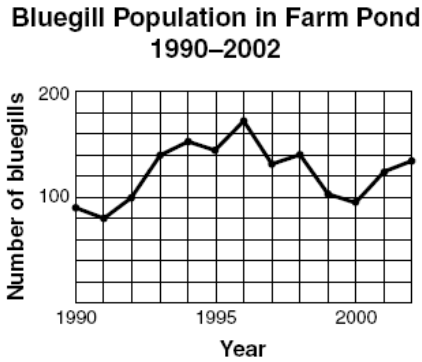
1.



According to the data in the graph, during which time period did the overall bluegill population decline? _____

Transition forest – overlap zones between needleleaf forests and deciduous forests

Appalachian Cove forest – climax forests known for high humidity and lush foliage

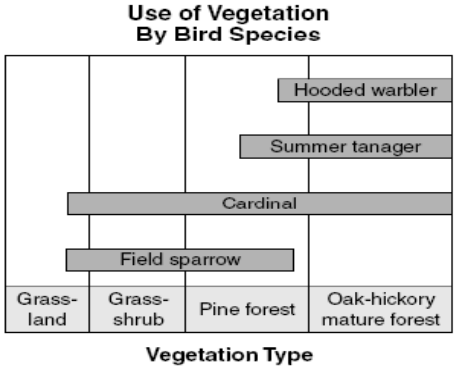
Northern Needleleaf forest – spruce-fir forests found on the highest, coolest peaks

Oak-Hickory forest – classic deciduous forests with abundant food and shelter

2. Shenandoah National Park is home to many different types of ecosystems. According to the characteristics shown above, which ecosystem would ***most likely*** be home to a mixture of wildlife species from northern, cooler ranges and southern, warmer ranges? _____

3. The organisms in a typical backyard are likely to include bacteria, grass, shrubs, trees, insects, spiders, birds, and small mammals. Together, all these organisms make up a _____.

4. In order to maintain homeostasis, it is ***most important*** for an animal to be able to _____.

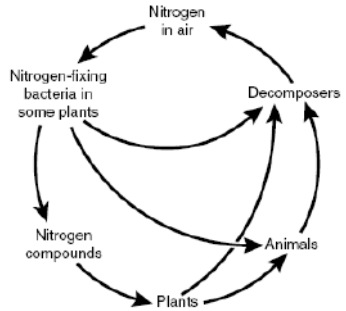


5. An experiment is designed to clear an oak-hickory forest and replant the area with pines. Which of the following species would be ***most*** threatened by this experiment? _____

6. Based on the method by which they get food, organisms are classified as autotrophs or heterotrophs. List each organism listed below as either an autotroph or a heterotroph.

A) Mushroom-_____ B) Grass-_____

B) Human-_____ D) Fish- _____

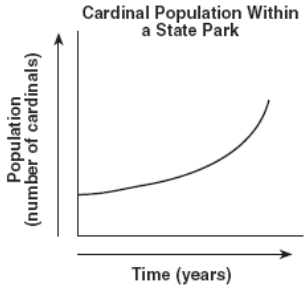


7. The diagram shows a simplified nitrogen cycle. Which process is responsible for returning nitrogen to the air? _____

Sandy Beach and Dune Wildlife Locator Chart

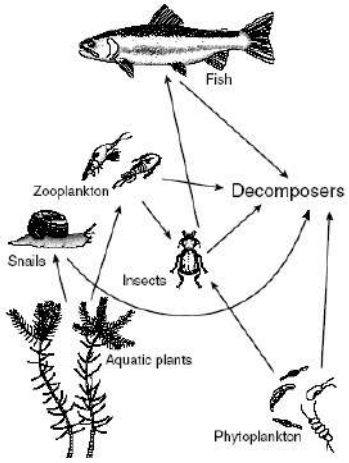
	Feeds in Dunes	Feeds on Wet Sand or Beach	Feeds at High-tide mark
Nests in Tree Canopy or Shrubs	Yellow-billed Cuckoo American Robin Cedar Waxwing		Fish Crow Boat-tailed Grackle
Nests in Tree Trunks	Downy Woodpecker Northern Flicker		Raccoon
Nests on Ground	Eastern Cottontail	Black-bellied Plover Wilson's Plover Semipalmated Plover Piping Plover American Oystercatcher Willet Sanderling Semipalmated Sandpiper Dunlin Laughing Gull Ring-billed Gull Great Black-backed Gull	Ruddy Turnstone
Nests in Fresh Water	Fowler's Toad		

