

CHAPTER 1

INTRODUCTION

ESTABLISHMENT AND PURPOSE OF THE TANANA VALLEY STATE FOREST

The Tanana Valley State Forest (TVSF) was established as a unit of Alaska's State Forest System on July 1, 1983. The law states the purpose of state forests:

The primary purpose in the establishment of state forests is "multiple use management that provides for the production, utilization, and replenishment of timber resources while perpetuating personal, commercial, and other beneficial uses of resources." (AS 41.17.200) It also clarifies that state forest land "shall be retained in state ownership." (AS 41.17.210(b)).

NOTE: Because AS 41.17 specifies that the Tanana Valley State Forest shall be retained in state ownership, the TVSF Management Plan does not identify lands for disposal. However, if legislation specifically authorizes the University of Alaska to select land within the State Forest, it will supercede AS 41.17.

The law also addresses the composition of State Forests: "The governor may propose to the legislature the establishment of state forests consisting primarily of commercially valuable forest land determined by the governor to be necessary for retention in state ownership for management under the principles of multiple use and sustained yield" (AS 41.17.210(a)). In compliance with this section, the Tanana Valley State Forest boundaries were designed to encompass mostly forestland with potential for commercial value. Lands along the major clear water rivers were generally excluded from the State Forest, even though some very productive forestland is found along the clearwater rivers.

The wildlife management objective of the Tanana Valley State Forest is "the production of wildlife for a high level of sustained yield for human use through habitat improvement techniques to the extent consistent with the primary purpose of a state forest" (AS 41.17.400(e)).

AS 41.17.200-.400 provides additional direction on management of the state forest. The law directs the Department of Natural Resources (DNR) to prepare a management plan for the state forest that "must consider and permit the uses described in AS 38.05.112(c)." These uses are:

- "commercial timber harvesting, including related activities;"
- "harvesting of forest products for personal use;"
- "fish and wildlife habitat, including"
 - "identification and protection of important wildlife habitat;"
 - "retention of riparian, wetland, and ocean-shoreline vegetation critical for fish and wildlife habitat;"
 - "classification of water bodies according to physical characteristics; and
 - "the use of silvicultural practices, commercial timber harvest, and related activities to maintain and enhance the quality of fish and game habitat;"
- "uses of forest land for non-timber purposes, including"

- "recreation, tourism, and related activities;"
- "mining, mining claims, mineral leaseholds, and material extraction;"
- "uses of fish and wildlife;"
- "agriculture, including grazing, and"
- "other resources and uses appropriate to the area, including compatible traditional uses;"
- "soil characteristics and productivity;"
- "water quality, and"
- "watershed management."

Under AS 41.17.200, DNR may "restrict the public use of the land and its resources, including timber, fish and wildlife, and minerals, only when necessary to carry out the purposes of [the Forest Resources and Practices Act]." Further, "if the commissioner finds that a permitted use is incompatible with one or more other uses in a portion of a state forest, the commissioner shall affirmatively state in the management plan that finding of incompatibility for the specific area where the incompatibility is anticipated to exist and the time period when the incompatibility is anticipated to exist together with the reasons and benefits for each finding."

In addition, AS 38.04.200 states that DNR "may not manage state land, water, or land and water so that a traditional means of access for traditional outdoor activities is restricted for the purpose of protecting aesthetic values [...] unless the restriction or prohibition is"

- "for an area of land, water, or land and water that encompasses 640 contiguous acres or less;"
- "temporary in nature and effective cumulatively less than eight months in a three-year period;"
- "for the protection of public safety and public or private property;"
- "for the development of natural resources and a reasonable alternative for the traditional means of access across the land, water, or land and water for traditional outdoor activities on other land, water, or land and water is available and approved by the commissioner; or"
- "authorized by an act of the legislature."

PURPOSE OF THIS MANAGEMENT PLAN

This management plan sets management goals for the Tanana Valley State Forest. Further, the plan sets policy on how the Department of Natural Resources (DNR) will review and address proposals for use of State Forest land by the public, industry, and other government agencies. Because the plan is designed to promote multiple use, it establishes the rules or guidelines aimed at allowing various uses to occur with minimal conflict. The plan also identifies potential development activities within the Forest.

