

Analysis of the Management Situation

ANILCA Addition Sec. 502. Subject to valid existing rights, the minerals in public lands within the Copper River ANILCA addition (approximately 801,600 acres) to the Chugach National Forest, are withdrawn from location, entry, and patent under the United States mining laws. With respect to such areas, the Secretary, under such reasonable regulations as he deems appropriate, may permit the removal of nonleasable minerals from the lands in the manner prescribed by Reorganization Plan Numbered 3 of 1946 and the Act of March 4, 1917 (39 Stat. 1150; 16 U.S.C. 520), and the removal of leasable minerals from such lands in accordance with the mineral leasing laws, if the Secretary finds that such disposition would not have significant adverse effects on the administration of the area.

The Act of March 4, 1917 (39 Stat. 1150; 16 U.S.C. 520) The Secretary of Agriculture is authorized to permit the prospecting, development, utilization of the mineral resources of the lands acquired under the Act of March 1, 1911.

Reorganization Plan Numbered 3 of 1946 The functions of the Secretary of Agriculture and the Department of Agriculture with respect to the uses of mineral deposits in certain lands pursuant to the provisions of the Act of March 4, 1917, (39 Stat. 1134, 1150; 16 U.S.C. 520) . . . are hereby transferred to the Secretary of the Interior and shall be performed by him or, subject to his direction and control, by such officers and agencies of the Department of the Interior as he may designate: Provided, That mineral development on such lands shall be authorized by the Secretary of the Interior only when he is advised by the Secretary of Agriculture that such development will not interfere with the primary purposes for which the land was acquired and only in accordance with such conditions as may be specified by the Secretary of Agriculture in order to protect such purposes.

Primary Purpose for Management (ANILCA Sec. 501b): Conservation of fish and wildlife and their habitat shall be the primary purpose for management. May permit removal of nonleasable minerals if the Secretary finds that such disposition would not have significant adverse effects on the administration of the area.

Oil and Gas Potential (Jansons, U., and others, 1984; Nelson, S. W., and others, 1984)
Oil exploration in the Gulf of Alaska had its beginning in 1900 near Katalla in the southeastern part of the Forest. Oil was first produced commercially from a 40 acre tract near Strawberry Point. Oil seeps are common throughout the Katalla-Controller Bay area. Of 44 wells drilled between 1900 and 1930, almost all had some oil shows and 18 wells produced oil commercially at one time or another. In the first decade of the 1900's, production from the field was great enough that a small refinery was built to

Figure IV-50: Summary of Oil & Gas Potential

Potential	Land Status (acres)				
	National Forest Surface and Subsurface	Acquired National Forest	National Forest Surface, Reserved Minerals	ANILCA Copper River Addition (acquired)	Private Surface, Private Minerals
Oil and Gas	119,300	0	9,200	0	700
Katalla Exchange Area	29,000	0	0	0	0
Total	148,300	0	9,200	0	700

*Low potential

Analysis of the Management Situation

process the crude oil. The refined products were marketed locally to the fishing fleet although the demand was much greater than the supply. Production per well varied from 15 to 240 barrels per month. The better wells pumped every day, but in the smaller ones, oil was allowed to accumulate and pumped once a week. The refinery burned down in 1933 and was not rebuilt. Total production from the field amounted to 153,922 barrels.

Occasional attempts at further development occurred in the 1960's and in 1982 there was a renewed interest in the area. Historic levels of production were low and should be achievable again. Oil occurs in the Tertiary Poul Creek Formation which consists of complexly faulted and fractured carbonaceous shaly horizons. The formations appear to be thermally immature or are approaching the threshold of maturity. Where the formations, especially the Poul Creek, are more deeply buried, with longer burial history, they may become thermally mature and capable of generating hydrocarbons.

The U. S. Geological Survey rates approximately 160,000 acres of the area on the East Copper River Delta as having a low potential for oil and gas, see Figure IV-50. The area has a substantiated potential for oil and gas, and continued exploration of the area may be warranted.

