2009 TOWN OF GRAND LAKE TREE REMOVAL PROJECT

Sealed bids will be accepted by the Town of Grand Lake at the Grand Lake Town Hall, P. O. Box 99, 1026 Park Avenue, Grand Lake, CO 80447, Attention: Tree Removal, until noon on July 8, 2009 for the removal of trees on Town owned right-of-ways.

At said place and time, and promptly thereafter, all Bids that have been duly received will be publicly opened and read aloud.

General Description of Work

Work includes the removal of trees that are dead or dying.
The main trunks must be cut into sections ranging from four to eight feet in length which shall be stacked (bunked) on site near the roadway.
The limbs and slash must be removed by the bidder.
The trees to be removed are divided into two bid groups and are better described as follows:

Bid #1 – trees marked with yellow paint
Lake and Ellsworth (SW corner) – 7 trees
Pitkin St. (across from the Kaufmann House Museum) – 2 trees
Pitkin St. (in front of old Library) – 1 tree
Pitkin and Grand (NW corner) – 1 tree
Hancock St. (just north of Boater's Choice Marina – 1 tree
Ravenwood (Grand and Haskell) – 7 trees
Cemetery – approx. 42 trees (trees marked with orange/red tape not paint)
(see attached map)

Bid #2- trees marked with yellow paint
Town right of way of Aspen Lane – approx. 42 trees
Pine St. north of Spruce – 4 trees
Town right of way lake access from Grand Ave. between 1430 and 1464 Grand Ave. – approx. 31 trees
Town right of way lake access from Grand Ave. just east of 2150 Grand Ave. – approx. 27 trees
(see attached map)

Bidding

Each bid shall include all costs for the contractor to provide all labor, materials, equipment, tools and services as necessary to perform and complete in a workmanlike manner all work required to cut and stack the main tree trunks as specified above **and** cut and remove all limbs and slash from the bid area.
Stumps will be cut as close to ground level as practical.
Each contract should include any crane time or other contingency costs.
The Town will review each bid submitted as a "cost not to exceed" price.
All areas are in Town right of ways and should therefore be accessible. If the Contractor does need to access or remove cuts through private property; permission must be obtained from the private property owner prior to doing so.
Furthermore, all contractors must ensure compliance with Colorado's Forest Stewardship Guidelines (attached).

Project Timeframe

The timeframe for all project work is between the date the contract is awarded and October 31, 2009. Successful bidders will include their estimated start date, as well as their estimated completion date.

Insurance Requirements

Contractors must maintain Commercial General Liability, Commercial Automobile Liability and Workers' Compensation and Employers' Liability Insurance, and must have a Town business license. At a minimum, each contractor shall carry Commercial General Liability Bodily Injury and Property Damage $600,000 each occurrence, $600,000 aggregate; Personal Injury $600,000 each occurrence, $600,000 aggregate; Commercial Automobile Liability Bodily Injury & Property Damage, $100,000 any one accident or loss; Workers' Compensation and Employers' Liability: Workers' Compensation – at statutory levels, Employer's Liability $100,000 each accident, $100,000 disease – each employee, $500,000 disease – policy limit. A current copy of the contractor's insurance, naming the Town as additional insured, shall be included with the bid.

Site Inspections by Appointment

Site Inspections are highly encouraged. Contact Dan Korkowski, Code Enforcement Officer, Shane Hale, Town Manager, or Bernie McGinn, Public Works Director, at 627-3435 to schedule a site inspection appointment.

***The Town reserves the right to reject any and all bids, and to waive any informalities and irregularities therein.**

GC Public Access Map (FLS)

ESRI ESRI Support Center Help

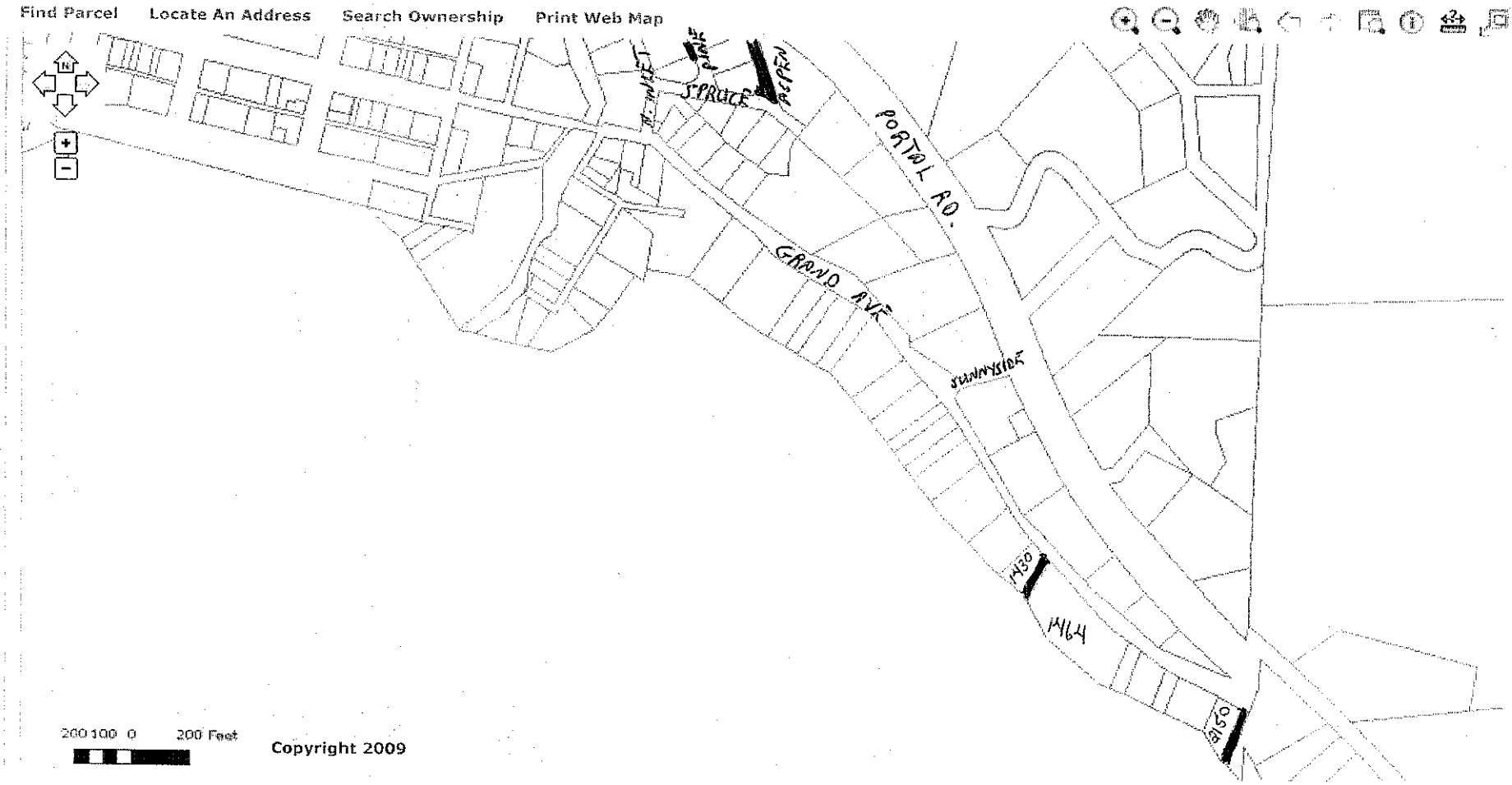
Find Parcel Locate An Address Search Ownership Print Web Map

