



Echoes of the Past Educational Activity

Objective

The group will discuss the cultural and natural sounds of their location. They will first identify important sounds of the present, then imagine historic sounds from the past. The discussion introduces two categories for sounds: intrinsic and extrinsic. This activity pairs well with a history presentation at a cultural site.

Ages	10+
Group Size	10–20 students
Setting	Outdoors
Duration	30 minutes
Subject(s)	Science, Special Skills, Social Science

Overview

The soundscape changes over time. This is the result of many forces. Geological processes can shape the coastline and mountain ranges. Animal migration can bring new calls and songs. Human technology can introduce new materials and machines.

This activity works well at a culturally significant site, but it could be any place that has experienced change. The leader starts with some history to show how the location has changed over time. If you're not familiar with the history, invite a park ranger or local historian to help. These details help connect sounds to cultural and natural history.

The group will also discuss which sounds belong at the site. To do this, you will introduce two categories used by the National Park Service: intrinsic and extrinsic. Intrinsic sounds fit with the location's soundscape. Extrinsic sounds are not appropriate for a given site. These categories can guide both discussions and decisions.

Logistics

This activity is most effective when done at a site with cultural importance or with layers of history. If you do not feel you know the history well enough, work with a local park ranger or interpretation specialist. Ask them to prepare a 5–10 minute presentation about the site to start the activity. Make sure they understand the main goal of focusing on soundscape. This context can help them focus less on dates and details that are unrelated. If you are comfortable with the history, prepare something yourself.

Find a comfortable place at the site to gather the group and sit. Consider how much seating is available, if the ground is suitable for sitting, and how to keep the group protected from weather.

You may choose to extend Step 2 of this activity by playing some sound examples for the group. This would require a portable audio player. We recommend a Bluetooth speaker paired with a smartphone, laptop, or tablet. The examples you play should be human-made sounds that mimic natural sounds. Some examples are the sound of a rain stick or indigenous throat singing. Search online for these sounds before beginning the activity and have them ready for Step 2.

Important Vocabulary

Acoustics	How sound behaves in a space; The branch of physics concerned with the properties of sound.
Environmental history	The changing ways people think about, affect, and use ecosystems over time
Extrinsic sounds	Sounds that do not form an essential part of the park experience
Intrinsic sounds	Cultural, historic, and natural sounds that belong within the park experience
Noise	Unwanted sound. The difference between sound and noise depends upon the listener and the circumstances.
Recreation	Activity done for fun.
Soundscape	All the sounds heard in a specific location.

Procedures

Step 1. Listening Through Time

Start with the prepared presentation of the site's cultural history. Use as many descriptors as possible. Include cardinal directions, land features, colors, textures, and other identifiers. Include a brief Q&A if time allows.

Next, shift the focus to sounds. Use the following questions to start discussion, beginning with the present year and working backwards through time. Within each period, discuss examples of changing technology. The goal is for people to imagine how sounds change over time.

Ask

What sounds do you hear right now?

Draw the group's attention to a variety of natural sound sources (animals, wind, water) as well as human-made sounds. For the human-made sounds, take a few minutes to discuss the different types or categories. For example: communication, transportation, recreation, cooking/eating.

Ask

Which of these sounds are fairly new to this place? In other words, which of the things making the sounds we hear now weren't around until recently?

Guide the group to think about smartphones, electric vehicles, and other recent technologies. Consider whether other sound sources have been added or subtracted within the past few years, such as use of shuttle busses instead of personal vehicles, or a new trail.

Say

Imagine being here in the 1990s or early 2000s.

Procedures (continued)

Ask

What sounds would people here have heard then? Which of the sounds would have been loudest or most common?

Depending on the site, road vehicles and airplanes are likely the most dominant human-made sound sources. If need be, prompt the group to think about transportation.

Say

Next, think back to the 1950s or 1960s.

Ask

How would sounds then have been different from the sounds from the 1990s or today?

Again depending on the site, cars may be a notable sound source. Many parks invested in building roads, parking lots, and hiking trails during this era. However, the park may not even have been established by the mid-20th century. Encourage the group to think about changes in recreation over time.

Say

Now think about the late 19th century and beginning of the 20th century.

Ask

What was this land being used for then? How were people moving from place to place? What tools or technology were they using for work, food, and communication?

Again, specifics will depend on the site. Generally, transportation technology may have included horses, buggies/wagons, or trains. Steam-powered machines may have been present, or people may have been farming or hunting. Perhaps point out that newspapers and telegraphs share information silently, as compared to talking on a phone or watching videos on the internet. The idea of “parks” was still fairly new.

Ask

When did Europeans arrive in this location? What technologies did they bring with them? Did they begin making changes to the land?

Depending on the timing and location, this may mean horses and guns, or plowing fields and chopping down forests, etc. Rather than try to develop a comprehensive list, guide the group to think about how the new technology and different land use (if applicable) would have changed the soundscape.

Ask

What would this place have sounded like before European settlers arrived? What were people native to this land using for transportation, food, communication, and recreation? What sounds are still present today?

If applicable, discuss multiple native nations tied to the site, and how sounds may have differed culture to culture. Emphasize that native peoples aren't ancient history. Although they use different tools and technologies today than they did generations ago, they may still have many of the same cultural practices, such as ceremonies.

Procedures (continued)

Step 2. Connections

Read the following quote from Dr. Bernie Krause, a soundscape expert and audio field recordist.

