

The Climate Threat and Conservation Planning

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Abstract

The prospect of 21st century climate change poses a threat to natural ecosystems and their biodiversity and presents particularly difficult challenges for their conservation. Model-based climate and ecological change scenarios provide key insights as to the nature of this threat. Crucial among these are (1) that probable climate changes are of a magnitude and character to be significant for populations, communities, and landscapes, and (2) the high level of uncertainty in such scenarios makes it inherently difficult to project changes at regional and finer scales. Consequently, conservation planning cannot rely heavily on such scenarios – instead a different approach must be sought for on-the-ground decision making. An alternate strategy is to focus on reducing the vulnerability of conservation elements to climate change and making decisions that deal with uncertainty in a smart way. This calls for a comprehensive evaluation of what we know about the sensitivity of target organisms and landscapes to climate (e.g., in terms of resistance and resilience), about synergism with other threats, and what can be done realistically to enhance the viability of species and integrity of ecosystems in light of the climate threat.