

CHAPTER 2: FORESTWIDE MANAGEMENT POLICIES

INTRODUCTION

This chapter describes the overarching management policies for each of the major resources, land categories or management concerns affected by the plan:

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|------------------------------|----------------------------|----------------------|
| A. Cultural Resources | F. Carbon Offset Projects | M. Non-timber Forest |
| B. Water Resources | G. Hazardous Fuels | Products |
| C. Riparian and Instream | H. Grazing and Agriculture | N. Tourism |
| Flow Management | I. Private Land | O. Recreation |
| D. Fish and Wildlife Habitat | J. Scientific Resources | P. Trails |
| E. Forest Health and | K. Subsurface Resources | Q. Public Access |
| Climate Change | L. Timber Management | R. Transportation |

For each topic, the information is divided into goals and specific management guidelines. Goals represent the general conditions the Division of Forestry and Fire Protection (DOF) is trying to achieve, while management guidelines are specific courses of action that will be applied to management decisions. These policies apply to state-owned land within the Tanana Valley State Forest (TVSF). They do not apply to other adjacent State, Federal, or private lands.

The following terms have specific meaning in the context of this plan and are used frequently in this chapter. Additional definitions are in Appendix A.

Consultation: Under existing statutes, regulations and procedures, the Department of Natural Resources informs other groups of its intention to take a specific action(s) and seeks their advice or assistance. Consultation is not intended to be binding on a decision; it is a means of informing affected organizations and individuals about forthcoming decisions and getting the benefit of their expertise.

Feasible: Capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, technical, and safety factors.

Feasible and Prudent: Consistent with sound engineering practice and not causing environmental, social, or economic problems that outweigh the public benefit to be derived from compliance with the standard which is modified by the term “feasible and prudent”.

Goal: A general statement of intent, usually neither quantifiable nor having a specified date of completion. Goals identify desired long-range conditions.

Guideline: A specific course of action that must be followed when a resource manager permits, leases, or otherwise authorizes use of state lands. Some guidelines state the intent that must be followed and allow flexibility in achieving it. Guidelines also range from giving general guidance for decision-making or identifying factors that need to be considered to setting detailed standards for on-the-ground decisions.

Policy: An intended course of action or a principle for guiding actions. In this plan, DNR policies for land and resource management include goals, management intent statements, management guidelines, planned activities, implementation plans and procedures, and various other statements of DNR's intentions.

Shall: Requires a course of action or set of conditions to be achieved. A guideline modified by the word 'shall' must be followed by resource managers or users. If such a guideline is not complied with, a written decision justifying the noncompliance is required (see Appendix B, Finding of Incompatibility).

Should: States intent for a course of action or set of conditions to be achieved. A guideline modified by the word 'should' states the plan's intent and allows a resource manager to use discretion in deciding the specific means for best achieving the intent or whether circumstances justify deviation from the intended action or set of conditions. A guideline may include criteria for deciding if such a deviation is justified.

Will: Same as 'shall' (above), however, when the word 'will' refers to a planned management activity by DNR or another agency, the carrying out of this activity is contingent on available funding.

A. CULTURAL RESOURCES

GOALS

Cultural Resources

In accordance with the Alaska Historic Preservation Act of 1971 ([AS 41.35](#)) it is the policy of the state to preserve and protect the historic, prehistoric, and archeological resources of Alaska from loss, desecration, and destruction so that the scientific, historic, and cultural heritage embodied in these resources may pass undiminished to future generations.

Examples of cultural resource sites that could be encountered include (but are not limited to): historical cabin remains (collapsed, standing, or foundations); historic trails; adits; dredges or other mining equipment; cultural depressions or pits; graves or cemeteries; prehistoric tools or artifacts; and paleontological (fossilized) remains.

MANAGEMENT GUIDELINES

Cultural Resource Identification

DNR identifies and determines the significance of cultural resources in the Tanana Valley State Forest through:

1. Cultural resources surveys conducted by qualified DNR personnel or pre-qualified and agency approved professional organizations.
2. Encouragement of research on cultural resources within the Tanana Valley State Forest by qualified individuals and organizations.
3. Cooperative efforts between state, federal, and Alaska Native groups for planned surveys and inventories.

Cultural Resource Protection

Protect cultural resources through the following actions:

1. Review proposed land uses and management activities for potential conflicts with cultural resources values.
2. Cooperate with concerned government agencies, Alaska Native organizations, statewide or local groups, and individuals to develop guidelines and recommendations on how to avoid or mitigate identified or potential conflict.

Cultural Resources in Timber Management Areas

The Division of Parks and Outdoor Recreation Office of History and Archaeology (OHA) will review proposals for timber management activities through the interagency review processes for the Five-Year Schedule of Timber Sales and Forest Land Use Plans for individual sales. Areas of known historic, archaeological, or paleontological sites should not be disturbed. Timber operations shall not occur

within 300 feet from the boundaries of known sites unless the OHA determines, in consultation with the DOF, that certain activities can occur without significantly impacting the cultural resource. The OHA will, within the limits of staffing and funding, assess the extent and significance of the cultural resource and work with the DOF to develop site-specific avoidance, minimization, or mitigation measures to balance heritage preservation needs with timber management. In the event that staffing or funding limitations prevent OHA personnel from performing these surveys, they may be contracted out to qualified cultural resource professionals.

Report Cultural Sites When Found

The Alaska Heritage Resources Survey (AHRs) is an inventory of all reported historic and prehistoric sites within the State of Alaska and is maintained by the Office of History and Archaeology (OHA). The AHRs is used to protect cultural resource sites from destruction. By knowing of possible cultural resources prior to the start of a project, efforts can be made to avoid project delays. Only a very small portion of the state has been surveyed for cultural resources and therefore the possibility remains that previously unreported resources may be located within the project area. Should inadvertent discoveries of cultural resources occur during a project, activities in the area should cease and OHA notified to evaluate whether the resources should be preserved in the public interest (as specified at Section [41.35.070\(d\)](#)). While over 22,000 sites have been reported within Alaska, this is probably only a very small percentage of the sites which may exist but are as yet unreported. The AHRs is not complete or static, so cultural sites, when found, should be reported to OHA.

ACTIVITY SUMMARY

This plan lists cultural sites within the Tanana Valley State Forest (Table 2.1). DPOR's Office of History and Archaeology (OHA) has more information on the type and location of each of these sites, so that impacts on them may be avoided or mitigated. The sites are identified by number, rather than by name or location, to protect them from vandalism.

Table 2.1. Cultural Sites Identified within Tanana Valley State Forest.

Unit	Number of Sites	AHRS Number
11	2	XBD-00023, XBD-00024
South of Tanana River, east of Delta River, on western portion of landform	11	XBD-00313 to XBD-00321, XBD-00327, XBD-00328
South of Tanana River, east of Little Delta River	1	XBD-00166
10A	4	XBD-00074, XBD-00077, XBD-00081, XBD-00201
10C	2	XMH-00246, XMH-01236
10D	2	XBD-00023, XBD-00024
8A	8	XBD-00014, XBD-00063, XBD-00065, XBD-00172, XBD-00173, XBD-00131, XBD-00331, XBD-00409
8B	1	XBD-00004
8C	2	XBD-00246, XBD-00363
9A	1	XBD-00019
6	4	FAI-00113 to FAI-00116
2D	1	FAI-02177
2E	4	FAI-00076, FAI-00621, FAI-02177, FAI-01447
3A	3	LIV-00031, LIV-00569, LIV-00788
3B	7	LIV-00556, LIV-00732, LIV-00748, LIV-00776, LIV-00780 to LIV-00782
4D	4	FAI-00013, FAI-02102, FAI-02202, FAI-02385
5A	6	FAI-00215, FAI-00216, FAI-00437, FAI-00438, FAI-02179, FAI-002263
7A	1	XBD-00296
7B	7	XBD-00012, XBD-00124, XBD-00169, XBD-00175, XBD-00176, XBD-00331, XBD-00409
7C	3	XBD-00011, XBD-00042, XBD-00168
10C	2	XMH-00394, XMH-01481
12B	8	TNX-00066, TNX-00203, TNX-00204, TNX-00244 to TNX-00248
13A	1	TNX-00118
13B	1	TNX-00238

B. WATER RESOURCES

GOALS

Water resources within TVSF include surface and ground water. These resources represent potential sources of drinking water, habitat, recreation, and hydroelectric power. Alaska’s Forest Resources & Practices Act (FRPA), AS 41.17, specifies that “the [DNR] Commissioner shall protect riparian areas from the significant adverse effects of timber harvest activities on fish habitat and water quality.”

Management of riparian areas is the primary tool DOF uses to address water quality within TVSF.

The primary water resource goals in TVSF include:

1. The adequate preservation of fish habitat by maintaining a short- and long-term source of woody debris, stream bank stability, channel morphology, water temperatures, stream flows, water quality, adequate nutrient cycling, food sources, clean spawning gravels, and sunlight (AS 41.17.115(a))
2. Ensure the water use classes and subclasses identified at 18 AAC 70.020(a)(1) are protected.
3. Consideration of water resources and water quality in designing the construction of roads, bridges, culverts, and other infrastructure necessary for forestry activities within state forest lands.

MANAGEMENT GUIDELINES

State water quality standards (WQS) are specified under 18 AAC 70. Water quality standards establish the goals or uses of water the state wishes to protect, narrative and/or numeric criteria (e.g., chemical substances or eroded soil) used to determine attainment, and provisions pertaining to how WQS will be implemented. Land activity upstream of a site in TVSF may affect the water quality within TVSF boundaries. This might require operations within TVSF to accommodate additional water quality stipulations, even if the original source of pollution is outside TVSF boundaries.

Impaired Waters and TMDLs

A waterbody that exceeds a certain threshold of pollution (i.e., criteria) may be designated by the DEC as Impaired Waters. A waterbody identified as impaired is subject to recovery plans which may include a Total Maximum Daily Load (TMDL). A TMDL identifies the amount of pollutants that a waterbody can assimilate while maintaining compliance with water quality standards. Operations within or upstream of TVSF may affect the TMDL for a body of water. While there are no waterbodies identified as Impaired within TVSF boundaries, Impaired Waters are present within the Tanana Valley and may affect management standards for waterbodies within TVSF. Information describing identification and remediation of Impaired Waters is available through the DEC Water Quality webpage.

(<https://dec.alaska.gov/water/water-quality/>).

Drinking Water Source Protection

The DEC regulates public water system sources of drinking water, which includes both surface water and

groundwater sources. These sources are identified and managed using Drinking Water Source Protection (DWSP) Areas. Activities upstream, or upgradient, of or affecting tributaries of, or groundwater used for, drinking water sources can negatively affect those sources of water and the communities that rely on them. Possible effects on downstream, or downgradient, water quality should be considered when planning land activities within DWSP Areas for public water system sources. Information about drinking water protection and links to DEC’s interactive drinking water protection webmap are available through the DEC Drinking Water Program webpage (<https://dec.alaska.gov/eh/dw/dwp/>).

Fueling, Spills, and Contamination

Guidance for prevention and preparedness, as well as the Alaska Inland Area Contingency Plan, outlining a framework for incident response in the case of a hazardous material spill, are available through the DEC Division of Spill Prevention and Response at <https://dec.alaska.gov/spar/ppr>.

ACTIVITY SUMMARY

Table 2.2. impaired waters within Tanana Valley. The following waterbodies do not pass within TVSF boundaries, but may be tributary to water within the State Forest¹.

WATERBODY	POLLUTANT OF CONCERN	RECOVERY PLAN OR TMDL
BIRCH CREEK	Turbidity	Upper Birch Creek Turbidity TMDL
CROOKED CREEK	Turbidity	Crooked Creek Watershed TMDL
DEADWOOD CREEK	Turbidity	Crooked Creek Watershed TMDL
KETCHUM CREEK	Turbidity	Crooked Creek Watershed TMDL
BOULDER CREEK	Turbidity	Crooked Creek Watershed TMDL
UPPER GOLDSTREAM CREEK	Turbidity	Goldstream Creek TMDL

¹ This information sourced from AK DEC Integrated Water Quality Monitoring and Assessment Report <https://dec.alaska.gov/water/water-quality/integrated-report>

C. RIPARIAN AND INSTREAM FLOW MANAGEMENT

GOALS

For the purposes of this document, a riparian area, as defined in [AS 41.17.950](#), is “the area 100 feet from the shore or bank of an anadromous or high value resident fish water body on state land managed by [DNR].” Instream flow refers to the rate of water moving through a waterway at a given time. Different levels of flow are targeted when managing a body of water depending on the services it is intended to provide. Water is an important resource for fish and wildlife habitat, recreation, and other human uses. These ecosystem services can be reduced or damaged by effects such as erosion or temperature changes that can result from use or disturbance. In an effort to minimize the negative impacts of land use in or near riparian areas of TVSF, DOF maintains the following goals in relation to management of waterbodies and their surrounding riparian ecosystems:

1. **Recreation:** Provide opportunities for a variety of recreational activities within publicly owned stream corridors, including remote and developed recreational activities.
2. **Fish and Wildlife Habitat Use:** Protect riparian fish and wildlife habitats and maintain existing human uses of fish and wildlife resources.
3. **Water Quality:** Protect water quality to standards established by DEC.
4. **Forest Products:** Where consistent with the above goals, and with the Forest Resources and Practices Act, provide for the harvest of timber from riparian forests.

MANAGEMENT GUIDELINES: RIPARIAN ZONES

Forest Resources and Practices Act and Regulations

The Forest Resources and Practices Act establishes and provides standards for riparian areas for forestry operations in the Northern Region ([AS 41.17.118\(a\)\(3\)](#)). The Act ([AS 41.17.115-119](#)) and regulations ([11 AAC 95.260-280](#)) also establish best management practices to prevent adverse impacts from forestry operations on fish habitat and water quality.

Special Management Zones

The areas adjacent to bodies of water are managed primarily to protect or enhance recreational values, significant fish and wildlife habitat, human uses, and water quality. Special Management Zones (SMZs) are planning tools that can be used to define mitigation practices allowing potential land use or development in sensitive habitat that might otherwise be prohibited. SMZs can be applied to side channels, sloughs, and backwaters. See Table 2.3 for a list of waterbodies indicated as habitat for anadromous fish or high value resident fish species.

The width of an SMZ will be determined on a case-by-case basis, depending on the values present in a riparian zone and the uses that are anticipated in that zone. In all cases, however, a SMZ will extend a minimum of 100 feet landward from the ordinary high-water mark of a lake or stream.

Uses Allowed in Special Management Zones

11 AAC 95.275 outlines allowable uses within riparian areas in TVSF. To the extent feasible and prudent, commercial and industrial uses, transportation facilities, and pipelines will be located outside of SMZs unless these uses are water dependent. Where it is not feasible and prudent to exclude these uses from SMZs, other measures must be developed in coordination with ADF&G and DMLW to meet the intent of these guidelines. Timber harvest may occur in SMZs if it is sited and designed to be consistent with the riparian standards specified in AS 41.17.118(a)(3) and with the primary recreation, fish and wildlife, and water-quality goals stated above.

All land use authorizations and management activities in SMZs shall provide for public access to and along public and navigable stream sides and lakeshores.

Alteration of the Hydrologic System

To the extent feasible, channelization, diversion, or damming that will alter the natural hydrological conditions and have a significant adverse impact on important riverine habitat will be avoided.

Soil Erosion

Soil erosion will be minimized by restricting the removal of vegetation adjacent to streams and by stabilizing disturbed soil as soon as possible.

Structures in Fish Habitat

See the “Structures in Fish Habitat” part of the Fish and Wildlife Habitat section of this chapter.

Water Intake Structures

See the “Water Intake Structures” part of the Fish and Wildlife Habitat section of this chapter.

Transportation Facilities in Floodplains

See the Transportation section of this chapter.

MANAGEMENT GUIDELINES: INSTREAM FLOW MANAGEMENT

Streams and Uses to Consider

Streams and other waterbodies should be considered for instream flow reservations when an identified need exists to support significant public purposes, or when the resource values of the stream are exceptional.

Under AS 46.15.145, reservation of water for instream flow is possible for four types of uses:

1. Fish and wildlife habitat. Habitat type and significance may be determined by consultation with ADF&G.
2. Recreation and park purposes.
3. Navigation and transportation purposes.
4. Sanitary and water quality purposes.

Other uses of water such as hydropower where water is diverted, impounded, or withdrawn are covered by statutes (Water Use Act) and associated regulations (AS 46.15 and 11 AAC 93.010 - .970).

ACTIVITY SUMMARY

Over 150 bodies of water and their tributaries or outlets have been identified within the TVSF as having significant fish, wildlife, recreation, or water values that will be protected within a Special Management Zone (Table 2.3). Activities and uses adjacent to or across unlisted waterbodies will be subject to interagency review and appropriate guidelines in the Forest Land Use Plan or the applicable permit review process.

Table 2.3. Waterbodies with designated special management zones.

Waterbody	Sub-Unit
Unit 1	
Hutlinana Creek (A)	1A, 1B
Baker Creek (A)	1B
Tolovana River (A)	1C
Lake 303	
Pothole Lake System	
Unit 2	
Tolovana River (A)	2D, 2E
Kantishna River (A)	2A
Iksgiza Lake	
Oblique Lake	2B
Tanana River (A)	
Unit 3	
Tolovana River (A)	
Tatalina River	3A, 3B
Unit 4	
Chatanika River (A)	4A
Washington Creek	
Hayes Creek (A)	
Goldstream Creek	4C, 4D
Unit 5	
Tanana River (A)	
Goldstream Creek	5A
Unit 6	
Chena River (A)	
Little Chena River	
Anaconda Creek	
Jenny M Creek (A)	
Mullen Slough (A)	
Unit 7	
Tanana River (A)	
Salcha & Little Salcha Rivers (A)	
Redmond Creek	7B, 7C
McCoy Creek	7C
Unit 8	
Tanana River (A)	
Clear Creek (A)	8A
Tenderfoot Creek (A)	
Rosa & Keystone Creeks	8A, 8B, 8C
Caribou Creek	8C
Kiana Creek (A)	8E

Waterbody	Sub-Unit
Unit 9	
Goodpaster River (A)	9A
Shaw Creek (A)	9A, 9B
Rapid Creek & Liscum Slough	
Lake 992	9B
Unit 10	
Tanana River (A)	
Bluff Cabin Creek (A)	10A
Clearwater Creek (A)	
Clearwater Lake Outlet (A)	
Onemile Slough (A)	
Goodpaster River (A)	10A
South Fork Goodpaster River (A)	
Volkmar River & Lake	10A, 10C
Twelvemile Lake	10C
Black & George Creek	
Unit 11	
Volkmar River & Lake	
Healy River	
Unit 12	
Tanana River (A)	
Sand Creek	12A
Billy Creek & Lakes	
T Lake	
Mansfield Creek & Lake	
Fish Lake	
Bear Creek	
Round Lake	12B
Robertson River (A)	
Unit 13	
Tanana River (A)	
Porcupine Creek	13B
Unit 14	
Tok River (A)	
Little Tok River	
Clearwater Creek	

*(A) designates anadromous water body.

