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Autore	Pouyat Richard V
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Nota di contenuto	Executive Summary -- Overview and Purposes -- Key Message -- Chapter 1. State Of Forest And Rangeland Soils Research In The United States (Dan Binkley, Daniel D. Richter, Richard V. Pouyat, and Linda Geiser) -- Chapter 2. Soil Carbon (Erin Berryman, Jeff Hatten, Deborah S. Page-Dumroese, Kate Heckman, David D'Amore, Jennifer Puttere, Michael SanClements, Stephanie Connolly, Charles H. (Hobie) Perry, and Grant Domke) -- Chapter 3. Soils And Water (Mary Beth Adams, Vince Archer, Scott Bailey, Kevin McGuire, Chelcy Miniat, Dan Neary, Toby O' Geen, Pete Robichaud, and Mike Strobel) -- Chapter 4. Biogeochemical Cycling In Forest And Rangeland Soils Of The United States (Lindsey E. Rustad, Jennifer Knoepp, Daniel D. Richter, and Andrew Scott) -- Chapter 5. Forest And Rangeland Soil Biodiversity (Stephanie A. Yarwood, Elizabeth Bach, Matt Busse, Jane E. Smith, Mac A. Callaham, Jr., Chih-Han Chang, Taniya Roy Chowdhury, and Steven D. Warren) --

Chapter 6. Wetland And Hydric Soils (Carl Trettin, RandallKolka, Anne Marsh, Sheel Bansal, Eric Lilleskov, Patrick Megonigal, Marla Stelk, Graeme Lockaby, David D'Amore, Richard MacKenzie, Brian Tangen, Rodney Chimner, and James Gries) -- Chapter 7. Urban Soils (Richard Pouyat, Susan Day, Sally Brown, Kirsten Schwarz, Richard Shaw, Katalin Szlavecz, Tara Trammell, and Ian Yesilonis) -- Chapter 8. Soil Management And Restoration (Mary Williams, Cara Farr, Deborah Page-Dumroese, Stephanie Connolly, and Eunice Padley) -- Chapter 9. Soil Mapping, Monitoring, And Assessment (Mark J. Kimsey, Larry E. Laing, Sarah Anderson, Jeff Bruggink, Steve Campbell, David Diamond, Grant Domke, James Gries, Scott Holub, Greg Nowacki, Deborah Page-Dumroese, Charles H. (Hobie) Perry, Lindsey Rustad, Kyle Stephens, and Robert Vaughan) -- Chapter 10. Challenges And Opportunities (Linda Geiser, Toral Patel-Weynand, Anne Marsh, Korena Mafune, and Daniel Vogt) -- Appendix A: Regional Summaries -- Appendix B: Soils Networks And Resources -- Appendix C: Summary Of Research Questions.

Sommario/riassunto

This open access book synthesizes leading-edge science and management information about forest and rangeland soils of the United States. It offers ways to better understand changing conditions and their impacts on soils, and explores directions that positively affect the future of forest and rangeland soil health. This book outlines soil processes and identifies the research needed to manage forest and rangeland soils in the United States. Chapters give an overview of the state of forest and rangeland soils research in the Nation, including multi-decadal programs (chapter 1), then summarizes various human-caused and natural impacts and their effects on soil carbon, hydrology, biogeochemistry, and biological diversity (chapters 2–5). Other chapters look at the effects of changing conditions on forest soils in wetland and urban settings (chapters 6–7). Impacts include: climate change, severe wildfires, invasive species, pests and diseases, pollution, and land use change. Chapter8 considers approaches to maintaining or regaining forest and rangeland soil health in the face of these varied impacts. Mapping, monitoring, and data sharing are discussed in chapter 9 as ways to leverage scientific and human resources to address soil health at scales from the landscape to the individual parcel (monitoring networks, data sharing Web sites, and educational soils-centered programs are tabulated in appendix B). Chapter 10 highlights opportunities for deepening our understanding of soils and for sustaining long-term ecosystem health and appendix C summarizes research needs. Nine regional summaries (appendix A) offer a more detailed look at forest and rangeland soils in the United States and its Affiliates.