Oberteuffer Research and Education Forest Management Plan

Prepared by: Oregon State University, Extension Service
10507 N. McAlsiter Rd.
LaGrande, OR 97850

Date: March 2, 1998

Landowner: College of Forestry
Research Forests (Dave Lysne, Director)
Oregon State University
Corvallis, Oregon 97331

Location: This tract is approximately 113 acres situated in Union County in the NW ¼ Section 13 Township 1 North Range 40 East WM. and is located about 1 mile north of Stubblefield Mountain northeast of Elgin (see map).

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Introduction and Purpose

This plan is a collection of resource information and management principles that, when considered together, help guide the action plan for the Oberteuffer Research and Education Forest. The purpose of this plan is to provide a coordinated framework for managing all the resources on the Oberteuffer property in ways that meet the vision, mission and goals for the property. Local interest and questions should be directed to the OSU Extension Office, 10507 N. McAlister Rd., LaGrande, OR 97850 (541) 963-1010.

Ownership and Management History:

In 1974, Bill and Margaret Oberteuffer (both retired teachers) purchased a 160 acre tract of land that included a house, other buildings, pastures and forest land on Stubblefield Mountain, near Elgin, Oregon. After years of caring for and investing substantial time and money in the management of the propertys' fields and woods, as well as dedicating their lives to sharing with others what they had done, they donated 113 acres with mostly trees on it to the OSU College of Forestry in 1994.

Vision:

The Oberteuffer Research and Education Forest is an outstanding, nationally recognized property where people learn about forests, the connections between people and forests, and practical management practices that create sustainable, healthy forest ecosystems.

Mission:

Management of the Oberteuffer Research and Education Forest will provide opportunities for teaching, researching and demonstrating forestry practices that maintain, enhance or create a productive, diverse and healthy forest ecosystem. The primary focus will be natural resource education. The management scope will range from individual trees to stands to the landscape.

Management Philosophy:

Silviculture systems will emphasize uneven-aged management across the forest, and development of a healthy forest capable of producing a variety of monetary and non-monetary outputs typical of northeast Oregon forestlands. While producing these outputs, silvicultural and other practices will:

- Sustain or enhance ecosystem diversity and health
- Sustain or enhance forest productivity in the long term
- Be cost effective and profitable, excluding high cost research installations
- Ensure compliance with applicable laws and regulations
- Protect the inherent value of the tract from fire, vandalism and theft

- Emphasize safety
- Demonstrate neighborliness
- Demonstrate progressive land management practices using a full range of silvicultural systems
- Maintain a reliable and stable access system
- Promote good stewardship ethics
- Maintain a sustainable flow of forest products and amenities

Property Goals

The goals are:

- to practice sustainable forest resource management on a working tree farm;
- to maintain, enhance or create an infra-structure that allows OSU Research Forests and OSU Extension Forestry to effectively and efficiently provide high quality education, research, and demonstration, as well as profitably administer and manage the property as a satellite forest of the OSU College of Forestry.
- to focus on developing educational opportunities, materials and resources that benefit woodland owners, students and their teachers, and the general public;
- to implement applied-research and demonstrations that address resource management issues important to management of small parcel sizes and nonindustrial forest land ownerships. Some of the more important and challenging issues are:
  - ⇒ reforestation of underproductive forestland, especially those sites occupied by competing grasses and shrubs;
  - ⇒ watershed management concepts applied to small private holdings;
  - ⇒ agro-forestry concepts, including integrating timber, forage, wildlife and recreation for maximizing ecological and economic benefits;
  - ⇒ comparisons of even-age and uneven-age management practices to include ways to shift from one system to another;
  - ⇒ management techniques that sustain long-term forest ecosystem health;
  - ⇒ showcasing the benefits of managing young stands, including precommercial thinning, pruning, prescribed burning, slash disposal, multiple-use management strategies, commercial thinning, and alternative silviculture; and
  - ⇒ exploring the possibilities of managing small private forest land parcels on a landscape or watershed level and across ownership boundaries.

Topography:

The property generally faces to the north. Ridges and drainages are oriented north and south so there are west and east facing slopes, as well as some southwest and northeast areas. Slopes are gentle, most slopes are less than 10% -15%, yet there are short reaches of 100' or so that exceed 40%. Ground based harvest systems are appropriate. Annual precipitation averages 25 inches

and elevation ranges from 3960 to 4190 feet (about the elevation of the Meacham pass on I-84 between LaGrande and Pendleton).

Roads and Access:

The Oberteuffer Research and Education Forest is located at the end of the gravel on Follet Rd., approximately 2 miles south of Highway 82. The turnoff on Highway 82 is about 5 miles northeast of Elgin (see maps) . The property is about 40 minutes driving time from LaGrande.

A seasonal dirt road provides generally good access to the property from Follet Rd. This road is about 1 mile in length, and enters the property at the extreme north property boundary (near the northeast corner), runs through a narrow strip of land along the east fence, then goes west and north through the property, and ending at the pasture gate on the west side of the property. It is in good overall condition, however, there are some areas that need attention. A spring near the pond is draining into the road and causing some rutting. A culvert and other water drainage actions need to be taken. Also, there are several wet areas in the road that need to be rocked and the road should be outsloped in a few places to improve water drainage. This road is the main access or haul road out of the property, all traffic for educational or management purposes will use this road.

Two other seasonal roads, approximately 2/3 mile in total length, are also on the property. One allows access to a gate on the south line that is access to Estil Arrand's property, the other runs north from the pond to the north property boundary and provides entry to Glen and Ruth Urhigs' farmstead.

