



Exit Glacier Area Trails Environmental Assessment Mitigation: 2009 Exotic Plant Monitoring

Kenai Fjords National Park

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Exit Glacier, Kenai Fjords National Park. NPS photo dated 6/15/2009.

Introduction

In 2006 Kenai Fjords National Park (KEFJ) implemented trail improvement work that was detailed in the 2006 “Improvement to Trails and Overlook Areas in the Exit Glacier Area Environmental Assessment” (NPS 2006a). All work outlined in this document was completed at the end of the 2008 season. In accordance with the environmental assessment (EA), the KEFJ Exotic Plant Management Team (EPMT) carefully monitored progress of the project for impacts and changes to exotic plant infestations along the trails. The 2006 FONSI (“Finding of No Significant Impact”) report states, “Park exotic plant personnel will pay particular attention to the project areas during routine survey efforts for at least three years following completion of the projects to ensure that any weeds inadvertently transported to the site are promptly detected and treated. Since trucks will be driven up the paved trail and to/from the off-site brush disposal site, intensive survey attention will be paid to areas along the paved trail. (NPS 2006b)” The report also mentions the importance of monitoring the trails for exotic plants: “With the addition of new trails and overlooks, exotic plants may find avenues for invasion of new areas (NPS 2006b) and gives direction for surveying the area: “Efforts will be utilized to control exotic species. The park’s exotic plants inventory and monitoring program currently surveys all trails and developed areas in the park for the purpose of early detection and rapid removal of non-native invasive plant species; this survey effort will continue under the selected alternative.” This is the final report summarizing survey and control efforts conducted on the lower trails in the Exit Glacier area during the 2006-2009 seasons, including the Overlook Loop Spur, the Nature Trail reroute, and the Nature Trail accessibility improvements. Monitoring of the Harding Icefield Trail portion will continue into 2011 since this part of the project was not completed until 2008.

Methods

Inventory, monitoring, and control of exotic plants are conducted yearly in accordance with the Alaska EPMT Data Collection Protocol. 2009 marks the sixth consecutive year of systematic surveys and exotic plant control along the Exit Glacier Area Trails.

Since 2006 monitoring has been conducted to determine the extent, number, and species of exotic plants growing around the trail improvement work areas in accordance with the mitigation plan for the 2006 Environmental Assessment. Spatial data was collected to document the presence or absence of exotic species along each trail between May and September. The four trail projects of concern are: the Overlook Loop Spur, Nature Trail reroute, Nature Trail accessibility improvements, and the Harding Icefield Trail (HIT) reroute (Figure 1).

Results

Overlook Loop Spur

During the required monitoring period from 2006- 2008 (defined in the EA) no exotic plants were found along the Overlook Loop Spur. Additional monitoring in 2009 indicates the trail is still free of exotic plants. The trail was mapped and added to the AK EPMT regional database, indicating the absence of exotic species.

Nature Trail Reroute

The Nature Trail reroute was completed in 2006. During the required monitoring period from 2006- 2008 (defined in the EA) no exotic plants were found along the Nature Trail reroute or at the overlook area where the trail terminates. The trail section was mapped and added to the AK EPMT regional geodatabase, indicating the absence of exotic plant species.

Nature Trail Accessibility Improvements

In 2006, 436 individual common dandelion (*Taraxacum officinale*) plants were documented and controlled near the beginning of the Nature Trail. This population of common dandelions was documented here before the trail project began in 2006. They were located on the east side of the trail,

