Coastal Louisiana Practice Test (Sample)

Study Guide

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Questions

1. What is the water filtering capacity of one live oyster?

A. Up to 10 gallons of water a day

B. Up to 25 gallons of water a day

C. Up to 50 gallons of water a day

D. Up to 75 gallons of water a day

2. What is one effect of the Mississippi River changing its course over time?

A. Increased salinity levels in the Gulf

B. Formation of deltaic features

C. Reduced sediment flow

D. Enhanced fishing grounds

3. In which type of environment is hypoxia most prevalent?

A. Upland forests

B. Coastal and estuarine waters

C. Desert regions

D. Mountain lakes

4. Which wetland type is primarily dominated by trees?

A. Marsh

B. Estuary

C. Swamp

D. Hydrophytic vegetation

5. What type of soils are typically found in wetlands and are anaerobic?

A. Hydrophytic soils

B. Marsh soils

C. Hydric soils

D. Estuarine soils

6. Which term best defines the process of land loss occurring in Louisiana?

A. Environmental degradation

B. Land subsidence

C. Accretion

D. Climate change adaptation

7. Which authority does CPRA represent?

A. Federal

B. Local

C. State

D. International

8. What are the conditions measured in parts per million (ppm) for hypoxia and anoxia?

A. Hypoxia is 0 ppm, Anoxia is less than 2 ppm

B. Hypoxia is 2 ppm, Anoxia is 0 ppm

C. Hypoxia is 4 ppm, Anoxia is 2 ppm

D. Hypoxia is 1 ppm, Anoxia is 3 ppm

9. What role does oil and gas infrastructure play in Louisiana's wetland productivity?

A. It is a major area of concern for environmental impact

B. It promotes tourism in the region

C. It assists in wildlife conservation efforts

D. It is unrelated to the wetlands

10. What is the primary aim of freshwater diversion in coastal management?

A. Increase salinity levels

B. Improve aquatic habitat

C. Try to lower salinity

D. Enhance soil quality

Answers

1. C
2. B
3. B
4. C
5. C
6. B
7. C
8. B
9. A
10. C

Explanations

1. What is the water filtering capacity of one live oyster?

A. Up to 10 gallons of water a day

B. Up to 25 gallons of water a day

C. Up to 50 gallons of water a day

D. Up to 75 gallons of water a day

One live oyster can filter up to 50 gallons of water a day, making this a critical aspect of their ecological role in coastal environments. Oysters are filter feeders, meaning they draw in water and extract plankton and other particles for nourishment. In doing so, they play a significant role in improving water quality by removing sediments and nutrients, which can help reduce algal blooms and promote clearer waters. This filtering capability not only benefits the health of the marine ecosystem but also supports other species by maintaining a balanced habitat. Understanding the substantial impact that one oyster can have emphasizes the importance of oyster populations in maintaining healthy coastal environments.

2. What is one effect of the Mississippi River changing its course over time?

A. Increased salinity levels in the Gulf

B. Formation of deltaic features

C. Reduced sediment flow

D. Enhanced fishing grounds

The Mississippi River changing its course over time leads to the formation of deltaic features, which are landforms created by the deposition of sediment carried by the river as it slows down and enters a standing body of water, such as the Gulf of Mexico. This sediment deposition results in the creation of new land and various wetlands, which are crucial for supporting diverse ecosystems and wildlife. As the river alters its path, sediment is redistributed, leading to the development of new deltaic regions, while previous areas may experience erosion and changes to their landscape. In this process, the dynamic nature of river systems is highlighted, as sediment and nutrients are essential for maintaining the health of coastal ecosystems. These deltaic features play a vital role in protecting the coast from storm surges and creating habitats for aquatic and terrestrial species.

