

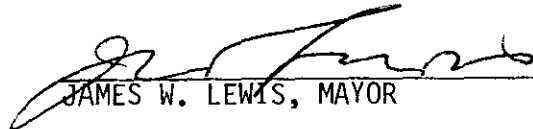
RESOLUTION NO. 649

A RESOLUTION ADOPTING CONCEPTS OF THE JACKSONVILLE WATERSHED FOREST
MANAGEMENT PLAN

BE IT RESOLVED, that the City Council of the City of
Jacksonville, Oregon hereby adopts the Jacksonville Watershed
Forest Magement Plan attached hereto as Exhibit "A" and incorporated
herein, and

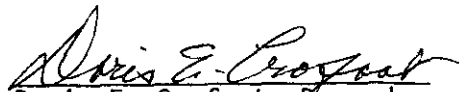
BE IT FURTHER RESOLVED, that the Forestry Committee of the
City of Jacksonville is hereby authorized to make minor amendments in
priorities and implementation of the Watershed Forest Management
Plan.

Signed by me in open session in authentication of its
passage this 5TH day of September, 1995.



JAMES W. LEWIS, MAYOR

ATTEST:



Doris E. Crofoot, Recorder

JACKSONVILLE WATERSHED FOREST MANAGEMENT PLAN

Prepared for:
City of Jacksonville


Prepared by:
Robert L. Thrush
Consulting Forester

April, 1995

**JACKSONVILLE WATERSHED
FOREST MANAGEMENT PLAN**

This Forest Management Plan was developed for the City of Jacksonville by Robert L. Thrush, Consulting Forester.

Date: April 4, 1995


ROBERT L. THRUSH
Consulting Forester

Accepted by the City of Jacksonville.

Date: April ____, 1995

CITY OF JACKSONVILLE

By: _____

TABLE OF CONTENTS

Signature Page	
Table of Contents	
Introduction.....	1
<i>Purpose</i>	
<i>Description</i>	
<i>Ecology</i>	
<i>History</i>	
Forest Practices Act.....	4
Management Objectives.....	5
Resources	
Recreation.....	5
Watershed.....	8
<i>Soils</i>	8
<i>Erosion</i>	9
<i>Streams</i>	11
<i>Forest Health</i>	5
<i>Riparian Zones</i>	12
<i>Reservoir</i>	12
<i>Fisheries</i>	13
Wildlife.....	13
<i>Big Game</i>	13
<i>Threatened Endangered Species</i>	14
<i>Game Birds</i>	14
<i>Habitat Enhancement</i>	14
Aggregate.....	15
Forest Health.....	16
Merchantable Timber Inventory.....	16
Timber Harvesting.....	19
<i>Recommendations</i>	20
<i>Proposed Harvest Schedule</i>	22
<i>2015 And Beyond</i>	23
Silviculture	
<i>Seed and Seedlings</i>	23
<i>Brushfield Rehabilitation</i>	24
<i>Hardwood Control</i>	25
<i>Planting Under Hardwoods</i>	25
<i>Animal Damage</i>	25
<i>Precommercial Thinning</i>	26
<i>Silviculture Cost Estimates</i>	27

Silviculture Activity Summary.....	27
Erosion Control Activity Summary.....	28
Recreation and Reservoir Development Summary.....	29
<i>Estimated Harvest Income</i>	29
<i>Additional Recommendations</i>	29
<i>Long-Range Recommendations</i>	29
Acknowledgments.....	30

INTRODUCTION

Purpose: This management plan is designed to assist and focus activities to meet the city of Jacksonville's objectives in the management of city-owned property within the Jackson Creek watershed. It has been written to provide guidelines for a sound strategy which reflects a land stewardship ethic to integrate the management of the forest resources as a valuable legacy for present and future generations. Forest management is a long-term process. To ensure continuity of management, it is essential to have in place a management plan with associated policies and procedures for implementation.

An attempt has been made to develop a plan which is thorough yet concise and easily interpreted. Prescribed activities will require additional field work, contract supervision, and liaison to complete.

Forest resources are assessed and described. Activities are prescribed and prioritized to develop, enhance and/or maintain resources to accomplish the management objectives stated herein. Also included are estimated costs and benefits of these activities. Estimated income from recommended harvesting is provided as well.

Description: This tract of forest land of approximately 1800 acres lies primarily within the Jackson Creek drainage and is often referred to as the Jacksonville watershed. The southeast corner of the property is located just 1-1/2 miles west of downtown Jacksonville and is easily accessible via the Jackson Creek Road.

The Jacksonville watershed drains to the southeast via three primary converging streams: Jackson Creek, Norling Gulch and Cantrall Gulch. The terrain is quite variable, with gentle ridge tops and south slopes to steep north slopes. Slopes of all aspects are represented. There are numerous short, sharp draws in areas of decomposed granite soil. The elevation ranges from 1980 feet at the reservoir to over 4000 feet at the highest point in the northwest portion of the property.

Vegetation is quite typical for the region. The predominant coniferous species is Douglas-fir, followed by ponderosa pine, grand fir, incense cedar, sugar pine, and knobcone pine. Also present on north slopes is Pacific yew. Although this small understory tree is not important commercially, it adds to forest diversity, is esthetically pleasing, and is a significant indicator of a good timber-growing site. Also present is sword fern, another indicator of a good site. Using the standard method of determining site quality by measuring the height and age of young free-growing trees, site quality was found to be in the mid-Site III range on the better sites. Site quality in the area is quite variable and degrades to non-commercial forest on some steep, rocky slopes. However, it is estimated that 80% of the property is Site IV or better. Site quality is difficult to

determine on much of the area due to the absence of indicator species and young, free-growing trees.

The predominant hardwood species is madrone. Other hardwood species include black oak, white oak, chinquapin, dogwood, canyon live oak, big leaf maple, mountain mahogany and, along the streams, white alder, black cottonwood, willows and some vine maple.

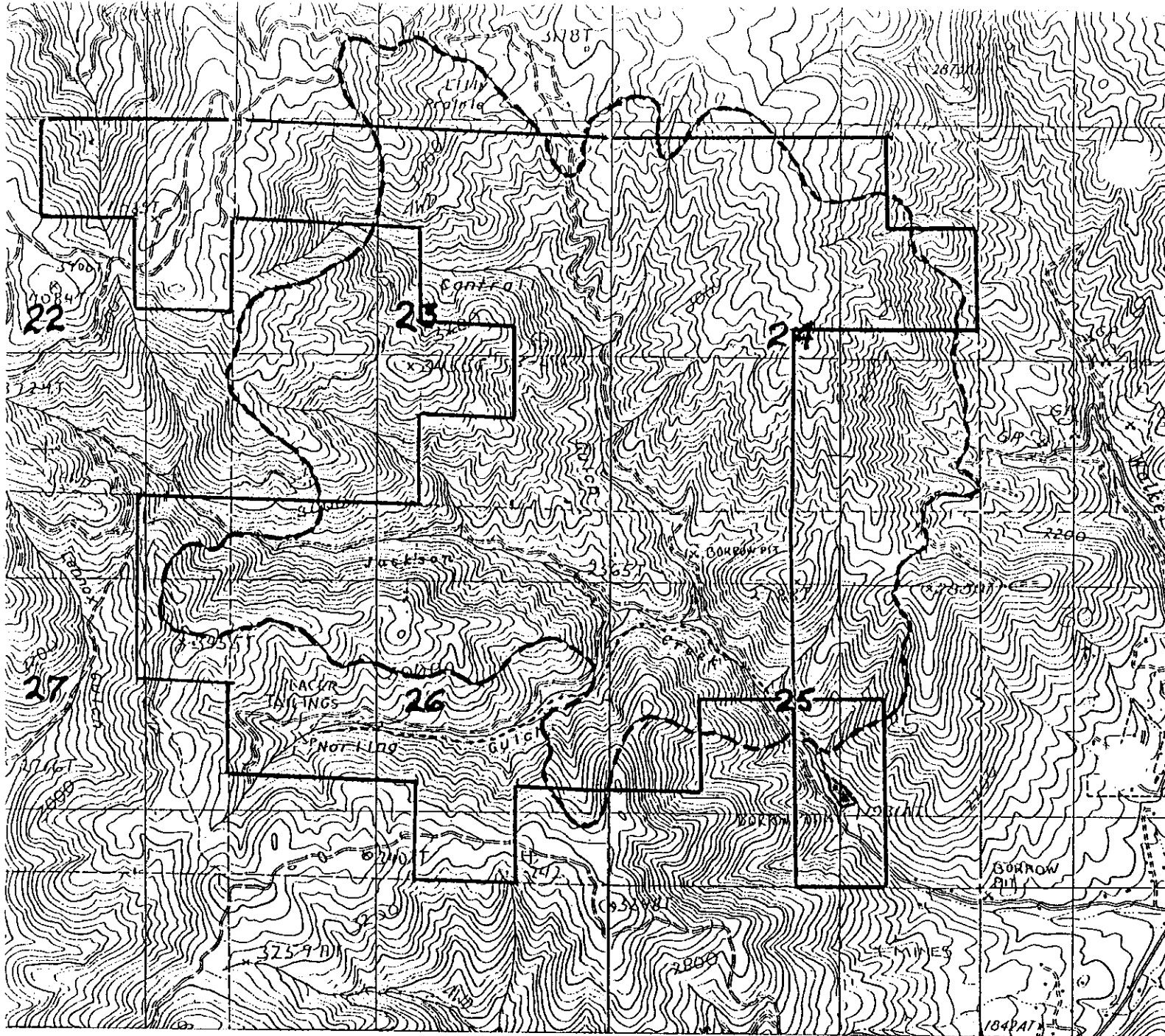
Brush and other woody plant species include gray manzanita, deerbrush ceanothus (*Ceanothus integerrimus*), wedgeleaf ceanothus, ocean spray, mock orange, snowberry, tall Oregon grape and dwarf Oregon grape.

Plant communities and timber will be discussed in further detail in the Resource section.

Ecology: Forest managers must possess a good understanding of the plant ecology of an area in order to make good management decisions. Each species has a set of characteristics unique to that species. For example, species differ in their tolerance to shade, drought, frost, heat, high water table, fertility deficits, certain minerals, etc. These unique sets of characteristics are basic to the formation of the various plant communities.

In this area, ponderosa pine is the important commercial species best suited for the drier sites as it is more drought tolerant than Douglas-fir. However, Douglas-fir is usually more prevalent even on the south slopes because it is much more shade tolerant. Forest fires occur relatively frequently in this region. After fires, stumps of hardwood species, especially the abundant madrone, sprout rapidly. Also, the heat from fires cause seeds of manzanita and ceanothus species lying dormant for years to germinate the following spring. Since seed production of Douglas-fir and ponderosa pine is sporadic, the brush and hardwood cover is often well advanced before seed is disseminated from surviving conifers. The brush and hardwood cover provides shade essential for the survival of the coniferous germinants, particularly Douglas-fir on south slopes. The intolerant ponderosa pine seedlings cannot grow fast enough in dense shade to over-top the overstory. The medium tolerant Douglas-fir seedlings can tolerate some shade and are much more likely after a long struggle to overtop the brush or hold on until the overstory dies off. Only recently-germinated seedlings require shade or cooler temperatures to survive. Nursery-grown two-year-old seedlings survive and grow very well when outplanted, even on exposed south slopes, provided plant competition is not too severe and adequate moisture is available.

Knobcone pine is uniquely equipped to regenerate after forest fires. It is very tolerant of drought but intolerant of shade. Most importantly, its regularly-produced cones accumulate on the trees and are serotinus. The seed remains viable and is released when adequate heat, as generated by a forest fire, opens the cone scales. Knobcone pine is a commercial species and would be a more common component of local timber stands if



JACKSONVILLE WATERSHED

1956 Burn

Scale: 1:24,000 (1" = 2,000')
 Contour Interval = 40', Supplementary Contour Interval = 10'

Legend:

Perimeter, 1956 Burn
 Reservoir



not for its height limitation. Since it grows to a height of only about 80 feet, other species overtop and shade it out. Remnant stands persist in Southern Oregon on some rocky ridge tops where the soil is too shallow to support taller species.

