

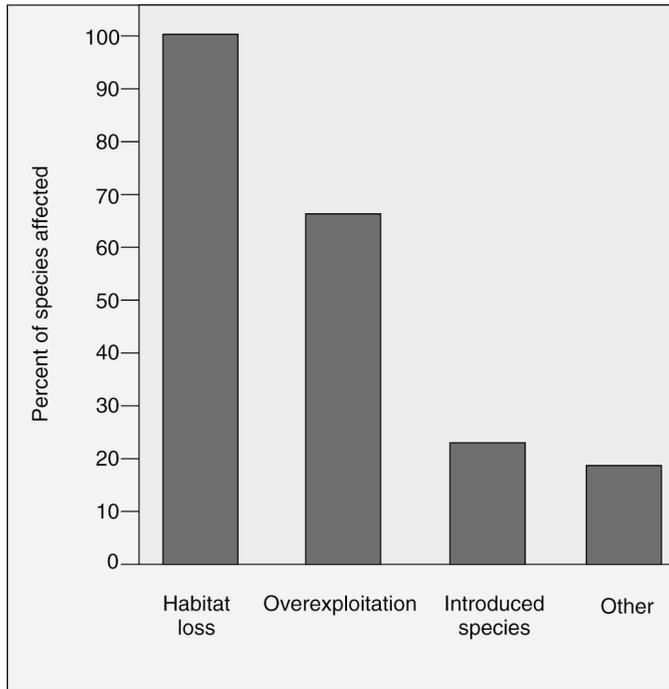
Conservation Biology

1. Species _____ are as normal and necessary as species formation.
2. Scientists estimate that no more than 15% of the world eukaryotic organisms have been _____ and given scientific names.
3. As habitats are fragmented, shrinking in size, a major problem is the _____ effect.
4. Scientists speculate that extinctions did not occur in Africa as they did on other continents because animals _____ with humans in Africa.
5. An organism whose decline or removal from a habitat causes many other species numbers to change dramatically is called a _____ species.
6. The majority of mammal and bird extinctions have occurred on _____.
7. _____ is the process of examining the genomes of animals and plants for useful genes.
8. Conservation biologists have been promoting the idea of very large areas with undisturbed habitats. They are called _____ and are especially good for preserving biodiversity.
9. Extinctions have occurred since life originated. However, since humans have been on the Earth, many extinctions have occurred as a result of human activities. Biologists are concerned about this trend in extinctions and human presence. Which of the following choices is correct about how biologists estimate rates of extinctions?
 - A. Biologists estimate the number of extinctions by conducting annual counts of the most critical flora and fauna and by using past extinctions as models.
 - B. Biologists estimate the number of extinctions by analyzing habitat loss and studying recorded extinction events.
 - C. Biologists estimate the number of extinctions by monitoring all populations for births and deaths.
 - D. Biologists estimate the number of extinctions by constant examination of the fossil record, especially deep marine sediments.
10. A friend asks you for a definition of *endemic* because she is writing a history paper and this word keeps occurring in the literature in reference to bison on the Great Plains of the United States. Your response is that the word *endemic* means
 - A. a species that has gone extinct since humans have evolved on Earth
 - B. a species that exists in many habitats on the Earth
 - C. a species that has coevolved with humans on Earth
 - D. a species that lives in only one area of the Earth

11. As we study the past 50,000 years worth of information about species' decline and extinctions around the world
 - A. we see rapid extinctions, especially of the larger animals, not long after humans arrive in an area
 - B. we can make a rough estimate of a population's risk of a local extinction
 - C. we see a steady-state rate of extinctions on all continents, only islands show a difference due to climate change
 - D. we see huge extinctions, especially of the larger animals, with ice ages and global warming
 - E. we see local extinctions that appear random, and then recolonizations from other areas

