

# TABLE OF CONTENTS

---

|                       |      |
|-----------------------|------|
| PREFACE .....         | V    |
| ACKNOWLEDGMENTS ..... | VII  |
| INTRODUCTION .....    | IX   |
| PERMISSIONS .....     | XI   |
| TABLE OF CASES .....  | XXXI |

## PART I. INTRODUCTION TO NATURAL RESOURCES LAW

|  |          |
|--|----------|
| <b>Chapter 1. Economics and Natural Resources Law.....</b>     | <b>3</b> |
| I. Introduction .....  | 4        |
| A. Scarcity: The First Premise of Both Law and Economics ..... | 5        |
| B. The Inevitability of Costly Choices Under Scarcity .....    | 6        |
| C. Alternative Mechanisms for Allocating Scarce Resources..... | 6        |
| II. The Market System of Resource Allocation.....              | 7        |
| A. Supply and Demand .....                                     | 7        |
| 1. The Law of Demand.....                                      | 7        |
| 2. The Law of Supply .....                                     | 9        |
| B. How Markets Function in Theory .....                        | 10       |
| 1. Market Equilibrium: Where Supply and Demand Meet.....       | 10       |
| 2. Shifts in Supply, Demand, and Market Equilibria .....       | 11       |
| III. Efficiency.....   | 15       |
| A. Productive Efficiency.....                                  | 16       |
| B. Allocative Efficiency .....                                 | 16       |
| 1. Pareto Efficiency.....                                      | 16       |
| 2. Kaldor-Hicks (“Potential Pareto”) Efficiency .....          | 17       |
| IV. Market Failures.....                                       | 19       |
| A. Lack of Property Rights .....                               | 19       |
| The Tragedy of the Commons .....                               | 20       |
| B. Externalities, Public Goods, and Congestible Goods .....    | 23       |
| C. Transaction Costs .....                                     | 28       |
| D. Imperfect Competition .....                                 | 28       |
| E. Equity Considerations.....                                  | 29       |
| V. Government Intervention to Correct Market Failures .....    | 29       |
| A. Lack of Property Rights .....                               | 30       |
| B. Negative Externalities .....                                | 31       |
| 1. Common Law and Statutory Liability for Externalities.....   | 31       |
| 2. Regulatory Responses to Market Failure.....                 | 33       |
| 3. Tax-Based Responses to Market Failure .....                 | 39       |
| C. Public Goods.....   | 41       |
| D. Transaction Costs.....                                      | 42       |
| E. Non-Efficiency-Related Government Interventions.....        | 42       |

---

|  |  |           |
|--|--|-----------|
| VI.  | Cost-Benefit Analysis.....   | 43        |
| A.   | Contingent Valuation.....  | 45        |
| B.   | Travel-Cost Valuation .....  | 45        |
| C.   | Hedonic Pricing .....  | 46        |
| D.   | Discounting to Present Value .....   | 48        |
| E.   | Cost-Benefit Analysis in Natural Resource Policy? .....  | 50        |
|  | Is There a Role for Benefit-Cost Analysis in Environmental,<br>Health, and Safety Regulation? .....    | 51        |
| VII.   | Extra-Governmental Institutions for Averting or Reducing Market<br>Failures (and Their Failures) ..... | 58        |
| A.   | Government Failure .....   | 58        |
| B.   | Extra-Governmental Institutions.....   | 60        |
| 1.   | Social Norms .....   | 60        |
|  | Order Without Law: How Neighbors Settle Disputes .....   | 60        |
| 2.   | Common Property Regimes.....   | 64        |
|  | Governing the Commons: The Evolution of Institutions for<br>Collective Action .....                    | 65        |
| VIII.  | The Importance of Comparative Institutional Analysis.....  | 69        |
| IX.  | Do the Problems Confronting the Earth's Natural Resources Require<br>a New "Economics"? .....          | 70        |
| <br><b>Chapter 2. Constitutional and Administrative Themes in Natural<br/>Resource Law .....</b> |  | <b>73</b> |
| I.   | Who's Got the Power?.....  | 73        |
| A.   | Constitutional Authority over Natural Resources and Public<br>Lands.....                               | 74        |
|  | United States v. Pierre Grimaud.....   | 75        |
| B.   | State Authority and Federalism.....  | 77        |
|  | Nuclear Energy Institute, Inc. v. Environmental Protection<br>Agency .....                             | 78        |
| II.  | Jurisdiction: Getting Through the Courthouse Door .....  | 82        |
| A.   | Parties: Constitutional Standing.....  | 83        |
|  | Manuel Lujan, Jr., Secretary of the Interior v. Defenders of<br>Wildlife, et al.....                   | 83        |
| B.   | Parties: Zone of Interests .....   | 91        |
|  | Brad Bennett, et al. v. Michael Spear, et al.....  | 92        |
| C.   | Timing: Final Agency Action and Exhaustion.....  | 94        |
| D.   | Timing: Ripeness and Mootness .....  | 96        |
|  | Ohio Forestry Association, Inc. v. Sierra Club et al.....  | 97        |
| III.   | Now What? Judicial Review of Agency Action .....   | 101       |
| A.   | Scope of Review: The Administrative Record .....   | 102       |
| B.   | Standard of Review .....   | 102       |
| 1.   | The Arbitrary and Capricious Standard of Review .....  | 103       |
| 2.   | "Facial" Challenges: Statutory Interpretation and Chevron<br>Deference.....                            | 104       |
|  | Mineral Policy Center v. Norton and National Mining<br>Association .....                               | 104       |