3. In which type of environment is hypoxia most prevalent?

A. Upland forests

B. Coastal and estuarine waters

C. Desert regions

D. Mountain lakes

Hypoxia is most prevalent in coastal and estuarine waters due to the natural processes occurring in these environments, particularly in areas where excess nutrients, often from agricultural runoff, lead to eutrophication. This nutrient enrichment stimulates the growth of phytoplankton, which, when they die and decompose, consume large amounts of dissolved oxygen in the water. As oxygen levels diminish, it creates conditions unsuitable for many aquatic organisms, leading to a hypoxic or even anoxic environment. Coastal and estuarine regions are particularly vulnerable because they serve as transition zones between land and open ocean, often receiving higher nutrient inputs from various sources, including rivers and human activities like farming and urban runoff. This biochemical cycle, coupled with factors such as water stratification and temperature variations, increases the likelihood of hypoxia in these waters, making them hotspots for this phenomenon. In contrast, upland forests, desert regions, and mountain lakes have different ecological dynamics that do not typically lead to the conditions conducive to hypoxia.

4. Which wetland type is primarily dominated by trees?

A. Marsh

B. Estuary

C. Swamp

D. Hydrophytic vegetation

The wetland type that is primarily dominated by trees is a swamp. Swamps are characterized by the presence of woody plants, particularly trees, which thrive in the wet, often waterlogged conditions typical of these environments. Unlike marshes, which are dominated by herbaceous plants (grasses, reeds, and sedges), swamps have a significant tree canopy and can support various species of trees such as cypress, mangroves, or willows, depending on the region. Estuaries, while important wetlands too, are more transitional areas where freshwater mixes with saltwater from the ocean, and they often contain diverse habitats, including mudflats and salt marshes, but they are not primarily tree-dominated. Hydrophytic vegetation refers to all types of plants that are adapted to growing in waterlogged soil conditions and does not specify any particular composition regarding trees or other plants. This term is broader and could include various wetland types including marshes and swamps, but does not directly answer the question about tree dominance. Therefore, the identification of swamps as the wetland type dominated by trees highlights their unique ecological characteristics, making them distinctly different from other wetland types.

5. What type of soils are typically found in wetlands and are anaerobic?

A. Hydrophytic soils

B. Marsh soils

C. Hydric soils

D. Estuarine soils

The correct choice identifies hydric soils, which are specifically defined as saturated, flooded, or ponded for significant periods of time during the growing season, leading to anaerobic conditions. These soils are a crucial factor in the formation of wetlands, as they support the unique vegetation adapted to such environments. The presence of these soils is often used as an indicator of wetlands due to their water retention properties and the types of organisms they support. They typically exhibit characteristics such as poor drainage and high organic matter, resulting from the accumulation of plant material in conditions where decomposition is slowed due to the lack of oxygen. Hydric soils often have distinct color patterns and textures that further differentiate them from other soil types. Other terms in the choices refer to specific aspects of wetlands but do not accurately describe the soil type itself. While hydrophytic soils refer to soils that support water-loving plants, and marsh soils can denote soils found specifically in marsh environments, it is hydric soils that encompass the broader definition essential for wetland classification. Estuarine soils pertain to specific areas where freshwater from rivers meets saltwater from the ocean and do not capture the unique anaerobic characteristics intrinsic to hydric soils.

6. Which term best defines the process of land loss occurring in Louisiana?

A. Environmental degradation

B. Land subsidence

C. Accretion

D. Climate change adaptation

Land subsidence is the term that best defines the process of land loss occurring in Louisiana. This phenomenon refers to the gradual sinking or settling of the land surface, which in Louisiana is significantly influenced by a combination of factors such as natural geological processes, the excessive extraction of groundwater and oil, and the compaction of sediments in deltaic areas. As the land sinks, particularly in the delta regions that are home to critical ecosystems and human communities, it directly contributes to the loss of land and can exacerbate the challenges faced by the state's coastal areas, such as increased vulnerability to flooding and erosion. In this context, while environmental degradation and climate change adaptation are relevant to discussions about Louisiana's coastal challenges, they do not specifically pinpoint the primary mechanism of land loss. Accretion, on the other hand, involves the addition of sediment to land and is generally a process that can counterbalance some aspects of land loss. However, in the case of Louisiana, the overriding concern is the significant and continued land subsidence that leads to critical land loss, making it the most appropriate term to describe the situation.