Another phenomenon common in Southern Oregon is the inability of young stands of Douglas-fir to thin naturally. This problem occurs in all degrees and is particularly evident on poor sites. These overstocked stands are composed of slender trees with small crown ratios without any truly dominant trees. Such stagnated stands have limited potential for timber production and respond poorly when thinned. Normally, some of the trees within a stand become dominant and "shade out" the smaller (suppressed) trees. This natural thinning process begins at the sapling stage and continues through the old growth stage as individual trees grow larger and require more space. A goal of foresters is to duplicate or speed up this natural process by precommercial and commercial thinning to maintain healthy productive forests. Factors contributing to the stagnation problem are too many trees initially, limited available moisture, and root grafting. A dense stand of saplings with roots interlocked and grafted together performs more like one tree with many stems. This parasitic phenomenon tends to keep all the stems alive yet prevents any from becoming dominant. Root grafting is the reason some stumps continue to "grow" after trees are felled.

History: The Jacksonville watershed has a history of mining dating back to the mid-1800's when gold was discovered in the area. Much evidence of gold mining activities remain along the streams and slopes in the southern portion of the ownership. Numerous ditches which were used to transport water to the mines contour the hillsides. There is a variety of old diggings, from tunnels to open pits. The age of these operations is evident by the size of the fir and pine trees which have since grown on the sites. Hidden beneath the forest litter, iron and glass relics of the mining days await discovery.

In 1910, the city of Jacksonville received water rights on Jackson Creek and was authorized to store 57 acre-feet of water for domestic use. In the early 1920's, a reservoir and associated water distribution system was constructed. The reservoir was the source of city water for only 10 to 15 years. Probably because of water quality problems, use of reservoir water was discontinued in the 1930's and replaced by water flowing from a mine shaft approximately three-fourths mile upstream of the reservoir. An above-ground 8" diameter wooden pipe was incorporated into the system to transport the "tunnel" water via gravity flow to town. Sections of this old pipe now decorate Jacksonville Inn. This water source was in use until 1953 when the city hooked up to the Medford water system. Tunnel water continued to supply several residences until the 1970's.

In 1956, a major forest fire burned over approximately 67% of the watershed property. The resulting burn has been left to recover naturally.

Much of the area is still void of conifers and is covered with a dense stand of manzanita brush. North slopes support dense stands of madrone mixed with Douglas-fir to 35 years old in various stocking densities. Vegetation is described in more detail in the Resource section.

Silvicultural activities are prescribed to rehabilitate the brushfields, reforest the non-stocked areas, control hardwood competition and precommercially thin young Douglas-fir stands. These silvicultural activities will not only increase production of commercial forest products, but will also improve wildlife habitat, reduce the fire hazard, improve forest health, and increase recreation potential.

The most recent logging operation was conducted in 1978 which resulted in the harvesting of over one million, five hundred thousand board feet of timber. A timber sale was set up and sold with all trees over 14 inches DBH (diameter at breast height) designated for cutting. All logs were skidded with tractors. Large trees considered too difficult to access were bypassed and remain standing.

The only evidence of reforestation attempts or other silvicultural activities on the property is found in the vicinity of the mine shaft which served for a time as the city's water source. Here, someone planted Jeffery pine seedlings about 1980. These introduced trees planted in an opening are up to 15 feet tall, while those planted under the brush and madrone are spindly and range in height from two to four feet.

Although this property has been ravaged by nature and neglected and abused by man, it remains a very valuable asset. When managed with foresight, creativity and compassion, this forest will become a veritable treasure for the people of Jacksonville, providing significant income from timber production, pleasurable recreation opportunities, and desirable habitat for many species of wildlife.

FOREST PRACTICES ACT

The Oregon Forest Practices Act provides for a set of rules establishing standards which encourage and enhance the growing and harvesting of trees, while maintaining the environmental quality of the forest. Major components addressed are the trees, soil, air, water resources, and wildlife and aquatic habitats. Riparian areas, the wet soil areas next to streams, lakes, and estuaries, have been given special protection. These areas play an important role in protecting water quality and fish populations. Wildlife often find all of the necessities of life in these areas. Wetlands and the land adjacent to them are also provided special protection to maintain the water quality and quantity, and the fish and wildlife values this resource contributes to the forest environment.

The Act regulates activities on all private and state forest lands, and also provides for this regulation of forest operations to be under one agency's coordination. Through agreements, federal forest land agencies meet or exceed these practices on the lands they manage.

Forest practices rules require the landowner, timber owner or operator to notify the State Forester through its local District offices **at least 15 days** before starting an operation. This advance notice gives state foresters the opportunity to review the work site, identify potential problem areas, and help landowners and operators avoid problems.

Copies of the complete rules are available at all Department of Forestry offices.

MANAGEMENT OBJECTIVES

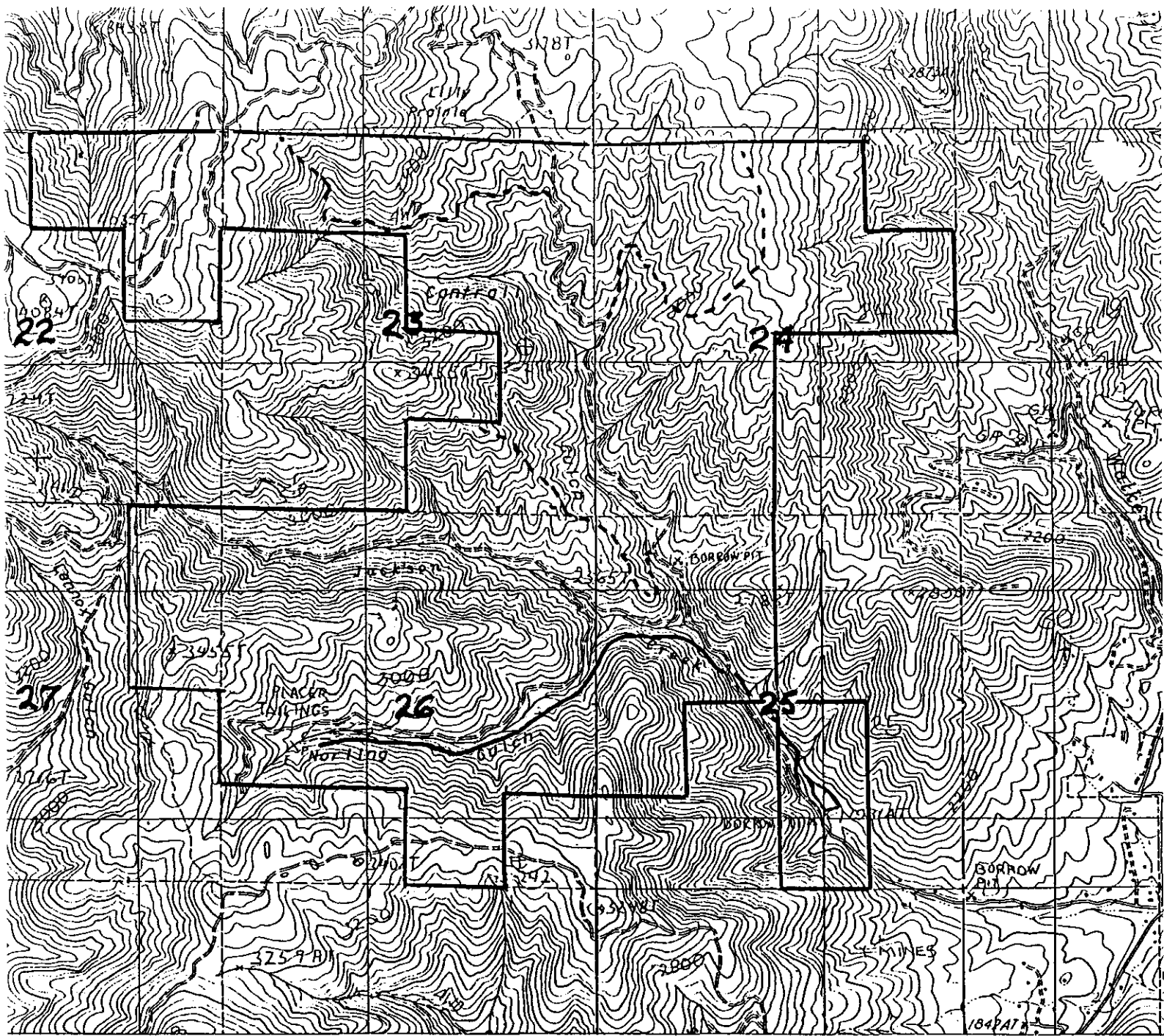
The primary objective is to manage the forest resources for the long-range benefit of present and future generations of people of Jacksonville and vicinity. More specific management objectives include:

1. Maximize the production of commercial timber, consistent with sound forest economics and other management objectives.
2. Protect the forest from loss by fire.
3. Promote and maintain forest health.
4. Restore and maintain a watershed with minimal erosion, producing cool, clean water to its inherent capacity.
5. Enhance and maintain potential fish habitat.
6. Provide habitat for diverse wildlife populations.
7. Provide recreation and education opportunities for diverse user groups.

RESOURCES

RECREATION

Recreation within the Jacksonville watershed is presently, as it has been for years, dominated by off-road motorcycle riding. This is evidently an ideal environment for the sport as old roads, skid roads, and trails of all sorts all over the property are heavily used. These "dirt bikes" are usually



JACKSONVILLE WATERSHED

Recreation Map

Scale: 1:24,000 (1" = 2,000')
 Contour Interval = 40', Supplementary Contour Interval = 10'

Legend:

- Proposed Hiking Trail 
- Motorcycle Trails 
- Possible Picnic Area 

off-loaded at the reservoir parking lot. The reservoir area is heavily used, as if for training and jumping is conducted at the adjacent borrow pit.

Another very common activity in the area is shooting. The reservoir area is the favorite spot for this sport. Other forms of recreation taking place on a relatively minor scale are bicycling, horseback riding, hunting and hiking.

A tremendous recreation potential for additional user groups remains undiscovered in the woods just upstream. The close proximity to town makes this forest quickly and easily accessible for local citizens. The forested Norling Gulch in particular is beautiful, serene, cool in the summer, and ideal for such activities as hiking, horseback riding, wildlife viewing or simply enjoying nature. Old mines await discovery and exploration. Dedicated hikers are in for a pleasant surprise when they climb to the top of a ridge and discover the scenic overlook. A lucky hiker may even see a wild deer.

To provide recreational and educational opportunities for a broad spectrum of local citizens, the following activities are recommended:

1. Improve the reservoir parking lot and install an all-weather signboard welcoming visitors and requesting their cooperation. Post the rules and regulations, and on a map, outline the city ownership and describe recreational opportunities. Educational information can be displayed, beginning with the management objectives. Because of anticipated vandalism, the first signs should be relatively inexpensive.
2. Develop at least a primitive picnic area immediately upstream from the reservoir.
3. Plant trees on the alluvial deposit and rehabilitate the borrow pit as described in the Reservoir section.
4. Develop a hiking/equestrian trail system beginning at the reservoir and extending up Norling Gulch approximately as described on the map, opposite page. The trail system can be easily extended by following old roads and mine ditches. It is hoped that volunteers could be recruited for trail construction. Another possibility is to encourage the State Forestry to construct their practice fire lines in desirable trail locations.

A similar trail system could be located in the Jackson Creek drainage around 2015, at which time the forest will be more mature, with qualities similar to today's Norling Gulch woods. During periods of temporary degradation of recreational values from logging, the alternate trail systems would continue providing opportunities for quality recreation.