Katalla Exchange Preference Area (1982 CNI Settlement Agreement, Section 7B) The United States, through the Secretary of Agriculture, may make available to CNI for a period of twenty-five years from the date of this Agreement, the Katalla Exchange Preference Area (approximately 56,400 acres) for oil and gas exploration, development and production (the agreement was signed on January 2, 1983 and is in effect until January 2, 2008). In the event that the Secretary or his representative makes a management decision that all or any part of the Katalla Exchange Preference Area should be made available for oil and gas exploration, development, and production through the issuance of federal oil and gas leases, or similar federal action authorizing such activities, then CNI shall have the first opportunity to acquire, by exchange, rights to explore, develop and produce oil and gas in the Katalla Exchange Preference Area subject to the conditions of this paragraph and any subsequent exchange agreement. An exchange proposal may include interests in land greater than the oil and gas estate, including fee title. The United States shall not be obligated to make a management decision on opening all or part of the Katalla Exchange Preference Area.

Coal (Jansons, U., and others, 1984; Nelson, S. W., and others, 1984)

Coal is present in the Bering River area on the Copper River Delta, and has been known since at least 1896. The coal occurs in seams that are locally thin, lack continuity, and are structurally complex. The coal rank ranges from subbituminous to anthracite.

Coal exposures consist mainly of isolated outcrops and prospect openings along the main stream courses. The intervening areas are covered with soil, moss, and other vegetation. Few coal beds have been traced for more than short distances and little is known of the maximum extent of the individual coal beds. A review of reports indicates that rapid changes in thickness are common features of coal beds in the Bering River field. Not all the descriptions indicate the cause of the thickness change, but structural deformation, in the form of squeezing and faulting, and stratigraphic thinning are represented. Twenty-two coal beds over 3 feet thick occur in a 2,700 ft. section of the Kushtaka-Kultieth Formations.

Figure IV-51: Summary of Coal Potential

Potential	Land Status (acres)				
	National Forest Surface and Subsurface	Acquired National Forest	National Forest Surface, Reserved Minerals	ANILCA Copper River Addition (acquired)	Private Surface, Private Minerals
Coal	10,500	0	0	0	26,500

Analysis of the Management Situation

Coal-bearing rocks underlie an area estimated to be about 10,000 acres of the Chugach National Forest and about 27,000 acres of Chugach Alaska Native Corporation lands, see Figure IV-51. The U. S. Geological Survey report (MF-1645-A) references hypothetical resources of 36 million short tons as determined by Holloway (1977). Gates (1946) and Sanders (1975) reported up to 3 billion short tons of coal resource. U. S. Bureau of Mines report (MLA 5-84) references coal resource estimates of this area, various researchers suggests a reserve base of 400 million short tons of coal. The outcrop length of the Kushtaka-Kultieth Formation in the area of Carbon and Monument Mountains suggests a minimum coal resource in the order of 1.2 billion short tons of coal. A coal resource of up to 3.6 billion tons has been inferred by others.

Salable Minerals

Salable minerals or mineral materials, include rock, sand, gravel, pumicite, cinders, pumice, clay, petrified wood, building stone, and riprap. Collectively they are referred to as Common Variety Minerals or Salable Minerals, they are generally sold by competitive sale to the highest bidder. Free use may be available to nonprofit associations, individuals, or government entities for use in public projects.

In 1995, the BLM (formerly Bureau of Mines), with assistance from the Forest, conducted a mineral material inventory within the Forest, along the Seward Highway corridor. This study indicates that common variety minerals of high quality are not abundant on the Forest. There are significant resources remaining on Forest land, especially if the material is to be used as borrow or fill. (Sherman, 1995)

The Chugach National Forest has a high potential for sand and gravel extraction along the rail belt between Seward, Portage, and Whittier. To date the use of sand and gravel has probably been most affected by local construction and road development and maintenance. Rock suitable for use as building stone, riprap, aggregate, and facing stone occurs in most areas of the Forest. Large riprap, called armor stone, from the Spencer Glacier area has been used for harbor projects in Whittier and Homer. (Huber, 1998)

Mineral production for the southcentral region of Alaska during 1995 totaled approximately 4.2 million tons (3.9 million metric tons) of sand and gravel worth an estimated \$11 million, Meyer, M. P., 1997. These resources were used for major road construction projects in the Anchorage and Valdez areas and major building projects in the Anchorage area.