---

|  |  |            |
|--|--|------------|
| C.   | Review of Agency Delays or Failure to Act.....                                     | 108        |
|  | Norton v. Southern Utah Wilderness Alliance.....                                   | 109        |
| IV.  | Citizens' Suits .....  | 113        |
| <b>Chapter 3. Environmental Decision-Making: NEPA.....</b> |  | <b>117</b> |
| I.   | Setting the Stage.....   | 118        |
| II.  | Administration and Enforcement.....  | 120        |
| A.   | Process-Forcing, Not Action-Forcing .....  | 120        |
|  | Mayo v. Reynolds.....  | 122        |
| B.   | The Council on Environmental Quality and the Environmental Protection Agency ..... | 126        |
| C.   | Judicial Review.....   | 126        |
| 1.   | Authority to Review NEPA Cases and Standard of Review .....                        | 126        |
| 2.   | Standing and NEPA's Zone of Interests.....   | 128        |
| 3.   | Injunctive Relief.....   | 129        |
| III.   | Threshold Requirements.....  | 131        |
| A.   | Is There an Agency? .....  | 132        |
| B.   | Is There a Proposal for Action?.....   | 133        |
| C.   | Is It a "Major" Federal Action? .....  | 135        |
| D.   | Does the Action Affect the "Environment"? .....                                    | 139        |
| E.   | Is the Environmental Impact "Significant"? .....                                   | 140        |
| F.   | The Environmental Assessment (EA) .....  | 142        |
| IV.  | The Adequacy of the EIS .....  | 146        |
| A.   | The Format and Contents of the EIS .....   | 146        |
| B.   | Alternatives .....   | 148        |
| C.   | Effects.....   | 151        |
| 1.   | Direct, Indirect, and Cumulative Effects of Agency Action.....                     | 151        |
|  | Sierra Club v. United States Dep't of Energy.....                                  | 156        |
| 2.   | Segmentation .....   | 161        |
|  | Natural Resources Defense Council v. U.S. Nuclear Regulatory Commission.....       | 163        |
| 3.   | Programmatic EISs and Tiering.....   | 165        |
| D.   | Consideration of Public Comments .....   | 166        |
| V.   | New Information and a Supplemental EIS .....                                       | 167        |
| VI.  | Exceptions from NEPA's Obligations.....  | 168        |
| A.   | Categorical Exclusions .....   | 168        |
| B.   | Emergencies.....   | 171        |
| C.   | Functional Equivalency and Related Exceptions .....                                | 172        |
| VII.   | NEPA in Special Contexts .....   | 175        |
| A.   | Proposals for Legislation.....   | 175        |
| B.   | National Security.....   | 176        |
| C.   | Environmental Justice .....  | 177        |
| D.   | Climate Change .....   | 177        |
| E.   | Extraterritorial Application.....  | 180        |
| F.   | Determinations of NEPA Adequacy (DNAs).....  | 181        |

---

|   |     |
|---|-----|
| VIII. NEPA's Progeny: The Environmental Policy Acts of States and Other Nations ..... | 182 |
| IX. NEPA's Future .....   | 183 |