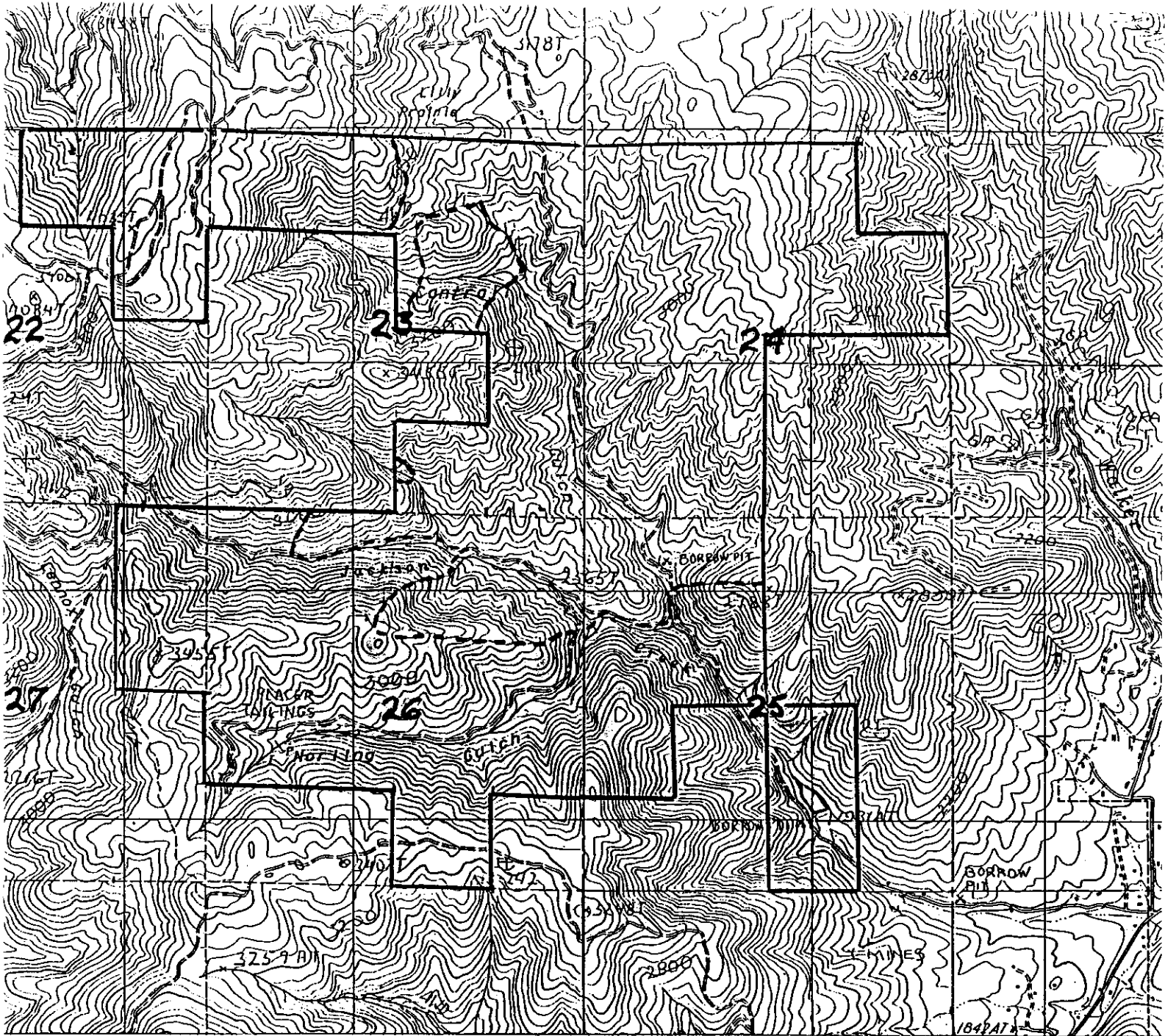
Motorcycle riding activities and recreational shooting must be modified in order to achieve the management objectives of this plan. These sports are extremely noisy and intimidating to other people in the area. Motorcycle riding not only conflicts with other recreational activities, but has unacceptable negative environmental impacts as well. Irresponsible motorcycle riding has contributed to the erosion problems and, according to ODF&W wildlife biologists, off-road vehicles disturb big game and can render areas inhospitable for deer and elk.

It is essential that the motorcycle club members and other riders cooperate and abide by a set of rules and regulations adopted by the city governing their activities. Considering all the area within which they have to ride, certainly some areas could be closed to motorcycle riding without significant degradation of the sport. The motorcycle club owns approximately 180 acres in the Lilly Prairie vicinity where they can and do off-load and ride. They also have permission to ride on Boise Cascade and BLM lands in the area.

Prior to establishing controls for motorcycle use, it is recommended that the city first perform erosion control measures and develop other recreation. It is felt that cooperation could be more easily achieved if the city visibly sets the example and practices responsible land management.

The following are suggestions for controlling shooting and motorcycle riding:

- a. No off-road riding south of the granite pit in the northwest quarter of Section 25.
- b. Close Norling Gulch drainage to all motorcycle riding and shooting.
- c. No riding on cut slopes of roads.
- d. No riding straight up hills, especially in draws, even on old skid roads.
- e. A few well-designed and located trails may be the best solution, not only for accomplishing the management objectives, but for the motorcycle riders' enjoyment as well. Trails should be designed and constructed with grade breaks (like water dips) about every 200 feet to minimize erosion. Trails could be located to avoid streams and important wildlife habitat, yet provide access to other riding areas. For best results, solicit participation from the motorcycle clubs and explain the objectives of trail location which



JACKSONVILLE WATERSHED

Soils Map

Scale: 1:24,000 (1" = 2,000')
Contour Interval = 40', Supplementary Contour Interval = 10'

Legend:
Sandy Loam ("granite")
Gravelly Loam ("clay")

- are: (1) provide a trail system for the continued enjoyment of motorcycle riders; (2) minimize erosion; (3) allow for other recreational users desiring a peaceful and quiet environment; and (4) minimize disturbance to big game mammals.
- f. Shooting should not be allowed south of the granite pit or in the Norling Gulch area. Designating a specific shooting area or shooting range is not advisable for liability reasons.
 - g. Update rules and regulations periodically to accomplish objectives.

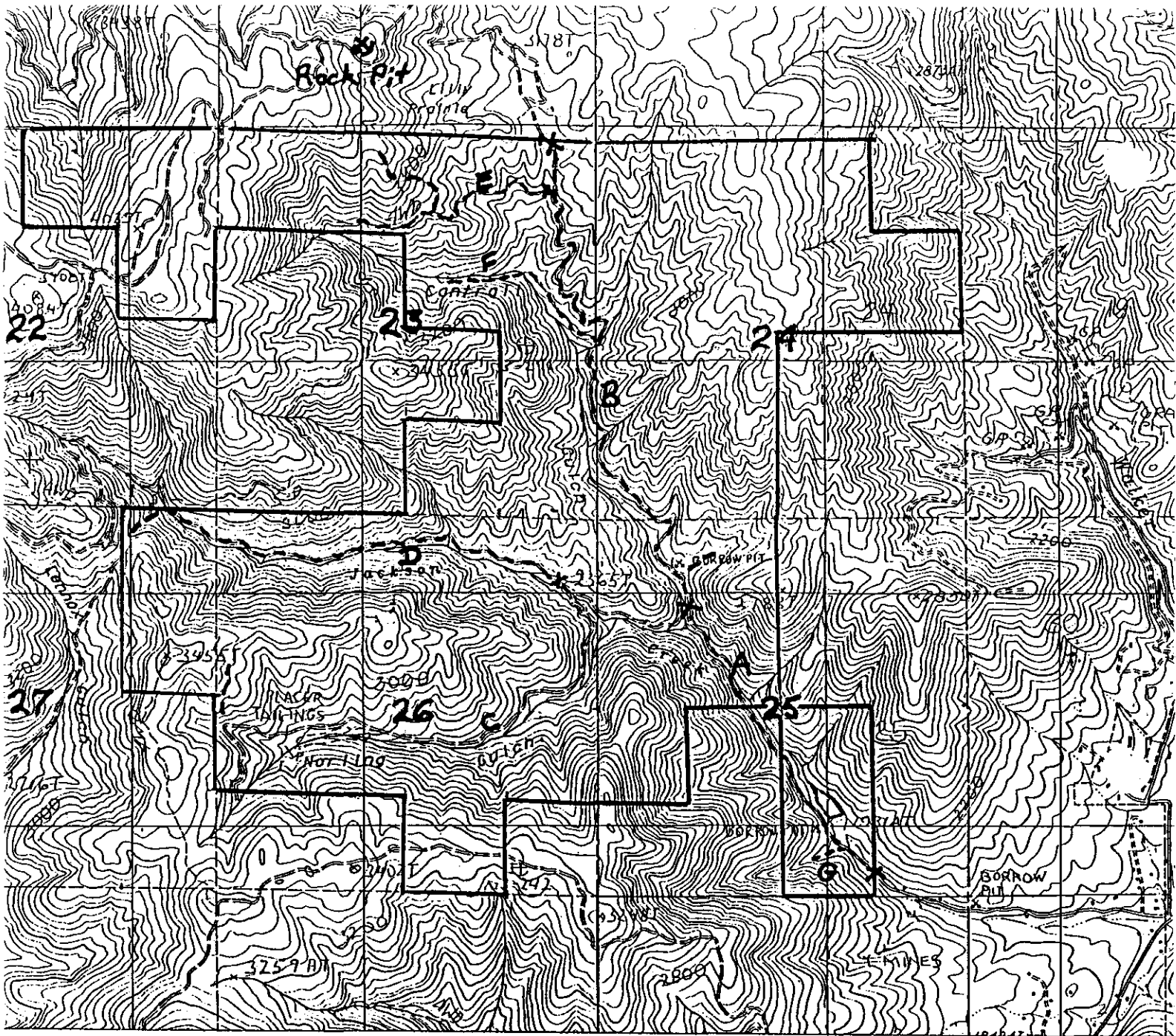
WATERSHED

Soils: The Soil Conservation Service (SCS) has mapped numerous soil series and variations thereof within the watershed. For management purposes, the soils have been grouped into two classifications based on their derivation and mapped accordingly. The soil is considered to be either "granite" (derived from granite rock) or "gravelly loam" often referred to as "clay" soil (derived from metamorphic rock).

There are variations within each of these classifications which affect site quality. Although the best sites are found on north slopes and gravelly loam soils, decomposed granite soil can also be quite productive.

In the management of this property, the most important soil characteristic is erodability. The granite soil within the watershed is extremely erodable and extra precautions must be taken to keep it in place.

The gravelly loam soil is much less erodable. Typically in soil erosion, the fine material, or clay, readily washes and stays in suspension. The washing away of the fine material effectively concentrates the gravel which then retards further soil movement. Of course, if the volume and velocity of water is sufficient, erosion will continue and can be severe.



JACKSONVILLE WATERSHED

Erosion Control Map

Scale: 1:24,000 (1" = 2,000')
 Contour Interval = 40', Supplementary Contour Interval = 10'

Legend:

- Erosion Control Required
- Road Segment Break X
- Road Segment ID B

Erosion:

Severe soil erosion has persisted within the watershed for decades. The bulk of the dislocated soil has been washed into the streams. Factors which have contributed to the erosion problem include: (1) the inherent erodability of the soil, (2) poor road location and design, (3) inadequate and improper road maintenance, (4) improper logging procedures, and (5) irresponsible motorcycle riding.

Erosion is a function of the inherent erodability of the soil and the volume and velocity of the water. The main source of the soil which enters the streams is the Cantrall Gulch road (see map opposite page, Road Segment B). This road traverses highly-erodable granite soil its entire length. There are few provisions such as cross drains, surface rock or rip rap to control erosion within the road prism. In some sections, water runs down the road or ditch-line as much as 1,000', washing increasingly deeper gullies before being diverted off the road.