ORGANIZATION OF THIS DOCUMENT

This chapter describes the purpose of the State Forest and management plan, the plan's relationship to other plans, the process used to develop the plan, and the physical setting of the State Forest.

Chapter 2 defines the goals and guidelines for management of each major resource in the State Forest and summarizes how the plan affects these resources.

Chapter 3 describes the policies for each of the State Forest's management units. Each management unit has a statement of management intent, a summary of existing resource values, and a list of management guidelines and activities that apply only to that unit. A chart that summarizes management direction is presented for each management unit.

Chapter 4 describes specific actions needed to implement the plan: the Forest Land Use Plan process, the formation of a citizens' advisory committee, and recommended legislative actions. The chapter discusses procedures for plan modification, and describes the process that will be used to review applications for land use authorizations.

Appendices A through I contain a glossary, mineral orders, road standards, and other supplemental information.

Finally, map plates (pocket) show locations of management units, roads and trails, the status of land that surrounds the State Forest, and other features and uses.

PHYSICAL SETTING

The State Forest encompasses 1.78 million acres and lies almost entirely within the Tanana River Basin, located in the east-central part of the state. The forest extends 265 miles from near the Canadian border to Manley Hot Springs and varies in elevation from 275 feet along the Tanana River below the Kantishna River confluence to over 5,000 feet in the Alaska Range west of the Glenn Highway, south of Tok. Almost 90 percent (1.56 million acres) of the State Forest is forested, chiefly with hardwood and hardwood-white spruce forest types. The principal tree species within the forest are paper birch, quaking aspen, balsam poplar, black spruce, white spruce, and tamarack. Almost 7 percent (121,000 acres) of the forest is shrub land, chiefly willow (Crimp, et al.1997).

The Tanana Basin is one of the coldest and warmest areas of the State. The mean July daytime high temperature in Fairbanks is 72 degrees Fahrenheit while the mean January daytime low in Tok is -30 degrees Fahrenheit. Extreme temperatures range from minus 65 degrees to 99 degrees Fahrenheit. Precipitation averages 10.4 inches including 65.1 inches of snow. The greatest amount of precipitation falls during the month of August and averages 1.86 inches. The least amount falls during the month of April and averages 0.27 inches. Generally, frost-free days occur from the first part of June to the end of August. Additional detailed climatic data is provided in Appendix H (National Oceanic and Atmospheric Administration, 1979-90).

Much of the Tanana Basin has never been glaciated, and has thick wind or river deposits with silt-rich soils that are relatively productive. Low, wet areas and north-facing slopes typically have permafrost at shallow depths. South slopes and areas subjected to flooding are permafrost-free or have deep unfrozen soils over permafrost. Precipitation is low to moderate at lower elevations, increasing at higher altitudes.

Land within the State Forest is relatively productive and accessible compared to other state holdings in the Tanana Valley. Approximately 85 percent of the State Forest is located within 20 miles of the state highway system. Eighteen communities adjacent to the State Forest total around 70,000 residents, with the majority located in the Fairbanks North Star Borough. Approximately half (1.1 million acres) of the Tanana Basin's commercial forest cover is located in the State Forest, and over 200 miles of the Tanana River are located within the forest.

PAST AND PRESENT FOREST CONDITION

Land within the Tanana Valley State Forest is part of the westernmost extension of the North American boreal forest ecosystem. The region's geologic history has greatly influenced the composition and diversity of the region's plant communities. Approximately eighteen thousand years ago, most of the Canadian-Alaskan landmass was covered by an ice sheet over a mile thick. Portions of the Tanana Valley, however, escaped glaciation. As the ice sheets retreated, plants began to colonize the bare mineral substrates. Over the past 12,000 years the current mixture of plants, animals and soils developed. Species that had the following characteristics quickly took advantage of these large expanses of new land: 1) dispersed over long distances, 2) were pollinated by wind, and 3) required mineral soil for regeneration. Many boreal species retain these characteristics today (Johnson, et al., 1995).