**PART II. HISTORY OF NATURAL RESOURCES LAW**

|  |            |
|--|------------|
| <b>Chapter 4. Four Troubled Eras of Natural Resources and Environmental Law.....</b>                                   | <b>189</b> |
| I. Era One—Resource Use.....   | 189        |
| II. Era Two—Conservation.....  | 193        |
| III. Era Three—Preservation.....   | 197        |
| IV. Era Four—Protection.....   | 199        |
| <b>Chapter 5. History, Development, and Continued Ownership of Public Lands .....</b>                                  | <b>205</b> |
| I. The American Land Base.....   | 206        |
| II. The Historical Foundation of Ownership: Federal Acquisition and Disposition of Property in the United States ..... | 208        |
| A. Artificial Property Boundaries and Fragmentation.....   | 209        |
| B. Acquisition of Land from European Powers and Native Nations .....   | 210        |
| Johnson v. McIntosh.....   | 212        |
| C. Tribal Lands and Reserved Rights.....   | 215        |
| 1. The Treaty Process .....  | 215        |
| 2. Tribal Reserved Rights.....   | 217        |
| D. The Creation of States.....   | 219        |
| 1. State Land Grants .....   | 220        |
| 2. The Equal Footing Doctrine.....   | 222        |
| E. Disposition of Federal Property to Individuals and Corporations .....   | 225        |
| 1. Grants to Miners.....   | 225        |
| 2. Grants to Railroads .....   | 226        |
| 3. The Allotment Act (Dawes Act) of 1884 .....   | 229        |
| F. Sorting out Ownership Complexities .....  | 230        |
| 1. Modern Federal Ownership, Land Exchanges, and Sales .....   | 230        |
| 2. RS 2477 Rights of Way .....   | 232        |
| III. The Federal Lands Management Structure .....  | 235        |
| A. The Land Management Agencies .....  | 235        |
| B. The Statutory Framework of Public Lands Law: An Overview ....   | 239        |
| C. State and Private Rights to Federal Lands and Resources? .....  | 244        |
| IV. The State Lands Management Structure .....   | 246        |

**PART III. MANAGEMENT AND DEVELOPMENT OF NATURAL RESOURCES**

|                                    |            |
|------------------------------------|------------|
| <b>Chapter 6. Rangelands .....</b> | <b>253</b> |
| I. America's Range Lands.....      | 253        |

---

|                                |  |            |
|--------------------------------|--|------------|
| II.                            | Federal Rangeland Management .....   | 256        |
| A.                             | The Statutory Framework for BLM Rangeland Management .....   | 257        |
| B.                             | Grazing Permits .....  | 263        |
| C.                             | President Clinton's Rangeland Reform .....   | 267        |
| D.                             | Post-Rangeland Reform .....  | 269        |
| E.                             | Wild Horse and Burro Management in the American West.....  | 272        |
|                                | American Wild Horse Preservation Campaign v. Jewell.....   | 274        |
| F.                             | Environmental Issues Surrounding Grazing.....  | 280        |
|                                | From Old-Growth Forests to Old-Growth Grasslands: Managing<br>Rangelands for Structure and Function..... | 280        |
| G.                             | Use of Former Grazing Lands for Renewable Energy .....   | 284        |
| III.                           | Grazing on State Public Lands.....   | 286        |
| IV.                            | Ranching to Preserve Western Open Spaces.....  | 288        |
|                                | Cow-Free Crowd Ignores Science, Sprawl .....   | 289        |
| <b>Chapter 7. Timber .....</b> |  | <b>293</b> |
| I.                             | Forest Resources in the United States .....  | 294        |
| A.                             | Historic Forest Resources and Forestry Practices .....   | 295        |
| B.                             | Forest Resources and Forestry Practices Today .....  | 296        |
| II.                            | The National Forests.....  | 301        |
| A.                             | The Political and Physical Landscape.....  | 301        |
|                                | Damage Control: A Field Guide to Important Euphemisms in<br>Environmental Law .....                      | 306        |
| B.                             | A Statutory Overview.....  | 308        |
| C.                             | NFMA's Mandate .....   | 311        |
| 1.                             | Planning Under NFMA .....  | 311        |
| 2.                             | NEPA and Forest Management.....  | 313        |
| 3.                             | NFMA's Substantive Standards .....   | 315        |
| 4.                             | NFMA Regulations .....   | 316        |
| a.                             | The 1982 Diversity Regulations.....  | 317        |
| b.                             | The Clinton 2000 Regulations.....  | 317        |
| c.                             | The Bush II Healthy Forest Initiative (HFI) .....  | 318        |
| d.                             | Post-2005 Planning Rules Developments .....  | 322        |
| e.                             | The Obama 2012 Planning Rule.....  | 323        |
| f.                             | The Trump Administration and National Forests .....  | 324        |
| 5.                             | Enforceability of NFMA .....   | 325        |
| a.                             | Challenges to LRMPs .....  | 326        |
| b.                             | Challenges to Sales as Not Conforming to LRMPs .....   | 327        |
|                                | In re Big Thorne Project.....  | 328        |
| c.                             | Enforcement of NFMA's Substantive Standards.....   | 333        |
| D.                             | Fire Policy and the Healthy Forest Restoration Act .....   | 336        |
| E.                             | The Roadless Policy .....  | 341        |
|                                | Juan Antonio Oposa et al. v. The Honorable Fulgencio S.<br>Factoran, Jr., G.R .....                      | 343        |
| III.                           | Forestry Law on Private Lands.....   | 347        |
| A.                             | Private Timber as Property .....   | 347        |
| 1.                             | Interests in Timber: Conveyances and Contracts .....   | 347        |