Note: This list is updated with the addition of anadromous water bodies only. Other high value resident water bodies should be considered but may require a committee review.

D. FISH AND WILDLIFE HABITAT

GOALS

Wildlife Management

Manage the Tanana Valley State Forest consistent with the Forest Resources and Practices Act, which states, “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\(e\)](#)). Creation of early seral habitat to enhance harvestable surplus of game species also benefits many non-game species by simulating natural disturbances, such as upland fire and riparian flooding.

Manage Habitat Base

Manage the habitat of sufficient suitable lands and waters to provide for the diverse habitat needs of fish and wildlife resources to maintain or enhance public use and economic benefits while maintaining the natural range of species and habitat diversity of the Tanana Valley State Forest.

Ensure Access to Public Lands and Waters

Ensure access to public lands and waters where appropriate to promote or enhance responsible public use and enjoyment of fish and wildlife resources. Access improvements should be designed to match the public use objectives for the area under consideration. See also guidelines in the Public Access section of Chapter 2.

Mitigate Habitat Loss

When resource development projects occur, reduction in the quality and quantity of fish and wildlife habitat shall be mitigated, following the steps set forth in Management Guideline I, and using proven fish or wildlife habitat enhancement techniques where appropriate. The State Wildlife Action Plan (ADF&G 2015) is incorporated in the Alaska Forest Action Plan, which has a section on Forest Resource Strategies that addresses threats to forest resources (DOF 2020:64). Guidance is provided in the strategies to maintain and improve fish and wildlife habitat (DOF 2020:67-68). This includes activities recommended in the 2015 State Wildlife Action Plan as well as those specific to boreal forest wildlife in the Tanana Valley (Paragi et al. 2020).

Contribute to Economic Diversity

Protect and enhance fish and wildlife resources and habitats to contribute directly or indirectly to local, regional, and state economies through commercial, subsistence, sport, and non-consumptive uses.

Improve Wildlife Habitat

Enhance the value of habitat to fish and wildlife species through water control projects or through vegetation manipulation, including burning, crushing, timber harvest, and other management practices, such as those described for boreal forests in the 2020 Alaska State Forest Plan (AK DOF 2020:68).

MANAGEMENT GUIDELINES

A recent literature review (Paragi et al. 2020) endorsed the continued consultation between ADF&G and DOF on forest management strategies to meet habitat needs of wildlife species in managed forest. Objectives may include public desires for enhancing habitat of harvested wildlife species, DOF desires for mitigating wildlife species damage on seedlings during post-harvest or post-fire regeneration, or conservation needs of non-game species that are determined to be declining at local, regional, or distribution-wide scales. Stand-scale consultations will continue during development of the FLUP to guide practices during harvest and reforestation. Landscape-scale consultations will continue during development of the FYSTS for scoping spatial options in wood harvest to meet desired outcomes in stand type pattern or connectivity as the road network and area of managed forest expands over time based on market demands.

Activities in Important Waterfowl Habitat

Activities that require adjudication and/or plan of operation and may produce high levels of physical, acoustical, and/or visual disturbance in or adjacent to important waterfowl habitat will, to the extent practicable, be avoided during sensitive periods for waterfowl (typically May – September). Where avoidance is not feasible, ADF&G will be consulted for assistance identifying important habitat and measures to avoid or mitigate significant impacts to waterfowl and/or their habitat from activities such as boat traffic, blasting, equipment operations, or seismic operations. For activities that produce permanent or significant adverse impacts to waterfowl habitat such as construction, placement of utility lines and/or dredging and filling, ADF&G and the U.S. Army Corps of Engineers, Alaska District, will be consulted to determine if permits will be granted (i.e., activity will not cause significant adverse impacts to waterfowl habitat or no feasible alternative exists), and if restrictions or mitigation measures are required. For activities and/or structures not fully regulated via permits, such as transmission lines, ADF&G will be consulted for assistance with measures that address placement, orientation, and marking for visibility of lines that will mitigate direct impacts to waterfowl.

Special consideration should be applied to trumpeter swans and common loons and their nesting habitat (May – September; Baldassarre 2014), given their sensitivity to disturbance and state designation as a Species of Greatest Conservation Need (ADF&G 2015). Where feasible and prudent, all land use activities in or near trumpeter swan nesting habitat, including the granting of leases or permits, will be conducted to avoid disturbance to swans or detrimental alteration to the habitat. Leases or permits may include seasonal restrictions on activities to avoid disturbance to swans. Consultation with ADF&G will be necessary to identify nesting habitat and determine appropriate guidelines to follow and activities to avoid (e.g., construction of transmission lines in trumpeter swan habitat).

Structures in Fish Habitat

Permanent or temporary structures in fish-bearing waters shall be designed, constructed, and maintained to comply with the requirements of Alaska Statutes [AS 16.05.841](#), [871](#), and [881](#) to minimize or mitigate impacts on passage for all species of fish. Any structure or activity associated with the structure should not have adverse effects on anadromous fish or their migration, spawning, and rearing habitat. Water withdraw structures shall be deployed, screened, and intake rate limited to prevent the

entrapment, entrainment, or impingement of fish. ADF&G Habitat must be contacted prior to any activities occurring in fish-bearing water bodies (including water withdrawals and stream crossings) to determine if a fish habitat permit is required.

Threatened and Endangered Species

All land use activities should be conducted consistent with state endangered species statutes (AS 16.20.180--210) and the federal Endangered Species Act to avoid jeopardizing the existence of threatened or endangered species of fish or wildlife or their use of an area, and to avoid modification or destruction of their habitat. The State of Alaska also aims to prevent the need for listing under the federal Endangered Species Act by proactively mitigating threats and reversing declines through the State Wildlife Action Plan (ADF&G 2015), administered through ADF&G's Threatened, Endangered and Diversity Program.

No species listed as endangered by the State of Alaska or the U.S. Fish and Wildlife Service (USFWS), or as threatened by the USFWS, currently occur in the Tanana Valley State Forest. However, as of the writing of this document, three terrestrial species known to occur in the Tanana Valley State Forest are undergoing a Federal Species Status Assessment, which is the formal process that considers wildlife for listing under the Endangered Species Act (ESA). The species include two small mammals, the Little Brown Bat (*Myotis lucifugus*) and Northern Bog Lemming (*Synaptomys borealis*), as well as McKay's Bumblebee (*Bombus mckayii*). Depending on the outcome, further actions may be needed, and federal review of other species (e.g., declining boreal songbirds) appear likely in future.

Little Brown Bats are common forest dwellers, and though we know little about populations in interior Alaska, those in the continental U.S. may be at risk from White Nose Syndrome, a deadly fungal infection, that kills bats during hibernation. Northern Bog Lemmings are naturally uncommon to rare and associated with a variety of boreal forest habitats, including mesic areas of spruce forest with mossy understory and forest openings, such as meadows and fens. McKay's Bumblebee is a newly recognized northern species that was previously considered a subspecies of the Western Bumblebee (*Bombus occidentalis*). Monitoring efforts in Alaska are underway to understand habitat use, though bees often use mixed boreal forest edge and bluff habitats including those in disturbed, riparian areas with flowering forbs and shrubs (Fulkerson et al. 2021).

Land use activities that could potentially affect State endangered species, or Species of Greatest Conservation Need (SGCNs; ADF&G 2015), will be identified as part of interagency consultations during review of forest land use plans or other land use plan or permit actions. A preliminary list of SGCNs likely to occur in the Tanana Valley State Forest is provided in Appendix 1 of Paragi et al. (2020: 101-105). The USFWS recommends minimizing forest disturbance to reduce "incidental take" of forest birds, including many SGCNs between 1 May-15 July (<https://www.fws.gov/alaska-bird-nesting-season>).

Eagles and falcons

Activities that potentially affect bald and golden eagles will be consistent with the Bald Eagle Protection Act of 1940 as amended. Bald Eagles nest along the Tanana River in large trees. For activities within ¼ mile of known bald or golden eagle nest sites, refer to the bald eagle land management practices for Alaska. Current guidelines and locations of nests, as well as technical advice on conducting activities near eagle nest sites, should be obtained from the Northern Alaska Fish and Wildlife Field Office of the

USFWS (<https://www.fws.gov/program/eagle-management/eagle-permits>). The recommended practices are designed to prevent human disturbance to eagles, particularly during the nesting season. Specific activities that are likely to cause disturbance to eagles include major land uses such as logging, the development of new commercial and industrial sites, mining, and road construction. During the critical nesting period (defined in Alaska as 1 March-31 August), human activities such as human entry into the primary nesting zone (330 feet from the nest) and low-level aircraft operations may also cause disturbance to eagles. Leaving a few mature trees standing in harvest areas near the river and sloughs can benefit reproduction of eagles and other raptor species.

Although peregrine falcons are no longer listed under the federal Endangered Species Act, the USFWS encourages the continued conservation of these species by applying protection measures during the nesting period. They nest along the Tanana River and its tributaries in the Tanana Valley State Forest. The recommended protection measures, as well as technical advice on conducting activities near peregrine falcon nest sites, can be obtained from the Northern Alaska Fish and Wildlife Field Office of the USFWS (<https://www.fs.usda.gov/database/feis/animals/bird/fape/all.html>). Activities that may disturb nesting peregrines (1 May- 1 September) are low-flying aircraft, other noisy activities, ground level activities, and construction near nest sites during critical nesting times. In addition, activities that could have negative impacts throughout the year (not only during nesting periods) include habitat alterations, construction of permanent facilities, and pesticide use.

Habitat Enhancement

Habitat manipulation through burning, water control, timber management practices, or other measures may be used to improve habitat for certain fish and wildlife species where feasible and compatible with other primary uses. Enhancement practices will not result in significant conflicts with a subunit's primary management intent. To the extent feasible, sinuosity of timber sale boundaries increases edge effect for a given cut size to benefit wildlife species that use multiple stand ages, and sinuosity visually mimics natural disturbance patterns better than straight edges. In the 2020 Alaska Forest Action Plan (AK DOF 2020:68), Section 1.3 “*Maintain and Improve Fish and Wildlife Habitat*” highlights five principles and guidelines for boreal forest (Paragi et al. 2020) that maximize opportunities to enhance wildlife habitat while managing for timber. These voluntary approaches can proactively reduce risk of wildlife species becoming endangered and avoid the need for federal oversight under the Endangered Species Act.

Mitigation

1. When authorizing the use or development of state lands, the Department of Natural Resources and the Department of Fish and Game will evaluate the requirements of the activity or development and the benefits or impacts it may have to habitat when determining stipulations or measures needed to protect fish and wildlife or their habitats. The costs of mitigation relative to the benefits to be gained will be considered in the implementation of this policy.
2. All land use activities should be conducted with appropriate planning and implementation to avoid or minimize foreseeable or potential adverse effects on fish and wildlife populations or their habitats.
3. The department shall enforce stipulations and measures and will require the responsible party to remedy any significant damage to fish and wildlife or their habitats that may occur as a direct

result of the party's failure to comply with applicable law, regulations, or the conditions of the permit or lease.

4. When determining appropriate stipulations and measures, the department will apply, in order of priority, the following steps. Mitigation requirements listed in other guidelines in this plan will also follow these steps.
 - a. Avoid anticipated, significant adverse effects on fish and wildlife or their habitats through siting, timing, or other management options.
 - b. When significant adverse effects cannot be avoided by design, siting, timing, or other management options, the adverse effect of the use or development shall be minimized.
 - c. If significant loss of fish and wildlife habitat occurs, the loss shall be rectified, to the extent feasible and prudent, by repairing, rehabilitating, or restoring the affected area to a functional state.
 - d. DNR will consider requiring replacement or enhancement of fish and wildlife habitat when steps "a" through "c" cannot avoid substantial and irreversible loss of habitat. The Department of Fish and Game will clearly identify the species affected, the need for replacement or enhancement, and the suggested method for addressing the impact. Replacement or enhancement of similar habitats of the affected species in the same region is preferable. DNR will consider only those replacement and enhancement techniques that have either been proven to be, or are likely to be, effective and that will result in a benefit to the species impacted by the development.

Replacement or enhancement will only be required by DNR if it is determined to be in the interest of the state. Replacement may include structural solutions such as creating spawning or rearing ponds for salmon, creating wetlands for waterfowl, or non-structural measures such as research or management of the species affected, legislative or administrative allocation of lands to a long-term level of habitat protection that is sufficiently greater than that which they would have otherwise received, or other management practices to increase habitat productivity.

ACTIVITY SUMMARY

Although all lands within the State Forest serve as fish and wildlife habitat to some degree, the DNR will manage especially important habitat lands to maintain fish and wildlife production and related public use.

Fish

Waterbodies within the Tanana Valley State Forest support subsistence, sport, and personal use fisheries. Fish habitat and fisheries conservation (catch, harvest, and release) values are of primary importance within and immediately upland of streams and lakes containing anadromous and high value resident fish species (Arctic grayling, northern pike, burbot, whitefish, etc.). Special Management Zones and Riparian Standards protect important spawning and rearing habitat and resident fish populations (see the Riparian and Instream Flow Management section of this chapter). Within these zones,

development activities will be permitted only if they are determined to have minimal impact on the fish, their habitat, and water quality or be of overriding public benefit.

Wildlife

Land in the Tanana Valley State Forest provides habitat for moose, caribou, bears, furbearers, raptors, waterfowl, upland birds, and other animals. Wildlife resources are used by tourists and residents for hunting, trapping, and non-consumptive uses, such as viewing. Timber harvest and other development activities will be designed to mitigate adverse impacts on important wildlife species and habitats. Paragi et al. (2020) provides best practices for managing boreal forest habitat for both timber and wildlife resources.

Pursuant to AS 41.17.400(e), ADF&G's Division of Wildlife Conservation may manipulate various tree species (spruce, willow, paper birch, aspen, and balsam poplar) in the State Forest to increase available moose browse and begin staggered rotations of hardwood forest beneficial to ruffed grouse and other early- to mid-successional wildlife species. Examples of techniques that may be used are tractor crushing of riparian willow and bulldozer shearblading or felling of hardwoods. ADF&G and DOF monitor these treatments for habitat benefits and cost-effectiveness. Habitat enhancement projects will be listed in the Five-Year Schedule of Timber Sales or by some other public process.

The proliferation of shrubs and deciduous tree saplings that can occur after timber harvest in mature coniferous forests of the Interior may be of high quality for moose. Based on vegetation responses observed after fire in the boreal forest, any increase in nutritional quality or palatability of new growth for moose might be temporary. However, a significant increase in the availability of browse is usually maintained for 20 to 30 years after harvest, especially where browsing pressure is heavy enough to slow stand succession toward mature forest. The amount of browse produced for moose depends on many factors, including stand characteristics, silvicultural practices, and the harvest system.

Other wildlife, such as insect-eating birds and raptors, can help reduce the risks of destabilizing herbivory events, such as damage from irruptive insects and small mammals, while providing viewing opportunities for tourists and residents. Paragi et al. (2020: Table 2) highlighted management suggestions that promote beneficial activity of avian predators. For example, retaining forest patches with late-seral features across harvested areas. This provides predators with snags and cavity trees needed for nesting and hunting in a manner that mimics natural disturbance, such as fire.

Finally, voles disperse fungal spores that facilitate seedling establishment, regeneration and tree growth (Paragi et al. 2020). Retaining dispersed woody debris in open harvested areas facilitates vole movement into, and soil inoculation of, areas where conifer regeneration is desired (Paragi et al. 2020: Table 2). In central Alaska, vole herbivory is generally not extreme (Paragi et al. 2016: 122-123).

E. FOREST HEALTH AND CLIMATE CHANGE

The Tanana Valley State Forest is home to many forest insects and tree diseases. Most are inconsequential and pose little to no risk to the growth or potential value of trees within the forest. Many others, however, have the potential to decrease growth or cause decay, dieback, or mortality. Paragi et al. (2016, 2020) recommended wildlife-based management strategies to reduce the risk of insect irruptions when trees are weakened by environmental stressors (e.g., drought, fire, or floods), by maintaining a diverse suite of birds that act as insect predators. Birds can also target key pests, such as woodpecker predation of bark beetles. The following information describes the most damaging and/or common of these damage agents and their respective mitigation strategies, where applicable.

Bark Beetles and Woodborers

The TVSF is home to Alaska's two most damaging spruce-killing bark beetles, spruce beetle (*Dendroctonus rufipennis*) and the northern spruce engraver (*Ips perturbatus*). Both preferentially attack white spruce in Interior Alaska, with black spruce being considered a rare host. Large scale outbreaks of spruce beetle periodically occur in Southcentral Alaska, though spruce beetle outbreaks are uncommon in Interior Alaska. There, the northern spruce engraver, often referred to simply as *Ips*, has historically been the bark beetle more commonly associated with mortality in white spruce. *Ips* activity is often associated with stressed or damaged trees, such as those impacted by windstorms, fire, or erosion along streams. Spruce beetle outbreaks can occur in the Interior, but have been uncommon, as overwinter survival of the beetles can be impacted by the extremely cold winter temperatures and other factors.

Spruce trees killed by bark beetles or other stressors like fire, or even live spruce harvested during the growing season, are attractive to a variety of secondary woodboring insects, including ambrosia beetles (*Trypodendron* species) and the spruce sawyer beetle (*Monochamus scutellatus*). In high enough numbers, the galleries in the wood created by the larvae of both secondary woodborer species can impact merchantability and may also be of concern if logs may be exported. Additionally, the galleries created by other secondary woodborers, such as metallic woodborers and woodwasps, may also affect merchantability.

GOALS

Insects and Diseases

Protect forest resources from economically damaging insect outbreaks and disease through active forest management and silvicultural treatments. While native insects and diseases are part of the boreal forest ecosystem, severe outbreaks can reduce timber availability and negatively impact forest uses.

Climate Adaptation for Forest Health and Resilience

Enhance forest resilience to climate change by managing for changing conditions, sustaining ecosystem health, and preparing for climate-related disturbances. Interior Alaska's forests are increasingly affected by climate change (Alaska State Forest Action Plan 2020). Adaptive management will sustain ecosystem services and economic value into the future. The updated forest management plan allows flexibility to adapt as new information emerges. Encouraging multiple age classes, harvesting with consideration for

forest health, and ensuring successful regeneration of appropriate tree species are key strategies for maintaining resilient and sustainable forests.

