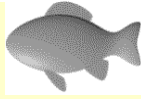


## AQUATIC



- ✳ 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