

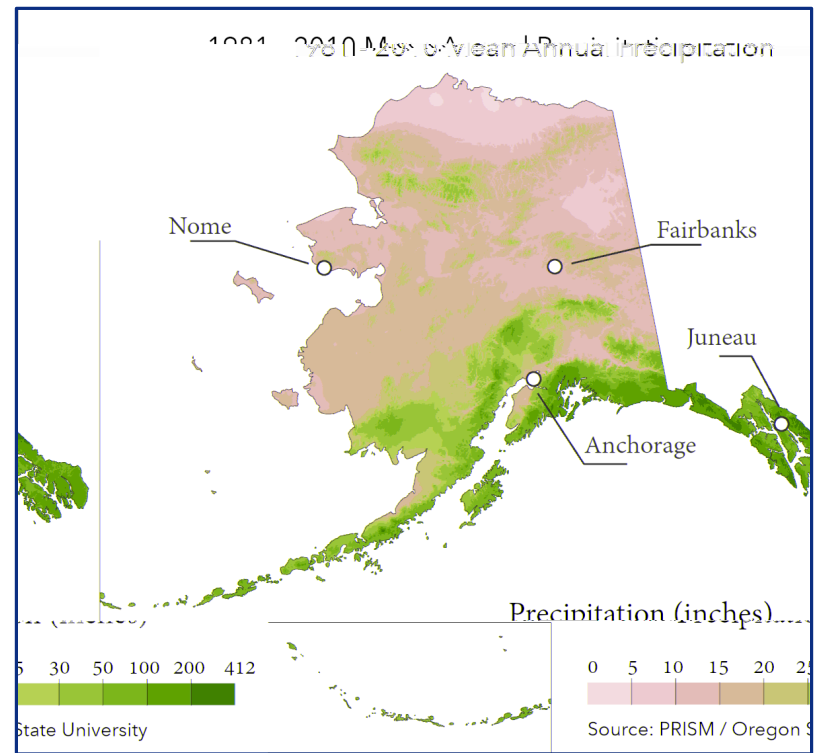
# Condition Monitoring Reporting Guide: Alaska

## Regional Background

Alaska is home to an incredibly diverse climate. The Southern portion through the Panhandle and the Aleutian Islands sports an oceanic climate typified by heavy rainfall and extratropical storms, where average monthly precipitation is greatest in the fall. The remainder of the state is host to mainly a subarctic or tundra climate, with long winters and short, cool summers. Average monthly precipitation is greatest in the summer here, with a rain shadow from the various mountains which results in the central portions of Alaska receiving less precipitation than coastal areas. The Brooks Range further restricts precipitation to the arctic regions. While the term drought was not historically used in Alaska's rainforest area, it is now an accepted climate term due to the severe drought event in 2019.

## Reporting Reminders

- Use “Severe” categories sparingly: overuse of these labels can make it difficult for researchers to identify the hardest hit areas.
- Sometimes, minor events may still have major human impacts, or vice versa. Do not worry if your precipitation measurements seem to conflict with the severity reflected in your reports: differentiating between magnitude and human impact is valuable to researchers and decision makers!
- While heat and drought often go together, be careful to note that impacts of heat (e.g., plants shedding leaves) are not necessarily indicative of drought conditions.
- Droughts do not end instantly. Rain after long droughts may mean *less dry* conditions, but not necessarily a reset to “Near Normal” conditions. Think *long term*.
- In addition to rain measurements, notes on a storm's duration, power outages, road closures, and other such impacts are helpful.

