



# Soundscape Activity

## Layering Sounds

**Theme:** There is a layered world of sound around you.

**General Concept: (Onion Metaphor)**

Students will imagine that the sounds occurring around them are layered. Students will be able to peel away layers of sound, similar to peeling away layers of an onion. Once one layer is removed, another layer can be revealed. Sometimes human-caused sounds can mask the sounds of nature, so intentionally peeling away an outer layer of human-made sounds may allow students to hear other sounds that were hidden (or “masked”), resulting in a better awareness of the acoustical world that surrounds them.

**Logistics:**

Find a place outdoors where the students will be able to hear both natural and human-made sounds.

**Materials Needed:**

Student Journals

**Learning Objectives:**

1. Students will tune in to both the natural and human-made sound “layers” around them, and will be able to differentiate between the two.
2. Students will express the role of sound in their everyday lives.
3. Students will consider why it may be important to have an awareness of the sounds around them.
4. Students will learn how the NPS Natural Sounds Program manages and protects park soundscapes.



Bull Elk. Image by Donald Metzner

**Step A) 30 Second Listening Exercise (All Sounds)**

Taking their journals, students spread out and find a comfortable spot to sit where they can still hear instructions. Minimize sounds (clothing, phones, iPods, etc.) Students close eyes and simply listen to all the sounds around for 30 seconds. After 30 seconds, instruct students to open eyes and make a list of all the sounds they heard.

*Suggested Discussion Questions:*

- What did you hear?
- Of those sounds, which ones were human-made?
- Which sounds were natural?
- What sounds did you like/ not like?
- Do you think there’s a difference between sound and noise?\*

\*Note: The Natural Sounds Program likes to differentiate between the use of sound and noise. Although noise is sometimes incorrectly used as a synonym for sound, it is in fact sound that is negatively evaluated (undesired) or extraneous to an environment. See <http://www.nature.nps.gov/sound/science> for more information.

**Step B) 30 Second Listening Exercise (Natural Sounds)**

Repeat activity, “peeling away” human-made sounds, listening just for natural sounds. Introduce concept of onion, imagining you can peel away layers of sound, similar to peeling away layers of an onion. Once one layer is removed, another layer can be revealed. Give start/ stop cues and instruct students to make a list of sounds heard in their journals.

*Suggested Discussion Questions:*

- What did you hear this time?
- Did you hear anything new this time?
- Were you able to peel away the layer of human-caused sounds? How difficult was it?

**Step C) 30 Second Listening Exercise (Human-made Sounds)**

Repeat activity peeling away the natural layer of sound and focus only on human-caused sound. Give start/ stop cues and instruct students to make list of sounds heard in their journals.

*Suggested Discussion Questions:*

- Was this easier or harder?
- What did you hear this time?
- Did anything you hear surprise you?

**Final Discussion**

1. How did this activity affect you? (heightened awareness? surprise? bored? etc.)
2. How did your perception of your environment change when you peeled away the human-made layer vs. the natural layer?
3. What sounds were pleasing / annoying? Why?
4. What sounds did you think were inappropriate for this location? Why?
5. What sounds did you think were appropriate for this location? Why?
6. If you were a Natural Sounds Program researcher helping the park manager, what sources of noise might you suggest he or she try to manage? (Managing noises might include limiting, eliminating, or determining where and when it is appropriate)

*\*Introduce the National Park Service dual mission:*

- Protect natural and cultural resources and provide enjoyment to visitors in parks. (Balance protecting resources while making sure visitors are having a good experience.)
- Because of this, what challenges do you think they encounter? (e.g., Need to minimize human-made

sound to protect natural resources, but in order to provide a quality experience for their visitors some human-made sounds may need to be allowed, such as visitors talking, cars, etc.)

- With the help of the Natural Sounds Program, it is up to the park managers to decide what sounds are appropriate or inappropriate for a particular park unit.
- The Natural Sounds Program works to protect, maintain, or restore acoustical environments while increasing scientific understanding and inspiring public appreciation for soundscapes. In order to assist park managers and achieve their mission, researchers at the Natural Sounds Program must be able to effectively peel apart the natural, cultural, and human-made sound “layers.” This allows them to focus on each layer of sound separately and provide better guidance to park managers on the best strategies for protecting both the acoustical environment and soundscape and for addressing noise pollution issues.



**National Park Service**  
U.S. Department of the Interior

*The Natural Sounds Program works to protect, maintain, or restore acoustical environments throughout the National Park System. We fulfill this mission by working in partnership with parks and others to increase scientific and public understanding of the value and character of soundscapes and to eliminate or minimize noise intrusions.*

**Natural Sounds Program  
Natural Resources Stewardship & Science**

1201 Oakridge Drive, Ste. 100  
Fort Collins, CO 80525

**Phone**  
970-225-3552

**E-mail**  
Lelaina\_Marin@nps.gov

**Website**  
<http://www.nature.nps.gov/sound>

The National Park Service cares for the special places saved by the American people so that all may experience our heritage.