
National Park Service

U.S. Department of the Interior

**Wrangell-St. Elias National Park and Preserve
Alaska**



**Dan Creek Mining Plan of Operations
Environmental Assessment
May 2012**

Pubic Review EA



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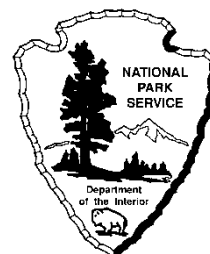
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ACRONYMS AND ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
ADNR	Alaska Department of Natural Resources
ADOT	Alaska Department of Transportation and Public Facilities
ANILCA	Alaska National Interest Lands Conservation Act
APE	Area of Potential Effects
BAP	Best Available Technology
BMP	Best Management Practices
CFR	Code of Federal Regulations
DEC	AK Dept of Environmental Conservation
DO	Director's Order
EA	Environmental Assessment
E.O.	Executive Order
EPA	Environmental Protection Administration
FONSI	Finding of No Significant Impact
GMP	General Management Plan
gpm	gallons per minute
mi	miles
MPO	Mining Plan of Operations
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
ORV	off-road vehicle
RFFA	reasonably foreseeable future action
ROD	Record of Decision
ROW	Right-of-Way
RWCA	Right-of-Way Certificate of Access
T&E	threatened and endangered
the park	Wrangell-St. Elias National Park and Preserve
U.S.	United States
UNESCO	United Nations Educational, Scientific, and Cultural Organization
USC	United States Code
USDA	United States Department of Agriculture
USDOI	United States Department of the Interior
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Service
WRST	Wrangell-St. Elias National Park and Preserve

1.0 INTRODUCTION

1.1 PURPOSE AND NEED

The National Park Service (NPS) is evaluating a proposal submitted by Mr. Randy Elliott (Elliott) for the purpose of accessing and conducting a gold placer mining operation on patented mining claims located at Dan Creek within Wrangell-St. Elias National Park and Preserve (WRST). Elliott, the operator of the claims, submitted a Mining Plan of Operations (MPO) as required by Title 36 of the Code of Federal Regulations (CFR), part 9A, Section 9.9, detailing his proposed means and methods. Elliott also submitted a SF-299 application for ANILCA 1110(b) access to Dan Creek.

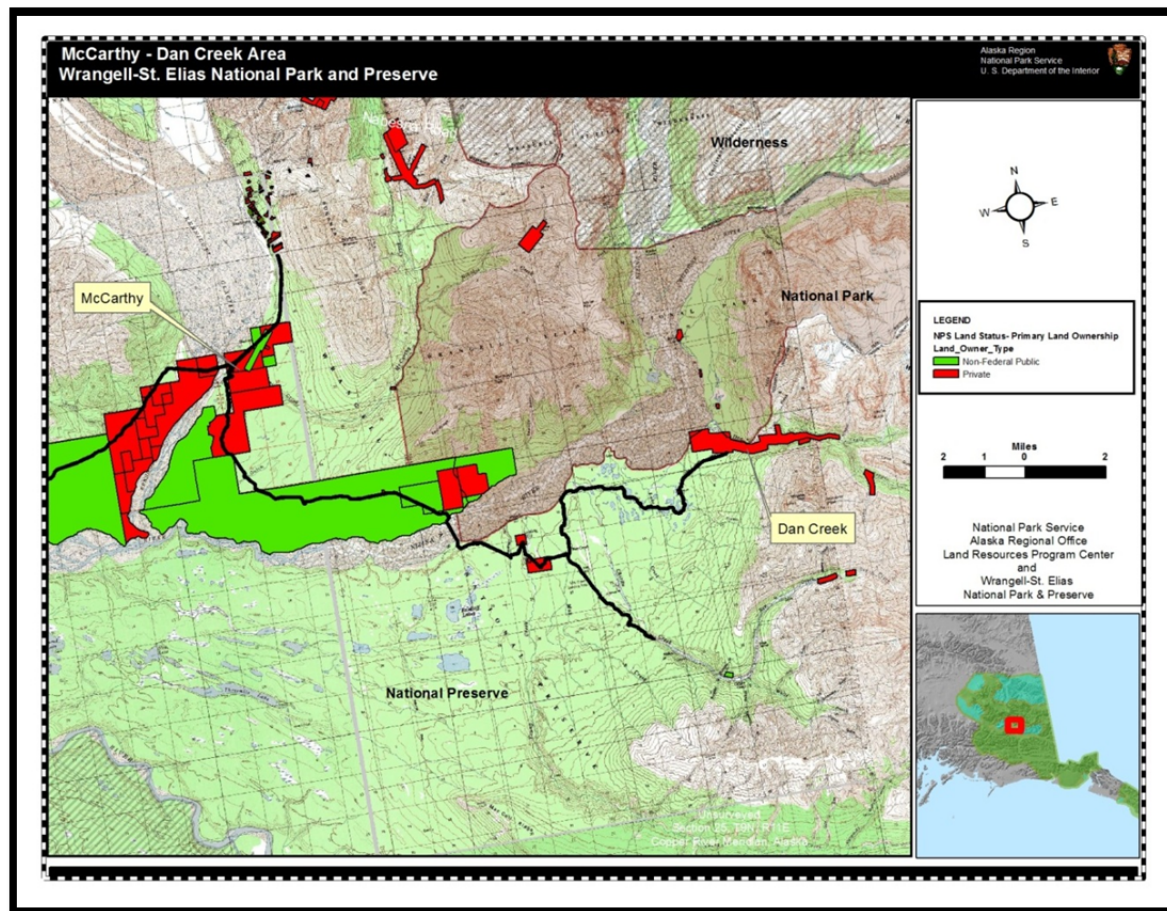


Figure 1: Dan Creek Location Map

The Dan Creek claims are privately-owned property which was patented in 1912 without surface use restrictions. This environmental assessment (EA) examines and analyzes the proposed access and mining operations and reasonable alternatives to ensure that it satisfies the requirements of 36 CFR 9.10, and would not significantly injure or adversely affect federally owned land.

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council of Environmental Quality (40 CFR 1508.9), the Mining in the Parks Act of 1976 and its implementing regulations (36 CFR 9A), as well as ANILCA 1110(b). Impacts to resources

within the patented mining claims which would not affect park lands or resources are noted but are not within the scope of any detailed analysis in this document, except under the assessment of cumulative impacts.

1.2 BACKGROUND

Prospectors first discovered gold in Dan Creek in 1899. These particular claims were located between July 6, 1901, and July 1, 1906, by the Dan Creek Mining Company, and surveyed by George E. Baldwin (Mineral Survey No. 923) between July 21 and August 8, 1910. This claim group consists of Discovery Nos. 1, 2, 3, and 4 Above, Nos. 1, 2, 5, 6, and 8 Below, Washington Gulch No. 1, California Gulch No. 1, Utah Gulch No. 1, Colorado Creek No. 1, Ohio Gulch No. 1, Oregon Gulch, Williams, Homestake, and Boulder Creek Placer Claims. These claims, which together total about 472 acres, were patented (No. 385873) on January 22, 1912, approximately 70 years prior to the establishment of WRST.

Much of the Dan Creek valley has been extensively and continuously mined since 1910. Virtually all stream bottoms have been significantly affected and many adjacent upland benches have also been mined or otherwise developed. Dan Creek miners employed hydraulic methods for over 25 years and major water diversions projects were common (NPS 1990). Miners used mechanized equipment here as well, and that use continues. Although the amount of mining activity on Dan Creek has fluctuated with the price of gold, this district has been a constant producer. Over the last hundred or so years, Dan Creek has yielded at least 60,000 ounces of gold, which at current prices would total around \$90 million.

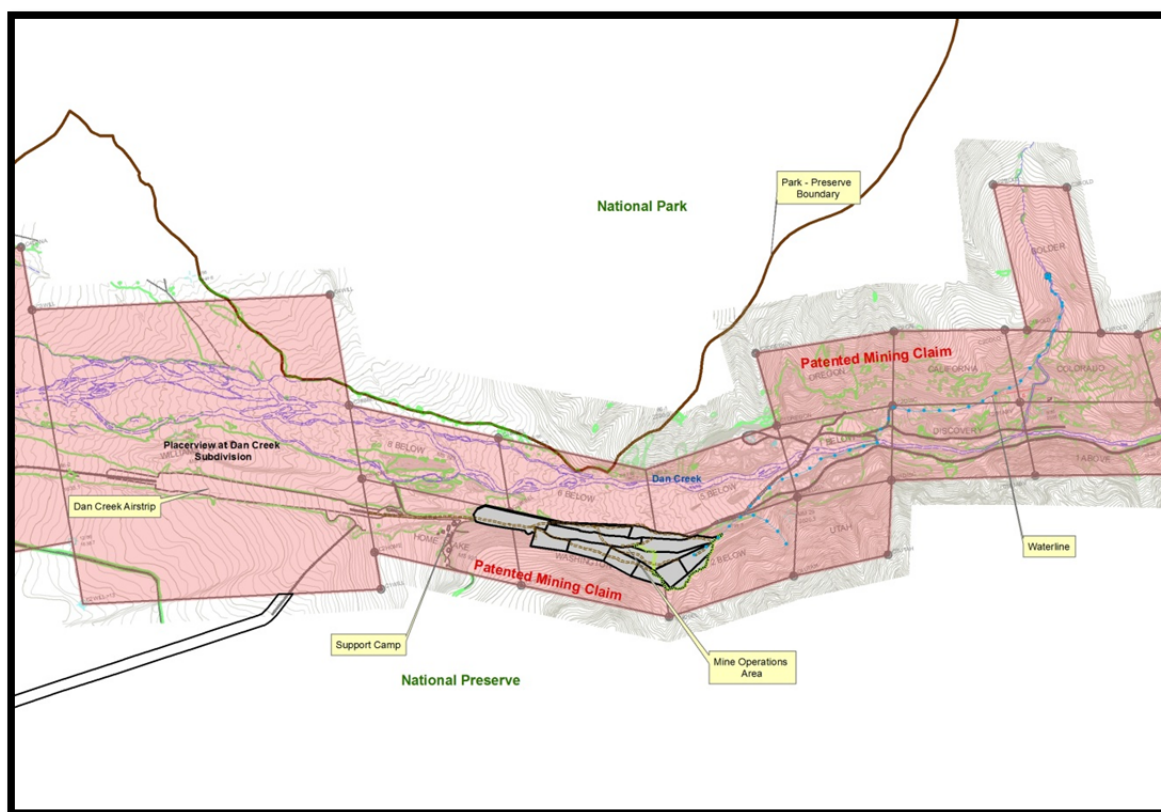


Figure 2: MS 923 Project Area

The present owners acquired the Dan Creek property in 1975, and they or their agents mined at Dan Creek until their operations were temporarily halted by the 1985 mining injunction (NPS 1990). Aware

that the NPS preferred approach for minerals management was to acquire all the mining claims located within Alaska units from willing sellers, the owners expressed an interest in selling Dan Creek. Although the NPS pursued acquisition of the property it was unable to reach agreement with the Dan Creek Partners.

Elliott entered into a purchase agreement in 2010 with TALMO, Inc., the present owner of the claims, for the mineral and surface rights to this property. Under that agreement Elliott serves as the agent for the owners and is authorized to conduct business for them (Appendix E).

Elliott developed and subsequently submitted a draft Mining Plan of Operations to the NPS for his ongoing placer mining operation along lower Dan Creek in February 2011. On May 25, 2011, NPS Alaska Regional Director Masica authorized Elliott to continue his existing mining operation on an interim basis until September 30, 2011 (see Appendix F). The NPS monitored and documented Elliott's operation during the 2011 field season to ensure mining operations and impacts were confined to private property and to assess potential effects on park resources and values (Rosenkrans 2011). Upon completion of the 2011 mining operations, the NPS determined that Elliott's MPO was essentially complete, and published a "Notice of Availability" for his MPO in the Federal Register (Federal Register Vol. 77, No. 34, February 21, 2012, Notices).

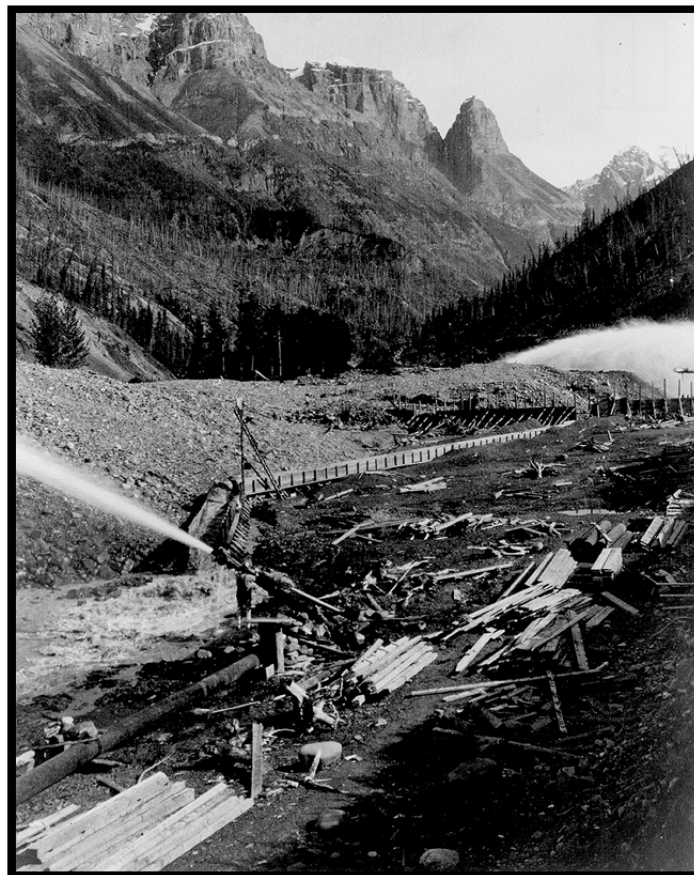


Figure 3: Historic hydraulic placer mining in the lower Dan Creek valley about 1910

1.3 PARK PURPOSE AND SIGNIFICANCE

President Jimmy Carter established Wrangell-St. Elias National Monument by executive order in 1978. The United Nations Educational, Scientific, and Cultural Organization (UNESCO) designated Wrangell-St. Elias National Monument and adjoining Kluane National Park in Canada as a World Heritage Site on October 26, 1979, recognizing their significant natural landscapes. Congress expanded the national monument in 1980, designating the enlarged area as Wrangell-St. Elias National Park and Preserve (WRST) under the Alaska National Interest Lands Conservation Act (ANILCA). WRST encompasses approximately 13.2 million acres, a significant portion of Alaska's south-central region (Bleakley 2000).

