



# National Park Service

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## DIRECTOR'S ORDER #47: SOUNDSCAPE PRESERVATION AND NOISE MANAGEMENT

**Approved:**/s/ Robert Stanton  
Robert Stanton, Director

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### **A. PURPOSE AND BACKGROUND**

The purpose of this Director's Order is to articulate National Park Service operational policies that will require, to the fullest extent practicable, the protection, maintenance, or restoration of the natural soundscape resource in a condition unimpaired by inappropriate or excessive noise sources.

**Natural Sounds and the NPS Mission.** An important part of the NPS mission is to preserve and/or restore the natural resources of the parks, including the natural soundscapes associated with units of the national park system. Natural sounds are intrinsic elements of the environment that are often associated with parks and park purposes. They are inherent components of "the scenery and the natural and historic objects and the wild life" protected by the NPS Organic Act. They are vital to the natural functioning of many parks and may provide valuable indicators of the health of various ecosystems. Intrusive sounds are of concern to the NPS because they sometimes impede the Service's ability to accomplish its mission.

Intrusive sounds are also a matter of concern to park visitors. As was reported to the U.S. Congress in the "Report on the Effects of Aircraft Overflights on the National Park System," a system-wide survey of park visitors revealed that nearly as many visitors come to national parks to enjoy the natural soundscape (91 percent) as come to view the scenery (93 percent). Noise can also distract

visitors from the resources and purposes of cultural areas--the tranquility of historic settings and the solemnity of memorials, battlefields, prehistoric ruins, and sacred sites.

Increasingly, even those parks that appear as they did in historical context do not sound like they once did. Natural sounds are being masked or obscured by a wide variety of human activities. In some parks, natural sounds are disappearing at such a rate that some may be gone before their existence can even be documented. Thus, soundscape preservation and noise management is one more dimension of the complex problem of achieving the NPS mission of preserving park resources unimpaired for the enjoyment of present and future generations.

**Appropriate and Inappropriate Noise.** Park purposes are defined in enabling legislation or proclamations, and through a comprehensive public planning process. Park purposes may be highly varied, in the same way that activities appropriate to each park's purpose may be highly varied. Park activities may include transportation systems, visitor centers, maintenance activities, recreational activities, weapons-firing demonstrations, cultural events, and many others. These activities are often found to be appropriate even though they generate elevated sound levels for areas within the parks. However, when activities (whether inside or outside a park) generate excessive levels of noise, they can jeopardize the natural soundscape resource and/or the purposes for which the park was created.

**Addressing the Problem.** This Director's Order addresses the problem of excessive/ inappropriate levels of noise. It directs park managers to (1) measure baseline acoustic conditions, (2) determine which existing or proposed human-made sounds are consistent with park purposes, (3) set acoustic management goals and objectives based on those purposes, and (4) determine which noise sources are impacting the park and need to be addressed by management. Furthermore, it requires park managers to (1) evaluate and address self-generated noise, and (2) constructively engage with those responsible for other noise sources that impact parks to explore what can be done to better protect parks. In this regard, the Service will give appropriate recognition and weight to the vital missions of other government agencies, such as the Federal Aviation Administration (FAA) and the military services, and respect the rights of park neighbors.

## **B. AUTHORITY**

Authority to issue this Director's Order is contained in the National Park Service Organic Act, as amended (16 USC 1 through 4), and delegations of authority contained in Part 245 of the Department of the Interior Manual.

## **C. INSTRUCTIONS AND REQUIREMENTS**

To accomplish the purpose of this Director's Order, the NPS will apply the following requirements to its soundscape preservation and noise management activities.

### **1. Applicable Policies**

Soundscape preservation and noise management activities will be subject to the policies contained in NPS Management Policies. The portions of Management Policies that are most pertinent to this topic are: Chapter 1, Introduction; Chapter 4, Natural Resource Management; Chapter 5, Cultural Resource Management; Chapter 6, Wilderness Preservation and Management; and Chapter 8, Use of the Parks. Policies in the form of regulations covering general audio requirements are published in title 36, section 2.12, of the Code of Federal Regulations. Policy on the regulation of commercial air tourism is established by Public Law 106-181, and implementing FAA regulations.

