



加助教: toeflfairy

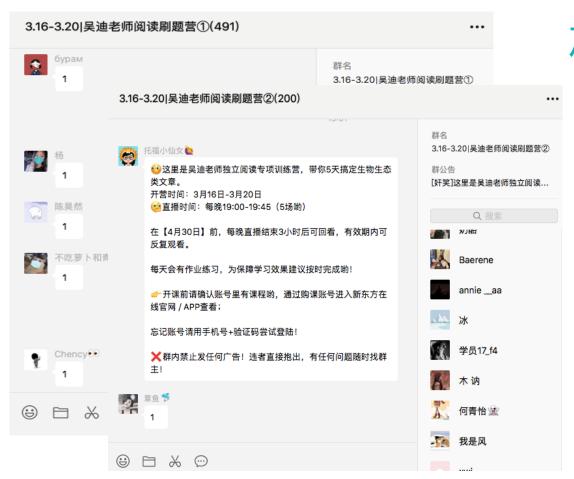
回复【阅读】进群





┿(直播结束3小时后可回看)





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回复【阅读】进群





每日直播结束老师会布置相应习题,在群内发布完成作业任务次日上课前老师会抽选1人点评 打卡全勤赠送吴迪老师整理托福阅读高频词汇



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回复【阅读】进群





生态学文章2 (动植物与环境的关系)

吴迪

欢迎登陆: www.koolearn.com





吴迪:

新东方在线托福阅读教师 6年教学经验 托福阅读连续3次满分

词句基础+篇章逻辑=阅读满分

课程大纲



- ➤ DAY 1: 动物行为学文章1 (鸟类+两栖动物+爬行动物)
- ➤ DAY 2: 动物行为学文章2 (哺乳动物)
- ▶ DAY 3: 生态学文章1
- > DAY 4: 生态学文章2
- ▶ DAY 5: 古生物学文章

课程大纲



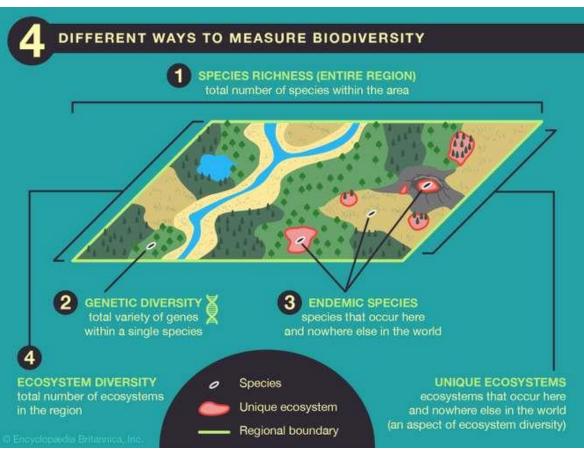
- > DAY 4: 生态学文章2 (动植物与环境的关系)
 - ▶ 背景知识补充
 - ▶ 例题讲解
 - ▶ 思路总结



- **Biodiversity:**
- What is biodiversity and how do we measure it?
 - ➤ **Biodiversity**, also called biological diversity, the variety of life found in a place on Earth or, often, the total variety of life on Earth.
 - ➤ A common measure of this variety, called species richness, is the count of species in an area.
 - > Furthermore, biodiversity encompasses the genetic variety within each species and the variety of ecosystems that species create.









Biodiversity:

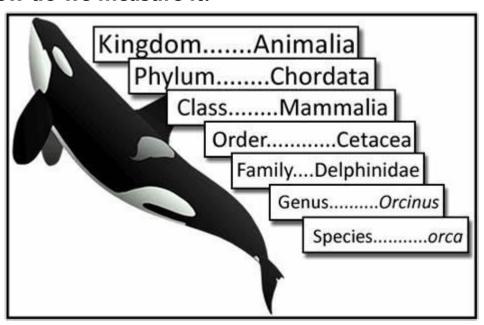
- What is biodiversity and how do we measure it?
 - ➤ Although examining counts of species is perhaps the most common method used to compare the biodiversity of various places, in practice biodiversity is weighted differently for different species, the reason being that some species are deemed more valuable or more interesting than others. One way this "value" or "interest" is assessed is by examining the diversity that exists above the species level, in the genera, families, orders, classes, and phyla to which species belong.