---

|  |                |
|--|----------------|
| 2. Trespass and Adverse Possession.....                          | 349            |
| B. State Forest Practices Acts and Private Land.....             | 352            |
| 1. Fire, Infestation, and Disease Prevention .....               | 353            |
| 2. Provisions for Sustainable Harvest .....                      | 354            |
| 3. Environmental Protection and Planning .....                   | 356            |
| 4. Constitutional Challenges to State Forest Practices Acts .... | 358            |
| C. Timber Harvesting and Water Quality.....                      | 359            |
| D. Forest Reserves and Open Space Protection .....               | 362            |
| E. Incentives for Conservation and Reforestation .....           | 365            |
| 1. The Natural Resources Conservation Service Programs .....     | 365            |
| 2. Tax Breaks and Other Economic Measures.....                   | 366            |
| 3. Forest Product Certification .....                            | 367            |
| IV. State Forestlands .....                                      | 368            |
| <br><b>Chapter 8. Water .....</b>                                | <br><b>371</b> |
| I. Introduction: The ABCs of Water and Water Law.....            | 372            |
| A. Surface Water and Groundwater: Physical Characteristics.....  | 373            |
| 1. Surface Water .....   | 374            |
| 2. Groundwater .....   | 376            |
| B. Water Law Fundamentals .....                                  | 376            |
| 1. Riparianism vs. Prior Appropriation.....                      | 376            |
| 2. Public Trust Doctrine .....                                   | 379            |
| 3. Federal Involvement.....                                      | 381            |
| II. Reasonable Use Riparianism.....                              | 382            |
| A. Historical Development—Reasonable Use Doctrine .....          | 382            |
| 1. Natural Flow Theory .....                                     | 382            |
| 2. What Is a “Natural Watercourse”? .....                        | 383            |
| B. Rights of Riparians.....                                      | 384            |
| C. Nuisance, Trespass, and Negligence .....                      | 388            |
| D. Transfer of Riparian Rights.....                              | 389            |
| E. Permits .....   | 390            |
| 1. Basic Permit Considerations.....                              | 391            |
| 2. Water Storage .....   | 391            |
| 3. Forfeiture and Condemnation.....                              | 392            |
| III. Prior Appropriation .....                                   | 393            |
| A. Introduction to Prior Appropriation.....                      | 393            |
| B. Development of the Prior Appropriation Doctrine .....         | 394            |
| C. Elements of Appropriation.....                                | 396            |
| 1. Intent.....   | 397            |
| 2. Diversion from a Natural Source.....                          | 399            |
| 3. Beneficial Use .....  | 401            |
| <i>St. Jude’s Co. v. Roaring Fork Club, L.L.C.</i> .....         | 403            |
| 4. Priority .....  | 409            |
| <i>Kelly v. Teton Prairie LLC</i> .....                          | 410            |
| D. Storage .....   | 412            |
| E. Reclaimed and Foreign Water .....                             | 413            |
| 1. Reclaimed Water.....  | 413            |