In November 1995, the Alaska Department of Transportation released a Draft 1995 Needs List of the "Transportation Needs and Priorities in Alaska". Those projects which may affect on the Chugach National Forest include highway and road construction activities, proposed trails and recreation access projects, ports and harbor projects, and other transportation activities. The major projects included the replacement of the Canyon Creek bridge, alignment/resurfacing sections of the Sterling and Seward Highways, the Cooper Landing bypass, and the Whittier highway access.

Currently there are about 30 permits issued a year. Material is sold, disposed of as free use, and used in-house for various projects, such as campgrounds, Forest roads, and trails. Gravel pits developed in Portage Valley have been reclaimed as fish ponds.

All lands on the Chugach National Forest are open for permit application for salable minerals, with the exception of the Nellie Juan-College Fiord Wilderness Study Area and certain small withdrawn areas. Approval of permits is discretionary.

Analysis of the Management Situation

Summary of Mineral Potential

Relative ranking of the favorability of resource areas was done for volcanogenic massive sulfide, lode gold and placer gold deposits. The ranking was restricted to those types because they have had historic production or are producing at present, and they constitute the major metallic resource potential for the area. Other deposit types were not ranked because they occurred in only one area, were incompletely studied, or were considered to have a low potential.

Figure IV-52: Summary of Mineral Potential

Potential	Land Status (acres)				
	National Forest Surface and Subsurface	Acquired National Forest	National Forest Surface, Reserved Minerals	ANILCA Copper River Addition (acquired)	Private Surface, Private Minerals
Placer Gold					
Most Favorable	483,100	100	0	0	35,100
Moderately Favorable	267,900	0	0	197,300	92,000
Least Favorable	295,800	0	0	0	56,000
Un-rated Potential	199,900	300	0	189,500	125,300
No Potential	3,298,700	100	0	414,700	556,300
Total	4,545,400	500	0	801,600	864,700
Lode Gold					
Most Favorable	132,300	300	0	0	13,000
Moderately Favorable	879,000	200	0	0	37,800
Least Favorable	181,200	0	9,300	197,300	149,900
Un-rated Potential	340,900	0	0	189,500	128,300
No Potential	3,012,000	0	38,800	414,800	535,700
Total	4,545,400	500	48,100	801,600	864,700
Base Metal (Copper)					
Most Favorable	14,700	0	2,900	0	28,100
Moderately Favorable	228,400	0	1,000	189,500	153,500
Least Favorable	59,500	0	0	0	58,200
Un-rated Potential	318,500	0	0	0	20,400
No Potential	3,924,300	0	44,200	612,100	604,500
Total	4,545,400	0	48,100	801,600	864,700
Oil and Gas	119,300	0	9,200	0	700
Katalla Exchange Area	29,000	0	0	0	0
Total	148,300	0	9,200	0	700

Analysis of the Management Situation

Figure IV-53: Summary of Mineral Production on the Chugach National Forest.

Deposit Type	Past Production	Current Production	Status	Reserves
Placer Gold	133,000 ounces	Estimate <700 oz/year	Active suction dredging operations	11,750,000 cy*
Lode Gold	117,854 ounces	0	Inactive	108,440 tons*
Base Metal Deposits (Copper)	208,667,556 Lbs.	0	Inactive	>7,246,000 tons**
Coal	Unknown	0	Inactive	Estimate varies from 36 million tons to >3.6 billion tons****
Petroleum	153,922 bbls.	0	Twelve oil and gas lease applications pending	Low potential
Sand, gravel, and building stone	Unknown	[get numbers from MARs]	Active	Very large

*Estimated volume of gold bearing gravel, Jansons, U., and others, 1984

**Estimated tons of gold bearing ore, Jansons, U., and others, 1984

***Estimated tons of copper bearing ore, probably much larger, Jansons, U., and others 1984

****Largest percent occurs on private land, Jansons, U., and others, 1984

Current Management Situation

Locatable Minerals

The current Forest Plan recommends 1,703,000 acres of the Forest for designation as wilderness, which would entail withdrawal from the mineral leasing and mining laws. Currently there are two groups of mining claims within the recommended wilderness area. One group consists of approximately 25 claims on the Upper Kings River. The other group of claims consists of approximately 10 claims in the North Blackstone Bay-Shotgun Cove area. It is not known if these claims are valid or not.

