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Reassessing Wilderness Stewardship in an Era of Rapid Climate Change

Efforts to plan for and respond to rapid climatic change are still in their infancy, and solutions for wilderness management are unlikely to come easily or quickly. A *Park Science* article by USGS ecologist Nathan Stephenson and USDA Forest Service paleoecologist Constance Millar emphasizes that revisiting the historic concept of “wilderness” serves as a starting point.

The Wilderness Act of 1964 frames wilderness as areas that are both “untrammeled” by human intervention and that retain their natural, primeval character. But in the face of rapid climatic and other global changes, wilderness stewards will inevitably face a trade-off: maintaining aspects of natural, primeval character (such as native species diversity) will require increasing management intervention — trammeling.

Confronting this tradeoff, managers can consider four broad classes of management actions: **restraint** through no action; enhancing **resilience** to assist the ecosystem’s ability to recover from stresses and disturbances; reducing threats to ensure short-term **resistance** to change; and long-term **realignment**, in which wilderness stewards facilitate transitions to conditions better aligned with a new climate.

Stephenson and Millar offer the following planning considerations to help managers decide which actions to implement to guide their wilderness areas through uncertainty and changes: **1)** The unprecedented nature of ongoing environmental changes means that **the past may no longer provide a useful target for the future.** **2)** The unpredictable nature of future changes means that **familiar planning approaches may become ineffective.** **3)** Fortunately, managers can instead **use planning approaches that consider a broad array of possible futures**, such as scenario planning. **4)** Rather than the traditional approach of defining desired future conditions, managers may benefit from **defining**

Management Implications

- Anthropogenic climatic change is forcing a reassessment of traditional wilderness stewardship approaches in light of inevitable trade-offs.
- Possible strategic responses to climatic change fall into four broad classes: restraint (do nothing), resilience and resistance (near-term ways of buying time), and realignment (long-term adaptation).
- Planning will be made challenging by the unprecedented and unpredictable nature of future changes; fortunately, robust planning approaches, like scenario planning, are available.

THIS BRIEF REFERS TO:

Stephenson, NL, CI Millar. 2012. Climate Change: Wilderness’s Greatest Challenge. *Park Science* 28(3): 34-38.

<http://www.werc.usgs.gov/seki>

<http://www.werc.usgs.gov/ProductDetails.aspx?ID=4643>

undesired future conditions — those to avoid.

5) Given the inevitability of surprises, it will also be useful to **plan appropriate responses before abrupt changes occur.** **6)** A mixed portfolio of actions can help **hedge your bets** in the face of unprecedented and unpredictable changes. **7)** Finally, certain decisions are likely to become easier to make if managers **broaden the geographic scope of planning.**



Ben Young Landis/USGS

Wilderness managers may need to broaden the geographic scope of planning to anticipate species distribution shifts, such as those modelled for Joshua trees.