ACTIVITY: Extinction Events



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?



Fossil Formation Activity: Extinction Events

- ▶ 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



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



NPS

► 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?