

turnaround and visitor rest stop and the extraction slopes would be restored. No additional gravel extraction would be authorized in the Kantishna area. Gravel truck traffic from Toklat River would be increased to meet gravel needs in the Kantishna area, as possible.

-Wildlife: No wildlife habitat would be adversely affected in the Kantishna area, so no new impacts to wildlife in the area are expected, except an increase in gravel truck traffic into Kantishna could result. The impacts of these trucks on wildlife along the Denali Park Road are expected to be negligible.

-Fishery: This alternative would have no impacts to fishery resources in the Kantishna area because no gravel source sites would be developed in the Kantishna area.

Alternative 2 – Maximum Flexibility/Short Hauls:

This alternative involves mineral extraction from up to 9 source sites, including 4 sites in the Kantishna area and the Boundary site near the border of the old park and new park additions. Sites to be used and developed in the Kantishna area would be Boundary, North Face Corner, Camp Ridge, Downtown Kantishna, and Kantishna Airstrip. The North Face Corner and Downtown Kantishna sites would be completely restored by the end of the 10-year planning period.

-Wildlife: Direct loss and modification of habitat due to clearing of vegetation for gravel extraction and processing in the Kantishna area would be up to 8.4 acres. This alternative would affect more moose habitat than the other alternatives because of the greater area of gravel extraction development, but the percentage of habitat affected is still negligible. The location of the gravel extraction on wet tundra benches and former mining claims would affect some winter moose habitat. The effects on wildlife may be slightly greater with this alternative than the other alternatives, primarily because of greater development activity and loss of habitat. These impacts would not be significant because of the continued high level of human use in the area during the summer season when most gravel development activities would also occur.

-Fishery: Impacts to fish resources would be minimal because best management practices would prevent siltation of Moose Creek. A bridge would provide access to the Downtown Kantishna site, or this site would be restored and not developed for gravel extraction because other adequate sources would be available in the Kantishna area. Limiting or restricting the number of stream crossings during sensitive migration and spawning periods would protect fish resources and habitat. This alternative is not expected to cause a significant impact to fishery populations or result in population declines.

Alternative 3 – Minimum Visual Intrusion/Long Hauls:

This alternative would result in three large extraction sites along the park road (Teklanika Pit, Toklat River, and Moose Creek Terrace), which would all be essentially out of sight from the road corridor.

-Wildlife: As noted for the preferred alternative, the upper Moose Creek valley is the most significant subsistence use area of the Kantishna Hills. This drainage provides the greatest diversity and highest potential for subsistence activities in Kantishna Hills due to the abundance of riparian and floodplain forest areas and the existing mining trails providing access into the valley. Contemporary use is primarily for hunting moose and bear and for grayling fishing. This alternative could affect about 3.7 acres of wildlife habitat from vegetative clearing and gravel placement for road construction in the upper Moose Creek valley (upstream of the Moose Creek Bridge) at the Moose Creek Terrace site. Due to the broad use of habitats and large size of range covered by most subsistence use species, and minimal loss or modification of wildlife habitat along this route, this alternative is not expected to result in significant impact to wildlife populations or result in population declines. Seasonal vehicle traffic and human activity along the first mile of the Moose Creek Road may cause the temporary disturbance and displacement of some wildlife resources along this corridor. But the seasonal redistribution and abundance of species from this corridor would not result in wildlife population declines.

-Fishery: The Moose Creek drainage provides important habitat for grayling, round white fish and chum salmon. For the Denali area, Eldorado Creek and Moose Creek are considered as high quality fisheries. The Downtown Kantishna site would be restored with no extraction of mineral materials and access would be limited during periods

of time not important to the migration, spawning, or rearing of fish. The potential to impact fish populations by interrupting periods of spring migration, spawning, and fall migration would be negligible. This alternative is not expected to cause a significant impact to fishery populations or result in population declines. Furthermore, restoration of Eldorado Creek where it intersects Moose Creek may improve grayling and salmonid habitat for fish migration and spawning.