ANILCA Section 201(a), states that the park/preserve will be managed for the following purposes, among others:

to maintain unimpaired the scenic beauty and quality of high mountain peaks, foothills, glacial systems, lakes and streams, valleys, and coastal landscapes in their natural state; to protect habitat for, and populations of, fish and wildlife including but not limited to caribou, brown/grizzly bears, Dall sheep, moose, wolves, trumpeter swans and other waterfowl, and marine mammals; and to provide continued opportunities, including reasonable access for mountain climbing, mountaineering, and other wilderness recreational activities. Subsistence uses by local residents shall be permitted in the park, where such uses are traditional in accordance with the provisions of title VIII.

1.4 LAWS, REGULATIONS AND POLICIES

1.4.1 General Mining Act of 1872 (30 USC 21 et. Seq.)

The General Mining Act of 1872 authorized and governed prospecting and mining for economic minerals, such as gold, platinum, and silver, on federal public lands. This law codified the previously informal system of acquiring and protecting mining claims on public lands. All United States citizens 18 years or older have the right under the 1872 mining law to locate a lode (hard rock) or placer (gravel) mining claim on federal lands open to mineral entry, and such claims may be recorded once a locatable mineral discovery is made. The Dan Creek patented mining claims were originally located under the terms of this Act.

1.4.2 NPS Organic Act and General Authorities Act

The NPS Organic Act of 1916 directed the Secretary of the Interior and the NPS to manage national parks and monuments to

conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations (16 USC 1).

The NPS Organic Act also granted the Secretary of the Interior the authority to implement "rules and regulations as he may deem necessary or proper for the use and management of the parks, monuments, and reservations under the jurisdiction of the National Park Service (16 USC 3)."

The General Authorities Act of 1970 and amendments to the NPS Organic Act passed in 1978 expressly communicated the role of the national park system in ecosystem protection. The amendments further reinforce the primary mandate of preservation by stating:

The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the national park system and shall not be exercised in derogation of the values and purposes for

which these various areas have been established, except as may have been or shall be directly and specifically provided for by Congress (16 USC 1-a1).

In addition, the NPS Organic Act and General Authorities Act prohibit the impairment of park resources and values. The 2006 NPS Management Policies use the terms “resources and values” to mean the full spectrum of tangible and intangible attributes for which the park is established and managed, including the NPS Organic Act’s fundamental purpose and any additional purposes as stated in the park’s enabling legislation. The park resources and values are intended to be managed so that they continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

1.4.3 Mining in the Parks Act of 1976 (PL 94-429)

The Mining in the Parks Act of 1976 closed six national park systems units to mineral entry following a congressional finding that if the application of the United States mining laws was not discontinued, they would conflict with the purposes for which individual parks units were established. Congress also directed that all mining operations in national parks should be conducted in a manner which prevents or minimizes damage to the environment and other park resources. Consequently, the Act also authorized the secretary of the interior to regulate mining and associated activities on federal mining claims located within park units. These regulations, found at 36 CFR Subpart 9A, apply to both patented and valid unpatented mining claims.

1.4.4 Presidential Proclamation 4625

On December 1, 1978, President Jimmy Carter, acting under authority granted by the Antiquities Act of 1906, issued Proclamation 4625, which established Wrangell-St. Elias National Monument to preserve 10,950,000 acres of land in south central Alaska possessing significant geological, ecological, biological, archeological, and historic features. While the new monument remained subject to valid existing rights, including mining claims located under the Mining Act of 1872, the proclamation withdrew all its lands from further mineral entry.

1.4.5 Alaska National Interest Lands Conservation Act of 1980 (PL 96-487)

On December 2, 1980, the U.S. Congress passed the Alaska National Interest Lands Conservation Act (ANILCA), enlarging and re-designating Wrangell-St. Elias National Monument as Wrangell-St. Elias National Park and Preserve. ANILCA gave the NPS the authority to administer the lands and interests within the park pursuant to the provisions of the National Park Service’s Organic Act of August 25, 1916, as amended (16 U.S.C.1), and other pertinent legislation. Like Proclamation 4625, ANILCA closed the park to mineral location under the existing mining laws (16 U.S.C. 410hh-5).

1.4.6 1990 Wrangell-St. Elias National Park and Preserve Cumulative Impacts of Mining EIS and ROD

As a result of a 1985 lawsuit filed by a group of environmental organizations, the U.S. District Court found that the NPS in Alaska had not fully complied with the 1976 The Mining in the Parks Act and the 1969 National Environmental Policy Act. The Court ordered the NPS to prepare an Environmental Impact Statement (EIS) on the cumulative impacts of multiple mining operations within each of three Alaska park units, including Wrangell-St. Elias National Park and Preserve, and enjoined the NPS from permitting mining operations without its approval pending its completion. As a result of actions proposed in WRST’s EIS, the NPS submitted a Record of Decision (ROD) to the Federal Court recommending acquisition of all patented and valid unpatented mining claims. However, the ROD (signed August 21, 1990) also stipulated that until such time as sufficient funds were available for acquisition, the NPS would continue to process mining plans of operations according to 36 CFR 9A, 43 CFR Part 36 and approve those plans that were approvable. On December 28, 1990, the Federal Court approved the findings of the EIS (NPS 1990). Congress subsequently appropriated funds for acquisition of mining claims in WRST,

and the NPS has pursued the acquisition of mining claims, including Dan Creek, from willing sellers since the late 1990s.

1.4.7 Wrangell-St. Elias National Park and Preserve Foundation Statement

WRST's Foundation Statement is a formal description of the park's core mission: a foundation to support planning and management. The foundation is grounded in the park's legislation and from knowledge acquired since the park was established.

The purpose of Wrangell-St. Elias National Park and Preserve is to maintain the natural scenic beauty of the diverse geologic, glacial, and riparian dominated landscapes, and to protect the attendant wildlife populations and their habitats; to ensure continued access for a wide range of wilderness-based recreational opportunities; to provide continued opportunities for subsistence use.

The Foundation Statement also identifies WRST's fundamental themes, among which are living cultures. That category's significance statement notes:

Wrangell-St. Elias National Park and Preserve is an inhabited area where local communities and traditional human activities remain integrated with the wilderness setting.

1.4.8 Wrangell-St. Elias National Park and Preserve Mission Statement

WRST's mission statement reminds park managers to value traditional activities and cooperate with local landowners:

We conserve the ecological integrity and heritage resources of Wrangell-St. Elias National Park and Preserve while providing for public use in a wilderness setting. We serve visitors who seek inspiration, recreation and education and we strive to provide for a quality and safe experience. We value those who live within the park boundaries and those who come to engage in traditional activities, subsistence, or scientific study. We cooperate with local communities, landowners, Alaska Native groups and others who are part of Wrangell-St. Elias National Park and Preserve in order to address their needs while fulfilling our responsibility to protect natural and cultural resources.

1.5 RELATIONSHIP TO OTHER PLANNING PROJECTS

ANILCA Section 1110(b) provides for private landowners to be given "such rights as may be necessary to assure adequate and feasible access for economic and other purposes to the concerned land by such . . . private owner or occupier and their successor in interest," while such rights would be subject "to reasonable regulations issued by the Secretary to protect the natural and other values of such lands." Access to mining claims situated within Alaska parks is governed by the Department of Interior transportation and utility system regulations at 43 CFR Part 36. Section 36.10 of these access regulations specifies procedures for access across park lands to valid inholdings, including patented and valid unpatented claims. Section 36.10(c), allows mining claimants who acquired their rights under the General Mining Act of 1872 to file their request for access as part of their mining plan of operations.

Elliott submitted an SF-299 application for access in November 2011. The NPS Alaska Region utilizes the July 2007 "Interim User's Guide to Accessing Inholdings in National Park System Units in Alaska" and employs the criteria and processes articulated in Wrangell-St. Elias National Park and Preserve's (WRST) 2008 "Established and Maintainable Access to Inholdings Programmatic Plan and Environmental Assessment" to describe, analyze and grant the operator an Alaska National Interest Lands Conservation Act (ANILCA), Section 1110(b) Right-of-Way Certificate of Access (RWCA) for access to Dan Creek to conduct mining operations. That RWCA will include the terms and conditions for use of

motorized equipment within an access corridor running from a point on the Dan Creek Road just north of the western approach to the Nizina River Bridge to the private property boundary on lower Dan Creek. Similar RWCA's could also be granted to other landowners east of the Nizina River.

1.6 SPECIFIC ISSUES

To focus this environmental assessment, the NPS selected specific impact topics for analysis and eliminated others from further evaluation. Impact topics are defined as any resources in WRST that may be affected by the proposed action. Subsequent discussions of the affected environment and environmental consequences related to each alternative focus primarily on these impact topics (Table 1). A brief rationale for the selection of each topic is given below, as well as the rationale for dismissing specific topics from further consideration.

1.6.1 Issues Selected for Detailed Analysis

Visual Resources

WRST was established in part to maintain unimpaired the scenic beauty and quality of high mountain peaks, foothills, glacial systems, valleys, streams and coastal landscapes (ANILCA Section 201(9)). Past mining and private land development has impacted many areas within WRST including at least 543 acres within the Nizina Study Area (NPS 1990). The proposed mining and access activities, as well as other future non-mining related development, would directly impact some components of the natural landscape associated with natural beauty, like vegetation, wildlife, and aquatic resources. Although this action's direct effects would remain largely confined to private property, such impacts could also indirectly affect visual resources viewed from park lands.

Vegetation

The NPS Organic Act and *NPS Management Policies* direct the NPS to maintain all the components and processes of naturally evolving park ecosystems, including vegetation. The proposed mining and access activities, as well as other future non-mining related development, would directly impact vegetation on private lands. The existing vegetation within the project area would be destroyed, disturbed or lost due to overburden removal and/or mining until successional vegetation is reestablished. Although this action's direct effects would remain essentially confined to private property, some vegetation on park lands could be impacted by vehicles utilizing the proposed access corridor.

Wildlife

WRST was established in part to protect "habitat for and populations of wildlife including but not limited to caribou, brown/grizzly bears, Dall sheep, moose, wolves, trumpeter swans and other waterfowl, and marine mammals (ANILCA Section 201(9))." Moose, bears, and sheep use or travel through the Dan Creek and Nizina River valleys (NPS 1990). The proposed mining and access activities, as well as other future non-mining related development, would directly impact wildlife on private lands. Although this action's direct effects would remain largely confined to private property, such impacts could also indirectly affect wildlife using nearby park lands. Mining operations and motorized access can pose potential impacts to wildlife by reducing available habitat and causing temporary avoidance zones.

Aquatic Resources

The Clean Water Act, the National Environmental Policy Act, and NPS Management Policies require the NPS to consider an action's potential to affect aquatic resources. Dan Creek is one of two major drainages in the Nizina Study Area, which contains an estimated 75 miles of stream resources (NPS 1990). Dan Creek flows into the Nizina River, a major glacial river system and the location of Elliott's access corridor to Dan Creek. Proposed access and mining operations would occur within or proximal to these fluvial systems. Potential resources at risk include fish, invertebrates and water quality.

Placer mining wastewater discharge would generate elevated levels of suspended sediments which could degrade water quality. Surface disturbance removes vegetation, exposing areas to erosion which could also adversely affect water quality. Improper transportation, use, or storage of fuels used in the mining process could endanger water quality and dependent resources. If not managed properly, motorized vehicle travel over the proposed access route within the Nizina River floodplain could threaten aquatic resources as well.

Wetlands

Consideration of impacts on wetlands is required by Executive Order 11990 (“Protection of Wetlands”). Functional wetlands are a critical component of a healthy ecosystem. Although historic mining operations in the Dan Creek valley have resulted in a loss of wetland area and function, the current project area is essentially confined to upland slopes, and no wetland areas are located within the mine site footprint. Overland vehicular traffic along the six-mile-long access corridor which traverses the Nizina River floodplain may result in some minor effects, but there is no anticipated loss of wetland area or function. Any potential impacts would be temporary and limited to very short stretches as the vehicle(s) entered and exited from the Nizina River floodplain.

Floodplains

Consideration of impacts on floodplains is required by Executive Order 11988 (“Floodplain Management”). Historic mining operations in the Dan Creek valley have profoundly altered the river corridor area and function of its floodplain. The NPS does not anticipate that the proposed mining operations would affect the Dan Creek floodplain because the proposed mine site and associated activity (tailings disposal and settling ponds) would be confined to upland slopes and terraces, and no floodplains are located within the projected mining footprint.

The proposed overland access across the Nizina Riverbed will traverse floodplains. However, the operator does not propose to establish any new roads or structures there, and the proposed motorized vehicle use would be confined to very short periods.

