

ENVIROTHON LEARNING OBJECTIVES/TESTING AREAS

Aquatics	TEKS Courses
A. Identify the processes and phases for each part of the water cycle	Biology 12 E; IPC 5 A,B,D,H,I, 7 A; Chemistry 11 A; Physics 6 E,F,G, 7 A,B; Environmental Systems 6 B,C,D,E; Aquatic Science 6A; Earth and Space Science 13 A, 14 C, 15 C; Range Ecology and Management 3 B; Advanced Environmental Technology 1 A,B; Wildlife, Fisheries, and Ecology Management 5 A
B. Describe the chemical and physical properties of water and explain their importance for freshwater and saltwater ecosystems	Biology 12 C; IPC 5 E,H, 6 C,D,E, 7 F; Chemistry 4 A,C,D, 7 A,B, 8 D, 10 A,B,E,F,H,I, 11 A,B,C,D,E; Physics 6 E,F,G; Environmental Systems 4 D,E; Astronomy 9 A
C. Discuss methods of conserving water and reducing point and non-point source pollution	Biology 12 C; IPC 5 I, 7 E; Chemistry 3B; Environmental Systems 5 B,C,D,E,F; Forestry and Woodland Ecosystems 2 H; Advanced Plant and Soil Science 8 A-G; Wildlife, Fisheries, and Ecology Management 5 F; Energy and Natural Resources Technology 8 A-I;
D. Analyze the interaction of competing uses of water supply, hydropower, navigation, wildlife, recreation, waste assimilation, irrigation, industry, and others	IPC 7F; Environmental Systems 5 A, 7 C, 9 F,G,H,I; Principles of Agriculture, Food and Natural Resources 6 C,D,E,F,H, 15 A; Range Ecology and Management 4 A,B; Wildlife, Fisheries, and Ecology Management 7 C,D,E; Energy and Natural Resources Technology 8 A
E. Identify common aquatic organisms through the use of a key	Biology 8 A,B,C; Environmental Systems 4 A,B; Aquatic Science 10 A; Wildlife, Fisheries, and Ecology Management 3 B, 7 A, 9 B;
F. Delineate the watershed boundary for a small water body	Aquatic Science 7 A,B,C; Earth and Space Science 15 C; Wildlife, Fisheries, and Ecology Management 5 G
G. Be able to explain the different types of aquifers and how each type relates to water quality and quantity	Aquatic Science 5 D, 7 ; Earth and Space Science 11 A; Range Ecology and Management 4 E
H. Briefly describe the benefits of wetlands, both function and value	Biology 4 B, 5 B, 9 B, 10 B, 12 B,C,E; Environmental Systems 4 A,B, 6 C,D,E; Aquatic Science 5 B,C; Range Ecology and Management 4 E
I. Describe the changes to the aquatic ecosystem based on alteration to the aquatic habitat	Biology 11 C, 12 C; IPC 7 F; Environmental Systems 4 F,G,H, 8 B; Aquatic Science 10 B,C
J. Know methods used to assess and manage aquatic environments and utilize water quality information to assess the general water quality of a given body of water (includes sampling techniques, water quality parameters used to monitor point and non-point source pollution)	Biology 1 A,B, 2 D-G, 3 A-C; IPC 1 A,B, 2 A-D, 3 A-C; Chemistry 1 A,B, 2 D-G, 3 A-C, Physics 1 A,B, 2 D-K, 3 A-C, 4 A; Environmental Systems 1 A,B, 2 D-J, 3 A-D, 9E; Aquatic Science 2 D-I, 3 A-C, 4C, 5A-D, 6A,B; Astronomy 1 A,B, 2 D-H, 3 A-C; Earth and Space Science 1 A,B, 2 D-I, 3 A-D; Forestry and Woodland Ecosystems 2 H; Advanced Environmental Technology 4 A-D; Advanced Plant and Soil Science 9 A-D; Wildlife, Fisheries, and Ecology Management 5 F, 7 D, 8 A-C, 10 A-C;
K. Be familiar with major methods and laws to protect water quality (surface and ground water) and utilize this information to make management decisions to improve the quality of water in a given situation	Biology 2 D-G, 3 A-C; IPC 2 A-D, 3 A-C; Chemistry 2 D-G, 3 C; Physics 2 D-K, 3 A-C; Environmental Systems 2D-I, 3 E,F, 5 A; Aquatic Science 2 D-I, 3 A-F; Earth and Space Science 2 D-I, 3 A-D; Advanced Environmental Technology 5 I,J, 8 A-D; Wildlife, Fisheries, and Ecology Management 4 A-D,G,J; Energy and Natural Resources Technology 8 G-H