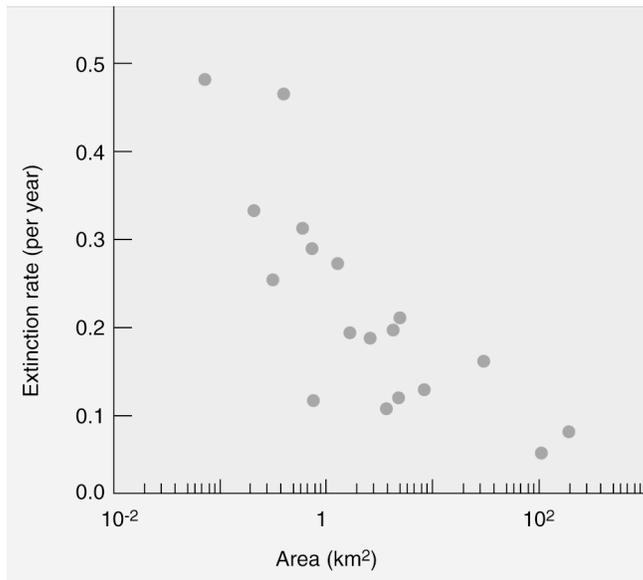
12. Regarding megafaunal extinctions, it is
 - A. assumed that climate change is the driving factor
 - B. assumed that, in the North American continent, the Ice Age was the driving factor
 - C. assumed that the dramatic differences between the ancient megafauna in North America and those found in Africa were the reason that the North American megafauna could not adapt and survive
 - D. assumed that the coevolution of African megafauna with humans is the reason they did not go extinct
 - E. assumed that the island megafauna mostly drowned in flooding as the icepack melted at the end of the Ice Age.

13. Which of the following is a correct interpretation of this graph?



- A. Habitat loss and overexploitation are the major reasons for species extinctions.
- B. Habitat loss and introduced species are the major reasons for species extinctions.
- C. Habitat loss and altered sex ratios are the major reasons for species extinctions.
- D. Overexploitation and introduction of exotic species have had a greater combined effect on species than habitat loss.

14. Which of the following is a correct interpretation of this graph?



- A. Larger islands have greater extinction rates than do smaller islands.
 - B. Smaller islands have greater extinction rates than do larger islands.
 - C. Larger islands and smaller islands have similar if not the same extinction rates because island size is not related to extinction rates.
 - D. Smaller islands have fewer species and thus lower extinction rates than larger islands.
 - E. Larger islands have more species and are at greater risks for extinctions than smaller islands.
15. Edge effects are the result of which of the following?
- A. Populations of flora and fauna have emigrated from the core of their population center to the edge of their habitat.
 - B. Metapopulations of some of the larger fauna have become more dominant on the landscape and as a result have increased the edge of their habitat.
 - C. Habitat fragmentations or habitat shrinkage have occurred, and thus the edge of the habitats have increased in size.
 - D. Habitat fragmentations or habitat shrinkage have occurred, and thus the edge of the habitats have decreased in size.
 - E. Populations of particular species have decreased and are on the edge of extinction.
16. Match the correct case study in conservation biology with its animal.
- A. fruit bats—introduction of new species
 - B. prairie chickens—loss of genetic diversity
 - C. songbirds—introduction of new species
 - D. prairie chickens—loss of habitat
 - E. Lake Victoria cichlids—loss of habitat

17. A scientist studied peregrine falcons to determine why the numbers of birds was declining. She determined that
- A. global warming (too much carbon dioxide) had increased the death rates in the newly hatched chicks
 - B. the genetic diversity of the falcons was too low to sustain their population level
 - C. the falcons had lost much of their habitat due to human developments
 - D. the falcon's habitat had been fragmented and the subsequent edge effect affected their ability to hunt for prey items
 - E. the levels of DDT in the environment were having a detrimental effect on eggs (causing the eggshells to be too thin) that were being laid by the female falcons
18. Sea otters have been used as an example of the "Keystone Species" concept. This means that sea otters
- A. provide the carnivorous component of the food chain in which they live
 - B. promote the edge effect in the kelp forests off the northern coastline of California
 - C. exert a particular strong influence on the structure and functioning of an ecosystem
 - D. offer an opportunity for scientists to study their long-term effects as they harvest the sea otter populations
 - E. Interactions with the kelp forests and the sea urchins have not really had any consequences that need to be currently studied
19. Which of the following groups is most studied regarding the increasing extinctions today?
- A. amphibians
 - B. mammals
 - C. fish
 - D. insects
 - E. bacteria
20. Animals that weigh more than 100 pounds are considered as
- A. extinct
 - B. endangered species
 - C. safe from extinction
 - D. sensitive species
 - E. megafauna
21. Historical extinction rates are best known for
- A. reptiles and amphibians
 - B. reptiles and birds
 - C. amphibians and fish
 - D. amphibians and birds
 - E. birds and mammals

