

Sites and SOUND

NPS Sites Protect Heritage of Sound



Where can you go to hear a bugling elk or a thundering waterfall? Where can you enjoy an opera outdoors or celebrate the history of jazz music as an American art form? At national parks . . .

From Yellowstone and Yosemite to Wolf Trap Farm and New Orleans Jazz Historical Park, the National Park System preserves a rich mixture of natural and cultural sounds that are part of our national heritage. National parks not only offer opportunities to listen to this legacy, but they provide special places for people to find inspiration, tranquility, and a sense of solitude.

As the din from civilization grows, national parks are valued more and more for these qualities. Yet, noise from air, water and ground transportation and other sources increasingly endangers these qualities. To reduce these impacts, public participation in protecting park soundscapes is an important part of caring for our parks.

Listen Up!

USDI National Park Service

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Natural sound resources are very important to most national park visitors.

American Public Values National Parks For Natural Sound Environments

How important are national parks as places for people to experience natural peace and the sounds of nature?

Very important—according to 72 percent of the American public that responded to a June 1998 survey on the National Park System.

Conducted by Colorado State University, the national public opinion survey also showed that 88 percent of those surveyed value national parks for their importance to future generations.

Protection of wildlife habitat also ranked high (78 percent), with preservation of natural ecosystems and protection of air and water quality joining natural sounds as very important reasons for having national parks.

Just what makes national parks some of the best places to find tranquility and enjoy the whisper of the wind moving gently across the landscape?

NPS policy identifies qualities such as natural quiet, solitude, scenery, and the sounds of nature as resources and values to be protected now and for future generations. Planning and management for preservation of natural sound environments is now required, just as we preserve wildlife, watersheds, and other natural resources.

Here are some ways the NPS works to preserve natural sound environments in parks. We monitor sound and identify noise sources so we can protect natural sound

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Sound Studies Compare Noise Levels

Preserving the sounds of the natural world is an important objective for the National Park Service. This is confirmed in law, policy, and the beliefs of NPS managers.

Although most park managers judge aircraft as the greatest interference with opportunities to enjoy natural soundscapes, national parks include other significant noise sources such as tourist cars and buses, snowmobiles, watercraft, and NPS maintenance equipment. Other sound problems identified by park managers include power generators, audio equipment, domestic animals, and loud human voices.

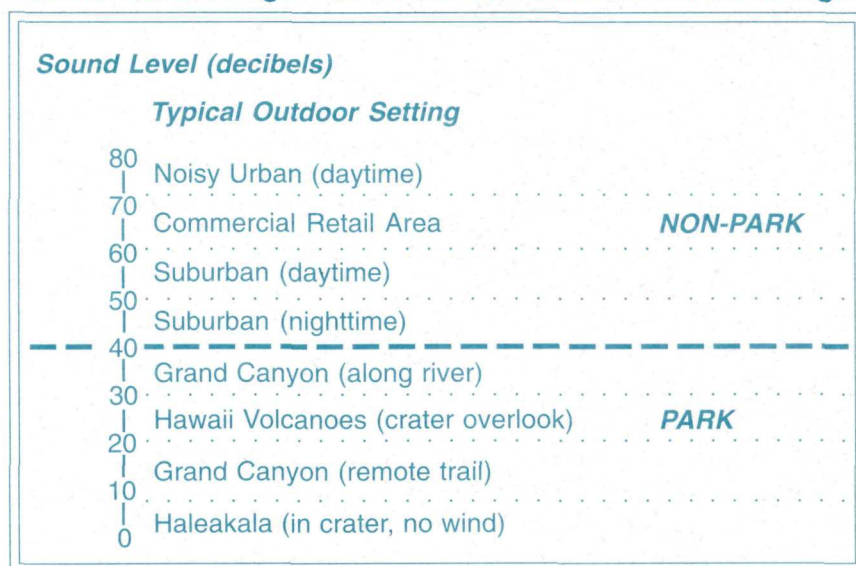
By conducting sound monitoring studies, park managers can identify noise sources in national parks. Special instruments are used to survey sound levels in decibels (units that express relative intensity of sounds on a logarithmic scale from zero for the least perceptible sounds to over 100 for un-

comfortable noise levels). For instance, a passenger car traveling at 65 miles an hour may register a sound level of 70 decibels at a distance of 25 feet.

The table below shows sound levels for a range of park and non-park settings in the form of an "acoustic thermometer." Values at the bottom are very quiet. In comparison, values at the top of the thermometer are much noisier. The upper half shows sounds associated with urban settings. The lower half includes national park sound levels that city dwellers rarely encounter in their daily routines.

The relatively large sound level range (roughly 40 decibels) that can be found between a busy downtown area and the suburbs at night can also be found in park areas, but lying entirely *below* the lowest of the common outdoor sound levels in suburban environments.

Sound Level Ranges for Some Park and Non-Park Settings



Information source: *Report on Effects of Aircraft Overflights on the National Park System*, USDI NPS, July 1995, p. 79.

SOUND Policy

Works in Progress

NPS Management Policies of 1988 (chapter 4, page 17) state: "The National Park Service will strive to preserve the natural quiet and the natural sounds associated with the physical and biological resources of the parks (for example, the sounds of the wind in the trees or of the waves breaking on the shore, the howl of the wolf, or the call of the loon) . . ."