BIO AREA #1

GC Public Access Map (FLS)

ESRI ESRI Support Center Help

Find Parcel Locate An Address Search Ownership Print Web Map



BID AREA #2

Who is involved?

Strengthening the cooperative working relationships of all natural resource organizations is an important goal. The Colorado Forest Stewardship Coordinating Committee, whose members have common natural resource interests, guides and recommends direction for the Forest Stewardship Program.

Membership includes:

Private Forest Landowners
Colorado State Forest Service
Colorado Division of Wildlife
State Conservation Board
State Land Board
USDA Forest Service
USDA Natural Resources Conservation Service
Colorado State Cooperative Extension
Colorado Forestry Association
Colorado Tree Farm Committee
Colorado Association of Conservation Districts
Colorado Timber Industry Association
Pheasant's Forever
The Nature Conservancy
Private Consultants
Colorado Counties Inc.
Rocky Mountain Elk Foundation Conservation Fund

Who will help me?

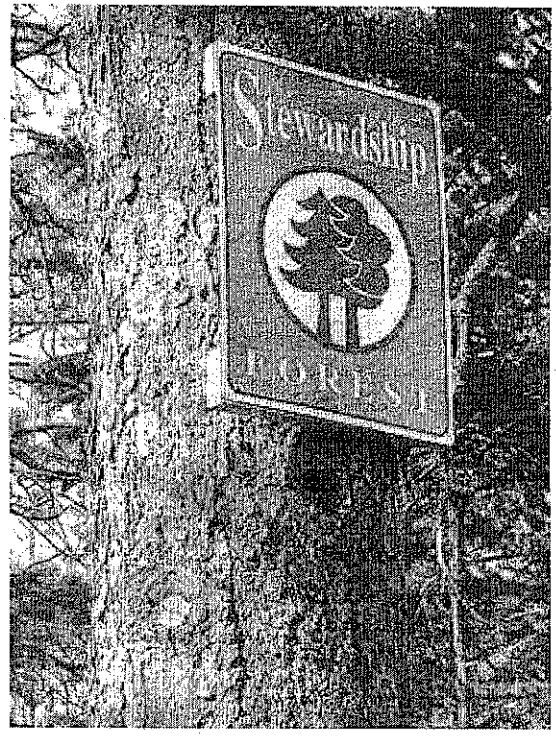
To find out how you can participate in the Forest Stewardship Program please contact your local Colorado State Forest Service (CSFS) District Office

or

log onto the CSFS website:

http://www.colostate.edu/Depts/CSFS/offlist.html

FOREST STEWARDSHIP

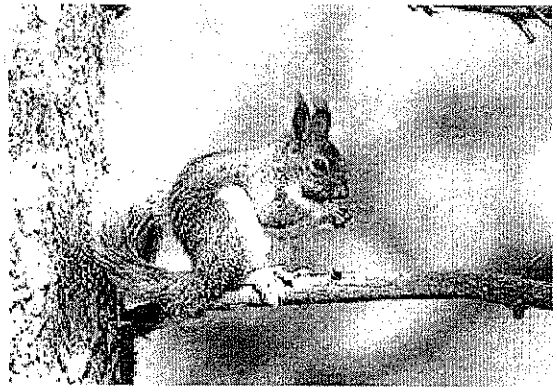


Colorado's Forest Stewardship Program

Colorado State FOREST SERVICE

What is Forest Stewardship?

Approximately six million acres of private forest land exists in Colorado. Like all natural resources, forests require proper management to be healthy and productive. By managing your forest you can protect water quality, increase habitat diversity for wildlife, and increase the growth rate of your trees.

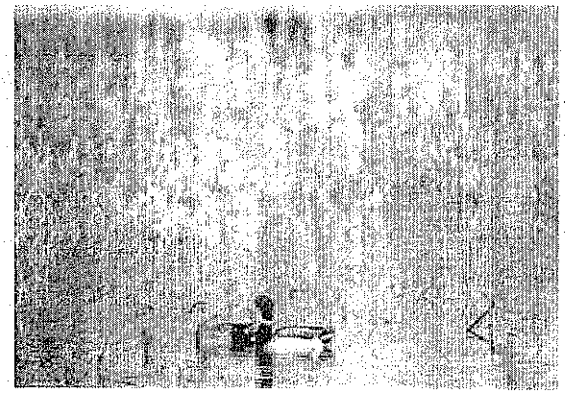


In addition, properly managed forests can provide income, reduce the risk of wildland fire, help protect trees against insects and diseases, and even increase the value of your property.

