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Two species of deer have been prevalent in the Puget Sound area of Washington State in the Pacific Northwest of the United States. The black-tailed deer, a lowland, west-side cousin of the mule deer of eastern Washington, is now the most common. The other species, the Columbian white-tailed deer, in earlier times was common in the open prairie country; it is now restricted to the low, marshy islands and flood plains along the lower Columbia River. Nearly any kind of plant of the forest understory can be part of a deer's diet. Where the forest inhibits the growth of grass and other meadow plants, the black-tailed deer browses on huckleberry, salal, dogwood, and almost any other shrub or herb. But this is fair-weather feeding. What keeps the black-tailed deer alive in the harsher seasons of plant decay and dormancy? One compensation for not hibernating is the built-in urge to migrate. Deer may move from high-elevation browse areas in summer down to the lowland areas in late fall. Even with snow on the ground, the high bushy understory is exposed; also snow and wind bring down leafy branches of cedar, hemlock, red alder, and other arboreal fodder. The numbers of deer have fluctuated markedly since the entry of Europeans into Puget Sound country. The early explorers and settlers told of abundant deer in the early 1800s and yet almost in the same breath bemoaned the lack of this succulent game animal. Famous explorers of the north American frontier, Lewis and Clark arrived at the mouth of the Columbia River on November 14, 1805, in nearly starved circumstances. They had experienced great difficulty finding game west of the Rockies and not until the second of December did they kill their first elk. To keep 40 people alive that winter, they consumed approximately 150 elk and 20 deer. And when game moved out of the lowlands in early spring, the expedition decided to return east rather than face possible starvation. Later on in the early years of the nineteenth century, when Fort Vancouver became the headquarters of the Hudson's Bay Company, deer populations continued to fluctuate. David Douglas, Scottish botanical explorer of the 1830s, found a disturbing change in the animal life around the fort during the period between his first visit in 1825 and his final contact with the fort in 1832. A recent Douglas biographer states: "The deer which once picturesquely dotted the meadows around the fort were gone ?in 1832?, hunted to extermination in order to protect the crops." Reduction in numbers of game should have boded ill for their survival in later times. A worsening of the plight of deer was to be expected as settlers encroached on the land, logging, burning, and clearing, eventually replacing a wilderness landscape with roads, cities, towns, and factories. No doubt the numbers of deer declined still further. Recall the fate of the Columbian white-tailed deer, now in a protected status. But for the black-tailed deer, human pressure has had just the opposite effect. Wildlife zoologist Helmut Buechner(1953), in reviewing the nature of biotic changes in Washington through recorded time, says that "since the early 1940s, the state has had more deer than at any other time in its history, the winter population fluctuating around approximately 320,000 deer (mule and black-tailed deer), which will yield about 65,000 of either sex and any age annually for an indefinite period." The causes of this population rebound are consequences of other human actions. First, the major predators of deer-wolves, cougar, and lynx-have been greatly reduced in numbers. Second, conservation has been insured by limiting times for and types of hunting. But the most profound reason for the restoration of high population numbers has been the fate of the forests. Great tracts of lowland country deforested by logging, fire, or both have become ideal feeding grounds

of deer. In addition to finding an increase of suitable browse, like huckleberry and vine maple, Arthur Einarsen, longtime game biologist in the Pacific Northwest, found quality of browse in the open areas to be substantially more nutritive. The protein content of shade-grown vegetation, for example, was much lower than that for plants grown in clearings.

question 1

According to paragraph 1, which of the following is true of the white-tailed deer of Puget Sound?

A It is native to lowlands and marshes.

B It is more closely related to the mule deer of eastern Washington than to other types of deer.

C It has replaced the black-tailed deer in the open prairie.

D It no longer lives in a particular type of habitat that it once occupied.

question 2

It can be inferred from the discussion in paragraph 2 that winter conditions

A cause some deer to hibernate

B make food unavailable in the highlands for deer

C make it easier for deer to locate understory plants

D prevent deer from migrating during the winter

question 3

The author tells the story of the explorers Lewis and Clark in paragraph 3 in order to illustrate which of the following points?

A The number of deer within the Puget Sound region has varied over time.

B Most of the explorers who came to the Puget Sound area were primarily interested in hunting game.

C There was more game for hunting in the East of the United States than in the West.

D Individual explorers were not as successful at locating games as were the trading companies.

question 4

According to paragraph 3, how had Fort Vancouver changed by the time David Douglas returned in 1832?

A The fort had become the headquarters for the Hudson's Bay Company.

B Deer had begun populating the meadows around the fort.

C Deer populations near the fort had been destroyed.

D Crop yields in the area around the fort had decreased.

question 5

Why does the author ask readers to recall "the fate of the Columbian white-tailed deer" in the discussion of changes in the wilderness landscape?

A To provide support for the idea that habitat destruction would lead to population decline

B To compare how two species of deer caused biotic changes in the wilderness environment

C To provide an example of a species of deer that has successfully adapted to human settlement

D To argue that some deer species must be given a protected status

question 6

Which of the following statements about deer populations is supported by the information in paragraph 4?

A Deer populations reached their highest point during the 1940s and then began to decline.

B The activities of settlers contributed in unexpected ways to the growth of some

deer populations in later times.

C The cleaning of wilderness land for construction caused biotic changes from which the black-tailed deer population has never recovered.

D Since the 1940s the winter populations of deer have fluctuated more than the summer populations have.

question 7

Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

A Arthur Einarsen's longtime familiarity with the Pacific Northwest helped him discover areas where deer had an increase in suitable browse.

B Arthur Einarsen found that deforested feeding grounds provided deer with more and better food.

C Biologists like Einarsen believe it is important to find additional open areas with suitable browse for deer to inhabit.

D According to Einarsen, huckleberry and vine maple are examples of vegetation that may someday improve the nutrition of deer in the open areas of the Pacific Northwest.

question 8

Which of the following is NOT mentioned in paragraph 5 as a factor that has increased deer populations?

A A reduction in the number of predators

B Restrictions on hunting

C The effects of logging and fire

D Laws that protected feeding grounds of deer

question 9

Look at the four squares [] that indicate where the following sentence could be added to the passage. Where would the sentence best fit?

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question 10

Directions: An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that not presented in the passage or are minor ideas in the passage. This question is worth 2 points.

- A. The balance of deer species in the Puget Sound region has changed over time, with the Columbian white-tailed deer now outnumbering other types of deer.
- B. Deer populations naturally fluctuate, but early settlers in the Puget Sound environment caused an overall decline in the deer populations of the areas at that time.
- C. In the long term, black-tailed deer in the Puget Sound area have benefitted from human activities through the elimination of their natural predators, and more and better food in deforested areas.
- D. Because Puget Sound deer migrate, it was and still remains difficult to determine accurately how many deer are living at any one time in the western United States.
- E. Although it was believed that human settlement of the American West would cause the total number of deer to decrease permanently, the opposite has occurred for certain types of deer.
- F. Wildlife biologists have long been concerned that the loss of forests may create nutritional deficiencies for deer.