MANAGEMENT GUIDELINES

The following sections describe major forest health threats and recommended mitigation strategies.

Bark Beetle Mitigation

To minimize the potential for bark beetle outbreaks in the Tanana Valley State Forest resulting from harvest operations, felling of white spruce or creation of white spruce slash should be avoided during and immediately preceding the spruce beetle and northern spruce engraver flight periods, if possible. The flight periods of these two beetles typically begin when temperatures reach about 60°F in the spring (often May) and continue into July. Immediately preceding the flight period, in this context, could mean a month or more before the beetle flight begins and is dependent on the relative temperatures and how quickly the cut material dries such that it is no longer suitable for bark beetles.

If cutting white spruce during or immediately preceding the beetle flight period, white spruce logs or slash (greater than 4" in diameter) resulting from project operations should be processed (e.g. milled, debarked, chipped, processed for firewood, or burned) before the next beetle flight period. The following guidelines provide more detailed recommendations.

- If suitable equipment is available, debarking of the logs and slash is preferred. Debarking will destroy the bark beetle habitat and will be most effective if the logs are debarked no later than mid-July. Prompt debarking will also limit the suitability of the logs and slash for some species of secondary woodborers.
- If cut white spruce are not promptly removed from the site, the logs should be bucked into manageable bolts (logs) and stacked into tight triangular decks of 10-15 bolts. Decks can be placed in the woods but should be placed away from residual white spruce.
- Any operations in or near white spruce should be conducted to minimize root compaction and/or mechanical damage to the lateral roots or trunks of residual trees.

Within the Tanana Valley State Forest, as within forests elsewhere in the Interior, a primary forest health concern is the potential future impact of spruce beetle. Spruce beetle outbreaks in the Interior have historically been rare, with populations presumably kept in check by extremely cold winter temperatures and other factors. Increasingly mild winters associated with climate change, however, could result in conditions conducive to better overwinter survival of spruce beetles in the region. Likewise, warmer temperatures could result in an earlier start to the beetle flight period and/or longer beetle flight periods. Increased stress on host trees could also affect their susceptibility to attack. To help evaluate these possibilities, climate researchers at UAF have been developing models (<https://uaf-snap.org/project/modeling-spruce-bark-beetle-outbreaks-in-a-warming-climate/>) to predict what spruce beetle impacts in the Interior may look like in future climate scenarios.

Defoliating Insects

The genetics of spruce budworm in Alaska are complicated, but at least two species are present, eastern spruce budworm (*Choristoneura fumiferana*) and spruce budworm (*Choristoneura orae*); both occur within the Tanana Valley State Forest. They are essentially indistinguishable and are generally collectively referred to as spruce budworm. Though outbreaks have been infrequent, spruce budworm has the potential to cause damage within the Tanana Valley State Forest. Spruce budworms can cause defoliation, top-kill, and growth losses. If the damage is severe enough over multiple consecutive years, though uncommon in Alaska, tree mortality is possible.

The hardwood tree and shrub species present within the Tanana Valley State Forest can be affected by myriad defoliating insects, the most dominant of which is typically aspen leafminer (*Phyllocnistis populiella*), a moth that affects quaking aspen and other *Populus* species; willow may occasionally be affected. This insect is commonly in outbreak across much of the Interior and within parts of the Tanana Valley State Forest each year. While the damage from this insect does not typically cause mortality, multi-year outbreaks can lead to reduced growth rates and branch dieback or top-kill. The stress imparted on the tree by repeated impacts from this insect, when coupled with other stressors such as drought, likely influence susceptibility to the mortality-causing aspen running canker (*Neodothiora populina*)². An additional defoliator that can occasionally cause extensive defoliation in quaking aspen is the large aspen tortrix (*Choristoneura conflictana*), which may also affect understory birch or spruce during outbreaks. Like many of our hardwood defoliating insects, however, outbreaks are typically short-lived, often lasting only 2-3 years before disease, predators, or other factors cause populations to crash. Large aspen tortrix-affected trees may even reflush with new leaves in the same season.

Defoliation of birch trees may also periodically occur within the Tanana Valley State Forest. Several potential defoliating species feed on birch and may cause defoliation when populations are high, including birch leafrollers (multiple species), birch aphids, and the spear-marked black moth (*Rheumaptera hastata*). Outbreaks of the spear-marked black moth have historically occurred about every 15-17 years, but like other defoliators, have been very short lived. The invasive amber-marked birch leafminer (*Profenusa thomsoni*) and late birch leaf edgeminer (*Heterarthrus nemoratus*) are also present throughout much of the Tanana Valley State Forest. Reduced growth is possible with multi-year severe outbreaks of these late season defoliators, but in low to moderate populations their damage is largely aesthetic.

With outbreaks often short-lived and long-term damage being limited for many of these defoliators, mitigation for these defoliating insects is not typically warranted.

Tree diseases

Aspen running canker (*Neodothiora populina*) is an aggressive tree disease known to occur in both the Interior and Southcentral. Of several ecoregions surveyed by researchers, disease incidence was found

² Ruess RW, Winton LM, Adams GC (2021) Widespread mortality of trembling aspen (*Populus tremuloides*) throughout interior Alaskan boreal forests resulting from a novel canker disease. PLOS ONE 16(4): e0250078. <https://doi.org/10.1371/journal.pone.0250078>

to be highest within the Tanana-Kuskokwim Lowlands ecoregion. Many Tanana Valley State Forest parcels occur within or adjacent to this ecoregion. This disease was first documented around 2014 and the causal agent was not previously known to science. Small diameter aspen trees in mature aspen stands appear to be most heavily impacted. Affected trees often die within one to two years and there are no known mitigation tactics.

Tomentosus root rot (*Onnia tomentosa*) occurs within the Tanana Valley State Forest and can affect all native conifers in the region, though white spruce and black spruce are most commonly affected. This disease, which spreads from tree to tree through root contact, can cause growth reduction, butt rot, and mortality and stay alive long after the host trees have died. Thinning should be avoided in infected stands. If restoring suspected tomentosus root rot pockets, to limit losses, keep newly planted spruce at least 10 feet from any known inoculum source or plant hardwoods.

Numerous stem decays affecting conifers, hardwoods, or both occur throughout the Interior and may be observed within the Tanana Valley State Forest. These include, among others, brown crumbly rot/red belt fungus (*Fomitopsis pinicola* complex), Artist's conk (*Ganoderma applanatum*), and red ring rot (*Porodaedalea pini*).

Invasive plants

Even in the most remote locations, an increase in activity means increased potential for introduction of invasives species. Increased road access, machinery traffic during treatment implementations, and potential recreational use of State Forest lands all have the potential to facilitate the spread of invasive species. Managing Foresters may consult guiding documents, for example, the Alaska Plant Materials Center *Strategic Plan for Invasive Weed and Agricultural Pest Management and Prevention in Alaska* (<https://plants.alaska.gov/invasives/strategic-plan.htm>), for information describing SOA protocols for invasive species prevention and mitigation.

University of Alaska Anchorage's Alaska Center for Conservation Science maintains the Alaska Exotic Plants Information Clearinghouse (AKEPIC), a database of geospatial information for non-native plant species in Alaska (<https://accs.uaa.alaska.edu/invasive-species/non-native-plants/>). This resource is available for predicting the presence of invasive plants in potential management sites or reporting observations of invasive species in the field.

Forest management practices that involve machinery, hand crews, seedlings or growing substrate, seed, or other external influences on a site are potential sources of invasive species introduction and reasonable prevention or mitigation efforts should be embedded in the design of these practices where possible.

An adaptive management approach will allow foresters to cater management decisions to the specifics of Alaska's environmental characteristics and take advantage of lessons learned in the process. By emphasizing updated information, such as future National Climate Assessments (<https://nca2023.globalchange.gov/chapter/29/>) or models produced by credible organizations like UAF Scenarios Network for Alaska & Arctic Planning (<https://uaf-snap.org/>) or researchers (Sundquist, Lutz et al 2024), and monitoring outcomes of current practices, managing foresters can keep forestry practices

relevant to the landscape as it continues to change. The opportunity to base subsequent decisions on outcomes of employed best management practices allows managers to respond to unpredictable outcomes and document the decision process for future learning. Other natural resource and economic fields may be affected by rapid or unpredictable environmental change, which may reveal opportunities for forestry practices or forest products to offer solutions.

ACTIVITY SUMMARY

Surveys and Monitoring

Each year, USDA Forest Service Forest Health Protection and DOF Forest Health staff coordinate forest health aerial detection surveys or use comparable ground-based or satellite imagery-based surveys across the state. For Interior Alaska, the Tanana Valley State Forest is among the priority areas covered by those surveys. DOF Forest Health staff provide an annual summary of forest damage documented during those surveys to Tanana Valley State Forest managers and once finalized, the spatial data from these surveys is available across the agency and publicly.

Tanana Valley State Forest managers should coordinate with DOF Forest Health staff when special forest health monitoring projects are needed. Past special monitoring projects within or near the Tanana Valley State Forest have primarily focused on monitoring bark beetle populations in response to windstorms, fuel treatments, or land clearing effort.

F. CARBON OFFSET PROJECTS

In 2023, legislation was enacted allowing the State to use its lands and natural resources for carbon management projects, including through the Carbon Offset Program authorized under [AS 38.95.400 – AS 38.95.499](#). The Carbon Offset Program enables the State to implement carbon offset projects on State land, including in the TVSF. Carbon offset projects are defined under [AS 38.95.499\(4\)](#) to include, relative to the TVSF, “afforestation, reforestation, and similar land and resource management measures that mitigate greenhouse gases by maintaining or increasing the carbon stock on state land.”

Lands within a State Forest or within a unit of state forest are managed under specific requirements set out in [AS 41.17.220](#), which under subsection (4) may include a carbon offset project undertaken under [AS 38.95.400 - AS 38.95.499](#). [AS 41.17.220](#) specifies that, if applicable, land within a State Forest shall be managed under a carbon offset project undertaken by DNR. [AS 41.17.230\(a\)](#) requires DNR, when preparing a forest management plan under [AS 41.17.400\(b\)](#), to consider and permit uses of forest land for carbon offset projects. [AS 41.17.230\(g\)](#) requires carbon offset projects to be consistent with the applicable management plan, requires the management plan to identify the land appropriate for the carbon offset project, and authorizes DNR to amend a forest management plan to allow for carbon offset projects. This management plan is amended to designate all land classifications in the Tanana Valley State Forest as available for carbon offset projects, unless specified otherwise. Specific information about prohibited or limited uses can be found in the Land Use Summary Tables in Chapter 3.

GOALS

Provide opportunities for carbon offset projects on State lands within TVSF that are compatible with the primary purpose stated in [AS 41.17.200](#) while managing TVSF in accordance with guidance and regulations specified in [AS 41.17](#), the Alaska Forest Resources and Practices Act.

Create economic opportunity for local and state economies by

- generating revenue to the State’s general fund and revenue to fund community and utility grants for renewable energy heat and power projects (AS 38.95.430 requires 20% of the revenue generated from carbon offset credit sales be deposited into the Renewable Energy Grant Fund) through the sale of carbon offset credits
- creating jobs locally and increasing the use of local support services.

Create other co-benefits for local communities by providing ecosystem benefits like improved water resources and habitat and by providing improved fishing, hunting, subsistence, recreation, and scenic opportunities.

Manage for Multiple Use. As appropriate, maintain opportunity and access for a range of uses within lands managed for carbon offset projects.

Forest health and productivity. Provide opportunities for the application of forest management practices to maintain or enhance the carbon sequestration and storage capacity of forested lands within TVSF.

MANAGEMENT GUIDELINES

The DNR Office of Project Management & Permitting (OPMP) Carbon Offset Program is responsible for planning, developing, and implementing carbon offset projects on State land, including within the TVSF. Carbon offset projects in the TVSF are subject to the requirements of [AS 38.95.400 – AS 38.95.499](#) (Carbon Offset Program) and [11 AAC 78](#) (Carbon Offset Projects on State Land), including:

Identification of potential carbon offset projects. Potential carbon offset projects within the TVSF will be identified by DNR or by recommendations from other State agencies, local governments, non-profits, tribal entities, private companies, or other members of the public.

Evaluation of potential carbon offset projects. DNR will determine whether to proceed with a potential carbon offset project by considering the economic effects, revenue potential, compatibility with other land uses, and other factors. Reforestation on carbon sequestration projects was initially considered early in market scoping (Alden 2001). Recent modeling of forest dynamics under climate scenarios included outcomes of decreasing biomass potentially important to offset evaluations (Sundquist et al. 2024).

Best Interest Findings for carbon offset projects. DNR must make a written finding that a carbon offset project serves the State’s best interests before developing a project. The best interest finding is based on information, material facts, and issues identified in the evaluation process and during public review and comment.

Registration and management of carbon offset projects. DNR will manage a carbon offset project in the TVSF in a manner consistent with a carbon registry’s standards, protocols, and methodologies. [AS 38.95.499\(10\)](#) defines “registry” to mean an organization or program that registers and issues carbon offset credits for carbon offset projects. A carbon registry is an independent carbon crediting program that enforces standards to ensure that carbon benefits (i.e. greenhouse gas emission reduction or removals from the atmosphere) from a carbon offset project are real, measurable, permanent, and verifiable.

Requirements for Carbon Offset Projects. [AS 38.95.410](#) limits the term of a carbon offset project to 55 years; requires that State land used for a carbon offset project, to the extent practicable, remain open to (1) the public for access, hunting, fishing, and other generally allowed uses and (2) other resource development; and requires that State land used for a carbon offset project remain open to mineral exploration and development.

G. HAZARDOUS FUELS AND PRESCRIBED FIRE MANAGEMENT

GOALS

As stated in AS 41.15.010 - 41.15.170, it is the responsibility of Alaska DNR to provide protection from wildland fire and other destructive agents, commensurate with the values at risk, on the TVSF. Where possible, the Division of Forestry and Fire Protection intends to use proactive measures to manage vegetation, or hazardous fuels, in a way that can mitigate the risks of wildland fire, while also achieving desired resource management conditions.

The Division of Forestry and Fire Protection maintains the following goals with respect to hazardous fuels and prescribed fire management on the TVSF:

1. Protect human life.
2. Reduce and mitigate risks of damage to communities, structures, natural and cultural resources due to wildland fire.
3. Enable fire to function in its ecological role and maintain the natural fire regime where appropriate.
4. Incorporate vegetation management techniques into Timber Management Plans to reduce and mitigate risks of damage from wildland fire.
5. Minimize adverse environmental impact of fire suppression activities.
6. Encourage Alaska-specific fire-related research.

MANAGEMENT GUIDELINES

Fire plays an important role in the health and function of Alaska's forests. While wildland fire is a key factor in maintaining ecosystem productivity, it can also present a serious threat to human life and property. Land management is one method to address this contrast and helps fortify lands against the complexities of balancing the ecological benefits of fire with protecting areas of wildland-urban interface (WUI).

Multiple land management tools have been derived from extensive research and scientific publications. Land management tools are used to help address fuels management questions ranging from local to landscape scales. Fire management options are one of those tools and are described in the Alaska Interagency Wildland Fire Management Plan. Each fire management option defines what the initial response to new fire starts within an area should entail. The designated fire management option for an area of land will influence the level to which vegetation is managed in that area. For example, Critical Protection Areas should be considered for intensive fuels management routines, while Limited Action Areas may receive no treatment consideration at all. See Table 2.4 for descriptions of Fire Management Options and a short description of the level of response appropriate for each option in the event of fire. Fuels projects on the TVSF are subject to the same planning process as timber sales. Reference the Timber Management section in Chapter 2, Section L for more information.

Table 2.4. Fire Management Options and Their Approximate Percent Area in TVSF.

<i>Protection Level</i>	<i>Description</i>	<i>Level of Response</i>	<i>Approximate % Area</i>
Critical Protection	Typically near residential areas	Immediate and aggressive fire suppression efforts to preserve life and property	1%
Full Protection	Follow the major highways in the Tanana Basin, and where there are valuable resources close to access	immediate suppression efforts to protect high value resources where fire may adversely impact resource management objectives	79%
Modified Action Areas	Contain 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	15%
Limited Action Areas	Areas where fire is beneficial or benign, or firefighting costs are greater than fire damage	fires are monitored, but no suppression action is taken except to prevent fires from burning onto higher value land.	5%

Prescribed Burns

In some areas, land use or natural resource objectives may be met using prescribed fire. For example, prescribed fire may be used for improving or creating wildlife habitat, reducing hazardous fuels, or simulating ecological succession on local or landscape scales. The policy that governs prescribed fire activities within the TVSF can be found in Chapter 2800 of the DOF Policies & Procedures Manual. Prescribed fire activities on the TVSF can only be implemented with the DNR's approval through a formal prescribed fire planning process. Prescribed fire activities are also subject to Alaska DEC regulations regarding smoke management and allowable acreage to be burned. For more information on prescribed fire, see the Alaska Interagency Fire Management Plan, the Alaska Department of Environmental Conservation webpage, and Alaska Division of Forestry and Fire Protection webpage.

Vegetation Treatment Methods

According to AWFCG's *Fuel Model Guide to Alaska Vegetation*, the vegetation profile of an area can be used to a certain extent to predict the behavior of fire, should it occur in that area. This information can be used to make informed decisions in planning efficient and economically feasible hazardous fuel management projects. Hazardous fuel reduction treatments are accomplished using two cutting methods: conventional and mechanized. The conventional method entails using hand-held tools, like chainsaws and brush cutters, to cut vegetation. The cut vegetation is typically consolidated into brush piles by hand under this treatment method. The mechanized treatment method utilizes heavy equipment to cut and remove vegetation from the treatment area. Common heavy equipment used on

hazardous fuel reduction projects includes bull dozers, excavators, shear blade, roller chopper, mastication heads and chippers.

By nature, a timber sale involves changing the vegetation structure in an area. In many cases, this includes thinning or clearing of high-resin fuels such as black and white spruce, and a resulting transition to hardwood regeneration stands. Hardwood stands tend to be less susceptible to wildfire, and the succession patterns following a timber sale may have lasting effects on the fire behavior in an area. These effects are considered when planning timber sales and should be described in the FYSTS. For areas outside of timber sales, vegetation is managed as feasible and prudent in accordance with the Alaska Interagency Fire Management Plan and Alaska DNR guidelines. The *Fuel Model Guide to Alaska Vegetation* can be accessed through the Alaska Wildland Fire Coordinating Group webpage (<https://fire.ak.blm.gov/administration/awfcg.php>), and resources such as landfire.gov provide access to geospatial layers representing features such as fuels, vegetation, or disturbance history to aid in management decision-making.

