Scientists Propose Lunar Storage

Scientists have proposed an **ambitious** plan to protect Earth's **biodiversity**: a lunar **biorepository**. This vault would store preserved samples of **endangered** species on the moon. Climate change and habitat loss are **accelerating** species extinction, making it challenging to **safeguard** them in their natural **habitats**. A moon-based biorepository could **enhance** genetic diversity or even **facilitate** the cloning of extinct species.

This idea draws **inspiration** from the Svalbard global seed vault in Norway, which preserves seeds to ensure important crops can be re-established if necessary. However, Svalbard's recent flooding due to warm temperatures highlighted its **vulnerability** to climate change.

Dr. Mary Hagedorn, the lead author from the Smithsonian's national zoo and conservation biology institute, argues that a moon vault would be secure from climate-related and **geopolitical** threats. The moon's naturally **frigid** environment would keep samples frozen without human **intervention** or energy, essential for preserving **viable** cells for cloning.

Although establishing a lunar biorepository presents numerous challenges, the primary **obstacle** is not biological. Scientists have already used **cryopreservation** to store living cells from species like the starry goby fish. This technique **halts** all biological activity by freezing cells at extremely low temperatures.

The proposed repository would prioritize species crucial to **ecosystems** and food webs, potentially enabling the re-establishment of extinct populations or even **terraforming** another planet. Dr. Hagedorn believes the project is **feasible** but might take decades to complete. Essential steps include developing space-resistant packaging for cryopreserved samples and organizing their transport to the moon. The scientists hope their proposal will inspire new ideas and **collaborations** to protect Earth's biodiversity.

Vocabulary and Definitions (CEFR B2)

1. **Ambitious**: Showing a strong desire and determination to succeed.
2. **Biodiversity**: The variety of plant and animal life in the world or in a particular habitat.
3. **Biorepository**: A facility that collects, catalogs, and stores biological samples.
4. **Endangered**: At serious risk of extinction.
5. **Accelerating**: Increasing in speed or rate.
6. **Safeguard**: To protect from harm or damage.
7. **Enhance**: To improve the quality, amount, or strength of something.
8. **Facilitate**: To make an action or process easier.
9. **Inspiration**: The process of being mentally stimulated to do or feel something.
10. **Vulnerability**: The quality of being easily hurt or attacked.
11. **Geopolitical**: Relating to politics, especially international relations, as influenced by geographical factors.
12. **Frigid**: Very cold in temperature.
13. **Intervention**: The action of becoming intentionally involved in a difficult situation.
14. **Viable**: Capable of working successfully.
15. **Cryopreservation**: The process of freezing biological material at extremely low temperatures to preserve it.
16. **Obstacle**: Something that blocks one's way or prevents progress.
17. **Halt**: To stop something.
18. **Ecosystems**: Biological communities of interacting organisms and their physical environment.
19. **Terraforming**: Transforming a planet to make it habitable by Earth-like life.
20. **Feasible**: Possible and practical to do easily or conveniently.
21. **Collaborations**: Working together with others to achieve a common goal.

Simple Discussion Questions

1. What is the main purpose of the proposed lunar biorepository?
2. How does the Svalbard seed vault relate to the idea of a moon biorepository?
3. What are some challenges mentioned in creating a lunar biorepository?

True or False Questions

1. The lunar biorepository aims to protect Earth's biodiversity. (True/False)
2. Climate change and habitat loss are decreasing species extinction. (True/False)
3. The moon's frigid environment would help keep samples frozen without human intervention. (True/False)
4. Cryopreservation involves heating biological samples to very high temperatures. (True/False)
5. Dr. Hagedorn believes the lunar biorepository project is impossible to achieve. (True/False)

Cloze Quiz

Scientists have proposed an _____ plan to protect Earth's _____: a lunar _____. This vault would store preserved samples of _____ species on the moon. Climate change and habitat loss are _____ species extinction, making it challenging to _____ them in their natural habitats. A moon-based biorepository could _____ genetic diversity or even _____ the cloning of extinct species.

This idea draws **inspiration** from the Svalbard global seed vault in Norway, which preserves seeds to ensure important crops can be re-established if necessary. However, Svalbard's recent flooding due to warm temperatures highlighted its _____ to climate change.

Dr. Mary Hagedorn, the lead author from the Smithsonian's national zoo and conservation biology institute, argues that a moon vault would be secure from climate-related and _____ threats. The moon's naturally _____ environment would keep samples frozen without human _____ or energy, essential for preserving _____ cells for cloning.

Although establishing a lunar biorepository presents numerous _____, the primary _____ is not biological. Scientists have already used _____ to store living cells from species like the starry goby fish. This technique _____ all biological activity by freezing cells at extremely low temperatures.

The proposed repository would prioritize species crucial to _____ and food webs, potentially enabling the re-establishment of extinct populations or even _____

another planet. Dr. Hagedorn believes the project is _____ but might take decades to complete. Essential steps include developing space-resistant packaging for cryopreserved samples and organizing their transport to the moon. The scientists hope their proposal will inspire new ideas and _____ to protect Earth's biodiversity.

Quiz Answers

1. The lunar biorepository aims to protect Earth's biodiversity. True
2. Climate change and habitat loss are decreasing species extinction. False
3. The moon's frigid environment would help keep samples frozen without human intervention. True
4. Cryopreservation involves heating biological samples to very high temperatures. False
5. Dr. Hagedorn believes the lunar biorepository project is impossible to achieve. False