### **2. Reference Manual**

The Associate Director for Park Operations and Education will develop and maintain a reference manual (RM-47) to provide comprehensive guidance on soundscape preservation and noise management. The reference manual will include applicable policies and procedures; technical guidance on planning, inventory, monitoring, education, noise prevention and mitigation; and other

information that will help field managers and staff to meet their responsibilities.

### **3. Soundscape Preservation and Noise Management Planning**

Superintendents will address the preservation of natural soundscapes and the elimination, mitigation, or minimization of inappropriate noise sources through NPS planning processes (see [Director's Order #2: Park Planning](#)) and operations policies. Soundscape preservation and noise management can be addressed in appropriate sections of General Management Plans or through a variety of park implementation plans. If needed to deal with the complexity or urgency of a noise issue, a separate implementation plan (e.g., a Soundscape Preservation and Noise Management Plan as described in Reference Manual 47) will be developed. These park planning efforts will (1) describe the baseline natural ambient sound environment in qualitative and quantitative terms; (2) identify sound sources and sound levels consistent with park legislation and purposes; (3) identify the level, nature and origin of internal and external noise sources; (4) articulate desired future soundscape conditions; and (5) recommend the approaches or actions that will be taken to achieve those conditions or otherwise mitigate noise impacts.

### **4. Interim Noise Management Measures**

Where noise management actions – particularly those related to park-generated noise or noise from sources covered by existing regulations – do not require a planning process with public participation, superintendents will act to lessen the impact of noise in parks by identifying the inappropriate and intrusive noise sources and by implementing any immediately feasible mitigation or preventative measures. Noise Prevention and Mitigation Considerations in Reference Manual 47 will provide guidance in this process.

### **5. Inventorying and Monitoring the Soundscape**

As needed for baseline resource inventory, soundscape preservation and noise management planning, development of interim management measures, commercial air tour management planning purposes, or for other plans (general management plans, commercial services plans, use management plans, etc.), superintendents will inventory and monitor park soundscapes as described in Reference Manual 47. The information provided from inventory and monitoring is essential to understanding the relationship between the baseline natural soundscape and human-made components of the soundscape--existing and proposed. This information (1) makes it possible to better understand the resource that needs to be protected and the appropriate and inappropriate sources of noise; (2) enables a park to define acoustic goals for different parts of the park, and to determine the nature and level of impacts; and (3) suggests where management intervention can most effectively contribute to protecting park resources and improving the visitor experience consistent with park purposes. Monitoring over time will allow measurement of progress toward defined acoustic goals.

### **6. Establishing Soundscape Preservation Objectives**

In the planning process, acoustic objectives must be established to define the desired future soundscape conditions of parks. These objectives must be consistent with park purposes and plans, as well as with the goal of returning the soundscape to as near natural conditions as possible over time – while allowing visitors to access and enjoy the park in a manner consistent with park management goals. The timeframe for this restoration will be a function of local conditions and will be established in appropriate planning documents.

The fundamental principle underlying the establishment of soundscape preservation objectives is the obligation to protect or restore the natural soundscape to the level consistent with park purposes, taking into consideration other applicable laws. Where natural soundscape conditions are currently not impacted by inappropriate noise sources, the objective must be to maintain those conditions. Where the soundscape is found to be degraded, the objective is to facilitate and promote progress toward the restoration of the natural soundscape. This basic principle is modified by two circumstances:

(a) The first is where the Congress has legislated (e.g., through park legislation, the Alaska National Interest Lands Conservation Act, the Wendell H. Ford Aviation Investment and Reform Act for the 21<sup>st</sup> Century) specific provision for noise-making activities, and then only to the extent that the noise cannot be contained below certain levels consistent with that activity. If, for example, congressional action provided for a noise-producing activity in or next to a national park, the soundscape management goal would be to reduce the noise to the level consistent with the best technology available – to mitigate the noise impact, but not adversely affect the authorized activity.