---

|   |            |
|---|------------|
| 2. Foreign and Developed Water .....                                | 415        |
| F. Changes in Use, Transfers, and the “No Harm” Rule.....           | 415        |
| G. Water Quality .....  | 418        |
| H. Loss of a Water Right.....                                       | 419        |
| IV. Groundwater.....  | 422        |
| A. The Occurrence and Use of Groundwater.....                       | 422        |
| 1. Aquifers—Underground Reservoirs .....                            | 424        |
| 2. Contamination .....  | 425        |
| B. Groundwater Rights.....  | 426        |
| 1. Absolute Ownership .....   | 426        |
| 2. Reasonable Use.....  | 427        |
| 3. Correlative Rights .....   | 427        |
| 4. Restatement (2d) of Torts § 858.....                             | 429        |
| 5. Prior Appropriation .....  | 430        |
| 6. Statutory Permit Systems.....                                    | 431        |
| 7. Surface Water-Groundwater Connectivity .....                     | 432        |
| V. Federal and Tribal Interests in Water.....                       | 433        |
| A. The Federal Navigation Powers .....                              | 434        |
| B. Reclamation .....  | 436        |
| 1. The Reclamation Era.....   | 436        |
| Reclamation Water Rights .....                                      | 436        |
| 2. What Law Governs Reclamation Water? .....                        | 438        |
| C. Reserved Rights.....   | 440        |
| 1. The Existence and Quantity of Reserved Rights.....               | 441        |
| 2. The Effect of State Law .....                                    | 444        |
| 3. Location and Use of Reserved Rights.....                         | 445        |
| VI. Environmental Regulations.....                                  | 447        |
| A. Wild and Scenic Rivers Act.....                                  | 447        |
| B. Clean Water Act .....  | 448        |
| C. Endangered Species Act.....                                      | 450        |
| VII. Interstate Issues.....   | 453        |
| A. Judicial Allocation .....  | 453        |
| B. Interstate Compacts .....  | 454        |
| C. Legislative Allocation.....                                      | 456        |
| D. Future Interstate Conflicts .....                                | 456        |
| <b>Chapter 9. Minerals.....</b>                                     | <b>459</b> |
| I. An Introduction to Minerals and Mining in the United States..... | 460        |
| A. America’s Mineral “Wealth” .....                                 | 461        |
| B. Geology and Extraction of Mineral Deposits .....                 | 464        |
| 1. Geology of Mineral Deposits .....                                | 464        |
| 2. Mineral Extraction .....   | 464        |
| a. Exploration.....   | 465        |
| b. Mining Methods .....   | 466        |
| C. The Mining Industry .....  | 469        |

---

|       |   |     |
|-------|---|-----|
| II.   | Hardrock Mineral Law.....   | 471 |
| A.    | The 1872 Mining Law's Location System for Hardrock Mining....                 | 472 |
| 1.    | Location .....  | 473 |
| a.    | Lands Open to Location.....   | 473 |
| b.    | Locatable Minerals .....  | 475 |
| c.    | Qualified Locators.....   | 476 |
| d.    | Types of Locations.....   | 477 |
| (i)   | Lode Claims.....  | 479 |
| (ii)  | Placer Claims .....   | 481 |
| (iii) | Mill Sites.....   | 482 |
| e.    | Location Procedures.....  | 483 |
| f.    | Supplemental State Location Requirements .....                                | 484 |
| B.    | Discovery .....   | 485 |
| 1.    | Prospectors' Rights Prior to Discovery: <i>Pedis Possessio</i> .....          | 486 |
|       | Geomet Exploration, Ltd. v. Lucky MC Uranium Corp. ....                       | 487 |
| 2.    | Discovery of a Valuable Mineral Deposit .....                                 | 490 |
|       | United States v. Coleman .....  | 492 |
|       | Dredge Corp. v. Conn .....  | 495 |
| C.    | The Unpatented Mining Claim.....  | 497 |
| 1.    | The Rights of Valid, Unpatented Mining Claims .....                           | 497 |
| a.    | Exclusive Right of Possession .....   | 497 |
| b.    | Surface Rights.....   | 499 |
| c.    | Extralateral Rights.....  | 500 |
| d.    | The Right to Amend or Relocate Claims .....                                   | 502 |
| 2.    | Limitations and Requirements Imposed on Unpatented<br>Mining Claims.....      | 502 |
| a.    | Claim Maintenance Fee.....  | 503 |
| b.    | Adverse Claimants.....  | 503 |
| c.    | Surface Use Limitations.....  | 504 |
| D.    | The Patented Mining Claim .....   | 510 |
| E.    | Reform Efforts .....  | 511 |
| III.  | The Law of Saleable, Common Variety Minerals.....                             | 512 |
| A.    | The Materials Act and Common Varieties Act.....                               | 513 |
| B.    | The Location System and Common Variety Minerals .....                         | 514 |
| 1.    | Common Variety Minerals Found in Association with<br>Locatable Minerals ..... | 514 |
| 2.    | Location of Pre-1955 Discoveries of Common Variety<br>Materials .....         | 514 |
| 3.    | Location of Post-1955 Discoveries of Common Variety<br>Materials .....        | 515 |
| C.    | Disposal of Salable Materials .....   | 516 |
| IV.   | State Mining Law on State and Private Lands.....                              | 517 |
| A.    | Permits .....   | 517 |
| B.    | Leases.....   | 519 |
| C.    | Severance .....   | 520 |
| D.    | A Miner's Responsibility to Adjoining Property Owners .....                   | 522 |
|       | Levens v. Ballard.....  | 523 |

