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Nota di contenuto	Cover; Title Page; Copyright; Contents; Acknowledgements; About the companion website; Chapter 1 Where Are We and How Did We Arrive Here?; 1.1 Why this book?; 1.2 Ecosystems in crisis; 1.3 Relevance of the past; 1.4 Forecasting the future; 1.5 Chapter details and logic; 1.6 For whom is the book intended?; 1.7 Four key questions and the links to policy; Chapter 2 Modelling; 2.1 Introduction; 2.1.1 How did these models develop?; 2.1.2 Climate data, climate and earth system models; 2.2 Background ecosystem, vegetation and species models; 2.2.1 Vegetation models; 2.2.2 Species-level modelling 2.2.3 Equilibrium physiologically-based modelling of species 2.2.4 Statistical equilibrium modelling of species; 2.2.5 Some uncertainties and assumptions that apply generally to bioclimatic models; 2.2.6 Models of intermediate complexity; 2.2.7 Biogeochemistry integrated into equilibrium biome models; 2.2.8 Integrating biome and NPP models; 2.3 Dynamic modelling; 2.3.1 Local to landscape scales: forest gap modelling; 2.3.2 Regional to global scales: dynamic global vegetation modelling; 2.4 Integrating models; 2.4.1 Earth system models; 2.4.2 Integrated assessment models

2.4.3 Agent-based models  
2.5 Further reading; Chapter 3 Data; 3.1 Introduction; 3.2 Which data are relevant?; 3.3 Ecosystem dynamics: direct observation; 3.3.1 Phenology; 3.3.2 Biological monitoring; 3.4 Ecosystem dynamics: indirect measurement or proxy data; 3.4.1 Historical ecology; 3.4.2 Palaeoecology; 3.4.3 Pollen analysis; 3.4.4 Charcoal and fire scars; 3.5 Drivers of ecosystem dynamics; 3.5.1 Palaeoclimates and greenhouse gases; 3.5.2 Human impact on ecosystem dynamics; 3.6 Databases; 3.7 Gaps in available data and approaches

Chapter 4 Climate Change and Millennial Ecosystem Dynamics: A Complex Relationship  
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4.7 Climate and megafaunal extinction  
4.7.1 Recent range shifts; 4.8 So how important is climate change for future millennial ecosystem dynamics?; Chapter 5 The Role of Episodic Events in Millennial Ecosystem Dynamics: Where the Wild Strawberries Grow; 5.1 Introduction; 5.2 Fire; 5.2.1 Past to present fire; 5.2.2 Present to future fire; 5.2.3 Modelling fire; 5.2.4 Modelling ignition; 5.2.5 Modelling fire spread; 5.2.6 Data-model comparison; 5.3 Forest pathogens during the Holocene; 5.4 Hurricanes and wind damage; 5.5 Conclusion  
Chapter 6 The Impact of Past and Future Human Exploitation on Terrestrial Ecosystem Dynamics

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Sommario/riassunto

Ecosystem Dynamics focuses on long-term terrestrial ecosystems and their changing relationships with human societies. The unique aspect of this text is the long-time scale under consideration as data and insights from the last 10,000 years are used to place present-day ecosystem status into a temporal perspective

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