

Montana Climate Normals README

Description of Normals Data

This directory contains climate normals for the state of Montana for the 1991 - 2020 reference period. All normals are derived from gridMET climate data. The base gridMET units and coordinate system (WGS 84) are maintained to minimize any errors introduced by unit conversion or reprojection. The units and variable names associated with each of the sub-directories are listed in the table below:

Abbreviation	Long Name	Units
erc	Energy Release Component	NFDRS fire danger index
pr	Precipitation	mm
rmax	Maximum Relative Humidity	%
rmin	Minimum Relative Humidity	%
sph	Specific Humidity	kg/kg
srad	Solar Radiation	W/m ²
tmmn	Minimum Temperature	K
tmmx	Maximum Temperature	K
vpd	Vapor Pressure Deficit	kPa
vs	Wind Speed	m/s

Within each subdirectory, files adhere to a naming convention of {time}__{statistic}.tif, where time is the time period of the normal (e.g., annual, jan, feb, etc.) and statistic is the climate normal summary statistic (e.g., mean, median, etc). Within each directory is another subdirectory titled quantiles/{time}__{n}th.tif, where n is a quantile value for a given variable. All .tif files are stored as Cloud Optimized GeoTIFFs (cog) to enhance rendering and display on the web.

For more details about how the climate normals were created, please visit the information tab on the Montana Climate Atlas. If you have any other questions about the data, please reach out to Colin Brust at the Montana Climate Office (colin.brust@mso.umt.edu).