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Forestry		TEKS Courses
A. Identify common trees without a key and identify specific or unusual species of trees or shrubs through use of a key		Environmental Systems 4 A,B; Forestry and Woodland Ecosystems 2 C; Wildlife, Fisheries, and Ecology Management 3 B;
B. Understand forest ecology concepts and factors affecting them, including the relationship between soil and forest types, tree communities, regeneration, competition, and succession		Biology 7 C,D,E, 10C, 12A-F; Environmental Systems 6 B-E; Forestry and Woodland Ecosystems 2 D; Advanced Plant and Soil Science 6 A,B
C. Understand the cause/effect relationship of factors affecting tree growth and forest development (climate, insects, microorganisms, etc.)		Biology 9B, 12C, 11C; IPC 7F; Environmental Systems 4D, 8A; Earth and Space Science 13 C, D; Forestry and Woodland Ecosystems 2 B; Advanced Environmental Technology 5 A-J, 6 A-F; Advanced Plant and Soil Science 7 A-E
D. Understand how wildlife habitat relates to forest communities, forest species, forest age structure, snags and den trees, availability of food, and riparian zones		Wildlife, Fisheries, and Ecology Management 5 A-F
E. Understand the value of trees in urban and suburban settings and factors affecting their health and survival		Landscape Design and Turf Grass Management 3 A-D
F. Understand how the following issues are affected by forest health and management: biological diversity, forest fragmentation, air quality, fire, and recreation		Environmental Systems 4 F,G,H, 5 E,F, 9 A,B,C,E,I; Advanced Environmental Technology 5 F-I, 6 C,E,F, 7 B,D,E,F, 8 A-D; Wildlife, Fisheries, and Ecology Management 5 A-F, 7 A
G. Understand basic forest management concepts and tools such as: how various silvicultural practices are utilized, the use of tree measuring devices, and best management practices		Environmental Systems 5 A,C,D, 8 B; Forestry and Woodland Ecosystems 3 A-D, 5 B-E
H. Identify complex factors which influences forest management decisions (economics, social, and ecological)		Environmental Systems 7 A-D; Principles of Agriculture, Food and Natural Resources 6 A-H; Forestry and Woodland Ecosystems 2 A, 4 A-C, 5 A, 6 A,B, 8 A-C; Advanced Environmental Technology 4 A-D; Advanced Plant and Soil Science 7 A-D, 13 A-E
I. Apply silviculture concepts and methods to develop general management recommendations for a particular situation and management goals		Environmental Systems 9E; Advanced Plant and Soil Science 6 C,D, 8 A; Forestry and Woodland Ecosystems 3 A-D, 4 A-C,

