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

and play in communities within and adjacent to the Forest, defining their quality of life or life-style through the opportunities provided. They may expect that these opportunities will be maintained through the planning process.

Need to Establish or Change Management Direction

Many people are concerned about their employment, income, and access to resources, their community viability and stability that they feel depends upon management of the Chugach. They would like the Forest Service to continue supplying current opportunities for and access to forest resources. Other people, both inside and outside Alaska, are concerned about forest health and preservation. They are encouraging the Forest Service to manage the resources for nonuse values and non-consumptive uses. Many of these conflicting views were not present or as prominent during the last round of forest planning in 1984 as they are today. All of these competing uses should be addressed and considered within this forest planning process.

Several events within the communities of the Chugach have occurred since the 1984 plan and have or continue to have impacts on the social and economic condition. These events include the continued spruce bark beetle infestation, the 1989 Exxon-Valdez oil spill, the recent decision to build a road to Whittier, and the continued debate over federal subsistence control.

Federal regulations implemented since 1984 include changes and additions, and clarifications of social and economic analysis requirements. These include changes in the federal register, 1992, additions to the Forest Service Manual and Handbook, and the 1994 Executive Order 12898 concerning environmental justice. This executive order requires all Federal agencies to disclose potential impacts to minority and or low-income communities, and includes several processes for contacting and communicating with these communities. There is a need to understand and display social and economic impacts related to resource use and allocations within the Forest. The impacts should be considered at the national, regional and community level. There is a need to define and consider all potential effects, whether qualitative or quantitative, and to inform the public and the decision-maker.

Revision Decision Space

In selecting a final alternative it is realized that no alternative will be able to answer all the needs of the communities or individuals in Southcentral, or those outside of the Forest boundaries. Alternatives are compromises between the competing uses of the Chugach and competing definitions of quality of life. Socioeconomic concerns are broad and complex enough that they do not constitute a single issue that can be easily addressed.

Each alternative should allow for a different level of employment and income opportunity within each resource-dependent sector. The economic and social outcomes would be based on the outputs provided by management of the resource base and the private sectors ability and willingness to take advantage of these opportunities. These outcomes, both quantitative and qualitative should be measured in absolute values as well as through discussions of trends, outside forces, other resources and other users. The links between community stability and forest resource outputs and links between resource uses should also be considered by alternative. Such analysis and discussion will provide a comparison of alternatives and related costs and benefits to the decision-maker.

With this robust comparison in mind, the forest planning process should include the following:

1. A social and economic assessment, done as part of the AMS to provide background, past trends, context for the current situation, as well as benchmarks for future comparisons.

2. A social and economic impact analysis, a combination of quantitative and qualitative measures at several scales for a robust comparison of alternatives. The economic analysis would be more quantitative at regional scales where data is available, moving into qualitative discussion at the local scale where data is not available due to disclosure laws, or not collected. The social analysis would use quantifiable data where available, but would include more qualitative discussion of trends and issues at the local level.
3. Standards and Guidelines relating to Forest Service involvement and support of community development by way of collaborative stewardship.
4. Monitoring of social and economic conditions to validate impact analysis and provide feedback for adaptive management opportunities.

Classification of forest communities based on clear, specific and measurable criteria, trends and specific definition of each classification would allow for effective monitoring.

Figure IV-56: Comparison of southcentral Boroughs and Census areas, 1980, 1990 and 1995

Variable	1980	1990	1995	1980	1990	1995	1980	1990	1995
Population	175,808	227,572	251,320	25,653	41,100	46,028	8,470	10,059	10,432
Per capita income (1996 dollars)	$28,459	$28,899	$28,433	$25,281	$24,753	$23,438	$27,439	$26,986	$26,204
Employment by industry	Percent								
Ag, fish, forestry	1	1	1	11	11	9	10	11	11
Mining	3	4	3	7	5	5	0	0	0
Construction	6	5	6	7	6	6	8	4	3
Manufacturing	2	2	2	14	10	8	7	12	12
Transport. Pub. Utilities	8	8	5	6	6	6	14	14	13
Wholesale	4	4	4	2	2	2	2	1	2
Retail	13	15	17	11	14	16	9	11	12
F.I.R.E.	14	9	8	10	5	4	5	4	3
Services	21	27	29	16	24	25	18	18	23
Government	30	25	23	16	17	18	27	24	22