Revision decision space:

Leasable Minerals

The current Forest Plan was completed prior to the Oil and Gas Leasing Reform Act of 1987. There are twelve oil and gas lease applications pending on the Copper River Delta. Forest Plan revision must decide if the areas are available for lease issuance and if available under what conditions will we lease them.

Figure IV-54: Status of Mining Claims

	1997	1996	1995	1994	1993	1992*	1991
Mining Claims**	558 ~11,160 acres	708	832 ~20,800 acres	1000	1500	2000	2000
Active Mining Operations	100	104	85	74	47	46	54



Analysis of the Management Situation

Appendix

Leasing Analyses and Decisions. As a part of the category of “Lands Available for Resource Development”, Forest Plan revision shall address the following points with respect to the Federal Onshore Leasing Reform Act of 1987:

- Display lands withdrawn from mineral leasing by an act of Congress or by an order of the Secretary of the Interior;
- Display lands recommended for wilderness allocation by the Secretary of Agriculture;
- Display lands designated by statute as wilderness study areas, unless oil and gas leasing is specifically allowed by the statute designating the study area; and
- Display lands within areas allocated for wilderness or further planning in Executive Communication 1504, Ninety-Sixth Congress (House Document No. 96-119), unless such lands subsequently have been allocated to uses other than wilderness by an approved Forest land and resource management plan or have been released to uses other than wilderness by an act of Congress.

Leasing Analyses. The leasing analysis shall be conducted by the authorized Forest officer in accordance with the requirements of 36 CFR part 219 (Forest land and resource management planning) and/or, as appropriate, through preparation of NEPA documents. As part of the analysis, the authorized Forest officer shall:

Figure IV-55: Decisions required for oil and gas drilling on National Forest Systems lands.

Decisions included in Forest Plan Revision alternatives	Responsible Agency
Location of lands administratively available for leasing, the terms and where special stipulations apply (36 CFR 228.102(d). Based upon potential or expression of interest.	Forest Service
Location of lands authorized for lesae (36 CFR 228.102(e)	Forest Service

Decision points to be made after Revision	
Application for lease submitted to Bureau of Land Management	Applicant for Lease
Verification that effects are disclosed in a NEPA document and lease is consistent with the Forest Plan (36 CFR 228.102 (e)(1).	Forest Service
Assurance that proper stipulations are included in the lease (36 CFR 228.102(e)(2).	Forest Service
Determination that operation and development is permitted, except where no surface occupancy is allowed. This determination does not necessarily permit ground-based access (36 CFR 228.192 (e)(3).	Forest Service
Lease issued.	BLM
Application for permit to drill submitted to Bureau of Land Management.	Lease Holder
Proposed Surface Use Plan submitted to Forest Service (36 CFR 228.106).	BLM
Surface Use Plan reviewed. Site-specific environment effects analysis. Surface Use Plan approved.	Forest Service
Permit to drill issued.	BLM

Analysis of the Management Situation

1. Identify on maps those areas that will be:
 - (i) Open to development subject to the terms and conditions of the standard oil and gas lease form (including an explanation of the typical standards and objectives to be enforced under the standard lease terms);
 - (ii) Open to development but subject to constraints that will require the use of lease stipulations such as those prohibiting surface use on areas larger than 40 acres or such other standards as may be developed in the plan for stipulation use (with discussion as to why the constraints are necessary and justifiable); and
 - (iii) Closed to leasing, distinguishing between those areas that are being closed through exercise of management direction, and those closed by law, regulation, etc.
2. Identify alternatives to the areas listed in paragraph (c)(1) of this section, including that of not allowing leasing.
3. Project the type/amount of post-leasing activity that is reasonably foreseeable as a consequence of conducting a leasing program consistent with that described in the proposal and for each alternative.
4. Analyze the reasonable foreseeable impacts of post-leasing activity projected under paragraph (c)(3) of this section.

Area or Forest-wide leasing decisions (lands administratively available for leasing). Upon completion of the leasing analysis, the Regional Forest shall promptly notify the Bureau of Land Management as to the area or Forest-wide leasing decisions that have been made, that is, identify lands which have been found administratively available for leasing. At such time as specific lands are being considered for leasing, the Regional Forester shall review the area or Forest-wide leasing decision and shall authorize the Bureau of Land Management to offer specific lands for lease subject to site specific NEPA Analysis in conjunction with Forest Plan Implementation.