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Soil	TEKS Courses
A. Recognize soil as an important resource	Biology 12 C,D; Principles of Agriculture, Food and Natural Resources 6 C; Range Ecology and Management 4 A, 5 A; Forestry and Woodland Ecosystems 2 A; Advanced Environmental Technology 4 A,B,D; Advanced Plant and Soil Science 6 A,B, 7 A-E;
B. Describe basic soil properties and formation factors	Biology 11 C, 12 E; IPC 7 F; Chemistry 4 A,C,D, 10 A,B,E,F; Environmental Systems 4 E; Earth and Space Science 9 B, 11 A; Principles of Agriculture, Food and Natural Resources 11 A-C; Advanced Environmental Technology 7 A-F; Advanced Plant and Soil Science 7 A,B; Principles of Agriculture, Food, and Natural Resources 11B-C
C. Understand soil drainage classes and know how wetlands are defined	Aquatic Science 9 B,C; Advanced Plant and Soil Science 7 A,C
D. Determine basic soil properties and limitations, such as mottling and permeability, by observing a soil pit or soil profile	Principles of Agriculture, Food and Natural Resources 11 A-C; Advanced Environmental Technology 7 A-F; Landscape Design and Turf Grass Management 3 A; Advanced Plant and Soil Science 7 B;
E. Identify types of soil erosion and discuss methods of reducing erosion	Aquatic Science 8 A; Principles of Agriculture, Food and Natural Resources 6 C,D,E; Forestry and Woodland Ecosystems 4 C; Advanced Environmental Technology 5 F-I, 6 C,E,F, 7 B,D,E,F, 8 A-D; Advanced Plant and Soil Science 7 C,D,E; Energy and Natural Resources Technology B, D
F. Utilize soil information, including soil surveys, in land use planning	Principles of Agriculture, Food and Natural Resources 7 E, 8 A-C; Range Ecology and Management 4 C; Forestry and Woodland Ecosystems 4 C,D; Advanced Environmental Technology 8 A-D; Landscape Design and Turf Grass Management 3 B; Advanced Plant and Soil Science 5 A-D, 7 D,E; Wildlife, Fisheries, and Ecology Management 6 G, 8 A-C,
G. Discuss how soil is a factor in, or impacted by, non-point source pollution	Biology 4 C; Aquatic Science 7 A,B,C; Principles of Agriculture, Food and Natural Resources 6 D,E; Forestry and Woodland Ecosystems 4 C; Advanced Environmental Technology 7 B,D,E,F; Advanced Plant and Soil Science 7 D,E; Wildlife, Fisheries, and Ecology Management 5 F; Energy and Natural Resources Technology A,B,D

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Wildlife		TEKS Courses
A. Identify common wildlife species and wildlife signs (keys will be used for more extensive identification)		Biology A-C; Wildlife, Fisheries, and Ecology Management 3 B, 7 A-C;
B. Identify basic wildlife survival needs		Biology 12 D; Environmental Systems 4 F; Wildlife, Fisheries, and Ecology Management 7 A,D,
C. Describe specific adaptations of wildlife to their environment and role in the ecosystem		Biology 7 A-E, 9 B, 12 A-C; Environmental Systems 4 A-B, 6 C-E; Range Ecology and Management 3 A,B,C;
D. Describe predator/prey relationships and examples		Biology 12 A; Wildlife, Fisheries, and Ecology Management 5 E;
E. Describe the potential impact of the introduction of non-native species		Biology 12 F; Environmental Systems 4 F, 9 I; Range Ecology and Management 3 A,B,C, 7 A-D, 8 A-D;
F. Describe the major factors affecting threatened and endangered species and methods used to improve the populations of these species		Environmental Systems 4 F,G,H, 5 F, 9 E,F; Advanced Environmental Technology 5 F-I, 6 C,E,F, 7 B,D,E,F, 8 A-D;
G. Describe the ways habitat can be improved for specific species by knowing their requirements		Environmental Systems 7 A
H. Discuss the concepts of carrying capacity and limiting factors		Biology 12 D; Environmental Systems 4 F, 7 A-D; Range Ecology and Management 4 B,C
I. Discuss various ways the public and wildlife managers can help in the protection, conservation, management, and enhancement of wildlife populations		Environmental Systems 4 F,G,H, 8 A; Range Ecology and Management 3 B, 7 A-D, 8 A-D; Wildlife, Fisheries, and Ecology Management 2 C, 3 A, 4 A-L, 8 A-C
J. Describe food chains/webs and cite specific examples		Biology 9 D, 12 A,C,F; Environmental Systems 4 F, 6 C,D,E; Range Ecology and Management 3 A;
K. Describe factors that limit or enhance population growth		Environmental Systems 4 F, 7 A-D; Range Ecology and Management 8 A-D; Wildlife, Fisheries, and Ecology Management 5 C,E
L. Evaluate a given habitat for its suitability for designated species, given a description of their habitat needs		Biology 12 D, Environmental Systems 4 D, 5 A;