Final Report: Exotic Plant Management Team 2005
Kenai Fjords National Park

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ABSTRACT

Exotic plants have been documented, mapped and controlled in Kenai Fjords National Park (KEFJ) for the second year. Work was conducted utilizing Alaska Exotic Plant Management Team (EPMT) protocol and regional support. Exotic plants were surveyed and mapped using a Trimble GeoXT Geospatial Positioning System (GPS) unit. Exotic plant species new to the park were identified and mapped this year. Although a similar number of areas were monitored and surveyed, the overall number of plants controlled appears to have decreased from 2004. Rover data was sent to the regional EPMT coordinator to be entered into a nationwide database and used in the creation of a nationwide exotic plant map. Monitoring and control efforts should continue at KEFJ to keep exotic plant numbers from increasing and moving farther into the park along human vectors. These efforts on a yearly basis will slow the further spread and introduction of new exotic plants species and to help keep native ecosystems intact.

INTRODUCTION

In the summer of 2004, KEFJ worked in cooperation with the NPS Alaska Exotic Plant Management Team (AKEPMT) and began a program to monitor and stop the spread of exotic plant species within the park. Exotic plants found in the park were surveyed, mapped and removed by hand. Seven species of exotic plants were inventoried within the park boundaries in the Exit Glacier area (Kriedeman, 2004). No exotic plants were found in the coastal areas of the park that were surveyed. The need to continue the identification and control of exotic plants was recognized by KEFJ. During the 2005 field season, sites that were surveyed the previous year were monitored and new infestations were inventoried and mapped. Exotic plants were hand-pulled and counted as time and labor constraints would allow. Two trail crews working at KEFJ helped pull exotic plants around Exit Glacier and the maintenance facility as an educational project. Most of the exotic plant work was done in the Exit Glacier area, but additional surveys were also conducted in various locations in the coastal areas of the park.

METHODS

During May through August, 2005, a Biological Technician conducted the mapping and exotic plant control with help from a Youth Conservation Corps

student who worked for 6 weeks in June and August. Exotic plant sites mapped in 2004 were revisited and new infestations were inventoried. The EPMT protocol used in 2004 was again used in 2005 (Kriedeman 2004). Exotic species were mapped using a Trimble GeoXT GPS unit and survey information was entered into the data dictionary. Maps made from 2004 GPS rover files were downloaded into the Trimble unit so that 2004 exotic plant locations could then be set as a navigational target and easily relocated. 2004 sites were then revisited and compared to last year's findings.

New exotic plants and infestations were located by searching all human-impacted areas in the Exit Glacier area. Trails, including the Main Trail, the Nature Trail, the Upper Loop Trail and the Harding Icefield Trail, as well as parking lots, roadways, housing and public building areas were assessed for exotic plants. In 2004, only locations that had exotic plants were mapped. In 2005, all human impacted areas at Exit Glacier that were surveyed were also mapped. If exotic plant species were not found it was noted in the data dictionary. This makes it clear where exotic plants have been surveyed each year and if exotics are moving into a previously uninfested area.

Exotic plants found west of the fee station in human-impacted areas were controlled by hand-pulling. The shoulder of the entrance road east of the fee station was not controlled due to lack of personnel to hand-pull the large *T.officninale* (Common dandelion) infestation. Plants located farthest away from human-impacted areas were the highest priority for removal. The site north of the Exit Glacier entrance road in an undisturbed area located in 2002 (Bryden, 2002) as well as the site located off the Harding Icefield Trail were mapped and controlled again this year. This year's control efforts were finished by mid- June in these locations, before the plants had gone to seed. In 2004, most of the *Taraxacum officinale* had already gone to seed by the time these areas was mapped and controlled. All rover files collected with the Trimble GPS were sent to the regional EPMT and entered into a nationwide database.

Surveying more human-use areas in the coastal part of the park was a priority. Most of the popular camping and kayak landing sites were surveyed in Aialik Bay, as well as the two public use cabins and the ranger station/research camp. Because of time limitations and transportation costs, surveys were not conducted by KEFJ in the Nuka Bay area. Although there is less regular visitation because of its remote location and the high expense of traveling there, there is a history of mining in the area and a higher probability of having exotic plants. Elizabeth Bella, Plant Ecologist for the Forest Service, conducted an exotic plant survey of the whole Kenai Peninsula and had the opportunity to travel to Nuka Bay and survey the public use cabin as well as old mining sites and roads. The information gathered by the park service and Elizabeth Bella will be shared, so redundant surveys will not be conducted. Her GPS points and data will be included in the EPMT database and map.

Education is an important part of the EPMT mission, so emphasis was put on including this in the summers' goals. Two trail crews working in the park spent half a day learning about the problems associated with exotic plants and pulling exotics at the maintenance facility and in the Exit Glacier parking lot. During spring seasonal employee training, interpretive rangers learned about the EPMT efforts and were given exotic plant identification material. Pamphlets about exotic plants were also distributed in the Exit Glacier Nature Center.

RESULTS

In addition to previously identified exotic plants (Kriedeman, 2004), new species documented in the Exit Glacier area this year where a patch of *Rumex acetosella* (sheep sorrel) located next to the bus drop-off area. One *Ranunculus acris* (tall buttercup) plant was on the main paved trail shoulder. A clump of *Hordeum jubatum* (fox-tail barley) was found growing at the edge of the car parking lot, and *Phleum pratense* (timothy grass) was growing in two vegetation islands in the parking lot. A clump of *Rumex crispus L.* (curled dock) was found next to Willow Cabin in the Exit Glacier housing area.