---

|   |   |            |
|---|---|------------|
| V.  | Mining and the Environment .....  | 525        |
| A.  | The Problem of Abandoned Hardrock Mines.....  | 525        |
| B.  | Federal Environmental Law.....  | 529        |
|   | Great Basin Resource Watch v. Bureau of Land Management....                                       | 530        |
| C.  | State Mining Regulations Preempted by Federal Law? .....  | 534        |
|   | The People v. Brandon Lance Rinehart .....  | 535        |
| VI.                                       | International Mining Law .....  | 541        |
| A.  | What Is International Mining Law? .....   | 541        |
| B.  | Sources .....   | 543        |
| C.  | Environmental and Social Issues .....   | 543        |
| 1.  | Social License to Operate .....   | 543        |
| 2.  | Mining in the Deep Sea .....  | 545        |
| D.  | Enforcement.....  | 546        |
| <b>Chapter 10. Energy Resources .....</b> |   | <b>547</b> |
| I.  | Leasable Minerals Under the 1920 Mineral Leasing Act and Related<br>Acts.....                     | 548        |
| A.  | Oil and Gas .....   | 549        |
| 1.  | Royalties from Oil and Gas Leases.....  | 550        |
| 2.  | Onshore Oil and Gas .....   | 552        |
| a.  | Predicates to the Leasing Decision .....  | 552        |
| b.  | The Leasing Decision.....   | 554        |
| c.  | Lease Terms and Stages.....   | 555        |
| d.  | Lease Conditions.....   | 557        |
| e.  | NEPA's Effect on Oil and Gas Leases .....   | 558        |
| f.  | Hydraulic Fracturing.....   | 560        |
| g.  | Fracking and the Environment.....   | 562        |
| h.  | Pros and Cons of Fracking: Research Updates .....   | 563        |
|   | The Regulation of Fracking by Federal and State<br>Law .....                                      | 567        |
|   | Natural Gas Extraction—Hydraulic Fracturing<br>Providing Regulatory Clarity .....                 | 568        |
| 3.  | Offshore Oil and Gas .....  | 572        |
| a.  | Federal Jurisdiction.....   | 572        |
| b.  | The Outer Continental Shelf Lands Act (OCSLA) and<br>the Coastal Zone Management Act (CZMA) ..... | 572        |
| c.  | Deepwater Drilling .....  | 575        |
| d.  | NEPA .....  | 576        |
| B.  | Coal.....   | 577        |
| 1.  | Pre-1976 Federal Coal Leasing.....  | 579        |
| 2.  | The 1971–1976 Moratorium.....   | 579        |
| II.                                       | The Federal Coal Leasing Amendments Act (FCLAA) .....   | 580        |
| A.  | Coal Leasing Under the FCLAA.....   | 580        |
| B.  | Fair Market Value.....  | 581        |
| C.  | Retroactive Effect of the FCLAA .....   | 582        |
| D.  | NEPA.....   | 584        |