Socioeconomic Environment

Mining is a commercial operation with the potential to benefit the mine operators, employees and investors directly. Businesses revenues and employment opportunities could also enhance other local revenue streams, indirectly benefiting the greater socioeconomic community/environment.

Recreation and Visitor Use

ANILCA Section 101(b) states that Congress intended the Act to preserve “wilderness resource values and related recreational opportunities including but not limited to hiking, canoeing, fishing, and sport hunting, within large arctic and subarctic wildlands and on freeflowing rivers . . .” Recreation and visitor use of the Dan Creek valley is low due to its remote location, abundance of private property, and access difficulties. A Dan Creek landowner has plans for developing commercial visitor services. Local residents occasionally hunt and pan gold in the lower Dan Creek valley, mainly during the summer and fall, and some may also trap there in the winter. The Nizina River valley gets slightly more use. Commercial river guides raft the Nizina with clients in the summer and recreational boaters raft and kayak it as well. Recreational snowmachiners also travel the frozen Nizina Valley in the winter. Overland access impacts would be limited to very short periods along existing access routes between where the vehicle(s) enter and exit the Nizina River floodplain.

The type, degree, and quality of recreation and visitor use could be affected by the proposed mining and overland access activities associated with this action. While continued use and occupancy of the patented

mining claims could impact the natural setting adversely, all development associated with this action would be confined to private lands. In contrast, some future commercial operators could stage their activities from private land in the Dan Creek valley, providing local visitors with new recreational opportunities.

1.6.2 Issues Dismissed from Further Analysis

Soils

The NPS Organic Act and *NPS Management Policies* direct the NPS to maintain all the components and processes of naturally evolving park ecosystems, including soils. The mine site encompasses 15 acres, some of which is previously disturbed and already lacks a discernible soil horizon. Mining and road construction associated with this action would directly and adversely affect some soils on privately-owned lands, but proposed access off-site would generally be confined to either barren gravel bars lacking soils or existing road beds. No new impacts to soils on park lands are anticipated.

Cultural Resources

Consideration of impacts to cultural resources is required under the National Historic Preservation Act (NHPA) of 1966 and NEPA. WRST contains cultural features in areas where humans have lived for sustained periods (along major rivers, lakes, roads, trails, and within historic mining districts). The Dan Creek valley has a long history of placer mining. Ahtna Chief Nikolai's seasonal subsistence hunting camp was situated near the mouth of Dan Creek prior to the arrival of early explorers, but it was destroyed or buried by earlier mining and/or fluvial processes. The Nizina Riverbed is an active barren gravel surface in a constant state of modification, erosion and deposition.

WRST cultural resource staff conducted an archeological inventory of this action's area of potential effect (APE) in an effort to identify any remaining historic properties (36 CFR 800.4(b)) pursuant to NHPA, Section 106 (16 USC 470f). While numerous historic features were identified on private lands outside the mine site footprint, only one site was situated within the APE, and it lacked sufficient integrity to satisfy National Register criteria (36 CFR part 63). As a result, WRST staff reported a finding of "No Historic Properties Affected" (36 CFR 800.4(d)(1)) to Alaska's State Historic Preservation Office (SHPO), and the SHPO concurred (see Appendix D). However, NPS staff will provide recommendations to the operator regarding future protection and preservation of any privately owned historic artifacts. For WRST's complete NHPA Section 106 Finding, see Appendix C.

Subsistence

ANILCA Section 810 requires federal agencies to analyze the impacts of federal actions on subsistence resources and lifestyles. Some local rural residents conduct subsistence activities including hunting and gathering within the general vicinity of this proposed action. Nevertheless, this topic was dismissed from further analysis because this action is largely confined to private property, where public subsistence use is already restricted, and therefore its overall effects would be negligible. Furthermore, this action possesses no potential to result in any additional subsistence restrictions. An ANILCA Section 810(a) summary evaluation and analysis is contained in Appendix B.

Threatened and Endangered Species

The Endangered Species Act requires an analysis of impacts on all federally listed, threatened, and endangered (T&E) species, as well as species of special concern listed by the State of Alaska. After conducting a survey of the projected sites, WRST resources staff reported finding no listed, threatened, or endangered federal T&E species within the Dan Creek valley. Therefore, no Endangered Species Act §7 consultation with the U.S. Fish and Wildlife Service (USFWS) is required.

Wilderness Values

WRST contains approximately 9.1 million acres of designated wilderness and an additional 2.2 million acres deemed suitable for future wilderness designation. However, WRST's 1986 General Management Plan found that the wilderness values of Dan Creek and surrounding area were sufficiently altered by past mining and associated activities to exclude it from future wilderness designation (NPS 1986). The proposed alternative in WRST's 1988 Final Environmental Impact Statement for Wilderness Recommendation also excluded the Dan Creek area from future wilderness designation for the same reason (NPS 1988). The designated Wilderness boundary is located approximately 6.25 air miles east of the project area.

Air Resources

WRST is considered a Class II airshed under the Clean Air Act, which requires consideration of impacts on air resources. While construction and mining activities would generate some short term and highly localized machinery emissions and airborne dust, these impacts would be negligible.

Park Management

The park has been monitoring and funding minerals management activities at Dan Creek for more than 30 years. Recent efforts by the operator and park staff have resulted in development of the Elliott MPO. The proposed action would require monitoring by park staff to ensure protection of park resources and values, but it would not significantly alter the scope or commitment of park management.

Environmental Justice

Executive Order (E.O.) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, requires all federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. As this action would not result in changes to human health or the environment with disproportionately high and adverse effects on minority or low-income populations or communities.

Climate Change

Secretarial Order 3226 directs federal agencies to ensure that climate change impacts are considered in connection with departmental planning and decision making. The *2006 NPS Management Policies* direct the operation and management of facilities, vehicles, and equipment in a manner to minimize the consumption of energy, water, and nonrenewable fuels. Wrangell-St. Elias is projected to become warmer and drier over the next century with winter temperatures becoming significantly warmer (SNAP 2009). Although precipitation is predicted to increase, the amount will likely be insufficient to offset an increase in evapotranspiration caused by warmer temperatures and a longer growing season. A longer growing season will mean shorter periods of frozen ground and changes in the timing of peak melt and river water levels. Seasonal changes will lead to drying of wetlands, streams, and lakes that are not glacially fed. However, it may lead initially to higher water levels in glacially fed waters.

The Nizina River may exhibit less channel variability as the glacier recedes and inputs less of a sediment load. Unusual flood events caused by outburst lakes are expected to diminish on the Nizina as the climate warms. Dan Creek currently exhibits a higher degree of stream channelization due to past mining disturbances and may be more unpredictable during high water as it reestablished a natural floodplain. It is not anticipated that climate change will have a noticeable impact during the time frame of this mining plan of operations.

		Projected Temperature (TEMP) Change (°F)		Project Precipitation (PRCP) Change (inches)		
Season	Time	Avg. Temp	Change in Temp.	Total PRCP	Change in PRCP	% Change in PRCP
Annual	Historic	23.6 ± 2.0	NA	85.2 ± 25.8	NA	NA
	2040	27.5 ± 2.0	3.8	90.5 ± 26.0	5.3	6%
	2080	30.7 ± 1.9	7.1	93.6 ± 26.0	8.4	10%
Summer	Historic	41.6 ± 2.4	NA	36.2 ± 8.9	NA	NA
	2040	44.1 ± 2.5	2.5	38.7 ± 9.0	2.5	7%
	2080	47.2 ± 2.4	5.5	39.6 ± 9.0	3.4	9%
Winter	Historic	10.8 ± 1.9	NA	48.9 ± 17.1	NA	NA
	2040	15.6 ± 1.9	4.8	51.8 ± 17.2	2.9	6%
	2080	18.9 ± 1.9	8.2	54.0 ± 17.3	5.1	10%

Adapted from Scenarios Network for Alaska & Arctic Planning (SNAP) 2009 Projected climate change scenarios for Wrangell-St. Elias National Park & Preserve.

1.7 PERMITS AND APPROVALS RELATED TO THIS ACTION

The decision by the National Park Service to approve or not approve a proposed mining plan of operations on a patented mining claim and the proposed access over the Nizina Riverbed by the operator and landowner are classified as federal actions. Approval to conduct mining and access to the property would be contingent upon compliance with all applicable State of Alaska and federal statutes and regulations.

2.0 ALTERNATIVES

2.1 ALTERNATIVE 1 (NO ACTION) – NO ACCESS OR MINING OPERATIONS AUTHORIZED

Under this alternative, the NPS would not grant a RWCA for motorized vehicle overland access to private property (inholdings) east of the Nizina River and would not approve the operator's proposed mining plan of operations. As a result, no one would be authorized by the NPS to travel with motorized heavy equipment over the Nizina riverbed on parklands between the DOT ROW and Dan Creek and no authorized mining would occur at Dan Creek. This alternative provides a baseline for evaluating the changes and impacts of the proposed action alternative.

2.2 ALTERNATIVE 2 (PROPOSED ACTION) – AUTHORIZE ACCESS TO DAN CREEK AND PROPOSED MINING OPERATIONS WITH NATIONAL PARK SERVICE STIPULATIONS

Under this alternative, the NPS would grant a RWCA for motorized vehicle overland access to private property (inholdings) east of the Nizina River and would approve the operator's mining plan of operations at Dan Creek. Both of these authorizations would include NPS stipulations for resource protection. These stipulations would constitute a mitigation plan designed to minimize and/or prevent potential environmental impacts to park resources and values and would be conditions to the authorization to mine and the RWCA. The proposed access stipulations are contained in Exhibit A, attached to the RWCA in Appendix H. The proposed mining stipulations are presented in Appendix G.

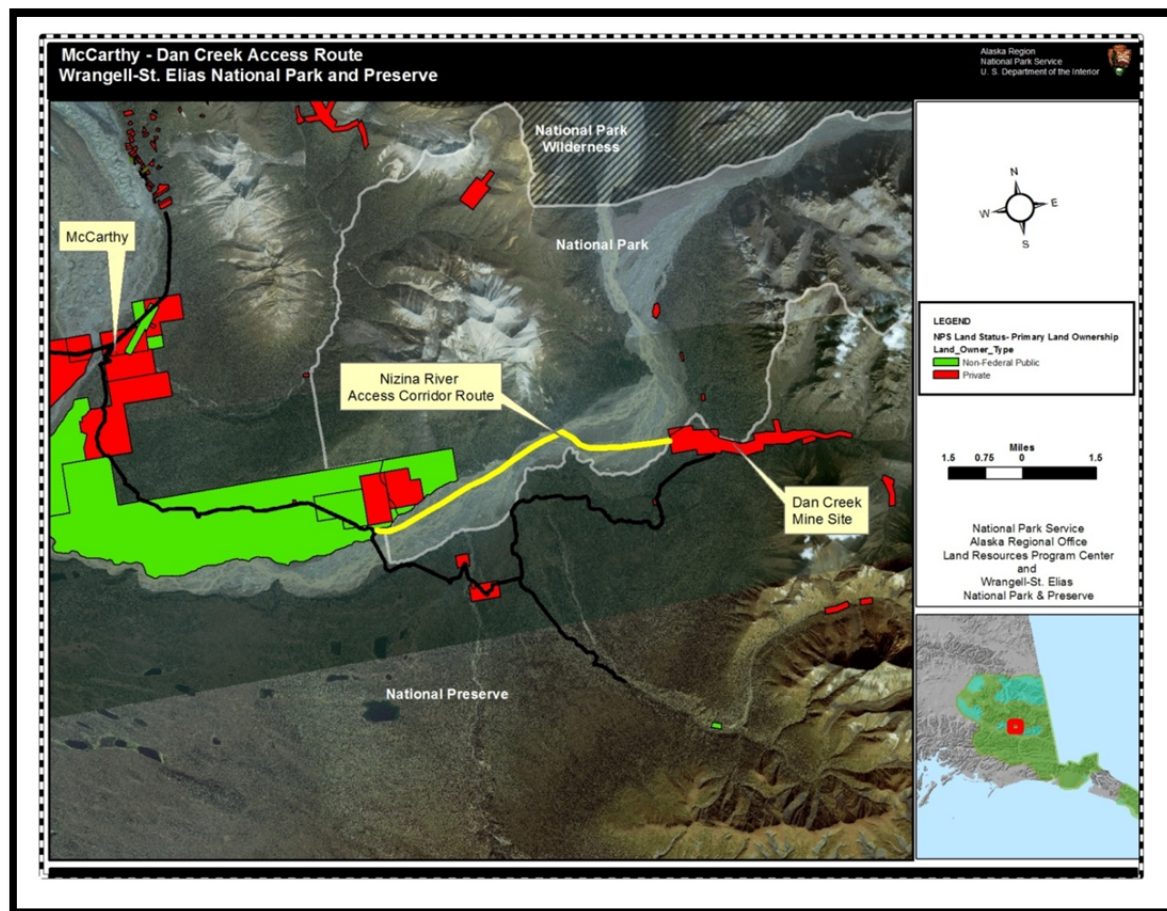


Figure 4: Access route between McCarthy and Dan Creek

2.2.1 Proposed Access to Private Property at Dan Creek

Access to Dan Creek to Mine:

Elliott filed an SF-299 Application with the NPS on November 8, 2011, to obtain an ANILCA 1110(b) Right-of-Way Certificate of Access (RWCA) (Figure 4). The access to Dan Creek will also include use of the state ROW north of the Nizina River. His application describes past and proposed access activities to support ongoing mining operations at Dan Creek. Elliott obtained an ADF&G Fish Habitat Permit for motorized travel on the Nizina Riverbed.

