climate can influence species diversity

第1题

What is the lecture mainly about?

A Similarities and differences between polar and tropical birds

B How mammals tend to differ from birds in choosing a microhabitat

C How feeding strategies based on climate can influence species diversity

D Warning signs that indicate when a species is threatened with extinction

第2题

What are two points the professor makes about polar animals species with regard to the food they eat?

A They change their eating behaviors based on food availability

B They can survive without food for long periods of time

C They tend to need more food in the winter than in the summer

D They look for food over a very wide area

第3题

Why does the professor discuss the arctic fox?

A To point out its effect on bird populations in polar regions

B To identify an animal species affected by seasonal change

C To illustrate the importance of microhabitats

D To give an example of a generalist species

第4题

What reason does the professor give to support the claim that microhabitats lead to an increase in species diversity?

A They have temperatures that are suitable for many species.

B They reduce competition among species for the same food resources.

C They allow individual species to spread throughout multiple ecosystems.

D They prevent animals species destroying their food sources through overpopulation.

第5题

Why does the professor mention species extinction?

A To emphasize a possible consequence of specialization

B To point out the effect of human activity on polar habitats

C To illustrate a downside of competition between different species

D To give a reason why animal species might change its microhabitats

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Professor: One of the most noticeable differences between polar regions and tropical regions is the tropical ecosystems are much more diverse in terms of the plants and animals we find there. Now, remember that the farther you are from the equator, the more seasonal fluctuations in temperature there tend to be. So how do you think this affects animals in polar ecosystems in terms of food? John?

Student 1: I would guess that with big changes in seasons and you know, plants dying and animals migrating in the fall, it keeps changing what kinds of foods are available in polar regions.

Professor: Right and with that, the feeding behavior of polar animals. They tend to cover a lot of territory in search of food and they need to be what we call, generalists, meaning that in their eating habits they’re amazingly flexible. A really good example is the Arctic Fox. It mainly eats smaller mammals.

Student 1: Like mice and rabbits?

Professor: Well yea, that’s the idea; very small mammals of that sort, but in the summer its diet expands to include migratory birds and especially their eggs, as well as insects and even berries. It also feeds on seals or anything else that polar bears have killed and left behind, so the Arctic Fox’s definitely a generalist that’s pretty hard to categorize according to one particular type of food. Now, in the tropics, temperatures are much more stable, so what does that mean to animals in ecosystems there? Ann?

Student2: Well, with temperatures about the same year round, their food sources would probably be much more stable too, so they wouldn’t have to keep adapting their feeding behavior to changing conditions.

Professor: Right and typically these animals survive quite well on just one or two food sources. They’ve become what we call specialists; living in one small part of the habitat, feeding on one particular kind of food. There’s a South American bird for example called the Yellow Eared Parrot that lives in Colombia, not far from the equator. It’s mostly green actually, but with patches of yellow feathers on the sides of its head near its ears. Anyway, this yellow-eared parrot nests in one particular species of palm tree: the wax palm and it’s very picky about what it eats, mainly the fruit of the wax palm.

Student 2：But you said there’s more diversity in tropical ecosystems. I mean just because an animal prefers one special kind of food. Why does that lead to more diversity?

Professor: Good question. What happens is that in the tropics with each species more or less specializing in a particular type of food, they’re more likely to divide up the ecological resources, so each little bit of the habitat essentially becomes a microhabitat that supports the species uniquely suited to thrive on the food and in the living space that this microhabitat provides. So in the {inaudible) ecosystem, you end up with lots of microhabitats and lots of different species that are not competing with each other much at all. There’s a place for everyone.

Student2: So the generalist species cover a lot of territory, but the specialists?

Professor: Unlike the generalists, they don’t need to. Ok, now here’s a question to consider. Based on what we’ve been saying, in which kind of ecosystem, polar or tropical, would you expect species to have a better chance of survival?

Student 1: I’d say an animal species would have a better chance of surviving in the tropics.

Professor: Because…

Student 1: Well, if they each have their own little microhabitat with no competition for food or whatever, they’ve got it made.

Professor: Right, that’s what you might think, except there is a downside to being a specialist. Can anyone think of what that might be?

Student2: Well, {inaudible) like you said: if they each have their own microhabitat, but what if that microhabitat disappears? Professor: Keep going...

Student2: Well, if they can eat only one kind of food and that food grows in only one particular microhabitat, well if that microhabitat disappears, they’re out of luck. They might all starve and the species could die out.

Professor: Right, extinction is a real threat and species on the brink of extinction, lots of these live in tropical regions and they’re most specialists whose microhabitat is being destroyed, often due to human activities. This was certainly true of the yellow-eared parrot, less so now that the wax palms are legally protected, but it’s definitely something to think about.

{"1": ["C"], "2": ["A", "D"], "3": ["B", "D"], "4": ["B"], "5": ["A"]}