8. A student studying wildlife nesting patterns in the sandy beach and dune ecosystem of the Chincoteague National Wildlife Refuge would find nests of the least species in which locations? _____



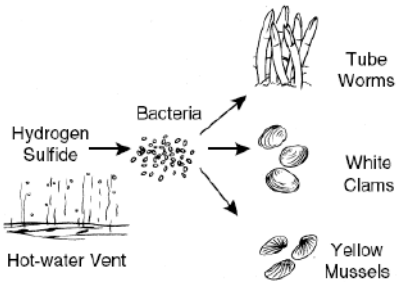
9. What hypothesis could be best supported by this graph? _____
_____

10. What is the greatest limiting factor for plants that grow on the floor of a rain forest? _____
11. Name a decomposer in a Virginia forest? _____
12. A symbiotic relationship in which both organisms benefits is known as _____.
13. A symbiotic relationship in which one organism benefits while one organism is harmed is known as _____.
14. A symbiotic relationship in which one organism benefits while one organism is neutral is known as _____.



15. Energy is transferred from insects to fish in this system by _____.

Deep-Ocean Organisms

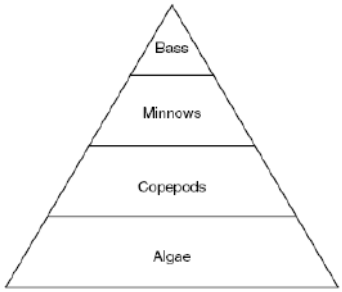


16. Around hot-water vents deep in the ocean live specialized communities. Bacteria turn hydrogen sulfide into sugars by a chemical process. The bacteria then provide food to other life forms, as shown in the diagram. Compared to food chains on land, the bacteria fill the same role as _____.

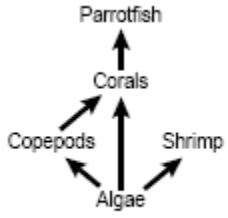
Hypothesis: More pine seeds germinate after a forest fire.

17. The most valid and reliable test of this hypothesis would include an experimental group of pine seeds that was recovered from a fire area and pine seeds that were _____.

18. The nonpoisonous eastern scarlet snake has colored bands that closely resemble the poisonous coral snake. This selective adaptation provides the eastern scarlet snake with _____.



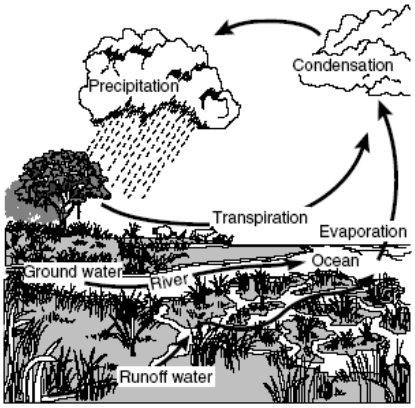
19. Which level of this food pyramid represents the largest biomass? _____



Ocean Food Web

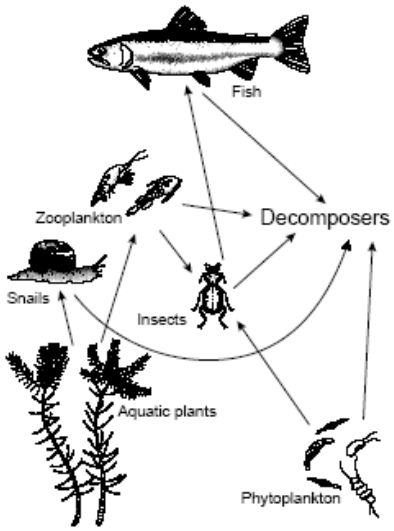
20. Food webs are models used to show energy flow in ecosystems. In the above food web, what is the main source of energy for the copepods? _____

