

Maine's Climate

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Maine's moist climate: Strongly variable seasonal temperatures with even precipitation

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Maine's climate is striking for two characteristics – the sharp contrast between coastal and inland (especially northern) weather and the evenness of precipitation throughout the year. Together, these patterns lead to the highly diverse climates and natural landscapes that make the state so interesting to residents and visitors alike.

For practical reasons, the National Weather Service divides Maine into three zones: Coastal, Southern Interior, and Northern. Owing to the moderating influence of the Gulf of Maine, the narrow Coastal zone has less extreme change in temperature from season to season than the more continental Southern Interior and Northern regions of the state. Still, all Mainers are familiar with large differences in seasons, with pleasant summers and “real” winter with lots of cold and snow in most places.

Over the period of instrumental records from Maine (1895 - present), the annual mean temperature in the Northern region is 39.3F; the Southern Interior is 43.2F, and the Coastal Zone is 44.3F. Of course that doesn't sound like much contrast given the extreme winters typical of the north, but those are correct numbers, and those differences lead to quite different vegetation and natural landscapes. The cooling of the Gulf of Maine on coastal summers produces a large contrast with the warmer Southern Interior/Northern regions of the state. (Summer visitors to the coastal areas have long taken advantage of this natural “air conditioning.”)

Total annual precipitation is quite similar throughout Maine. The annual average for the Northern region is 41.1 inches; the Southern Interior, 43.1 inches; and the Coastal zone, 44.3 inches. But the most unusual thing about Maine's precipitation regime is its low seasonal variability. (Of course this is a statistical statement, because we all know that periods such as the summer of 2009 have seemingly endless stretches of rain, while other times seem to be without rain for too long.) But in general, all parts of Maine can expect to get 3-4 inches of precipitation in every month of the year. In fact, the tendency for even precipitation throughout the year is one of the reasons that moisture-loving forests and wetlands are so productive in the state. By contrast, most states and most other places in the world have highly seasonal precipitation. Even places that have greater average precipitation than Maine nevertheless have strong seasonality in deposition of moisture – extended dry periods offset by heavy monsoons, for example.

Even with the evenness of the average monthly precipitation and the coastal-inland contrasts in temperature, weather events happen all the time that are well outside the statistical means. For example, although average daily summer temperatures in Southern Coastal Maine are typically in the 60's, the record high is 103F. And at the other extreme, a site in northwestern Aroostook County recorded -50F in January of 2009 – an all-time low record.

And Mainers know very well that the similar annual precipitation totals around the state and throughout the year occur in different forms. Snowfall in Caribou averages 112 inches, compared with 70 inches in Portland. Of course rainfall values are different in the complementary way.

More information about Maine's climate can be found at the Main State Climate Office's webpage: <http://umaine.edu/maineclimatenews/>