---

|      |   |     |
|------|---|-----|
| III. | The Surface Mining Control and Reclamation Act (SMCRA) .....                          | 586 |
| A.   | SMCRA's Scope and Basic Requirements.....   | 586 |
|      | Hodel v. Virginia Surface Mining & Reclamation Ass'n, Inc.....                        | 588 |
| B.   | Valid Existing Rights (VERs) .....  | 593 |
| C.   | SMCRA and the Clean Water Act .....   | 594 |
| IV.  | Oil Shale, Coalbed Methane, and Geothermal Steam .....                                | 596 |
| A.   | Oil Shale.....  | 596 |
|      | Crossing the Next Meridian: Land, Water, and the Future of<br>the American West ..... | 596 |
| B.   | Coalbed Methane.....  | 599 |
|      | Newman v. RAG Wyoming Land Co. ....   | 599 |
| C.   | Geothermal .....  | 604 |
|      | Water That Is Not Water.....  | 604 |
| V.   | The Future of U.S. Energy Policy .....  | 607 |
| VI.  | A Note on Split Estates.....  | 610 |
| A.   | Federal Rights to Minerals Underlying State and Privately-<br>Owned Lands .....       | 611 |
|      | 1. What Has Been Reserved? .....  | 612 |
|      | 2. Relations Between Mineral and Surface Estates .....                                | 614 |
| B.   | Private Rights to Minerals Underlying Federally Owned<br>Lands.....                   | 616 |

**PART IV. CONSERVATION OF NATURAL RESOURCES**

|                                   |   |     |
|-----------------------------------|---|-----|
| <b>Chapter 11. Wildlife .....</b> | <b>623</b>  |     |
| I.                                | Introduction .....  | 624 |
| II.                               | Private Wildlife Law .....  | 624 |
| A.                                | Ownership of Wildlife.....  | 624 |
|                                   | 1. The Rule of Capture .....  | 625 |
|                                   | Pierson v. Post .....   | 625 |
|                                   | 2. Liability for Wildlife .....   | 626 |
| B.                                | The Protection of Private Land and Animals When Wildlife<br>Trespasses or Causes Harm ..... | 627 |
| III.                              | State Wildlife Law.....   | 630 |
| A.                                | State Game Laws.....  | 630 |
| B.                                | State Wildlife Management on Federal Lands.....   | 635 |
| C.                                | The Hunting Culture and Anti-Cruelty Measures.....  | 636 |
| IV.                               | Federal Wildlife Law: Federal Authority and Federal Public<br>Lands.....                    | 637 |
| A.                                | Introduction to Federal Wildlife Law.....   | 637 |
| B.                                | Federal vs. State Power .....   | 638 |
|                                   | 1. The Commerce Clause.....   | 639 |
|                                   | a. The Dormant Commerce Clause.....   | 639 |
|                                   | b. The Affirmative Commerce Clause.....   | 640 |
|                                   | 2. The Privileges and Immunities Clause .....   | 643 |
|                                   | 3. The Treaty Clause .....  | 644 |
|                                   | 4. The Property Clause.....   | 645 |