(b) The second circumstance relates to noise-generating activities that are appropriate to the park under the NPS Organic Act and other relevant legislation related to natural and cultural resource management or the provision of visitor services. This includes many appropriate management and maintenance activities, visitor and permittee activities, concession operations, etc. In these situations, soundscape management goals are to reduce noise to minimum levels consistent with the appropriate service or activity, as long as that service or activity continues to be needed. It is critical that the Service lead by example and not impose conditions on others that the Service is not itself prepared to implement. Where appropriate new services or activities are initiated consistent with park management plans, soundscape management goals will be adjusted to the extent necessary to facilitate the service or activity. Another consideration in this regard is the management of permitted noise-generating activities, such as concerts in urban parks, to ensure that noise is kept to levels that will not adversely impact residents of adjacent neighborhoods.

## **7. Defining Impacts on Park Soundscapes**

In planning for soundscape preservation and noise management, superintendents must use the best science available to determine the impact of existing or proposed noise sources on the soundscape, wildlife, aquatic and marine life, cultural resources, other resources and values, and the visitor experience, as appropriate. With respect to determinations related to the impacts of sound on the park soundscape, the natural soundscape is the "affected environment." Under 16 USC 1 et seq., the Service possesses broad and sole authority to manage the lands, resources, and visitors in the areas under its charge. The Service has the "special expertise" and "jurisdiction," as the terms are used in the National Environmental Policy Act and its implementing regulations, to determine the nature, extent, and acceptability of impacts on park resources and visitors. This includes determining the type, magnitude, duration, and frequency of occurrence of noise that is compatible or incompatible with protecting the resources or the visitor experience for which the park was established and planned, as well as determining the significance of noise levels or impacts. This may also include determining whether certain noise sources are necessary or appropriate. In some cases, it may be necessary for parks to conduct additional ecological and sociological studies to better understand the extent and nature of actual or potential impacts on park resources or visitors.

Even in those situations where the responsibility for assessing the noise impacts of its proposed action rests with another Federal agency, under guidance established by the Council on Environmental Quality (CEQ) in implementing the National Environmental Policy Act, the NPS has jurisdiction by law and expertise to determine the effects of that noise on units of the national park system. CEQ guidance indicates that these agencies must take NPS standards and evaluations into account in the evaluation of impacts.

## **8. Constructive Engagement**

Superintendents must work constructively and cooperatively with those responsible for inappropriate sources of noise in parks, including NPS operations, permittees, visitors, commercial tours with or without commercial use permits, concessionaires, and park neighbors. In some cases, such as where there are aircraft overflights or noise sources located outside park boundaries, other agencies or entities may have jurisdiction over the noise-producing activity. However, where such activity impacts park resources or visitors, the Service has the obligation to protect and manage park resources and visitors, and Service jurisdiction may overlap or interact with the other agency's jurisdiction in complex ways. The vital missions of other government agencies such as the FAA and the military services, and park neighbors, must be given appropriate consideration in the process of setting soundscape preservation and noise management goals and objectives. The Service will work constructively with other agencies and entities to minimize and mitigate any impacts to park resources or visitors.

## **9. Air Tour Management Planning**

Public Law 106-181 and implementing FAA regulations provide for a cooperative FAA/NPS public planning process to develop an Air Tour Management Plan (ATMP) when and where a commercial air tour operator seeks to provide tours over units of the national park system (the legislation exempts Grand Canyon National Park, Rocky Mountain National Park, and parks in Alaska from the process). The Service will assist the FAA in this localized process and determine the nature and extent of impacts on natural and cultural resources and visitor experience opportunities. The FAA, with responsibility for ensuring the safe and efficient use of the nation's airspace and for protecting the public health and welfare from aircraft noise, will lead the ATMP effort and regulate these commercial activities as provided for in the cooperative planning effort. The FAA and the NPS must approve and sign the environmental decision document required by NEPA, which may include a finding of no significant impact, an environmental assessment, or an environmental impact statement, and the record of decision for the ATMP. This requires superintendents to work cooperatively with the FAA, air tour operators, and other stakeholders in the development of these plans. Procedures for this interagency process, and plan content requirements, are provided in Reference Manual 47.