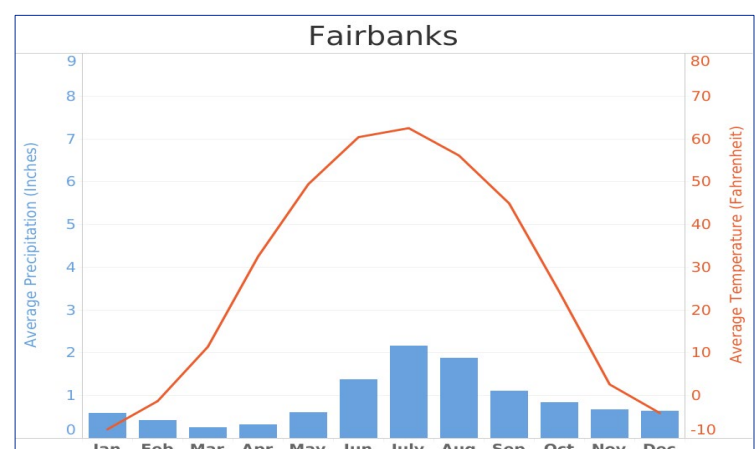
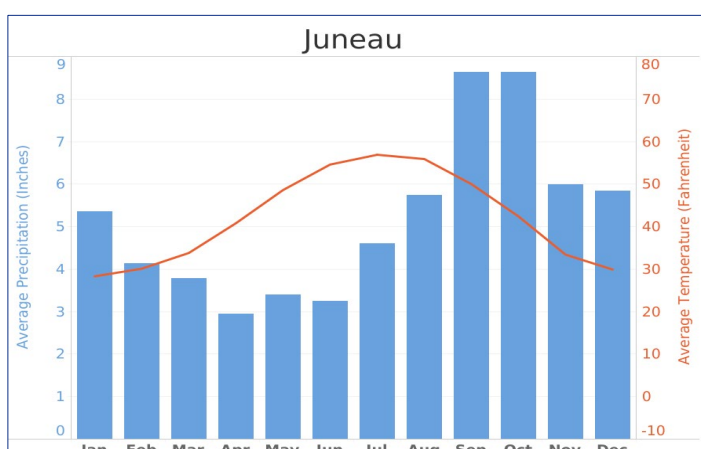
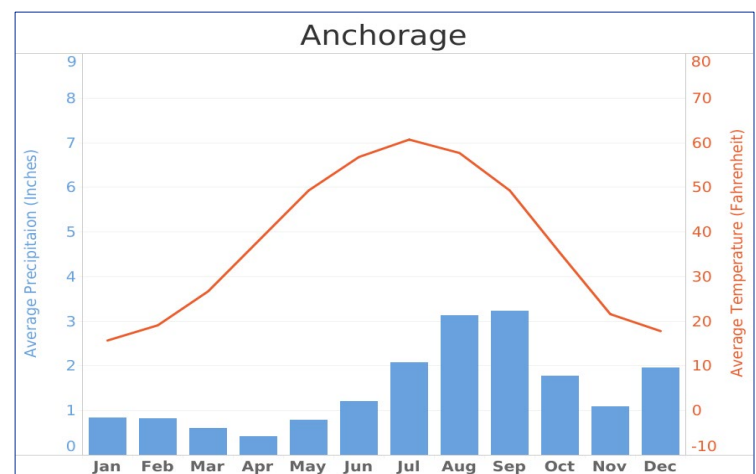
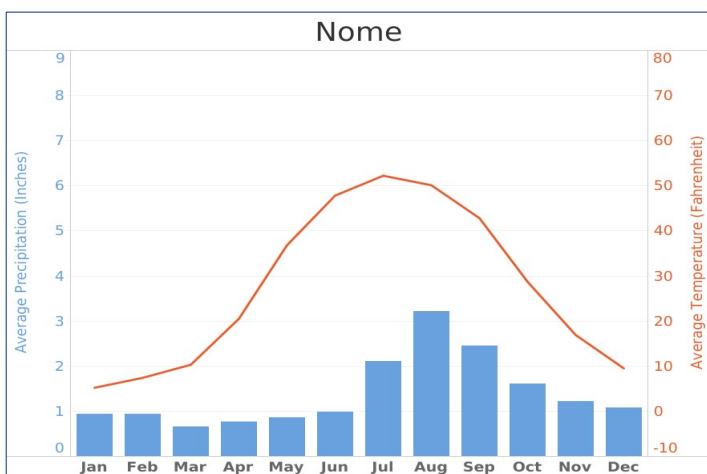


## Average Monthly Climate Data

These climate charts represent normal monthly precipitation and temperature at select locations. Pick a city near you and use the data as a baseline for your “near normal” conditions. Explore these resources for more climate and drought information:

- [National Drought Mitigation Center - Alaska](#)
- [NOAA National Centers for Environmental Information](#)
- [Western Regional Climate Center – Alaska Summary](#)
- [Alaska Climate Research Center](#)

Data Source: NOAA National Centers for Environmental Information



# What to Look For

The following tables provide examples of the types of conditions you might observe during different wet or dry periods. **These lists are designed as an aid.** The first table shows the condition monitoring scale bar categories and the types of conditions that correspond to those categories. The second table organizes different types of conditions and impacts by sectors and areas of interest. Be sure to note any other observations that you think may relate to dry or wet conditions.

SEVERELY WET	MODERATELY WET	MILDLY WET	NEAR NORMAL	MILDLY DRY	MODERATELY DRY	SEVERELY DRY
<ul style="list-style-type: none"> <li>• Use this category sparingly</li> <li>• Wet conditions have persisted for several weeks</li> <li>• Major flooding</li> <li>• Soil is saturated</li> </ul>	<ul style="list-style-type: none"> <li>• Wet conditions have persisted for a few weeks, or there has been a major rainfall event</li> <li>• Standing water and minor flooding</li> <li>• Soil is very damp</li> </ul>	<ul style="list-style-type: none"> <li>• Frequent precipitation for several days</li> <li>• Standing water is common</li> <li>• Soil moisture is above normal</li> </ul>	<ul style="list-style-type: none"> <li>• Observed conditions normal for this time of year</li> <li>• This should be your default entry</li> </ul>	<ul style="list-style-type: none"> <li>• Dry conditions have persisted for a few weeks</li> <li>• Soil is somewhat dry</li> </ul>	<ul style="list-style-type: none"> <li>• Dry conditions have persisted for several weeks</li> <li>• Lakes and rivers are low</li> <li>• Water use restrictions start</li> <li>• Soil is very dry</li> </ul>	<ul style="list-style-type: none"> <li>• Use this category sparingly</li> <li>• Dry conditions have persisted for months</li> <li>• Soil is completely dry</li> <li>• Water is scarce</li> <li>• State of Emergency</li> </ul>