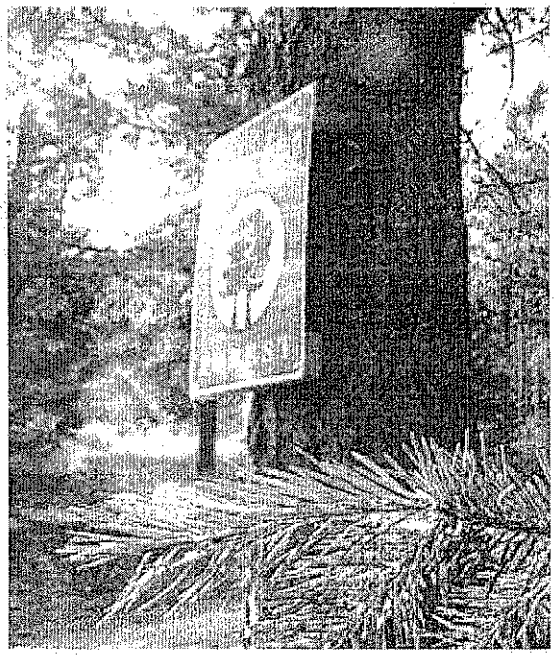
The Forest Stewardship Program can provide you with information, education and technical assistance. This program encourages long-term stewardship of private forest lands. It is designed to assist landowners to more actively manage their forest and related resources.

Who can be a Forest Steward?

The Forest Stewardship Program focuses on landowners in important resource areas, including plains and prairies, where good planning and management will enhance and sustain the long-term productivity of multiple forest resources. The program provides landowners with the planning and technical assistance they need to maintain productive and healthy forest conditions. The Program also recognizes landowners who apply stewardship to their forested lands. Landowners with a Forest Stewardship plan may also be eligible for financial assistance if available.



How can I become a Forest Steward?



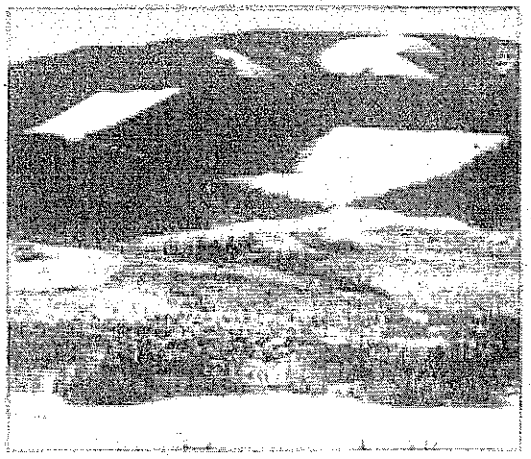
If you are a landowner who wishes to manage forest vegetation and associated resources for stewardship, you are eligible. First, you will work with a professional forester to identify your goals and objectives for your property. Your forester can then help you develop a Forest Stewardship Management Plan. The plan will enhance your knowledge of your property and assist you in making informed decisions to sustain a healthier, more productive forest.

TIMBER HARVESTING

Harvest Design

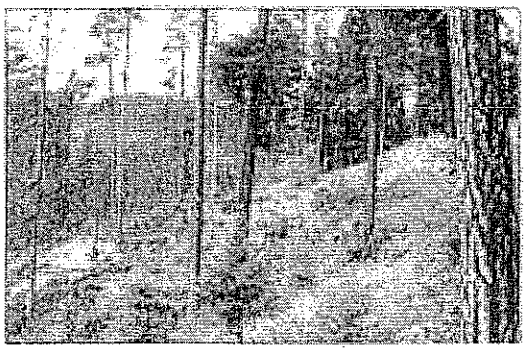
■ Use the logging system that best fits the topography, soil type, and season, while minimizing soil disturbance and economically accomplishing silvicultural objectives.

Analyze the effects of harvesting on the watershed.



Protect wildlife habitat.

Plan for a new forest.



Timber harvest planning is more than deciding how to cut trees. The harvest design must consider the long-term effects of harvesting on ecologically important resources.

Watershed analysis.

What are the effects of this harvest when combined with other activities in the same watershed? Will there be a combined detrimental effect on water yield and sediment? Work with neighboring landowners to maximize everyone's opportunities while protecting the watershed.

What are the potential effects of the harvest on water quality?

Soil erosion hazard. Some soils are more prone to erosion or slumping. Help is available to identify erosion and slumping hazards.

Rainfall: its seasonal pattern and total amount?

Topography. Where are steeps, drainages, streams and other physical features located? Are there critical areas that will require special attention?

Wildlife habitat protection.

How will the harvest affect wildlife habitat? Eliminating elk habitat, for example, may displace elk use of the area.

Plan for a new forest.

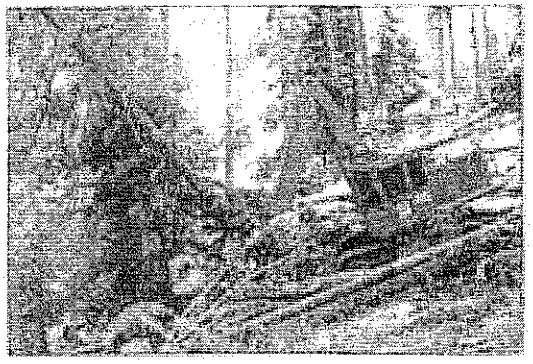
Are there other plants, in addition to trees, that indicate special precautions about the harvest area? What kind of forest will be grown after the harvest and how quickly will the site be reforested?

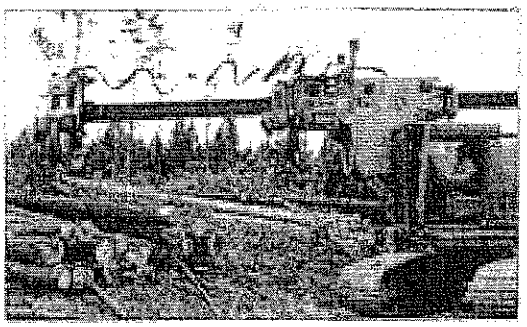
Trees left for future harvest must be of sufficient vigor and acceptable species to ensure continuous growing and harvesting. They must also be protected from damage, to enhance their survival and growth.

