

Science Time

Program Content for October 19, 2016

Read the article “Researchers work to spread prized genes of the Yellowstone bison” on page A1 of the Sunday, October 16, 2016 edition of The Seattle Times.

Objective/s

- I can explain how the U.S. embryo bison transplant program operates.
- I can detail the pros and cons of the bison transplant program.

Next Generation Science Standards (NGSS) connection

- *Disciplinary Core Idea:* Humans depend on the living world for the resources and other benefits provided by biodiversity. But human activity is also having adverse impacts on biodiversity through overpopulation, overexploitation, habitat destruction, pollution, introduction of invasive species, and climate change. Thus sustaining biodiversity so that ecosystem functioning and productivity are maintained is essential to supporting and enhancing life on Earth. Sustaining biodiversity also aids humanity by preserving landscapes of recreational or inspirational value.

Pre-reading and Vocabulary: Define each term and then use it in a sentence to demonstrate your understanding.

1. transplant
2. embryo
3. herd
4. genetic diversity
5. hybrid

Comprehension Questions

1. Why did researchers transplant embryos from bison in Yellowstone National Park into bison in Minnesota?
2. Why are Yellowstone bison “prized”?
3. What is the difficulty faced when using Yellowstone bison in breeding programs?
4. What have researchers done in the past to get around the difficulty faced in question 3 above? What are they doing now?
5. Describe the process that researchers are using to track the progress of implanted embryos.
6. Why has securing a sexually mature Yellowstone bull to breed in Minnesota been impossible?
7. How did the population of bison go from tens of millions to thousands?
8. How do Yellowstone bison and commercial bison differ?
9. Where and when did the first bison embryo transfer take place?
10. How successful has the bison embryo transplant program been overall?

Prompts and Extensions

1. The type of science that is being practiced by the researchers in the article you just read is called conservation genetics. Learn more about this branch of science [here](#).
2. Watch this recent [news story](#) about the revival of the American bison and [this one](#) about the embryo transplant program you just read about.
3. Read this [article](#) about the first successfully transplanted bison at the Bronx Zoo in 2012.

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