Under natural conditions, widespread and sometimes large-scale disturbances occur from wildland fire, flooding and erosion. Endemic populations of insects and diseases occur throughout the forest and local outbreaks occur periodically. On a smaller scale, blowdown and breakage from snow contribute to coarse woody debris in the forest ecosystem.

In the Tanana Basin, human disturbance from logging and man-caused fires increased from 1900 to 1940 when human activity expanded during the gold rush. Present forest condition reflects the history of both natural and man-caused disturbances. These disturbances have produced the mosaic of vegetation types that are characteristic of the Tanana Basin and support its native plants and animals.

When natural disturbances are reduced by human activity, such as fire suppression, the forest becomes less diverse and less able to sustain the full range of forest types, wildlife habitats, scenery, and human uses. Disturbance, either natural or man-caused, is necessary to maintain the forest, ensure a high level of productivity of renewable resources, and sustain biological diversity. Man-caused disturbance and control of natural disturbance should be conducted in a way that maintains the structure and function of the forest.

POSSIBLE EFFECTS OF A WARMING CLIMATE

At issue today is the extent to which Alaska's and the world's climate is changing. The prevalent thought is that the world's climate is warming, but not all scientists agree about the extent or duration of the effects. Climate change models, while agreeing on some aspects of climate change, predict contradictory results on others. Scientists agree that there have been large natural temperature changes in the past. Data from the studies of Antarctica's ice indicate

that the global temperature has been about 4°F (2°C) warmer than at the present, and that the earth's temperature has oscillated, varying by as much as 20°F (11°C) over the past 250,000 years. Average warming in Alaska since the 1950s has been 4°F (2°C); the greatest warming, about 7°F (4°C), has occurred in the Interior in the winter. The growing season has lengthened by more than 14 days since the 1950s. Subarctic areas are predicted to experience greater change than temperate areas. Any global changes (human-induced or natural cycles) will have a larger effect on the boreal forest than on the temperate forests to our south.

Local research has found that white spruce in productive commercial stands at low elevations in the Tanana Valley grow best in the coolest summers and least in the warmest summers. The cause is believed to be temperature-induced drought stress.

Some potential impacts to Interior Alaska include a change in plant community composition and animal habitat, including an expansion of more-productive forest into cooler and wetter sites. If temperatures rise, permafrost thawing will result. Some models predict an increase in wildfire occurrence and insect and disease problems.

Foresters and other resource managers must keep abreast of developments in the science and effects of climate change and be ready to adapt management strategies to reduce the magnitude of harmful impacts and take advantage of beneficial changes.

Works Cited:

1. Drake, J.B. 1996. Predicting climate change, in ORNL Review. Oak Ridge, TN: Oak Ridge National Laboratory.
2. Juday, G.P. 2001. Contribution to Tanana Valley State Forest plan on climate change (e-mail). Fairbanks, AK.
3. National Assessment Synthesis Team, US Global Change Research Program. 2000. Climate change impacts on the United States: the potential consequences of climate variability and change. Washington, D.C.

MANAGEMENT OVERVIEW

The Tanana Valley State Forest must be managed for multiple use and sustained yield of renewable resources. DNR will manage the State Forest to maintain the range of forest types and stand ages characteristic of the boreal forest in Interior Alaska to

- sustain the full range of resources and uses of the forest,
- ensure a high level of productivity of renewable resources,
- contribute to the regional economy and employment, and
- perpetuate biological diversity.

Decisions on managing the State Forest will be made in accordance with applicable statutes and regulations, and in consideration of biological, economic, and social conditions. The public will be involved in these decisions through planning processes and public review.

WHY PLAN FOR PUBLIC LAND?

The Tanana Valley State Forest is rich in natural resources, and there are many different ideas about how these natural resources should be used. Also, as various areas of the forest change due to man-caused and natural influences, the use of those areas of the forest will change. Although some uses directly conflict with each other, different uses can occur on the same land, provided the uses are carefully managed.

The planning process openly reviews resource information and public concerns before long-range decisions are made on state land use issues. The planning process resolves conflicting ideas on land use and lets the public know what choices were made and why.