Alternative 5 – Economic Alternative with Moderate Hauls (NPS Preferred Alternative):

Similarly to the preferred alternative, this alternative would result in the development of up to 6 gravel extraction sites and restoration of a few abandoned borrow sites. Before the Downtown Kantishna site could be developed for gravel extraction, a bridge would need to be constructed over Moose Creek. The restoration plan for this site would return Eldorado Creek to near its original location before mining activities during the previous century. The Downtown Kantishna area would be restored within 10 years under this alternative. At the end of this period the North Face Corner site would be reopened for gravel extraction, stockpiling, and processing. A few smaller abandoned borrow sites to be restored are all within the old park boundaries. The NPS estimates up to 65 acres of area would be restored in the next 10 years along the park road corridor, including Downtown Kantishna.

-Wildlife: The upper Moose Creek valley is the most significant subsistence use area of the Kantishna Hills. This drainage provides the greatest diversity and highest potential for subsistence activities in Kantishna Hills due to the abundance of riparian and floodplain forest areas and the existing mining trails providing access into the valley. Contemporary use is primarily for hunting moose and bear and for grayling fishing. This alternative would not affect any wildlife habitat in the upper Moose Creek valley (upstream of the Moose Creek Bridge), except for about 3.6 acres near the bridge at the North Face Corner. Due to the broad use of habitats and large size of range covered by most subsistence use species, and minimal loss or modification of wildlife habitat along this route, this alternative is not expected to result in significant impact to wildlife populations or result in population declines. Seasonal vehicle traffic and human activity along the first mile of the Moose Creek Road may cause the temporary disturbance and displacement of some wildlife resources along this corridor. But the seasonal redistribution and abundance of species from this corridor would not result in wildlife population declines.

-Fishery: The Moose Creek drainage provides important habitat for grayling, round white fish and chum salmon. For the Denali area, Eldorado Creek and Moose Creek are considered as high quality fisheries. Because a bridge is proposed for access to the Downtown Kantishna site, there is no potential to impact fish populations by interrupting periods of spring migration, spawning, and fall migration. This alternative is not expected to cause a significant impact to fishery populations or result in population declines. Furthermore, restoration of Eldorado Creek where it intersects Moose Creek may improve grayling and salmonid habitat for fish migration and spawning.

(b) Redistribution of Subsistence Resources.

Alternative 4, Phased Development of Moderate Number of Sites (NPS Preferred Alternative):

The temporary public safety closure to the discharge of firearms along the developed area of Kantishna during the first half of the moose hunting season makes access and use of the upper Moose Creek drainage even more important to subsistence users. Subsistence users prefer to avoid the busier recreational use areas of Kantishna to reduce the chance of encounters and/or potential conflicts with non-consumptive users. The upper Moose Creek drainage provides this relatively remote, yet accessible and productive habitat for subsistence resources. With the caribou season closed in this region of the park, moose and bear hunting within this drainage have become the primary subsistence resource harvested in this area.

The slight intrusion of vehicle traffic and gravel source site development just beyond the 1-mile firearms closure area may cause a negligible temporary displacement of some wildlife resources along the Moose Creek corridor. This temporary, negligible disturbance and displacement, however, is not expected to cause a lasting redistribution of wildlife populations. The very minor displacement of moose during the September hunting season may cause subsistence users to travel slightly further to locate and harvest moose resources.

Alternative 1 - No-Action Alternative:

This alternative would have the least overall impacts to wildlife and fish resources of any of the alternatives. Restricting gravel extraction and processing to two sites in the park at Teklanika Pit and Toklat River would have no effect on the distribution of subsistence resources or subsistence activities in the Kantishna area.

Alternative 2 – Maximum Flexibility/Short Hauls:

All of the proposed gravel development sites in this alternative would be within the existing firearms closure area, so subsistence resources would not be affected where subsistence hunting may take place until after September 15. Gravel production activities may take place in the Kantishna area after September 15 so long as access across the park road is open. A slight redistribution of wildlife from the old park boundary to the Kantishna Airstrip may occur because up to 5 gravel sites may have human activity along this part of the park road. These effects are expected to be minor to negligible because significant human activity already occurs along this part of the park road corridor during the main visitor season.

