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Sunshine and Cloud Cover

Many aspects of the environment and climate, including temperature, plant growth, and melting of ice and snow, depend on the amount of sunshine, which derives from the length of day and the amount of cloud cover.

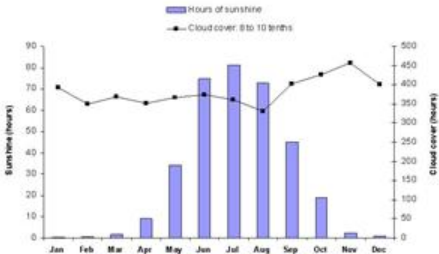
Because of the high latitude of the Wood Buffalo region (Fort McMurray is at 56.65°N), day length is highly seasonal:

Sunrise, sunset, and day length at the summer and winter solstices.

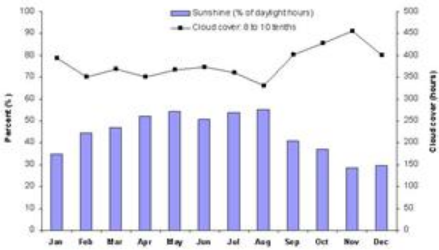
| Location       | Summer Solstice |          |            | Winter Solstice |         |            |
|----------------|-----------------|----------|------------|-----------------|---------|------------|
|                | Sunrise         | Sunset   | Day Length | Sunrise         | Sunset  | Day Length |
| Fort Chipewyan | 4:13 am         | 10:39 pm | 18:26 h    | 9:15 am         | 3:32 pm | 6:17 h     |
| Fort McMurray  | 4:32 am         | 10:22 pm | 17:50 h    | 9:00 am         | 3:48 pm | 6:48 h     |
| Edmonton       | 5:03 am         | 10:08 pm | 17:05 h    | 8:49 am         | 4:16 pm | 7:27 h     |
| Calgary        | 5:21 am         | 9:55 pm  | 16:34 h    | 8:37 am         | 4:33 pm | 7:36 h     |

Data shown are for June 20, 2008 (summer solstice) and December 21, 2008 (winter solstice). Source: Old Farmer's Almanac 2008.

In Fort McMurray, mean hours of sunshine are highest in summer, when day length is longest and heavy cloud cover (80% to 100% of the sky) is relatively infrequent (see the top graph to the right). Cloud cover is highest during fall and winter (September to January); hours of sunshine as a percentage of possible daylight hours is thus lowest during these months (see the bottom graph to the right).



Mean total hours of bright sunshine and cloud cover, Fort McMurray, 1971 to 2000  
Source: Environment Canada  
(http://climate.weatheroffice.ec.gc.ca/climate\_normals).  
( click to enlarge )



Sunshine (as a mean percent of possible daylight hours) and mean cloud cover, Fort McMurray, 1971 to 2000.  
Source: Environment Canada  
(http://climate.weatheroffice.ec.gc.ca/climate\_normals).  
( click to enlarge )

Next page: Extreme Climatic Events

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