The Nizina floodplain portion of the overland route is six miles long and consists of a motorized track eight to ten feet wide within an ADF&G approved corridor. No construction or blading of the gravel surface is proposed or will be permitted. The alignment within the Nizina Riverbed is located on National Park Service lands, assuming that the Nizina River is non-navigable (no formal determination of navigability has been made to date). All other proposed motorized vehicular traffic between McCarthy and Dan Creek would occur within the state ROW (described in Appendix A), or on non-federal lands.



Figure 5: Aerial view of Nizina River floodplain from east of the Nizina Bridge

Elliott indicates that Dan Creek residents have used “all classes” of equipment on the route between McCarthy and Dan Creek, and an inventory of heavy equipment currently located on lower Dan Creek supports that claim. The operator most often uses a 20-ton, four-wheel-drive mining loader, but also uses tracked-equipment like bulldozers, excavators, and Nodwells for spring crossings in order to minimize damage to the Dan Creek Road. His current vehicles include excavators up to 45 tons (2-5 cubic yard); bulldozers in the D3 to D8 class; rubber-tired equipment such as a front-end loader, a dump truck, a wheeled crane, and a flatbed; pickup trucks; and off-road vehicles, including a modified Toyota Land Cruiser and an assortment of small ORVs. Mining equipment, such as a wash plant and pumps, is generally transported on a flatbed truck or trailer. Fuel would be transported overland to Dan Creek annually in ADOT-approved, 350 gallon containers or on a trailer carrying (2) 1,000-gallon tanks.

Recreational property owners in the Dan Creek Subdivision also employ motorized equipment to transport building materials and supplies over the floodplain between the ADOT ROW and Dan Creek. In addition, many individuals owning private property located east of the Nizina River use airplanes to access their properties during the summer and snow machines during the winter. However, virtually all move heavier items, such as equipment, materials, and supplies are transported via the Nizina floodplain during the late spring and late fall, when water levels are lowest and the channel crossings the least difficult.



Figure 6: Aerial view of Nizina River floodplain at mouth of Dan Creek

In 2010 the operator allowed a local contractor to select and remove some large boulders from the Dan Creek mine site for use as stream-armoring rip-rap in the McCarthy area. That contractor transported the boulders overland across the Nizina River floodplain using a Caterpillar D2-500, 6-wheel-drive dump truck during low water periods without incident in 2010 and 2011.

ANILCA 1110(b) requires the NPS to provide the owners of property within National Park System Units such rights as may be necessary to assure adequate and feasible access to their properties for economic and other purposes. ANILCA 110(b) also gives the NPS the responsibility to reasonably regulate access to inholdings to protect natural and other values of National Park System units. A RWCA is required access to inholdings at Dan Creek for travel across parklands along the river corridor between the north bank of the Nizina River and Dan Creek (Figure A3). The Alaska Region of the NPS utilizes the “Interim Guide to Accessing Inholdings in Park Units in Alaska” to develop and to authorize ANILCA 1110 (b) RWCAs. The NPS has worked with the State of Alaska and local residents regarding long-term access to Dan Creek and will consider granting Elliott and other landowners RWCAs for motorized travel

on the Nizina Riverbed under this EA. No performance bonds would be required from the NPS for overland access to the Dan Creek inholdings by landowners, but for landowners to be in compliance with applicable requirements they contact the State of Alaska to secure any required state authorization(s).

Motorized vehicular travel could occur on the Nizina River floodplain whenever there was sufficiently low water, which can begin after August 15 and last until June 15, subject to any ADF&G, ADEC, or ADNR permit stipulations. However, most travel would likely be confined to the May-June and October-November periods. The operator anticipates making between three and six freight trips per year in support of his mining operations. WRST staff estimates that the other private property owners would require up to an additional six trips a year for non-mining purposes. Such freight trips generally consist of round trip travel, and often include more than one vehicle. If utilized, trailers would either be wheeled or tracked. The use of sleds would only be permitted when the ground is frozen and covered by ice or at least 12 inches of snow.

In order to prevent resource damage, WRST proposes to implement the following access stipulations:

- Cross country travel shall be limited to the route identified in the Operations Plan. Existing roads and trail shall be used whenever possible.
- The Superintendent or his/her designees will be notified by the operator at least 24 hours in advance prior to commencing and conducting motorized overland travel across the Nizina River floodplain.
- Access across the Nizina River floodplain with tracked heavy equipment will be completed during periods of low water only.
- The operator will obtain and maintain an ADF&G Fish Habitat Permit for travel on the Nizina Riverbed.
- Movement of equipment through willow (*Salix*) shall be avoided.
- Stream banks shall not be altered to facilitate crossing or be disturbed. The operator must not blade the route or modify the entry into any channel.
- Site disturbance shall be kept to a minimum to protect local habitats. All activities along the route site shall be conducted in a manner that will minimize disturbance to soil and vegetation and changes of natural drainage systems.
- The use and storage of hazardous substances must be done in accordance with existing federal and, state laws and regulations. Debris (such as soil) contaminated with used motor oil, solvents, or other chemical may be classified as hazardous substances and must be removed and disposed of in accordance with existing federal and state laws and regulations.
- The operator is prohibited from abandonment of supplies, fuel containers, vehicles or other equipment associated with the project on park lands.
- Refueling shall not occur within the annual floodplain. No fuel transfer activities may occur within 100 feet of any water body. Vehicles and equipment that are leaking fluids shall be pulled from service until leaks are repaired.

2.2.2 Proposed Mining Plan of Operations

Mine Support Structures and Related Operations:

Support Camp:

The Dan Creek Support Camp is located on private property (Homestake Placer) on a terrace above the aircraft tie down and the runway threshold/overrun area at the eastern end of the Dan Creek Airstrip (Figure 7).

Situated approximately .25 mile down valley from the center of the mine site, the support camp serves as the residential area for the operator, workers, and family, and includes eight structures for sleeping,

dining, storage, and equipment maintenance. Some temporary fuel storage also occurs there. No new structures are planned at the support camp.



Figure 7: Dan Creek Airstrip and support camp

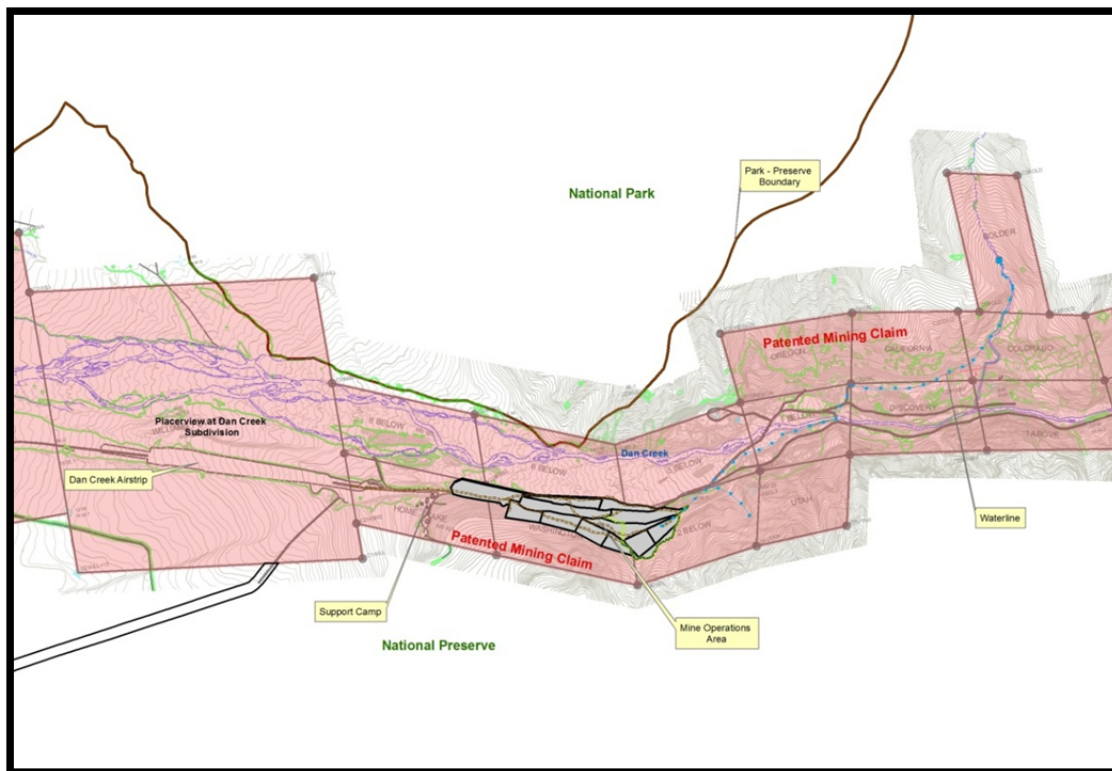


Figure 8: MS923 - Dan Creek Mine Operations Area

Roads and Infrastructure:

The project area contains a network of roads and trails on private property. Most are bladed tracks on gravel and/or barren disturbed surfaces. This established infrastructure includes:

- Dan Creek Airstrip (1,800 feet) – airplanes are parked in the tie down area at its eastern end (Figure 7);
- Road alignment from the western boundary of the private property to the eastern end of the Dan Creek Airstrip (1.1 miles);
- Road alignment from the Dan Creek Airstrip to Dan Creek No. 3 Above Claim (1.5 miles);
- Road alignments (multiple) on northern side of Dan Creek (1 mile);
- Road alignment spur from the Dan Creek Airstrip to the ADOT ROW (1,000 feet);
- Numerous temporary roads within the mine site used by ORVs, machinery and equipment.

Temporary Structures at the Mine Site

- Temporary work shelter
- Outhouse
- Transportable tool and supply shed

Water Management:

Water Use:

The primary water source for the Dan Creek mining operation originates at a timber and rock diversion structure at an elevation of approximately 2,200 feet on Boulder Placer Claim which redirects the surface flow from Boulder Creek's main channel into two water lines, consisting of 4-inch- and 8-inch-diameter aluminum pipes (Figure 9). Mine water usage is estimated at 300 gallons per minute (gpm) and domestic use is less than 100 gallons per day. All surface water removed from Boulder Creek would be returned to the Dan Creek drainage basin subsurface aquifer before entering park lands.



Figure 9: Boulder Creek water system intake and water lines

All water diversion activities (dam and piping) are confined to private property. The main waterline would range from 4,500 to 6,200 feet long. Hydraulic head at the mine site would vary from 200 feet at the 2,000-foot elevation to 450 feet at the 1,750-foot elevation. Water pipes would follow established roads, paths, and/or historic alignments, placed on the surface and anchored to slopes to prevent slippage. The water line to the support camp would extend an additional 800 feet beyond the mine site.

A secondary water source would originate at a spring at the 2,050-foot elevation on No. 2 Below Placer Claim. Water would be piped from there through approximately 475 feet of rubber and/or plastic hose. This water would be used primarily for domestic purposes.

Waste Water:

All mine waste water generated by the mining operations would be confined within two settling pond areas located on an upland terrace above Dan Creek (Appendix A). No discharge or fill into wetlands or surface waters is either proposed or anticipated.

Petroleum Products, Transport, Storage and Use:

Fuel would be stored on site in a single 1,100 gallon fuel truck located to the east of the ongoing mining operations (Figure 10). Although the operator used 3,500 gallons of fuel during 2011, he anticipates that in the future his average seasonal fuel usage would range between 2,000 and 2,500 gallons.

The process of mining (overburden removal, pay gravel removal and processing) utilizes two excavators. A loader or truck is used to move tailings. These machines are in the 20-ton class and would consume 40 to 50 gallons per mining day. Diesel would be transported overland from McCarthy to the mine site in four, ADOT-approved, 350-gallon containers or two 1,000 gallon tanks before the mining operation begins each summer. Following that preseason delivery, subsequent fuel would be transported from McCarthy to Dan Creek by fixed-wing aircraft. At any given time the operator could have as many as five 350-gallon fuel storage containers on site.



Figure 10: Fuel truck currently used for temporary fuel storage on site

Machinery would be serviced on site and generate less than 50 gallons of waste motor oil per year, which would be burned in the camp as heating fuel. Lubricants and grease products would be stored near the camp in a waterproof cellar and eventually transported out of the area. The operator would keep absorbent materials on site to mitigate any spills.

Mining Operations:

The proposed mining operations would occur on forested upland terraces and slopes situated on a bedrock terrace, above and to the south of Dan Creek and its associated floodplain. Approximately six acres would be mined. Bench placer mining operations would employ an open cut method and be conducted within and confined to an area containing approximately 15 acres (Figure 11). The benches to be mined vary in size, but average around 100 feet in width. The mining operations, which include multiple phases and components, would progress from east to west—from upstream to downstream—over a 0.4 mile reach. The operations would generally require three workers to operate machinery and run the wash plant and one to three laborers to provide support.

The developed mine site would include areas for mining gold-bearing gravels; stockpiling spoil; stripping and side-casting overburden and mine tailings; and controlling mining waste waters. Seven mining blocks have been delineated. The remainder of the developed footprint, which consists of approximately nine acres, would be utilized for support of the ongoing mine operations.

