ACTIVITY: Extinction Events

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Objective: Learners will analyze evidence of mass extinction events and compare how life forms differ after each of these events.

Introduction: Extinction events occur when multiple species disappear completely from the Earth, often due to significant environmental changes or catastrophic events. Fossil evidence provides a window into extinction events, helping scientists piece together the causes and effects of these events over millions of years, such as how they cause significant changes in biodiversity.

Have learners:

1. Make observations of an artist's rendering of a paleoenvironment on the handout.
    a. Discuss observations and inferences about the area (e.g., using the mountains as context for where in the U.S. this scene might have existed).
    b. Observe an image of what the area looks like today: **Landscape photos from page 9 of the photo gallery of White Sands, New Mexico**.
    c. Note the similarities between the paleoenvironment and the current environment (e.g., a relatively flat landscape with mountains in the distance). You may also want to view other images in the gallery that show times when water is in the area.
    d. Hypothesize what effect environmental changes likely had on the organisms in the White Sands area.
2. Read about **mass extinction events**:
    a. First, study the graph "Big Five Mass Extinctions in Earth's History" and discuss the relative size of each extinction event.
    b. Under "The Big Five Mass Extinctions," read about one or more mass extinction event, focusing on why they occurred.
    c. Optionally, read about the minor and mass extinction events during the **Triassic, Jurassic, and Cretaceous**, including the event that led to the extinction of the dinosaurs.
3. Return to the discussion of the White Sands area from Step 1.
    a. Read about the animals that used to live in the area on the **White Sands Paleontology webpage**.
        ▸ *What was the environment like when they lived, and what adaptations did they have that helped them to survive?*

- ► *Did each type of animal in the area go extinct around the same time? What do scientists think is the cause of their extinction?*

b. View images in the **NPS photo gallery** that depict animals living in White Sands today.

4. Discuss how paleontologists might recognize when a mass extinction occurred as they study the fossil record (e.g., looking through rock layers and no longer finding certain fossil types beyond a certain layer; and/or sudden changes in the body form of fossils).

HANDOUT: Extinction Events

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Study the artist's rendering of an ancient environment (paleoenvironment) showing what they think the area around an NPS Unit looked like.

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- What part of the U.S. do you think the artist who made this is trying to depict? Why do you think this?

- Visit the map of all **NPS Units**. What park(s) are near this area?