

Future climate and the Haines Index as simulated by the NCAR CCSM3.0 general circulation model

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Abstract:

Future climate change will not just affect surface weather conditions and fuel characteristics. It will also affect above-ground atmospheric properties such as stability and moisture, known to play an important role in the development of large wildfires. This study uses simulations from the NCAR CCSM3.0 general circulation model to derive a future climatology for 2000-2099 of the above-ground atmosphere's potential contribution of dry, unstable air to large or erratic plume-dominated wildfires as expressed by the Haines Index. The future climatology covers North America, and all changes are presented as deviations in median values from a 20-year control period. Control period simulations are validated against Haines Index values calculated from NCEP/NCAR reanalysis fields.