- **Biodiversity:**
- What is biodiversity and how do we measure it?
 - Taxonomy
 - ➤ 界 (Kingdom)
 - ➤ 门 (Phylum)
 - > 纲 (Class)
 - > 目 (Order)
 - ➤ 科 (Family)
 - ➤ 属 (Genus)
 - ➤ 种 (Species)



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- **Biodiversity:**
- > What regions typically have high biodiversity?
 - > Tropical Rainforests
 - > Coral Reefs









Biodiversity:

- > What regions typically have high biodiversity and why?
 - ➤ Coral Reefs: Healthy coral reef ecosystems are like bustling cities, with buildings made of coral and thousands of marine inhabitants coming and going, interacting with one another, carrying out their business. In this sense, coral reefs are the sea's metropolises. Coral reefs provide shelter for nearly one quarter of all known marine species. And over the last 240 million years, reefs have evolved into one of the largest and most complex ecosystems on the planet. They are home to more than 4,000 species of fish, 700 species of coral, and thousands of other species of plants and animals. Scientists estimate that, in total, more than one million species of plants and animals are associated with the coral reef ecosystem.



- **Biodiversity:**
- What regions typically have high biodiversity?
 - > Tropical Rainforests
 - Climate: hot, wet
 - Location: close to the equator
 - > Temperature
 - > Precipitation
 - > Plants and Animals of the Tropical Rainforest



- **Biodiversity:**
- > What regions typically have high biodiversity?
 - Plants and Animals of the Tropical Rainforest
 - ➤ **The Canopy:** This is the highest level of the rainforest, basically a roof formed by the branches and leaves of the area's largest trees. Most of the trees reach over 120 feet in height, and combined with their dense cover can mean that little to no sunlight reaches lower areas of the rainforest. Trees at the highest level must be able to tolerate extreme sunlight and changing wind patterns.



- Biodiversity:
- What Factors Influence the Biodiversity of an Ecosystem?
 - Direct Drivers:
 - fertilizer and insecticide use and overhunting.;
 - Biotic factors in an ecosystem are divided into producers, consumers and decomposers. These factors have to be maintained in a certain ratio for the ecosystem to thrive.
 - Indirect Drivers: Industrialization and Overpopulation; Byproducts of Industrialization; the Construction of Dams; Climate Change
 - Invasive Species: Invasive species are not native to an ecosystem.





PRIMARY DRIVERS HABITAT LOSS OVEREXPLOITATION CLIMATE CHANGE INVASIVE POLLUTION SPECIES ASSOCIATED WITH Process of harvesting Addition of any Thinning, **GLOBAL WARMING** fragmenting, Any nonnative too many aquatic or substance or any species that terrestrial animals. form of energy to or outright Modification of destruction of significantly which depletes the the environment Earth's climate an ecosystem's modifies or stocks of some at a rate faster associated with disrupts the species while driving than it can be plant, soil, rising levels of hydrologic, and ecosystems others to extinction rendered harmless greenhouse gases nutrient resources it colonizes in the atmosphere over the past one to two centuries -INFLUENCERS -· Human population growth · Increasing consumption · Reduced resource efficiency **BIODIVERSITY LOSS** Reduction in the number of genes, individual organisms, species, and ecosystems in a given area



According to paragraph 3, how do seagrasses affect the nutrient supply in the ecosystem?

- A. Because of their high rate of metabolism, they consume a large percentage of the available nutrients.
- B. They attract various species of algae and bacteria that produce high nutrient concentrations in the water column.
- C. They take up carbon and other nutrients trapped on the sea bottom and bring them back into use.
- D. Through anaerobic processes at their roots, they produce a very nutrient-rich sediment.



