# Detailed Contents

## PREFACE

| Preface | xvii |

## PART I. SUSTAINABILITY—ESSENTIALS FOR BUSINESS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>2</td>
</tr>
<tr>
<td>What Is Sustainability?</td>
<td>2</td>
</tr>
<tr>
<td>Sustainability-Related Definitions</td>
<td>3</td>
</tr>
<tr>
<td>History of the “Green” Movement</td>
<td>5</td>
</tr>
<tr>
<td>History of Pollution</td>
<td>5</td>
</tr>
<tr>
<td>Urbanization</td>
<td>6</td>
</tr>
<tr>
<td>Naturalists and Environmentalists</td>
<td>6</td>
</tr>
<tr>
<td>John Muir</td>
<td>8</td>
</tr>
<tr>
<td>John James Audubon</td>
<td>8</td>
</tr>
<tr>
<td>The Wilderness Society</td>
<td>8</td>
</tr>
<tr>
<td>Rachel Carson</td>
<td>8</td>
</tr>
<tr>
<td>Gaylord Nelson</td>
<td>9</td>
</tr>
<tr>
<td>Ten Myths About Sustainability</td>
<td>9</td>
</tr>
<tr>
<td>The Case for Being Sustainable</td>
<td>11</td>
</tr>
<tr>
<td>Profitability</td>
<td>11</td>
</tr>
<tr>
<td>Linking Profitability to Development</td>
<td>11</td>
</tr>
<tr>
<td>Competitiveness</td>
<td>12</td>
</tr>
<tr>
<td>Consumer Loyalty</td>
<td>12</td>
</tr>
<tr>
<td>Global Warming Concerns</td>
<td>12</td>
</tr>
<tr>
<td>International Pressures</td>
<td>13</td>
</tr>
<tr>
<td>Public Exposure</td>
<td>13</td>
</tr>
<tr>
<td>Greening the Supply Chain</td>
<td>13</td>
</tr>
<tr>
<td>Minimizing Waste</td>
<td>13</td>
</tr>
<tr>
<td>However . . . a Note of Caution</td>
<td>14</td>
</tr>
<tr>
<td>Why Sustainable Strategy?</td>
<td>14</td>
</tr>
<tr>
<td>Five Stages on the Path to Sustainability</td>
<td>16</td>
</tr>
<tr>
<td>Triple Bottom Line</td>
<td>17</td>
</tr>
<tr>
<td>The Importance of Triple Bottom Line</td>
<td>18</td>
</tr>
<tr>
<td>Chapter Outline</td>
<td>18</td>
</tr>
<tr>
<td>Conclusion</td>
<td>23</td>
</tr>
</tbody>
</table>
PART II. RENEWABLE RESOURCES

Chapter 1. Air and Climate Issues
- Chapter Overview
- A Primer on Air Pollution
- Pollution Control
  - Pollution Effects
  - Health Effects
  - Heat Island Effect
  - Legal Enforcement
  - Indoor Air Quality
  - Mobile Sources
  - Air Quality Index
- Global Sustainability Conferences
  - Rio Conference on Sustainability 1992
  - Kyoto Protocol
  - Johannesburg Earth Summit
- Industry Efforts
  - Steel Industry
  - Automobile Industry
- Climate and Global Warming
  - Evidence for Global Warming
  - Arguments Against Global Warming
- Business Implications
- Conclusion
- Key Words
- Discussion Questions
- Recommended Websites