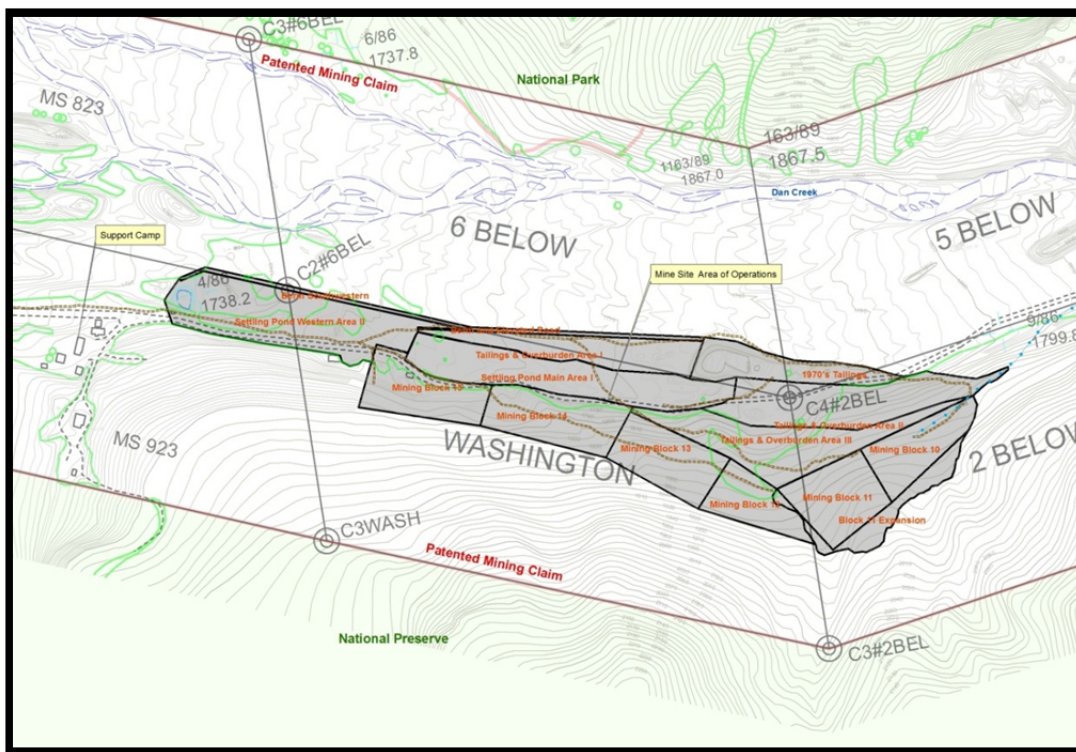


Figure 11: Dan Creek Mine Operations Area

The gold-bearing bench channel gravels on this north-facing slope would be the third bench in this general area to be mined. This particular bench is situated about 50 feet higher than the others which have been previously mined or tunneled. The operator estimates that 50,000 cubic yards of topsoil and/or overburden must be removed and 4,000 cubic yards of gravel must be processed annually to recover the gold. The pay gravel is six-feet thick and the overburden ranges from less than 10 feet- to more than 100-

feet thick. The overburden stockpile and settling pond areas would be situated in part within areas previously mined and/or disturbed by past mining-related operations. The active and barren portion of Dan Creek floodplain is located immediately north of the mine site. No mining operations are proposed within the floodplain.

The proposed mine site is a dynamic area which would evolve continuously as the mining operations proceed. Seven mining blocks containing a total of about 6.1 acres are delineated for bench placer mining. Some surface mining had previously been undertaken within these areas prior to commencement of the current operations. The mining plan described below should be considered a generalized scenario because a precise sequence and timeline remains subject to numerous unknown factors, including the exact location of the pay gravel; the nature and depth to the bedrock and irregular topography; the thickness, composition and nature of the overburden; the feasibility and viability of undertaking the projected overburden removal sequencing; and the economics of the gold deposit.

Typical mining would include the following five components:

Component One: Clearing and Removal of Vegetation and Soil Layer:

A combination of methods would be employed to clear and remove the trees and soil. In forested areas, the trees would be cut with a chainsaw. Some of the trees would be salvaged for use as firewood and/or building materials. In other areas, the trees would be removed with excavators and/or bulldozers during the initial stripping process (Figure 12). Soil and vegetation material ranging from 6 to 18 inches thick would be side-cast onto slopes to the north of the area being stripped and utilized for reclamation. The mining operations would clear approximately one acre per year.



Figure 92: Vegetation and soil layer removal/stripping

Component Two: Removal of Colluvium and Fluvial Gravel:

Mining bench deposits requires overburden to be excavated in order to reach the pay gravel. The unconsolidated gravels that cap the “pay zone” would be removed and cast to the north by a combination of techniques which include blading with a bulldozer, lifting and side-casting with excavators, and/or hydraulically moving the gravel by use of water supplied by the Boulder Creek pipeline and gravity. All overburden removed and/or cast to the north would be deposited onto upland terraces or side slopes. Typically, the remaining high wall would range from 20 to 80 feet in height and would approach 75 degrees (Figure 13). The operations could remove, stockpile, or cast aside up to 50,000 cubic yards of material each season.

Component Three: Processing Gold Bearing Deposits:

During the overburden stripping and mining phases, the mine cut would resemble either a large trench with high walls on three sides or a bench cut with a high wall. Once the overburden is removed, the remaining material would be processed to recover the gold.

The “paying gravel” is typically contained within a six-foot-thick layer. An excavator would be used to remove the oversize rocks from the gravel. The largest boulders would be transported to the edge of the settlement pond area for use in stabilizing the northern boundary of “Tailings and Overburden Area I.” The remaining gravel would then be washed and classified further with a $\frac{3}{4}$ minus screen. The material processed by the wash plant would include old stream gravels and the upper few feet of fractured bedrock and rubble.



Figure 13: Overburden removal on Mining Block No. 11

A series of excavators would excavate, lift, transport, and feed the pay gravel to the wash plant, which consists of a dump box with a continuous, gravity-fed water supply. The material is sorted by a series of wire screens, which remove the oversized material while permitting the fines to drop and pass through a sluice box. An excavator loads the oversized material into a vehicle for eventual transport to the dump

area. The tailings generated by the wash plant would be deposited onto uplands terraces or upland slopes. The wash plant would process about 4,000 cubic yards of material each season (Figures 14 & 15). Although the delineated mining blocks are up to 190 feet wide, only that portion of the property which is economically viable to mine would be processed through the wash plant.



Figure 10: Excavation of gold-bearing gravels for processing



Figure 15: Operating wash plant and sluice

Component Four: Mine Water Management:

Discharge from the wash plant operations and the removal of overburden would generate mud-laden waters, which would issue from the wash plant and flow through a series of migrating channels across and down the adjacent zone of barren overburden into “Settling Pond Main Area 1 (Figure 16)”. The operations undertaken to control and divert the flow would include channelization and construction of gravel containment and diversion structures. A series of dams and ponds would be developed and maintained within the settling pond area, which would contain as many as five or more discrete settling ponds and/or trenches that are inter-connected. The mine operator does not propose to add any chemicals or flocculants to the mine’s waste water to enhance fine particle settling.



Figure 16: Settling pond

The containment structures and ponds would require regular maintenance. The mine operator would periodically utilize mechanized equipment to remove fine sediments from the settling ponds, stockpiling them in “Tailings and Overburden Area 1” and/or using it as fill in the “Berm and Elevated Road Area”. Periodic removal of the fines would allow the water to percolate into the underlying gravel, which serves as a filter system. The mine’s waste water design would prevent release of surface water outside the settling pond areas. If surface water begins to escape the settling ponds, the operator would immediately cease operations and take corrective action. The western extension of the settling pond area would be developed as necessary to accommodate any potential overflow during periods of heavy rain and runoff.

Component Five: Reclamation:

Concurrently with and/or subsequent to mining, some of the mined and trenched area would be back-filled and the overburden and tailings leveled. Reclamation would consist of capping the leveled overburden with a mixture of fine tailings, organics, and any stockpiled topsoil to provide a fine-grained, well-drained building site. The operator has no plans to reclaim the site to approximate pre-mining natural conditions. Some of the overburden adjacent to and north of the mine would be returned to the exposed bedrock cut, but part of the upland high wall would remain. In general, the reclaimed area, which contains both the mining blocks and the adjacent tailings and overburden areas, would resemble an elevated terrace. The northern portion of the overburden area would have a north-facing slope which parallels Dan Creek. All reclaimed overburden, spoil, tailings, and sediments would be confined to upland areas outside and above the active Dan Creek floodplain. The operator ultimately plans to terrace the reclaimed mine area and develop it into a residential building site. No reseeding is proposed, but successional vegetation cover would be allowed to reclaim the area through natural processes.

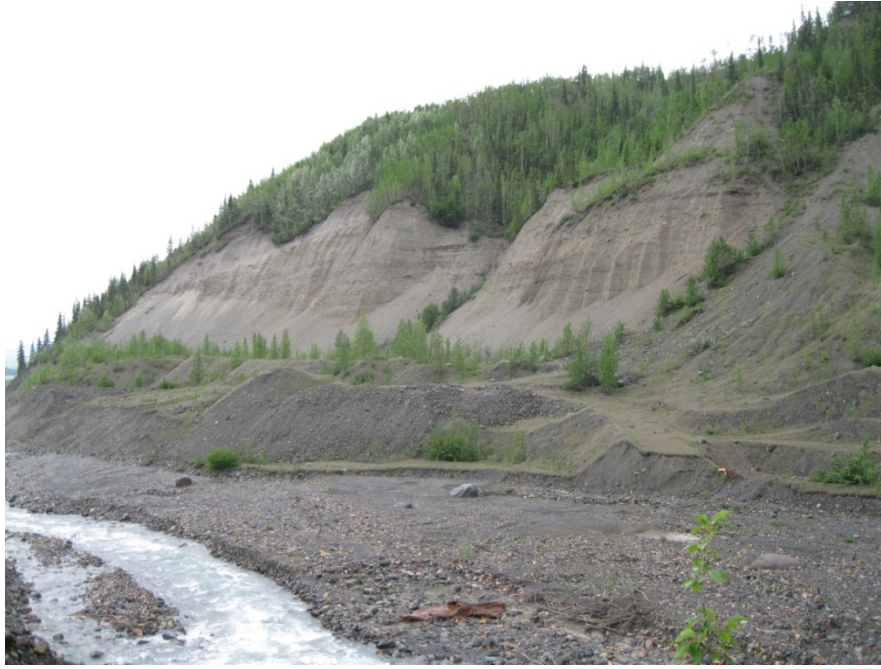


Figure 17: Natural revegetation on bench mined in the 1980s

The buildings and structures located outside the delineated mine site at the historic support camp would not be removed, and the heavy equipment used for mining would remain there on private property. The structures located in the proposed mining area, such as the temporary tool/supply shed and the work shelter, would be utilized for future development.

The operator's reclamation goal is to ensure that the mining area of operations would be rehabilitated to a standard and condition which would not constitute a nuisance or adversely affect, injure, or damage the adjacent federally-owned lands, as required by regulation. Those areas within the Dan Creek bench mine site that were disturbed would resemble other previously mined sites within the Dan Creek drainage (Fig 17).

2.3 ENVIRONMENTALLY PREFERABLE ALTERNATIVE

As stated in Section 2.7 (D) of the NPS Director's Order (DO) 12 Handbook (NPS implementation guidelines for NEPA), "the environmentally preferred alternative is the alternative which would best promote the national environmental policy expressed in NEPA (§101(b))." The environmentally preferable alternative is the alternative that not only results in the least damage to the biological and physical environment, but that also best protects, preserves, and enhances historic, cultural, and natural resources.

Both the Alternative 1 (the No Action Alternative) and Alternative 2 (the NPS Preferred Alternative with mitigation measures attached as described in Section 2.4) would satisfy the NEPA goals. Alternative 2 is also consistent with the Mining in the Parks Act, and permits the operator to exercise his right to mine.

2.4 MITIGATION MEASURES

A complete description of stipulations is provided in Appendix G.

2.4.1 Soils and Water Quality

Operations would be undertaken and facilities maintained to avoid unnecessary erosion, reducing the potential for adverse impacts to soils and water quality. In addition, measures would be taken to prevent fuel spills as well as to control and cleanup impacts from any spill. Fuel transportation and storage would be undertaken in a manner consistent with State of Alaska Department of Environmental Conservation (ADEC) requirements. The operator shall undertake operations consistent with any EPA or ACE water discharge (NPDES) or ACE 404 fill permits requirements.

Any leakage or spillage of oil based fuels onto the ground or into the stream shall be reported according to Alaska State regulations to the ADEC and the Superintendent. Immediate action shall be taken to confine the spill to the smallest possible area

2.4.2 Cultural Resources

All federal laws and regulations protecting cultural resources shall apply while undertaking access and mining operations. In the event that concealed cultural and/or scientific resources are encountered the Superintendent or Superintendent's designee shall be notified immediately. The discovery shall be left intact and steps taken to protect it.

2.4.3 Floodplains and Wetlands

Motorized travel within the Nizina River floodplain would be restricted to low water periods or times when the riverbed and/or channels are frozen and/or safe for motorized traffic. No construction or blading of the Nizina River floodplain travel surface or wetlands on park lands would be authorized. Storage of vehicles, equipment and supplies or parking below ordinary high water on the Nizina floodplain would be prohibited. The operator shall undertake operations consistent with EPA or ACE and water discharge (NPDES) or ACE 404 fill permits requirements.

2.4.4 Aquatic Resources

The operator shall obtain and maintain any ADF&G Fish Habitat Permit required for motorized vehicle travel across active channels of the Nizina River. The operator shall obtain any required permits from ADNR for overland travel, mining or water use.

2.4.5 Other permits:

To be in full compliance with all potentially applicable requirements, WRST recommends that the operator contact the ADNR and secure any and all requested authorization(s) from them.

2.5 ALTERNATIVES CONSIDERED BUT NOT EVALUATED FURTHER

2.5.1 NPS Acquisition of the Patented Mining Claims on Dan Creek

As per direction provided in the Record of Decision for the 1990 *WRST Cumulative Impacts of Mining EIS*, the NPS is actively engaged in a program to acquire mining claims from willing sellers within Wrangell-St. Elias National Park and Preserve. The Dan Creek Partners (DCP) acquired the Dan Creek property in 1975. NPS land managers contacted the DCP and pursued acquisition of the property, but no agreement to acquire MS 923 at Dan Creek was ever reached. The NPS remains interested in acquiring mineral properties as directed by the 1990 EIS.