The Water Cycle

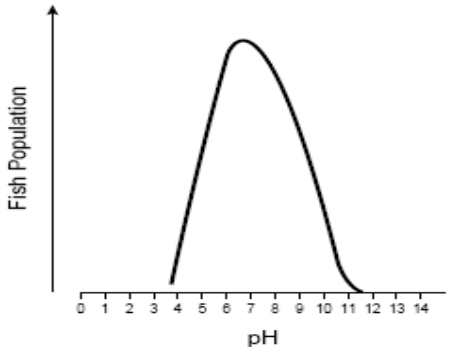


21. The diagram shows a simplified water cycle. What is the major source of energy driving this cycle?_____

22. According to this simplified water cycle, the process of transpiration is the process that _____ _____.



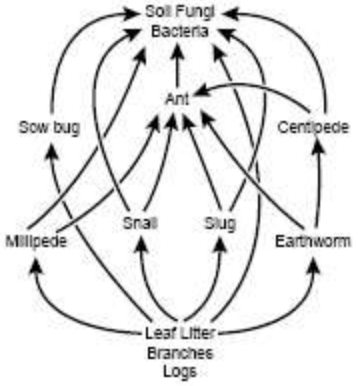
23. Which of these populations would probably ***increase*** if the zooplankton decreased? _____



24. A lake has a normal pH of 7. Large amounts of acidic waste were dumped into the lake, changing the pH to 4. What will most likely happen? _____

25. What are the levels of organization of a mammal?

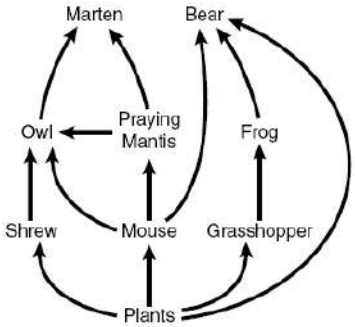
_____ → _____ → _____ → _____ → _____



26. The diagram shows a simple food web of organisms on a forest floor. Which of these is ***most*** dependent on the earthworm for its food supply? _____

27. What is the niche of a lion? _____

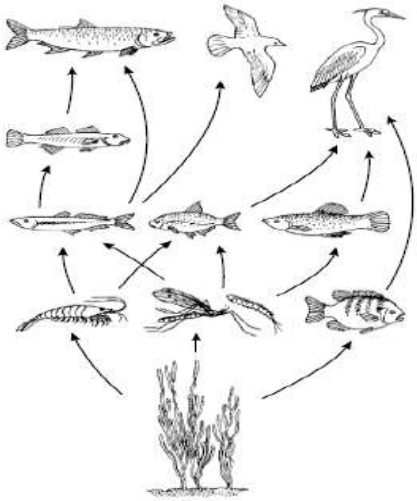
28. The ermine is a small animal that lives along riverbanks and in forests. During the spring and summer, it grows a brown coat. It sheds the brown coat during the autumn and grows a white one. This change of color in the ermine's coat allows it to _____.



29. Which of these populations is most likely to increase if the number of grasshoppers decreases? _____

Algae → Frog → Snake → Hawk

30. The relationship between the algae and the frog may be described as _____.

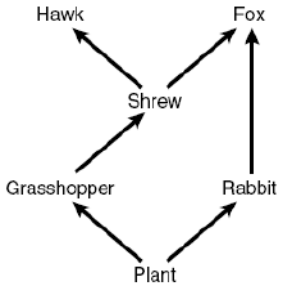


31. Which process is the foundation for the food web? _____

32. Put the following terms in the correct order of progression in a food chain?

Herbivores Carnivores Producers

_____ → _____ → _____



33. The primary producer in the ecosystem above is the _____.

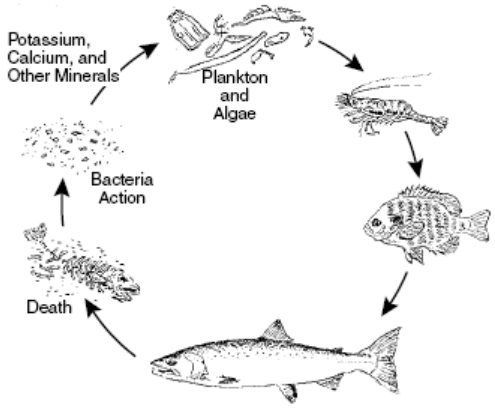
34. Give a specific example that illustrates a predator-prey relationship? _____

35. During the process of evaporation, liquid water becomes _____.

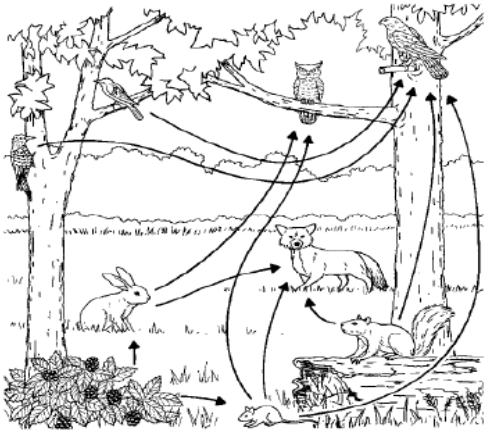
36. What process in the water cycle causes dew to form in the morning? _____

