



Sound Monitoring Technical Assistance Request Summary: Summer 2008



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October 2008

File Name: KriedemanC_2008_KEFJ_SoundMonitoring_Summer_Summery.doc

Abstract

Soundscape was identified as a social indicator during the Visitor Experience Resource Protection (VERP) planning process used in the development of the Amendment to the Exit Glacier Area Management Plan. Because of the technical skills and equipment involved in sound monitoring, a Technical Assistance Request was submitted to the NPS Natural Sounds Program. The Natural Sounds Program accepted our request, and two Acoustic Technicians came to the park from July 15 through July 29. They assisted with choosing monitoring sites from the four management zones, and taught park staff how to set up and maintain monitoring equipment.

Recommended Citation:

Kriedeman, C, 2008. Sound Monitoring Technical Assistance Summary 2008: Kenai Fjords National Park. Kenai Fjords National Park, U.S.D.I. National Park Service, Seward, AK. 6pp.

Topics:

Sound Monitoring, Soundscape, Social Conditions

Theme Keywords:

Sound Monitoring, Natural Sounds, Soundscape, Technical Assistance Request, Social Conditions, Indicators and Standards, VERP, Exit Glacier, Kenai Fjords National Park

Place name Keywords:

Alaska, Kenai Fjords National Park, KEFJ, Exit Glacier

Acronyms:

GIS	Geographic Information System
KEFJ	Kenai Fjords National Park
NPS	National Park Service
TAR	Technical Assistance Request
VERP	Visitor Experience Resource Protection

Introduction

Soundscape was identified as a social indicator during the Visitor Experience Resource Protection (VERP) planning process used in the development of the Amendment to the Exit Glacier Area Management Plan. Because of the technical skills and specialized equipment involved in sound monitoring, a Technical Assistance Request was submitted to the NPS Natural Sounds Program in 2006. The Natural Sounds Program accepted our request, and two Acoustic Technicians came to the park from July 15 through July 29 in 2008. They assisted with choosing monitoring sites from the four management zones, and taught park staff how to set up and maintain monitoring equipment.



Acoustic Technicians from the NPS Natural Sounds Program setting up Sound monitoring equipment in the Hiker Zone.