Alternative 3 – Minimum Visual Intrusion/Long Hauls:

As with the preferred alternative, the temporary public safety closure to the discharge of firearms along the developed area of Kantishna during the first half of the moose hunting season makes access and use of the upper Moose Creek drainage even more important to subsistence users. Subsistence users prefer to avoid the busier recreational use areas of Kantishna to reduce the chance of encounters and/or potential conflicts with non-consumptive users. The upper Moose Creek drainage provides this relatively remote, yet accessible and productive habitat for subsistence resources. With the caribou season closed in this region of the park, moose and bear hunting within this drainage have become the primary subsistence resource harvested in this area.

The slight intrusion of vehicle traffic and gravel source site development just beyond the 1- mile firearms closure area may cause a negligible temporary displacement of some wildlife resources along the Moose Creek corridor. This temporary, negligible disturbance and displacement, however, is not expected to cause a lasting redistribution of wildlife populations. The very minor displacement of moose during the September hunting season may cause subsistence users to travel slightly further to locate and harvest moose resources.

Alternative 5 – Economic Alternative with Moderate Hauls (NPS Preferred Alternative):

The impacts of this alternative on subsistence resources distribution and subsistence activities would be similar to the preferred alternative, except production of gravel at the North Face Corner would have slightly less impact on subsistence resources and activities compared to the Moose Creek Terrace site.

(c) Habitat Losses.

Alternative 4, Phased Development of Moderate Number of Sites (NPS Preferred Alternative):

This alternative would adversely affect up to 3.7 acres of area in the Kantishna subsistence area. The acres of disturbance at Downtown Kantishna would not be counted because placer mining already disturbed this area, which would be reclaimed by the end of the ten-year period. The 3.7 acres of low shrub tundra on the Moose Creek Terrace is not high quality wildlife habitat for moose or other important subsistence resources in the area. Fish habitat along Eldorado Creek would be restored and fish habitat along Moose Creek would be protected with best management practices, including a bridge over Moose Creek for access to gravel resources at Downtown Kantishna.

Alternative 1 - No-Action Alternative:

This alternative would affect no wildlife habitat in the Kantishna area. The Downtown Kantishna site would likely be restored without extraction of any gravel resources, which would improve about 50 acres of wildlife and fish habitat in the area. This alternative would not result in any loss of habitat that would lead to the reduction of important wildlife or fish populations.

Alternative 2 – Maximum Flexibility/Short Hauls:

This alternative would adversely affect up to 12.1 acres of fish and wildlife habitat in the Kantishna subsistence area. The acres of disturbance at Downtown Kantishna would not be counted because placer mining already disturbed this area, which would be reclaimed by the end of the ten-year period. The potential acres of disturbance would be wet low shrub tundra and black spruce forest at Camp Ridge and Kantishna Airstrip. Reclamation of the North Face Corner would be delayed for a couple years because this area would be used for stockpiling and processing material from Camp Ridge until Camp Ridge is enlarged enough to hold stockpiles and processing equipment. An additional 2.4 acres of shrub tundra could be disturbed near the Kantishna area at the Boundary site.

Alternative 3 – Minimum Visual Intrusion/Long Hauls:

As with the preferred alternative, this alternative would disturb about 3.7 acres of low shrub tundra in the Moose Creek subsistence area. The North Face Corner and Downtown Kantishna sites would be reclaimed as soon as practicable, which would more quickly restore about 80 acres of wildlife and fish habitat in the Moose Creek valley.

Alternative 5 – Economic Alternative with Moderate Hauls (NPS Preferred Alternative):

This alternative would adversely affect up to 3.6 acres of area in the Kantishna subsistence area. The acres of disturbance at Downtown Kantishna would not be counted because placer mining already disturbed this area, which would be reclaimed by the end of the 10-year period. The 3.6 acres of low, wet shrub tundra at the North Face Corner is not high quality wildlife habitat for moose or other important subsistence resources in the area. Fish habitat along Eldorado Creek would be restored and fish habitat along Moose Creek would be protected with best management practices, including a bridge over Moose Creek for access to gravel resources at Downtown Kantishna.