Chapter 2. Water Issues
- Chapter Overview
- Drinking Water
  - Bottled Water
- Water Pollution
  - Sewage
- Ocean Pollution
  - Florida’s Coastal and Ocean Future
  - Overfishing
- Water Scarcity
- Water Conservation
  - A City Water Agenda: Chicago
- Water Legislation
  - The Clean Water Act
<table>
<thead>
<tr>
<th>The Rain Forest</th>
<th>93</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest Management</td>
<td>94</td>
</tr>
<tr>
<td>Types of Tree Harvesting</td>
<td>94</td>
</tr>
<tr>
<td>Sustainable Forestry</td>
<td>95</td>
</tr>
<tr>
<td>Forest Ethics</td>
<td>97</td>
</tr>
<tr>
<td>Urban Forests</td>
<td>98</td>
</tr>
<tr>
<td>Business and Wood</td>
<td>99</td>
</tr>
<tr>
<td>Paper Use</td>
<td>99</td>
</tr>
<tr>
<td>The Wilderness</td>
<td>100</td>
</tr>
<tr>
<td>The Wilderness Society</td>
<td>101</td>
</tr>
<tr>
<td>Managing Biodiversity</td>
<td>101</td>
</tr>
<tr>
<td>Special Species</td>
<td>102</td>
</tr>
<tr>
<td>Causes of Extinction</td>
<td>103</td>
</tr>
<tr>
<td>Why Should We Care?</td>
<td>104</td>
</tr>
<tr>
<td>Reintroduction of the Wolves</td>
<td>105</td>
</tr>
<tr>
<td>The Silence of the Bees</td>
<td>105</td>
</tr>
<tr>
<td>Biodiversity Action Plans</td>
<td>106</td>
</tr>
<tr>
<td>Deep Ecology</td>
<td>106</td>
</tr>
<tr>
<td>Estuary Protection</td>
<td>107</td>
</tr>
<tr>
<td>Business Implications</td>
<td>108</td>
</tr>
<tr>
<td>Conclusion</td>
<td>108</td>
</tr>
<tr>
<td>Key Words</td>
<td>109</td>
</tr>
<tr>
<td>Discussion Questions</td>
<td>109</td>
</tr>
<tr>
<td>Recommended Websites</td>
<td>110</td>
</tr>
</tbody>
</table>

**Chapter 5. Alternative Clean Energy and Fuels**  
111

**Chapter Overview**  
111

**The Need for Clean Energy**  
111

**Conventional Sources of Energy**  
113

- **Coal**  
113

- **Oil**  
114

- **Natural Gas**  
115

- **Nuclear**  
115

**An Overview of Renewable Energy**  
116

**Solar Energy**  
117

- **Newer Technologies**  
119

- **Advantages of Solar Energy**  
120

- **Challenges of Solar Energy**  
121

- **Business and Global Implications**  
121

**Wind Energy**  
122

- **Advantages of Wind Energy**  
122

- **Challenges of Wind Energy**  
123

- **Business and Global Implications**  
123

**Hydropower**  
124

- **Advantages of Hydropower**  
125

- **Challenges of Hydropower**  
125

- **Business and Global Implications**  
126
### Part III. Stakeholder Interest and Choices 135

#### Chapter 6. Sustainability Strategies and Frameworks 136

- **Chapter Overview** 136
- **Why Sustainable Strategy?** 137
  - Sustainable Value Creation 137
  - Global Drivers of Sustainability 138
  - Ladder of Sustainability 140
  - Players Within the Organization 141
- **Natural Capitalism** 141
- **Natural Step** 143
  - Four System Conditions for Sustainability 143
  - The Funnel 144
  - Strategies for Action 145
- **Industrial Ecology** 146
  - Systems Analysis 146
  - Material and Energy Flows and Transformations 147
  - Multidisciplinary Approach 147
  - Analogies to Natural Systems 147
  - Linear (Open) Versus Cyclical (Closed) Loop Systems 147
  - Examples of Industrial Ecology 149
  - Life Cycle Assessment 152
- **Cradle to Cradle and Biomimicry** 153
  - Cradle to Cradle 153
  - Biomimicry 154
- **Environmental Stewardship and Sustainability** 156
  - Environmental Protection Agency’s Approach to Environmental Stewardship 157
- **Tools for Sustainability** 159
  - Environmental Management System 159
  - Total Quality Environmental Management 160
Chapter 11. Carbon Markets: Offsets and Standards  
Chapter Overview  
Carbon Footprint  
- Carbon Neutrality  
- Two Basic Options  
- Kyoto Protocol  
Carbon Offsets  
- Rationale  
- Principal Types  
- Carbon Footprint Calculator  
- Carbon Offset Examples  
- Market Performance Criteria  
Standards for Offsets  
Examination of Offset Providers  
Conference of the Parties (COP17) Durban  
- Implications for Carbon Markets  
Conclusion  
Key Words  
Discussion Questions  
Recommended Websites  
Appendix

Chapter 12. Designing Sustainable Cities and Communities  
Chapter Overview  
A City Sustainability Portfolio  
- Los Angeles  
- Salt Lake City  
- Denver  
- Phoenix  
- Boston  
- New York City  
- Atlanta  
- Washington, D.C.  
- San Francisco  
- Portland  
- New Orleans  
- SustainLane’s U.S. City Rankings  
- London  
- Paris  
- Hong Kong