2.5.2 Operator's Proposal without NPS Stipulations

This alternative was not analyzed further because it would not provide any additional protection of park resources. Without the stipulations described in the Proposed Action alternative, there may be unnecessary and potentially significant risk of adverse impacts to resources, especially to water quality and aquatic resources.

Impact Topic	Alternative 1 – No Action Alternative	Alternative 2 – Authorize Dan Creek Mining Plan with National Park Service Stipulations (Proposed Action)
Visual Resources	No change to visual resources	Alternative 2 would result in direct, medium intensity long term negative impacts to local visual resources.
Vegetation	No change to vegetation	Alternative 2 would result in direct and indirect, medium intensity long term negative impacts to local vegetation.
Wildlife	No change to wildlife	Alternative 2 would result in direct and indirect, medium intensity long term negative impacts to local wildlife.
Aquatic Resources	No change to aquatic resources	Alternative 2 would result in direct and indirect, low intensity long term negative impacts to local aquatic resources.
Wetlands	No change to wetlands	Alternative 2 would result in indirect, low intensity long term negative impacts to local wetlands.
Floodplains	No change to floodplains	Alternative 2 would result in indirect, low intensity long term negative impacts to local floodplains.
Socioeconomic Environment	No change to socioeconomic environment	Alternative 2 would result in direct and indirect, medium-intensity short-term beneficial impacts to the local socioeconomic environment.
Recreation and Visitor Use	No change to recreation and visitor use	Alternative 2 would result in direct and indirect, low-intensity short term impacts on recreation and visitor use.

Note: Refer to Chapter 4 of this document for a more detailed analysis.

Table 1: Comparison of Alternatives

3.0 AFFECTED ENVIRONMENT

3.1 PROJECT AREA

Dan Creek is a large southern tributary of the Nizina River, a major northern tributary of the Chitina River. The proposed mining area is located on lower Dan Creek, beginning just east of the Dan Creek Mining Camp and proceeding upstream for about one mile. All mineral extraction and its associated ground disturbance are confined to the south side of the Dan Creek valley and above its 0.25 mile wide floodplain (Figure 18).

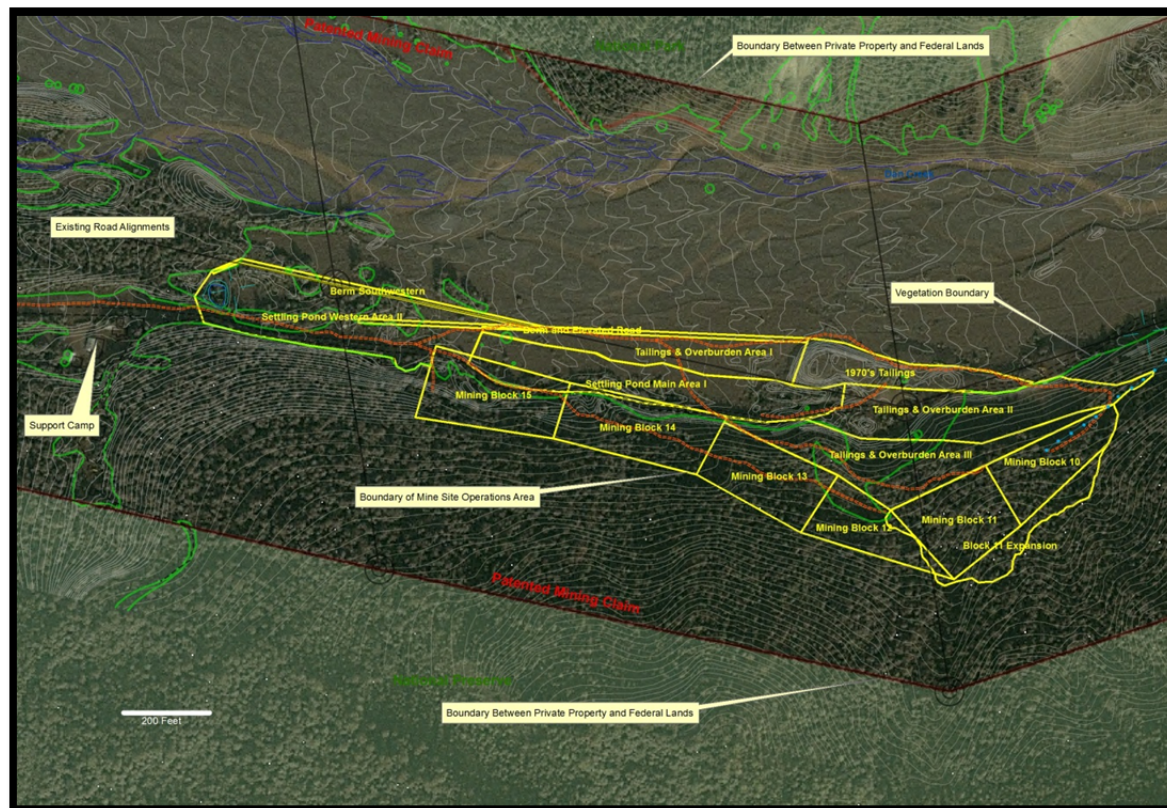


Figure 18: Mine Operations Area

The geology at the mine site consists of a sequence of unconsolidated sediments overlying bedrock, a Cretaceous shale. The channel deposits to be mined are situated at the base of the unconsolidated sediments in contact with the bedrock. These unconsolidated sediments have a large boulder-rich base which is about 10-15 feet thick. Typically, the bottom 6-foot-thick section in contact with the bedrock will be processed through the wash plant. This layer is overlain by horizontally-bedded stream gravels 40 to 50 feet thick which are in turn overlain by clay rich colluvium deposits ranging between 20 and 50 feet thick. The soil and vegetation mat averages about 12-18 inches thick in the area. Although frozen ground and ice occur locally, both are intermittent. The mine face weeps at the colluvium-gravel contact.

Mining has occurred in the Dan Creek valley since 1910. Hydraulic mining, which was a common practice in the early twentieth century, was used extensively at Dan Creek, causing riparian habitat loss, bank instability, and changes in stream morphology. Dams and stream diversions were employed commonly in the past and some remnants remain.

3.2 RESOURCE IMPACTS TOPICS

3.2.1 Visual Resources

The visual quality of the Dan Creek project area is characterized by extensive high mountain peaks in the east and the extensive forested slopes bordering the wide Nizina River valley in the west. Dan Creek's deep valley penetrates the mountains, and while its lower reaches are heavily forested, its upper reaches transition into tundra, talus, rock glaciers, cliffs and peaks. This area is physically dynamic, highly influenced by glaciers and fluvial systems. Naturally occurring mass wasting and erosion scars, barren and void of vegetation, dot the landscape. The mine site consists of sparsely-vegetated river terraces, disturbed lands from past mining, and forested upland slopes.

Nikolai Butte and Williams Peak border the area to the northeast and southwest and dominate the landscape when viewed from the Dan Creek valley. From the project area, the views are predominately to the west, toward the wide and braided Nizina River. A series of high cirques block most views to the east.

Past mining significantly affected visual resources in the Dan Creek valley. Hydraulic operations destroyed all the forested floodplains and expanded the area of barren floodplain, scouring many forested slopes, removing virtually all vegetation, and leaving deeply incised gullies (Figure 19). Miners deepened, broadened, and diverted stream channels to facilitate gravel extraction. However, many slopes and much of the original mining disturbance have naturally revegetated. Numerous historic sites associated with historic mining remain, but most are now ruinous and located on private property.



Figure 19: Historic Dan Creek with Dan Creek Mining Camp at lower left

The Nizina Study Area includes past placer mining operations on Chititu Creek and Dan Creek (NPS 1990). The darkened area within the claim groups as well as adjacent areas were directly and/or indirectly impacted (Figure 20).

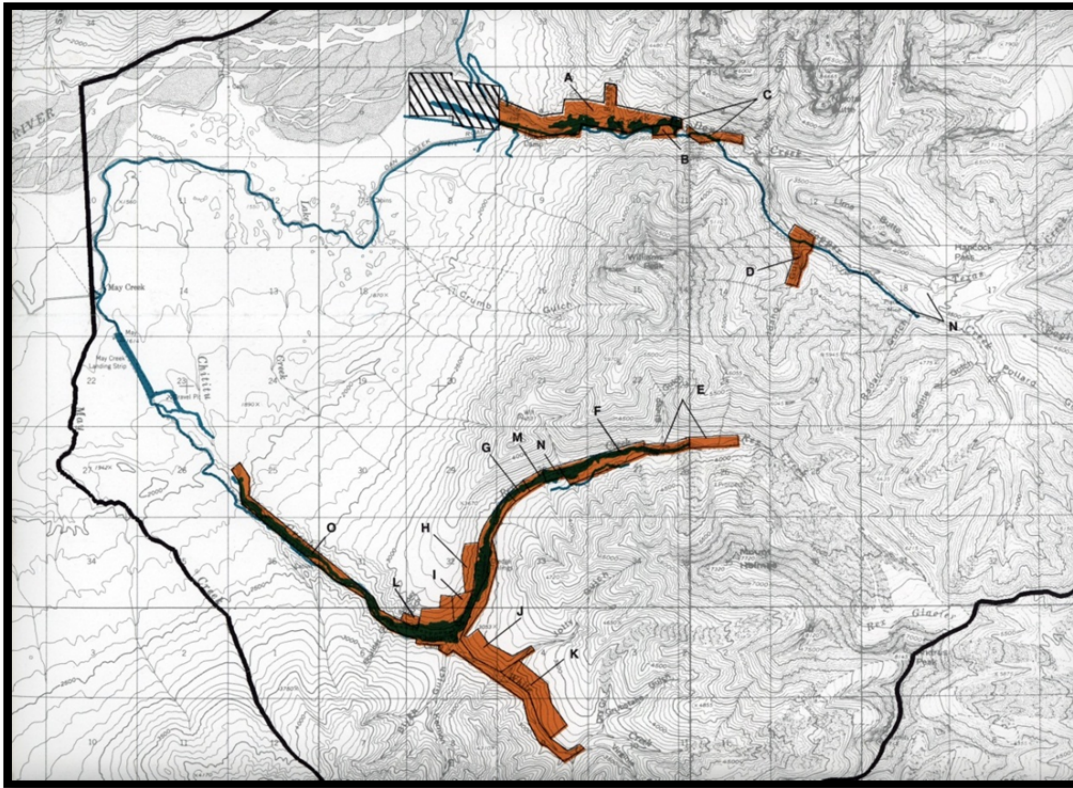


Figure 20: Nizina Study Area: Mining Claims and Past Disturbance

Non-mining development has also impacted the naturally occurring visual resources of the Dan Creek valley. The relatively recent subdivision of private property along its lower reaches has resulted in the construction of homes, recreational cabins, associated support structures, an airstrip, and numerous roads and trails, introducing objects and colors which have resulted in long-term and/or permanent changes to its natural character.

The Nizina River is a large barren braided glacial stream. Remnants of the Nizina Bridge structures remain. Motorized vehicle tracks left by individuals traveling across or within the disturbed and barren Nizina floodplain are also periodically visible.

3.2.2 Vegetation

Approximately 50 percent of the Nizina Study area defined by the 1990 Mining EIS is forest and 30 percent is classified as barren land cover. The primary vegetative communities within and around the Dan Creek valley include mixed conifer/ deciduous forest (white spruce: *Picea glauca*, Balasam poplar: *Populus balsamifera*, Aspen: *Populus tremuloides*), deciduous forest (Balasam poplar: *Populus balsamifera*, Aspen: *Populus tremuloides*), tall shrub (alder: *Alnus spp.* and willow: *Salix spp.*), low shrub, sedge/meadow, and alpine tundra. The Nizina Riverbed is mostly barren or sparsely vegetated with a few isolated shrub and dryas covered gravel bars.

Past mining altered, damaged, and/or destroyed much of the natural vegetation in the Dan Creek valley, but natural processes have reduced many of those effects. While once heavily forested, the project area now contains numerous mining-related or naturally-occurring disturbed sites in various stages of successional revegetation. The current residential and recreational development in the lower Dan Creek valley has affected local vegetation as well, but due to the permanent nature of that development, its effects will undoubtedly be more lasting. The Nizina floodplain remains largely natural.

3.2.3 Wildlife

Wildlife including moose, sheep, and bears use or travel through the Dan Creek and Nizina River valleys (NPS 1990).

Moose inhabit most of the lowlands. The vegetative communities of primary importance to moose include mixed forest, deciduous forest, tall shrub, sedge/meadow, alpine tundra, and particularly below 3,400 feet in elevation, some low shrub.

Grizzly bears are relatively abundant, although their precise numbers are unknown. Salmon spawn in a few small clear streams between May Creek and the Chitistone River, providing opportunistic grizzlies a high protein supplement to their diet. Soapberries are abundant and serve as an important food in the fall. The vegetative communities important to grizzlies include mixed forest, low shrub, tall shrub, sedge/meadow, and alpine tundra.

Dall sheep inhabit the upland areas, where their primary habit includes alpine tundra and low shrub communities over 3,400 feet in elevation. Sheep seldom occupy the very steep or highly elevated barren uplands.

Past mining, settlement, and hunting have all impacted wildlife. Although mining temporarily altered some local wildlife habitat, natural revegetation processes have reclaimed and reduced many of those impacts. Mining also created avoidance zones, but those too have lessened over time. In contrast, the effects of the current residential and recreational development and local hunting in the lower Dan Creek valley are again expanding those avoidance zones, and both of these impacts can be expected to continue.