22. Island species are particularly vulnerable because
- A. humans have altered habitats
 - B. island species have lost the ability to escape predators
 - C. humans have introduced competitors
 - D. humans have introduced diseases
 - E. A, B, C, and D
23. A species found naturally in only one specific geographical area and no other place on the Earth is referred to as
- A. endangered
 - B. sensitive
 - C. native
 - D. endemic
 - E. cosmopolitan
24. As many as one-half of the Earth's plants
- A. may already have gone extinct in the last 100 years
 - B. may be threatened with extinction at present
 - C. may be considered invasive species
 - D. are known to be medicinally useful
 - E. have been shown to be keystone species
25. Conservationists have identified 25 areas, worldwide, as hotspots. This means these areas
- A. can now be preserved
 - B. have serious pollution problems and are being targeted for cleanup
 - C. have high numbers of endemic species and are increasing with introductions
 - D. have high numbers of endemic species and are decreasing
 - E. have high numbers of invasive species and are struggling to survive

Use the following scenario for Questions 26-28

A small island has stable populations of plants and animals, including one species of hawk as the only predator.

26. A ship docks at the island, and the ship's cat has recently had a litter of kittens. One of the young cats accidentally goes ashore in a small boat, jumps to land and runs into the brush. No one notices, and they leave the cat on the island.
- A. it's only one cat and will make no difference to the island
 - B. the increase in nitrogenous waste from the cat will increase the size of many plants
 - C. the fish in the lagoon will decrease due to predation
 - D. some species of ground-nesting birds may go extinct within a few years
 - E. the insect populations will decline

27. The removal of the hawks could cause _____ for at least a year or two
- A. an increase in the plants
 - B. an increase in the insects
 - C. an increase in the small rodents
 - D. a decrease in the fish
 - E. a decrease in the plants
28. A resort is built on one end of the island. This causes
- A. a rapid increase in biodiversity of the island
 - B. a rapid increase in biodiversity of the shallow waters around the island
 - C. an increase in rainfall
 - D. an increased edge effect
 - E. an increase in pollock and a decrease in sea urchins
29. A major problem with hotspots is humans moving in and causing
- A. habitat destruction
 - B. increased genetic diversity
 - C. increased immigration among species
 - D. decreased introductions
 - E. decreased biomagnification
30. Habitat loss for a species can be the result of
- A. habitat destruction
 - B. pollution of the habitat
 - C. human disruption of a habitat
 - D. A and B
 - E. A, B, and C
31. As habitats become more fragmented and become smaller, the relative proportions of the habitat that remain have an increase
- A. in size leading to defragmentation
 - B. in connectivity to other habitats
 - C. in patch size of the habitat
 - D. in the edges of the habitat, leading to edge effects
 - E. in species richness, leading to biodiversity

32. Which of the following whale species are recovering their population numbers as a result of whale harvesting regulations?
- I. Right whales
 - II. Pacific Gray Whales
 - III. Sperm Whales
 - IV. Fin Whales
 - V. Humpback Whales
- A. I and II
 - B. I, II, and III
 - C. II and V
 - D. I, II, III, and IV
 - E. I, II, and V
33. The various endemic cichlids species of Lake Victoria have suffered losses in their population numbers and species due to the introduction of
- A. the Nile crocodile
 - B. the Nile perch
 - C. a new algae species
 - D. a new ectoparasite that lives on the gills
 - E. a fish hawk
34. Why might the different species of whales fail to recover even though hunting has been banned?
- A. loss of genetic diversity
 - B. loss of habitat
 - C. introduction of invasive species
 - D. increasing predation
 - E. increased disease spread due to edge effects
35. One of the important reasons for maintaining biodiversity is to
- A. prevent loss of habitats that can be logged or farmed at some future date
 - B. prevent loss of habitat leading to edge effects
 - C. prevent introduction of invasive species
 - D. maintain the genetic diversity of wild relatives of common crops
 - E. prevent increased disease spread due to edge effects