Consideration of the harvest site — in particular, terrain — influences the choice of a logging system. On gentle terrain, tractors and skidders, or even forwarders, are a logical choice. In Colorado forests, ground-based skidding equipment is common.

Left: Whatever the harvest system — skidders or skyline — skilled operators are crucial.

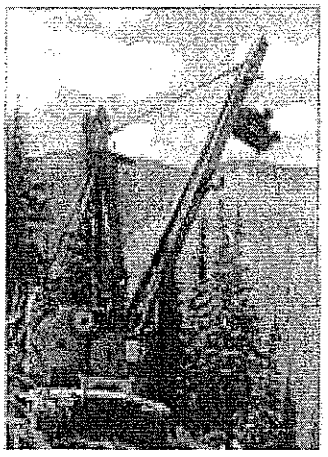
Below: Feller-bunchers are mechanical harvesters that move through the forest and harvest trees and pile them in bunches. They can reach into harvest areas and fell individual trees with minimal damage to remaining trees, water and, or wildlife habitat.





Above: Slide-boom delimbers begin the manufacturing process right in the forest. They quickly strip off the branches and cut the stem into exact lengths.

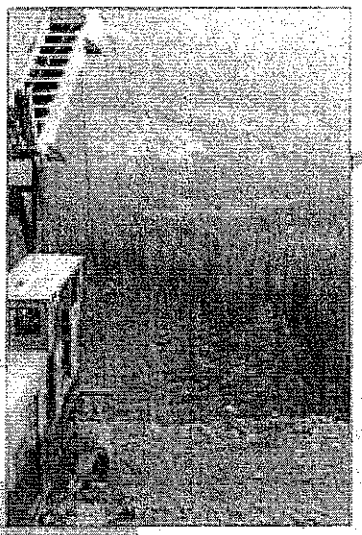
Skyline and cable harvesting (below) are used on steep slopes where ground-based equipment cannot operate. These machines are capable of reaching out a quarter mile, lifting logs off the ground and moving them to a landing where they are hauled away.

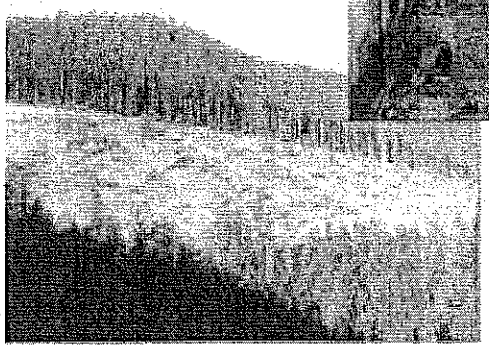


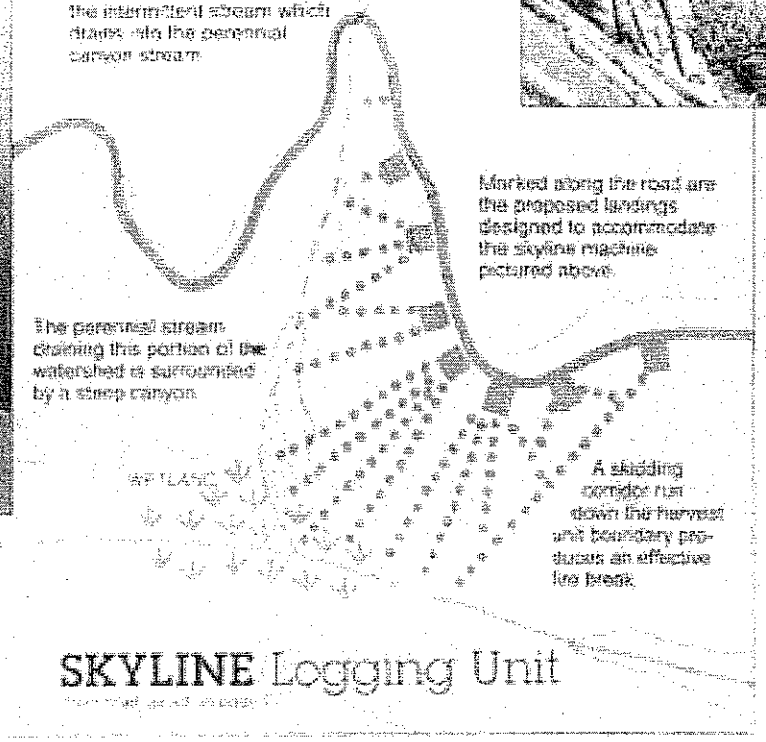
Whatever the chosen harvest system, it must protect the long-term resource values of the forest.

Use the economically feasible yarding system that will minimize road densities.

- Consider the potential for erosion and possible alternative yarding systems prior to planning tractor skidding on steep or unstable slopes.







The topographic map (above) indicates steep terrain. A skyline harvest system is a good choice. This system eliminates the need for skid trails because the logs are moved to the landing by an aerial cable (skyline). By suspending logs in the air, skyline systems reduce soil disturbance. This harvest system is more expensive than ground skidding, but is used where long, steep slopes are common. When harvesting is completed, skyline harvest areas are easily recognized by the skyline corridors. Once the timber is removed the area can be regenerated and a new forest is free to grow.