Because the road is located just above the stream which runs in a sharp draw, the dislocated soil is washed into the stream. At one time in the early 1970's, the fill slopes and road bed were so severely gullied that this road was impassable with a four-wheel drive vehicle. Apparently when the road becomes too eroded for comfortable vehicular travel, someone blades the surface and fills all the gullies. The erosion scenario is repeated the following winter. Compounding the problem is the amount of motorcycle and four-wheel drive vehicle traffic. Soil stability is never achieved. Motorcycle riders apparently possess a propensity to run up on the cut slopes, causing further soil dislocation. In one instance, such sport resulted in a plugged culvert and the predictable consequences.

Similar problems are associated with road Segments D and E. Segment E is severely gullied and is impassable by all vehicles except motorcycles. Segment D is severely washed and is nearly impassable.

Segment C, up Norling Gulch, has been rebuilt and maintained by Boise Cascade. Consequently, little erosion has occurred this past winter or is anticipated in the future.

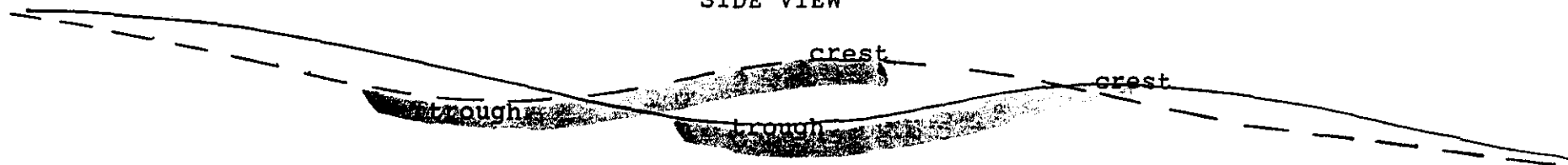
Although Segment A is adequately rocked to prevent serious erosion, the absence of sufficient drainage allows water to run down the road great distances, washing off fine material and developing ruts.

Segments G and F are located in the bottom of draws without room for both streams and roads. Consequently, the streams run down the roads.

Poor logging practices have contributed to erosion as well. Temporary roads and skid roads have been improperly located, resulting in small streams running down these avenues. There is evidence of skid roads not being properly water barred.

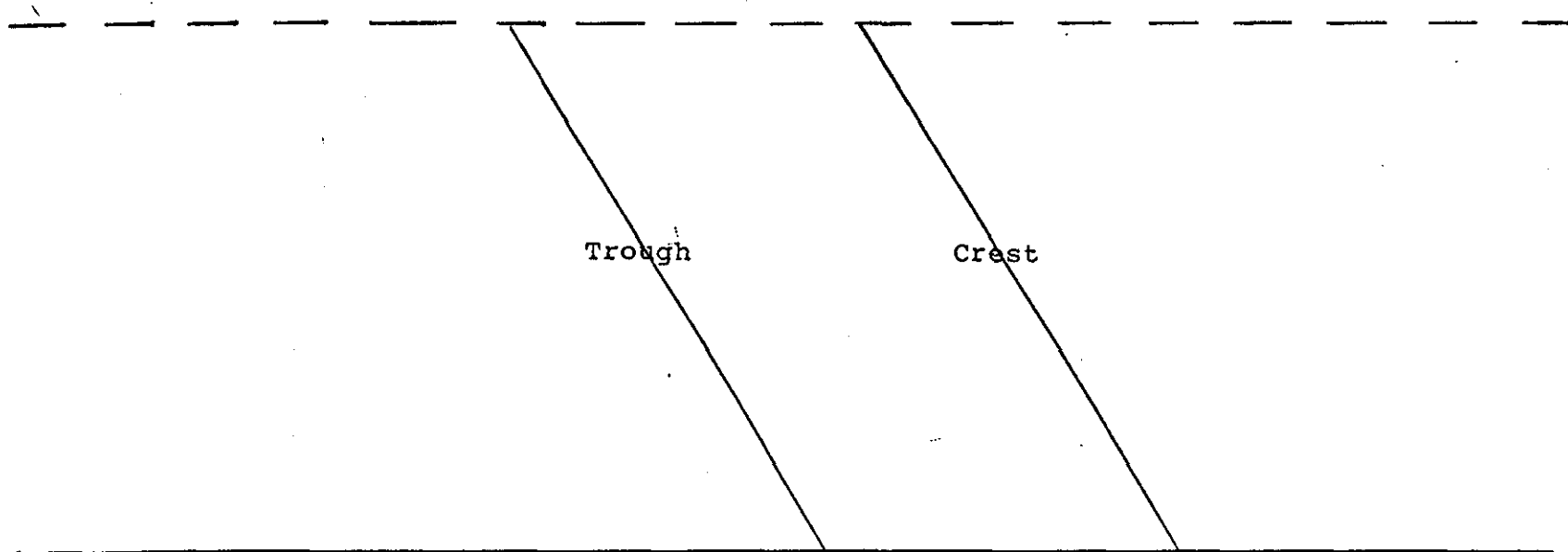
WATER DIP DIAGRAM

SIDE VIEW



Scale: 1/4"=1'

OVERHEAD VIEW



LEGEND: Inside grade - - - - -

Outside grade ————

Surface rock 

Spillway

Motorcycles also contribute to off-road erosion problems. This is especially apparent where the riders use steep skid roads for their trails which are never allowed to stabilize, resulting in the formation of deep ruts. Water bars are often cut when crossed repeatedly by motorcycles. Although the potential for erosion is great on granite soils, substantial motorcycle-caused erosion is apparent on clay soils as well. To avoid repetition, recommended erosion control measures for motorcycle riding are located in the Recreation section.

Recommended Erosion Control Measures:

Segment B. Cantrall Gulch Road

1. Reconstruct the road as follows:
 - a. Insloped.
 - b. Rolling water dips as described in the diagram at 200' maximum intervals on grades of 6% and greater, and 300' intervals on lesser grades, and in locations with minimum fill where the fill slope is least likely to wash.
 - c. Apply a layer of pit run rock about 4" thick to water dip area and fill slopes as per the diagram. A potential source of pit-run rock is Boise Cascade's rock pit located in Section 14.
 - d. Monitor erosion and take corrective action where needed. Avoid further blading of surface to fill ruts as the loose granite washes readily. The preferred solution would be to fill ruts with rock.

It is recommended to keep this road serviceable as it is important for fire suppression and other management activities.

Road Segment A

1. Construct water dips at 300' intervals on grades 5% or less and 200' on grades 6% or greater.

Road Segment D

1. Construct water dips as described for Segment B.
2. Monitor erosion and add rock or take other corrective measures as required.

This road should also be kept open for fire protection and other management activities. Rocking the water dips may not be necessary as there is less traffic and the grade is less steep.

Road Segment E

1. Construct water dips and/or water bars at two-thirds the intervals recommended for Segment B to "put road to bed."

This road is not considered necessary for management and should be closed until needed.

Road Segments G and F

1. Divert water back into original channels where possible.
2. Water bar and close roads.
3. For Segment G, dispose of trash prior to closing road.

All future logging should be accomplished with responsible soil conservation procedures:

1. Avoid skidding down draws.
2. When crossing draws with truck roads or skid roads, always dive in and climb out.
3. Water bar all skid roads after use.
4. Skid or yard logs away from streams.
5. On steep slopes, locate roads near ridge tops to facilitate uphill cable logging.
6. Design drainage systems into all new roads.
7. Close and drain spur roads except when needed for management purposes. Closed to vehicular traffic, these roads may be ideal for recreation when incorporated into trail systems.

Streams:

A considerable amount of decomposed granite has been temporarily deposited in and alongside the stream beds. This material can be expected to continue moving downstream during periods of heavy run-off for years, even after erosion is controlled. The stream beds are otherwise rocky with the potential for transportation of clean, cool water.

Riparian
Zones:

The riparian zone vegetation within the watershed is well-developed and provides shade for the streams and important habitat for many species of wildlife. (This is the favorite haunt of the obscure ruffed grouse.) A 25' to 65' band of alder straddles all the creeks. Associated with the alder is cottonwood, willow, big leaf maple, Oregon ash and, along the periphery, Douglas-fir and the ever-present madrone. Understory vegetation composition is horsetail, snow berry, mock orange, hazel, ocean spray and various forbs and grasses.

Immediately below the reservoir is a swampy area covering about two acres. This area supports an overstory of large alder, ash, cottonwood and big leaf maple.

Reservoir:

The reservoir was constructed in the early 1920's to provide storage for the city's domestic water supply. However, it was used for the intended purpose for only 10 to 15 years.

For an unknown length of time, the reservoir has performed as a very effective settlement basin. This is now and probably will be for some time its most important function. Where the stream enters the pool, water velocity is reduced, depositing silt in an alluvial fan. This alluvial deposit, primarily granite, now covers two-thirds the original pool area. Much of the suspended fine material precipitates to the bottom, further cleaning the water.

Several potential uses for the reservoir have been explored. A potentially important function is a water source for helicopter fire fighting systems. With minor access improvements, tank trucks could refill here as well. Down-stream fisheries could possibly be enhanced by discharging impounded water to extend the flow of Jackson Creek later into the summer. The reservoir may already provide this function as the swampy area below the dam is suspected to be caused by leakage. However, an ODF&W fish biologist concluded that "warm water (from the reservoir) could be worse than no water."

Wildlife habitat could be enhanced with a little development and a reduction in human interference. The pond could provide important habitat for the western pond turtle (a "sensitive" species) as well as a nesting and resting area for some waterfowl.

The reservoir could also improve the recreational qualities of the adjacent proposed picnic area/trail head. Warm water game fish probably already inhabit the pond.

Recommendations:

1. Conduct a study during the summer months to determine the reservoir's effect on downstream water temperature and quantity.

2. Plant ponderosa pine trees where suitable and cottonwood or willow in wet areas of the alluvial fill to enhance the recreation area and provide isolation and habitat for pond wildlife.
3. Rehabilitate at least the front portion of the borrow pit by filling with three to four feet of alluvial material and planting pine trees. Aesthetics will be greatly improved when the trees obscure the view of the old excavation.
4. Improve access to facilitate the refilling of fire trucks.
5. Burn or otherwise dispose of piles of woody debris. Debris could be incorporated into borrow pit rehabilitation.

Fisheries: It was hoped that summer steelhead reproduction could be enhanced or developed in Jackson Creek. According to a Fish Biologist with Oregon Department of Fish and Wildlife, Jackson Creek is a potential summer steelhead spawning stream. Although the stream usually stops flowing in the summer, the progeny of adults which spawn in January are able to go downstream before the creeks dry up. Winter steelhead which usually spawn in March, however, must spawn in larger streams with year-round flows.

It was discovered that on or before March 2, 1995 all the water in Jackson Creek was diverted into an irrigation canal at the N.E. edge of Jacksonville. As long as this stream diversion is practiced, it will be impossible for summer steelhead to successfully reproduce in upper Jackson Creek. This is not an insurmountable problem, however, and can be solved by the ODF&W with cooperation from the Medford Irrigation District.

As recently as 1986, there was a population of small native cutthroat trout to six inches long in Jackson Creek downstream of the reservoir for about one-fourth mile. These fish were lost (or went downstream) as the creek has completely dried up the last few years. Native trout will probably reinhabit the creek when precipitation levels are more normal. Jackson Creek is known to support a trout population in the Central Point area.

WILDLIFE

The Jacksonville watershed hosts an array of birds and animals common to the region. Populations of some species, however, are relatively low and even non-existent due to the nature of the habitat.

Big Game: The blacktail deer population is very low. Although elk are known to range in the vicinity, no elk sign was found on the property. The low numbers of these important game mammals can be attributed to two factors: (1) most

of the area is overgrown with either a dense stand of manzanita brush or madrone, and (2) the intrusion of off-road vehicles into otherwise more favorable habitat disturbs deer and elk. There is evidently a healthy black bear population, particularly on the Walker Creek side. Manzanita berries are important as food for bears and are more accessible in this area where manzanita brush is less dense and mixed with other brush and tree species.

Although cougars range within the watershed, as evidenced by sightings of their tracks, these predators have been sighted closer to the city where deer and other prey are more numerous. Once the habitat and corresponding deer and elk populations are improved within the watershed, the cougar population can be expected to concentrate in that area.