Speaking about our ancient ancestors, “our imagination and our innate need to hear relationships between sounds would have been first stimulated by the voices of the tropical and temperate forest, deserts, high plains, tundra, and coastal regions, where we camped, hunted, and listened. This would have served as a template from which to arrange our own sounds – made with our voices and early instruments. While we were carefully listening, we would have transformed what we heard into expressions that reflected immediate links to the world around us.”

For example, “a tribe once completely isolated in the tropical Brazilian mountains and rainforests, the Yanomami use rain sticks to incorporate their acoustic environment into their ceremonies and music. . . Inuit groups who live in the Northwest Territories of Canada emulate in their music the constant wind that roars across the open plains and tundra, the strongest natural acoustic presence of their environments. By subtle manipulation of sound’s resonance as it comes from their throats, the singers can generate multiple harmonics that leave the impression of many voices simultaneously coming from one source.”

Optional extension

Share other local examples of human-made sounds that mimic natural sounds. Feel free to add or swap Krause’s examples from Brazil and Canada with sounds that have a clear connection to your local park. Consider playing these for the group using a portable audio player, then discuss.

Fun Facts

The name of the Native American tribe, Wy’am means ‘echo of falling water,’ which came from the sounds of Celilo waterfall along the Columbia River before it was muted by the flooding from The Dalles Dam (nearby Portland, Oregon).

Bernie Krause



The National Park Service has its own jazz band! The Arrowhead Jazz Band celebrates part of the country’s musical legacy, playing at the New Orleans Jazz National Historical Park in Louisiana.

New Orleans Jazz National Historical Park



Procedures (continued)

Step 3. Intrinsic vs. Extrinsic Sounds

Provide definitions for intrinsic and extrinsic sounds. This will shift the discussion to how sounds affect culture and well-being.

Say

Intrinsic sounds are cultural, historic, and natural sounds that belong within the park experience. Extrinsic sounds are sounds that do not form an essential part of the park experience.

Draw attention to examples of intrinsic and extrinsic sounds from Step 1. Focus on those heard during the visit. Then, use these questions to continue the discussion.

Ask

What sounds do you enjoy in this environment? Are the sounds intrinsic or extrinsic?

Are any of these sounds common in your everyday experience?

Do any of those sounds inspire you to be creative? To sing or dance?

Which sounds add to a positive experience for park visitors?

Which sounds distract from your enjoyment of the park?

What would you like to change about the soundscape in this location?

Fun Fact

Many places are named for the sounds heard there. For example:

- Wolf Island (Voyageurs National Park) was named by residents who could hear wolves howling from the highest point.
- Kūpina‘i Pali (Hawai‘i Volcanoes National Park) translates to “the echoing cliff”.
- Exclamation Point (Black Canyon of the Gunnison National Park) hints at the sound visitors make when they see the view.
- Silent City (in Bryce Canyon National Park) reflects the remarkably quiet pockets tucked between the rock formations.

Geographical Place Names of Voyageurs National Park, Hawai‘i Volcanoes
Restoration of Indigenous Place Names, Black Canyon of the Gunnison
National Park, Bryce Canyon National Park



Resources

Black Canyon of the Gunnison National Park. Map. <https://www.nps.gov/blca/planyourvisit/maps.htm>

Bryce Canyon National Park. Map. <https://www.nps.gov/brca/planyourvisit/maps.htm>

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Echoes of the Past Field Notes

Deliver an introduction to your group about the location and how it has developed over time. This should focus on cultural history but could also include key environmental changes.

Step 1. Listening Through Time

- Begin with the present day and ask volunteers to name sounds that they hear at the current location.
- Highlight the sounds that are fairly new and unique to the current day soundscape.
- Guide the group in thinking about these approximate periods one at a time:
 - 1990s - early 2000s (turn of the 21st century)
 - 1950s - 1960s (mid 20th century)
 - Late 19th to early 20th century
 - Arrival of Europeans or Euro-Americans
 - Pre-European contact Native American, Alaska Native, and/or Pacific Islander cultures
- For each period, focus on three essential questions:
 - How would a visit to this site sound different?
 - What sounds from that period are missing from today?
 - What sounds from the present would be missing?

Step 2. Connections

Read the quote from Dr. Bernie Krause. There are many examples of people mimicking natural sounds in both ancient and indigenous cultures. These sounds were often incorporated into music and ceremonies.

- Yanomami people in the Brazilian mountains and rainforests use rain sticks to evoke the familiar sound of precipitation.
- Inuit groups in the Northwest Territories of Canada emulate the roar of wind by manipulating the resonance of their throat.
- Ask the group to consider if there are ways that natural sounds still influence our present lives.
- Optional extension: Play examples of human-made sounds that mimic natural sounds.

Step 3. Intrinsic vs. Extrinsic Sounds

- Explain that intrinsic sounds include cultural, historic, natural sounds that belong within the park experience. Contrast these with extrinsic sounds, which are not essential parts of the park experience.
- Call attention to one example of each at the current location.
- Guide the group in reflection on the differences between intrinsic and extrinsic sounds using the following questions:
 - Which sounds do you enjoy most in this location?
 - Do any sounds relate to your everyday experience?
 - Do any sounds inspire you to be creative?
 - Which sounds distract from enjoyment of this location?
- Wrap up the conversation with a final hypothetical question: What would you like to change about the soundscape in this location?