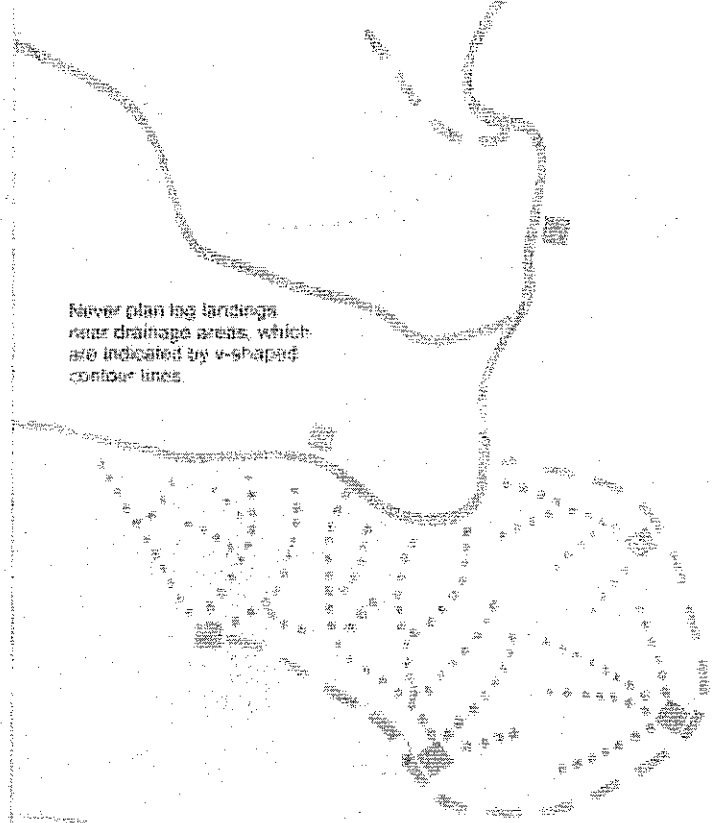
The forest land pictured in the topographic maps above is the same land pictured on page 7. Here it is used to illustrate timber harvesting BMPs. Looking back at the map on page 7, you can see the steep canyon pictured above and in the mountain top bench shown on the topographic map on the next page. The contour lines indicate the contrast between the two locations. Terrain differences like this call for harvest techniques that consider the potential for erosion and its impact on water quality.

A small skyline harvesting system is planned for the steep canyon above. A perennial stream runs down the canyon and drains into a wetland at the toe of the slope. The skyline will operate from the road, using an overhead cable to reach down the hillside and pull suspended logs up to the road (dotted lines indicate the planned cable settings). Log landings are planned along the road. These small landings reduce the need for extensive excavation to carve out flat areas to pile logs. Notice that the harvest plan shows the boundary of the SMZ along the perennial stream and encloses the wetland at the toe of the hillside. The small skyline makes it possible to harvest timber in the SMZ without disturbing the soil and individual trees can be removed from the SMZ without the risk of damage to water quality.

When the terrain is more gentle like that shown in the topographic map on the next page, other harvesting options are available. The harvest plan for this mountain bench calls for ground-based skidding equipment, pictured in the far right photo. The slope is less than 30% and well suited to skidding equipment. A temporary access road (dashed line) is planned to come off the main haul road. It skirts around the outer edge of the bench and allows downhill skidding to the marked log landings along the road.

Designated skid trails are planned for this unit (spoiled logs on the map). Pre-planned skid trails limit soil disturbance and potential soil compaction. They should also be designated to avoid natural drainage areas. Skidding equipment is limited to these designated trails rather than "go anywhere" trails (see diagram, page 23). Try to confine the area covered by skid trails and landings to less than 15% of the total unit.

Regardless of the harvest system you choose, being able to grow the next forest depends on protecting the soil.

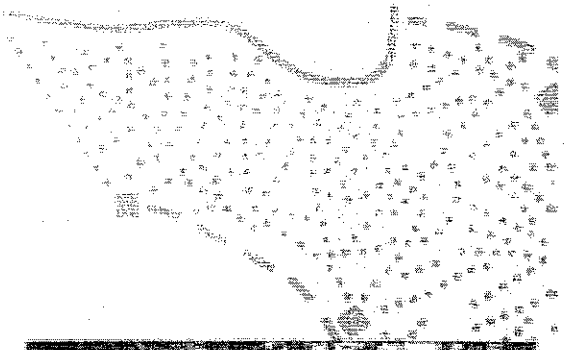


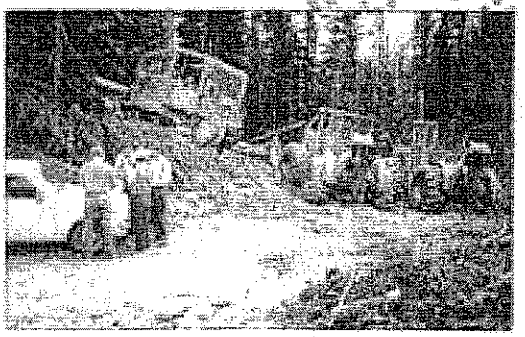
SKIDDER Logging Unit

■ Design and locate skid trails and skidding operations to minimize soil disturbance. Using designated skid trails is one means of limited site disturbance and soil compaction.

When designated skid trails are compared to "go anywhere" skid trails, there is little difference in winching, but a large difference in the area covered by skid trails.

Research and field experience indicate that designated skid trails may be only slightly more expensive, than "go anywhere" skid trails.





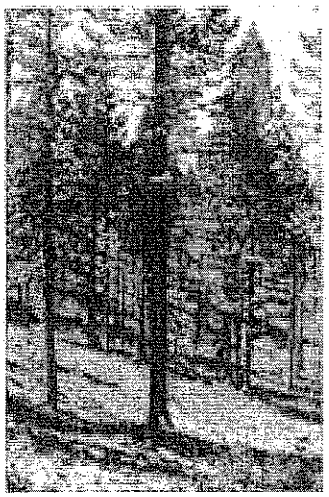
■ Minimize the size and number of landings to accommodate safe, economical operation.

■ Avoid locating landings that require skidding across drainage bottoms.

■ Locate skid trails to avoid concentrating runoff and provide breaks in grade.

■ Locate skid trails and landings away from natural drainage systems and divert runoff to stable areas.

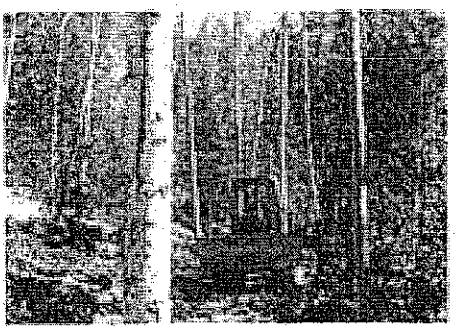
■ Limit the grade of constructed skid trails on geologically unstable, saturated, highly erodible, or easily compacted soils to a maximum of 30%. Use mitigating measures, such as waterbars and grass seeding, to reduce erosion on skid trails.



