1. Record Nr. UNINA9910254116103321

Autore	Hansen Andrew James
Titolo	Climate Change in Wildlands : Pioneering Approaches to Science and Management / / by Andrew James Hansen, William B. Monahan, David M. Theobald, S. Thomas Olliff
Pubbl/distr/stampa	Washington, DC : , : Island Press/Center for Resource Economics : , : Imprint : Island Press, , 2016
ISBN	1-61091-712-X 1-61091-713-8
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (XII, 391 p. 2 illus.)
Disciplina	333.72
Soggetti	Nature conservation Conservation biology Ecology Geotechnical engineering Nature Conservation Conservation Biology/Ecology Geotechnical Engineering & Applied Earth Sciences United States
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Foreword -- Acknowledgements -- 1. Introduction: Why Study Climate Change in Mountains?- PART I: Approaches for Climate Adaptation Planning -- 2. Linking Climate Science and Management -- 3. Challenges and Approaches for Integrating Climate Science into Federal Land Management -- PART II: Climate and Land Use Change -- 4. Historical and Projected Climates to Support Climate Adaptation across the Northern Rocky Mountains -- 5. Foundational Analyses of Historical and Projected Climates as a Basis for Climate Change Exposure and Adaptation Potential across the Appalachian Landscape Conservation Cooperative -- 6. Assessing Vulnerability to Land Use and Climate Change at Landscape Scales: Landforms and Physiographic Diversity as Coarse-Filter Targets Representing Species and Processes -- PART III: Ecological Consequences and Vulnerabilities -- 7. Quantifying Impacts

of Climate Change on Ecosystem Processes in the Great Northern and Appalachian Landscape Conservation Cooperatives -- 8. Modeling Potential Impacts of Climate Change on Vegetation for National Parks in the Eastern United States -- 9. Potential Impacts of Climate Change on Tree Species and Biome Types in the United States Northern Rocky Mountains -- 10. Past, Present, and Future Climate Shapes the Vegetation Communities of the Greater Yellowstone Ecosystem across Elevation Gradients -- 11. Assessing the Vulnerability of Tree Species to Climate Change in the Appalachian Landscape Conservation Cooperative -- 12. Likely Responses of Native and Invasive Salmonid Fishes to Climate Change in the Rocky and Appalachian Mountains -- PART IV. Managing under Climate Change -- 13. Opportunities, Challenges, Approaches to Achieving Climate-Smart Adaptation -- 14. Perspectives on Responding to Climate Change at Rocky Mountain National Park -- 15. Case Study: Whitebark Pine in Greater Yellowstone Ecosystem -- 16. Assessing Success in Sustaining Wildland Ecosystems: Insights from Greater Yellowstone -- 17. Conclusion -- Contributors -- Index.

Sommario/riassunto

This volume is a collaboration between scientists and managers, providing a science-derived framework and common-sense approaches for keeping parks and protected areas healthy on a rapidly changing planet. Scientists have been warning for years that human activity is heating up the planet and climate change is under way. In the past century, global temperatures have risen an average of 1.3 degrees Fahrenheit, a trend that is expected to only accelerate. But public sentiment has taken a long time to catch up, and we are only just beginning to acknowledge the serious effects this will have on all life on Earth. The federal government is crafting broad-scale strategies to protect wildland ecosystems from the worst effects of climate change. The challenge now is to get the latest science into the hands of resource managers entrusted with protecting water, plants, fish and wildlife, tribal lands, and cultural heritage sites in wildlands. Teaming with NASA and the Department of the Interior, ecologist Andrew James Hansen, along with his team of scientists and managers, set out to understand how climate and land use changes affect montane landscapes of the Rockies and the Appalachians, and how these findings can be applied to wildlands elsewhere. They examine changes over the past century as well as expected future change, assess the vulnerability of species and ecosystems to these changes, and provide new, collaborative management approaches to mitigate expected impacts. A series of case studies showcases how managers might tackle such wide-ranging problems as the effects of warming streams on cold-water fish in Great Smoky Mountain National Park and dying white-bark pine stands in the Greater Yellowstone area. A surprising finding is that species and ecosystems vary dramatically in vulnerability to climate change. While many will suffer severe effects, others may actually benefit from projected changes.