AQUATIC

- Identify the processes and phases for each part of the water cycle
- Describe the chemical and physical properties of water and explain their importance for freshwater and saltwater ecosystems
- Discuss methods of conserving water and reducing point and non-point source pollution
- Analyze the interaction of competing uses of water supply, hydropower, navigation, wildlife, recreation, waste assimilation, irrigation, industry, and others
- Identify common aquatic organisms through the use of a key
- Delineate the watershed boundary for a small water body
- Be able to explain the different types of aquifers and how each type relates to water quality and quantity
- Briefly describe the benefits of wetlands, both function and value
- Describe the changes to the aquatic ecosystem based on alteration to the aquatic habitat
- 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)
- Be familiar with major methods and laws used 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

FORESTRY

- Identify common trees without a key and identify specific or unusual species of trees or shrubs through the use of a key
- Understand forest ecology concepts and factors affecting them, including the relationship between soil and forest types, tree communities, regeneration, competition, and succession
- Understand the cause/effect relationship of factors affecting tree growth and forest development (climate, insects, microorganisms, etc.)
- Understand how wildlife habitat relates to forest communities, forest species, forest age structure, snags and den trees, availability of food, and riparian zones
- Understand the value of trees in urban and suburban settings and factors affecting their health and survival
- Understand how the following issues are affected by forest health and management: biological diversity, forest fragmentation, air quality, fire, and recreation
- 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
- Identify complex factors which influences forest management decisions (economics, social, and ecological)
- Apply silviculture concepts and methods to develop general management recommendations for a particular situation and management goals

SOIL

- Recognize soil as an important resource
- Describe basic soil properties and formation factors
- Understand soil drainage classes and know how wetlands are defined
- Determine basic soil properties and limitations, such as mottling and permeability, by observing a soil pit or soil profile
- Identify types of soil erosion and discuss methods for reducing erosion
- Utilize soil information, including soil surveys, in land use planning
- Discuss how soil is a factor in, or impacted by non-point source pollution

WILDLIFE

- Identify common wildlife species and wildlife signs (keys will be used for more extensive identification)
- Identify basic wildlife survival needs
- Describe specific adaptations of wildlife to their environment and role in the ecosystem
- Describe predator/prey relationships and examples
- Describe the potential impact of the introduction of non-native species
- Describe the major factors affecting threatened and endangered species and methods used to improve the populations of these species
- Describe ways habitat can be improved for specific species by knowing their requirements
- Discuss the concepts of carrying capacity and limiting factors
- Discuss various ways the public and wildlife managers can help in the protection, conservation, management, and enhancement of wildlife populations
- Describe food chains/webs and cite examples
- Describe factors that limit or enhance population growth
- Evaluate a given habitat for its suitability for designated species, given a description of their habitat needs