As much as 40% or more of any area may be covered with skid trails if they are not planned and marked in advance.

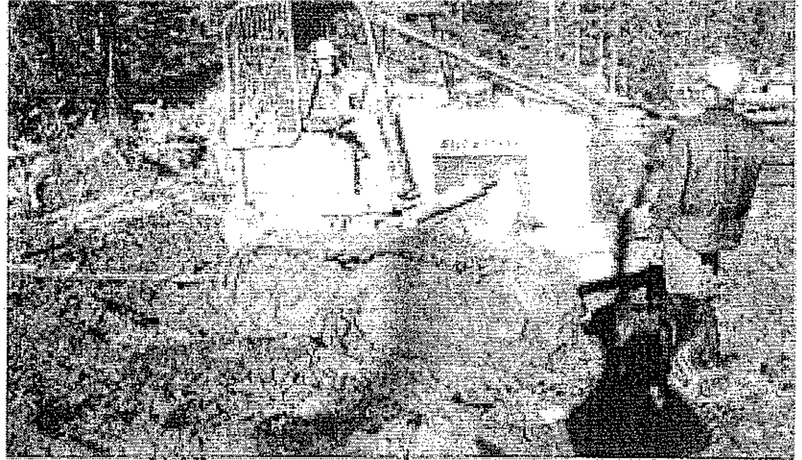
This may be desirable in certain situations such as when attempting to expose mineral soil to improve germination and survival of tree seedlings or to disturb aspen root systems which encourages coppice regeneration. However, it is generally wiser to limit ground disturbance by pre-planning skid trails so as to minimize erosion potential.

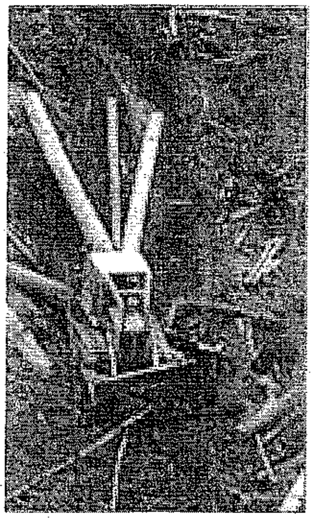
Poor location of log landing. Logs are being skidded across drainage.



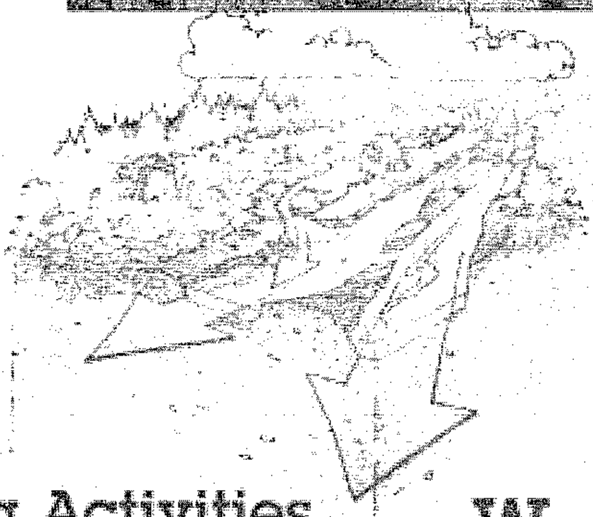
Right: Planning can help avoid steep skid trails on slopes greater than 30% with highly erodible soils. Always install waterbars (see page 24) on skid trails as needed.

- Tractor skid when compaction, displacement and erosion will be minimized.
- Avoid tractor or wheeled skidding on unstable, wet or easily compacted soils and on slopes that exceed 40% unless operation can be conducted without causing excessive erosion.
- Avoid skidding with the blade lowered.





Forest soils on steep slopes are often shallow. Scalping off the litter layer removes the soil's protective cover, leaving it exposed to erosion. Don't use the blade as a brake or to improve traction for skidders on steep slopes.



What happens when the forest litter layer is scraped off?

- Nutrients for the next crop of trees are removed.
- Mineral soil is exposed to erosion by rainfall and surface flow.
- Soil does not retain moisture as well.
- Ability of the soil to grow trees is reduced.
- Runoff and sediment transport increase.

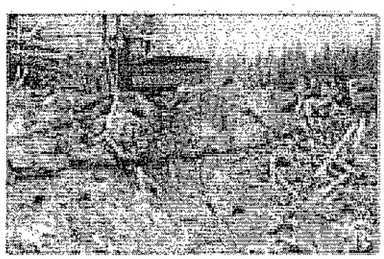
Other Harvesting Activities

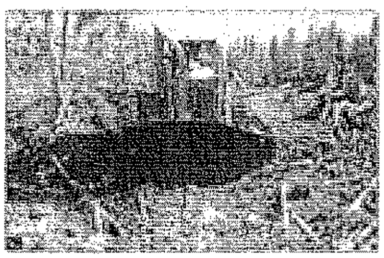
Drainage Management

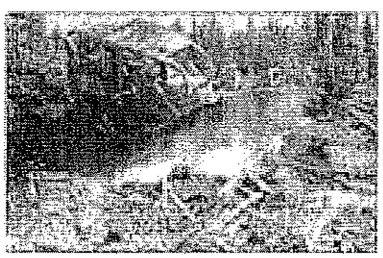
- Stabilize or reclaim landings and temporary roads on completion of use. Logging slash and other natural debris may be scattered on them and these disturbed areas reseeded to grass.

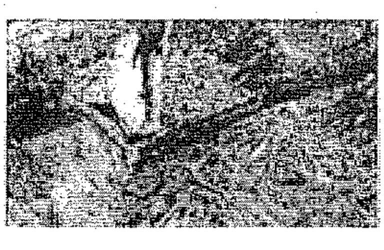
Ditches, waterbars, or outsloping can prevent water accumulation on landings. Be sure to waterbar skid trails leading down to landings.