Timber Resources:

Most of the property is covered with timber, however, about 12% is improved pasture. The forest is highly variable with multiple species and age classes. Species include ponderosa pine, Douglas-fir, grand fir, and western larch: a few Engelmann spruce and lodgepole pine are also present. Average volume per acre is about 9,000 board feet. The area is adequately stocked with trees in the seedling, sapling, pole and sawtimber size classes.

Twelve timber stands are delineated on the enclosed area map. Without exception, all stands are in the Grand Fir plant association, mostly on the dry side, with isolated pockets of the twinflower type. Except for the northeast part of stand 5, stand 8 and stand 10 all stands have been commercially thinned within the last five to ten years, much of this thinning done prior to transfer of ownership to the College of Forestry.

Table 1. Timber Vegetation Descriptions

Stand	Species[1]	Quadratic Mean Diameter (trees 8"+)	Quadratic Mean Diameter (all trees)	Average Basal Area (sq. ft.)	Density (Trees/Acre)[2]	Max Age[3]	Site Index[4]
1	PP>DF	15.0?	7.0?	75?	230?	100?	93?
3	GF > DF = WL	15.7	6.9	69	265	107	89
5	DF>GF>WL=PP	15.2	9.1	91	204	119	74
6	PP > WL = DF	14.5	7.0	60	224	98	95
7	PP > DF > GF > WL	13.9	7.6	107	343	101	99
8	PP	9.7	9.7	110	215	23	116
9	PP > DF	16.5	6.4	67	301	102	93
10	GF>DF>PP	15.3	7.0	114	420	107	115

1. GF = grand fir; PP = ponderosa pine; DF = Douglas-fir; WL = western larch
2. Density refers to all trees
3. Maximum age of site index tree
4. Site index for PP, base year = 100

Table 2. Timber Vegetation Volume Estimates.

Stand Number	Description	Acres	MBF Volume per Acre (16' log, 6" top)	MAI-Board foot Volume Increment per Acre (32' log, 6" top)
1	PP/DF mixed-ages, sawtimber	2.4	?	?
3	DF/GF mixed-ages, sawtimber	15.8	8.6	75
5	DF/PP/WL sawtimber, thinned	18.3	12.5	139
6	PP 90 year old sawtimber, thinned	7.3	8.4	83
7	PP/DF mixed-age class, sawtimber	4.3	4.5	155
8	PP, 30 year old, PCT	2.7	5.0	99
9	PP/DF light stocking, sawtimber	34.0	7.9	63
10	GF/DF/WL/PP well stocked, mixed-ages, sawtimber	13.4	16.2	140

Stand 1 - 2.4 acres

This stand is mixed ponderosa pine and Douglas-fir with an understory of grass, sedge, snowberry, ninebark, and oceanspray. Pine and fir regeneration is present throughout the unit. Brush is heaviest in areas where overstory removal has opened the canopy. Light sanitation thinning occurred in the mid-1980's, ~~More light thinning~~ then again in 1992.

Stand 2- 0.4 acres Pond

Stand 3 - 16.1 acres

This is a mixed stand of Douglas-fir, grand fir, western larch and ponderosa pine. Ninebark and oceanspray dominate the understory and suppress natural regeneration of tree species, hence reproduction is low. Light commercial thinning to sanitize stand of dwarf mistletoe and improve spacing in 1985 in area north of road, and in 1990-91 south of road.

This stand is a good candidate for demonstrations of brush control treatments followed by underplanting with ponderosa pine, Douglas-fir and western larch. Three approaches are suggested: mechanical removal, hand removal, and broadcast herbicide (ground application with backpack sprayers). Brush treatments would likely follow a commercial thinning. Dwarf mistletoe in the Douglas-fir and larch will necesitate removal of overstory once healthy regeneration is established.

Stand 4-13.7 acres

This is an open area consisting of two pastures. In 1997 a vegetation management and shading study was installed in the east pasture. A seedling stock type, vegetation management and animal damage barrier demonstration was installed in the west pasture in 1998.

Stand 5 - 18.3 acres
Parts of this stand are more open than Stand 3, but it generally resembles Stand 3 with its brushy understory. The stand is on an east aspect and appears slightly more productive than Stand 3., at least on the east and south end. A commercially thinning occurred in 1990-91. Given the existing stocking, no thinning is recommended for the near future. The stand towards the north becomes less productive because it's more on a ridgetop with rocky soils. In 1995 some broken topped trees and blowdown were removed. Regeneration is poor, but some Douglas-fir is beginning to become established. No treatment is recommended in the near future.

The area on the east side slopes down towards the pond and has more grand fir than the rest of the stand. This area was not harvested when the rest of the stand was thinned. As a result the stocking is higher and there are more sapling and pole sized trees.

Stand 6 - 7.3 acres
This stand occurs on a ridge top and consists of almost all ponderosa pine both in the overstory and understory, and some scattered Douglas-fir in both canopies. Pine grass and snowberry are common. Ponderosa pine is regenerating well. This area was thinned in 1986, in addition some large pine trees were cut from stand 9 at the same time.

This stand is a good candidate for uneven-aged, pine management given the two cohorts of pine that currently exist. Pre-commercial thinning the young pine cohort will maintain its vigor and growth. Commercial thinning the old pine cohort will open the stand for natural regeneration and initiate a third cohort of pine.

Stand 7 - 4.3 acres
This stand of Douglas-fir, ponderosa pine, western larch and grand fir pole-sized trees is due for a commercial/pre-commercial thinning. It was last thinned precommercially in the early 1980's. Thinning should favor Douglas-fir and pine, but leave scattered grand fir and western larch for diversity. Stocking could be reduced by 30 to 40 percent.