7. Which authority does CPRA represent?

A. Federal

B. Local

C. State

D. International

The Coastal Protection and Restoration Authority (CPRA) represents state authority in Louisiana. It is specifically created to address the unique challenges faced by the coastal regions of Louisiana, primarily focusing on coastal restoration and protection efforts. CPRA's responsibilities encompass planning, implementing, and overseeing programs and projects aimed at combating issues such as land loss, habitat degradation, and vulnerabilities to storms and flooding. This state-level designation highlights CPRA's role in coordinating with local governments, federal agencies, and various stakeholders while ensuring that the state's coastal policy is aligned with Louisiana's needs and interests. In contrast, the federal authorities primarily deal with overarching national regulations and funding, while local authorities focus on municipal matters, and international bodies generally engage with cross-border and global coastal issues.

8. What are the conditions measured in parts per million (ppm) for hypoxia and anoxia?

A. Hypoxia is 0 ppm, Anoxia is less than 2 ppm

B. Hypoxia is 2 ppm, Anoxia is 0 ppm

C. Hypoxia is 4 ppm, Anoxia is 2 ppm

D. Hypoxia is 1 ppm, Anoxia is 3 ppm

Hypoxia and anoxia are terms used to describe conditions related to the levels of dissolved oxygen in aquatic environments. Hypoxia generally refers to low oxygen levels that can stress aquatic life, while anoxia indicates a complete lack of oxygen. In aquatic systems, hypoxia is often characterized by dissolved oxygen levels at or below 2 ppm, which can be detrimental to many organisms. Anoxia, on the other hand, is defined as having dissolved oxygen levels at 0 ppm, indicating no oxygen is present at all. Thus, the measurement of 2 ppm for hypoxia accurately captures the threshold where oxygen is critically low but not entirely absent, and the measurement of 0 ppm for anoxia clearly defines the extreme condition where all oxygen is depleted. This understanding is essential for assessing the health of aquatic ecosystems, particularly in areas like coastal Louisiana, which frequently face issues related to oxygen depletion due to various environmental factors.

9. What role does oil and gas infrastructure play in Louisiana's wetland productivity?

A. It is a major area of concern for environmental impact

B. It promotes tourism in the region

C. It assists in wildlife conservation efforts

D. It is unrelated to the wetlands

Oil and gas infrastructure plays a significant role in Louisiana's wetland productivity primarily through its environmental impact. The extensive network of pipelines, drilling sites, and refineries can disrupt the natural hydrology of wetlands, which are crucial for maintaining ecosystem health. These infrastructures can lead to habitat loss, erosion, and pollution, affecting the delicate balance of plant and animal life that depends on the wetlands. In addition, the extraction of oil and gas often results in the alteration of landscapes and water systems, contributing to issues such as saltwater intrusion and reduced freshwater availability. This not only affects the biodiversity of the wetlands but also impacts their functionality in providing ecosystem services, such as water filtration and flood protection. Therefore, understanding the environmental implications of oil and gas infrastructure is crucial for managing and preserving wetland productivity in Louisiana. Other options do not directly address the direct environmental concerns related to oil and gas infrastructure in the context of wetland productivity. While there indeed may be tourism benefits or conservation initiatives tied to wetlands, these are secondary to the pressing environmental issues posed by the oil and gas sector.

10. What is the primary aim of freshwater diversion in coastal management?

A. Increase salinity levels

B. Improve aquatic habitat

C. Try to lower salinity

D. Enhance soil quality

Freshwater diversion in coastal management is primarily aimed at managing salinity levels within estuarine environments. By introducing freshwater into areas that may be experiencing saltwater intrusion, this practice helps to lower salinity. High salinity levels can be detrimental to freshwater ecosystems and the species that inhabit these areas, as many aquatic organisms have specific salinity tolerances. By reducing salinity, freshwater diversion can create a more favorable environment for various plant and animal species, thus promoting the health of the ecosystem. While improving aquatic habitat and enhancing soil quality are important aspects of coastal management, the direct objective of freshwater diversion is specifically focused on the control of salinity. This is crucial for protecting habitats that are vital to fish and wildlife, as well as for supporting the overall ecological balance within the coastal ecosystem.