- For each landing, skid trail, or fire trail, provide and maintain a drainage system to control the dispersal of water and to prevent sediment from entering streams.
- Install necessary waterbars on tractor skid trails. Appropriate spacing between bars is determined by the soil type and slope of the skid trails. Timely implementation is important.
- When natural revegetation is inadequate to prevent accelerated erosion before the next growing season, apply seed or construct waterbars on skid trails, landings and fire trails. A light ground cover of slash or mulch will retard erosion.









Waterbars divert surface water from bare soil to areas where it will not cause erosion. They should be constructed on roads, landings, and skid trails (pictured). Waterbars can be constructed with a shovel, but mechanical equipment is most common. Cut the waterbar into solid soil at least eight inches deep. Shape the berm, parallel to the cut, at least twelve inches above the skid trail grade. Construct the cut downward, but not more than at a 45 degree angle, so water runs to the outlet. Be sure the waterbar is open at the lower end so water runs out. Water should flow onto slash, vegetation, or rocks. When temporary spur roads are waterbarred, be sure to connect the waterbar into "cutslope" to intercept all surface flow.

Suggested Waterbar Intervals for Different Soils

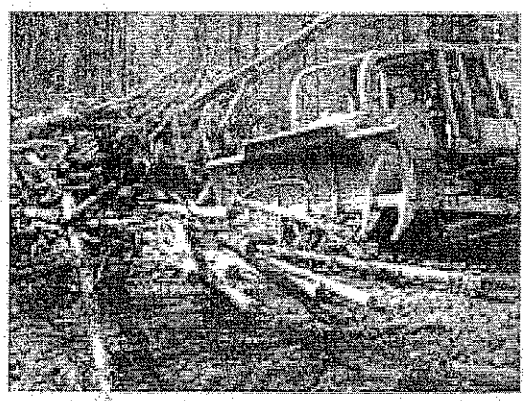
Recommended Waterbar Spacing Distance for Roads and Skid Trails

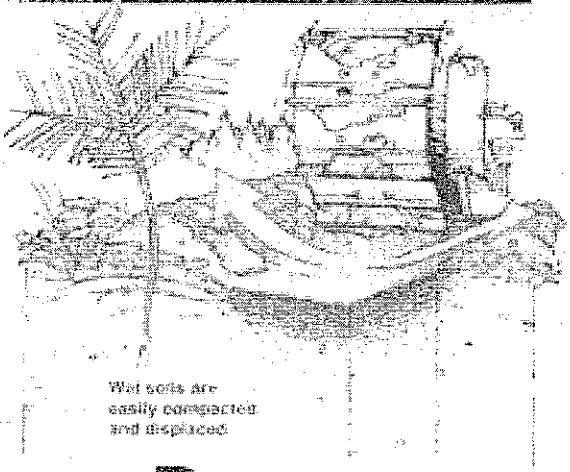
Grade of Road or Trail (%)	Unstable Soils (High Erosion Hazard)	Stable Soils (Low Erosion Hazard)
[illegible]	150	200
[illegible]	100	140
[illegible]	80	115
[illegible]	60	90
[illegible]	45	60
[illegible]	30	40

Intervals in feet

Slash Treatment and Site Preparation

The question "How much soil exposure is enough?" is common when preparing a site for a new forest. Clean as a parking lot (below) is too much. New forests need the nutrients and protection supplied by logging slash. Soil compaction is another problem with sweeping the forest clean.



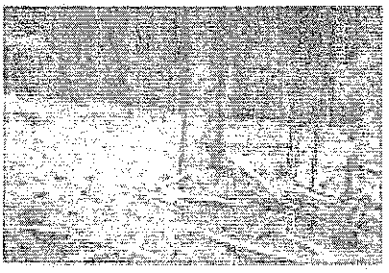


Wet soils are easily compacted and displaced.

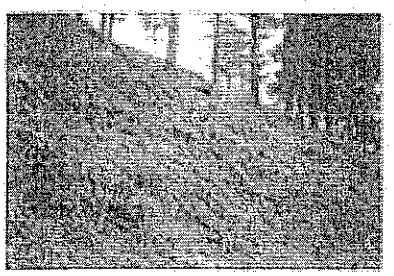
When you pick up a handful of forest soil, half of it is solid material. The rest is empty pore space that holds water and air. Heavy equipment can squeeze soil grains, reducing the space for water and air. Since trees need water and air for growth, the start of the next forest can suffer from soil compaction.

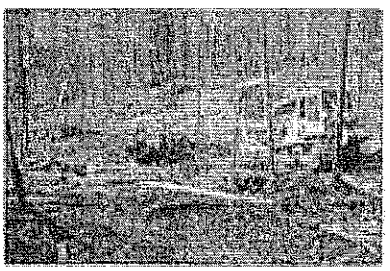
Certain soil conditions are more likely to lead to compaction. Wet soils are more compactible than dry. The most severe compaction occurs within a few inches of the surface. Unfortunately, that is where seed germination occurs and where most of the water-absorbing tree roots are found.

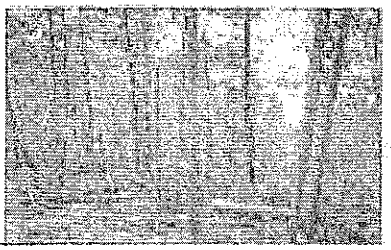
Regeneration of a new forest may require the removal of some logging slash. Seed from nearby trees germinates best in exposed mineral soil. Surface scarification activities must expose bare soil for new seedlings, while avoiding erosion. The three scenes below show mechanical scarification, inadequate (top), acceptable (middle), and excessive (bottom).

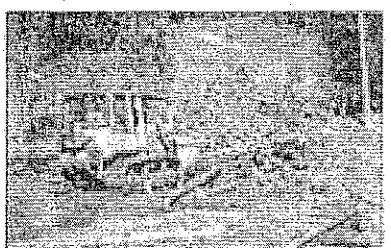


Reduction of slash to decrease fire hazard is recommended. In the top scenes below, one shows acceptable slash reduction (top); the other is not acceptable because too much fire hazard was left.