Stand 8 - 2.7 acres
This essentially pure ponderosa pine stand started from natural regeneration into a pasture. The trees were thinned and pruned in the early 1980's and again in 1990. Slash was chipped and left on site in 1991. Increment cores taken during a recent inventory indicate the trees have grown well, but are beginning to slow. A pre-commercial thinning is recommended for this unit with an additional pruning lift on approximately 50 trees per acre.

Stand 9 - 34 acres
This relatively open and uneven-age stand has an overstory of mature ponderosa pine, an understory of sapling and pole size pine and scattered Douglas-fir, and a vegetative cover of pine grass and snowberry. Sixty to seventy percent of the overstory was probably removed in 1957 according to Mr. Oberteuffer. This unit lies on moderately productive soils and a west to northwest aspect, so it's a little drier. Natural regeneration is somewhat lacking and may be the result of competition from ground vegetation. The Douglas-fir is found more frequently on the north end. The young understory trees were thinned in the early 1980's and several sanitation / salvage cuts have been made since that time. In 1991, about 24 MBF of sawtimber was removed (most trees infected with *Elytroderma deformans*).

There are unthinned patches of trees that need thinning, most average 12 inches DBH and are about 80 years old. Regeneration is ponderosa pine and Douglas-fir (dominant) in patches and 10-15 years old.

Management includes a commercial thinning in the overstory. The north half would be managed for a diversity of Douglas-fir and ponderosa pine using uneven-age management, while the stand to the south lends itself to an even-age strategy to promote and develop a stand of ponderosa pine. Here, slashing the Douglas-fir regeneration and underburning will provide growing space and conditions for pine regeneration.

Stand 10 - 13.4 acres

The stand is dominated by mature grand fir, Douglas-fir and ponderosa pine. Ground vegetation is mostly pine grass and elk sedge with scattered snowberry and ninebark. Some timber has been removed from the southern and western areas of the stand, but the Oberteuffer's purposely left most of this area as a natural area.

This stand could be commercially thinned. Ground disturbance should be encouraged to prepare a seed bed for ponderosa pine and Douglas-fir. If natural regeneration is lacking two to three years after thinning, an underplanting should be considered.

At the northeast end of this stand is a closed-canopy, mature stand has not been treated in over 30 years. The stand is dominated by mature grand fir and Douglas-fir. Understory trees and vegetative cover are sparse to non-existent. No treatment was intentional by the previous owner, and the stand could be maintained in this condition as an example of the natural development of unmanaged stands.

Wildlife Resources

This tract is highly diverse, as is indicated by the forest type descriptions provided above. These inherent differences in tree species, vertical and horizontal structure of the canopy, understory species and stocking have combined to create conditions for a wide variety of wildlife habitats. In fact, elk, deer, turkeys, neotropical migrants, cavity nesting birds and animals, small mammals and other animals have been observed and listed for the property by the Oberteuffers (Table X). Based on our knowledge there are no threatened, endangered or sensitive species on this tract.

Management should favor leaving a minimum of one snag greater than 12 inches DBH per acre and at least one downed log greater than 8 inches DBH per acre. The area is deficient of snags and downed logs, and current efforts will integrate these wildlife objectives into future management decisions.

Grazing

The property has a perimeter fence and two interior pasture fences. Other than Units 4 and 8, which were grazed by sheep, the Oberteuffer tract was grazed lightly by horses from 1979 - 1994 when the OSU College of Forestry acquired the property. Currently, units 1, 4 and part of 8 are annually grazed to a three inch stubble height by cattle. Grazing will be discontinued in units 4

and 8 once the planting demonstration are installed. Grazing in unit 1 will continue. Forage production is excellent throughout the property.

Diffuse knapweed has been a problem in unit 4, 8 and along the road in unit 9, however, aggressive herbicide treatment in 1996-97 has provided good control; plans are to continue annual weed control maintenance.

Because of a lack of interior fences, grazing will not occur until the pond vegetation is established. Future grazing strategies, integrated with timber and wildlife objectives, is being considered, but a final decision has not been made.

Water Resources

Riparian habitats include a pond that was constructed in 1990 and an intermittent stream that crosses the southwest corner of the property for a distance of about 100 feet.

The pond is in an emphemeral stream course and is at the headwaters of an unnamed tributary of Rysdam Creek, a fish bearing stream within the Grande Ronde river watershed. Plans are to continue planting a variety of hardwood shrubs and trees to improve wildlife habitat and water quality around the pond edge. As these plants become established this area will be an excellent example to use with students for teaching watershed management concepts.

The emphemeral stream that crosses about 100 feet in the southwest corner has abundant streamside vegetation, and includes a few pine, but mostly hardwood shrubs and grasses. Although only a short stretch, there is some potential for using this area for educational purposes.

Soils

Soils on the Oberteuffer tract are generally very productive. They include the Hall Ranch stony loam, Lookingglass silt loam, Lookingglass very stony silt loam and Tolo silt loam (see map). A description is provided below:

Hall Ranch Stony Loam, 2 to 35% slopes:

- Deep and well drained, formed in colluvium and residuum and derived from andesite and rhyolite. Some loess and volcanic ash is in the surface layer. Depth to soft bedrock ranges from 20"-40".
- Permeability moderate. Available water capacity is 2.5 to 6.5 inches. Water supplying capability is 8-16 inches. Effective rooting depth is 20-40 inches. Erosion hazard moderate.
- Limitations are mainly stones on the surface, which may interfere with felling, yarding and other operations involving use of equipment.
- Site index for ponderosa pine is 85-95. Production capabilities at PP Site Index of 90 are 3,400 cu.ft. per acre for a 40 year old fully stocked stand and 37,960 bd. ft. per acre Scribner at 130 years for fully stocked stands.