Paragraph 3: Since most seagrass systems are depositional environments, they eventually accumulate organic material that leads to the creation of fine-grained sediments with a much higher organic content than that of the surrounding unvegetated areas. This accumulation, in turn, reduces the water movement and the oxygen supply. The high rate of metabolism (the processing of energy for survival) of the microorganisms in the sediments causes sediments to be anaerobic (without oxygen) below the first few millimeters. According to ecologist J. W. Kenworthy, anaerobic processes of the microorganisms in the sediment are an important mechanism for regenerating and recycling nutrients and carbon, ensuring the high rates of productivity—that is, the amount of organic material produced—that are measured in those beds. In contrast to other productivity in the ocean, which is confined to various species of algae and bacteria dependent on nutrient concentrations in the water column, seagrasses are rooted plants that absorb nutrients from the sediment or substrate. They are, therefore, capable of recycling nutrients into ecosystem that would otherwise be trapped in the bottom and rendered unavailable. [TPO 44]



Paragraph 4: Like mangrove swamps, coral reefs are extremely important habitats. Their diversity of coral genera is greatest in the warm waters of the Indian Ocean and the western Pacific. Indeed, they have been called the marine version of the tropical rain forest, rivaling their terrestrial counterparts in both richness of species and biological productivity. They also have significance because they provide coastal protection, opportunities for recreation, and are potential sources of substances like medicinal drugs. At present they are coming under a variety of threats, of which two of the most important are dredging and the effects of increased siltation brought about by accelerated erosion from neighboring land areas. [*TPO 47*]

According to paragraph 4, why have coral reefs been compared to tropical rain forests?

- A. Both are located near the Indian and western Pacific Oceans.
- B. Both are home to a wide variety of species.
- C. Both play an important role in protecting coastal lands.
- D. Both are threatened by the erosion of nearby land.



Paragraph 3: In many characteristics, savanna soils are similar to those of some rain forests, though more extreme. For example, savanna soils, like many rain forest soils, are typically oxisols (dominated by certain oxide minerals) and ultisols (soils containing no calcium carbonate), with a high acidity and notably low concentrations of such minerals as phosphorus, calcium, magnesium, and potassium, while aluminum levels are high. Some savannas occur on wet, waterlogged soils; others on dry, sandy, well-drained soils. This may seem contradictory, but it only means that extreme soil conditions, either too wet or too dry for forests, are satisfactory for savannas. More moderate conditions support moist forests. [*TPO 31*]

According to paragraph 3, rain forest and savannas differ in that

- A. the soils in rain forests contain fewer minerals than savanna soils do
- B. savannas affect soil conditions more than rain forests do
- C. unlike rain forests, savannas prefer sandy, well-drained soils to soils that are very wet
- D. unlike rain forests, savannas may develop under both very dry and very wet soil conditions



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According to paragraph 3, all of the following are true of savanna soils EXCEPT:

- A. They have high concentrations of potassium.
- B. They contain high levels of aluminum.
- C. They are very acidic.
- D. They contain large amounts of certain oxide minerals.



Paragraph 6: On certain sites, particularly in South America, savanna formation seems related to frequent cutting and burning of moist forests for pastureland. Increase in pastureland and subsequent overgrazing have resulted in an expansion of savanna. The thin upper layer of humans(decayed organic matter) is destroyed by cutting and burning. Humus is necessary for rapid decomposition of leaves by bacteria and fungi and for recycling by surface roots. Once the humus layer disappears, nutrients cannot be recycled and leach from the soil, converting soil from fertile to infertile and making it suitable only for savanna vegetation. Forests on white, sandy soil are most susceptible to permanent alteration. [*TPO 31*]

According to paragraph 6, human activity affects soils in all of the following ways EXCEPT:

- A. Decomposition of leaves occurs too fast for surface roots to obtain nutrients.
- B. Nutrients are not recycled
- C. Humus is destroyed
- D. Certain soils become unable to support vegetation other than savanna vegetation.





【托福无忧】阅读单项白天班 (2020年4月上旬班)

¥1880







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