



Paleoclimate Implications for Climate Sensitivity and Human-Made Climate Change

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Climate sensitivity depends upon the initial climate state, the time allowed for climate response, and the nature of the climate forcing. Paleoclimate data, interpreted with care, provide a rich source of information that helps us assess climate sensitivity and potential human-made climate effects. We infer that Earth has warmed in the past few decades to a level above the Holocene range. We also conclude that Earth in the warmest interglacial periods of the past million years was less than 1°C warmer than in the Holocene. Polar warmth in these interglacials and in the Pliocene, rather than indicating that a substantial cushion remains between today's climate and dangerous warming, suggests that Earth is poised to experience strong amplifying polar feedbacks in response to moderate global warming. Thus goals to limit human-made warming to 2°C are not sufficient – they are prescriptions for disaster.