Community Management

Resources such as Community Wildfire Protection Plans (CWPP), Firewise, and Firewise Communities exist to help communities in making decisions regarding fire prevention and planning practices. Template CWPPs and Firewise educational materials are available through the Alaska Wildland Fire Coordinating Group and the DOF. The Fairbanks North Star Borough, Delta Junction and Tok all have developed CWPPs. Those CWPPs include wildland fire risk assessments, hazard mitigation tactics, and emergency response plans that directly relate to the management to the TVSF.

Research

Development of technology and methods for hazardous fuels management is inevitable. The TVSF may be identified as a location suitable for future hazardous fuels research. Should a research project be proposed on TVSF lands, managing foresters should consult existing wildland fire science publications from credible institutions, such as the University of Alaska or the Alaska Fire Science Consortium. Placement of projects on the landscape should be coordinated with the Fire and Fuels branches of the AK DOF to limit redundant or conflicting projects and to reasonably predict the effects of a project at that site. Expectations surrounding land conversions, timber resource utilization, and implications of proposed projects on the local timber base will be developed at the discretion of managing foresters at the time of project proposal.

ACTIVITY SUMMARY

To date, there has been a small amount of hazardous fuel break work within the forest boundary. A few shear blade and shaded fuel break units have been successfully implemented within the TVSF boundary. Many hazardous fuel breaks have been installed immediately adjacent to or within the proximity of the TVSF. These installations impact decision-making within the management boundary, especially regarding wildfire risk assessments and wildland fire management. As stated above, timber sales can be considered as hazardous fuels reduction.

H. GRAZING AND AGRICULTURAL ACTIVITIES

GOALS

Provide Grazing and Agricultural Opportunities

Provide land for agricultural activities such as grazing, haying, or crop harvesting within Tanana Valley State Forest while maintaining or enhancing the productive capability of the soil. Lands leased for grazing and agriculture shall be managed and utilized in accordance with approved practices for range management and soil conservation.

Fuels Management

Utilize grazing where appropriate to support the development, maintenance, or enhancement of naturally and artificially created fire breaks and wildland fire fuels management.

MANAGEMENT GUIDELINES

Use of State Land for Grazing

Agricultural activities that may include conversion of forest to non-forest or create private property rights are incompatible with the primary purpose of the state forest. Beyond the generally allowed use applications described in 11 AAC 96.018, improved or unimproved pasture grazing may be allowed in the State Forest provided the following criteria are met:

1. Land areas meet appropriate classifications according to regulation specified in 11 AAC 60.010.
2. Improved pasture grazing is known to be consistent with the management intent of the area.
3. Resulting activities will not cause access problems such as blocking trails or restricting access to public lands. If an area is fenced, gates are generally required to allow trail access. Even where trails are not present, gates are often required at specific points. Restrictions would be noted in Range Management or Grazing Operations Plan.
4. A statement is obtained from the USDA Natural Resources Conservation Service indicating that the soils are suitable without draining for improved pasture grazing.
5. Fencing of the area will generally be required. Riparian habitat adjacent to water bodies with public recreation values of regional or statewide significance, habitat values, or watershed values shall be protected by fencing, unless other feasible and prudent methods are determined.
6. At the discretion of DNR, in consultation with ADF&G, all improvements must be removed when a lease is terminated.
7. DEC recommendations regarding possible nonpoint source pollution problems are addressed.
8. Livestock feedlots are prohibited.
9. All activities are subject to a management plan.

Key Habitats

Grazing and other agricultural activities will be prohibited in Dall sheep and high-value grizzly bear habitats, Research Natural Areas, and portions of the state forest intended to protect fish and wildlife habitat and water quality, including Special Management Zones and Wetland Setbacks. In other areas, grazing will be permitted on a case-by-case basis on compatible sites (e.g., grass meadows in areas of low natural tree stocking) if consistent with the management intent of the area, and after consultation with ADF&G concerning disease and habitat risks to local wildlife populations.

Multiple Use

Lands used for grazing will be managed as multiple use lands to support a variety of public benefits, including fish and wildlife habitat and harvest, water quality maintenance, public recreation, public access, and wildland fire fuels management (11 AAC 60.130).

Grazing lands will be managed to ensure sustainable forage for domestic stock and wildlife, and in compliance with applicable regulations affecting grazing permits. Cultivation of nonnative forage crops is not permitted, and any seed used must be free of species listed in 11 AAC 34.030 *Prohibited and Restricted Noxious Weeds*.

Public access across and public use of grazing or agricultural lands may not be limited by persons holding grazing leases or permits unless approved in writing by the Department.

Grazing Permits and Leases

A grazing lease or permit issued by DNR is required for any person who releases livestock on state lands beyond generally allowed uses under 11 AAC 96.025(3)(D). Permits may be issued for 5 years. Short-term leases may be issued for up to 10 years. Permits may be issued wherever grazing is not prohibited provided fish and wildlife and other significant resources or uses are not adversely affected.

Permits or short-term leases, rather than long-term leases, should be issued in areas especially susceptible to soil erosion or water quality degradation, environmentally sensitive areas, areas with potentially conflicting uses, or areas where the level of activity and investment by the lessee does not require a long-term commitment of the land. These areas will be identified through DNR's range management plans.

Long-term leases may be issued where grazing is a designated use and where the level of activity and investment by the lessee is significant enough to require a long-term commitment of the land. Long-term leases will establish reasonable utilization standards that, if not met, may be cause for cancellation of the lease.

The requirements stated in these guidelines will be implemented through appropriate lease and permit stipulations. In addition, standards in permits or leases will follow the fencing guidelines developed cooperatively by the DNR, NRCS, and ADF&G to minimize impacts to fish, wildlife, and recreation uses.

Range Management Plans

Where grazing is anticipated to be a significant, widespread land use with potential for creating environmental harm, DNR will develop range management plans (RMP) before issuing grazing leases or permits in consultation with ADF&G, NRCS, DEC, and Soil and Water Conservation Districts. DNR will determine where range management plans are appropriate based on consultation with other affected agencies, including ADF&G. Best practices to reduce risk of introducing invasive species or pathogens shall be specified in range management plans. Mitigation practices for invasive plants exist in reforestation recommendations and in Standard Operating Procedures for wildland fire suppression.

Grazing Management Plans

In order to obtain a permit or lease, a Grazing Management Plan (GMP) must be submitted to the DNR. Grazing Management Plans are comprehensive outlines describing where animals will be grazed, the type and number of animals expected to graze, management practices, and plans to maintain multi-use management, including public access on grazing lands. Best practices to reduce risk of introducing invasive species or pathogens shall be specified in grazing operations plans. Once approved, GMPs are submitted to DNR Division of Mining, Land & Water to make the final decision about issuing authorizations. For more information, or to begin the permitting process, contact the Alaska DNR Division of Mining, Land & Water Northern Regional Office.

Standards of Approval for Grazing Management Plans

Approval will be based on consideration of the potential effects of grazing on vegetation, water quality, riparian lands, soil stability, disease transmission, livestock-predator conflicts, and competition between wildlife and stock for forage. DNR, in consultation with affected agencies, may require that appropriate measures be specified in a grazing operations plan to minimize adverse impacts. Where applicable, GMPs will be approved only when they comply with the existing range management plan for an area.

Modification of Grazing Management Plans

Modification of grazing management plans may be required if grazing activities are determined to cause significant degradation to the range or wildlife habitat, including water quality, soil stability, or sustainable forage for stock and wildlife. Determination that modification of a grazing management plan is necessary will be made by DNR in consultation with the lease or permit holder, DEC, and ADF&G.

ACTIVITY SUMMARY

There are currently no active grazing permits in the State Forest.

I. PRIVATE LAND

The Tanana Valley State Forest adjoins private land owned by Alaska Native corporations, Alaska Native allottees, and other individuals. In some areas, past state subdivisions abut the State Forest. Private owners may be affected by forest management activities and forest access.

GOALS

Minimize negative impacts of State Forest activities on adjacent privately owned land.

MANAGEMENT GUIDELINES

Resource Development Near Private Land

Timber, recreation, road, and other development activities near private land (which includes Alaska Native allotment and other Alaska Native lands) will be designed to avoid conflicts with landowners to the extent feasible and prudent. The DOF will consider using selective harvest or other partial cutting techniques within 200 feet of private land and consider potential impacts of roads on adjacent private land when planning forest road locations. During the public review process for the proposed activity, DNR will attempt to contact all private landowners whose land adjoins a proposed timber sale area, road, or other development project.

Alaska Native Allotments

A small number of parcels within the TVSF are identified as available or pending Alaska Native Allotments. The DOF will manage unadjudicated lands identified for Alaska Native Allotments within the TVSF as if they are privately owned until the adjudication process is complete. Once a parcel is adjudicated, it will be managed according to the decision to convey or retain ownership of the parcel. If an allotment parcel is retained in state ownership, it will be managed according to the primary purpose of this plan and the goals and guidelines described in this chapter.

J. SCIENTIFIC RESOURCES

GOALS

Research Natural Areas

Maintain ecologically representative or unique sites in a natural state for observational research, education, and environmental monitoring.

Experimental Forests

Provide forest land for forest research that involves site manipulation or long-term observation.

Other Scientific Values

Provide opportunities for scientific investigation and education within the Tanana Valley State Forest that will help increase knowledge of the environment and the impact of various land use activities.

MANAGEMENT GUIDELINES

Research Natural Areas

Research Natural Areas (RNAs) are intended to provide sites within which baseline ecological research and education can be conducted. It is intended that these areas be maintained in their natural state as much as possible.

Incompatible Activities and Uses: The activities in the list below require an authorization to occur and can be prohibited by not issuing a permit. The second list of activities are those that are not now restricted, that do not require a permit, and are therefore much harder for the DNR to monitor and control. Those uses would only be regulated if a problem developed with a specific activity. In addition, the second list is not a complete list; it is only a list of examples of activities that could be incompatible with other activities.

The following activities will typically not be authorized unless they are found to be consistent with the management intent for the RNA. Authorizations will be conditioned to protect RNAs from incompatible activities.

Incompatible activities that require authorizations:

- a. Timber harvest
- b. Material extraction
- c. Developed recreation
- d. Improved pasture or unimproved grazing
- e. Trapping cabins
- f. Introduction of species not endemic to the area
- g. Commercial collection of non-timber forest products.

Currently, DNR does not expect incidental individual activities to impair RNAs. However, if Generally Allowed Uses (11 AAC 96) threaten the integrity of a RNA, DNR may establish a Special Use Land designation (under 11 AAC 96.010) in the future to regulate individuals' activities within RNAs. The Special Use Land designation is consistent with the TVSF Management Plan, and may be established without an amendment to this plan. Examples of activities that may be regulated include:

Examples of activities that may become incompatible.

- a. Use of all motorized ground vehicles, such as snowmachines, tracked vehicles, four-wheel drive vehicles, pickup trucks, automobiles, and motorcycles off established rights-of-way.
- b. Campfires and warming fires.
- c. Gathering of dead and down wood, and collection of other plant materials.
- d. Camping on vegetated sites.
- e. Digging or excavating
- f. Disturbance or removal of vegetation including brushing survey lines or trails, cutting or removing vegetation.
- g. Driving livestock.
- h. Placing of markers or stakes.

Access through Research Natural Areas: An RNA shall not block access to or use of other resources. When access through a RNA is necessary (if there is no other feasible and prudent access route to resources beyond the RNA), roads will be designed and located to protect the features for which the RNA was designated, as much as possible. Roads will be designed in consultation with researchers or research agencies with a known interest in the RNA.

If DNR-authorized research is being done in the RNA, and if the researcher has notified DNR of the nature and location of their research, the researcher must be consulted before other authorizations are issued to avoid impacts to research. Access through the RNA will be designed to avoid impacts to the research site whenever possible.

The entity building the road will be required to sign the entry and exit points from the RNA.

Posting of Incompatible Activities: Signs may be posted at likely entry points to RNAs. The signs will list activities that are regulated or are incompatible with the RNA.

Mineral Exploration: Mineral exploration will be conducted in RNAs so that scientific values are minimally disrupted. Surface geophysical or geochemical surveys must show positive results before heavy equipment is permitted to operate within prospecting sites or mineral claims. Results of such surveys will be made available to the general public.

Fire Management: The DOF will consult with appropriate research agencies in planning fire suppression activities, except for initial attack, within RNAs. For additional information on fire management topics in this plan, see the Interagency Fire Management Plan section in Chapter 1, the Fire Management part of the Timber Management section of Chapter 2, and the Fire Disturbance section of Chapter 4.

Hunting and Trapping: The RNAs are open to fishing, hunting and trapping. Hunting and trapping of certain animal species of scientific interest may be restricted temporarily during periods of study. Should a research project for the RNA be conceived that requires temporary restrictions or changes to hunting, trapping, fishing, or ADF&G management activities during the period of the study, DNR shall cooperate with the appropriate division(s) of ADF&G to evaluate the proposed restriction and if necessary take measures up to and including interaction with the State Board of Game or Board of Fisheries to enact necessary restrictions.

Existing Right of Ways: A number of pipeline right-of-way leases and applications run through and adjacent to RNAs. Management of RNAs is subject to valid existing rights.

Experimental Forests

Bonanza Creek Experimental Forest: The USDA Forest Service, Pacific Northwest Research Station, has management authority for the Bonanza Creek Experimental Forest (Subunit 5B). As outlined in the lease granted to the Forest Service by the Department of Natural Resources (Appendix D), the Forest Service must approve all activities in the Experimental Forest, including timber harvest, road construction, and mineral exploration and development.

Research and demonstration forest under University of Alaska direction: The University of Alaska tentatively received title to approximately 4,007 acres in Tok as the result of legislation passed in 2005. A legal challenge to the legislation occurred, and as part of the court ruling, these lands reverted to the DMLW for management and are no longer part of the land entitlement for the University. Prior to this action the University collaborated with the DOF, as part of their studies on boreal forest systems, to establish and maintain several permanent forest research plots and an experimental tree species trial. These lands are included in the operable area, but the DOF intends to work with the University to reserve the study areas from harvest unless it is determined the research projects would be aided by active management.

Other Research Activities

Researchers are encouraged to notify the DNR of the location of their research area, and the type of research being done. A permit is not required for research that only involves Generally Allowed Uses. However, if DNR has been notified, the research site can be protected from disturbance by development activities.

ACTIVITY SUMMARY

Research Natural Areas

Six RNAs that total 12,191 acres have been set aside in their natural state for scientific and educational purposes (Table 5). Currently, there are no permits issued for research activities on the RNAs.

Table 2.5. Designated Research Natural Areas.

Research Natural Area	Subunit	Acres
Oblique (Tschute) Lake	2B	2,990
Caribou Crossing	2C	1,251
Rosa-Keystone Dunes	8B	3,243
Shaw Creek Tamarack	9B	1,910
Volkmar Bluffs	10B	1,894
Johnson Slough Bluffs	10D	903
Total		12,191

Bonanza Creek Experimental Forest

The USDA Forest Service, Pacific Northwest Research Station has renewed the lease and continue to manage the 13,596 acres for use as an experimental forest for manipulative and observational forest research. Although management authority for the Bonanza Creek Experimental Forest rests with the Forest Service, resources within the forest remain the property of the state until 2055 when the property will be conveyed to the University of Alaska.

Other Research Activities

Forestry research activities in the TVSF include permanent sample plots, selected yield plots, and Forest Inventory and Analysis plots established by the University of Alaska Fairbanks and the U.S. Forest Service. Other activities, either on-going or completed in the last 20 years, include meteorological studies, salmon monitoring studies, seismic monitoring, and permafrost observatories by the University of Alaska Fairbanks, ADF&G, and Woodwell Climate Research Center.

K. SUBSURFACE RESOURCES

GOALS

Mineral and Energy Supplies

Make metallic and nonmetallic minerals, coal, oil and gas, materials, and geothermal resources available to contribute to the energy and mineral supplies and independence of the United States and Alaska.

Economic Opportunities

Provide stable job opportunities and stimulate economic growth by making subsurface resources available for development. Land in Tanana Valley State Forest is managed for the efficient and

environmentally sound development of subsurface resources, siting of infrastructure to support subsurface resource development, and disposal of tailings.

State Revenues

Establish a stable source of state revenues.

Environmental Quality and Cultural Values

When developing subsurface resources, protect the integrity of the environment and affected cultures to the extent feasible and prudent.

State Support for Mining

Aid in the development of infrastructure (for example, ports, roads, or railroads) and continue to provide technical support to the mining industry.

Note: For goals on salvaging timber prior to development activities, see the Timber Management section, Management Guideline G., Salvage of Timber from Land Clearing.

MANAGEMENT GUIDELINES: MINERAL AND COAL DEVELOPMENT

Implementation of AS 38.05.255(a) provisions on timber

Pursuant to AS 38.05.255(a) and mining rights regulation 11 AAC 86.145(a), all lands within the legislatively designated boundaries of the Tanana Valley State Forest are “timberlands”. The locator or holder of prospecting sites, mining claims, or mineral leases must contact the DOF prior to using or clearing timber from timberlands. DNR may determine additional stipulations to be included in a land use permit or plan of operations approval regarding the clearing, use, salvage or acquisition of timber on a case-by-case basis.

Mineral and Coal Exploration

State land in the Tanana Valley State Forest may be leased or opened for coal prospecting permits if DNR determines it is in the best interest of the state as required by AS 38.05.035. Before a permit is issued, DNR will determine if the surface values are significant enough to warrant restricting surface entry. Decisions on surface entry for coal adjacent to streams will be made in consultation with the affected agencies.

Open to Mineral Location

Under AS 41.17.230, the Tanana Valley State Forest management plan is required to consider and permit uses of forest land for nontimber purposes including mineral location. Recognized exploration methods for locatable minerals will be allowed within the TVSF unless specifically closed or limited by a mineral order, leasehold location order, or special use designation. See Chapter 3 Unit Summary tables for information about limited or prohibited uses within TVSF. DNR may determine that some traditional forms of access will not be allowed in specific areas to avoid resource damage. Where an area is open to mineral entry, a miner has the right to stake a claim regardless of the surface use designation or classification. Any adverse effects of mining on surface resources or uses will be managed through compliance with state laws and regulations and the management intent and guidelines of this plan.

