



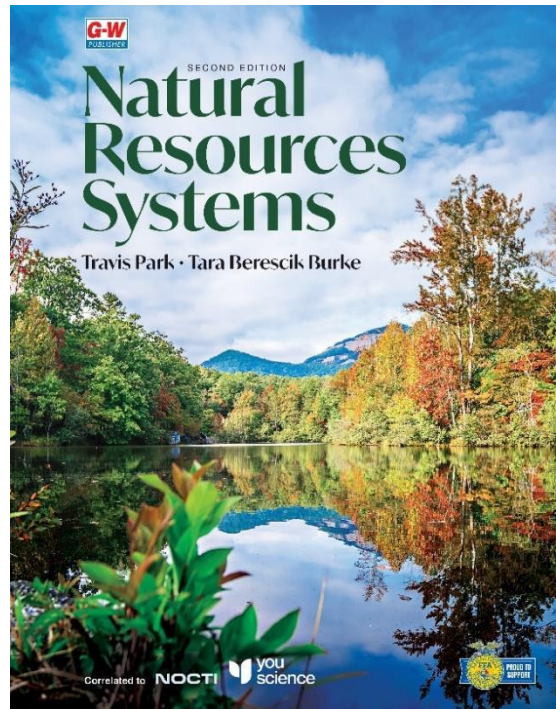
Correlation of
Natural Resources Systems,
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to
CASE Natural Resources & Ecology (NRE)

Goodheart-Willcox is pleased to partner with CASE 4 Learning (Curriculum for Agricultural Science Education) by correlating *Natural Resources Systems* to the curricular concepts and performance objectives taught in their Natural Resources and Ecology curriculum.

The correlation chart below lists the CASE Natural Resource and Ecology curriculum concepts in the left column. Corresponding content from *Natural Resources Systems* that a student can use to help understand the concept is in the right column.

CASE 4 Learning designs inquiry-based agricultural curriculum for middle and high school classrooms; offers lifetime certification, training and support for teachers; and prepares students for college and career readiness. CASE 4 Learning is an initiative of the National Council for Agricultural Education.

For more information about CASE 4 Learning, including a complete listing of their curricular offerings, please visit <https://case4learning.org>.



CASE Concepts	Textbook Pages
Unit 1 - Conservation, Preservation, Exploitation	
Lesson 1.1 Natural Resources & Ecology 101	
1. Individuals have different perceptions about natural resources and ecology.	Textbook pages: 112–113, 131
2. Organized record keeping is an important skill for people working in the fields of natural resources and ecology.	Textbook pages: 765–775
3. The perception of conservation, preservation, and exploitation regarding the use of natural resources influence natural resource management decisions.	Textbook pages: 12–14, 60–66, 72–74

CASE Concepts	Textbook Pages
<p>4. Career opportunities exist in natural resources and ecology for all levels of education in areas of study including conservation, education, management, and recreation.</p>	<p>Textbook pages: Career Information & planning: 20–48 NRE Career Connections: 11, 24, 121, 129, 157, 182, 205, 242, 261, 265, 284, 319, 335, 340, 362, 393, 421, 438, 454, 466, 496, 543, 566, 605, 622, 652, 673, 703, 726</p>
Lesson 1.2 Building Biomes	
<p>1. A biome, classified by the predominant vegetation, is primarily determined by climate, altitude, and latitude.</p>	<p>Textbook pages: 88–102, 137–152</p>
<p>2. The result of regular observations of the natural world, accurate and useful field notes are a tool in the scientific study of the natural world.</p>	<p>Textbook pages: 594</p>
<p>3. The diversity of an ecosystem includes both the living and non-living components.</p>	<p>Textbook pages: 11–15, 82, 88, 103–104, 182</p>
Unit 2 - Mother Earth	
Lesson 2.1 Soils & Land (check one)	
<p>1. Soil formation factors, including climate and parent material, influence soil types and uses.</p>	<p>Textbook pages: 209–215</p>
<p>2. Soil texture and structure influence soil properties and usability.</p>	<p>Textbook pages: 211–213, 221–224</p>
<p>3. Soil is a natural filter and can collect nutrients and other materials from water.</p>	<p>Textbook pages: 215–218</p>
<p>4. The development, use, and management of soil as a natural resource are related to soil properties.</p>	<p>Textbook pages: 219–225, 245–246, 258</p>
Lesson 2.2 Reading The Land	
<p>1. Topographic maps provide information on the configuration of the surface of the Earth.</p>	<p>Textbook pages: 245, 728–738</p>
<p>2. Erosion influences land use and may cause environmental changes in ecosystems.</p>	<p>Textbook pages: 236–245</p>
<p>3. A soil survey is a land-use planning tool.</p>	<p>Textbook pages: 199, 219</p>
Unit 3 - Water Works	
3.1 Water Basics	
<p>1. Solar energy drives the hydrologic cycle, resulting in water evaporating into the atmosphere and returning to the surface of the Earth in different forms.</p>	<p>Textbook pages: 84–85, 308–310</p>
<p>2. Water is converted into a series of forms as it moves through the environment over time.</p>	<p>Textbook pages: 84–85, 308–309</p>