Threatened
Endangered
Species:

Although there are no known spotted owl nesting sites on the watershed property, there are several in the vicinity. When planning logging or silvicultural activities, it is important to consult the State Forestry personnel as certain activities may have to be modified or delayed according to spotted owl requirements. It may be important to maintain foraging habitat for these rare birds. In this area, spotted owls feed primarily on wood rats which are in abundance. Stands of madrone in particular are infested with wood rats. Although hardwood-control activities are prescribed, it is unlikely that all these trees will be eliminated or the rat population subsequently reduced significantly. However, it would be wise to leave some madrone in most stands for wildlife considerations.

Game
Birds:

Mountain quail, ruffed grouse, blue grouse, band-tailed pigeons and mourning doves are common in the area. Although wild turkeys are close by, no turkey sign is in evidence within the watershed. This area is also home to many species of raptors, woodpeckers and songbirds.

Habitat
Enhance-
ment:

Several activities are prescribed which will improve habitat for diverse wildlife populations. Brushfield reclamation will significantly improve habitat for many species. Removal of impenetrable brushfields and replacement with grass, clover and palatable young brush species will especially benefit deer and elk. Wild turkeys should also benefit from these large openings where they can forage on insects, shoots and seeds while keeping watch for predators such as bobcats, coyotes and cougar. Connecting lanes cleared across brushy draws between the cleared areas will provide ingress and egress for big game as well as forming fire breaks. The brushy edges of the clearings are important for many species of small birds and mammals.

Forage is the limiting factor for many wildlife species in this area as the other habitat requirements, water and cover, are abundant. The quality of forage within the reclaimed brushfields will diminish as brush and planted trees grow. After approximately 15 years, these areas will provide little browse and will be more important for cover. To maintain forage areas for big game, additional clearings should be created through harvesting or brushfield/hardwood conversion at 5 to 10 year intervals. Another consideration is habitat on neighboring properties.

Further study will be required to determine the effects of noisy off-road vehicles on big game habitats. It is interesting to note that spotted owls are successfully rearing young in the vicinity in spite of noisy dirt bike activity close by during the nesting season. Perhaps wildlife is more adaptable and tolerant of humans than the biologists have concluded.

Additional wildlife habitat improvements and considerations are included in the harvesting and silviculture sections of this plan.

AGGREGATE

The possibilities of a viable aggregate (granite) operation on the watershed are considered excellent. Approximately 880 acres of the ownership is decomposed granite soil. The easternmost 40 acres joins the Walker Creek aggregate operations. The haul down Jackson Creek would be only about one mile farther than the Walker Creek/Par-A-Dice Ranch Road haul. Granite has been removed from a pit located where the Cantrall Gulch road first enters the granite soil type.

If the city desires to develop the aggregate resource and the appropriate rezoning is procured, a detailed study involving drilling and sampling would be prudent.

However, aggregate operations within the watershed is not recommended. Such activities would conflict with the management objectives of this plan. Heavy rock truck traffic and associated noise and dust would create undue hazards and unpleasanties for people recreating in the area. The opportunity for quality recreation is considered to be a very important resource which will become even more important in the years to come. Furthermore, erosion problems could persist with aggregate removal, considering the steep slopes and erodability of the soil. Finally, additional aggregate truck traffic through Jacksonville is not likely to be welcomed by the townspeople.

FOREST HEALTH

Forest health includes several related concepts. Healthy forests have a high degree of resistance and resilience to pests and disturbances and retain the capacity for sustainable resource production. Forest pests may not be the cause of poor forest health, but they are often the result.

Management objectives help determine what constitutes a healthy forest. The herein-stated objectives index a (healthy) forest which can be kept relatively free of catastrophic fires and provide a continuous supply of resources, including recreation, wildlife, timber and water. The makeup of such a forest would necessarily include such features as: (1) abundant growing stock, adequately spaced and free of excess brush and hardwood competition to maximize growth and be relatively fire safe; (2) diversity, with all age classes, native species, thickets, multilayered stands and scattered cull (rotten) trees represented to enrich the habitat for diverse wildlife populations; and (3) snags, down trees and woody debris in place for additional habitat and nutrient cycling.

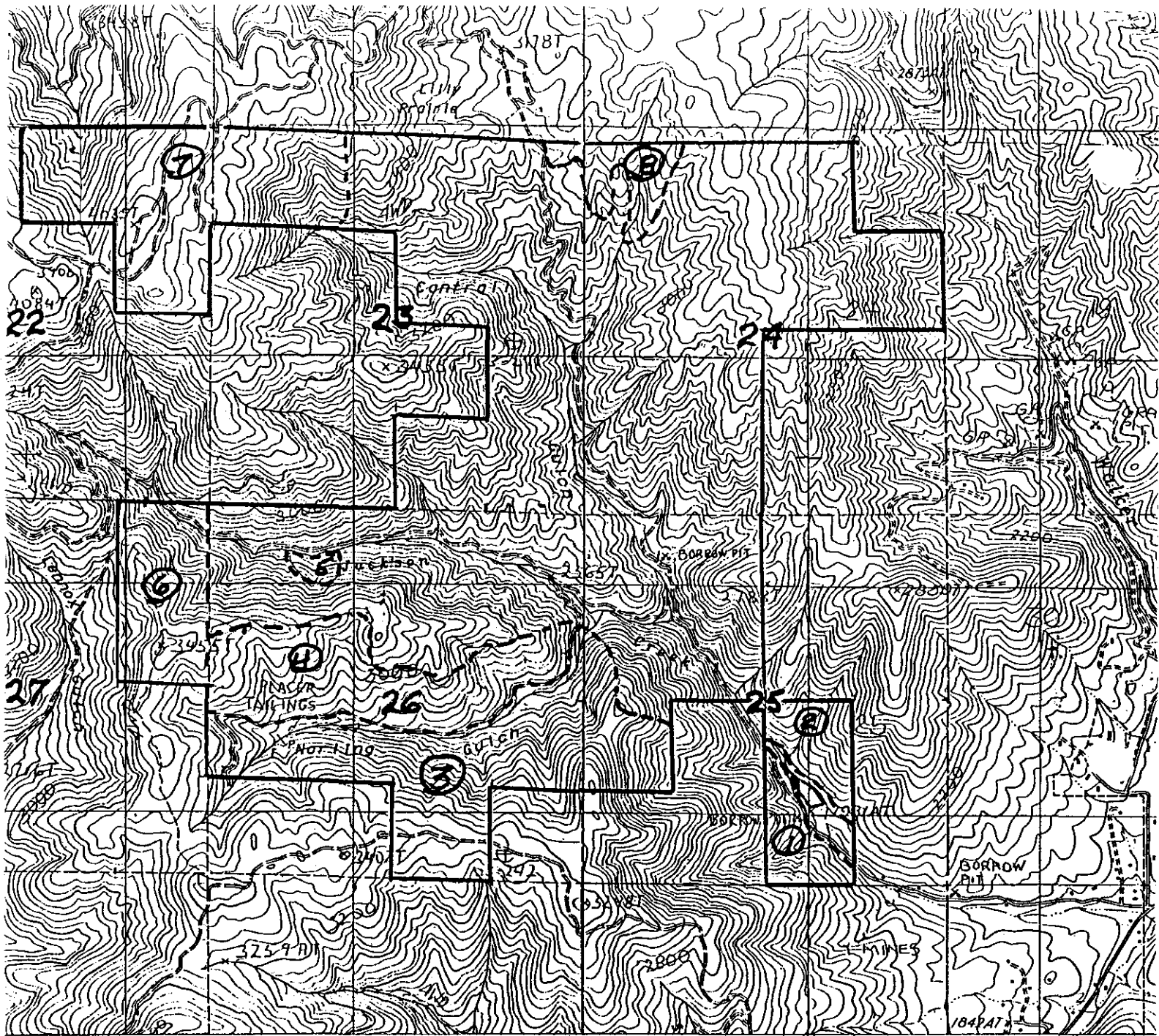
Ramifications of many forest features are conflicting. For example, thickets, multilayered stands, hardwood trees and old cull trees reduce timber production and may increase the fire hazard. These trade-offs must be considered and balanced. Keep in mind that "just because a little of something is good doesn't mean a whole lot is great."

Silvicultural and harvesting activities are prescribed which will improve forest health. Brushfield rehabilitation will reduce the likelihood of a major fire, convert a near "biological desert" to excellent wildlife habitat and increase the growing stock inventory. Precommercial thinning and hardwood control may temporarily increase the already extreme fire hazard but will in the long run improve stand health, reduce fire hazard, and greatly increase timber growth. Commercial thinning and mortality salvage will also improve stand health and reduce the fire hazard.

At the higher elevations, dwarf mistletoe in Douglas-fir and heavy grand fir mortality are serious problems. Commercial Thinning and sanitation salvage is prescribed for these stands.

MERCHANTABLE TIMBER INVENTORY

A cruise was conducted of all areas considered to have significant economically recoverable, merchantable timber volume. One-eighth-acre fixed radius sample plots were measured with a target intensity of 10% cruise for areas expected to exceed 2,000 BF per acre and 5% for areas of lesser volume densities. All merchantable conifers within the plots with a DBH of 10 inches or greater with at least a 32 foot log to a 6 inch top were measured and/or tallied. With the exception of two units, cull trees



JACKSONVILLE WATERSHED

Cruise Unit Map

Scale: 1:24,000 (1" = 2,000')
 Contour Interval = 40', Supplementary Contour Interval = 10'

Legend:

Cruise Unit Boundary
 Cruise Unit Number



were not considered. Information on hardwoods and premerchantable conifers was also gathered.

Cruise Unit #5 consists of a grouping of residual trees which survived the 1956 fire and are considered significant and recoverable. 75% of these trees, including culls, were measured and have an average net volume of 141 BF per tree. Most of these trees are fire-scarred and many are culls.

Other scattered residual trees on this north slope were not cruised as they are considered more valuable left standing at this time to benefit wildlife as well as their removal would cause excessive damage to the premerchantable stand.

Exhibits:

- a. Cruise Unit Map
- b. Stand Table with net volume by DBH by unit
- c. Table with number of trees by DBH by unit
- d. Graph depicting total number of trees by DBH
- e. Table of volume by species by cruise unit

