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FRQ Practice 2.1

SUGGESTED SKILL

 *Concept Explanation*

1.A

Describe environmental concepts and processes.

Describe one of the three levels of biodiversity. (1 pt.)

- Ecosystem - the variety/amount of different natural habitats/ecosystems found in a given area
- Species - the variety/amount of different species of organisms/plants/animals found in a given area
- Genetic - the diversity in the genotypes/genes/traits of the members of a population

Explain how high biodiversity at the level you described is beneficial to ecosystems. (1 pt.)

- High ecosystem diversity provides a wide variety of habitats and food resources that can support a wide variety of different species, which makes the ecosystem more resilient/stable
- High species biodiversity can also provide a wide variety of food or shelter resources to other organisms **OR** creates a more diverse and stable food web
- High genetic biodiversity makes a species less prone to population loss due to a disturbance **or** increases the likelihood that the population can adapt/evolve to changing conditions

FRQ Practice 2.2

SUGGESTED SKILL

 *Concept Explanation*

1.B

Explain environmental concepts and processes.

Describe an ecosystem service that intact forest ecosystems provide for humans.

Ecosystem Service	Benefit to Humans
Resource material (tree/forest)	Lumber, building materials, fuel, paper, food
Oxygen production	Human respiration
Soil formation/protection	Forestry, agriculture, flood control, water quality
Protection of water supplies	Drinking water, recreation, irrigation, fishing
Habitat (e.g. specify shade, temperature moderation, etc.)	Animals or plants desired by humans for fishing, hunting, food
Biodiversity	Food, medicine, gene diversity, breeding stock
Carbon sink (sequestering)	Slows climate change
Aesthetics/cultural/social	Connection with nature (inspiration for art, music, poetry, etc.), research, education, recreation, tourism

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FRQ Practice 2.2

SUGGESTED SKILL

 *Concept Explanation*

1.B

Explain environmental concepts and processes.

Identify one human activity that could degrade the ecosystem service and **explain** how the activity decreases the value of the ecosystem service. (1 pt.)

Ecosystem service	Human activity & explanation of decreased value
Resource material	Clear-cutting/rapid deforestation; produces short-term profits, but decreases ability to harvest lumber in future years
Oxygen	Deforestation (for a specific purpose); reduces the rate/amount of oxygen production via photosynthesis
Water supplies	Deforestation (for a specific purpose); removes root structure and makes soil less permeable, decreasing rate of groundwater recharge
Habitat	Deforestation (for a specific purpose); removes trees needed by animals for habitat/food source, reducing their populations for human hunting/harvesting
Biodiversity	Deforestation (for a specific purpose); removes trees/plants needed by animals for habitat/food source, reducing the ability for humans to use them as food or to use plants as medicine
Carbon sink	Deforestation (for a specific purpose); removes trees & reduces the amount of carbon they can store from the atmosphere via photosynthesis
Cultural	Deforestation (for a specific purpose); decreases the beauty of ecosystems, decreasing likelihood of tourists/educational/research use

FRQ Practice 2.3

SUGGESTED SKILL

 *Concept Explanation*

1.A

Describe environmental concepts and processes.

Describe the processes of colonizing an island habitat.

- members/individuals from a mainland population/other population move/migrate to an island habitat previously not colonized by the species

Describe how the island's distance from the mainland influences the number of species that will colonize the island habitat.

- As the islands distance from the mainland increases, the number of species that colonizes the habitat decreases
- There is an inverse relationship between the distance from the mainland and the number of species that will colonize the island

FRQ Practice 2.4

SUGGESTED SKILL



Text Analysis

3.A

Identify the author's claim.

There is a genetic basis for
the variance in thermal
tolerance in salmon.

FRQ Practice 2.5

SUGGESTED SKILL

 Data Analysis

5.A

Describe patterns or trends in data.

Describe the relationship between latitude and change in first leaf date depicted in the graph. (1 pt.)


- As latitude increases, the change in first leaf date becomes earlier
- The higher the latitude, the earlier the first leaf date becomes

Explain why you think this relationship exists. (1 pt.)

- As the climate becomes warmer, plants are able to leaf out earlier in the year in northern latitudes as frost or cold spells don't prevent their growth

FRQ Practice 2.6

SUGGESTED SKILL

 *Data Analysis*

5.B

Describe relationships among variables in data represented.

Describe the difference in beak size between the two islands. (1 pt.)


- The finches on Santa Cruz Island had a higher average beak size than the finches on Daphne Island

Make a claim about the reason for this difference in beak size. (1 pt.)

- The finch population on SC Island may have adapted larger beaks to utilize larger seeds or insects as a food source
- The finch population on Daphne Island may have adapted smaller beak sizes to reach seed or insect food sources in smaller spaces

FRQ Practice 2.7

SUGGESTED SKILL

 Data Analysis

5.C

Explain patterns and trends in data to draw conclusions.

Based on the graph below, **explain** whether spruce trees are an early, middle, or late successional species.

- Spruce are a mid-successional/middle succession species. They don't appear in an area immediately after a disturbance and their population size doesn't peak until 120 years after a disturbance. From 120-200 years, their population declines, indicating that they're not a late-successional or climax species