Preparation of a management plan for the Tanana Valley State Forest is required under Title 41 of the Alaska Statutes. State agencies that are responsible for implementing the plan use a variety of methods such as timber sales, permits, leases, or contracts to manage the land and its resources. Actions of the Alaska Department of Natural Resources will be based on the approved management plan.

RELATIONSHIP OF THIS PLAN TO OTHER DNR PLANS

Several other land use plans will affect or be affected by the Tanana Valley State Forest Management Plan:

- **Tanana Basin Area Plan.** The Tanana Basin Area Plan, adopted in 1985 and updated in 1991, established land management direction for much of the state land adjacent to the State Forest. The State Forest plan was developed to be consistent with Tanana Basin Area Plan policies.
- **Fairbanks North Star Borough Comprehensive Recreational Trail Plan.** The Fairbanks North Star Borough Comprehensive Recreational Trail Plan inventories trails of regional and statewide significance in the Borough. The plan presents detailed policies and specific recommendations for trail management within and outside of the State Forest. The trail plan does not supercede the Tanana Valley State Forest Management Plan.
- **Five-Year Schedules of Timber Sales.** The DNR Division of Forestry annually prepares a Five-Year Schedule of Timber Sales for each area office -- Fairbanks, Delta, and Tok -- under AS 38.05.113. These schedules "provide a timeline that identifies timber sales, their amounts, and their locations." The Schedules also list planned transportation routes to access proposed timber sales and reforestation projects for each area. The Schedules are intended to "provide the public and the forest products industry with a basis to comment on future sale offerings." They also provide an opportunity to coordinate forest management activities among different landowners. Draft Schedules are published for public, industry, and agency review and are reviewed with the Tanana Valley State Forest Citizens' Advisory Committee prior to adoption.

- **Forest Land Use Plans (FLUPs).** The DNR Division of Forestry must prepare a FLUP for each timber sale greater than 10 acres, except for salvage harvests on land that is cleared for non-forest use (AS 38.05.112). A FLUP describes the harvest methods, access, reforestation plan, and multiple use provisions for the proposed sale. Each FLUP must consider the same list of uses required for the Tanana Valley State Forest Management Plan ((AS 38.05.112(c)); see “Establishment and Purpose of the Tanana Valley State Forest,” above). Draft FLUPs are published for public, industry, and agency review prior to adoption.
- **Interagency Fire Management Plan.** Alaska Interagency Wildland Fire Management Plan. DNR, along with other state and federal agencies and Native corporations, has developed an interagency fire management plan for Alaska. This plan identifies the appropriate level of wildland fire suppression for all lands in Alaska. In some areas, wildland fires are actively suppressed to protect life, property, or valuable resources. In other areas, wildland fires are allowed to burn to improve wildlife habitat, decrease long-term risks of severe wildland fires, and reduce the costs of fire suppression. In the Tanana Valley State Forest, Critical Protection areas have been identified where immediate and aggressive fire suppression efforts are taken to protect life and property. Critical protection areas are typically close to residential areas and cover about 1% of the State Forest. Full Protection areas also receive immediate suppression efforts to protect high value resources where fire may adversely impact resource management objectives. Full protection areas follow the major highways in the Tanana Basin, and where there are valuable resources close to access. About 79% of the State Forest is in full protection. Modified Action areas are those with high value resources where land managers may consider trade-offs of acres burned versus suppression costs. Fires are attacked immediately, but land managers guide the suppression effort. Modified protection areas cover 15% of the State Forest. Limited Action areas are those where fire is beneficial or benign, or fire fighting costs are greater than fire damage. In these areas, fires are monitored, but no suppression action is taken except to prevent fires from burning onto higher value land. About 5% of the State Forest is in limited protection areas. Fire suppression levels are reviewed annually among the agencies and major landowners. For additional information on fire management topics in this plan, see the Fire Management parts in the Scientific Resources and Timber Management sections of Chapter 2, and the Fire Disturbance section of Chapter 4.

PLANNING PROCESS

The first Tanana Valley State Forest Management Plan was adopted in 1988 following extensive participation by the public and government agencies. Under state law, the plan must be reviewed at least every five years and revised as necessary (AS 41.17.230(b)). The plan was modified in 1991 and again in 1995 to address changes concerning the Goodpaster River area and the Citizens’ Advisory Committee, respectively. Both modifications included public review. This is the first update of the management plan. The planning process generally considers a 20-year period during plan development. However, longer periods are considered for determining the allowable cut levels.