Lookingglass Silt Loam, 2 - 12% slopes:

- Deep, moderately well drained. Formed in loess and volcanic ash overlying older residuum and colluvium derived dominantly from volcanic tuff and basalt. Underlying material to a depth of 60" or more is brown silty clay loam.

- Permeability moderate to depth of 21 inches and very slow below this depth. Available water capacity is about 10 to 12 inches. Water supplying capacity is 14 to 18 inches. Effective rooting depth is 20 to 40 inches. Erosion hazard is slight to moderate. Water is perched above clay subsoil to a depth of 18"-36" in winter and spring.
- The main concerns with this soil for timber production are the very slow permeability of the clay subsoil and the seasonal perched water table. The soil may become compacted if it is wet. Roads need a heavy rock base.
- Site index for ponderosa pine ranges from 85-90. On a base of site index 90 the potential production of wood fiber is 3400 cu. ft. per acre for an even-aged, fully stocked stand of trees 40 years old or 37,960 bd. ft. per acre for an even-age fully stocked stand at 130 years.

Lookingglass very stony silt loam, 2-20% slopes:
- Similar to Lookingglass silt loam, except there are more stones on the surface.

Tolo Silt Loam, 12-35% slopes:
- Deep, well drained soil. Formed in volcanic ash and loess deposited over a soil derived dominantly from loess and basalt. Underlying material is a buried subsoil of dark yellowish brown silty clay loam that grades to silt loam and extends to a depth of 65 inches or more.
- Permeability is moderate to a depth of 33 inches and moderately slow below this depth. Available water capacity is about 18-24 inches. Water supplying capacity is 15 to 24 inches. Effective rooting depth is 60 inches or more. Erosion is moderate to high.
- Site index for DF ranges from 75-85. On the basis of site index 80 for DF the potential production per acre of wood fiber is 4,880 cu. ft. for an even-aged, fully stocked stand of trees 40 years old or 50,820 bd. ft. from an even-aged, fully stocked stand at 110 years old.

Of primary concern is to disturb the surface layer of this soil as little as possible. This layer has an exceptionally high available water capacity and contains an appreciable amount of nutrients. During wet periods this ashy material has low strength.

Forest Health

The health of this forest is generally very good. The Oberteuffer's did an excellent job of removing diseased and insect killed trees, and thinning most stands to improve tree quality and vigor.

Some insect and disease conditions do exist, however. Dwarf mistletoe is present at light to moderate levels in Douglas-fir on the east side of the property. Western larch trees also have light to moderate amounts of this disease. The incidence of root disease is minimal, although there is a small pocket of *Fomes Annosus* just south of the pond and east of the skid trail that goes south from the road (look for the "root ball" of a windthrown grand fir). *Elytroderma deformans*, can be found in ponderosa pine trees on the west side of the property.

Insects are also present. Douglas-fir beetle has been found in abundant numbers on windthrown logs, however, standing green trees have not been killed. Mountain pine beetle has killed a few second growth ponderosa pine on the south and west side. *Ips pini*, the pine engraver, has killed pockets of young pine and tops of larger trees, however, recently only a few trees have been noticed. Western pine beetle has recently killed some rather large ponderosa pine, most of which were removed in the salvage operation of 1995. Western spruce budworm caused mostly growth loss and top kill in some grand fir and Douglas-fir, impact overall has been relatively minor.

Recreation

The potential for enhancing recreational opportunities on the Oberteuffer tract is tremendous. Even now, people use the property for hiking, mushroom picking, snowshoeing, cross country skiing, bird watching, and hunting elk, deer and turkeys.

Plans are underway to have an extensive trail system to provide access to the various management units. The interpretive trail should increase interest in hiking on the Oberteuffer property.

The pond will eventually be an area for education about watersheds. As the vegetation fills in around the pond, and a picnic table is constructed, there should be more interest in using the pond for family picnics. Advertising the recreational opportunities in the brochure should enhance awareness and increase recreational use of this property. One advantage to enhancing recreational potential is that our forest resource management educational efforts will be visible and accessible by recreationalists.

Cultural Findings

See Appendix

Oberteuffer Action Plan (1998 - 2002)

Strategies

⇒ In the spring, walk the property to assess the condition of the property, specifically look for fences that need repair, blowdown or bug kills that need to be salvaged or places where trees need to be removed from road ways.
⇒ Logging should be conducted during the dry part of the year or when the ground is frozen in winter.
⇒ Tours will be conducted during times of the year when vehicles will not damage roads, usually May through October.
⇒ Develop handouts and other educational materials as new research and demonstration information becomes available.

⇒ Develop demonstrations that showcase good examples of management practices such as precommercial thinning, pruning, prescribed burning, slash disposal, multiple-use management, commerical thinning and alternative silviculture.

1998

Infra-structure.

- Begin the planning process, to include developing contract language and identifying consultants and contractors to implement road water management practices, road widening and grading, rocking wet areas, and possible road relocation for implementation in 1999.

- Identify bus turn around area and flag in boundaries.

Applied-research and demonstration

- **Seedling stock-type, vegetation management and animal damage barrier demonstration.** Create a four acre demonstration that will help NIPF owners and others make better decisions by showing alternatives in one place, including various seedling stock-types, vegetation control options and alternative animal damage barriers. Installation planned for spring 1998 in the northwest pasture, Unit 4.