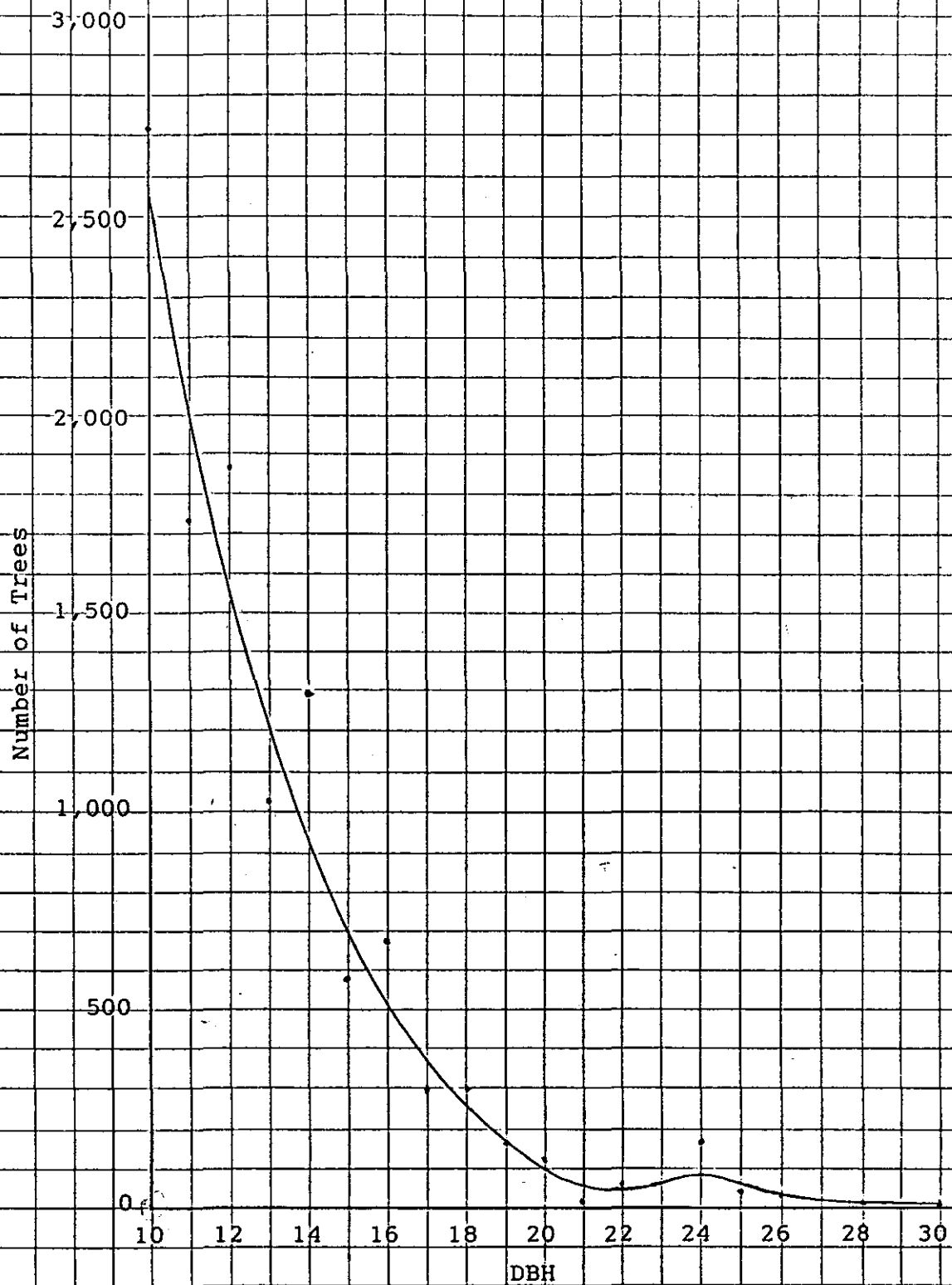
VOLUME BY SPECIES BY CRUISE UNIT

Unit	D-F	PP	GF	IC	SP
1	104,800				
2	11,300	21,900			
3	439,750	40,440	5,050	15,160	5,060
4	30,340	45,520			
5	9,280				
6	49,260	3,920		2,800	
7	134,690	17,250	94,480	31,190	
8	6,250	21,700		1,990	2,960
Totals:	785,670	150,730	99,530	51,140	8,020

Total Cruise Volume = 1,095,090 BF

Species Composition:

D-F	72%
PP	13%
GF	9%
IC	5%
SP	1%



NUMBER OF TREES BY DIAMETER

STAND TABLE

Net Volume All Species by DBH by Cruise Unit

DBH	Cruise Unit								Total
	1	2	3	4	5	6	7	8	
10	10,000		36,120	15,370	400	5,380	69,210	390	136,870
11	7,600	500	32,950	13,320	80	7,180	31,110	2,340	95,080
12	12,800	2,400	61,270	15,540		12,920	30,860	1,090	136,880
13	6,000		35,850	8,880	100	8,250	17,770	7,330	84,180
14	15,200	900	70,510	5,550	1,210	7,180	38,880	5,620	145,050
15	6,000	1,200	64,450		680	4,670	4,650	2,030	83,680
16	6,400		35,830	8,880	650	10,400	43,680	2,960	108,800
17	19,200	3,300	6,360		130		13,960	1,560	44,510
18	6,800		29,190	8,320	1,810		7,190	1,720	55,030
19		4,600	19,070		660		10,150	2,180	36,660
20			17,340		430		10,150	4,680	32,600
21					480				480
22		3,200	7,510		850				11,560
23		7,000	12,720						19,720
24	14,800	3,900	40,460		430				59,590
25			19,070						19,070
26			16,760		680				17,440
27									
28		6,200							6,200
29									
30					690			1,000	1,690
Totals:	104,800	33,200	505,460	75,860	9,280	55,980	277,610	32,900	1,095,090

TIMBER HARVESTING

Timber harvesting and silviculture are the primary forest management tools. Logging not only generates income but, when properly managed, improves forest health and wildlife habitat. The primary objectives of timber harvesting on the Jacksonville watershed should be to cut the highest priority timber and to promote growing stock.

Cutting priorities can be grouped into three primary classifications:

1. High Priority - trees which should be cut.
2. Medium Priority - trees which could be cut.
3. Low Priority - trees which should not be cut.

High Priority:

Mortality salvage (MS) is the highest priority and should be accomplished as soon as practical. Cut all dead and dying timber.

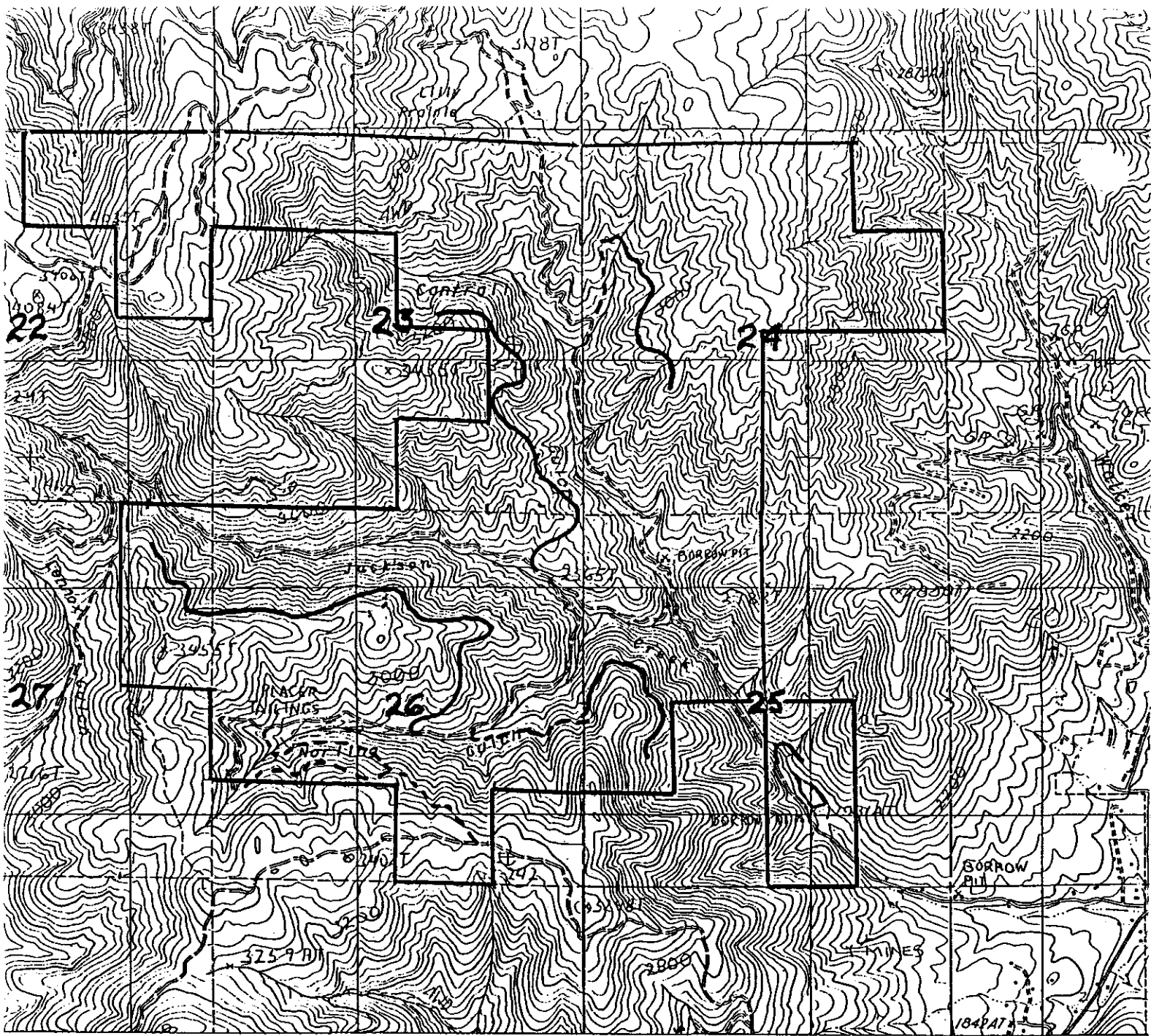
Commercial thinning (CT) is also of high (but not urgent) priority. Priority for thinning increases as the trees grow larger, competition increases, and growth rates of trees within the stand is reduced. Stands of second growth should be thinned as required to maintain diameter growth rates of four to six annual rings per inch on the dominant and co-dominant trees. Commercial thinning should be repeated at intervals of about ten years to provide additional space for the larger trees and to thin groups of trees too small at the time of the prior thinnings.

Sanitation Salvage (SS) involves the removal of defective, diseased, or mistletoe-infected trees. Sanitation salvage is also of high priority and is often accomplished in conjunction with commercial thinning and other partial cut regimens.

Overstory removal (OR) is the removal of residual trees (remnants of an older stand, usually scattered) to allow young trees to grow freely. Overstory removal should be accomplished before the reproduction becomes too large and susceptible to excessive logging damage.

Medium Priority:

Partial cut (PC) is a general term describing the harvesting of a portion of the trees on an area and is the usual harvest practice for multiple-aged stand management. Individual trees are selected for removal for various reasons, including large and surplus, thinning, mortality salvage, overstory removal, and sanitation salvage. Priority is variable and depends on the general condition of the stand. Medium priority surplus trees are those



JACKSONVILLE WATERSHED

Future Road Location

Scale: 1:24,000 (1" = 2,000')
 Contour Interval = 40', Supplementary Contour Interval = 10'

Legend:
 Improve Existing Road 
 New Road Construction 

above rotation age and not considered necessary for growing stock, recreation or wildlife habitat.

Low Priority:

Growing stock includes trees which are healthy and sound with adequate spacing and the potential for relatively fast growth.

Optimum rotation age is usually considered to be about 70 years. In practice, however, rotation age is a somewhat hypothetical concept used primarily in yield and allowable cut computations. All trees are not harvested as soon as they reach a certain age.

Recommendation:

It is recommended that all harvesting be accomplished via log sales rather than timber sales. The advantage of log sales are (1) the city would be assured of getting the most money for harvested timber and (2) a better logging job can be expected due to better selection and control of the logger.

It is further recommended that a professional forester skilled in young stand management and harvesting be hired or contracted to manage logging jobs. The harvest management forester's duties would include:

1. Plan the logging, including boundaries, roads, landings, equipment, etc.
2. Locate necessary property lines and corners.
3. Mark or otherwise designate trees to be cut.
4. Show the timber to several log buyers to get the highest price and secure a purchase order.
5. Show the job to several suitable loggers to get the best logging price and prepare a logging contract.
6. Consult with, advise and/or inform the city of all pertinent matters.
7. Acquire the necessary permits and develop a harvest plan, if required.
8. Supervise the logging to see that it is done properly, with minimal damage to soils, streams, reproduction, esthetics and other resources.