Source: 1969-1995 Regional Economic Information System, Bureau of Economic Analysis

Figure IV-57: Chugach Forest communities and characteristics

Community	Population 1980	Population 1990	Population 1996	Percent Change 1990-96	Percent Native 1990	Access	Subsistence Preference
Municipality of Anchorage	174,431	226,338	254,269	12.34	6	Road	Urban
Chenega Bay*	0	94	95	1.06	69	Ferry	Rural
Cooper Landing	116	243	272	11.93	1	Road	Rural
Cordova**	1,879	2,110	2,537	20.24	11	Ferry	Rural
Hope	103	161	160	-0.62	3	Road	Rural
Kenai	4,324	6,327	6,950	9.85	8	Road	Urban
Moose Pass	76	81	120	48.15	11	Road	Urban
Seward	1,843	2,699	2,914	7.97	15	Road/Ferry	Urban
Soldotna	2,320	3,482	3,968	13.96	4	Road	Urban
Sterling	919	3,802	5,378	41.15	2	Road	Urban
Tatitlek	68	119	125	5.04	86	Ferry	Rural
Valdez	3,079	4,068	4,254	4.57	5	Road/Ferry	Urban
Whittier	198	243	289	18.93	12	Train/Ferry	Rural***

*Chenega Bay was built in its present location in the mid 1908s.

**Cordova annexed Eyak in 1993.

***Whittier is currently rural, but could be reclassified with completion of the connecting road system.

Source: Alaska Department of Labor, Alaska Department of Fish & Game, Alaska Department of Community and Regional Affairs

Figure IV-58: Communities of Interest

Area	Community or Community Group
Kenai Peninsula Borough	Cooper Landing, Hope, Moose Pass, Kenai, Seward, Soldotna, Sterling
Municipality of Anchorage	Anchorage, Girdwood
Valdez-Cordova Census Area	Chenega Bay, Whittier, Cordova, Tatitlek, Valdez

Through monitoring of these criteria, changes in a community's classification would allow the Forest Service to use adaptive management and be responsive to an area's resource needs as well as providing information for future analyses.

1. Subsistence Management.

Introduction

Subsistence hunting, fishing, trapping and gathering activities on the Chugach National Forest represent a major focus of life for many Southcentral Alaskan residents. Some individuals participate in subsistence activities to supplement personnel income and provide needed food. Others pursue subsistence activities to perpetuate cultural customs or traditions. Still others participate in activities for reasons unconnected with income or tradition. For all of these individuals, subsistence is a life-style reflecting deeply held attitudes, values and beliefs.

The six rural communities within or adjacent to the Chugach are Hope, Cooper Landing, Whittier, Chenega Bay, Tatitlek, and Cordova. The first three communities are on the Kenai Peninsula. These communities are located in the northern end of the Kenai Peninsula. Cooper Landing and Hope lie on either side of Juneau Creek and Resurrection Creek, within the northern part of the Kenai mountains. This region of the Kenai Peninsula is habitat for moose, black and brown bear, mountain goats, Dall sheep. Caribou were reintroduced to the area by the Alaska Department of Fish and Game in 1965. Furbearers such a as wolves, coyote, lynx, mink, land otters, wolverine, hares, and beaver are common. A variety of freshwater fishes are present, including Chinook, chum, coho, pink and sockeye salmon which spawn in abundance around these local communities. Birds such as sandhill cranes, ptarmigan, grouse, ducks, and eagles are also found in the region. In addition to the variety of land and freshwater animals found around Cooper Landing and Hope.

Whittier, Chenega, and Tatitlek lie in the ice free areas of Prince William Sound (PWS). In addition to the upland and freshwater habitats, the area also contains saltwater wetlands and tidal flats, in addition to the extensive marine waters. These saltwater resources support a variety of saltwater resources, such as bottom fish, crab, scrimp, clams and other varieties of marine invertebrates. For residents of PWS caribou and Dall sheep are not readily available on the Chugach, but deer are also found along the coastlines and the islands of Prince William Sound.

Particularly in Prince William Sound, where the economy is highly seasonal and resource based, subsistence harvest of fish and wildlife resources takes on much importance. The use of these resources may play a major role in supplementing cash incomes during periods when opportunity to participate in the wage economy is either marginal or nonexistent. Due to the high prices of commercial products, especially in remote communities, the economic role of locally available fish and wildlife takes on added importance.