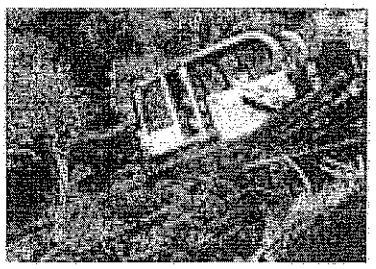








- Use brush blades or equipment when piling slash.
- Scarify the soil only to the extent necessary to meet the reforestation objective of the site. Site preparation equipment producing irregular surfaces is preferred. Care should be taken to preserve the surface soil horizon.

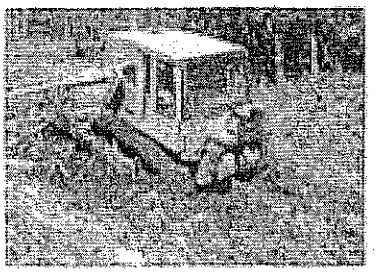


Slash from log processing should never be cast into the SMZ.

- Low slash and small brush should be left to slow surface runoff, retain soil nutrients, and provide shade for seedlings.

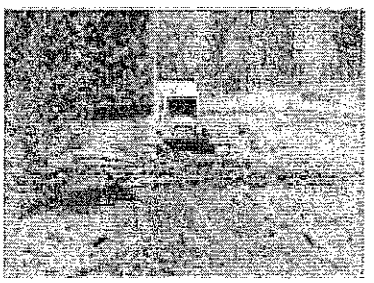
Work around existing small trees and low brush.

- Carry out brush piling and scarification when soils are frozen or dry enough to minimize compaction and displacement.



Stay clear of wet areas during scarification. Results like this create compaction and water quality problems.

- Carry soil scarification on steep slopes in a manner that minimizes erosion.

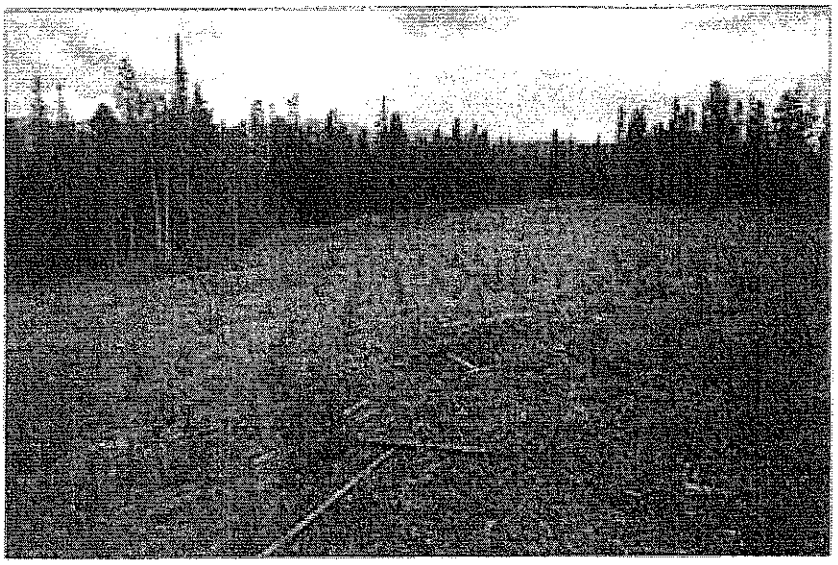


Machine-made ruts on hillside soils can easily become channels for surface water erosion.

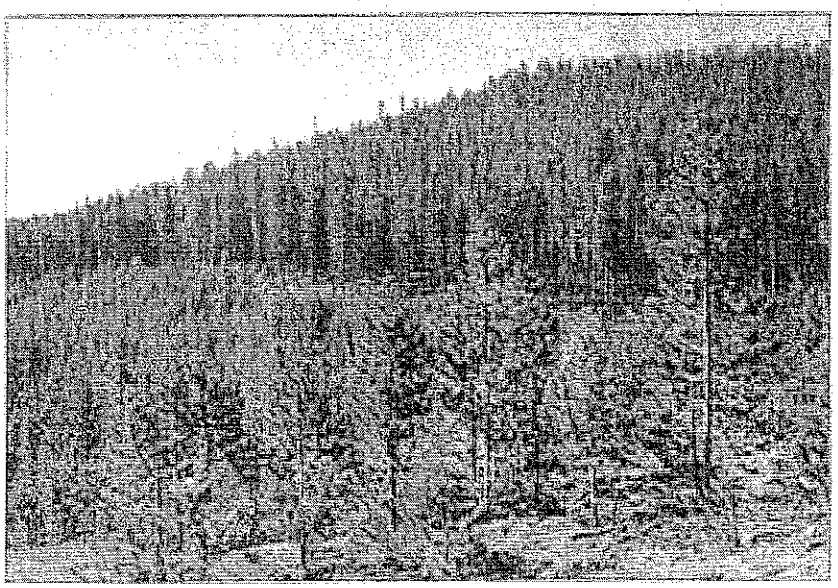
Reforestation

- Remove all logging machinery refuse to a proper disposal site (tires, chains, chokers, cable, and miscellaneous discarded parts).
- Limit water quality impacts of prescribed fire by constructing waterbars at fireline, not placing slash in drainage channels, and maintaining the stream-side management zone. Avoid intense fires unless needed to meet silvicultural goals.
- Broadcast burning and of approved selective herbicide applications are preferred means for site preparation, especially on slopes greater than 40%. Herbicide and insecticide use requires special training and state licensing of applicators. For additional information contact the Colorado Department of Agriculture.
- Rapid reforestation of harvested areas is encouraged to re-establish protective vegetation.

Broadcast burning can be used to prepare a site for a new forest, even on steep slopes. By carefully monitoring moisture conditions, a fire can be set that consumes only part of the material, leaving the soil humus and large logs relatively undisturbed. Afterwards, the site is either planted or allowed to seed-in naturally.



Site preparation techniques — mechanical or broadcast burning, are designed to get the new forest off to a vigorous start. When combined with healthy tree seedlings, either planted or naturally seeded, the result is the next generation forest.



Generally, throughout Colorado, natural regeneration provides more than adequate restocking of harvested areas.