37. Give an example of a decomposer at work in a food web? _____

38. A tick that feeds on the blood of animals is a _____.

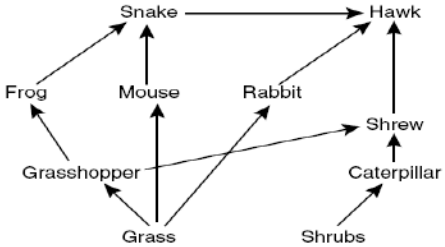


39. According to this diagram, both of these fish get their energy from _____.



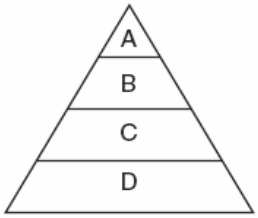
40. In the food web shown, which consumers eat only producers? _____

41. How are humans classified within a food chain? _____



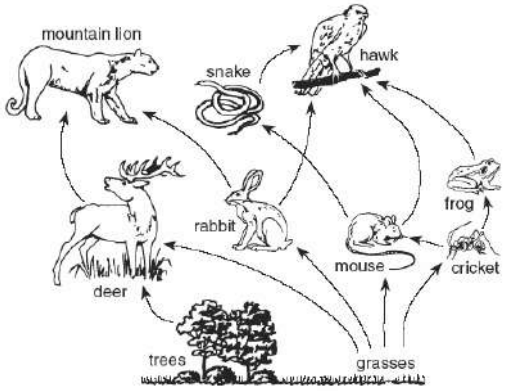
42. In this food web, which organism has the greatest number of food sources? _____

43. The diagram below represents a pyramid of energy in an ecosystem. Which level in the pyramid would most likely contain members of the plant kingdom? _____



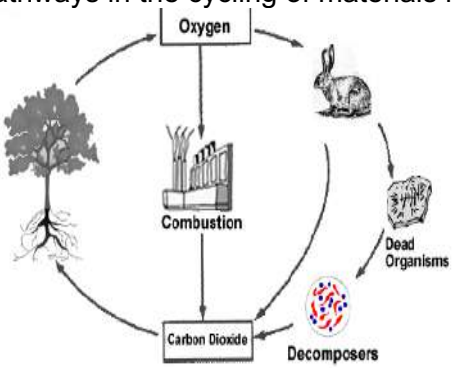
44. Vultures, which are classified as scavengers, are an important part of an ecosystem because they _____.

45. In the food web illustrated below, which event would cause the ecosystem to become unstable?

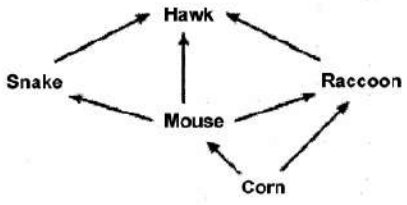


_____

46. The diagram below shows some pathways in the cycling of materials in the environment.



47. Which two processes are involved in the cycling shown in the diagram? _____



48. In the diagram above, which organism is both a primary and a secondary consumer? _____

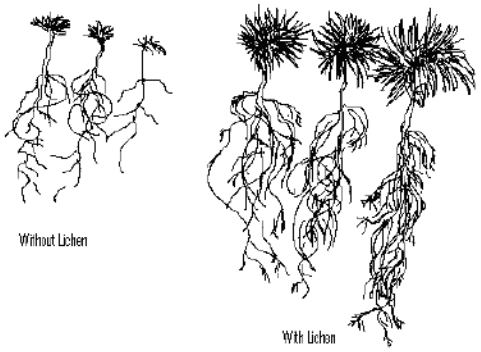


Figure 1

49. The drawing shows the results of an experiment involving three juniper plants that were allowed to grow in the same environmental conditions. One set of plants were infused with lichen (fungus) attached and the other set without. Based upon the results the experiment, what conclusion could be drawn?

_____

50. The drawing shows an experiment involving three juniper plants that were allowed to grow under the same conditions over a period of time. Based on the experiment, a scientist concludes that lichens and juniper have a _____ relationship.

51. What term refers to the behavior of two species attempting to use the same living space, food source, and water source? _____

52. Cougars are predators that often eat weakened or diseased animals. This is a description of the _____ of cougars.