	WET	DRY
Agriculture	Crops and grazing pastures will likely be green and in healthy conditions. With moderately wet conditions, the need for individual irrigation may drop off noticeably. Berries will likely yield larger and more plentiful fruit, as long as temperature conditions are also conducive to growth. Too much precipitation during the growing season may inhibit plant growth and production.	Without enough rainfall and streamflow, crops may develop late, show stunted growth, or yield smaller harvests. Individual irrigation systems in the interior may be strained. The forestry industry may be significantly impacted by prolonged dry conditions. Water is used for both irrigation and electricity in many municipalities, so agriculture may suffer due to the need for electricity.
Business	Rainy and muddy conditions may delay construction and infrastructure projects. Flooding or snow may result in school closures or lost work hours, particularly in rural areas where alternative routes may not be available and back road conditions are too slippery and dangerous.	Fish hatcheries and other water-dependent businesses may struggle with low water-levels. Low rainfall reduces stream flow and dissolved oxygen amounts, creating concern for these sectors. Energy industries such as hydropower and natural gas may struggle in dry conditions, causing citizens to rely on diesel generation, which is expensive and has negative air quality and health implications.
Energy	Hydropower output may benefit from increased snowmelt. Periods of heavy rain or snow may create the risk of power outages due to wind, ice, or falling limbs.	Alaska's demand for energy is among the 10 lowest in the nation due to its small population, but its per capita energy consumption is the fourth highest in the US thanks to the harsh winters. In 2018, Alaska's hydropower accounted for 27% of its electricity generation. This is especially crucial to the Alaska panhandle, where hydropower is especially important. In dry conditions, hydropower production would be impacted.
Fire	A saturated landscape causes fire danger declarations to be at or near minimum. Fire crews will often wait for wet conditions to perform prescribed burns to minimize the danger of unwanted spreading.	Wildfires will be larger and more common, as reflected in reports from the Interagency Alaska Wildland Fire Coordinating Group. Drought conditions both heighten the risk of wildfire ignition and promote fast spreading of ignited fires due to lack of moisture. Heat fuels fires, so hot and dry conditions are especially dangerous.
Plants & Wildlife	Rainy seasons may improve conditions for aquatic wildlife. Increased growth of mosses can also be expected. Heavier-than-usual snowfall at high elevations may push animal populations farther down the mountain to forage, potentially resulting in more encounters with humans.	Plants and wildlife will experience greater stress and may show signs through shedding leaves or being sparsely populated. When conditions are hot and dry, salmon and other important fisheries found in shallow waters may experience greater die-off as the fish encounter less oxygenated waters. Moose won't be easy to spot, mosquito populations will decline, and most other wildlife populations will be unseen or unheard.
Relief & Response	Restrictions on water use and outdoor burning are likely to be lifted or relaxed as weather shifts from dry to wet. Highway safety measures are possible on routes likely to be affected by fog, flooding, ice, or landslides.	Governments and other agencies may issue statements encouraging voluntary water and energy conservation. These will often become mandatory if drought worsens. Regulations on outdoor burning and the use of fireworks are common, even at low levels of drought. Rangelands under the Conservation Reserve Program may be opened for emergency grazing.
Safety & Health	Heavy rain or prolonged moisture conditions can cause the ground to be saturated with pools of water and mud. This can lead to difficulty driving on back roads, causing travel and commuting dangers. These conditions can also support higher mosquito populations, depending on the season.	The Alaskan tundra may experience dust storms in the fall, when river levels are at their lowest. The shallowing of wetlands may increase the presence of stagnant water and contribute to higher mosquito levels. Pollen and diminished air quality may exacerbate allergies and asthma symptoms. Thawing permafrost can potentially increase landslide activity by creating unstable slopes. Adverse effects to crops and subsistence materials may affect food security and human well-being.
Tourism & Recreation	Relatively snowy seasons often work to the benefit of winter tourism seasons. Recreation industries such as skiing depend heavily on snowfall, not necessarily "wet" conditions. While parts of the region are characterized by frequent rain, extended wet periods may discourage hiking, camping, and other outdoor activities.	Ski seasons may be delayed or postponed, and there is likely to be decreased turnout to resorts. Boating and fishing may be harmed by warmer, shallower waters. Fireworks may be banned during dry conditions for fear of wildfire ignition.
Water	Rivers and reservoirs may be at normal or above-normal levels. Wetter years may experience greater alpine snowpack that lasts later into the season. Mountain streams fed by snowmelt may be at higher levels throughout the spring.	Lower-than-average snowpack amounts can result in struggling stream and river levels. Ponds, small streams, and wells may dry completely in severe conditions. Water quality will typically decrease due to increased temperature and decreased volume. Heat-induced permafrost thawing increases water infiltration, which prevents runoff and surface water recharging. Household rainwater catchment systems will struggle to adequately provide for the home.