3.2.4 Aquatic Resources - Water quality, fish and invertebrates

Proximal to the proposed mine area, Dan Creek is a moderately-sized and braided, glacially-fed stream which originates in the peaks to the southeast and flows northwest to the Nizina River. Its natural vegetation-covered floodplain and associated river terraces were heavily impacted by placer mining during the first half of the twentieth century.

Dan Creek carries a heavy suspended sediment load during the warm summer months due to the meltwater contributed by its headwaters glaciers. During periods when its suspended glacial sediments level is high, its natural concentrations of copper, iron and zinc can exceed EPA standards for protection of aquatic life (EPA 1986). The valley's extensive disturbance from past mining activities, naturally occurring extreme terrain, and barren steep side slopes all contribute suspended sediments from nonpoint runoff. Dirt roads and trails in the project area also generate potential for some turbidity (NPS 1990).

The Nizina River is an anadromous stream. ADF&G issues Fish Habitat Permits for vehicular travel within the river corridor to avoid and minimize potential affects to fish populations.

A survey conducted by park fisheries staff in 2011 reported that Dan Creek contained a resident population of arctic grayling and dolly varden throughout the affected area. The Nizina River provides habitat for slimy sculpin, dolly varden, arctic grayling, burbot, and coho salmon. Coho salmon spawn at the mouth of Dan Creek, in mainstream side channels downstream of Dan Creek and in other Nizina River tributaries both upstream and downstream. Juvenile Chinook salmon have been documented in nearby Young Creek.

Aquatic populations have been substantially impacted in the past. Existing aquatic populations are recovering from past impacts.

3.2.5 Wetlands

Wetlands are defined by the U.S. Army Corps of Engineers as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation

typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas (33 CFR 328).”

According to the U.S. Fish and Wildlife Service (1987), wetlands perform “important physical and ecological functions that deserve special consideration.” Wetlands play a major role in maintaining hydrologic systems and the quality and quantity of surface and ground waters. Some wetlands can absorb large quantities of water and act as natural flood control systems for rivers by gradually releasing floodwaters and reducing the magnitude of high flows. Wetlands may slow the rate of runoff during periods of normal rainfall and help recharge aquifers. In some places, sediments and pollutants may be filtered out of water draining through wetlands, and water quality may thus be improved. Wetlands are extremely important to resident and migratory birds for resting, feeding, and nesting and can be important foraging grounds for large mammals, such as moose and bear.

Past mining activity in the Dan Creek valley has altered, reduced, and destroyed wetlands, disrupting their natural functions. Wetland habitat, including riparian vegetation, has been disturbed over time and now exists as fragmented units in various stages of natural recovery. Mining operations identified in this plan would not occur within existing wetlands. Wetlands in the Nizina River corridor appear to function naturally and remain essentially undisturbed by any human-generated process other than climate change.

3.2.6 Floodplains

A floodplain is an area of relatively level land that is periodically inundated with water. The floodplains of lower Dan Creek and the upper Nizina River are braided gravel fluvial streams consisting of a network of small channels separated by temporary gravel bars. The channels and gravel bars in these floodplains are highly mobile, with river channels changing frequently, especially during flood events. Both floodplains are barren and consist largely of stream gravels and small boulders.

The two floodplains differ substantially in size. The Dan Creek floodplain in the project vicinity is rarely over 300 feet wide, while the Nizina River floodplain at the mouth of Dan Creek is nearly 1.5 miles wide. At normal flow, lower Dan Creek is usually confined to one active channel, while the upper Nizina River usually has more than three or four channels, even during low water. The character of the Nizina River floodplain was greatly influenced by glacial outburst events prior to 1970. Since that time, floods generated from glacier and snow melt as well as heavy rain events are the principle drivers within the large and barren Nizina floodplain.

Past mining activity in the Dan Creek valley has significantly altered the natural floodplain there, flushing out much of its clay and silt and disturbing most aquatic systems. No proposed mine activities are proposed within the Dan Creek floodplain. The Nizina floodplain remains largely natural except where remnant structures (such as causeway and bridge abutments) still delineate the state ROW.

Much of the vegetation in both floodplains is typical early succession species that are highly adapted to the ever changing floodplains and river channels. The soil is poorly developed for plants at this stage and the vegetation is sparse.

3.2.7 Socioeconomic Resources

The Dan Creek valley was extensively mined during the early and middle twentieth century, and some mining has continued. Expenditures to local communities from those operations are difficult to estimate due to the number, variety, and scale of the operations and the length of time that they continued. Historically, the economic contributions must have been substantial, particularly for the community of McCarthy, which served as the main supply center for the surrounding region. Following the closure of the Copper River and Northwestern Railway in 1938 and the subsequent exodus of commercial businesses from McCarthy, most supplies have been imported from Anchorage, Alaska, located over 300 road miles to the west. Today, most laborers live elsewhere, although mining still provides some economic benefit to nearby McCarthy and more distant Copper Valley stores and business.

3.2.8 Recreation and Visitor Use

Recreation and visitor use of the Dan Creek valley is low due to its remote location, preponderance of private property, and access difficulties. Many local residents and a few visitors hunt on nearby federal lands. Some individuals occasionally pan gold in the lower Dan Creek valley, mainly during the summer and fall, and some may trap there in the winter. The Nizina Valley gets slightly more use. Commercial river guides raft the Nizina River with clients in the summer and recreational boaters raft and kayak it as well. Recreational snowmachiners also travel over the frozen Nizina River corridor in the winter to access the surrounding area.

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter analyzes the environmental impacts of implementing the alternatives. Section 4.1.6, “Cumulative Impacts,” describes the impacts of past, present and reasonably foreseeable future actions occurring within the project area *other than those actions described in the alternatives*. Subsequent sections of this analysis describe the direct, indirect, short term, and long term impacts of actions that would be implemented under each alternative.

This analysis focuses on the impacts of the alternatives to the following WRST resources: vegetation, water resources, wildlife, cultural resources, visual quality, and local economy (see “Issues Selected for Detailed Analysis” for rationale for selecting impact topics). As noted earlier, impacts occurring directly on the patented mining claims that would not affect park lands will not be addressed in this document, except under the assessment of cumulative impacts.

4.1 METHODOLOGY AND IMPACT CRITERIA

The direct, indirect, and cumulative impacts are described for each issue (impact topic). The impacts for each issue are based on the intensity (magnitude), duration, and context (extent) of the impact. Summary impact levels (negligible, minor, moderate, or major) are given for each issue. Definitions are provided below.

4.1.1 Intensity

Low:	A change in a resource condition is perceptible, but it does not noticeably alter the resource’s function in the park’s ecosystem, cultural context, or visitor experience.
Medium:	A change in a resource condition is measurable or observable, and an alteration to the resource’s function in the park’s ecosystem, cultural context, or visitor experience is detectable.
High:	A change in a resource condition is measurable or observable, and an alteration to the resource’s function in the park’s ecosystem, cultural context, or visitor experience is clearly and consistently observable.

4.1.2 Duration

Temporary:	Impacts would last only a single visitor season or for the duration of discreet activity, such as construction of a trail (generally less than two years).
Long term:	Impacts would extend from several years up to the life of the plan.
Permanent:	Impacts are a permanent change in the resource that would last beyond the life of the plan even if the actions that caused the impacts were to cease.

4.1.3 Context

Common:	The affected resource is not identified in enabling legislation and is not rare either within or outside the park. The portion of the resource affected does not fill a unique role within the park or its region of the park.
Important:	The affected resource is identified by enabling legislation or is rare either within or outside the park. The portion of the resource affected does not fill a unique role within the park or its region of the park.

Unique: The affected resource is identified by enabling legislation and the portion of the resource affected uniquely fills a role within the park or its region of the park.

4.1.4 Overall Summary Impact Levels

Summaries about the overall impacts on the resource synthesize information about context, intensity, and duration, which are weighed against each other to produce a final assessment. While each summary reflects a judgment call about the relative importance of the various factors involved, the following descriptors provide a general guide for how summaries are reached.

Negligible:	Impacts are generally extremely low in intensity (often they cannot be measured or observed), are temporary, and do not affect unique resources.
Minor:	Impacts tend to be low intensity or of short duration, although common resources may have more intense, longer-term impacts.
Moderate:	Impacts can be of any intensity or duration, although common resources are affected by higher intensity, longer impacts while unique resources are affected by medium or low intensity, shorter-duration impacts.
Major:	Impacts are generally medium or high intensity, long term or permanent in duration, and affect important or unique resources.

4.1.5 Impairment

Impairment of a park resource(s) occurs when a resource would no longer fulfill the specific purposes identified in the park's enabling legislation (or proclamation) or its role in maintaining the natural or cultural integrity of the park, as described in the park's GMP, foundation document, or other significant guiding plans.

4.1.6 Cumulative Impacts

Cumulative impacts are the effects that would result from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions (40 CFR 1508.7). Interactive impacts may be either *counervailing* – where the net cumulative impact is less than the sum of the individual impacts or *synergistic* – where the net cumulative impact is greater than the sum of the individual impacts. Cumulative impacts were assessed by combining the potential environmental impacts of this action's alternatives with the impacts of projects that have occurred in the past, are currently occurring, or are proposed in the future within the project area.

Past Activities: Past mining activities disturbed Dan Creek extensively, physically disrupting stream channels and altering both riparian vegetation and aquatic life. The loss of riparian habitat reduced nutrient sources to stream systems, decreased shade, and reduced wildlife habitat. Construction of roads, dams and tailings piles altered stream flow and modified and destroyed major portions of some fluvial systems. Soils and vegetation along access trails/roads, and within the drainage bottoms and their adjacent upland slopes remain disturbed. Past activities in and around the project area also include the construction of the Dan Creek Road and other supply routes in the Nizina Valley and the Dan Creek Airstrip, as well as clearing land and building recreational structures in the Placerview at Dan Creek Subdivision (NPS 1990).

Present Activities: Mining operations on Dan Creek have occurred intermittently for many years, and operations of a similar scope continue. The present mining activities are confined to private property. The Placerview Subdivision at Dan Creek plat contains approximately 150 one-acre lots, a 5,000 foot-long

airstrip and access roads. Public records indicate that about ten lots have been sold, most of which appear to have been partially cleared of vegetation and /or have structures or equipment on site. Sale of recreational lots and development of private property for non-mining purposes is ongoing. Motorized vehicle overland access on the Nizina Riverbed to Dan Creek occurs annually.

Future Activities: A Dan Creek mineral development scenario was included in the 1990 *WRST Cumulative Impacts of Mining EIS* to project future possibilities, but there presently are no future activities (RFFAs) planned for the project area other than the proposed action. WRST anticipates that the owners of the Placerview at Dan Creek Subdivision will sell more lots for recreational and commercial development.

If the operator determines that mineral development on the Dan Creek claims is not economically viable, he could decide to subdivide and/or otherwise develop that property. If this were to occur, the land would be used for non-mining developments and activities (e.g., lodges, private cabins), whose potential impacts could include direct and indirect threats to water quality and aquatic resources of Dan Creek, as well as additional impacts to vegetation and soils which would affect the visual quality of the surrounding landscape. Depending on the nature and extent of the development, some segments of the local economy could benefit from an increase in population and infrastructure. Motorized vehicle access overland on the Nizina Riverbed and floodplain to Dan Creek and other private properties east of the Nizina is expected to continue.

4.2 ANALYSIS OF IMPACTS

The following sections describe the impact associated with the Alternative 1 – No Action and Alternative 2 – Proposed Action alternatives.

4.2.1 Visual Resources

Alternative 1 – No Action Alternative. No Access or Mining Operations Authorized

Past and Present Impacts

Past and present actions that have impacted visual resources in the project area include past mining activities; construction of the Dan Creek Road and other supply routes in the Nizina Valley; construction of the Dan Creek Airstrip; and the development of private property. All have introduced colors and forms that contrast starkly with the natural environment and are particularly visible from the air.

Conclusion

Under the no-action alternative, no new impacts to visual resources would occur on parklands resulting from authorization to access Dan Creek or conduct mining operations on the patented claims.

Alternative 2 - Authorize Access to and Mining Operations on Dan Creek with National Park Service Stipulations (Proposed Action)

Past and Present Impacts

Past and present impacts to visual resources are described above.

New Impacts

Alternative 2 would cause direct, medium intensity impacts to visual resources. During the mining period, visual resources in the project area would be altered by the presence of machinery, activities and crews. Once the mining period is completed, the project area's visual quality and aesthetics would remain adversely affected by the loss of vegetation cover in a portion of the mine site that had not previously been disturbed. However, the mining impact would occur on private land and be difficult to recognize

because it borders a much larger area of previous disturbance. In addition, the number of people able to observe the mining area from park lands would be small, as few visit the Dan Creek valley.

Tracks and vehicles along the proposed access corridor across the Nizina River floodplain would be more noticeable. Many visitors see the Nizina floodplain from the air and some would undoubtedly notice the tracks left by access vehicles across the barren landscape. However, these tracks would be temporary, appearing and disappearing as water levels rise and fall and river channels meander.

Cumulative Impacts

The past and present impacts to visual resources described above would be expected to remain, though gradually lessening over time. The impacts on visual resources from Alternative 2 would include an expansion of colors and forms that contrast with the natural environment. Localized impacts to visual resources would include an increase in the disturbed mining area for the foreseeable future and ephemeral tracks across the Nizina River floodplain. However, its impact on visual resources would be temporary, remain largely confined to private lands, mimic previously disturbed landscapes, be restricted to an area not frequented by park visitors, and remain largely invisible from park lands.