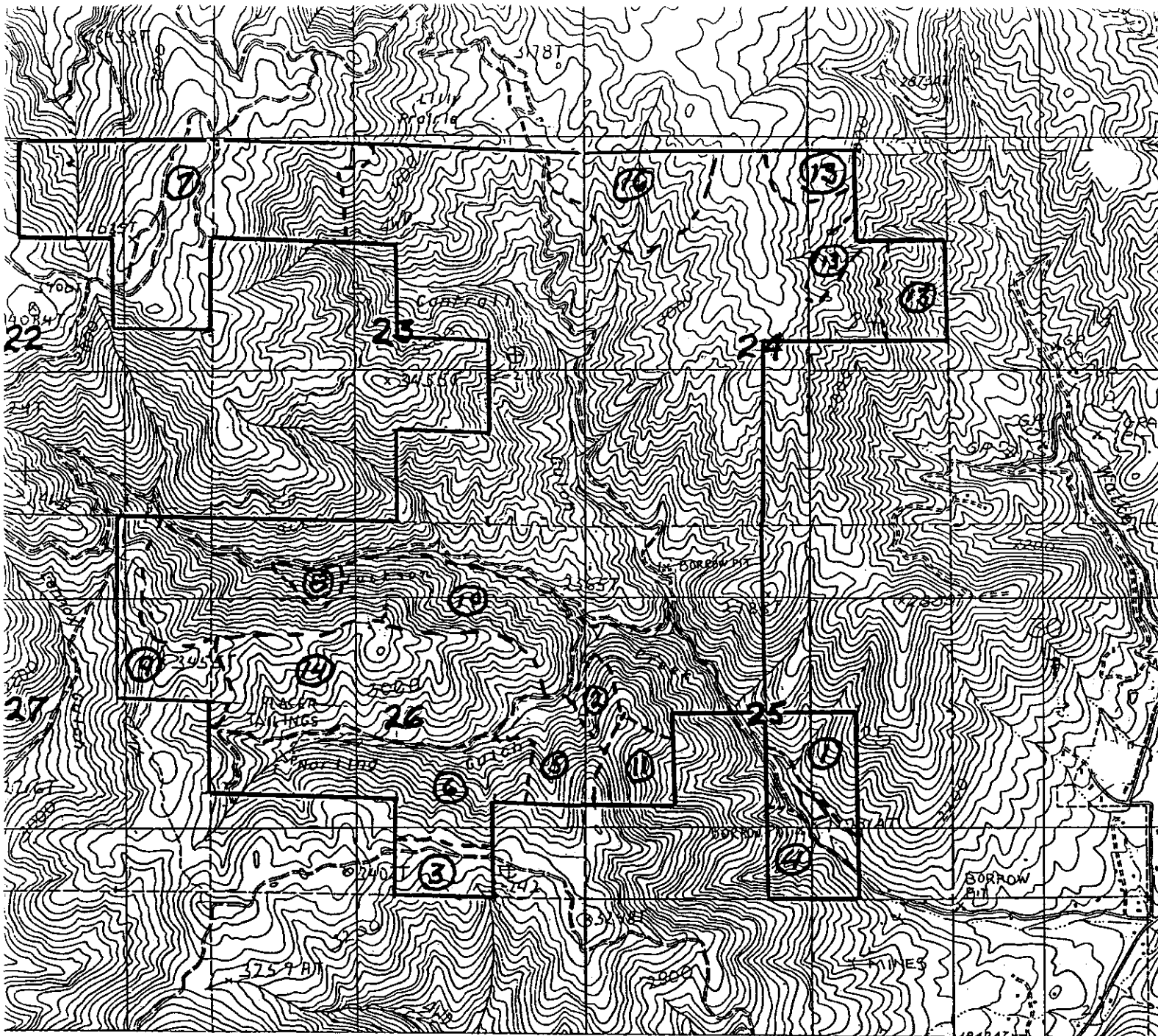
9. Ensure that the city receives scale tickets for all logs removed and that all money for the sale of the logs is properly distributed and accounted for.

Timber harvest opportunities on the Jacksonville watershed will be somewhat limited for the next 20 years because of a limited supply of growing stock.

There is a considerable amount of dead and dying timber which will be lost if it is not salvaged. The area with the greatest mortality lies northeast of the reservoir. Within the past few years, the combination of poor site, drought, and bark beetles has resulted in a mortality rate of 54% by volume on this south slope. There are other areas with high priority timber requiring mortality salvage and overstory removal as well. A harvest scenario is recommended for 1995 which would result in the sale of approximately 170 MBF of logs. The stumpage value (net value to the city) is expected to be about \$450 per MBF. This amount includes professional assistance and minor road construction.

Additionally, medium priority timber is available which could be cut. It is recommended that at least some of this timber be harvested and the proceeds invested in silviculture activities to promote more growing stock. Although not targeted, some medium priority timber is included with the proposed 1995 harvest.

It is recommended that some harvesting be accomplished every five years. Such a schedule will provide for the commercial thinning of alternate units at 10-year intervals. These relatively frequent logging operations on the ownership will also facilitate any necessary mortality salvage and the accomplishment of desired cat work. A 20-year proposed harvest schedule has been prepared on that basis.



JACKSONVILLE WATERSHED

Harvest Unit Map

Scale: 1:24,000 (1" = 2,000')

Contour Interval = 40', Supplementary Contour Interval = 10'

Legend:

Harvest Unit Boundaries
Harvest Unit Number



PROPOSED HARVEST SCHEDULE

1995

Priority	Unit	Acres	Type	Unit INV	Estimated Vol. MBF	Comments
H	1	30	MS	35	35	
H	2,5	41	MS-OR	25	25	
H	3	20	MS-OR	30	15	
H	4	20	MS-OR	50	20	
H	6	100	CT	400	75	Repeat in 2005
Year Total					170	

2000

H	7	160	CT-SS	450	100	Repeat in 2010
M	8	4	OR	10	10	
M	16	20	OR	40	30	
Year Total					140	

2005

H	6	100	CT	725	160	Repeat in 2015
H	4	20	OR	40	40	
Year Total					200	

2010

H	7	160	CT	800	160	
M	9	40	PC	80	40	
Year Total					200	

Projected Inventory = beginning inventory plus
(estimated annual growth x years x acres)

YIELD CURVE

BULLETIN 201 USDA

SITE INDEX 140

Volume per Acre, 16' Logs

MBF

75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0

0 10 20 30 40 50 60 70 80 90 100

Stand Age in Years

Number of trees 12" +	37	79	118	139	148	149	145	139
10 yr. ave. ann. growth/ac.	420	790	1140	1140	1050	930	780	

Information gathered from unmanaged stands in the Pacific Northwest

2015 AND BEYOND

Areas pre-commercially thinned in 1995 through 2000 can be expected to be ready for commercial thinning in 2015. At that time, the five-year harvest is projected to be 360 MBF.

Beyond 2015, a sustained yield annual allowable cut of 190 MBF is calculated, considered only the 900 acres stocked in 1995. However, the recommended precommercial thinning and hardwood control must be accomplished to meet this projection. Reforestation of additional areas would further increase the allowable cut as well as provide associated benefits.

Allowable cut is computed as follows:

Volume of fully-stocked natural Douglas-fir at age 70, site index*
120 (high site IV) = 20,600 BF** short log scale.
Less 10% for long log scale = 18,540 BF
18,540 BF ÷ 70 years = 265 BF/acre/year
265 BF x 900 acres x 80% of normal = 190 MBF per year.

* Site index is the height in feet of the dominant and co-dominant trees at age 100.

** From Technical Bulletin 201, USDA Yield Tables for Douglas-fir.

This yield projection is considered very conservative. The yield for site index 130 is 35% higher than for site index 120 and the best north slope sites are near site index 140. The yield for site index 140 is 70% higher than for site index 120. Also, no allowance was considered for managed stands.

SILVICULTURE

Seed and Seedlings

The importance of reforesting areas only with seed collected in the local area cannot be over-emphasized. Not only is the potential for good performance assured with local stock, but maintaining the gene pool is important for future generations as well.

It is recommended that a seed inventory be collected within a 5 mile radius of the ownership. Tree seed remains viable for at least 10 years (less for some species) when properly frozen. Approximately 70 pounds of ponderosa pine and 15 pounds of Douglas-fir seed would be sufficient to reforest all the non-stocked and understocked areas on the watershed. Unfortunately, cone crops are infrequently produced. It is possible that either the State Forestry or BLM has a supply of appropriate seed which

could be purchased to initiate a reforestation program. Knobcone pine seed is available at any time up Cantrall Gulch.

The State Forestry nursery at Elkton can be contracted for growing two year old bare root seedlings. Private nurseries are also available.

Brushfield Rehabilitation

Assuming that seedlings are in their second year of growth in nursery beds, the following procedures are recommended for rehabilitating brushfields:

Step 1: During the summer months, clear brush with a cat equipped with a brush rake. Push the brush downhill and pile it in windrows for burning. Avoid displacing humus and top soil.

Step 2: Sow a grass seed-clover mixture in September. The purpose of the grass which germinates in the fall is to control erosion, inhibit the survivability and growth of spring-germinating manzanita and provide forage for wildlife.

Step 3: Prior to February, burn the brush piles and sow grass seed in their place.

Step 4: In January or February, plant ponderosa pine seedlings at the rate of 400 per acre. Douglas-fir and knobcone pine may be mixed with the ponderosa to add diversity. The knobcone also adds an element of fire insurance. The suggested mix is 20% Douglas-fir and 5% knobcone pine.

Step 5: At the end of March, apply herbicides via a backpack sprayer within a three foot radius of each planted tree to control grass and brush competition. The recommended formula is one pound Velpar and three pounds Atrazine (Conifer 90) per covered acre.

Step 6: For the enhancement of big game habitat, it is recommended that deerbrush ceanothus (*Ceanothus integerrimus*) be established in the plantations:

- a. During June, prepare planting spots or strips by applying Roundup via a backpack sprayer. Caution: Avoid Roundup contact with the planted trees.
- b. Plant seedlings or sow stratified deerbrush seed in the bare spots the following winter.

For erosion protection and safety considerations, avoid clearing steep ground and draws with cats. Approximately 75% of the brush covered terrain (400 acres) is considered suitable for cat operations. Draws within

the brushfields which support primarily hardwoods could be successfully planted providing the hardwoods were injected and killed.

In the likely event that all the brushfields will not be cleared at once, priorities will need to be assigned to decide where to begin. Factors to consider when determining priorities include (1) the best location for the resulting fire breaks, (2) big game habitat distribution, and (3) site quality.

The decision to either rehabilitate brushfields or control hardwoods and precommercially thin young stands may be more difficult. Considering only the financial aspect, the decision is easy. Precommercial thinning hardwood control results in a much higher return on investment due to the much shorter investment period. However, there are intrinsic values associated with reforestation which are difficult to measure in dollars.

Hardwood Control

It is recommended that madrone be controlled via the "hack and squirt" method when precommercially thinning and/or planting areas occupied by these hardwoods. This procedure is very effective and involves hacking into the sapwood with a hatchet and squirting a small dose of the herbicide Arsenal into the wound. Only one such procedure is required to kill trees up to 8 inches in diameter. The treated madrone die quickly and seldom sprout from the stump. Although this operation is effective when performed year round, growing season operations produce the best results.

North slopes burned by the 1956 fire now support stands in various mixtures. Douglas-fir stocking ranges from 0 to over 2,000 stems per acre. It is recommended that controlling madrone, planting understocked areas and precommercially thinning young Douglas-fir stands on these highly productive sites be assigned the highest priority. For optimal efficiency, first treat the hardwoods, second, plant understocked areas, and then accomplish the thinning.

Planting Under Hardwoods

Hardwood treatment can be performed immediately before or after planting conifers. Douglas-fir at the rate of 400 to the acre is recommended for planting north slopes and ponderosa pine or a mixture of pine and fir at the same rate is recommended for slopes of other aspects. The madrone overstory has shaded out and killed most of the brush species providing men freedom of access to plant trees. No herbicide treatment is considered necessary to enhance tree survival.