To address the problems associated specifically with the impacts of commercial air tourism, the NPS and Federal Aviation Administration formed a National Parks Overflights Working Group comprised of aviation and environmental interests. The group recommended a process for addressing how commercial air tourism is managed over individual national parks. Recommendations by the group are being incorporated into the FAA regulatory process and may also be implemented through legislation.

The NPS also works to manage personal watercraft use. In both cases, public-oriented management planning processes will address these use issues in a way that will provide increased protection of park visitors and park resources while, at the same time, providing better visitor services.

Natural SOUNDS

Listen to the Landscape . . .

There are just as many captivating soundscapes in national parks as there are outstanding panoramas—maybe even more!

Natural soundscapes in parks feature a remarkable variety of biological and physical components. For example, desert soundscapes may include the squawking of ravens, the descending trill of canyon wrens, the chirp of a crowd of crickets, the whistle of a gentle breeze, or the roar of a river during a flash flood.

Natural soundscape conditions are actually anything but silent. Yet, such natural ambient sound levels are

*"All the sounds of the earth
are like music."*

—Oscar Hammerstein II

sometimes referred to as *natural quiet* when experienced in the absence of any human-produced noise. The NPS is working to identify and minimize such noise sources. The goal is protection and restoration of natural soundscapes—and natural quiet—which really is not so quiet after all.



Photo by Ken Phillips

NPS use of the MD-900 Explorer quiet technology helicopter reduces noise.

Grand Canyon Leads National Parks In Use of Quiet Technology

A new species of bird is soaring in the skies above Grand Canyon National Park, and it's one of the quietest in its family. Easily identified by its black and white body and bright yellow stripe, this big bird sports no tail feathers, yet has a wingspan of 34 feet!

The oversized fledgling is actually a new MD-900 Explorer

noise test with flying colors—with a compliance margin greater than other helicopters tested. (According to the manufacturer, sound from the NOTAR affects an area 50 percent smaller in size than the area affected by a tail-rotor-equipped helicopter of the same dimensions.)

Reducing the impacts of aircraft noise is a priority for the park. Area tour operators have joined the NPS in efforts to use quiet technology and restore natural sounds. Papillon Airways is working on the introduction of a retrofitted helicopter that carries more visitors, yet is even quieter than the NOTAR. The 19-seat Twin Otter, flown by Scenic and Grand Canyon Airlines, features four rather than three bladed propellers, and is one of the quietest airplanes flying over the Canyon.

This use of quieter aircraft assists park managers to restore natural sounds at the Grand Canyon and to gain a growing audience of supporters *over* the parks.



Public Values Sounds

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environments in those parts of national parks where visitors should have the opportunity to experience natural sounds.

Education also plays an important role. Noise from NPS sources such as park maintenance operations, vehicles, and aviation use can be minimized by noise prevention and mitigation practices implemented by park staff. Other distracting noise from vehicles such as personal watercraft, snowmobiles, buses, and aircraft can be

lessened as well. For example, public awareness and voluntary noise reduction efforts can directly reduce vehicle noise in the parks.

How will this affect park visits for most people?

In general, greater opportunities for natural park experiences should result. Ideally, people will realize how their own presence in and around national parks affects natural sound environments and they will act accordingly to protect them.



The national parks were established "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for future generations."

—NPS Organic Act, 1916

Cooperative Planning Reduces Noise

Vehicles take a significant toll on the natural soundscapes that so many visitors seek in national parks.

Transportation vehicles in campgrounds and on roads contribute to background noise, punctuated in some areas of national parks by aircraft and watercraft. Consequently, the NPS is developing new ways to reduce congestion and the impacts of noise associated with vehicles while, at the same time, improving visitor services and safety.

Even as development of cooperative air tour planning with the Federal Aviation Administration begins, personal watercraft management and ground transportation enhancements are

underway. Public transit systems in Yosemite, Zion, and Grand Canyon will lessen traffic and noise in those national parks. Trams or buses will take visitors at Zion and Yosemite from parking areas outside the parks to shuttle destinations inside. A light rail system will serve Grand Canyon visitors in the same way.





We also work to manage where and when personal watercraft use is appropriate in national parks. Public input has a key role in this planning process.

Overall, the goal of these planning actions is to reduce transportation noise impacts and provide better service to the public.

the Nature of Sound

What will your next national park visit sound like?

Stop and listen. An astounding world of sound exists in national parks. Some park areas stir with a symphony of birdsongs. Others remain so quiet, you can hear your heart beat. Find a place to appreciate the sounds of nature on your next park visit. Try to understand how your presence affects natural sound environments. Here are some ways to help protect natural sounds:

-  Be aware of campground quiet hours provided in park information. Keep voices low and vehicle engines turned off so everyone can enjoy natural sounds.
-  Speak quietly and turn off vehicle engines to observe wildlife. Human-made sounds can disrupt wildlife behavior.
-  Be considerate of park visitors when talking, starting vehicle engines, or using audio devices. Many people visit the parks to escape the sounds of modern civilization.
-  Use alternate methods of transportation, such as park shuttles, where available. Choose transportation with the least impact on natural quiet.