



San Antonio Missions National Historical Park

Preliminary Acoustic Monitoring Briefing

April-May 2008

Background Information

Through the technical assistance process, San Antonio Missions National Historical Park requested that existing and natural ambient measurements be conducted at the park. Sound sources of concern at the park include a proposed runway expansion at nearby Stinson Municipal Airport, as well as routine overflights. Airport expansion was slated to begin in July 2008. To meet the data collection objective, an acoustic monitoring device was deployed for 30 days during April and May. Sound pressure levels and continuous digital recordings were collected. This briefing serves as a preliminary snapshot of the acoustical conditions at the site. A full acoustic monitoring report will follow, pending further data analysis. Table 1 describes the location and characteristics of the monitoring site.

Table 1. Study area.

Site	Site Name	Dates Deployed	Vegetation	Elevation	Latitude	Longitude
SAAN001	Tufa House	4/21-5/21	Open meadow, 50% tree cover	158 m	29.33264	98.45451

Metrics

In determining the current conditions of an acoustic environment, it is important to examine how often sound pressure levels exceed certain thresholds. Table 2 explains the relevance of threshold values while Table 3 reports the percent of time that measured levels were above these four key thresholds.

Table 2. Explanation of threshold values.

Threshold (dBA)	Relevance
35	Adverse health effects of sleep interruption
45	WHO's recommendation for max noise levels inside bedrooms
52	Speech interference for interpretive programs
60	Speech interruption for normal conversation

Table 3. Percent time above metrics.

Site	% Exceedence daytime ¹				% Exceedence nighttime ²			
	35 dBA	45 dBA	52 dBA	60 dBA	35 dBA	45 dBA	52 dBA	60 dBA
SAAN001	100.00	93.42	25.70	2.80	100.00	60.54	8.20	1.04

¹. Daytime hours are 0700-18:59:59

². Nighttime hours are 1900-06:59:59

Table 4 reports the daytime and nighttime median existing ambient as determined by the sound level meter. This level includes all sound sources, both natural and non-natural. A-weighted decibel is the sum of sound energy across the range of human hearing. Humans do not hear well at very low or very high frequencies. Weighting adjusts for this.

Table 4. Median A-weighted existing ambient (L_{50}).

Site	Median A-Weighted Existing Ambient (dBA)	
	Day ¹	Night ²
SAAN001	49.1	46.2

¹. Daytime hours are: 0700-18:59:59

². Nighttime hours are: 1900-06:59:59

Please note that this is a preliminary briefing designed to get requested information back to the park as quickly as possible. Additional data will be available upon request if needed. If there are any questions or concerns about the information in this briefing, please contact the Natural Sounds Program (see contact information below). Thank you for your interest and participation in acoustic resource monitoring.

Natural Resource Program Center

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