---

|  |  |            |
|--|--|------------|
| C.   | Federal Funding of State Programs.....                               | 646        |
| D.   | National Wildlife Refuges.....                                       | 647        |
| 1.   | The History of the Wildlife Refuge System.....                       | 647        |
| 2.   | Management of the NWRS .....   | 649        |
| E.   | Wildlife Control in Federally Restricted Lands .....                 | 652        |
| 1.   | Wilderness Areas .....   | 652        |
| 2.   | National Parks.....  | 653        |
| 3.   | Wild and Scenic Rivers.....  | 654        |
| F.   | National Forests and Biological Diversity .....                      | 654        |
| V.   | Federal Species Protection Laws.....                                 | 656        |
| A.   | The Lacey Act .....  | 656        |
| B.   | Migratory Birds and Eagles.....                                      | 659        |
| C.   | Marine Mammals .....   | 663        |
|  | Natural Resources Defense Council, Inc. v. Pritzker.....             | 665        |
| VI.  | The Endangered Species Act of 1973 (ESA) .....                       | 669        |
| A.   | The History and Philosophy of the ESA .....                          | 669        |
| B.   | The ESA's Scope and Key Provisions .....                             | 671        |
| C.   | Species Listing and Critical Habitat Determinations.....             | 674        |
| 1.   | Listing Species .....  | 675        |
|  | Humane Society of the United States v. Zinke.....                    | 679        |
| 2.   | Critical Habitat Designations.....                                   | 687        |
| D.   | The Taking Prohibition .....   | 689        |
|  | Babbitt v. Sweet Home Chapter .....                                  | 689        |
| E.   | The Federal Consultation and “No Jeopardy” Requirements .....        | 694        |
| F.   | Affirmative Obligations.....   | 697        |
| 1.   | The Duty to Conserve.....  | 697        |
| 2.   | The Duty to Engage in Recovery Planning .....                        | 698        |
| G.   | Enforcement.....   | 702        |
| 1.   | Citizen Suits.....   | 702        |
| 2.   | Federal Enforcement .....  | 704        |
| H.   | Moderating the Severity of the ESA .....                             | 705        |
| 1.   | The “God Squad” .....  | 705        |
| 2.   | Incidental Take .....  | 705        |
| 3.   | Habitat Conservation Plans (HCPs) .....                              | 708        |
| 4.   | ESA Defenses .....   | 710        |
| I.   | Has the ESA Been Successful? .....                                   | 711        |
| <b>Chapter 12. Recreation and Preservation on Public Lands .....</b> |  | <b>715</b> |
| I.   | Introduction .....   | 716        |
| A.   | The Recreational/Preservation Conflict .....                         | 717        |
|  | Recreation Wars for Our Natural Resources .....                      | 717        |
| B.   | The Multiple Use/Dominant Use Conflict on Public Lands.....          | 723        |
| 1.   | Dominant Use .....   | 724        |
| 2.   | Commodity Use Driving the Adoption of the Multiple Use Standard..... | 726        |
| II.  | Recreation .....   | 728        |
| A.   | Recreation Trends and Benefits .....                                 | 728        |

---

|      |  |     |
|------|--|-----|
| B.   | National Parks and Monuments .....   | 735 |
| 1.   | General Recreational Use .....   | 735 |
| 2.   | Motorized Recreational Use.....  | 736 |
| 3.   | Concessions, Support Facilities and Services .....                         | 737 |
| 4.   | Commercial Recreation .....  | 740 |
| 5.   | Non-Recreation Commercial Development.....                                 | 740 |
| C.   | Forest Service Lands.....  | 741 |
| 1.   | General Recreational Use .....   | 742 |
| 2.   | Motorized Recreational Use.....  | 743 |
| 3.   | Concessions and Permits.....   | 744 |
| D.   | BLM Lands .....  | 746 |
| 1.   | General Recreational Use .....   | 746 |
| 2.   | Motorized Vehicle Use.....   | 746 |
|      | <i>The Wilderness Society v. Kane County, Utah.....</i>                    | 747 |
| 3.   | Concessions and Permits.....   | 752 |
| 4.   | National Recreation Areas .....  | 752 |
| 5.   | National Landscape Conservation System .....                               | 753 |
| E.   | Scenic and Historic National Trails .....                                  | 753 |
| III. | Preservation.....  | 755 |
| A.   | The Preservation Impulse.....  | 756 |
| B.   | Parks and Monuments .....  | 757 |
| 1.   | Creation of National Parks and Monuments .....                             | 758 |
| 2.   | Management Directives .....  | 761 |
| 3.   | Antiquities and Monuments .....  | 762 |
| C.   | Historic Preservation and Traditional Cultural Properties .....            | 763 |
| D.   | Archeological Resources .....  | 768 |
| E.   | The Wild and Scenic Rivers Act .....                                       | 769 |
| IV.  | Wilderness Preservation .....  | 772 |
| A.   | Wilderness Designation .....   | 772 |
| B.   | How Are Wilderness Lands Managed? .....                                    | 774 |
|      | The Problem with Wilderness .....  | 777 |
| V.   | External and Internal Threats to Recreation and Preservation<br>Lands..... | 781 |
| A.   | External Threats Occurring Outside Park or Wilderness<br>Boundaries .....  | 781 |
| B.   | Internal Threats .....   | 785 |
| 1.   | Natural Imbalances .....   | 785 |
| 2.   | Liability Issues.....  | 787 |
|      | INDEX.....   | 791 |