

## Climate Data for Alberta Metadata

Climate variables were derived from an interpolation of historical weather station data using the parameter-elevation regressions on independent slopes model (PRISM) method (Daly et al. 2002). Monthly climate normals for the 1961-1990 baseline period were downscaled to a 500-m resolution using resampled 1:50,000 scale elevation data from CanMatrix ([http://ftp.geogratis.gc.ca/pub/nrcan\\_rncan/raster/canmatrix2/](http://ftp.geogratis.gc.ca/pub/nrcan_rncan/raster/canmatrix2/)) and the ClimateWNA software package, available at <http://tinyurl.com/ClimateWNA>, based on methodology described in Hamann et al. (2013). Derived bioclimatic indices were developed from monthly variables according to Wang et al. (2011):

Variable	Definition
ppt_wt	winter (Dec/Jan/Feb) precipitation
ppt_sm	summer (Jun/Jul/Aug) precipitation
pas	precipitation as snow
nffd	number of frost-free days
mwmnt	mean warm month (Jul) temperature
msp	mean summer (May-Sep) precipitation
mcmt	mean cold month (Jan) temperature
mat	mean annual temperature
map	mean annual precipitation
ffp	frost-free period
bffp	beginning of frost-free period
effp	end of frost-free period
cmd	climatic moisture deficit
eref	potential evapotranspiration
emt	extreme minimum temperature

Daly, C., W. P. Gibson, G. H. Taylor, G. L. Johnson, and P. Pasteris. 2002. A knowledge-based approach to the statistical mapping of climate. *Climate Research* 22:99-113.

Hamann, A., Wang, T., Spittlehouse, D.L. & Murdock, T.Q. 2013. A comprehensive, high-resolution database of historical and projected climate surfaces for western North America. *Bulletin of the American Meteorological Society* 94:1307–1309.

Wang, T., A. Hamann, D. L. Spittlehouse, and T. Q. Murdock. 2011. ClimateWNA—High-Resolution Spatial Climate Data for Western North America. *Journal of Applied Meteorology and Climatology* 51:16-29.