Figure IV-59: Subsistence Use in Six Communities

Community	Year	Total Harvest (lbs)	Per Capita Harvest	Average # Resources Harvest	Average # Resources Used	Percent Native
Chenega	1992	37,305	413	12	19	69
Tatitlek	1991-92	37,153	344	13	19	87
Cordova	1992	437,767	164	9	14	11
Whittier	1990-91	22,308	80	4	8	12
Hope	1990-91	16,782	111	6	9	3
Cooper Landing	1990-91	23,562	92	6	8	1

Current Management Situation

Current Forest Plan
The current Forest Plan does not specifically address issues related to or provide direction for management of fish and wildlife habitats or populations important for subsistence uses other than the following statement that subsistence uses should be given special attention and priority. Also, the effects of land management activities in subsistence uses needs to evaluated.

Current Inventory of the Subsistence Resource
The Subsistence resource inventories are available for all six rural communities that use the Chugach National Forest for subsistence activities. Subsistence resource information is available for Chenega Bay (1992), Tatitlek (1991-92), Cordova (1992), Whittier (1991), Hope (1991), and Cooper Landing (1991).

Prince William Sound and the Kenai Peninsula are used extensively by subsistence users. Of the six communities within or adjacent to the Chugach, the Native villages of Chenega and Tatitlek use the Forest the most for subsistence purposes. Chenega averages over 410 pounds per capita, while Tatitlek uses nearly 350 pounds per capita. Cordova residents harvest 164 pounds per capita, while residents of Hope, Cooper Landing, and Whittier use 111, 92, and 80 pounds per capita respectively.

Figure IV- 59 describes the subsistence use in the six communities showing that the differences in their reliance on subsistence resources. Per capita consumption serves as a useful comparison of the communities dependence on subsistence resources. Chenega (410 pounds per capita) and Tatitlek (344 pounds per capita) are typical of the small rural coastal and interior communities. Only the Arctic-Subarctic coast communities have a higher per capita consumption. Cordova was more similar to Southeast Alaska coastal communities which average about 210 pounds per capita. Hope, Cooper Landing, and Whittier demonstrated much less use on subsistence resources, generally around 100 pounds per capita. By comparison non-rural areas such as Anchorage, Matanuska-Susitna Borough, and the Kenai Borough average around 48 pounds per capita.

Table IV-60 summarizes the use amounts and patterns for the six rural communities known to use the Chugach national Forest for subsistence purposes. Included are wild resources that are found on the Chugach. The six communities are variable in the variety and amount of harvests, though all show a harvest predominance of fish, particularly salmon.

Need To Establish Or Change Management Direction

Subsistence allocation issues are becoming more contentious. To make informed decisions for this plan the Forest Service will need to provide more of the biological and social analysis on:

Basic biology and wildlife and fisheries surplus allocation data;
Levels of use, seasons of use, areas of use;
Proportion obtained from Federal public lands; and
Methods and means of harvesting subsistence resources.

Much of this information is on the GIS subsistence data layer. Additional information will have to be entered into the data layer to provide for requirements of determining whether surplus wildlife and fisheries allocation exists. This is currently the case for goats in Prince William Sound, and is on the horizon for deer in PWS and moose for the Copper River Delta. These requirements will also be required for moose and caribou in the Kenai Peninsula, when the current Customary and Traditional determinations are completed.