- **Commercial thinning, brush control and regeneration strategies in a mixed-conifer forestt.** The goal of this project is to show alternatives to establishing regeneration on a mixed-conifer site with low to moderate stocking of mixed species in the overstory, and few existing seedlings and high brush competition in the understory. In 1998, Unit 3 will be prepared and marked for a commercial harvest in 1999 with the goal of removing diseased and defective trees, improving spacing and shifting the species compostition to more ponderosa pine and western larch. Seedlings will be ordered for a planting in 2000. The vegetation management part of this project will be a replicated and statistically valid study.

Education

- **Self -guided interpretive trail.** Design and develop an interpretive trail that highlights examples of active management, silvicultural strategies, forest succession, forest ecological characteristics, examples of multiple-use management, watershed management issues and practices, and other important features. This trail will enhance the recreational as well as educational opportunities on the property, especially for students, teachers and the general public. The proposed location is outlined in Figure ? A summer student intern will flag in

the trail location on the ground, produce a map with stops identified and draft a list of subjects to consider for inclusion. This trail will not be accessible by disabled people because of the high cost of developing a paved surface over such broken, rocky ground.

- **Brochure.** Develop a brochure for the property that outlines ownership goals, actions, map, activities, assistance and how to get involved in education programs. This will improve awareness of what the property has to offer and increase it's use for educational benefits.

- **Photo points.** Locate photo points, especially in areas targeted for management, to show before and after differences, and forest successional changes.

- **Special educational opportunities.** Locate, label, map, record and develop a handout of special educational opportunities as part of the interpretive trail, including bark beetle damaged trees, bird box locations, riparian area plantings, snags, downed logs, root disease, dwarf mistletoe or other similar examples. This project will enhance all educational programs held on the property.

1999

Infra-structure

- **Roads and access.** Implement road water management, outsloping and rocking prior to or during logging. Also, create a rocked bus turn around at the same time.

- **Fences.** Construct fence stiles for easier crossing during tours.

- **Restrooms.** Construct two state-of-the-art vaulted ceiling restroom facilities. Make these disabled accessible.

Applied-research and demonstration

- **Commercial thinning, brush control and regeneration strategies in a mixed-conifer forest .** This study will be logged during July and August, and the vegetation management treatments completed by fall.

- **Uneven-age and even-age comparison, and fuels management demonstration.** The goal of this demonstration is to compare uneven-age and even-age management in a mixed stand of ponderosa pine and Douglas-fir (Unit 9). Generally, the idea is to do a commercial thinning in the overstory, then precommercial thin the understory and plant where appropriate. Fuels will be treated several ways. The commercial harvest, precommercial thinning and fuels treatments will be completed by fall. Needed planting will occur in 2000.

Education

Appendix

List of Birds, Mammals and Plants from Bill and Margaret Oberteuffer

Birds:

Pied-billed Grebe
Great Blue Heron
Canada Goose
Mallard
Green-winged Teal
Cinnamon Teal
Bufflehead
Turkey Vulture
Northern Goshawk
Sharp-shinned Hawk
Cooper's Hawk
Red-tailed Hawk
Bald Eagle
Marsh Hawk
American Kestrel
Gyrfalcon
Ruffed Grouse
California Quail
Virginia Rail
Sora
American Coot
Killdeer
CommonSnipe
Western Sandpiper
Wilson's Phalarope
Mourning Dove
Screech Owl
Great Horned Owl
Northern Pygmy Owl
Common Nighthawk
Black-chinned Hummingbird
Rufous Hummingbird
Calliope Hummingbird
Belted Kingfisher
Common Flicker
Pileated Woodpecker
Yellow-bellied Sapsucker
Williamson's Sapsucker
Hairy Woodpecker
Downy Woodpecker
White-headed Woodpecker
Black-backed Three-toed Woodpecker
Eastern Kingbird
Western Kingbird
Western Wood pewee
Olive-sided Flycatcher
Violet-green Swallow
Tree Swallow
Barn Swallow
Gray Jay
Steller's Jay
Black-billed Magpie
Common Crow
Clark's Nutcracker
Black-capped Chickadee
Mountain Chickadee
Chestnut-backed Chickadee
White-breasted Nuthatch
Red-breasted Nuthatch
Brown Creeper
House Wren
Winter Wren
American Robin
Varied Thrush
Western Bluebird

Mountain Bluebird
Townsend's Solitaire
Bohemian Waxwing
Cedar Waxwing
Starling
Solitary Vireo
Warbling Vireo
Yellow-rump ed Warbler
Townsend's Warbler
House Sparrow
Western Meadowlark
Red-winged Blackbird
Brewer's Blackbird
Brown-headed Cowbird
Western Tanager
Black-headed Grosbeak
Lazuli Bunting
Evening Grosbeak
Cassin's Finch
House Finch
Pine Grosbeak
Common Redpoll
Pine Siskin
American Goldfinch
Red Crossbill
Rufous-sided Towhee
Dark-eyed Junco
Chipping Sparrow
White-crowned Sparrow
Song Sparrow

Mammals:

Pine Squirrel
Yellow Pine Chipmunk
White footed Mouse

Mole
Meadow Mouse
Shrew
Weasel
Coyote
Mule Deer
White-tailed Deer
Rocky Mountain Elk
Skunk
Porcupine
Badger
Muskrat
Black Bear - tracks only
Bobcat - ditto
Cougar - ditto

Flying Squirrel
Columbian Ground Squirrel

Plants:

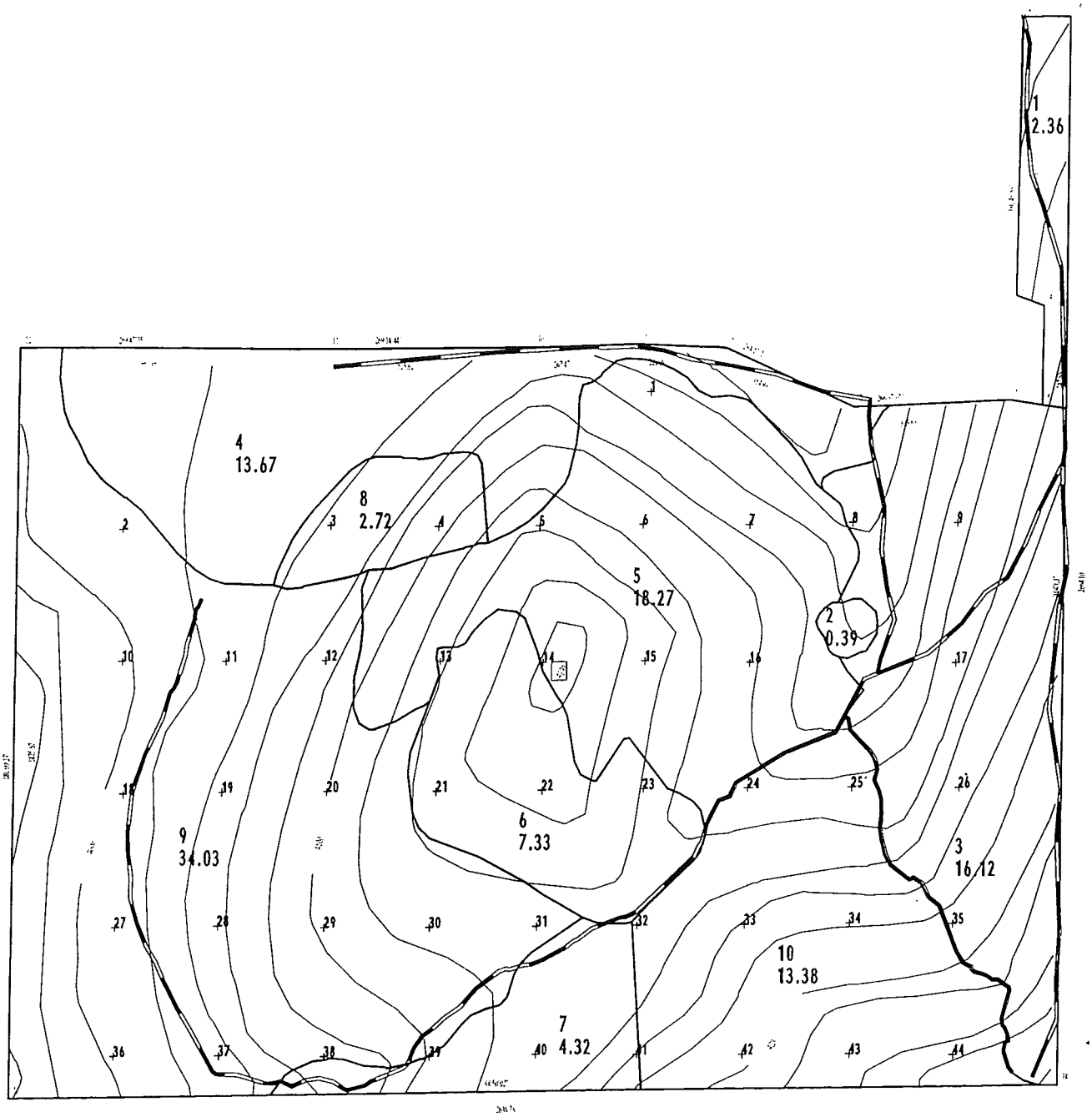
Anemone sp.?
Arnica (Arnica cordifolia)
Blue Lupine sp.?
Blue Elderberry
Blackcap
Bull Thistle
Blue Gentian
Blue Penstemon sp.?
Buttercup - 2 species
Orchid (Habernaria elegans)
Bishop's Cap (Mitella)
Bird's Foot Trefoil
Brodiaea Lily (Brodiaea)
Bedstraw (Galium)
Blue-eyed Mary (Collinsia)
Burdock (Arctium)
Chamomile (Matrichria)
Calypso Orchid (Calypso bulbosa)
Cow-parsnip (Heracieum lanatum)
Cat-tail (Typha latifolia)
Clarkia
Camas (Camassia)
Choke Cherry
Cat's Ear (Calochortus)
ChiCkweed
Canadian Thistle
Dogwood (Cornus sericea)
Dandelion sp.?
Dwarf Waterleaf (Hydrophyllum capitatum)
Death Camas (Zighdenus)
False Lupine
False Hellebore
Fringe Cup
False Solomon Seal (smilacina racemosa)Gum Plant
Heal-all (Prynella vulgaris)
Hound's Tongue (Cynoglossum)
Indian Pipe (Monotropa uniflora)
Iris sp.?
Lamb's Quarter
Large Purple Fleabane
Larkspur sp.?
Morning Glory
Musk Thistle (Carduus nutans)
Meadowrue (Thalistrum)
Miner's Lettuce (Montia perfoliata)
Mint sp.?
Mullein (Verbascum)
Nettle
Ninebark (Physocarpus)
Owl-clover
Ocean Spray (Holodiscus)
Old Man's Whiskers (Geum)
Pussy-toes (Antennaria)
Prairie Star (Lithophragma)
Pinedrops (Pterospera andromeda)
Pink Microsteris (Microsteris)
Peony (Paeonia brownii)
Purple Fleabane
Pink Lupine
Pearly Everlasting (Anaphalis margaritacea)
Red Paintbrush
Red Columbine (Aquilegia formosa)
Red Clover
Slender Cinquefoil (Potentilla)
Shooting Star
Serviceberry
Syringa
Sweet Clover
Sheep Sorrel
Sedum Stenopetalum
Spirea, Red (Spirea douglasii)
Snowberry (Symphoracarpos)
Spirea, White
Spotted Coral-root (Coralophiza Maculata)
Sweet-cicely (Osmoriza)
Speedwell (Veronica) -
Spotted Knapweed (Centurea)
Thistle, American sp.?
Tar-weed (Amsinchia)
Tiny Trumpet (Collomia linearis)
Twinflower (Linnaea borealis)
Violet, purple
Violet, yellow
Vase Flower (Clematis hirsutissima)