Reclamation of Mined Land

Land use permits and plans of operation for mineral development and gravel extraction will specify reclamation measures to meet the standards given in [AS 27.19](#). [11 AAC 97](#) details the minimum requirements for land reclamation during and after mining, though DNR may determine additional stipulations on a case-by-case basis. Determination of the specific measures to be taken and whether a performance bond will be required will be done in consultation with the affected agencies. Specific measures may include storage and reuse of topsoil; disposal of overburden; regrading of tailings and revegetation; re-establishment of natural (not necessarily original) contours; re-establishment of natural drainage systems; long-term erosion control measures; and removal of equipment, improvements, and other human-caused changes.

Access for Mineral and Coal Development

Existing roads and trails should be used to provide access to mine sites wherever feasible. Regulations for miscellaneous land use permits require that access be managed so that damage is minimal. Where coinciding with existing or reasonably foreseeable future timber harvest access routes and operations; DNR may stipulate performance standards for construction and maintenance of access roads or trails be no less stringent than those required under [AS 41.17](#) and associated regulations. Access across tundra, wetlands, and other environmentally sensitive areas will be managed to minimize damage (see the Transportation section of this chapter).

Unauthorized Use of State Lands

DNR will place a high priority on taking appropriate action against construction of illegal structures that block public access or other unauthorized use of public lands for private purposes. This will include taking appropriate action against mining claimants who use their claims for facilities that are not necessary for prospecting, extraction, or basic mining activities. In carrying out this policy, emphasis will be placed on unauthorized uses that obstruct significant settlement, public recreation, or other public uses or obstruct public access.

Control of Visual Impacts

Guidelines will be developed as necessary through the land use permit or leasing process to minimize the adverse visual impacts of mining especially in settled areas, recreation areas, and in areas viewed from roads. In such areas, guidelines should minimally consider the following items: control of solid wastes; removal of vegetation; siting of mining structures, tailings and overburden; roads; and rehabilitation of mining sites.

Approval of Plans of Operation

DNR may approve plans of operation required for locatable mineral leases if the plans adequately address the guidelines of this plan and DNR has consulted with and carefully considered the recommendations of ADF&G and DEC. Violation of the plan of operations is cause for enforced cessation of operations if, after a reasonable period of time, a negotiated solution cannot be reached with the operator, or a violation is repeated.

Guidelines for the application of locatable mineral closures

Locatable mineral closures are the most extreme management tool that can be used by DNR to resolve subsurface and other resource conflicts. AS 38.05.185(a) requires that before an area of state land can be closed to mining or mineral location, except as provided in AS 38.05.300, the commissioner must make a written finding that mining would be incompatible with significant surface uses. The area to be closed to mineral entry and location will be limited to the minimum necessary to protect the continued productivity and availability of the surface resources being protected.

Guidelines for the application of the locatable mineral leasing program

State land may not be closed to mining or mineral location unless the commissioner makes a finding that mining would be incompatible with significant surface uses. The acquisition of rights to locatable minerals may be restricted to the leasehold location system where the commissioner determines that mining would present potential conflicts with significant surface uses. Mineral leasing is preferred over mineral closure as a management option to resolve conflicts between mineral development and other significant surface uses.

Prior to restricting the acquisition of rights to locatable minerals to the leasehold location system, DNR is required to identify potential conflicts between mineral development and other significant surface uses that need protection and issue a Finding of Incompatibility. DNR will consult with ADF&G and DEC in the development of any leasehold location order stipulations needed to protect those other resources.

Resource values that may conflict with coal or mineral development

The decision to apply mineral closures or locatable mineral leasing will be made by the commissioner within the parameters set by the Alaska Statutes. AS 38.05.185(a) requires that the commissioner determine that mining is incompatible with a significant surface use before an area can be closed to mining. The same section of statutes requires the commissioner to determine that a potential use conflict exists before requiring the development of locatable minerals under a lease (see Appendix B, Finding of Incompatibility).

In some circumstances, the commissioner may find that the following categories of resource values require locatable mineral leasing or closure, or prohibit coal leasing and prospecting to protect their continued productivity and availability. In other circumstances, care during mineral development is all that may be necessary to protect these resources. The degree of conflict that could occur between mining and any other resource value is impossible to predict in all circumstances. Therefore, the following categories or resource values will be evaluated to determine if locatable mineral closure, locatable mineral leasing, prohibition of coal leasing or prospecting, special land use designation, or another management option is needed to protect the continued productivity and availability of the resource in conflict.

Lands With Significant Commercial, Industrial, or Public Use Values

- Lands with significant coal, oil and gas, timber, or other commercial potential.
- Lands recognized as future transportation corridors where access for pipelines, road, railroads, utility corridors, or other surface transportation infrastructure could be blocked or

impeded by mining claims. (After the alignment is established, areas will be reopened if there is surplus land.)

- Lands and waters that provide unique or unusual opportunities for the human use and enjoyment of fish or wildlife, including fishing, hunting, trapping, photography, and viewing.
- Lands and waters that provide significant recreation opportunities, such as clear water rivers that are now or are expected to be important for recreation, key public access sites, and recreation facilities.
- Lands and waters with significant scientific or educational value.
- Lands and waters that are the watershed of a community water supply.
- Sand and gravel pits, stone quarries, or other significant known material sites that might be lost to public use if mineral claims were staked.

Lands With Significant Fish or Wildlife Resources

- Lands and waters that support protected species of plants, fish, or wildlife (such as bald or golden eagles), threatened and endangered species.
- Lands and waters that support production or maintenance of fish or wildlife species that have significant economic, subsistence, recreational, scientific, educational, or cultural values or that have been given special protection through state or federal legislation or international treaty.
- Other lands and waters not included above that are known to support unique or unusually large assemblages of fish or wildlife.

MANAGEMENT GUIDELINES: OIL AND GAS

Generally, oil and gas exploration, development, and production will be encouraged on state lands. Impacts on other important uses and resources will be managed through appropriate mitigation measures developed during the permitting and leasing processes.

Oil and gas guidelines are not addressed here. Oil and gas guidelines specific to a particular management unit are in Chapter 3. DNR's statewide policies for oil and gas are found in the Five-Year Oil and Gas Leasing Program and specified under [AS 38.05.180](#). Specific stipulations for oil and gas exploration, development, and production activities will be developed and applied on a case-by-case basis for each oil and gas lease sale through DNR's existing practices.

MANAGEMENT GUIDELINES: MATERIALS

Preferred Materials Sites

When responding to a request for a material sale or identifying a source for materials, the highest priority should be given to using existing upland material sources. Using materials from wetlands, lakes,

and the active³ or inactive⁴ floodplain of rivers or streams should be avoided unless no feasible alternative exists. Sales or permits for gravel extraction will not be permitted in fish spawning beds. Material extraction from water sources may also be regulated by the Corps of Engineers. Material sites should be located as near as is feasible to the location of material use in order to minimize construction and maintenance cost of transportation facilities.

Material Extraction from Extensive Areas

Material extraction from wetlands, lakes, or stream corridors (including the active and inactive floodplain) should occur only after design consultation with ADF&G, DOT/PF, DPOR, DGGS, and DEC.

More information regarding material extraction in sensitive areas is available in Gravel Removal Studies in Arctic and Subarctic Floodplains in Alaska and accompanying Gravel Removal Guidelines for Arctic and Subarctic Floodplains in Alaska (USFWS, 1980a and 1980b). This guidance is generally followed in TVSF in addition to the design consultation required above, to minimize negative impacts of material extraction on other resources and uses.

Maintaining Other Uses and Resources when Siting and Operating Material Sites

Before allowing the extraction of materials, DNR will ensure that the requirements or stipulations give adequate protection to other important resources and uses including, but not limited to existing water rights; water resource quantity and quality; navigation; fish and wildlife habitat and harvest; timber resources; recreation resources and opportunities; historic and archaeological resources; adjacent land uses; and access to public or private lands. The disposal of materials should be consistent with the applicable management intent statement and management guidelines of this plan.

DNR determines if other existing material sites can be vacated and rehabilitated as a result of opening a new material site.

Rehabilitation. Current material sites within the TVSF are co-designated for Forestry and Material uses. At the close of a material site, management designation of that site will return to Forestry. Rehabilitation of materials sites must meet the requirements of AS 27.19.020 and 11 AAC 97.250(a). Design and closure of material sites should consider potential for future recreational use, such as swimming. For additional guidelines that affect material extraction see policies under the Mineral and Coal Development Guidelines in the Subsurface Resources section of this chapter.

ACTIVITY SUMMARY

More than 99 percent of the State Forest will remain open to locatable mineral location and leasing. Locatable mineral closures will be placed on campgrounds and other significant recreational development; the Trans Alaska Oil Pipeline right-of-way is closed to mineral location.

³ Active floodplain - the portion of the floodplain that is flooded frequently; it contains flowing channels, high-water channels, adjacent bars, and usually little or no vegetation.

⁴ Inactive floodplain - the portion of the floodplain that is flooded infrequently; it may contain high water and abandoned channels and is usually lightly to heavily vegetated.

Mineral exploration and development in the 24,993 acres (1.4 percent of the State Forest) that comprise the Bonanza Creek Experimental Forest and the six designated research natural areas is subject to a leasehold location order. Mining will be restricted in these areas if it will negatively impact the overriding scientific values of the areas.

L. TIMBER MANAGEMENT INCLUDING FOREST RESOURCES PROTECTION.

GOALS

Economic Development

Contribute to Alaska's economy with a diversified forest products industry that provides a range of job opportunities, net revenues to the state, competitively priced products and increased per capita income, while ensuring that personal use needs of all Alaskans are met within the capabilities of the land.

Emphasize support of Alaskan value-added businesses when designing and offering timber sales in the State Forest.

- Provide a reliable supply of raw timber to the market.
- Stimulate local and state economies by generating royalties to the State's general fund, creating jobs locally, and increasing use of local support services.
- Generate revenue such that the AK DOF can self-support perpetuated forest management operations, including the salaries of resource forestry personnel and practices such as site preparation or tree planting.
- Bring Alaskan communities closer to independence from imported energy sources and materials.

Management of Tanana Valley State Forest Timber Resource

Actively manage Tanana Valley State Forest (TVSF) to provide for production, utilization, and replenishment of timber resources through silvicultural practices. Ensure a high level of sustained timber productivity by maintaining a mosaic of forest types and stand ages characteristic of the boreal forest in Interior Alaska. TVSF is managed to sustain a variety of resources dependent on forest ecosystems.

The diverse resources and uses in the TVSF reflect the history of natural and human disturbances in Alaska's interior, the forest, and the context in which the TVSF boundaries base were selected. The configuration of TVSF reflects the statutory requirement that it be composed primarily of commercially valuable forest.

Decades of forest research by the Forest Sciences Department at UAF and the Boreal Ecology Cooperative Research Unit (formerly known as the Institute of Northern Forestry), US Forest Service, Alaska Fire Science Consortium and international researchers provide the foundation for resource management decision-making. DNR continues to incorporate new research into management strategies as information becomes available. Information on natural and human disturbance history and ecological processes is constantly changing, and this plan is based on available information at the time of publication. To support sustained production of multiple resources and forest uses, DOF best practices are selected to maintain the range of forest types and stand ages naturally occurring in the Tanana Valley.

MANAGEMENT GUIDELINES

Timber Management Principles

As a state forest, the primary purpose of the TVSF is active timber management ([AS 41.17.220](#)). While meeting this purpose, Lands within the TVSF are intended to be managed for multiple use consistent with [AS 41.17.060](#), unless specific uses are explicitly prohibited.

Sustained Yield-Timber and other resources in the TVSF are managed using principles of sustained yield, as required by the State Constitution (Art. VIII, sec. 4) and Alaska statutes ([AS 41.17.220](#)). For the purposes of this document, sustained yield is defined as the “achievement and maintenance in perpetuity of an annual or regular periodic output of the various renewable resources of the state land consistent with multiple use” ([AS 38.04.910](#)). The DOF’s policy is to define “regular periodic output” as output over a ten year period. Harvests may exceed the allowable cut only in unusual circumstances as described by the Alaska Superior Court (First Judicial District) in their decision SEACC vs. Alaska, 1983. Departures are allowed for salvage cuts where trees have been killed or damaged, because dead trees are not part of sustained yield. Proposals for salvage sales will be subject to public and interagency review through the FLUP process. DOF will also include salvage sales on Five-Year Schedules whenever possible. Salvage sales may be excluded from a Five-Year Schedule under AS 38.05.117 when waiting for the Schedule will cause substantial losses of economic value on salvage sales.

Annual Allowable Cut-Management tools are required to plan practices that will support a sustained yield of forest resources. The Annual Allowable Cut (AAC) is one such tool, describing the volume of timber that may be harvested from a forest under optimum sustained yield management (Stoddard and Stoddard, 1987). The amount of timber harvested each year will vary and may be more or less than the annual allowable harvest figure for the State Forest. However, at no time will the total amount of timber harvested exceed the combined annual allowable harvest in a ten year period. In other words, if harvests in year one and year two are each five times the annual allowable cut for the state forest, there will be no harvest during the next eight years. The allowable cut is determined using a combination of the most recent and accurate forest inventory data available and Geographic Information System (GIS) analysis. The timber base considered for this calculation includes legislatively designated state forest lands, as well as forest classified state-owned lands.

The annual allowable cut calculation is not a decision document, but a technical calculation based on information from the management plan and forest inventory report. Revisions to the annual allowable cut shall be made as changes in land ownership or designated uses occur.

The allowable cut is developed in three steps:

1. **Forest Inventory:** To determine how much timber can be removed on a sustained yield basis, the forested area is spatially defined. Next, a forest inventory is conducted to determine the species, distribution, quality, and quantity of the trees growing in the defined area. The inventory identifies the acreage and standing volume of timber in the defined area. The inventory also includes measurements of growth rate and mortality, both natural processes within the forest. The inventory procedure is a sampling process which combines the use of

remotely sensed data and on-the-ground measurements to establish an acceptable level of reliability of the sampling.

2. **Sustained Yield:** Areas that are not commercially viable are deleted from the timber base. In the TVSF, for example, black spruce forest types are deleted from the timber base. The initial rotation age is derived from culmination of mean annual increment. This assumption is used to estimate the sustained yield of timber that could be harvested. See the Glossary, Appendix A, for definition of culmination of mean annual increment.
3. **Allowable Cut:** The AAC modifies the sustained yield estimate to reflect the guidelines and objectives in the Tanana Valley State Forest Management Plan.

Three factors affect the AAC:

1. **Site-specific factors:** Not all of the State Forest is available for harvest. For example, the six research natural areas, the Chatanika River corridor, and the Bonanza Creek Experimental Forest are not included in the timber base.
2. **Reduction Factors:** Reductions may be made from time to time as it is determined that an area should not or cannot be harvested. Because managers know such conditions exist, but not where they all occur, reduction factors (a percentage of each species) are also applied to make the calculation conservative. The reduction factor is a reduction to the allowable cut for unknown, on-the-ground situations where timber harvest may not be feasible or appropriate. Reduction factors have been established for each of four major forest vegetation types that may contribute to the sustained yield timber base. These factors represent the estimated percentage of timber volume that will not be available because of other values. They are based on the division's experience preparing timber sales. Reduction is highest for the vegetation types that are associated with rivers where habitat and water quality concerns are highest. Reduction factors for hardwoods are lower as they tend to occur in large expanses, away from rivers or other site-specific resource concerns. The factors do not apply to research natural areas or the Bonanza Creek Experimental Forest, because these areas have been excluded in total from the sustained yield timber base.
3. **Rotation Age Adjustments:** Rotation age is adjusted to meet management objectives. These rotations are applied to portions of the State Forest where timber harvesting is allowed. Rotation may be based on many criteria, including mean size, age, culmination of mean annual increment, attainment of a particular minimum physical or value growth rate, and biological condition. There may be different rotation ages for different species, growing sites, and other factors. For each species, application of the adjusted rotation age to the sustained yield results in an allowable cut for the forest. Generally, it is expressed as a ten-year periodic allowable cut to allow for fluctuations in harvest rates due to market conditions and other variable factors. This is the allowable cut. See the DOF's Tanana Valley Allowable Cut Determination for more information.

Inventory

Management values such as the AAC are calculated based on the most recent and accurate inventory data available to the DOF. A combination of field measurements, aerial imagery, and GIS analysis is used to provide estimates of volume, stocking, defects, and growth by individual tree species. This information is then used to produce accurate volume data and geographically referenced spatial locations of individual timber stands. Thorough inventory data and understanding of spatial distribution allow for more informed management decisions and precise placement of boundaries.

The precision afforded by inventory studies reduces the need for estimation tools such as reduction factors. Reduction factors are a numerical reduction from the allowable cut to compensate for unknown on-the-ground situations where timber harvest may not be feasible or appropriate. As the designation of TVSF predates the widespread availability of GIS software, some management boundaries were selected without complete knowledge of an area's suitability for timber harvest. Reduction factors are residually included in some decision-making processes for the management of TVSF.

Procedures for Modification to the Allowable Cut

Examples of changes that would merit a forest-wide revision of the AC, based on changes to the assumptions, include changes in utilization standards, updated forest inventory data, revised site index data, or new yield tables for commercial species. Forest-wide revisions will be noticed in the FYSTS and will be subject to a technical review of the suggested changes. This could include peer review of the revised sustained yield report, inventory report or other related documents. A final report would be made to the TVSF Citizens' Advisory Committee and to the Board of Forestry for their review prior to adopting the revisions. An opportunity for public comment will be provided.

Boundary changes in the State Forest, land withdrawals, large fires or other landscape level disturbances that affect the data that the AC is based upon are examples of local events that would require a review of the AC document. Such changes would add or delete acreage of various forest types from the forest and result in a technical change to the AC. Such modifications would likely be within specific units in the forest and not be forest-wide revisions.

Technical changes to the AC, based on changes to the timber base, will be explained in the Five Year Schedule of Timber Sales (FYSTS) by the administrative unit of the forest in which the proposed change originates. There are currently three administrative units: Fairbanks, Tok and Delta. Northern Region offices prepare individual planning documents which are combined as the FYSTS at least once every two years. FYSTS are subject to interagency and public review processes.