Conclusion

Alternative 2 would result in direct, medium intensity and long term negative impacts to local visual resources. However, this action's summary effect would be minor because its contribution is low in terms of the park's total visual resources.

4.2.2 Vegetation

Alternative 1 – No Action Alternative. No Access or Mining Operations Authorized

Past and Present Impacts

Past and present actions that have impacted vegetation in the project area include clearing for past mining activities and its associated logging for construction materials and heating fuel; construction of the Dan Creek Road and other supply routes in the Nizina Valley; construction of the Dan Creek Airstrip; and the subdivision and development of private property. Such activities have altered, damaged, and destroyed local vegetation, although some of that damage has been naturally mitigated by subsequent revegetation.

Conclusion

Under the no-action alternative, no new impacts to vegetation would occur on parklands resulting from authorization to access Dan Creek or conduct mining operations on the patented claims.

Alternative 2 - Authorize Access to and Mining Operations on Dan Creek with National Park Service Stipulations (Proposed Action)

Past and Present Impacts

Past and present impacts to vegetation are described above.

New Impacts

Alternative 2 would facilitate erosion, altering, disturbing, and/or destroying vegetation, resulting in direct and indirect impacts to park lands.

Cumulative Impacts

The past and present impacts to vegetation described above would be expected to remain, though gradually lessening over time. Once mining is completed, the newly disturbed areas would remain affected until they fully revegetate. However, most direct impacts would be confined to private lands and only indirect, low intensity impacts would affect park vegetation.

Conclusion

Alternative 2 would result in direct and indirect, medium intensity long term negative impacts to local vegetation. However, while its impact on the project area is of medium intensity, its summary impact is minor in terms of the park's vegetation as a whole.

4.2.3 Wildlife

Alternative 1 – No Action Alternative. No Access or Mining Operations Authorized

Past and Present Impacts

Past and present actions that have impacted wildlife in the project area include past mining activities and the associated market hunting which supplied food for its miners; construction of the Dan Creek Road and other supply routes in the Nizina Valley; construction of the Dan Creek Airstrip; and the subdivision and development of private property. Such activities have reduced wildlife numbers, altered or destroyed wildlife habitat, and created aversion areas, disturbing and disrupting wildlife use. Hunting and trapping continues to affect local wildlife.

Conclusion

Under the no-action alternative, no new impacts to wildlife would occur on parklands resulting from authorization to access Dan Creek or conduct mining operations on the patented claims.

Alternative 2 – Authorize Access to and Mining Operations on Dan Creek with National Park Service Stipulations (Proposed Action)

Past and Present Impacts

Past and present impacts to wildlife are described above.

New Impacts

Alternative 2 would cause direct and indirect impacts to wildlife. Mining, construction activities, and increased use of the local supply routes would destroy or alter wildlife habitat and disturb and/or disrupt wildlife. Once mining activity is completed, the area would remain affected, while the disturbed habitat slowly recovers by natural processes. However, as all development would occur on private lands, only indirect, medium intensity impacts would affect park lands.

Cumulative Impacts

The past and present impacts to wildlife described above would be expected to remain, though gradually lessening over time. Alternative 2 would add medium intensity but long term impacts to contextually-important wildlife.

Conclusion

Alternative 2 would result in direct and indirect, medium intensity long term negative impacts to local wildlife. However, while its contribution to the project area is of medium intensity, its summary impact is minor in terms of the park's wildlife as a whole.

4.2.4 Aquatic Resources

Alternative 1 – No Action Alternative. No Access or Mining Operations Authorized

Past and Present Impacts

Past and present actions that have impacted aquatic resources in the project area include mining; construction of the Dan Creek Road and other supply routes in the Nizina Valley; construction of the Dan Creek Airstrip; and the subdivision and development of private property on lower Dan Creek. Such

activities disturbed aquatic resources in the stream channels and destroyed riparian vegetation, at times completely stripping the soil from adjacent landforms through hydraulic mining, which reduced or eliminated some nutrient sources. Stream channels were radically disturbed by hydraulic mining, which essentially eliminated the habitat in Dan Creek. Fish distribution prior to that disturbance is unknown but it is possible that species diversity was substantially impacted by hydraulic mining and it is possible that some fish populations in Dan Creek were temporarily eliminated. Construction of roads, dams, and tailings piles altered stream flow and modified and/or destroyed major portions of certain hydrologic systems. Most previous disturbance occurred along access trails and within the drainage bottoms.

Conclusion

Under the no-action alternative, no new impacts to aquatic resources would occur on parklands resulting from authorization to access Dan Creek or conduct mining operations on the patented claims.

Alternative 2 – Authorize Access to and Mining Operations on Dan Creek with National Park Service Stipulations (Proposed Action)

Past and Present Impacts

Past and present impacts to aquatic resources are described above.

New Impacts

Alternative 2 could cause direct, long term impacts to aquatic resources. Mining, construction activities, and increased use of the local supply routes would disturb and/or impact vegetation and soils increasing sediment input, create minor disturbances within stream channels, impact eggs or alevins, and increase the risk of fuel spills. Minor channel disturbances are not anticipated to have measureable effects to habitat complexity. Mitigation measures are expected to minimize the risk of fuel spills. Once mining is completed, the area's aquatic systems could remain affected until the disturbed areas fully revegetate and their soils stabilize. However, as most of this potential impact would occur on private lands, NPS stipulations would control and mitigate any potential significant impacts on parklands, therefore its relative impact would be low to park aquatic resources.

Cumulative Impacts

The past and present impacts to aquatic resources described above would be expected to remain, though gradually lessening over time. Alternative 2 would result in additional low intensity but long term impacts to contextually-important aquatic resources.

Conclusion

Alternative 2 would result in direct and indirect, low intensity long term negative impacts to local aquatic resources. However, while its contribution to the project area is of low intensity, its summary impact is minor in terms of the park's aquatic resources as a whole.

4.2.5 Wetlands

Alternative 1 – No Action Alternative. No Access or Mining Operations Authorized

Past and Present Impacts

Past and present actions that have impacted wetlands in the project area include past mining activities; construction of the Dan Creek Road and other supply routes in the Nizina Valley; construction of the Dan Creek Airstrip; and the development of private property. Such activities disturbed wetlands, reducing the amount of wetland area and affecting their ability to function. Construction of roads, dams, and tailings piles altered stream flow and modified and/or destroyed major portions of the hydrologic system. Most previous disturbance to wetlands occurred along access trails, roads and within the drainage bottoms.

Conclusion

Under the no-action alternative, no new impacts to wetlands would occur on parklands resulting from authorization to access Dan Creek or conduct mining operations on the patented claims.

Alternative 2 – Authorize Access to and Mining Operations on Dan Creek with National Park Service Stipulations (Proposed Action)

Past and Present Impacts

Past and present impacts to wetlands are described above.

New Impacts

Alternative 2 would not cause any direct impacts to wetlands as there are no wetlands within the mine site's proposed footprint. Mining, construction activities, and increased use of local supply routes would disturb and/or remove vegetation and soils, facilitating erosion. Although some wetlands proximal to the access corridor would be indirectly affected by motor vehicle travel, this would probably not result in any loss of wetlands or wetland function. As this action has little potential to impact park lands, its relative impact would be low.

Cumulative Impacts

The past and present impacts described above would be expected to remain, though gradually lessening over time. Alternative 2 would add direct, low intensity long term impacts to contextually-important wetlands along the access corridor.

Conclusion

Alternative 2 would result in indirect, low intensity long term negative impacts to local wetlands. However, while its contribution to the project area is of low intensity, its summary impact is minor in terms of the total acreage of wetlands located throughout the park.

4.2.6 Floodplains

Alternative 1 – No Action Alternative. No Access or Mining Operations Authorized

Past and Present Impacts

Past mining activity moved stream channels and increased erosion, significantly altering any associated floodplains. Past use of motorized vehicles upon the Nizina River and Dan Creek floodplains left tracks, but such marks are highly ephemeral.

Conclusion

Under the no-action alternative, no new impacts to floodplains would occur on parklands resulting from authorization to access Dan Creek or conduct mining operations on the patented claims.

Alternative 2 – Authorize Access to and Mining Operations on Dan Creek with National Park Service Stipulations (Proposed Action)

Past and Present Impacts

Past and present impacts to floodplains are described above.

New Impacts

Alternative 2 would be unlikely to affect the Nizina River or Dan Creek floodplains directly, as the mining operations are confined to uplands in the Dan Creek valley. Vehicle operations upon the gravel Nizina River floodplain would be confined to an 8-12 foot wide corridor over a six-mile zone. Riparian

vegetation borders the barren floodplains. Anticipated or potential impacts would not measurably decrease the floodplain's overall function.

Cumulative Impacts

The past and present impacts to floodplains described above would be expected to remain, though gradually lessening over time. Alternative 2 would add indirect, low intensity but long term impacts to contextually-important floodplains.

Conclusion

Alternative 2 would result in indirect, low intensity long term negative impacts to local floodplains. However, while its contribution to the local area is of low intensity, its summary impact is minor in terms of the park's total area of naturally functioning floodplains.

4.2.7 Socioeconomic Environment

Alternative 1 – No Action Alternative. No Access or Mining Operations Authorized

Past and Present Impacts

Past and present actions that have impacted the socioeconomic environment in Nizina Study Area (NPS 1990) include past mining activities; construction and maintenance of the Dan Creek Road; the subdivision and development of private property on lower Dan Creek and the area's associated increase in local population; and the initiation of local tourism. Past mining and its associated development was largely responsible for creating the cash economy and establishing the local supply center of McCarthy, Alaska.

Conclusion

Under the no-action alternative, no access to private lands or mining operations would be authorized adversely affecting the socioeconomic environment .

Alternative 2 – Authorize Access to and Mining Operations on Dan Creek with National Park Service Stipulations (Proposed Action)

Past and Present Impacts

Past and present impacts to the socioeconomic environment are described above.

New Impacts

Alternative 2 would benefit the area's socioeconomic environment both directly and indirectly. Mining on Dan Creek would require some goods and services and create limited employment opportunities. A few jobs would possibly be filled by local residents . Some local businesses, like those in McCarthy, would either benefit directly by supplying the mine or indirectly by serving its employees. More distant businesses, like those in Chitina and Glennallen, could also benefit.

Cumulative Impacts

The past and present impacts to the socioeconomic environment described above would be expected to remain, though gradually increasing over time. As the mining operation is small and employs relatively few people, Alternative 2 would cause medium intensity, short term beneficial impact on the local socioeconomic environment.

Conclusion

Alternative 2 would result in direct and indirect, medium-intensity short-term beneficial impacts to the local socioeconomic environment. However, this action's summary impact would be minor, because its contribution would be low in terms of the park's total socioeconomic environment.

4.2.8 Recreation and Visitor Use

Alternative 1 – No Action Alternative. No Access or Mining Operations Authorized

Past and Present Impacts

Past and present mining activities did not attract many visitors to the Nizina and Dan Creek valleys. Recreation and visitor use of the area was always relatively low due to its remote location and difficult access. As the project area was private property, those seeking recreational opportunities usually found more inviting destinations elsewhere. However, local residents and landowners occasionally hunted in the lower Dan Creek valley, and some trapped there in the winter. The main Nizina Valley received more use. Commercial guides began bringing recreational visitors to the Nizina River about 1912, and such use continues.

Conclusion

Under the no-action alternative, no new impacts to recreation and visitor use would occur on parklands resulting from authorization to access Dan Creek or conduct mining operations on the patented claims.

Alternative 2 – Authorize Access to and Mining Operations on Dan Creek with National Park Service Stipulations (Proposed Action)

Past and Present Impacts

Past and present impacts to recreation and visitor use are described above.

New Impacts

Alternative 2 would affect recreation and visitor use both directly and indirectly. As the project area is private property requiring permission to visit, it currently provides few recreational opportunities for those who do not know someone there or possess an airplane. In some instances individuals could avoid the area because of perceived negative impacts to the surrounding landscape. Alternatively, visitors who are interested in observing a mining operation and understanding mining history may benefit and seek out the experience. If commercial services are developed at Dan Creek, a mix of beneficial and potentially adverse impacts may result.

Cumulative Impacts

The past and present impacts to recreation and visitor use described above would be expected to remain, though gradually increasing over time. Alternative 2 would cause low intensity, short term negative and/or beneficial impacts on recreation and visitor use.

Conclusion

Alternative 2 would result in direct and indirect, low-intensity, short term impacts on recreation and visitor use. However, this action's summary impact would be minor, because its contribution would be negligible in terms of recreation and visitor use within the park as a whole.

5.0 CONSULTATION AND COORDINATION

5.1 AGENCY CONSULTATION AND COORDINATION

The NPS is the lead agency in the development of this EA. There was no public scoping in the development of this document. NPS policies do not require public scoping during draft document preparation of an EA. This EA will be available for public review and comment for a minimum of 30 days. Following the public review period, all the public comments will be considered.

A final decision by the NPS Alaska Regional Director may come in the form of a Finding of No Significant Impact (FONSI), which would take into account any new information and public comment, and select an alternative to implement. If a FONSI is approved, it would be sent to those individuals and organizations that commented during the public review period, and it would be available on the park's web site (<http://www.nps.gov/wrst/> and <http://www.nps.gov/wrst/parkmgmt/planning.htm>) and the NPS Planning, Environment, and Public Comment web site (<http://parkplanning.nps.gov/>).

The NPS has determined that there are no T&E Species expected in the immediate project area; therefore Section 7 consultation with the USFWS is not required.

5.2 LIST OF PREPARERS

This EA was developed by the staff at Wrangell-St. Elias National Park and Preserve. The NPS holds final responsibility for all content.

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