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Autore	Scott Andrew C
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Nota di contenuto	Fire on Earth: An Introduction; Contents; Preface; Acknowledgements; About the Authors; About the Companion Website; Part One: Fire in the Earth System; Preface to part one; Chapter 1 What is fire?; 1.1 How fire starts and initially spreads; 1.2 Lightning and other ignition sources; 1.3 The charring process; 1.4 Pyrolysis products; 1.4.1 Soot; 1.4.2 Volatile gases and compounds; 1.5 Fire types; 1.6 Peat fires; 1.7 Fire effects on soils; 1.8 Post-fire erosion-deposition; 1.9 Fire and vegetation; 1.10 Fire and climate; 1.11 Fire triangles; 1.12 Fire return intervals 1.13 How we study fire: satellites 1.14 Modelling fire occurrence; 1.15 Climate forcing; 1.16 Scales of fire occurrence; Further reading; Chapter 2: Fire in the fossil record: recognition; 2.1 Fire proxies: fire scars and charcoal; 2.2 The problem of nomenclature: black carbon, char, charcoal, soot and elemental carbon; 2.3 How we study charcoal: microscopical and chemical techniques; 2.4 Charcoal as an information-rich source; 2.5 Charcoal reflectance and temperature; 2.6 Uses of charcoal; 2.7 Fire intensity/severity; 2.8 Deep time studies

2.9 Pre-requisite for fire: fuel - the evolution of plants  
2.10 Charcoal in sedimentary systems; Further reading; Chapter 3: Fire in the fossil record: earth system processes; 3.1 Fire and oxygen; 3.2 Fire feedbacks; 3.3 Systems diagrams; 3.4 Charcoal as proxy for atmospheric oxygen; 3.5 Burning experiments - fire spread; 3.6 Fire and the terrestrial system; Further reading; Chapter 4: The geological history of fire in deep time: 420 million years to 2 million years ago; 4.1 Periods of high and low fire, and implications; 4.2 The first fires; 4.3 The rise of fire  
4.4 Fire in the high-oxygen Paleozoic world  
4.5 Collapse of fire systems; 4.6 Fire at the Triassic-Jurassic boundary; 4.7 Jurassic variation; 4.8 Cretaceous fires; 4.9 Fire at the Cretaceous-Paleogene (K-P or K-T) boundary; 4.10 Paleocene fires; 4.11 Fires across the Paleocene-Eocene thermal maximum (PETM); 4.12 Dampening of fire systems; 4.13 Rise of the grass-fire cycle; Further reading; Chapter 5: The geological history of fire - the last two million years; 5.1 Problems of Quaternary fire history; 5.2 The Paleofire working group: techniques and analysis; 5.3 Fire and climate cycles  
5.4 Fire and humans: the fossil evidence  
5.5 Fire and the industrial society; Further reading; References for part one; Part Two: Biology of fire; Preface to part two; Chapter 6 Pyrogeography - temporal and spatial patterns of fire; 6.1 Fire and life; 6.2 Global climate, vegetation patterns and fire; 6.3 Pyrogeography; 6.4 Fire and the control of biome boundaries; 6.5 The fire regime concept; 6.6 Fire ecology; 6.7 Conclusion; Further reading; Chapter 7: Plants and fire; 7.1 Introduction; 7.2 Fire and plant traits; 7.2.1 Post-burn recovery: vegetative re-growth and storage tissue  
7.2.2 Post-burn recovery: seedling recruitment

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## Sommario/riassunto

Earth is the only planet known to have fire. The reason is both simple and profound: fire exists because Earth is the only planet to possess life as we know it. Fire is an expression of life on Earth and an index of life's history. Few processes are as integral, unique, or ancient. Fire on Earth puts fire in its rightful place as an integral part of the study of geology, biology, human history, physics, and global chemistry. Fire is ubiquitous in various forms throughout Earth, and belongs as part of formal inquiries about our world. In recent years fire literature has multiplied exp

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