Availability of Timber for Harvest

Any area in the State Forest is available for timber harvest and is part of the timber base for calculating the allowable cut unless it is prohibited by law or by this plan through a finding of incompatibility (see Appendix B, Finding of Incompatibility). When planning timber sales, the Division shall weigh the pros and cons of dispersing the locations of sales versus concentrating them, with consideration for public needs, forest management objectives, wildlife habitat management and other factors. Ultimately, the DOF intends to expand access throughout the majority of the TVSF, bringing the entire State Forest

under active management. Expanding the forest acreage under active management will support the State Forest purpose of sustainably providing the timber resource to Alaskans while dispersing the impacts of timber harvest over a greater area. Obstacles to this goal include landscape-level changes to geomorphology in the face of current warming trends, access to roadbuilding materials, and long term road maintenance. Some areas in the TVSF are excluded from timber harvest. These areas include Research Natural Areas (RNA) and Experimental Forests. More information on these topics can be found in the *Scientific Resources* section of this document.

Priorities for Timber Sales

DNR will give highest priority to preparing timber sales that are needed to maintain the range of forest types and stand ages that support diverse forest uses. Sales in upland areas where natural disturbance is restricted due to fire suppression are a high priority. When scheduling sales, DNR will also consider sales that are needed to support regional value-added processing.

Economic Objectives

Active timber management occurs on the TVSF in the form of sales and projects. Timber sales most directly contribute to meeting the economic goals outlined above, facilitating a transaction between timber operators and the DOF. As of 2024, the four sale programs offered by the DOF include:

- Competitive sales offered by sealed bid or oral auction ([AS 38.05.120](#))
- Negotiated sales of up to 500 MBF for one year ([AS 38.05.115](#))
- Negotiated sales in areas with high unemployment, under-utilized mill capacity, and under-utilized allowable cut ([AS 38.05.118](#))
- Negotiated sales of up to 10 MMBF per year for up to 10 years specifically for value-added processing

A range of timber sale programs allows managing foresters to support local and state economic objectives across a spectrum of timber market and operator capacity scenarios. While an organized exchange of cash for timber resources is the primary objective of a timber sale, these sales can result in coincident benefits such as increased road access, recreation access, hazardous fuels management, or habitat management. In addition, increased infrastructure, development of, and maintenance of roads are long-term economic benefits to communities created by timber sales.

In some cases, forest management projects may be designed to achieve public goals such as maintaining biological diversity, reducing risks from wildland fire near residential areas, accelerating reforestation following infestations, providing capital improvements, or providing fuelwood to local markets. If the benefits of such projects offer significant non-monetary value to an area or adjacent community, managing foresters may decide to operate such projects at a monetary loss.

In either case, timber management on the TVSF occurs within an adaptive framework. Sales and projects are designed, implemented, monitored, and adjusted to reflect and accommodate a fluctuating timber market.

In most cases, the economic value of timber sales in the State Forest will be sufficient to pay for the costs of timber sale preparation and administration, reforestation, and road construction and maintenance and result in net revenue to the state. Some projects may be conducted at a deficit if they involve low-value timber or are designed to achieve other public goals such as maintaining biological diversity, reducing risks from wildland fire near residential areas, accelerating reforestation following infestations, providing capital improvements, or providing fuelwood to local markets.

In weak markets, total sale costs including reforestation are more likely to exceed revenue than in strong markets. However, even in weak markets, sales continue to meet the State's primary economic objective for timber, which is to provide local jobs. To further this mission, some sales are supported by CIP appropriations from the Legislature. Due to the multi-year nature of forest planning, revenue generation may occur in different years than the design and approval of a sale. Budgetary tracking should be considered across the entire sale timeframe rather than by fiscal years.

Salvage of Timber from Land Clearing

Timber with commercial or personal use values should be salvaged from lands that are to be cleared for other uses such as mining, transportation or utility corridors, and habitat enhancement projects, where feasible and prudent. See Chapter 1 for statutory direction for the Tanana Valley State Forest.

Timber Sale Planning

Locations of timber sales, acreage harvested, and quantities of timber offered will be proposed and reviewed in the Five Year Schedule of Timber Sales (FYSTS) planning process, as determined by [AS 38.05.113](#). Transportation and reforestation issues will also be addressed in the FYSTS. Other development proposals not related to timber harvesting may be included in the Five Year Schedule of Timber Sales. DNR may attempt to quickly salvage accessible timber following wildland fires or insect infestation without the requirement to include sale information into the FYSTS. Salvage sales not included in the Five Year Schedule may be reviewed by other agencies and the public in Forest Land Use Plans.

Timber Sale Coordination

DNR will attempt to coordinate its timber sale offerings with the timber sales offerings of other landowners or agencies when it will increase the viability of offerings, or offer other public benefits. The public and agency review of the Five Year Schedule of Timber Sales offers the best opportunity to coordinate timber sales.

Forest Resources and Practices Act

The policies in this plan are in addition to those established in the Forest Resources and Practices Act (FRPA) ([AS 41.17](#)). The Forest Resources and Practices Regulations ([11 AAC 95](#)) also contain the guidelines that shall be followed in managing timber and other resources. Guidance for implementation and compliance monitoring of practices reflecting these policies is described in the DOF publication *Implementing Best Management Practices for Timber Harvest Operations* (<https://forestry.alaska.gov/forestpractices>)

Silviculture and Harvest Practices

A variety of silvicultural systems will be utilized to achieve management objectives for specific stands of timber and will be discussed in the Forest Land Use Plan developed for each timber sale. (See Glossary for more detailed definition). These systems are a planned program of silvicultural treatments conducted over the life of the stand.

Complexity will vary, but each treatment begins with a reproduction cutting and progresses through intermediate treatments to another reproduction cutting at the end of the rotation.

An important aspect of the practice of silviculture is the recognition that it is conducted in the absence of complete knowledge concerning the changing economic and ecological factors that affect each stand. Many treatments can only be properly evaluated after many years have passed.

Silvicultural systems used will:

1. be consistent with the silvics of the species and ecology of the forest type;
2. maintain the site's productivity; and
3. be chosen to best achieve the management objectives. A variety of silvicultural systems, including uneven-aged management, may be used. The basic silvics of native commercial species are listed below.

Table 2.6. Characteristics of Interior Alaskan Species.

Species	Shade Tolerance	Seed Crops	Seed Dispersal	Preferred Substrate	Sprouting Ability
White Spruce	Moderate	3-6 yr.	200 ft.	Mineral soil Rotten wood	None
Paper birch	Intolerant	1-2 yr.	400 ft.	Mineral soil	Stump sprouts (moderate if mature, low if overmature)
Aspen	Intolerant	Annual	Long distance	Mineral soil	High (root suckers)
Balsam poplar	Intolerant	Annual	Long distance	Mineral soil	High (suckers and buried stems)

Harvest units will be sized and configured to best meet silvicultural, wildlife, scenic, and other objectives of the program sale. See also the Scenic Values guideline of the Recreation section of Chapter 2, as well as [AS 41.17.060\(c\)\(6\)](#), [11AAC 95.820](#), and [AS 38.04.200\(a\)](#) and (b). Harvest methods can include intermediate partial cuts prior to the final stand renewal reproduction cuts as listed below. The harvest method used must meet the requirements (silvics) of the species to be established in the new stand. Harvest unit size and required harvesting techniques, including required or restricted equipment use, will be determined in the Forest Land Use Plan for each sale. The Forest Land Use Plan is subject to interagency and public review.

Table 2.7. Silvicultural Methods Used in Different Forest Types.

Forest Type	Reforestation Target	Intermediate Cuts	Reproduction Cuts
White Spruce	Mixed White Spruce and Hardwoods	Thinning Sanitation Improvement	Clearcut (diameter limited); Seed Tree; Group Selection; Shelterwood
Birch	Birch	Thinning Sanitation	Clearcut (diameter limited); Seed Tree; Group Selection
Aspen And Balsam Poplar	Aspen and Balsam Poplar	None	Clearcut (diameter limited); Shelterwood (only to suppress reproduction)
Mixed	Mixed White Spruce and Hardwoods	Hardwood Removal Sanitation	Clearcut; Seed Tree; Group Selection; Shelterwood

Reforestation

The Forest Resources and Practices Act (FRPA) sets the standards for reforestation following logging, including the minimum stocking of residual trees allowed without reforestation. In 2011, Division of Forestry and Fire Protection conducted an inter-agency review of the reforestation policies described in FRPA. Considering these revisions, the priorities for reforestation are: 1. those required by the FRPA; and 2. deforested or understocked highly productive sites. Sites will be reforested with native commercial species. When artificial reforestation is used, seed should be sourced from a growth area with similar conditions to the harvest site as specified in 11 AAC 95.375(f). Non-native species will be planted only for research purposes, not for forest management operations that would convert native forests to non-native species. The following table lists acceptable reforestation methods for major species.

Table 2.8. Probability of Success by Reforestation Method

Species	Artificial		Natural	
	Planting	Seeding	Seeding	Sprouting
Spruce	High	Low	Medium	N/A
Birch	Untested on TVSF	Untested on TVSF	High	Medium
Aspen and Balsam Poplar	Untested on TVSF	Untested on TVSF	Medium	High

Spruce Reforestation Methods

- Planting: Plant immediately following harvest or site preparation.
- Artificial Seeding: Spot seed on mineral soil seedbed; site preparation recommended.
- Natural Seeding: Seed is only available every 3 to 5 years depending on cone crop; mineral soil seedbed and seed source within 200 feet is preferred.
- Spruce tree will not sprout after harvest.

Birch Reforestation Methods

- Natural Seeding: Mineral soil seedbed preferred with seed trees within 300 feet.
- Natural Sprouting: Sprouting is unreliable for trees over 70 years.

Aspen and Balsam Poplar Reforestation Methods

- Natural Seeding: Mineral soil seedbed preferred.
- Sprouting: All stems in clone should be cut; leaving uncut 15+ native stems/acre will minimize sprouting.

Personal Use Firewood

Harvest of wood for personal use as heating fuel is permitted in designated areas on state land with proper permitting. Information on approved cutting areas and permitting processes can be found at the DOF website in sections describing Forest Resources and Wood Energy. Permits can also be acquired in person at DOF region offices.

Fire Management

Consistent with [AS 41.15.010](#) and [AS 41.15.020](#), forest resources in TVSF will be protected from destructive agents commensurate with the values needing protection. The intent for fire management in the TVSF is to identify areas where wildland fire can be allowed or prescribed fire can be used to reduce costs of fire suppression, reduce risk of damaging fires, and maintain natural diversity and productivity of forest stands. Fire suppression will continue to be a priority near residential areas, infrastructure developments, high value stands of timber and other investments. Specific recommendations for changes in fire management options will be developed through the Fire Management Option Change Procedures within the Alaska Interagency Wildland Fire Management Plan. Timber and other resource assets will be considered when determining fire protection levels. These practices will be described in a fire management plan that is developed as part of the Alaska Interagency Fire Management planning process. (See also Chapter 4, Section X., Fire Disturbance, for recommendations on changing fire suppression levels in the TVSF). For additional information on fire management topics in this plan, the Hazardous Fuels and Prescribed Fire section of Chapter 2 and the Fire Disturbance section of Chapter 4.

ACTIVITY SUMMARY

Tanana Valley State Forest is managed with the intention of providing a sustainable supply of timber and forest products to the Northern Region of Alaska. The primary DOF offices involved in this management are located in Fairbanks, Delta, and Tok. The Northern Region emphasizes the support of local value-added wood processors, commercial fuelwood processors, and jobs in its timber sale program. The division identifies and offers timber for salvage that was damaged by insects, floods, fire and windstorms. Making these sales available for purchase in the Fairbanks, Delta and, Tok, areas for all-season access and harvesting is a top priority. Within the Tanana Valley State Forest, approximately one million acres, or 56 percent of the forest, has been identified as commercial timberland containing approximately 1.2 billion board feet of timber.

Research and Information

In the 2010's, several sources of inventory data covering the Tanana Valley have become available. In 2013, a short-term forest inventory was conducted, enhancing the Division's understanding of accessible timberlands in the Tanana Valley. In 2016, Interior Alaska was added to the survey areas included in the US Forest Service's Forest Inventory and Analysis (FIA) Project. After a five-year hiatus, measurement resumed in 2020 on Cooperative Alaska Forest Inventory (CAFI) plots. This project was established in 1994, and its 200 plots ranging from the Kenai Peninsula north to Coldfoot constitute the longest-standing inventory project in the state and includes 59 plots on TVSF or in forested lands near TVSF. Other historical inventory plots are being considered for revival as funding allows.

These projects collect information to capture forest characteristics such as growth, diversity, carbon stocks, and forest health. Between the 2013 Tanana Valley Survey and FIA Tanana Valley unit surveys, TVSF managers have access to comprehensive data representing the forest types in the Tanana Valley to aid in decision-making. This information increases DOF's abilities to plan strategically and to monitor changes in forest characteristics over time. CAFI and FIA are both long-term studies, which are designed to resample plots based on survey cycles. With recurring sampling of these data, DOF can adapt future management strategies to continue best practices in the face of environmental change.

In an effort to make information more widely available, the DOF has organized the Alaska DNR Forestry Resources Viewer, an online GIS-driven web application. Map features visualizing up-to-date data such as infrastructure, timber sales, and reforestation are available publicly. See also Scientific Resources and Forest Health and Climate Change sections in this chapter.

Timber Products

Demand for sawlogs has historically remained stable in the Northern Region. The firewood and biomass (wood pellets, pellet logs) demand tend to fluctuate in response to global oil prices.

In general, Fairbanks-Delta Area is responsible for the majority of timber production in the interior and produces the highest revenue and volume outside of Southern Southeast Alaska. Historically, timber harvests primarily focused on supplying spruce sawlog timber. Fuelwood is an important but secondary timber product harvested in the Fairbanks-Delta Area. Between 2001 and 2024, intensity of timber harvest in the TVSF has hovered at approximately 10-20% of the total allowable cut. In the Tok

management area, timber sales and harvest have been more focused on fire suppression and vegetation management. As timber harvest promotes the removal of resinous fuels such as spruce and regeneration of fire-resistant hardwoods such as birch, many of the timber sales in the Tanana Valley State Forest serve dual purposes as economic opportunities as well as fuels management tools.

Management

One important challenge faced by contemporary land managers is adapting to landscape-scale change. In recent decades, there have been observations of dramatic changes in temperature, precipitation, wildfire occurrence, and permafrost freeze and thaw cycles. These changes appear to be more intense in the northern and northwestern areas of the state (Thoman and Walsh 2019). Variable conditions such as these require land management that can adapt to rapid environmental changes. Northern Region Forestry combines elements of prediction with opportunities to adapt to promote flexibility in management policies as the Alaskan landscape continues to change. Five Year Schedules of Timber Sales are a primary management tool employed by DOF. The short-term nature of these plans allows frequent evaluation of market demands and available forest products. Every-other year planting schedules for reforestation, annual regeneration surveys, and scarification practices allow DOF to monitor re-establishment of forests post-harvest, which aids in predictions of timber availability in the future. Infrastructure maintenance and fire management are additional responsibilities of DOF on State Forest land and provide information about changing conditions on a landscape scale.

M. NON-TIMBER FOREST PRODUCTS

GOALS

Provide opportunities for commercial and personal use harvest of non-timber forest products (NTFPs) while managing TVSF in accordance with guidance and regulations specified in AS 41.17, the Alaska Forest Resources and Practices Act. According to 11 AAC 96.250(23), non-timber forest products include “mushrooms, conks, boughs, cones, leaves, burls, landscaping transplants, roots, flowers, and fruits.” Non-timber forest products are specified as products derived from biological resources and do not include minerals, soil, rocks, water, animals, or animal parts.

MANAGEMENT GUIDELINES

Permitting for commercial harvest of NTFPs is managed by the Alaska DMLW in coordination with the DOF. An official Limited Non-Timber Forest Products Harvest Permit must be obtained from the DMLW to harvest commercially on any general state land. “Commercial Use” refers to NTFPs harvested for the primary purpose of sale, resale, or use in a manufacturing process resulting in a product that will be sold or used for business activities. NTFP permits can be obtained over-the-counter at local DNR Public Information Centers or through the DMLW Land section website: <https://dnr.alaska.gov/mlw/lands/>. No permit is required to harvest reasonable quantities of NTFPs for personal use.

The “***Alaska Non-Timber Forest Products Harvest Manual***” is a guide published by the DMLW that outlines use and sustainability goals for commercial harvest of non-timber forest products on state land. This manual is available through the Land Section website listed above.

Species of aquatic plants excluding the rushes, sedges and true grasses, growing in a marine aquatic or intertidal habitat are managed by the ADF&G. Information on permitting and harvest standards of these products, is available through local ADF&G offices.

Some products such as sap and vegetative mats for transplant require standard land use permits for harvest. Contact local DMLW offices for more information.

For information regarding timber products such as firewood, saw-timber, pulpwood, cull logs, house logs, small roundwood, poles, posts, and Christmas trees, see the *Timber Management* section of this chapter.

ACTIVITY SUMMARY

Harvest of non-timber forest products in the TVSF generally occurs as incidental, small-scale projects. Often this activity occurs recreationally and/or for personal use.

N. TOURISM

Tourism markets Alaska's natural, cultural, historic, and recreational resources. The marketable resources on which tourism depends in the TVSF include scenic viewsheds, wilderness, forests, wildlife, lakes, and rivers, along with developed areas, which possess cultural, economic, and/or historical significance. The difference between recreation and tourism is that tourism is a commercial activity, while recreation is a leisure activity.

The Tanana Valley State Forest is managed for multiple use, consistent with the purpose of the establishment of the State Forest ([AS 41.17.200](#)). The State Forest is one component of the mosaic of public land in the Tanana Valley that includes State and federal park land, as well as general State land that has been designated for recreation. The State Forest will be retained in State ownership and managed to allow a range of development activities to occur, including tourism operations.

Tourism activities in the State Forest are generally concentrated along rivers, roads, and trails. The following list describes some of the resources in the Tanana Valley State Forest that benefit tourism.

- A. The Tanana Valley's forests provide natural settings for visitors engaged in activities ranging from sightseeing to canoeing to wilderness camping and hiking.
- B. Timber harvest in the Tanana Valley State Forest creates timber roads that can provide access to the forest for people using all different modes of transportation, including dogsled, foot, horses, skis, ATVs, and snowmachines.
- C. The Tanana Valley State Forest Management Plan allows for the development of roads, boat launches, pull-outs, campgrounds, cabins, and trails that would provide visitors with opportunities to access recreational and scenic sites. The plan also encourages the development of facilities that provide information about areas of cultural, economic, and/or historical significance, or about forest history and ecology (such as visitor centers and interpretive sites).

GOALS

Tourism Opportunities

Provide opportunities to appreciate Alaska's natural environments, history and diverse cultures and enhance visitors' experiences in Alaska.

