

Ecology 26-30 Biodiversity in Ecosystems

1 The ecosystem with the greatest biodiversity is the one that has the greatest-

- A variety of living things.
- B average annual rainfall.
- C coverage of land area.
- D elevation above sea level.

2 Changes to an ecosystem's biodiversity can have a direct effect on humans because humans-

- A inhabit all areas of the earth's ecosystems.
- B use minerals from the ground to make things.
- C rely mostly on solar power for energy.
- D depend on the earth's natural resources.

3 The chart lists data on 4 projects designed to restore a wetland destroyed by human activity and a hurricane. The chosen project will have to be low in cost, benefit the most species, and be supported by the community. Which project should be chosen?

Project	Anticipated cost (millions of dollars)	% of Wildlife to Benefit	Community Support
1	13 - 16	15 - 25	High
2	25 - 30	50 - 75	Moderate
3	12 - 17	70 - 80	High
4	18 - 25	75 - 80	Low

- A Project 1
- B Project 2
- C Project 3
- D Project 4

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5 Human activity can destroy coral reefs. Because so many organisms depend on the coral, this can have a negative effect on the ecosystem in shallow ocean waters. Which of the following solutions would be the best option to repair the ecosystem?

- A Introduce non-native species into the shallow ocean that don't depend on coral
- B Design nets to catch the kinds of fish that use coral reefs as a food source
- C Submerge large structures on which new coral reefs can form and grow
- D Use submarines to gather data on the amount of coral reefs lost each year

4 Humans use of fertilizers & pesticides cause N pollution in Earth's fresh water. It harms plants & animals in the water. Certain wetland plants are able to restore the water to it's non polluted state. Which would increase the negative effects of N?

- A Using fertilizers that do not contain nitrogen
- B Loss of biodiversity in the wetlands
- C A severe drought that reduces groundwater
- D The introduction of a new species of plant

Ecology 21-25 Dynamic Nature of Ecosystems

- 1 The peppered moth has two forms, a white-bodied and a dark-bodied form. The table provided shows the percentage of each type in a moth population over several years. Which of the following could be a correct claim from the data provided?



Year	% of Population	% of Population
1965	12	88
1970	15	85
1975	37	63
1980	62	38
1985	77	23

- A Data shows the white moth population decreased gradually while the black moth population increased from 1965-1985.
- B Data shows that eventually there will not be anymore dark-bodied moths after 1985.
- C Data shows that in the years after 1975 the trend reversed leading to more dark moths.
- D Data shows that the black moth population decreased from 1965-1985 while the White moth population increased over the same amount of time.
- 2 Brown tree snakes were first brought to Guam in 1950. Which of the following would provide evidence that the introduction of the brown tree snake has had an effect on the populations of organisms that lived on Guam?

Brown Tree Snakes

- introduced and aggressive
- live in trees
- hunt at night
- eat lizards and other birds

Island of Guam in 1950

- almost all nesting top predatory birds
- 2,000 lizards (200)
- No snakes
- large lizard population

- A Many of the military bases on Guam were closed in the 1980s.
- B Several other species of snakes were known to live on Guam before 1950.
- C The population of lizards on Guam in 1960 was very small.
- D The longest brown tree snake ever found on Guam measured 3 meters in length.

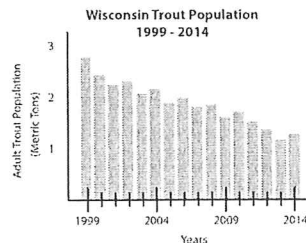
- 3 A physical disruption to an ecosystem occurred when a highway was built through a forest. Which of the following would provide evidence that the addition of a highway to this forest affected populations?

- A The amount of water runoff from higher elevations increased after the highway was built.
- B The trees that were not cut down during the construction of the highway continued to grow.
- C There were fewer species of nesting birds living in the forest after the highway was built.
- D A greater area of the forest floor was exposed to the sunlight after the highway was built.

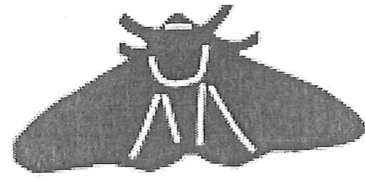
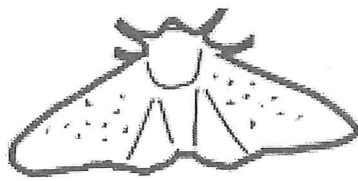
- 4 Bank swallows birds nest on a river's edges. They can't swim or breathe underwater. They eat flying insects and lay eggs in spring. Which observation is evidence that the population of bank swallows was affected by a change in the environment?

- A The largest swallows catch and eat more insects than the smallest ones.
- B Swallows that lay four eggs one year may lay five eggs the following year.
- C Fewer swallows are building nests along the river.
- D Swallows share a food source with other animals that also eat insects.

- 5 The graph provided shows the population of trout fish in the state of Wisconsin from 1999 to 2014. Which change to the ecosystem had the largest effect on the trout population in Wisconsin from 1999- 2014?



- A A hard freeze of many of the lakes in Wisconsin in the winter of 2006
- B The slow rise in lake temperatures in Wisconsin between 1999 and 2014
- C The rise in population of smaller fish in Wisconsin lakes between 2010 and 2011
- D A shift in ocean currents that occurred in 2000 and again in 2001



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Brown Tree Snakes

- Venomous and aggressive
- Live in trees
- Hunt at night
- Eat lizards and small birds

Island of Guam in 1950

- Home of growing US military base
- Jungle ecosystem
- No snakes
- Large lizard population

⑤

**Wisconsin Trout Population
1999 - 2014**