CASE Concepts	Textbook Pages
3. Lakes, rivers, and oceans are three significant types of bodies of water that have characteristics influenced by climate, topography, and organisms.	Textbook pages: 315–324
3.2 Water Function	
1. The Water Quality Index uses a series of tests, such as temperature, dissolved oxygen, pH, turbidity, and nitrates, to indicate the overall quality of a body of water.	Textbook pages: 334, 528
2. Water quality determines potential water uses, such as for drinking, irrigation for agriculture, industrial use, and recreational use.	Textbook pages: 336–341
3. Environmental conditions and human activities influence water quality.	Textbook pages: 342–350
4. The movement of water through watersheds and soil can alter the quality of water.	Textbook pages: 321–322
Unit 4 - Lighter Than Air	
4.1 The Role of Air	
1. The atmosphere consists of various levels defined by distinct characteristics, such as density, temperature, and chemical composition.	Textbook pages: 384–389
2. Gases found in the atmosphere, such as oxygen and nitrogen, take different forms as they move through a biogeochemical cycle.	Textbook pages: 83–87
3. An essential function of the atmosphere is the natural warming of the surface of the Earth.	Textbook pages: 384–388
4.2 The Smog has Lifted	
1. The measurement of the gases and particulates present at various levels determines air quality.	Textbook pages: 413–415, 419–422
2. Natural occurring processes and human activity influence air quality.	Textbook pages: 406–426
3. The greenhouse effect theory explains the potential reasons and causes of global warming.	Textbook pages: 390–391
Unit 5 - Earth's Energy	
5.1 The Energy of Life	
1. Energy and nutrients flow through trophic levels within an ecosystem.	Textbook pages: 444–455, 650
2. The geographic area of an ecosystem influences the complexity and type of organisms present.	Textbook pages: 435–444

CASE Concepts	Textbook Pages
3. The availability of natural resources determines the carrying capacity of a given species in an ecosystem.	Textbook pages: 144, 188–192 536, 658
Unit 6 - Flora & Fauna	
6.1 All Natural Flora	
1. Biodiversity refers to the variety of living components in an ecosystem.	Textbook pages: 12, 296–297, 435, 474
2. Plants are scientifically identified using taxonomy and various classification systems.	Textbook pages: 561–590
3. Vegetation type present in an ecosystem is influenced by the environment and the activity of animals and humans.	Textbook pages: 135–149, 559–590
4. Plant populations shift in response to changes in the environment.	Textbook pages: 559–590
6.2 Flourishing Fauna	
1. Wildlife requires habitat, including food, water, shelter, and space, suited to their needs to thrive in a community.	Textbook pages: 137, 187–193 434–454,
2. Organisms use natural processes to adapt to their environments and increase their chances of survival.	Textbook pages: 435–439 442–443
3. Human pressures of populations cause artificial selection within a population.	Textbook pages: 138–144, 189
4. Various objectives influence the management of wildlife species.	Textbook pages: 268, 447–454, 475–479, 698
5. Wildlife management includes improving habitat for a focal species.	Textbook pages: 480–482
Unit 7- Farming, Forestry, and Ferrous	
7.1 Agricultural Stewardship	
1. Sustainable agriculture practices include the efficient use of non-renewable and on-farm resources and, where appropriate, integrate natural biological cycles.	Textbook pages: 109–130
2. Agricultural stewardship balances agriculture productivity and profitability while conserving natural resources.	Textbook pages: 13, 51, 70, 340, , 497, 700–701
7.2 Timber!	

CASE Concepts	Textbook Pages
1. Effective forest management requires identifying goals and proposed uses of the forest, such as aesthetics, recreation, urban values, water, wilderness, wildlife, and wood products.	Textbook pages: 601–612
2. Forest management techniques include timber extraction, planting, and replanting of various species, cutting roads and pathways through forests, and fire management.	Textbook pages: 603–612
7.3 Digging & Drilling	
1. Essential mineral resources are available due to many different practices and methods.	Textbook pages: 282–285
2. Natural resource mining has positive and negative impacts on the environment and human populations.	Textbook pages: 282–300
Unit 8 - We the People	
8.1 Urban Sprawl	
1. Human populations and their food, fiber, and fuel needs impact the natural environment.	Textbook pages: 112–117, 131–132
2. Energy is available from diverse renewable and nonrenewable sources.	Textbook pages: 118–122
3. Managing waste impacts society and has environmental costs and benefits.	Textbook pages: 123–131
4. Proper waste management is essential for healthy ecosystems.	Textbook pages: 123–130
8.2 Walk in the Park	
1. Human recreational activities impact the natural environment and native species.	Textbook pages: 668–686
2. Protected natural spaces, such as National Parks and Scenic areas, have been designated to preserve landmarks as well as native flora and fauna.	Textbook pages: 692–714
3. Recreational use of natural resource areas requires the development of skills to ensure the individual's safety while protecting the integrity of the natural resource.	Textbook pages: 669–686
Unit 9 - Past, Present, and Future	
Lesson 9.1 Policing our Wilderness	

CASE Concepts	Textbook Pages
1. Environmental policies and regulations, such as the Endangered Species Act and wilderness protection designations, have been established to protect the environment for future generations of wildlife, vegetation, and human use.	Textbook pages: 65–76
2. National conservation practices have shifted over time due to changes in environmental perceptions.	Textbook pages: 52–59
3. Many organizations influence the protection of species and the environment.	Textbook pages: 73–74, 462–482, 692–713
Lesson 9.2 What's Next	
1. Balancing the human population's needs and demands for food, fiber, fuel with maintaining environmental quality is a complex social issue.	Textbook pages: 116–119, 168–170, 189–192, 249–250
2. Ecosystems change based upon management decisions over time.	Textbook pages: 81–103, 498–499, 598–612