Summary of Activities

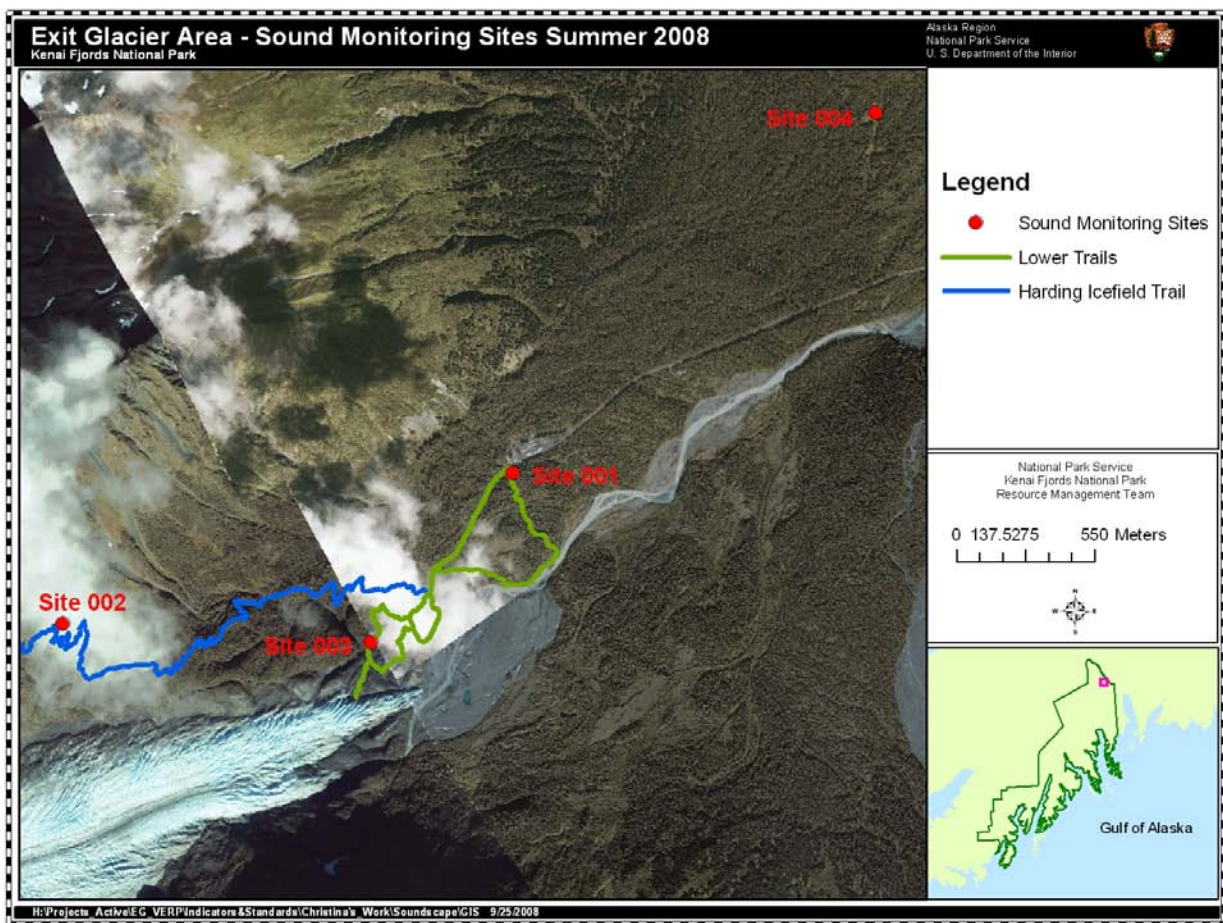
Sound monitoring equipment was set up in four summer management zones identified in the Exit Glacier Management Plant Amendment. These included Visitor Facilities, Pedestrian, Hiker and Backcountry Semi-primitive zones. No sound monitoring was conducted in the Backcountry Primitive zone because it was very difficult to access and contains mostly mountain tops and the Harding Icefield. Any sounds recorded in this zone would most likely be aircraft sounds, which could be captured by monitoring equipment in another zone. Monitoring sites were selected that would best capture the sounds representative of the zone. They were located away from running water since water sounds can mask other ambient sounds. Monitoring sites shown on the map below include:

Site 001 – Visitor Facilities Zone

Site 002 – Hiker Zone

Site 003 – Pedestrian Zone

Site 004 – Back-country Semi-primitive Zone



After monitoring equipment was set up at each site, two attended listening sessions were conducted which are used to ground truth sounds for technicians who will later be listening to the recordings collected during monitoring. A Personal Digital Assistant (PDA) was used to identify all sounds heard during a 1 hour listening session.

Monitoring equipment at each site was checked regularly to assess battery levels and make adjustments to equipment. During each visit, a Site Visitor Data Sheet was completed to document an interruption in monitoring and any adjustments made to the equipment. After the technicians left and park staff were maintaining the equipment, weekly equipment checks were conducted.



Acoustic Technician checking the battery voltage levels at a monitoring site.

Sound monitoring equipment was removed during the first week of September by park staff and shipped back to the NPS Natural Sounds Program in Ft. Collins. Data will be analyzed and interpreted by Natural Sounds Program staff. Sound data will be used as a baseline for the Soundscape in each zone and used to develop indicators and standards based on desired future conditions.

Discussion

There were two issues with equipment that occurred during monitoring. The first issue was with using a solar panel to charge batteries to run the equipment. The weather during monitoring was mostly cloudy and often raining. Three of the four systems did fine because the solar panels got enough direct sun exposure to maintain the batteries. The monitoring system set up in the Visitor Facilities Zone, Site 001, was in a more shaded area. Because the location was near a high visitor use area with tall trees, it was difficult to find a place to keep the equipment out of site, and get the solar panel in direct sunlight. The solar panel was not exposed directly to sunlight, so the batteries had to be disconnected from the system and periodically recharged.

The second issue was with bears damaging equipment. The equipment at site 004 was knocked down three times causing damaged some of the equipment. Site 002 was not bothered for most of the month is was deployed, but when park staff went to take down the equipment, the microphone was pulled off of the tripod and drop a few meters away. In the future, it may be useful to use an electric fence around the equipment to deter bears from approaching equipment.



Bear Damage to Sound Monitoring Equipment at Site 004.