast, rainfall was far below normal during autumn. As a result, a number of hydroelectric projects saw reservoir levels unusually low, and if the water level dropped too low, switching to the expensive alternative of oil-fired electric generation would be required.

Alaska Region Partners

Alaska Center for Climate Assessment and Policy
www.accap.uaf.edu

Alaska Climate Research Center
http://climate.gi.alaska.edu/

Alaska Climate Science Center
http://www.doi.gov/csc/alaska/index.cfmg

Cryosphere Today (University of Illinois),
http://arctic.atmos.uiuc.edu/cryosphere/

NOAA/NWS Weather Forecast Offices in Fairbanks, Anchorage and Juneau

NOAA/NESDIS/NCDC
www.ncdc.noaa.gov

Scenarios Network for Alaska and Arctic Planning
www.snap.uaf.edu

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