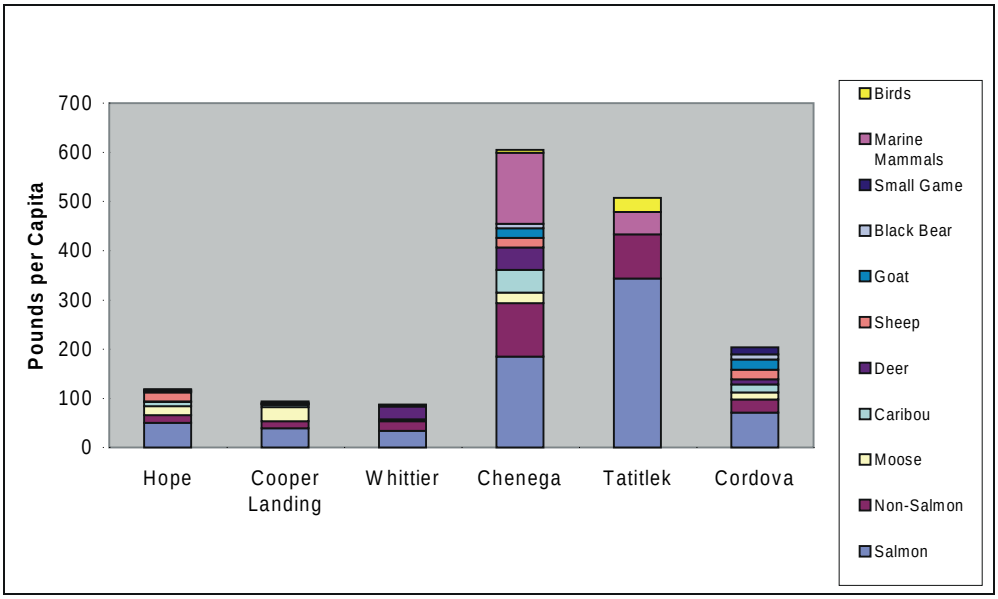
Much has changed in the subsistence arena since the Forest Plan was written. Prior to 1989, the State of Alaska was in compliance with Title VIII of ANILCA, as it recognized subsistence priority to rural residents of Alaska, and managed the wildlife and fish subsistence resources on the Chugach National Forest. In 1989, the Alaska Supreme Court decided in the *McDowell v State* that Alaska's rural subsistence priority system was unconstitutional. This ruling set up the dual fish and wildlife management system that is place today. Subsequently, the Ninth Circuit found that the Federal Subsistence Management Program wrongfully excluded navigable waters with reserved interests of the Federal Government. The Ninth Circuit held that public lands subject to the subsistence priority include navigable waters in which the United States has a reserved water right, including inland navigable waterways within and adjacent to the Forest. The action also includes selected but not conveyed lands. The net affect of these ruling is that the Chugach National Forest is actively concerned with management of wildlife and fish populations that are used for subsistence purposes.

The Revision effect should include a reassessment of the current subsistence uses with an intent to analyze the potential effects of the alternatives on subsistence uses and needs. The evaluation should examine whether the combination of past, present, or reasonable foreseeable future actions, in one or more of the alternatives, if implemented through project-level decisions and actions, might result in a significant restriction of subsistence uses of subsistence resources. An ANILCA Section 810 evaluation and determination is not required for approval of a revised Forest plan, however, a Forest-wide evaluation and determination would be most useful, as project level planning and decision making may be tiered to the determination providing for a tiering document. This should provide a template for the site specific documents providing for easier compliance with ANILCA Section 810. If a significant restriction in subsistence uses is determined, then ANILCA requires three determinations must be made. The first that the proposed actions are consistent with sound multiple-use management of public lands. Second, whether the Proposed action, consistent with sound multiple-use management of public lands, uses the minimum amount of land necessary. Forest-wide standards and guidelines or special management areas may be necessary to provide for special management or limit activities in the areas that are most important for subsistence uses, such as beach fringes or estuaries, of other areas with high fish and wildlife habitat values. Finally, reasonable steps will have to be used to minimize the impacts to subsistence uses and resources. Fish and wildlife habitat productivity will need to be maintained at the highest level possible, consistent with the overall multiple-use goals of the alternatives.

One major change that has occurred since the Forest Plan is the road access to Whittier. Here there is concern for impacts on subsistence resources, adverse impacts on their habitats, increased competition for subsistence resources and the possible dislocation of subsistence resources. For some resources, such as deer, where current harvest levels are near maximum sustainable, increased access and subsequent use could have an impact on subsistence users. This could also be the case for fish harvest watersheds adjacent to Passage Canal. The Revision of the Forest Plan needs to look at this issue and determine if there is there is a need to allocate or restrict access to recreational users to protect important subsistence use areas.

In summary, the revision process should be used to incorporate the concern for maintenance of subsistence uses on the Chugach National Forest. The needs for maintaining or increasing populations of fish and wildlife important to subsistence users must also be addressed in the revision process.

Figure IV-60: Subsistence Use in Six Communities



V. Other Current Management Situations

Some elements of the Forest Plan will not vary by alternative. Many of them will however have strengthened or clearer standards and guidelines or improved management direction. Reports have been written for the following resources but are not summarized here.

A. Air
B. Water
C. Soil
D. Research Natural Areas
E. Social and Economic Environment
F. Fire Management
G. Cultural Resources
H. Scenic Resources