

II. Benchmarks (Maximums/Minimums)

Figure II-1 summarizes the benchmarks for those resources with established benchmarks. Benchmarks approximate the maximum and minimum physical and biological resource production potential. For those resources with an associated market or assigned value, present net value benchmarks are also included in this analysis. They help define the range within which integrated alternatives can be developed. It is not biologically possible to develop alternatives that exceed the maximum benchmark for the resource. Similarly, the minimum benchmark approximates the background resource capability if no management were to take place. Benchmarks are not constrained by policy, budget discretionary constraints, or program and staffing requirements. In some cases benchmark analysis has not been completed.

Present net value (PNV) benchmarks are monetary benchmarks that estimate the maximum PNV of those resources having an established market value or an assigned value. PNV is a comparison between the costs and benefits of management decisions over time. For example, in comparing the costs and benefits of building a campground, most of the costs would occur in the first year of construction while the benefits would accumulate over the life of the campground. The PNV method compares costs and benefits by compressing all future benefits and costs during the life of a project or planning period into the present, in terms of today's dollars. In this analysis a four percent discount rate (as recommended within government publications) is used to account for future costs and benefits in present dollars over a 50 year time frame. The analysis is unconstrained in terms of budget, market demand, conflicts with other resources, and other factors. This analysis identifies the maximum value that could be expected for a resource, any value greater than the maximum would not be feasible.

The PNV analysis has been completed using Recreation and Wood Products resources only. These resources have established market value or assigned value, which can be used to estimate monetary benchmarks. The three areas, Kenai Peninsula, Prince William Sound and Copper River Delta, will be analyzed separately, the acres available in each resource are displayed in Figure II-2. Sport fishing, hunting and wildlife viewing were assumed to be included within the recreation values and were not to be analyzed separately. It was also assumed that because the Forest Service manages only the habitat for fish and wildlife that monetary benchmarks for the individual resources would not be appropriate. Mining was assumed to be influenced to a greater extent by mineral market conditions than potential impacts of Forest management, therefore, minerals were not included in the monetary benchmark. Similarly, commercial fishing was not analyzed as a monetary benchmark. The Forest manages the riparian habitat with best management practices and is assumed to have no impact on fish populations; while ocean currents, market prices, global supply and demand, as well as State catch limits will have greater impact than Forest management on commercial fisheries.

Analysis of the Management Situation

Figure II-1: Benchmarks

	Minimum Level Management	Current Level Management	Maximum Level Management
Biological Benchmarks			
Miles of Streams with Documented Fish Habitat (stream miles)			
All Species	4,600		7,000
Use and Occupancy Benchmarks			
Recreation (RVDs)			
Developed Recreation	65,365	558,000	1,256,400
Dispersed Recreation	1,404,630	2,170,800	11,453,500
Natural Resources Production Benchmarks			
Sports Fish Catch (thousands of adults/year)			
Coho Salmon	30.4		47.6
Chum Salmon	2.9		2.9
King Salmon	0.4		0.8
Sockeye Salmon	165		188
Pink Salmon	39		51.8
Dolly Varden	26.5		40.6
Rainbow Trout	71.5		104.6
Commercial Fish Catch (thousands of adults/year)			
Coho Salmon	329		592
Chum Salmon	885		1,365
King Salmon	2		2
Sockeye Salmon	5,284		7,126
Pink Salmon	859		1,279
Timber (thousands of board feet/year)			
Allowable Sale Quantity	0		59,872*
Personal Use	400		N/A

*Maximum Present Net Value -\$1,073,355

The PNV analysis consists of two maximum benchmarks, wood products and recreation. In terms of wood products, the average stumpage prices were used for a benefit value and unit and fixed costs were based on an average cost of past timber harvesting. The tentatively suitable land base for timber harvesting was used as the maximum number of acres available; hardwoods were not included as a commercial timber resource. Three types of logging systems, cable, helicopter, and tractor, were considered with different costs and benefits assigned by the board foot. On the Kenai Peninsula, it was assumed that the entire tentatively suitable base will be harvested in the first decade, or it would no longer be available on future decades due to Spruce Bark Beetle damage to

Figure II-2: Total acres available for resource production by area.

Area	Wood Products	Dispersed Recreation	Developed Recreation
Acres Available			
Kenai Peninsula	21,590	1,115,800	144,900
Copper River Delta	102,550	1,996,200	46,900
Prince William Sound	185,310	2,927,500	114,100
Chugach Total	309,810	6,039,500	305,900



Analysis of the Management Situation

Figure II-3: Maximum PNV benchmarks by area, over five decades

Area	Maximum Wood Products	Maximum Recreation
	Millions of 1997 dollars	
Kenai Peninsula	841	744
Copper River Delta	981	1,038
Prince William Sound	1,534	1,595
Chugach Total	3,356	3,377

the timber resource. Within the maximum wood products analysis, any acres not tentatively suitable for timber harvest were assumed to be available for recreation use, and the costs and benefits of this use were included in the PNV calculation.

Within the maximum recreation analysis, no timber harvesting occurred, with all available acres managed for recreation. Recreation acres were assigned to either dispersed or developed recreation based on the ROS inventory, which defines the current status of the Forest. Each recreation type was assigned a benefit value, based on average RPA willingness to pay values, and a resource cost, based on past budgeting. The acres of rock and ice were assigned a lower use rate than other accessible areas on the Forest to account for the limited access.

The maximum PNV benchmarks for recreation and wood products are displayed in Figure II-3. In each case, except for the Kenai Peninsula, recreation has a greater PNV over the 50 year time frame than wood products. Wood product activity has positive benefits throughout the Forest, benefits equal to or somewhat less than per unit costs. When combined with the fixed costs of managing the Forest for wood products, the total value becomes negative. Recreation management in contrast has fairly low fixed and per unit costs and recreation activity has an associated large per unit benefit. This analysis does not consider the many other types of values, benefits and costs that are associated with both recreation and tourism use of the Forest and with wood product production from the Forest. This is a single measure, as outlined in CFR 219, compares different resource uses on the Forest and represents only one way to compare these resource uses.

Benchmarks for minerals are the mineral potential and availability of the land for mineral exploration and development. National Forest System lands are generally available for mineral exploration and mining unless specifically precluded by an act of Congress or other withdrawal. There are three broad classes of laws which govern how minerals are managed on the National Forest; the laws that deal with Locatable Minerals (base and precious metals, such as gold, silver and copper); the Leasable Minerals (oil, gas, and coal, as well as metallic minerals on acquired lands); and the Salable Minerals, also called mineral materials (sand, gravel, and stone). The following table is a summary of the status of the mineral estate within the boundary of the Forest:

Figure II-4: Status of the Mineral Estate

Mineral Estate Status	Acres
National Forest System, surface and subsurface	4,545,400*
Acquired Lands	500
ANILCA Copper River Addition	801,600
Katalla Oil Exchange Area	56,400
National Forest Surface, Native Corporation Subsurface (reserved minerals)	48,100
Private/State Surface and Subsurface	864,700
Total	6,316,700

*Includes 84,400 acres of fresh water lakes.

**The Forest Service has no authority on private/state surface & subsurface.

Analysis of the Management Situation

Summary of Mineral Potential

Figure II-5 presents a relative ranking of the favorableness of resource areas that was done for volcanogenic massive sulfide (mainly copper), 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 II-5: 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
Coal	10,500	0	0	0	26,500

*Low potential