Wayside Gromwell (Lithospermum ruderale)
White Clover (Trifolium repens)
Water Smartweed (Polygonum amphibium)
Wild Hollyhock (Iliamna)
White Paintbrush
Wild Rose sp.?
Wild Strawberry
Wild Onion sp.?
Wild Forget-me-not
Wild Geranium
Western Coneflower (Rudbeckia occidentalis)

Yellow Oysterplant (Salsify)
Yellow Bell (Fritillaria pudica)
Yellow Mimulus
Yarrow (Achillea)
Yellow Fawn Lily (Erythronium grandiflorum)
Mt. Lady's-slipper Orchid (Cypripedeum montanum)

Golden Pea
Golden Currant (Ribes aureum)
Monument Plant (Frasera speciosa)
Nettle leaved Giant Hyssop (Agastache viticifolin)
Night flowering Catchfly (Silene noctiflora)
Grass Pink (Dianthus armeria)
Filaree (Erodium cievtarium)
Field Mint (Mentha arrensis)
Rocky Mountain Maple
Willow sp.?
Thorn-apple
Pacific Yew
Wild Plum
Black Cottonwood
Western Juniper
Englemann Spruce
Wild Cherry
Alder sp?

Oberteuffer Tract



+ Inventory Plot

Stand Boundary

Road

Scale = 1:4,800

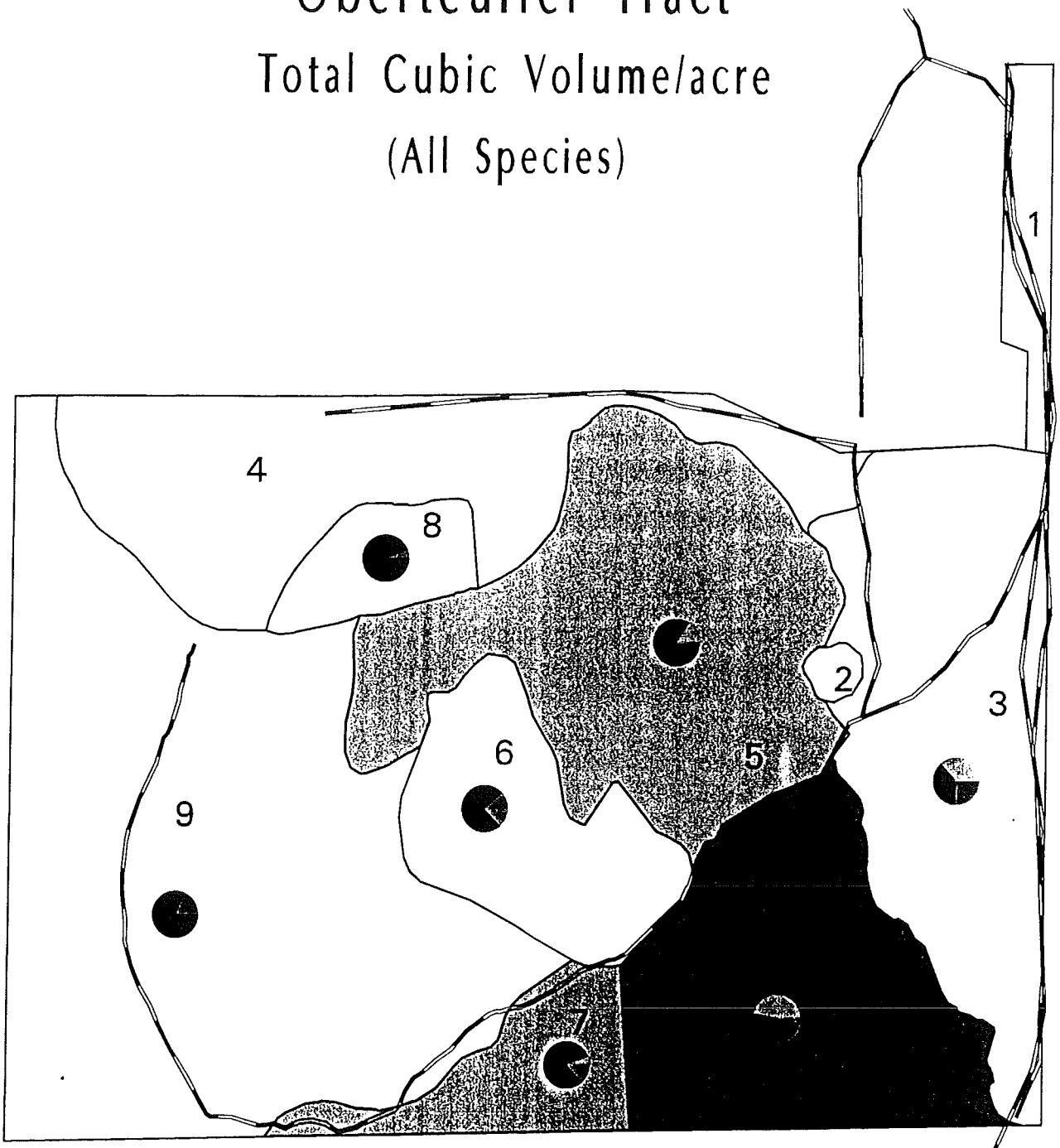
1 inch = 400 feet

Notes: Map prepared by Oregon State University Research Forests.
June 23, 1997

Oberteuffer Tract

Total Cubic Volume/acre

(All Species)