Species name	Common Name	Location
Rumex acefosella	Sheep sorrel	Bus drop-off area
Ranunculus acris	Tall buttercup	Main paved trail
Hordeum jubatum	Fox-tail barley	Car parking lot
Phleum pretense	Timothy grass	Car parking lot
Rumex crispus	Curled dock	In front of Willow Cabin

Some of the previously identified exotic plants (Kriedeman 2004) were also found in new locations. Fewer plants were pulled than in 2004, but more areas were mapped. The final numbers can be evaluated when all information is put into the EPMT Access database and compared to last year. By starting control efforts earlier this year exotic plants could be pulled before they went to seed, eliminating the plant as well as not allowing seeds to propagate. Pulling exotic plants often creates enough disturbance to facilitate seed germination. New sites beyond road and trail corridors were located north of the main entrance road. When hiking back from previously mapped sites off the road and trail corridor, two more areas of sparse vegetation infested with *T. officinale* were located. These areas continue to be a concern, since they are removed from human impact areas and may have been spread by wind or animals. One of the new sites has a mix of the exotic dandelion species as well as the native dandelion species. Care was taken to leave the native *Taraxacum ceratophorum* undisturbed. The Exit Glacier valley has numerous areas with similar sparse vegetation conditions due to glacial activity. These sites are susceptible to the same type of infestation.

More extensive surveying was done in the coastal region of the park. The public use cabins in Coleman Bay and Holgate Arm, as well as the ranger station and research camp in Aialik Bay were surveyed and were found to be free of exotics. Well-used kayak drop off and camping beaches were checked for exotics traveling in on kayaks, camping gear and clothing. Abra Cove, McMullen Cove, Pederson Lagoon easement site, Verdant Cove and the camping/ kayak drop-off beach south of Holgate public use cabin were surveyed for exotic plants. No exotic plants were noted. Most campsites were located on the top of beaches or areas exposed to saltwater in winter storms. Elizabeth Bella's exotic plant survey in Nuka Bay discovered two exotic plants in three locations. They were all found in old mining areas. All of the exotic plant locations were marked using GPS. Eighty-five *Leucanthemum vulgare* (Ox-eye daisy) stems were found in Beauty Bay on the old mine road and twenty stems were found in Surprise Bay at the beach landing site for the Kinney Mine. One-hundred and fifty stems of *Phleum pratense (*Timothy grass) were found at Beauty Bay airstrip. This data will be included in the EPMT database. Since Bella did not have a collection permit, the exotic plants found were not pulled.

Trail crews working at the park used one day a week as an educational day. The trail crew leaders requested to work with the EPMT and include an educational component. The beginning of the day started with a talk about exotic plants and then the trail crew helped with the project. The first trail crew pulled exotic plants growing in the maintenance facility to decrease the possibility of park owned vehicles spreading seeds into the park. The second trail crew pulled exotics on the road into the park at Exit Glacier. It is helpful to have a large crew of workers as more plants can be pulled in a short amount of time.

DISCUSSION

Most of the exotic plants continue to be confined to areas that had been recently or repeatedly disturbed by humans. There are some exceptions, and those disturbed areas were created by glacial activity in the Exit Glacier area. These areas were undisturbed by humans and infested with *T.officinale.* New sites were found in the same area in 2005. All these sites should be visited next summer to continue trying to eradicate these exotics. It should continue to be a priority to remove exotic plants that are outside disturbed human use areas.

Starting control efforts earlier in the 2005 field season decreased the number of exotic plants that could reseed before they were pulled. Snowfall was low in the winter of 2004/2005 and snow melted early and allowed exotic plants a chance to bloom early. The timing of snow melt will need to be considered each year for when to begin survey and control efforts.

Exotic plants found in the coastal region of the park were limited. They were located where they would be expected to be found, in mining areas where humans have a high impact. Exotics do not seem to be spreading by kayakers and campers at this time. Although, Pederson Lagoon easement site camping area would be a likely site for exotics in the future since it has mossy ground cover under trees and it is protected from saltwater. All the coastal sites that were surveyed were known high human use areas. As the park service continues to do research and work in the coastal part of the park, employees working in that area should be trained to look for exotic plants opportunistically. In the future, exotic plants could invade glacially disturbed sites not used by humans.

Exotic plants that were located by Elizabeth Bella in Nuka Bay need to be pulled in the 2006 field season. The infestations are not large and can be easily controlled at this point. Because of the remote location, logistics of a trip need to be planned early in the season to get someone out to the sites to pull the plants and bring them back for disposal.

No joint weed pulls were done with the National Forest Service in 2005. This partnership should continue since we share a common boundary and exotic plants are a threat to both agencies' lands. *Melilotus officinalis, Crepis tectorum*, *Medicago sativa* and *Medicago lupulina* line Exit Glacier Road on the Forest Service's land. These exotic plants are a threat to Kenai Fjords National Park due to their proximity.

It would be helpful to have additional personnel to assist with the control effort during June and July when many exotics are blooming. A crew that could work with minimal supervision would be the most helpful, so exotics could be mapped and controlled at other sites at the same time by the KEFJ Biotech.

Exotic plants continue to be at a controllable level at KEFJ. A few new species were documented in 2005, but were easily controlled. None of the exotic plant species on Chugach National Forest lands have crossed over into KEFJ, but there is a good possibility that it will happen in the near future. Continued work in cooperation with AKEPMT is the best way to continue exotic plant monitoring and control. The information gathered at KEFJ will be used in a national exotic plant control effort. KEFJ needs to continue to be committed to eradicating exotic plants on a yearly basis to protect intact ecosystems.

REFERENCES

Bryden, W. 2002. Final report: exotic inventory for Exit Glacier study area. National Park Service, Kenai Fjords National Park, Seward, AK. Unpublished report.

Kriedeman, C. 2004. Final report: exotic plant management team 2005, Kenai Fjords National Park. National Park Service, Kenai Fjords National Park, Seward, AK. Unpublished report.