Attitudes and preferences for climate change adaptation: A discrete choice analysis

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Abstract

Global climate change is transforming human and natural systems rapidly and in unprecedented ways, especially in arctic and subarctic regions of the world. In the region surrounding Denali National Park and Preserve in Alaska, climate change is primarily impacting weather patterns, hydrology, and vegetation in ways that are directly experienced by residents. Decisions about the future of this landscape will likely involve difficult tradeoffs that emphasize how crucial it is to incorporate multiple stakeholder perspectives in decision-making processes. We therefore conducted a discrete choice experiment to understand how residents of Interior Alaska were visioning for their preferred futures involving changes to four landscape characteristics. From a regional questionnaire administered to 3,000 residents (n = 303), we evaluated preferences for moose populations, fire management strategies, off-season tourism, and cost. Findings indicated that all four of these attributes significantly influenced residents' choices. The likelihood residents would select a hypothetical future scenario increased with higher moose populations, more acres of forest managed for fire, slower growth rates of off-season tourism rates, and fewer costs. Further, the strength of preferences for future conditions differed in accordance with attitudes toward these features. Our study extends previous research by providing empirical evidence of residents' preferences for the future of a region that is increasingly threatened by climate change. We also contribute to a growing body of environmental social science research that integrates the psychology of decision-making with econometric valuation of tradeoffs to better understand the underlying forces that influence value ascribed to goods and services. These findings also aid the decisions being made about landscape change on public lands by providing insight on how to integrate preferences of residents into adaptative management at a regional scale.