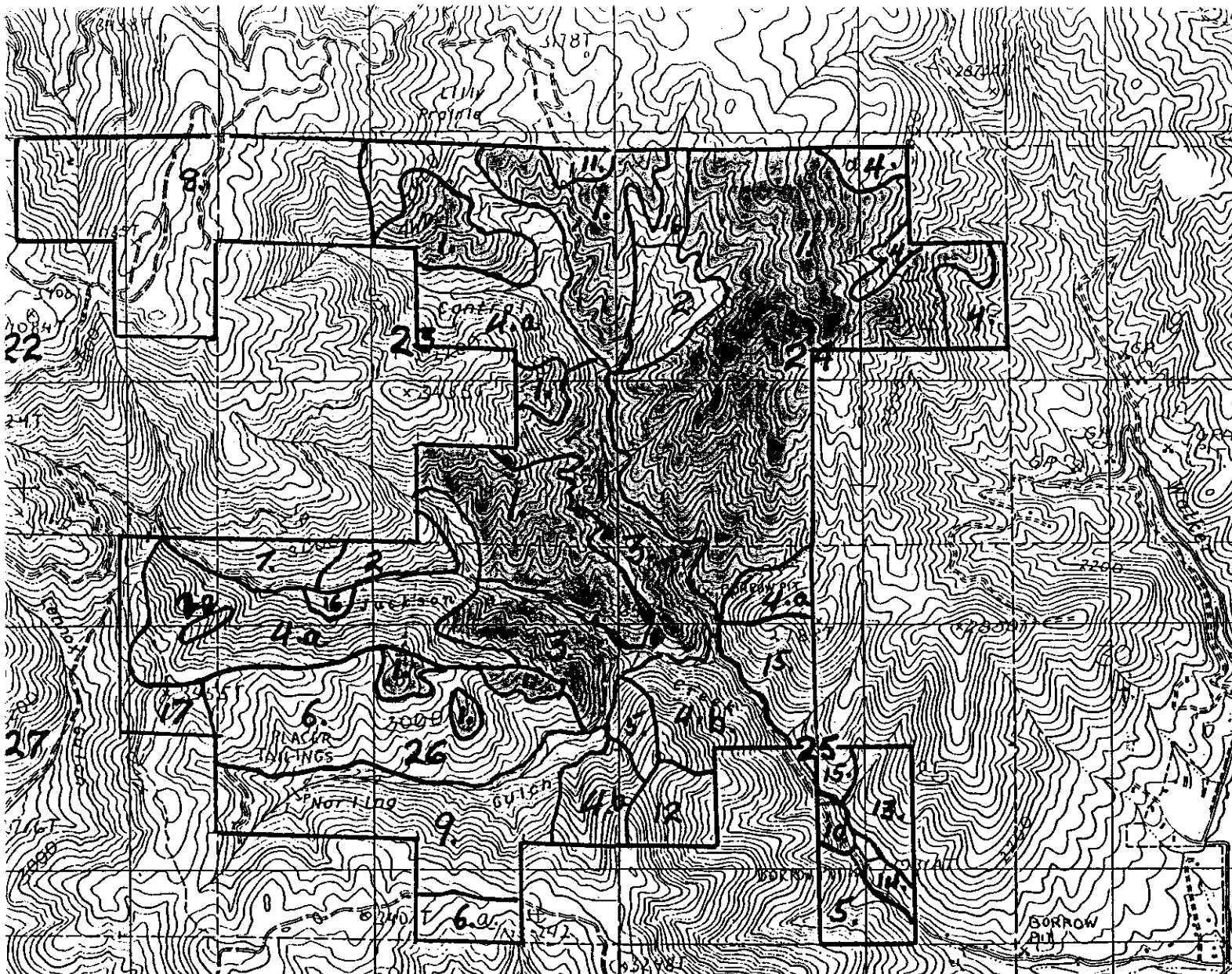
Animal Damage

No significant animal damage is expected to planted trees. The greatest potential for damage would be browsing by deer. However, since the

Jacksonville deer herd does not eat the Christmas trees growing in the area, perhaps the new plantations will be spared. The next most serious threat would probably be from jack rabbits or porcupines.

Precommercial Thinning

Young stands should be thinned via the chainsaw method to a target stocking level of 350 trees per acre. Large hardwood trees which could damage the conifers if felled should be injected while smaller ones may be felled. It is advisable to cut up (lop) the thinning slash and depress it close to ground to increase the rate of decay and reduce the fire hazard.



TYPE MAP

Unit	Description	Acres
1	Non-stocked, Manzanita brush	576
2	Non-stocked, Madrone overstory	60
3	Partially-stocked, age 20-30, Madrone overstory	127
4	Stocked, age 20-30, Madrone	346
5	Residual overstory, stocked, age 10, Madrone	40
6	Variable overstory, stocked, age 10-20, Madrone	121
7	Partially-stocked, age 5-15, Madrone, grass	27
8	D-F, GF, age 40-50 =	171
9	D-F, age 50-60 =	134
10	D-F, age 80-90 =	6
11	PP, age 70-80 =	6
12	D-F, age 60-70 =	27
13	Scattered old growth, high mortality, poor site	30
14	Riparian zone	3
15	Non-commercial forest land	40
16	Residual old growth	13
17	Variable, Poles, Reproduction	35

Summary

Stocked (75% or greater)	927 acres
Partially stocked (30% to 74%)	184
Non-stocked (29% or less)	646
Non Commercial Forest	<u>43</u>
Total:	1800 acres

Silviculture Cost Estimates

Seed Procurement:

70 lbs. ponderosa pine @ \$45/lb. = \$3150
 15 lbs. Douglas-fir @ \$79/lb. = 1185

Total Seed: \$4335

Planting:

Seedlings (incl. seed cost) \$150/M
 plus labor \$150/M = \$300/M ÷ 2.5 = \$120/acre
 Brush Clearing (cat) 100/acre
 Grass Seeding 40/acre
 Herbicide Grass Control 25/acre
 Burning Brush Piles 10/acre
 Deerbrush Seeding 40/acre
 Hardwood Control (HC) 40/acre
 Precommercial Thinning (PCT) 100/acre

SILVICULTURE ACTIVITY SUMMARY

Type	Priority	Activity %		Plant	Cost/ac	Acres	Cost
		HC	PCT				
4a	H	100	75	25	144	241	\$ 34,704
4b	H	50	100	0	120	80	9,600
3	H	100	25	50	125	127	15,875
2	H	100	0	90	148	60	8,880
1*	H	100	0	100	148	45	6,660
7**	M	50	50	40	130	27	3,510
6	M	50	100	0	120	100	12,000
5***	M	50	100	0	120	<u>40</u>	<u>4,800</u>
Subtotal:						170	\$ 96,029

Brushfield Rehabilitation \$295/ac x 400 = \$118,000
 Total Silviculture 1154 acres = \$ 214,029
 Add 5% for Professional Assistance \$224,730

- * Approximately 45 acres of the 576 acres typed as "brushfield" support hardwoods and can be treated with the less expensive "hack and squirt" method. 131 acres of brushfield considered too steep for clearing
- ** Grass control will be required around seedlings planted in grassy areas
- *** PCT and HC contingent on overstory removal.

EROSION CONTROL ACTIVITY SUMMARY

Road Segment	Activity	Rate	Miles	Cost
A	Construct dips	455	1.0	\$ 455
B	Dips and rock	1045	1.7	1776
C	None required			
D	Construct dips	455	1.3	592
E	Dips and water bar	455	1.0	455
F	Water bar and close	455	.5	230
G	Water bar and close	455	.2	<u>90</u>
Total Erosion Control:				\$3598
Professional Layout and Supervision:				<u>1000</u>
Total Cost Estimate:				\$4598

Erosion Control Cost Estimates

Construct water dips (D-6 cat @ \$65/hr.)		
7 hrs. per mile	=	\$ 455/mile
Add rock to dips (\$15/dip x 25 = \$375)		
and spread rock @ \$215/mile	=	\$ 590/mile

RECREATION AND RESERVOIR DEVELOPMENT SUMMARY

(in order of priority)

	<u>Activity</u>	<u>Estimated Cost</u>
1.	Install all-weather sign	\$ 500
2.	Plant pine trees (200 @ \$0.30 each)	60
3.	Plant willow and cottonwood (volunteer)	0
4.	Burn or dispose of debris piles	200
5.	Improve parking access to pond picnic area (2 hours of cat work)	130
6.	Rehabilitate borrow pit	1000

No cost estimates are made for developing a picnic area or constructing a trail system. It is hoped these activities can be accomplished via community effort. (Author volunteers to locate and assist in construction of a trail up Norling Gulch.)

Estimated Harvest Income:

1995	170 MBF @ \$450/MBF	\$ 76,500
2000	140 MBF @ \$450/MBF	63,000
	Total 5-year Net Income Estimate:	\$139,500

Additional Recommendations

1. Establish goals for the completion of prescribed activities.
2. Develop administrative procedures for the implementation of this management plan.

Long-Range Recommendations

1. Adopt a long-range goal of developing a "regulated" forest with nearly equal amounts of all age classes represented.
2. When planning final harvests, include small, irregular-shaped clear cuts of five acres or less. Clearings are an important component of a healthy forest ecosystem.

ACKNOWLEDGMENTS

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Jim Collins, Regional Habitat Biologist
Jerry Vogt, Asst. District Fish Biologist
Mervin Wolfer, Asst. District Wildlife Biologist

Oregon Department of Forestry

Dan Thorp, Medford Unit Forester

USDA Soil Conservation Service

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June 1, 1995

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P.O.B. 773
Jacksonville, OR. 97530

Subject: Comments on the Jacksonville Watershed Forest Management Plan

Dear Bob,

As you know, I believe that the overall quality of your Watershed Forest Management Plan for the Jacksonville reservoir and watershed land is excellent. The following comments are intended as suggestions for refinement only.

The forest management issues are fairly well resolved, however, recreation uses will be faced with a series of critical first hurdles. These are a few difficulties that I foresee:

1) There are long standing recreational uses and abuses of the City's watershed. Changing those habits will be a long and difficult task. Your idea of segregation of uses is excellent, but will require clarity of purpose, education, and enforcement.

The recreational potential of the watershed is large, but right now the City has several new recreational projects on its plate (Doc Griffin Park, the Woodlands Trail System, etc.) and there is a danger of overextension. To provide for, encourage, and monitor three or more different recreational uses in the watershed demands an intensive level of management.

The placement of picnic tables and signboards welcoming visitors may be a longer range option, that succeeds regulating the existing abuses and performing some of the necessary rehabilitation measures. Gating and limiting access in the short term might be considered.

Some measures that will benefit off-site recreational uses, such as exploring the potential for enhancement of the year-round stream flow of Jackson Creek for in-town greenway enjoyment may be shorter range option. Replacement of entrapped silt from the reservoir into the neighboring borrow pit may be a good start, thereby deepening the storage capacity. Transformation of the City's municipal water rights into in-stream flow should also be investigated, along with MID's current channelization of Jackson Creek into irrigation ditches.

No matter what level of recreational emphasis is given at this time, working out an intergovernmental agreement with the Jackson County Sheriff's Department that allows Jacksonville Police authority over this property as soon as possible is essential to the provision of adequate security.

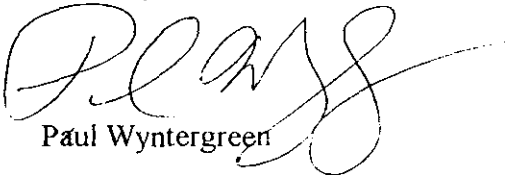
2) Cantral Gulch is proposed for motorcycle use, yet it is also the area with the highest erosion potential. This relationship has the potential for an ongoing maintenance problem and expense. Coordination with the Motorcycle association must receive a high priority in order to begin discussions on control and maintenance of that area.

Given the fact that that area also includes the greatest concentration of non-stocked and partially stocked units, probably requiring the greatest degree of brushfield rehabilitation expense, there may be some merit to considering sale of that portion of the property to the Motorcycle association after working Harvest Units 13 and 16, coming to agreement on control of downslope erosion impacts, and securing access easements to other portions of the City property. This would remove the City from liability concerns and significant rehabilitation expenditures, while providing revenue to assist in rehabilitation of other portions of the property and giving the Motorcycle association what they want, completely under their ownership and accessed from their Lily Prairie property.

Finally, we have done some work on prioritization of expenses already. Ultimately, I believe a rough cash flow projection for the Watershed area is needed to assist budgeting and other financial programming for this valuable resource. This will also assist in the preparation of grant proposals.

Please take these suggestions into consideration.

Sincerely,



Paul Wyntergreen

cc: Forestry Committee