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of a Dynamic General Vegetation Model, MC1; ABSTRACT; 4.1. RATIONALE FOR BUILDING DYNAMIC GLOBAL VEGETATION MODELS; 4.2. GENERAL CONCEPT USED TO BUILD DYNAMIC GLOBAL VEGETATION MODELS; 4.3. GENERAL CONSIDERATIONS ON BIOGEOGRAPHY; 4.4. GENERAL CONSIDERATIONS ON BIOGEOCHEMISTRY; 4.5. GENERAL CONSIDERATIONS ON DISTURBANCE 4.6. DGVM CALIBRATION AND VALIDATION; 4.7. SCALING ISSUES: VEGETATION CHANGE, WILDFIRES, AND COARSE CLIMATE GRIDS; 4.8. CONCLUSIONS-CURRENT STATUS AND FUTURE PROSPECTS; ACKNOWLEDGMENTS; REFERENCES; Part II Examples of Projects Using MC1 at Various Spatial Scales; Chapter 5 A Brief Description of the VINCERA Project; Vulnerability and Impacts of North American Forests to Climate Change: Ecosystem Responses and Adaptation; ABSTRACT; 5.1. INTRODUCTION; 5.2. METHODS; 5.3. RESULTS; 5.4. DISCUSSION; 5.5. CONCLUSIONS; REFERENCES Chapter 6 Continent-wide Simulations of a Dynamic Global Vegetation Model over the United States and Canada under Nine AR4 Future Scenarios ABSTRACT; 6.1. INTRODUCTION; 6.2. METHODS; 6.3. RESULTS; 6.4. DISCUSSION; ACKNOWLEDGMENTS; REFERENCES; Chapter 7 Drivers of Future Ecosystem Change in the US Pacific Northwest: The Role of Climate, Fire, and Nitrogen; ABSTRACT; 7.1. INTRODUCTION; 7.2. METHODS; 7.3. RESULTS; 7.4. DISCUSSION; ACKNOWLEDGMENTS; REFERENCES; Chapter 8 Application of MC1 to Wind Cave National Park: Lessons from a Small-Scale Study; ABSTRACT; 8.1. INTRODUCTION; 8.2. METHODS; 8.3. RESULTS 8.4. DISCUSSION; ACKNOWLEDGMENTS; REFERENCES; Chapter 9 Simulating Effects of Climate and Vegetation Change on Distributions of Martens and Fishers in the Sierra Nevada, California, Using Maxent and MC1; ABSTRACT; 9.1. INTRODUCTION; 9.2. METHODS; 9.3. RESULTS; 9.4. DISCUSSION; ACKNOWLEDGMENTS; REFERENCES; Part III Packaging MC1 Results to Increase Its Usability by Managers; Chapter 10 Using a Dynamic Global Vegetation Model to Help Inform Management Decisions; ABSTRACT; 10.1. INTRODUCTION; 10.2. DEVELOPING CLIMATE-INFORMED STSMs; 10.3. cSTSM MODEL APPLICATION IN CENTRAL OREGON 10.4. cSTSM MODEL APPLICATION IN THE WASHINGTON COAST RANGE

Sommario/riassunto

MC1 is a widely used dynamic global vegetation model (DGVM) that has been used to simulate potential vegetation shifts in National Parks (NPs) such as Wind Cave NP and Yosemite NP, across various states such as California and Alaska, over the entire continent of North America, and even over the entire globe, under a variety of climate change scenarios. Global Vegetation Dynamics: Concepts and Applications in the MC1 model describes the creation in the mid-1990's, architecture, uses, and limitations of the MC1 DGVM that is being used by an increasing number of research groups around the world