2. Restriction of Access:

The temporary Kantishna Firearms Discharge closure (safety closure) affects access for subsistence users during the first half of the fall moose hunting season by requiring subsistence users to travel at least 1 mile up Moose Creek from the Denali Park Road before discharging a firearm. In light of this temporary closure on lower Moose Creek, subsistence users continued to utilize the upper portions of Moose Creek drainage during the first half of the fall moose season to avoid the area where lodges and visitor use activities are concentrated. The projected level of access and human activity at the Moose Creek Terrace site (just beyond 1 mile up the Moose Creek Road at the end of the 10-year period) could result in a slight extension of the firearms discharge closure up Moose Creek by about 1 mile to protect workers in the area.

All rights of access for subsistence use on NPS lands are granted by Section 811 of ANILCA. The park and preserve are managed according to legislative mandates, NPS management policies, and guidelines in the approved *Denali General Management Plan*. No actions under the alternatives, which are described in detail in the environmental assessment, should affect the access of subsistence users to natural resources within the park. The alternatives are expected to have negligible impacts on subsistence uses in the project area. Access to Moose Creek for subsistence hunters on the existing mining access roads would continue. Improvements to the existing Moose Creek mining access route over the first mile after the junction with the Denali Park Road would slightly improve access into upper Moose Creek area.

3. Increase in Competition:

Hunting: No increase in competition for subsistence hunting is expected on park lands from any of the alternatives since park lands are not open to sport or general State hunting. Only NPS eligible subsistence users are authorized to harvest subsistence resources from Denali's ANILCA park additions.

Subsistence users of the Kantishna Hills area utilize the former mining routes for access to subsistence resources. Introducing new vehicular access to the Moose Creek Terrace area for gravel extraction and processing may increase the potential for conflict between subsistence users and park maintenance staff. This is expected to be minimal because past subsistence use primarily occurs in September, typically a period of decreasing use by other park user groups or park employees. It is possible that the Kantishna Firearms Discharge Closure would be extended

up to 1 mile along the Moose Creek Road to protect workers at the gravel extraction and processing area.

Fishing: The park ANILCA addition is open to both subsistence and sport fishing. The Moose Creek drainage provides important habitat for grayling, round fish and chum salmon. For the Denali area, the North Fork of Moose Creek is characterized as a high quality fishery. Grayling populations are slow growing and easily caught, making them susceptible to over harvest in areas of increasing fishing pressure. Recreational visitor use and non-subsistence fishing in the Moose Creek drainage has increased significantly over the past decade raising the potential to impact fish populations.

Currently subsistence use of fisheries in this area is known to be minimal and infrequent. National Park Service regulations and ANILCA provisions mandate that if and when it is necessary to restrict taking of fish, subsistence users are the priority consumptive users on federal public lands and would be given preference over other consumptive uses (ANILCA, Section 802(2)). Continued implementation of the ANILCA provisions would mitigate any increased competition from other non-subsistence users. Therefore, the proposed action is not expected to adversely affect resource competition.

AVAILABILITY OF OTHER LANDS

Within the Kantishna Hills, the upper Moose Creek drainage is considered to be a significant subsistence resource use area. Other park lands within, or nearer to, the existing community of Kantishna would pose much less of a potential to impact important subsistence resources or subsistence use activities.

FINDINGS

Introducing new or improved access for gravel resource extraction and processing may lead to minor conflict between subsistence users and park maintenance activities to produce gravel for the park road. NPS and ANILCA management tools and authorities are sufficient to mitigate potential difficulties. The NPS' projected level of use and access is not expected to cause a significant impact to subsistence resources or subsistence users.

The No-Action alternative would have the least affect or potential impact upon subsistence resources and subsistence use activities of any of the alternatives considered. This alternative impacts the least amount of wildlife habitat the least amount of geographical area within the Kantishna area and important Moose Creek drainage.

This analysis concludes that the **NPS Preferred Action** or any of the other alternatives would not result in a significant restriction of subsistence resources or subsistence uses.

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