36. Economists have been comparing the monetary value of intact habitats with the value of using (destroying) those habitats (such as for logging or farming). They find
- A. the immediate economic gain is worth it, such as in the shrimp farms in Thailand
 - B. the long-term problems are minimal, and usually economically minor, it is more of an aesthetic problem than a monetary one
 - C. in every case studied the intact habitat is more valuable than the destroyed one
 - D. clearing the forest for agriculture, as in Cameroon, provides jobs, housing, and long-term economic benefits
 - E. increased invasion in intact habitats renders it worthless within a few years
37. When New York City was given a choice to make regarding its drinking water
- A. they opted for more bottled water
 - B. they chose ecosystem maintenance over development
 - C. they had to construct expensive filtration plants to protect against disease
 - D. they chose ecosystem conversion to higher density housing for efficiency
 - E. they dug new and deeper wells rather than pay for desalinization
38. In the last 20 years one concern of scientists who study amphibians is that
- A. genetic diversity is being increased too rapidly for proper maintenance
 - B. the edge effects are causing declines in species numbers
 - C. DDT is affecting reproduction by thinning the egg membranes
 - D. populations are diversifying rapidly and speciation is occurring
 - E. many species are declining or have gone extinct in recent years
39. Ecologists are concerned about amphibian populations because
- A. their loss would be an aesthetic loss to the planet
 - B. of the possibility of numerous medicinal uses
 - C. they are keystone species in many areas—their loss will cause other populations to crash
 - D. amphibians are very sensitive to environmental change—they may be indicating serious problems
 - E. they are increasing to the point of competing with indigenous species
40. Natural colonization can happen in all of the following ways except
- A. a flock of birds gets blown off course
 - B. a bird eats a fruit on the mainland and defecates the seed on an island
 - C. people plant new species on an island
 - D. lowered sea levels connect two areas previously isolated
 - E. birds pick up seeds on their feet wading in mud, drop them elsewhere

41. Human caused introductions can occur by
- plants and animals accidentally escaping from ships
 - automobile or truck tires
 - being in the soil or on a plant sold at a nursery
 - seeds or organisms on clothing or shoes
 - all of the above
42. The extinction vortex
- is what happens as a population decreases and becomes more vulnerable to extinction from a variety of causes
 - is what happens in certain areas, similar to the Bermuda Triangle situation
 - is what happens competing species fight over a single niche, often driving both species to extinction
 - is a spiral of events that occur once a species has become overcrowded through excess reproduction
 - is a spiral of events that includes introduction of competing species, overexploitation, and disease, in that order
43. Match each of the following.
- | | |
|---|--------------------------|
| _____ A. A species goes extinct without any clear, single cause. | 1. hotspot |
| _____ B. Almost all the large mammals disappeared from North America by about 10,000 years ago. | 2. habitat loss |
| _____ C. An area with many endemic species, some of which are disappearing. | 3. edge effects |
| _____ D. Primarily due to habitat destruction, pollution, human disruption, fragmentation. | 4. megafaunal extinction |
| _____ E. Become an increasing problem as habitat size shrinks. | 5. extinction vortex |

Answer Key

No. on Test	Correct Answer
1	Extinctions
2	Discovered
3	Edge
4	Coevolved
5	Keystone
6	Islands
7	Gene prospecting
8	Megareserves
9	B
10	D
11	A
12	D
13	A
14	B
15	C
16	B
17	E
18	C
19	B
20	E
21	E
22	E
23	D
24	B
25	D
26	D
27	C
28	D
29	A
30	E
31	D
32	C
33	B
34	A

35	D
36	C
37	B
38	E
39	D
40	C
41	E
42	A
43	1-C, 2-D, 3-E, 4-B, 5-A