1. Provide opportunities for diverse tourism activities (See Table 3, Recreation Opportunities Matrix, for examples of activities in the State Forest).
2. Allow long-term access to forest resources valuable to tourism.
3. Identify areas with tourism use (See Chapter 3 Unit descriptions for detail). Fishing and hunting are described in the fish and wildlife sections of this chapter.
4. Support appropriate commercial development of tourism facilities and services through leases and technical assistance where tourism needs can most effectively be met by private enterprise, while avoiding or minimizing conflicts with other uses.

Tourism Resource Protection

Alaska's natural, cultural and historic resources are the foundation of Alaska's tourism industry and they must be protected.

1. Protect natural features of regional or statewide significance and preserve cultural features representing major themes in Alaskan history.
2. Prevent soil erosion, loss of fish and wildlife habitat, degradation of scenic and recreation areas, and loss of access to open space.
3. Encourage public education using signs, interpretive trails, and programs to portray natural, subsistence, cultural and historic features and forestry practices.

Economic Development

Alaska's tourism industry has grown dramatically since statehood and is now one of the state's largest industries. Tourism creates jobs and services for Alaska residents, and many tourism dollars are spent in Alaska. The challenge is to provide the benefits of a tourism industry without conflicting with existing community lifestyles.

1. Manage Alaska's recreation resources to support a tourism industry that supplies jobs, income, and revenue.
2. Minimize conflicts between tourism and other uses.
3. Allow for recreation and tourism facilities that enable appreciation of Alaska's scenic and historic resources.

MANAGEMENT GUIDELINES

Campgrounds, Public Use Cabins, and other Recreational Facilities.

These facilities are addressed in the Recreation section of this chapter.

Private Commercial or Public Nonprofit Recreation and Tourism Facilities

Lodges, tent camps, ski areas, or other private facilities designed to be run as private, profit-making, or public nonprofit recreation and/or tourism facilities may be permitted or leased if the facility fulfills the following conditions:

1. The proposed development adds to or enhances public recreation and tourism opportunities.
2. The amount of use generated by the facility will not conflict with the management intent for the unit or site.

Tourism operations shall not preclude other uses of the State Forest, referenced in [AS 38.05.112\(c\)](#), unless a finding of incompatibility has been issued (see Appendix B).

The facility will be sited, designed, constructed, and operated to create the least conflict with natural values and traditional uses of the area. It will also be sited and designed in accordance with management guidelines for riparian and instream flow, fire management, access, and wetlands.

Final approval of a permit or lease for the facility will be given only after interagency and public review. This review may be coordinated with the review of the Five-Year Schedule of Timber Sales process. See Chapter 4 for a description of commercial use permit requirements.

Management of Forest Resources for Tourism

Tourism is one of the uses for which the Tanana Valley State Forest will be managed. According to the Forest Resources and Practices Act, AS 41.17.060 (c)6, allowance shall be made for scenic quality in or adjacent to areas of substantial importance to the tourism and recreation industry. DOF can accommodate tourism in its operations by

1. Coordinating timber harvest and road building plans to accommodate tourism activities that benefit from the improved access and/or regrowth from harvested areas.
2. Considering impacts on tourism activities when designing timber harvest areas determining silvicultural methods.

Techniques to address scenic concerns are discussed in Management Guideline M., Silviculture and Harvest Practices, part of the Timber Management section of Chapter 2. See also AS 41.17.060(c)(6) and 11AAC 95.820. The Protection of Scenic Resources guidelines in the Transportation section of this chapter contains measures to help protect scenic resources, as well as guidelines that provide opportunities for road-accessible recreation activities. Additionally, the Scenic Values guidelines in the Recreation section of this chapter contains scenic value guidelines.

Management of Sites

Management of tourism sites will promote high quality recreation experiences, environmental quality, and safety.

Trails

See the Trails section of this chapter.

Information and Education

Interpretive signs, trails, and displays are encouraged. Development of interpretive facilities will be addressed within the Five-Year Schedule of Timber Sales or other public review process and development will be subject to available funding.

ACTIVITY SUMMARY

To maintain structures such as camps or other facilities, or for overnight use of state lands for 14 days or longer, a business must apply for a permit or lease through DNR DMLW. As of 2002, all commercial recreation businesses that use state uplands, shorelands, tidelands, and submerged lands on a day-use basis must register with DNR pursuant to 11 AAC 96.018. Commercial recreation operators that operate exclusively on state-owned waters are not required to register, though may be subject to other regulation. Information regarding requirements and process for leasing, permitting, or registration can be found on the DMLW Land Office webpage (<https://dnr.alaska.gov/mlw/lands/>). There are currently no active permits or leases for Tourism facilities on TVSF. Businesses that are registered for day use are

organized by ADF&G Game Management Unit (GMU), so a precise number of registered businesses operating on TVSF land is not available. The GMUs containing TVSF each show approximately 15 to 20 businesses registered for commercial recreation day use in 2021.

O. RECREATION

GOALS

Recreation Opportunities

Alaska’s abundant and diverse recreation resources are one of the major attractions for living in the state. Residents will continue to demand high quality, accessible recreation opportunities.

The Tanana Valley State Forest will be managed for multiple use, consistent with the purpose of the establishment of the State Forest ([AS 41.17.200](#)). The State Forest is one component of the mosaic of public land in the Tanana Valley that includes state and federal park land, as well as general state land that has been designated for recreation. Recreational use of the State Forest is recognized and protected in the State Forest enabling legislation, [AS 41.17.230\(a\)](#). The State Forest will be retained in state ownership and managed to allow a range of activities to occur, including public recreation. The State Forest complements other public lands in the Tanana Valley because its roads and trails allow it to fill a different niche than other, less accessible, lands in the area. Many of the high-value recreation lands within the Tanana Valley are outside the State Forest, such as clear water rivers and alpine areas. With these considerations, the Tanana Valley State Forest will be managed for the following recreation goals.

1. Allow and encourage a wide range of recreational uses of the State Forest. Forest lands will be managed to provide a range of recreation opportunities (see the Recreation Opportunities Matrix, Table 3).
2. Preference will not be given to one recreational use over another recreational use by restricting particular uses. The TVSF will be managed to allow people to pursue “generally allowed” ([11 AAC 96.020](#)) recreation activities. The DOF will use a variety of management techniques to resolve conflicts before invoking use restrictions. Use restrictions will require a finding of incompatibility (see Appendix B).
3. State Forest land management will not seek to duplicate opportunities provided by other public lands in the Tanana Valley, such as wilderness or highly developed recreation areas.
4. Allow for the development of recreation areas, trails, rivers, and sites that provide a range of year-round outdoor opportunities for a variety of ages, abilities, and use preferences near population centers and major travel routes. Developments will be designed and located to be compatible with other uses.
5. Consult with communities on recreational plans.
6. Identify areas with recreation use. These areas are described in Chapter 3 on a unit-by-unit basis. Fishing and hunting activities are addressed in the fish and wildlife sections of Chapter 3.
7. Allow appropriate commercial development of recreational facilities and services through land leases and technical assistance where public recreation needs can most effectively be provided by private enterprise. (See also the Tourism section of this chapter.)

Recreation Resource Protection

Alaska's natural and cultural resources are the foundation of Alaska's recreation opportunities and they must be protected.

1. Protect natural features of regional or statewide significance and preserve cultural features representing major themes in Alaskan history.
2. Prevent soil erosion, loss of fish and wildlife habitat, degradation of scenic and recreation areas, and loss of access to open space.
3. Allow for public education through signs, interpretive trails, and programs to portray natural, cultural, and historic features and forestry practices.

Economic Development

Alaska is an international recreation and tourism attraction. See the Tourism section in this chapter for the economic development goals that pertain to tourism and recreation.

MANAGEMENT GUIDELINES

Recreational Facilities

Construction and/or maintenance of recreational facilities does not fall within the responsibilities of the DOF ([AS 41.17.030](#)) or within the primary purpose of the TVSF. Other entities may propose development of recreation facilities within TVSF through a DNR DMLW land use application. Such applications will be reviewed by DOF before finalization, and DOF may approve or deny potential projects, or provide stipulations for approval. Through forest management practices, DOF may provide opportunities for access that support recreational use in the TVSF.

Private Commercial or Public Nonprofit Recreational Facilities

See the Tourism section in this chapter for the guidelines for the construction of recreational and tourism facilities.

Private Recreational Facilities

DNR will not authorize the construction of cabins or other facilities, or the private use of existing unauthorized cabins for private noncommercial use in the State Forest. Demand for recreational cabin use will be provided for by public use cabins or by commercially operated facilities (see the Tourism section of this Chapter).

Use of cabins and land previously leased to private individuals under the Remote Cabin, Open-to-Entry, or other disposal program, is not affected by this policy.

Management of Sites

Management of recreation sites will maintain high quality recreation experiences, environmental quality, and safety.

Trails

See the Trails section of this chapter.

Waterbodies

See the Riparian and Instream Flow section of this chapter.

Scenic Values

Development activities, such as timber harvesting, will be sited, designed, and carried out to minimize adverse impacts to scenic values. Vegetation that obscures scenic vistas may be managed to facilitate viewing. Techniques to address scenic concerns are discussed in Management Guideline D. Management of Commercial Forest Types, and Guideline M., Silviculture and Harvest Practices, in the Timber Management section in Chapter 2. See also [AS 41.17.060\(c\)\(6\)](#) and [11AAC 95.820](#).

Information and Education

Interpretive signs, trails, and displays are encouraged to provide recreational and educational opportunities. Development of interpretive facilities will be addressed within the Five-Year Schedule of Timber Sales or other public review process and development will be subject to the available funding.

ACTIVITY SUMMARY

The availability of access affects recreation opportunities. Dispersed recreation activities occur throughout the forest, but are mainly concentrated along roads, trails, and river corridors. See the “Examples of Recreational Activities” row of the Recreation Opportunities Matrix (Table 2.9) for activities identified in the State Forest. The character of recreation opportunities will vary over time and shift to different locations depending upon access, timber harvest activities and other resource management activities. The opportunities described in the Recreation Opportunities Matrix (Table 2.9) will vary by type of access and by season and year, as access development and maintenance shifts within the forest. All-season recreation opportunities will change during the winter if the roads are not plowed. During the winter, if the roads are plowed, seasonal access areas may provide opportunities similar to those in all-season accessed areas. Encounters with resource development activities will vary over time and location. Current and anticipated primary access for TVSF units is found in Table (2.12), *Primary access by subunit in the Tanana Valley State Forest*, located in the Transportation section of Chapter 2.

Management of the forest for multiple use, through shifting patterns of access, human use, resource development and vegetation types over time and space, will maintain a range of recreation opportunities. Where feasible, the DOF will manage timber harvest to enhance recreational activities.

The shores of streams, lakes, and rivers listed in Table 4 are designated Special Management Zones in part to maintain their recreation value (see the Riparian and Instream Flow Management section of this chapter).

The Eagle Trail State Recreation Site is the only developed facility within the State Forest. Other recreational facilities, including campgrounds, public use cabins, boat launches, waysides, interpretive sites, and trails, have been recommended for construction in the State Forest.

Construction of these developments, however, is contingent upon funding for both construction and

maintenance. Few developed recreation facilities are anticipated to be constructed in the State Forest in the next twenty years. Potential recreation facilities are listed in Chapter 4 in Table 4.2.

Table 2.9. Recreation Opportunities Matrix.

Characteristics of recreation activity vary with level of access.

RECREATION CHARACTERISTICS	ACCESS TYPE			
		Units with Seasonal Access	Areas with All- Season Access	Developed Recreation Sites
	Levels of Access	Accessible by highway vehicles only seasonally. Access is by all-weather roads that are unplowed in the winter, by winter roads that are not drivable in the summer, by trails that are not suitable for highway vehicles, or by boat.	All-weather roads connected to highway and maintained for year-round access.	Connected to highway system and maintained for access at least during high- use season.
	Human Use	Low to moderate use, varies seasonally.	Moderate use and encounters with other people.	Highest level of use and encounters with other people.
	Use Challenge and Risk	Moderate to high levels of challenge and risk. Requires medium to high skill for safety.	Low to moderate levels of challenge and risk. Requires low to medium skills for safety.	Low level of challenge and risk. Lowest level of skills needed.
	Examples of Recreational Activities	Fishing, hunting, boating, cross-country skiing, skijoring, snowmachining, dog mushing, hiking, trapping, canoeing, camping, berry picking, wildlife viewing, recreational mining.	Activities in seasonal access column, plus: vehicle day use, biking, camping in campgrounds, bus tours, educational programs, vehicle camping, sightseeing.	Vehicle camping in developed campsites, picnicking, day-hiking on developed trails.

P. TRAILS

GOALS

Public Use Opportunities

Ensure continued opportunities for public use of important recreation, public access, and historic trails of regional and statewide significance. Provide foot, dogsled, horse, mountain bike, snowmachine, four-wheeler, and sometimes vehicle access for a variety of purposes. Anticipate increased use with population growth.

Local Trails

Assist in establishing local trail systems that provide access to community recreation areas.

Trail Corridors

Protect or establish trail corridors to meet projected future use requirements and protect current use. The width and siting of access corridors depends upon their function and location. General precautions are taken when developing new access to avoid critical wildlife concentration areas. Easements are used to create access corridors, and information regarding this process is available through the DNR Division of Mining, Land, and Water.

MANAGEMENT GUIDELINES**Requirement for Access**

An assessment of the need for public access on a land area is required prior to leasing or otherwise disposing of state lands. If local access needs are identified through the adjudication or agency and public review process, access trails may be reserved through either retention of state land in public ownership or creation of a public access easement.

Ownership

All land within the Tanana Valley State Forest is owned by the state of Alaska. DNR determines whether access corridors are retained under state ownership or opened to public access through a public use easement.

Width of Access Corridors

The width of an access corridor is determined according to the guidance provided in the Eastern and Yukon Tanana Area Plans areawide land management policies under *Public Access*. Trails of regional or statewide significance within TVSF are managed to have corridors with a minimum width of 100 feet (50 feet each side of centerline). These trail corridors within TVSF boundaries should be managed to minimize negative effects or land use conflicts and maintains the authority to increase corridor widths as appropriate for their location or intended use.

Trail rerouting

Rerouting of trails for a short distance may be permitted to minimize land use conflicts or to facilitate use of a trail if alternate routes provide opportunities similar to the original route. If trails are rerouted, provision should be made for construction of new trail segments if warranted by type of use. Rerouting of trails will be addressed in the Five-Year Schedule of Timber Sales and Forest Land Use Plan processes.

Alignment with Crossings

When it is necessary for powerlines, pipelines, or roads to cross trail corridors, crossings should be at 90-degree angles when feasible, except when a trail corridor is deliberately combined with a public utility or transportation corridor. Where feasible, vegetative screening should be preserved when a utility crosses a trail corridor.

Land Use in Corridors

To the extent feasible and prudent, land use activities within a trail corridor, such as permits, leases, timber sales, and material sales, will be managed and permits and leases issued so that trail use or the aesthetic character of the trail are not adversely affected. This does not preclude trail crossings or rerouting of trails as described in this section.

Conversion of Trails into Roads

Trails that are classified in this plan as trails of regional or statewide significance will be converted into roads only after consideration in the Five-Year Schedule of Timber Sales and Forest Land Use Plans. The DOF will be invited to comment on RS 2477 route upgrade applications where they impact State Forest lands. DOF should coordinate with the Division of Mining, Land and Water regarding proposals to upgrade or vacate RS 2477 routes and will include such proposals in the Five-Year Schedule of Timber Sales and Forest Land Use Plans. Upgrades initiated by parties for non-timber uses are exempt from inclusion in the Five-Year Schedule of Timber Sales and Forest Land Use Plan processes, but would require an authorization from the Division of Mining, Land and Water.

Conversion of Roads into Trails

A forest access road may be converted to a trail after its use as a road has terminated. The nature of the road may require that it be put-to-bed, thus the new “trail” may have water bars, removed culverts, grass seeding, or other measures to prevent erosion which other trails may not have. Roads will be converted into trails only after consideration in the Five-Year Schedule of Timber Sales and Forest Land Use Plans. Any anticipated conversions should consider the Corps of Engineers’ silvicultural exemption during the process.

RS 2477 Trails

The state of Alaska claims, occupies, and possesses each right-of-way identified in AS 19. A right-of-way identified by this statute is available for public use under regulations adopted by DNR or, where applicable, the Department of Transportation and Public Facilities. Detailed management policy and a list of RS 2477 trails within TVSF can be found in the *Public Access* section of this chapter. For more information, contact Alaska DMLW Public Access Assertion and Defense program (<https://dnr.alaska.gov/mlw/paad/rs-2477/>).

Trail Use Restrictions

Several statutes address restriction of uses (AS 41.17.200(b), AS 41.17.230(a), AS 38.05.300(a)), restrictions on easements and rights-of-way use (AS 38.04.058), and restrictions of traditional means of access (AS 38.04.200). Applicable statutes and regulations must be considered when contemplating trail use restrictions.

Before restrictions are put into place, DNR should attempt to resolve the problems through management actions. Restrictions on the use of trails may be imposed to prevent damage to the trail. Such restriction may limit the types of trail traffic based on trail conditions or by season. Restrictions which are based on avoiding conflicts among different types of trail users will require public process and a description of the intended actions specifying the trail and the use restrictions.

Management of Future Trails

In the Future, trails may be constructed for specialized recreation, access, or multiple use. Alignment, standards, and management guidelines of such trails will be proposed and reviewed through a public review process.

ACTIVITY SUMMARY

Approximately 250 miles of trails have been designated to be of regional or statewide significance intersecting with the TVSF management area. Trails that are documented RS 2477 routes or identified through DMLW authorization records will be considered by managing foresters during the planning and decision processes for management activities within the TVSF. Many other trails within the TVSF are locally or regionally significant, though they are not documented in the State's land record system. Trails that are not documented through DMLW authorization records must be identified to managing foresters during the public review of FYSTs, BIFs, and FLUPs that affect the location of a given trail. DOF foresters are not required to identify trails beyond those documented in official state records, though the access, recreation, or other values of trails identified during public review of forest management activities must be considered in the decision process.

Q. PUBLIC ACCESS

GOALS

1. Maintain, enhance, or provide adequate access to publicly owned land and resources.
2. Ensure adequate opportunities for the public's use of public resources of local, regional, or statewide significance.
3. Provide access to and within Tanana Valley State Forest, including bridge crossings of major rivers, consistent with federal and state design, environmental requirements, and DOF goals.

MANAGEMENT GUIDELINES

Reservation of Public Use Easements

Before leasing or otherwise disposing of the land estate, DNR will reserve public land easements pursuant to the requirements of 11 AAC 51.015. This section of administrative code specifies standards for reserving public access easements and are used as the basis of reservation for such easements in authorizations granted by DNR.