This revision is the result of work by six working groups that included public and agency members, review by the Citizens' Advisory Committee and the interagency planning team, and public review. The steps in the revision process follow.

1. Public and agencies identified issues.
2. Public-agency working groups developed recommendations to resolve the issues.
3. The Tanana Valley State Forest Citizens' Advisory Committee reviewed the working group recommendations, and revised them as needed.
4. Interagency planning team prepared a draft plan revision
5. Draft plan was reviewed by the public.
6. Final plan was prepared.
7. Revised plan was adopted and implemented.

The planning team responsible for developing this management plan is composed of representatives from the agencies listed below:

Alaska Department of Natural Resources:

Divisions of Forestry; Geological and Geophysical Surveys; Mining, Land and Water; Agriculture; and Parks and Outdoor Recreation
Alaska Department of Fish and Game
Alaska Department of Environmental Conservation
Alaska Department of Transportation and Public Facilities
Alaska Department of Community and Economic Development
Fairbanks North Star Borough
USDA Forest Service, Boreal Ecology Cooperative Research Unit

In addition, private citizens, citizens' groups, private organizations, major landowners, and other state, federal, and local agencies were involved in the planning process by participating in working groups, attending Citizens' Advisory Committee meetings, and providing comments. The original planning process included three major efforts to involve the public. Fourteen public meetings were held in the fall of 1984 to identify issues. Three open-house sessions were held to solicit comments on alternatives during the fall of 1986, and a summary brochure was distributed through the mail. Finally, 17 public meetings were held as part of the public review of the draft plan.

The revision process that updated the plan involved an initial meeting of the Planning Team in 1994 to discuss organization and procedures. A brochure was then mailed to individuals and groups throughout the Tanana Valley asking for their concerns about management of the State Forest and about how they use the State Forest's resources. The responses were summarized and concerns were categorized into five subject areas: timber, access, habitat, recreation and tourism, and the Citizens' Advisory Committee (CAC). Five working groups were formed based on those subject areas to consider the issues and to make recommendations. The five working groups held 48 public meetings and formulated recommendations on all of the issues. Issues involving the CAC were resolved first so that the new CAC could participate in the remainder of the update process. A draft amendment reorganizing the CAC was proposed in 1995. Following agency and public review and hearings in Tok, Delta Junction, Nenana, and

Fairbanks, all of the comments were considered and the amendment was adopted in October 1995. The amendment slightly changed the composition of the Committee, expanded its purview to include forestry proposals on other state lands in the Valley outside of the State Forest, and adopted a consensus approach to its business. As recommendations were completed in the four other working groups, the new CAC reviewed them and recommended its own modifications. Those recommendations are incorporated in this plan. A subcommittee of the CAC was formulated in 1997 to try to resolve multiple-use conflicts in the Cache Creek and adjacent watersheds about 20 miles west of Fairbanks. The Cache Creek project ended in August 1999. The recommendations approved or modified by the CAC are incorporated in this plan.

PLAN IMPLEMENTATION

After the plan is signed by the Commissioner of the Alaska Department of Natural Resources, it becomes state policy for the management of state lands in the Tanana Valley State Forest. All DNR land use authorizations, timber sales, road building, mineral leases, and other actions on these state lands shall comply with the provisions of this plan.

MODIFICATION OF THE PLAN

The Tanana Valley State Forest Management Plan must be a flexible tool so that it can change as economic, social, and environmental conditions change. DNR will review this management plan at least once every five years and will revise it as necessary, in compliance with AS 41.17.230(b).

The plan may be amended if approved by the Commissioner of the Department of Natural Resources after public review and consultation with appropriate agencies. A minor change to the plan, such as clarifying intent or correcting an inconsistency, does not require public review. Special exceptions to the plan can occur when compliance with the plan is impossible or impractical. However, a request for a special exception must follow certain procedures (see Chapter 4, Plan Modification).