Using AI Technology and Laser Technology to Measure Hurricane-Induced Forest Damage

Description

Researchers at the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) have developed a new technology using lasers and artificial intelligence to assess hurricane damage in forests. Dr. Carlos Silva, an assistant professor at UF/IFAS, explained that traditional methods of assessing damage, such as field measurements, can be time-consuming and inefficient. By using remote sensing methods like lidar and NASA satellites, Silva and his team were able to create detailed maps of forest damage caused by hurricanes. These maps, available online, provide valuable information for planning restoration efforts and making management decisions. The innovative use of technology in forest monitoring has the potential to greatly benefit those impacted by natural disasters. By combining ground data with satellite imagery and AI, researchers hope to provide a useful tool for better preparing for future hurricanes.

Vocabulary List:

1. **Assess** // (verb): To evaluate or estimate the natureabilityor quality of something.
2. **Remote sensing** // (noun): The collection of data about an object from a distance.
3. **Lidar** // (noun): A technology that uses laser light to measure distances to objects.
4. **Restoration** // (noun): The action of returning something to a former ownerplaceor condition.
5. **Management decisions** // (noun phrase): Choices made by individuals or groups regarding the utilization of resources and activities to achieve specified goals.
6. **Innovative** // (adjective): Introducing new ideas original and creative in thinking.

Vocabulary quizzes

Multiple Choice (Select the Correct answer for each question.)

1. What is a layoff in the context of employment?

    Option: A. Hiring new employees
    Option: B. Dismissing employees from their jobs
    Option: C. Promoting employees to higher positions
    Option: D. Providing training to employees

2. What is remote sensing often used for?

    Option: A. Communicating in remote areas

Option: B. Monitoring environmental changes

Option: C. Managing office resources

Option: D. Conducting market research

3. What best describes an innovative idea?

   Option: A. Conventional and widely accepted

   Option: B. Unoriginal and predictable

   Option: C. Pushing boundaries and introducing new concepts

   Option: D. Outdated and inefficient

4. What is another name for the Aurora Borealis?

   Option: A. Southern Lights

   Option: B. Northern Lights

   Option: C. Polar Aurora

   Option: D. Twinkling Skies

5. Which energy source relies on heat from beneath the Earth's surface?

   Option: A. Wind energy

   Option: B. Geothermal energy

   Option: C. Solar power

   Option: D. Hydroelectricity

6. What does collaboration involve?

   Option: A. Working independently

   Option: B. Competing with others

   Option: C. Coordinating efforts with others

   Option: D. Avoiding communication

7. What does interdisciplinary research involve?

   Option: A. Focusing on a single field of study

   Option: B. Integrating knowledge from multiple fields

   Option: C. Ignoring other disciplines

   Option: D. Following traditional research methods

8. What does it mean when a business undergoes a shutdown?

   Option: A. Expanding operations

   Option: B. Temporarily closing operations

   Option: C. Increasing workforce

   Option: D. Acquiring a competitor

9. What do ambitions represent for individuals?

   Option: A. Setbacks and failures

   Option: B. Lack of motivation

Option: C. Long-term goals and desires

Option: D. Contentment with current status

10. What does decarbonization aim to reduce?

   Option: A. Carbon dioxide emissions

   Option: B. Renewable energy sources

   Option: C. Waste production

   Option: D. Deforestation rates

Gap-Fill (Fill in the blanks with the correct word from the vocabulary list.)

11. In times of financial difficulty companies may need to _____ costs to stay afloat.

12. The success of a project often hinges on the quality of _____ made throughout its

duration.

13. After the hurricane the community focused on the _____ of vital infrastructure.

14. Constructive _____ is valuable for personal and professional growth.

15. The new policy had a _____ impact on the company's bottom line.

16. The city center comes alive at night with its _____ nightlife and colorful lights.

17. An _____ is an organism that thrives in extreme environmental conditions.

18. Companies often pursue _____ strategies to reduce risk and increase opportunities.

19. The team focused on _____ their connections with key partners in the industry.

20. Continuous learning is essential for personal and professional _____ .

Matching Sentences (Match each definition to the correct word from the vocabulary list.)

21. Decarbonization initiatives aim to reduce carbon emissions and combat climate change.
22. Successful projects often result from effective collaboration among team members with diverse skills.
23. In a global economy companies strive to remain competitive by offering innovative products and services.

24. Remote sensing technologies like lidar are used for mapping terrains and studying vegetation.
25. The tech industry thrives on innovative ideas that disrupt traditional ways of thinking.
26. A sudden economic downturn may force businesses to implement a temporary shutdown to reevaluate their strategies.
27. The view from the mountaintop was breathtaking with lush valleys and snow-capped peaks stretching out below.
28. Investing in employee training and development can enhance the organization's competitiveness in the market.
29. The wave of digital transformation has revolutionized how businesses operate and engage with customers.
30. Effective risk assessment is crucial for making informed management decisions and avoiding potential pitfalls.

Answer

Multiple Choice: 1. B. Dismissing employees from their jobs 2. B. Monitoring environmental changes 3. C. Pushing boundaries and introducing new concepts 4. B. Northern Lights 5. B. Geothermal energy 6. C. Coordinating efforts with others 7. B. Integrating knowledge from multiple fields 8. B. Temporarily closing operations 9. C. Long-term goals and desires 10. A. Carbon dioxide emissions

Gap-Fill: 11. cut 12. management decisions 13. restoration 14. feedback 15. significant 16. vibrant 17. extremophile 18. diversification 19. strengthening 20. advancement

Matching sentence: 1. decarbonization 2. collaboration 3. competitive 4. lidar 5. innovative 6. shutdown 7. breathtaking 8. competitiveness 9. wave 10. assessment

CATEGORY

1. Sci/Tech - LEVEL1

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