## **10. Interpreting the Soundscape to Visitors**

Educating the American public about the nation's natural and cultural heritage is one of the fundamental responsibilities of the National Park Service and is central to its resource preservation efforts. Superintendents will use educational and interpretive materials (e.g. The Nature of Sound education materials) on the natural soundscape and its values to educate visitors about their soundscapes. Internally, NPS staff will lead by example by minimizing use of mechanical equipment, and by using the quietest and least impacting technologies available.

## **11. National Program Steering Committee**

The Associate Director for Park Operations and Education may establish a program steering committee to promote consistency and improvement in NPS soundscape preservation and noise management efforts, and to facilitate interagency coordination and actions. The committee will (1) assess NPS progress toward natural soundscape restoration and preservation; (2) review programmatic needs and provide recommendations on resource needs; (3) identify and assess programmatic issues; and (4) provide recommendations and advice to establish accountability, consistency, and continuity within the program. An established committee will function until such time as the Associate Director determines the committee is no longer needed.

## **D. DEFINITIONS**

The following definitions apply to this Director's Order:

### **1. Sound**

A mechanical wave or an oscillation in pressure, stress, particle displacement, and particle velocity transmitted through solids, liquids, and gases—some types of which are able to cause a sensation of hearing. The vibration causes the propagation of sound waves. Basic analytical parameters of sound include: frequency, amplitude (related to sound pressure and intensity), envelope (shape of amplitude in time), spectrum and duration.

### **2. Soundscape**

Soundscape refers to the total ambient acoustic environment associated with a given environment (sonic environment) in an area such as a national park. It also refers to the total ambient sound level for the park. In a national park setting, this soundscape is usually composed of both natural ambient sounds and a variety of human-made sounds.

### **3. Natural Ambient Sound Level**

The natural ambient sound level of a park is the natural soundscape of that park. It is comprised of the natural sound conditions in a park which exist in the absence of any human-produced noises. These conditions are actually composed of many natural sounds, near and far, which often are heard as a composite, not individually. In an acoustic environment subjected to high levels of human-caused sound, natural ambient sounds may be masked by other noise sources. The natural soundscape is an important resource of parks; there may also be important relationships between how this environment is perceived and understood by individuals and society. (Natural ambient sound is considered synonymous with the term "natural quiet.") This is the basis for determining the "affected environment" in NEPA documents and other environmental assessments related to human actions producing inappropriate or intrusive impacts on the park soundscape.

#### **4. Background Sound Level**

This is the sound level that can be measured in those situations where it is not possible to measure the natural ambient sound level with certainty because of high levels of human-caused sound, or where it is prohibitively expensive to measure natural ambient sound levels. In such situations, this level will be estimated using a statistic called  $L_{90}$ , the sound level that is exceeded 90 percent of the time. This metric is often used in acoustics literature to characterize "background" or "ambient," and is incorporated, for example, in state laws in Massachusetts, Connecticut and Illinois.

#### **5. Man-made Sound Levels**

The ambient sounds attributable to human activities in national parks are defined as human-made sound. The sound levels associated with these sounds are actually composed of many human-made sounds, near and far, which may be heard individually or as a composite. In a national park setting, these sounds may be associated with activities that are essential to the park's purpose, they may be a by-product of park management activities, or they may come from outside the park. It is these sounds and sound levels that need to be measured and evaluated in park planning processes to determine whether they are consistent with or destructive to soundscape management objectives.

#### **6. Noise**

Noise is generally defined as an unwanted or undesired sound, often unpleasant in quality, intensity or repetition. This makes noise a subjective term and pushes society to address which sounds or aspects of sound constitute unwanted interruptions in specific situations. Noise is often a byproduct of desirable activities or machines. In a national park setting, noise is a subset of human-made noises. National park staff are responsible for analyzing the sound energy associated with human activities and defining which sounds are appropriate or necessary for park purposes within the various park management zones, and which sounds are inappropriate or impact park purposes within various park management zones.

-----*End of Director's Order*-----