Hardrock Minerals With Acquired Status. Under authority of the Act of March 4, 1917, (the function of which was transferred from the Secretary of Agriculture to the Secretary of the Interior by the President's Reorganization Plan 3 of 1946), prospecting permits and leases may be issued for hard-rock minerals acquired by the United States. Other special acts authorize exploration and development of hard-rock minerals in certain acquired lands not subject to the general mining laws. By law or regulation, hard-rock minerals are made subject to development under or in general accord with the plan; therefore, they are included here. The plan, therefore, covers all valuable minerals with acquired status except "leasables" as listed in FSM 2822.12.

Mineral Potential

Most Favorable Potential A mineral resource potential is high where nearly all conditions are favorable for mineral deposit formation. In these areas, geologic, geophysical, geochemical, and other data demonstrate or suggest a high probability of mineral deposits. The size, grade, and location of known deposits are important supporting data in the assessment.

Moderate Favorable Potential A mineral resource potential is moderate where favorable geologic conditions have been identified or may reasonably be interpreted to occur, but where substantiating evidence for mineral deposits is less clear-cut.

Least Favorable Potential A mineral resource potential is low when only limited evidence supports favorable geologic conditions, and indications characteristic of mineral deposits are lacking. This is a broad category that embraces areas with obvious but dispersed and apparently uneconomic mineral

Analysis of the Management Situation

occurrences, as well as areas with few indications of mineralization. It includes areas where only sparse mineral resource data exist.

Unrated Potential The area was rated as unrated when mineral indicators are present, such as prospects, favorable geology but there is little information to substantiate the indicators.

No Potential No evidence of past activity.

E. Social and Economic Environment

Current Management Situation

Society and the economy are dynamic forces, changing in ways that influence human views of forest resources and how those resources are managed. Since the 1970's, national and State of Alaska trends have shown increases in population, discretionary incomes, and leisure time. These trends have changed, and will continue to change, public demands of forest resource use, and impacting forest management. People have been demanding more services and access to forest resource, often these demands conflict with demands of other resource users, increasing the complexity of forest management and resource use issues. Using the ecosystem management approach, the human dimensions of resource management must be included and integrated with the biological and physical for the process to be considered holistic. Analysis of trends and potential impacts done at multiple scales is necessary to understand social and economic conditions within the influence of Chugach management.

At the regional level, management of the Chugach has provided or contributed to many types of employment and income in Southcentral Alaska (Municipality of Anchorage, Kenai Peninsula Borough, and Valdez-Cordova Census Area) through resource management (Figure IV-56). A portion of the local wood products industry has utilized timber resources supplied by the Chugach, supporting local employment and income. Oil, gas, and mineral exploration and extraction on Forest system lands has also contributed to local employment opportunities. Habitat managed on the Chugach supports the relatively stable fishing and seafood processing industries, the State's largest employer. The Chugach has directly and indirectly contributed to the tourism and recreation industry, including a growing sport fishing and hunting industry and non-consumptive wildlife uses.

In addition to these employment opportunities and the related benefits that flow to local communities, the Forest has provided habitat for many fish, wildlife, and plant species used in subsistence activities, a critical component of Southcentral residents' life-styles. Concerns over nonuse values, values people place on the Forest resources without necessarily consuming resources or even being in the forest, have grown as societal values toward preservation gain importance. It is difficult to measure the social and cultural values people have toward forest resources, often these values are measured qualitatively rather than quantitative, but that does not make them any less important to the public or the planning process.

At the local level, communities of Southcentral Alaska have been affected in diverse ways by management of the Forest. It is difficult to generalize these effects from community to community because they are unique in terms of population size, access, economic structure and diversity, visions of the future, and local uses of the Forest (Figure IV-57). Trends present at the regional or borough/census area level manifest themselves in different ways within communities, making generalizations of communities from broader geographic areas or political boundaries difficult. Potential effects associated with Forest management depend on several variables – some within Forest Service control, such as where and how resources may be used, and some outside Forest Service control, such as which companies take advantage of resource opportunities, and current market conditions. Many individuals choose to live