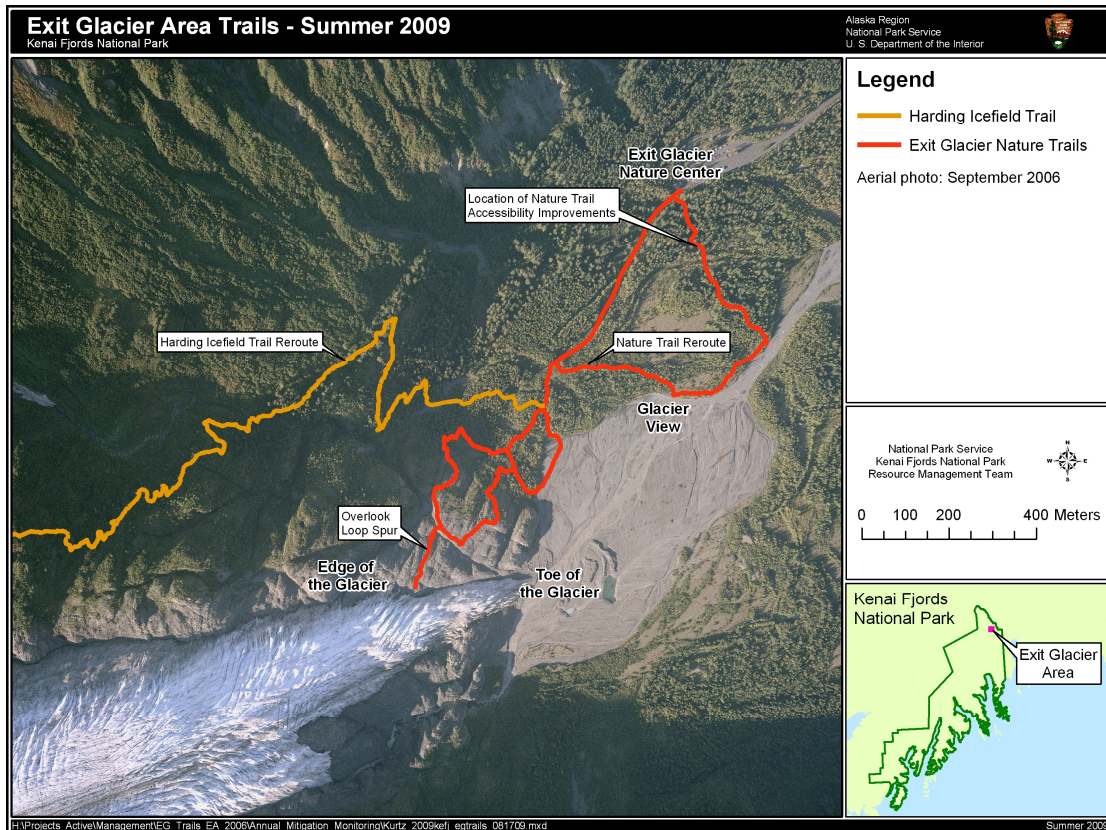


Figure 1. Exit Glacier Area Trails- Summer 2009

where it cuts through the 1917 glacial moraine. Scattered individuals were also found lining the east and west sides of the trail for approximately 20 meters. In 2007 the site was re-visited

before trail construction began and 120 individual common dandelion (*Taraxacum officinale*) plants were documented and controlled. The decreased number is likely a result of effective control efforts in 2006 and later phenology in 2007 (Wetherbee 2007). Trail construction began soon after the monitoring, involving the removal and relocation of soil around the site. Subsequent monitoring throughout the season did not reveal new dandelion growth. In 2008, a small population of common dandelions (*Taraxacum officinale*) was mapped and removed on and adjacent to the moraine being cut by the trail. In 2009 this area was monitored repeatedly throughout the season and no dandelions were observed. It appears that control measures effectively eradicated this population. KEFJ EPMT staff should continue to monitor this site each season.

In 2006, before work on the project began, several common dandelion (*Taraxacum officinale*) and common plantain (*Plantago major*) were documented and controlled in the streambed that crosses the trail at the wooden bridge. In 2007 the plants had not returned, but trail construction around the site prohibited frequent monitoring. In 2008 and 2009 no common dandelions (*Taraxacum officinale*) or plantain (*Plantago major*) were found in the streambed.

The extensive soil relocation during the trail construction is a concern because the soil may contain seeds from the infestations around the 1917 moraine and the streambed. Park staff should continue to monitor this area to ensure rapid detection of new dandelion infestations.

Harding Icefield Trail Reroute

Efforts to construct a reroute on the Harding Icefield Trail (HIT) began in 2007. At the end of the 2008 field season, blasting crews removed bedrock at the lower part of the HIT reroute, allowing through passage and concluding major construction of the HIT reroute. The reroute was opened to the public in the beginning of the 2009 season. While visitors enjoyed the easier hiking of the new reroute, trail crews worked on final tasks of stabilizing and smoothing the trail. During the 2008-09 seasons, all work crews were educated on the importance of cleaning tools and clothing in an effort to prevent the introduction of new seeds. At the end of the 2008 field season and throughout the 2009 season the reroute was monitored for exotic plants with the conclusion that it is currently free of these species.

From 2004-2008 a large patch of common dandelion (*Taraxacum officinale*) was documented and controlled along the HIT, a quarter mile up the trail, in the corner across from the rock staircase. Although this part of the trail is no longer in use because of the new reroute, this patch was monitored and controlled in 2009 with the determination that control efforts are effectively reducing the size of this population. The HIT reroute cuts off from the original trail and crosses immediately below this patch of dandelions. No exotic plants were found along the new reroute in 2009.

In 2009 existing populations of exotic plants on the original trail were revisited and treated, and no new populations were discovered. Along with the known dandelion infestation at the junction of the old trail and the new reroute, the original trail (which is no longer in use) will continue to be monitored and controlled according to the EPMT protocol.

Discussion

Monitoring during the 2006-2009 field seasons determined that there are no new exotic plant infestations along the trail improvement sites. Existing infestations were monitored, documented, and controlled.

The following mitigation measures outlined in the FONSI (NPS 2006b) were implemented by Resource Management each field season from 2006-2009 to minimize infestation of exotics resulting from the projects:

- At the start of the field season, and again whenever new trail crews arrive, trail workers will receive an orientation to exotic plants and standard or specific mitigation measures to reduce infestations. The park's resource management staff will be responsible for conducting the briefing. The park's maintenance staff is responsible for notifying appropriate resource management personnel when new crews are arriving to schedule the briefing.
- Park exotic plant personnel will pay particular attention to the project areas during routine survey efforts for at least three years following completion of the projects to ensure that any weeds inadvertently transported to the site are promptly detected and treated. Since trucks will be driven up the paved trail and to/from the off-site brush disposal site, intensive survey attention will be paid to areas along the paved trail.

References

National Park Service. 2006a. Improvements to Trails and Overlooks in the Exit Glacier Area Environmental Assessment. Kenai Fjords National Park.

National Park Service. 2006b. Finding of No Significant Impact: Improvements to Trails and Overlooks in the Exit Glacier Area. Kenai Fjords National Park.

Wetherbee, H. 2007. Invasive Plant Management Summer 2007 Field Season. National Park Service, Kenai Fjords National Park, Seward, AK. Unpublished report.