

Salt Creek Tiger Beetle

A resource for using QUEST Nebraska video in the classroom; created by PBS/NPR partner station NET

QUEST SUBJECTS

Life
Science

Biology
Health
Environment

Earth
Science

Geology
Climate
Weather
Astronomy

Physical
Science

Physics
Chemistry
Engineering

NE SCIENCE STANDARDS

Grade 6-8 *Life Sciences - Biological Adaptations and Evolution*

SC8.3.4.b Recognize the extinction of a species is caused by the inability to adapt to an environmental change.

Grade 9-12

Life Sciences – Biological Evolution

SC 12.3.4.b Recognize that the concept of biological evolution is a theory that explains the consequence of the interactions of: 1. The potential for a species to increase its numbers, 2. the genetic variability of offspring due to mutation and recombination of genes. 3. A finite supply of the resources required for life and 4. The ensuing selection by the environment of those offspring better able to survive

PROGRAM NOTES

The Salt Creek Tiger Beetle, once in abundance, now faces extinction. Part of the reason is because of its need for a very specific habitat. Like the Hollywood diva, It has to have everything it's own way. But, in this case, the Salt Creek Tiger Beetle must have its needs met in order for it to thrive and survive.

In this segment you'll find...



Photo by Mitch Paine

- ⦿ Information on the importance of habitat to the survival of a species
- ⦿ How scientists work to research and protect the Salt Creek Tiger Beetle

TOPIC BACKGROUND

The Salt Creek Tiger Beetle depends on a very unique habitat for survival. Confined to the saline mud flats along the Little Salt Creek in Northern Lancaster County, not far away from the hustle and bustle of Lincoln, Nebraska, this insect is believed to be in danger of disappearing. Adult Salt Creek Tiger Beetles are found in the exposed saline mud flats within just a few yards of wetland and stream edges, which contain salt deposits and vegetation, necessary for their survival. For the larva, these open, barren, unique salt mud flat areas are necessary for them to burrow into for safety and for capturing their prey.

In a growing college town like Lincoln, Nebraska, these habitats could face extreme degradation with commercial, residential, agricultural and transportation development. The U.S. Fish and Wildlife Service designated 1,933 acres of land in Lancaster and Saunders Counties in Nebraska as critical habitat for the endangered Salt Creek Tiger Beetle. The Endangered Species Act defines critical habitat as areas of the environment that might contain features necessary for the conservation of a threatened or endangered species.

VOCABULARY

Evolution – *change over a period of time within a successful species population*

Habitat – *the natural place of life and growth for a species*

Critical Habitat – *areas of the environment that are specific to a species*

Saline Mud Flats– *areas of high moisture and salt content in soil*

Environment – *the surrounding conditions that affect the growth of a species*

Extinction – *the act of dying out of a species or organism*

Adaptation – *the evolution of a species over time in order to be better suited for its habitat*



Photo by Mitch Paine

PRE-VIEWING

- What do you know about the Salt Creek Tiger Beetle?
- How is the habitat of a species important?
- Why is saving a species from extinction important?

VIEWING FOCUS

NOTE: You may choose to watch the Audio Slideshow twice with your students: once to elicit emotional responses and get an overview of the topic and again to focus on facts and draw out opinions.

- Identify ways that the Salt Creek Tiger Beetle is dependent on its habitat

Digging Deeper:

You are part of a research project that is required to capture adult and larval Salt Creek Tiger Beetles and bring them back to the lab for observation and protection. First, you must create the ideal habitat upon which they can survive. Illustrate and describe what you would create.

For all media see:

- Segment Summary Student Sheet
http://www.kqed.org/quest/downloads/QUEST_SegSum_StudentSheet.pdf
- Personal Response Student Sheet
http://www.kqed.org/quest/downloads/QUEST_PersResp_StudentSheet.pdf

LESSON PLANS and RESOURCES from NET, QUEST, PBS and NPR

Protecting Insects from Extinction NPR

<http://www.npr.org/templates/story/story.php?storyId=6384975>

This segment opens the dialog of the importance of all species being protected from extinction

Salt Creek Tiger Beetle

<http://drshigley.com/lgh/sctb/>

This resource offers students photography and information regarding the beetle, including fun facts.

Wind Energy Threatens Habitat PBS

<http://video.pbs.org/video/1559462359>

This video takes a look at the alternative energy and the impact on a species.

Migratory Birds and their Habitat KQED

<http://www.kqed.org/quest/television/the-great-migration>

Discover how tracking migratory birds can help conservationists and biologists better protect important wildlife habitats

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www.ops.org

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Nebraska Academy of Sciences

www.neacadsci.org

Nebraska Association of Teachers of Science

www.neacadsci.org/nats/index.htm

Omaha's Henry Doorly Zoo

www.omahazoo.com

University of Nebraska State Museum

www-museum.unl.edu

Boys/Girls Clubs of the Midlands

www.bgcomaha.org

Girls Inc. of Omaha

www.girlsincomaha.org

MORE EDUCATIONAL RESOURCES FOR USING QUEST MULTIMEDIA TO ENHANCE 21st CENTURY SKILLS IN TEACHING AND LEARNING

Why Use Multimedia in Science Education?

<http://www.kqed.org/quest/downloads/QUESTWhyMedia.pdf>

- Read about the importance of using multimedia in the 21st century science classroom.

How to Use Science Media for Teaching and Learning

<http://www.kqed.org/quest/downloads/QUESTMediaTips.pdf>

- A collection of tips, activities and handouts to actively engage students with multimedia.

Science Multimedia Analysis

<http://www.kqed.org/quest/downloads/QUESTMediaAnalysis.pdf>

- Give your students the tools to recognize the purposes and messages of science multimedia.

Create Online Science Hikes with Google Maps

http://www.kqed.org/quest/files/download/52/QUEST_ExplorationCreation.pdf

- Do you like the science hike Explorations on the QUEST site? Use this place-based educational guide to create similar science-based maps with youth.

Media-Making Toolkit for Science Education

<http://www.kqed.org/quest/education>

- Are you interested in integrating media making into your classroom or science education program? Find instructions, worksheets and rubrics for implementing simple media-making projects with students.

MORE QUEST



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www.kqed.org/quest

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