Retain Access

The state will manage for public access to the Tanana Valley State Forest by retaining access sites and corridors in public ownership, reserving rights of access when land is leased adjacent to the State Forest, acquiring access, or identifying RS 2477 rights-of-way. Rights-of-way within the Tanana Valley State Forest that are determined to qualify as RS 2477 Trails are to be retained in state ownership or made a stipulation of approval in permits and leases. More information regarding RS 2477 rights-of-way can be found in the Trails section of this chapter and at the DNR Division of Mining, Lands, and Water website (<https://dnr.alaska.gov/mlw/paad/rs-2477/>). Generally, section line easements should not be vacated on land within or adjacent to the State Forest unless reasonable alternative access can be established. Within the State Forest, DNR will reserve public access across areas leased for private use.

Management of ANCSA 17(b) Easements

ANCSA 17(b) easements are public easements through Alaska Native Corporation lands and waters. The Bureau of Land Management manages 17(b) easements. Generally, DNR will not accept management of 17(b) easements, though DNR may manage pre-existing or underlying RST's. The DNR Division of Mining, Land and Water manages RS 2477 routes where they coincide with 17(b) easements. Information regarding ANCSA 17(b) easements can be found online through DNR Division on Mining, Land, and Water (<https://dnr.alaska.gov/mlw/paad/17b-easements/>).

Access for Development

When an access route is constructed for resource development, existing public access will not be displaced or rendered unusable by new construction. Various uses of resource development roads shall not restrict the purpose for which the roads were constructed.

Public Access Rights

Where feasible and within the limits of available funding, full public rights of access should be provided when roads are constructed by state or local governments for purposes other than forest operations. Perpetual exclusive easements should be acquired and recorded when the state acquires access rights across property in other ownerships adjacent to the State Forest.

RS 2477 Designated Trails

In 1998, the Legislature enacted AS 19.30.400-420, which states that the State claims, occupies, and possesses each right-of-way granted under former 43 USC 932 (RS 2477) that was accepted either by the State, the Territory of Alaska, or by public users. The statute lists over 650 RS 2477 routes, providing notice to the public of their existence and vesting management authority for these rights-of-way with DNR.

The statute requires DNR to report annually to the Legislature on RS 2477 routes that have been newly identified. The statute also says that failure to identify or include a right-of-way on the list of routes does not relinquish any right, title or interest the public has in a right-of-way under RS 2477. Accordingly, there may be more routes in the TVSF than are currently identified.

RS 2477 Rights-of-way that intersect with the TVSF can be researched using DNR Alaska Mapper (<https://mapper.dnr.alaska.gov/>). The prescribed width for each right-of-way is generally 100 feet (50 feet each side of centerline) under AS 19.10.015.

Coordination with the Department of Transportation and Public Facilities (DOT/PF)

Access needs, such as right-of-way widths or road locations, should be coordinated with DOT/PF.

Limiting Access

Access to land within the State Forest may be curtailed at certain times to protect public safety, allow special uses, and prevent harm to the environment. Examples of conditions that may justify limiting public access are fire management, timber harvest operations, and high soil moisture content when traffic may cause extensive damage to roads and trails or sensitive populations of fish and wildlife.

Existing statutes address restrictions of most easements and rights-of-way use (AS 38.04.058), and restrictions of traditional means of access (AS 38.04.200). These and subsequent statutes and regulations must be considered when contemplating use restrictions.

Pipeline Access Roads and Crossings

On state land, access is allowed across and along the Trans-Alaska Pipeline (TAPS) under the following conditions:

1. Crossing on foot or by vehicles of less than 1,500 lbs. curb weight is allowed without a permit.
2. Crossing by vehicles, pickups, four-wheel-drive vehicles, and all-terrain-vehicles over 1,500 lbs. curb weight requires a permit except at designated vehicle crossings.
3. The public may not travel on the TAPS right-of-way parallel to the pipeline except by permit from the DNR State Pipeline Coordinator's Office.

Pipeline Crossings

DNR should work with Alyeska Pipeline Service Company to identify options to develop new pipeline crossings. Future pipelines (such as the Trans-Alaska Gas Line) should provide more places for public crossings to state land for hunting, fishing, recreation, timber harvest, settlement, and other uses or provide a mechanism to improve or develop future public crossings as the need arises.

ACTIVITY SUMMARY

Tanana Valley State Forest is managed to include public access by road, RS 2477 Trail, winter access, and navigable water. Information for access permits, where necessary, is available online through DNR Division of Mining, Land, and Water. A list of RS 2477 trails that cross Tanana Valley State Forest is available in the *Trails* section of this chapter, though subject to change as additional RS 2477 trails are identified. Detailed information describing the nature of access at specific locations is available in the *Transportation* section of this chapter. DMLW permits, easements, or leases within TVSF grant access via winter trail, road, or pipeline road. The TVSF contains a mix of access routes designed by DOF as part of the TVSF Forest Road system and those designed and managed by other entities through the DMLW adjudication process. The majority of these provide pipeline access, while a few grant access to other small scale personal use sites.

R. TRANSPORTATION

The DOF plans to bring the entire timberland base of the State Forest under active resource management. At current harvest levels it will take several rotations before all areas of the forest are brought under active management. Current rotation lengths vary from 80 years in the hardwoods to 120 years in the softwoods

As all areas of the forest are brought into active management the transportation system will be expanded by using a variety of road systems. At some point in the future, all areas will have access via an all season or winter road system. Portions of the road system will be inactive or “put to bed” for long periods of time. Other portions will be maintained as primary access routes into the forest. Planning and route selection for this system will be incremental and will occur as timber sales or other resource management activities occur in different geographic regions of the forest. This transportation system will be integrated and coordinated with other major land-owners, private and public, to ensure an efficient and logical transportation system is developed.

GOALS

Develop a transportation system to implement this plan and integrate it with other transportation needs in the Tanana Basin.

Minimize Costs

Develop a transportation system that has the lowest possible long-range cost, including construction, operations, and maintenance. Avoid unnecessary duplication of transportation facilities.

Minimize Adverse Impacts

Develop a transportation system with minimal adverse impact on the environment, aesthetic and cultural features, and other users.

Promote Efficiency

Develop a transportation system through a process of efficient route planning and with consideration of the full range of access needs, such as access to approved developments, commercial timber, recreation, and for forest protection.

Ensure Public Safety

Develop a transportation system with a high standard of public safety.

Minimize Access Restrictions

Avoid unduly restricting access to TVSF land and resources

MANAGEMENT GUIDELINES

Forest Road Construction and Maintenance Standards

The DOF constructs and maintains forest roads on State Forest as well as other State land in support of forest management activities. Forest road typically is constructed through timber sales, public works or force account projects to meet the State's forest management objectives. The DOF managed transportation infrastructure generally is accessible and is used by the public for recreation, subsistence, personal use, firewood, etc. Detailed specifications are outlined in the DOF Road and Bridge Standards, adopted in 2016. The standards described in the

2016 document represent acceptable conditions of State Forest roads. In the Tanana Valley State Forest, road engineering specifications are outlined in timber sale contracts on a case-by-case basis. These specifications are modeled after the 2016 road standards as feasible and prudent, environmental characteristics of an area.

A mixture of all-season, winter, and spur roads should be planned appropriately for their intended use and to minimize adverse environmental impacts, including impacts on wildlife habitat and riparian areas. The Forest Resources and Practices Act ([AS 41.17.010-.900](#)) specifies measures required for environmental protection. The Forest Resources and Practices Regulations ([11 AAC 95](#)) contain road construction and maintenance standards. The Northern Region Forest Road Standards are in Appendix F.

Identification of Potential Transportation Routes

Rivers and terrain influence the type of access that exists, and the type of access that will be constructed in the State Forest. Much of the State Forest is accessible only by winter road due to the presence of wetlands and rivers. Descriptions of anticipated access for each management unit is found in Chapter 3. Due to changing economic conditions or the construction of roads for non-timber projects, access may change from what is described in Chapter 3.

The Eastern Tanana Area Plan (ETAP) and Yukon Tanana Area Plan (YTAP) provide general recommendations for transportation routes necessary to support the land use policies in that plan, including some routes that cross the Tanana Valley State Forest. However, more detailed route alignment and feasibility analysis must be completed before the routes can be considered final.

To the extent feasible and prudent, DNR will avoid actions incompatible with the eventual construction of any potential transportation routes within the Tanana Valley State Forest that were identified in the ETAP and YTAP until final decisions are made on the feasibility of these routes. The transportation routes that could potentially pass through the State Forest are described in the ETAP and YTAP.

Access Plans for Resource Development Projects

Access needs for forest management are described in Chapter 3 for each management unit and are summarized in Table 12. Access plans may change over time because of factors like access development for non-timber resources (e.g., minerals and oil and gas). Incremental development of forest roads is anticipated to occur throughout the State Forest. The rate will depend on demand for forest products and need for forest protection and other multiple use activities. Non-timber development projects may not be anticipated in this plan but may be initiated in any part of the State Forest. Prior to the initiation of a resource development project, DNR will identify appropriate means of access and responsibilities for design, construction and maintenance of any proposed transportation facilities. Access plans for timber operations will be proposed to the public and other agencies through the Five Year Schedule of Timber Sales and Forest Land Use Plans. Access plans for other development activities will be coordinated through the applicable permitting processes.

Joint Use and Consolidation of Surface Areas

Joint use and consolidation of surface access routes and facilities will be encouraged wherever it is feasible and prudent to do so. Roads will be constructed for the use and development of resources and will be open to the public to allow for the use and development of resources except for closures noted in the Road Use Restrictions heading of this section. Surface access should be sited and designed to accommodate future development and avoid unnecessary duplication. Access plans should be coordinated with adjacent landowners to promote joint

use and efficiency. The access needs of other users should also be considered. The feasibility of using an existing route or facility will be evaluated before the use of a new route or facility is authorized. If a forest road is used by a limited group of people, such as for private land access, DNR will attempt to secure an agreement from the users for their share of the maintenance of the road to enable continued use of the road during periods when timber harvest is not occurring.

Protection of Hydrologic Systems

Transportation facilities will, to the extent feasible and prudent, be located to avoid effects on quality or quantity of adjacent surface water resources or detract from recreational use of the waterway. Standards for road construction and associated facilities are described in [11 AAC 95.285-335](#). During Winter, snow ramps, ice bridges, or other methods are required to provide access across frozen rivers, lakes, and streams to avoid the cutting, eroding, or degrading of banks. Operationally, cutting of banks may be required by site-specific conditions. If this technique is used, it must be approved via the Title 16 Process. These facilities should be removed immediately after final use. All transportation facility construction and maintenance is required to comply with water quality standards of the State of Alaska. All roads for forest operations shall comply with best management practices in the Forest Resources and Practices Regulations.

Protection of Fish and Wildlife Resources

Important fish and wildlife habitats, such as riparian areas, wildlife movement corridors, important wintering or calving areas, and threatened or endangered species habitat shall be avoided in siting transportation routes unless no other feasible and prudent alternatives exist. Location of routes and timing of construction and duration and conditions of use and permanence of roads shall be determined in consultation with the ADF&G. See also the *Fish and Wildlife Habitat* section of this chapter.

Protection of Cultural Resources

DOF will consult with the Alaska State Office of History and Archaeology, which includes the State Historic Preservation Office, to avoid known historic and archeological sites during construction of transportation facilities. More information is available in the *Cultural Resources* section of this chapter.

Protection of Scenic Resources

Roads and other transportation facilities should be sited and designed to minimize impacts to scenic resources identified in Chapter 3. Statutes and regulations pertaining to aesthetic considerations include [AS 38.04.200](#), [AS 41.17.060\(c\)\(6\)](#), and [11 AAC 95.820](#).

Timber Salvage from Rights of Way

All timber that has value for commercial or personal use should be salvaged on rights-of-way to be cleared for construction. See [AS 41.17.083](#) regarding salvage and salvage value.

Material Sites

To minimize the construction and maintenance costs of transportation facilities, material sites should be located as near to material use as practicable. Transportation corridors that require material should be located with reference to material potential identified in this plan.

Material sites should be screened from roads, residential areas, recreational areas, and other areas of significant human use. Sufficient land should be allocated to the material site to allow for such screening. Rehabilitation of material sites shall meet the requirements of [11 AAC 97.250\(a\)](#).

For additional guidelines that affect material extraction, see policies under the section on subsurface resources and the Forest Resources and Practices Regulations ([11 AAC 95.325](#)).

Off-Road Vehicle Activity

Most off-road vehicle activity does not require a permit on State Forest lands. Under [11 AAC 96](#), using a motorized vehicle in the State Forest, including a four-wheel-drive vehicle, stock pickup truck, snowmobile, or all-terrain vehicle (wheeled or tracked), on or off an established road right-of-way, does not require a permit if use off the right-of-way does not kill or break through the plant cover and expose the soil to erosion. Additional regulations may apply to lands that are overlain by resources managed by other agencies such as grazing forage or anadromous waters. Through a Special Use Lands designation, off-road vehicle activity may be restricted in research natural areas and in the Bonanza Creek Experimental Forest if this use threatens the purposes for which these areas were established (see the Scientific Resources section of this chapter).

When permits are issued for off-road vehicle use under [11 AAC 96](#) or on special use lands, they will require that disturbance of soils, vegetation, fish and wildlife populations, drainage patterns, and water quality be minimized. Operations should be scheduled when adequate snow and ground frost are available to protect the ground surface or should require the use of low ground pressure vehicles, avoidance of problem areas, or other techniques to protect areas likely to be damaged (see the Management Guidelines heading in the Water Resources section of this chapter). Before issuing permits, DNR will consult with affected agencies.

In addition, off-road vehicle permits generally should not be given for vehicle use in important fish and wildlife habitats during sensitive periods. If such vehicle activity is essential and no other practical alternative exists, it should be allowed only as an occasional use. ADF&G will be consulted to help identify important fish and wildlife habitat areas and sensitive periods that might warrant this restriction.

Several statutes address restriction of uses ([AS 41.17.200\(b\)](#), [AS 41.17.230\(a\)](#), and [AS 38.05.300\(a\)](#)), restrictions on easements and rights-of-way use ([AS 38.04.058](#)), and restrictions of traditional means of access ([AS 38.04.200](#)). These and subsequent statutes and regulations shall be considered when contemplating use restrictions.

Siting Utilities

Utilities and other support facilities, including but not limited to generation and transmission structures or cables and buried sewage and water lines, will be sited to minimize adverse impacts to other valuable resources or uses.

Other Design Standards

Bridges greater than 20 feet in length will be approved by Alaska Department of Transportation and Public Facilities. Roads crossing fish-bearing waters will provide fish passage consistent with [AS 16.05.841](#), and those crossing cataloged anadromous waters, with [AS 16.05.871](#).

Road Use Restrictions

DOF-managed forest roads may be closed temporarily or seasonally for public safety or to protect the road surface from damage. Road use may be restricted temporarily to minimize hazards that result from conflicting use, such as during periods of active industrial use. Access restrictions shall comply with [AS 41.17.200\(b\)](#),

AS 41.17.230(a), AS 38.05.300(a), AS 38.04.058, and AS 38.04.200 and other applicable statutes. Access restrictions for reasons other than protecting the resource or providing for public safety will require a finding of incompatibility.

Forest roads and bridges will be closed permanently when resources are not available to maintain them to the standards listed in Appendix F or when continued use is likely to produce significant negative impact on resources within the forest. Where roads are closed, DNR will take measures for erosion control in accordance with the Forest Resources and Practices Regulations (11 AAC 95.320).

Forest roads should remain open if they access substantial timber or other public resources. When known, decisions regarding permanent road closure and continued maintenance will be reviewed by agencies and the public in the Five Year Schedule of Timber Sales planning process as detailed in Chapter 4, and in the Forest Land Use Plans for specific timber sales.

Several statutes address restriction of uses (AS 41.17.200(b), AS 41.17.230(a), AS 38.05.300(a)), restrictions on easements and rights-of-way use (AS 38.04.058), and restrictions of traditional means of access (AS 38.04.200). These and subsequent statutes and regulations shall be considered when contemplating use restrictions.

Winter Roads

Winter roads are roads that can normally support regular logging vehicle traffic only during winter months and that have a load bearing capacity derived from a combination of frost, snow, or ice (11 AAC 95.900(90)).

Construction techniques for winter access routes depend on the range of terrain encountered and may include clearing vegetation and ground cover needed to provide a level running surface. Road surfaces may be composed of frozen mineral soil, packed snow, ice, or surface organics. 11 AAC 95.290(f) and (g) address winter road construction and design. Some segments of winter roads may cross terrain that requires construction to all-season standards.

Winter roads will be constructed and maintained to minimize degradation to vegetation, substrate, and hydrology. In all cases, winter road construction will protect water quality by adherence to standards established in the Forest Resources and Practices Regulations (11 AAC 95).

ACTIVITY SUMMARY

Access now exists to much of the TVSF, via state highways, RS-2477 trails and winter trails. In the future, forest roads may access all units of the forest. However, it is unlikely that all units will contain maintained roads simultaneously. In general, units adjacent to state highways are expected to contain all-season roads, to provide a range of access opportunities to the State Forest throughout the year. At present, there are over three hundred miles of all-season roads accessing the State Forest. Much of the forest is expected to have only winter access. State forest logging roads and trails provide the majority of off-highway all-season access to public lands in the valley

Table 2.12. Primary Access by Subunit of the Tanana Valley State Forest

AREA OFFICE	ALL SEASON ACCESS	ANTICIPATED ALL SEASON ACCESS	WINTER ONLY ACCESS
FAIRBANKS	Subunits 4C, 4D, 5A, east½ of Unit 6, and the Mosquito Creek and Canyon Creek Road portion of Subunit 7B.	Unit 3, and Subunit 4A.	Unit 1A, Southeast portion of Tatalina in Subunit 4B, west ½ of Unit 6, Subunit 7A, and remainder of 7B, 7C not in all-season access
KANTISHNA	None.	None.	Subunits 1A, 1B, 1C, 2A, 2B, 2C, 2D, and 2E.
DELTA	Subunit 8A and 10C south of the Tanana River.	Subunits 8C, 8D, 9A, and 9C.	Subunits 10A, 10C north of the Tanana River, Subunit 10D, and Unit 11.
TOK	Unit 14 and portions of 13B.	Portions of 12B and 13B.	Subunits 10C, 12A, 12B, 13A, 13B, and Unit 14 south of the Tok River valley.