Cubic Volume/acre

- 1500 - 1999
- 2000 - 2499
- 2500 - 2999
- 3000 - 3499
- 3500 - 3999
- Other

Species Composition

- Grand Fir
- Douglas Fir
- Ponderosa Pine
- Western Larch
- Engelmann Spruce

Stand Boundary

Road

Scale = 1:4,800

1 inch = 400 feet

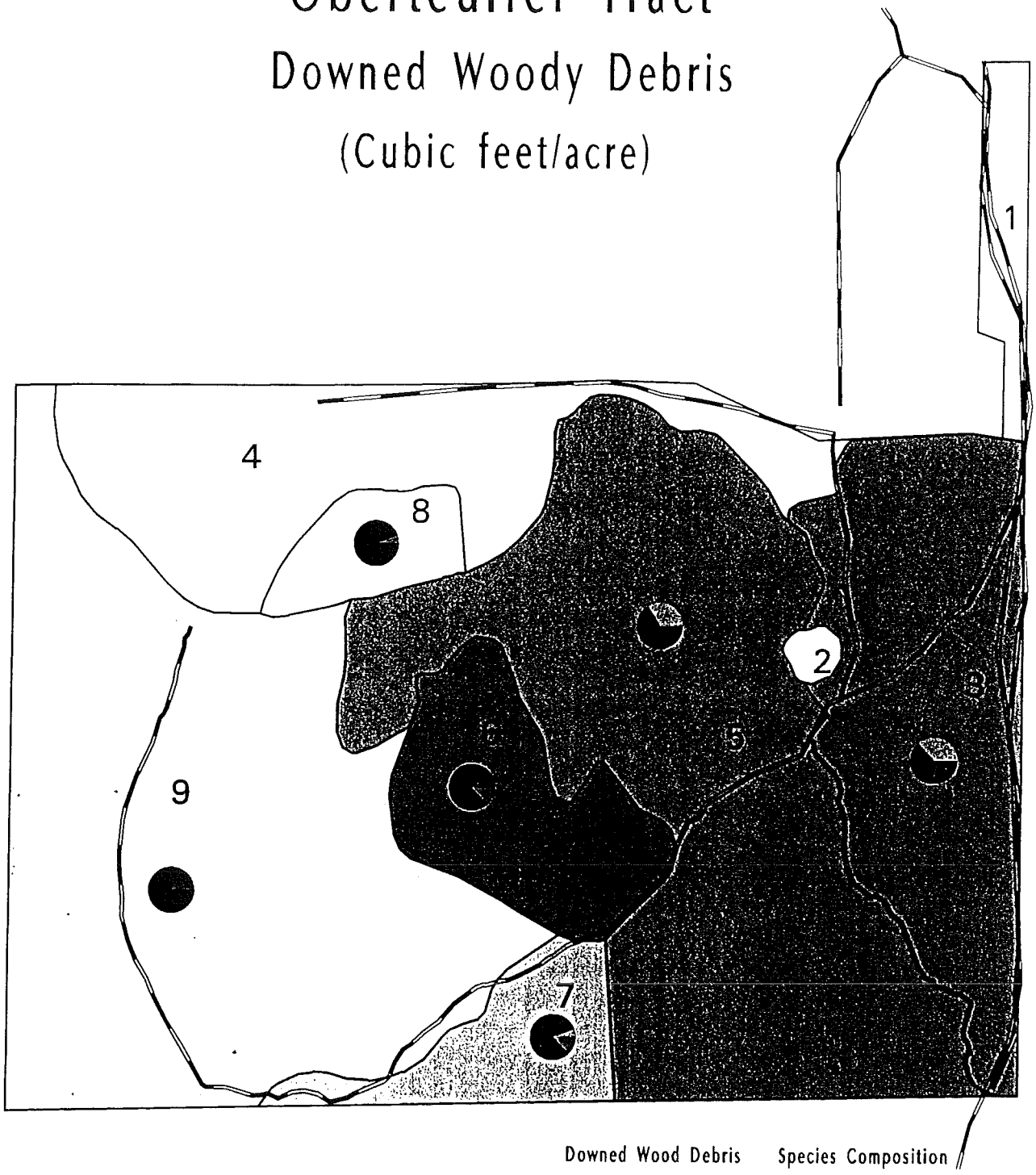
Notes: Map prepared by Oregon State University Research Forests.
June 23, 1997

/gis/workspace/oberteuf/volume.aml

Oberteuffer Tract

Downed Woody Debris

(Cubic feet/acre)



Downed Wood Debris

- 0
- 100 - 200
- 201 - 300
- 301 - 400
- 401 - 500
- 501 - 600
- Unknown
- Stand Boundary
- Road

Species Composition

- Grand Fir
- Douglas Fir
- Ponderosa Pine
- Western Larch
- Engelmann Spruce

Scale = 1:4,800

1 inch = 400 feet

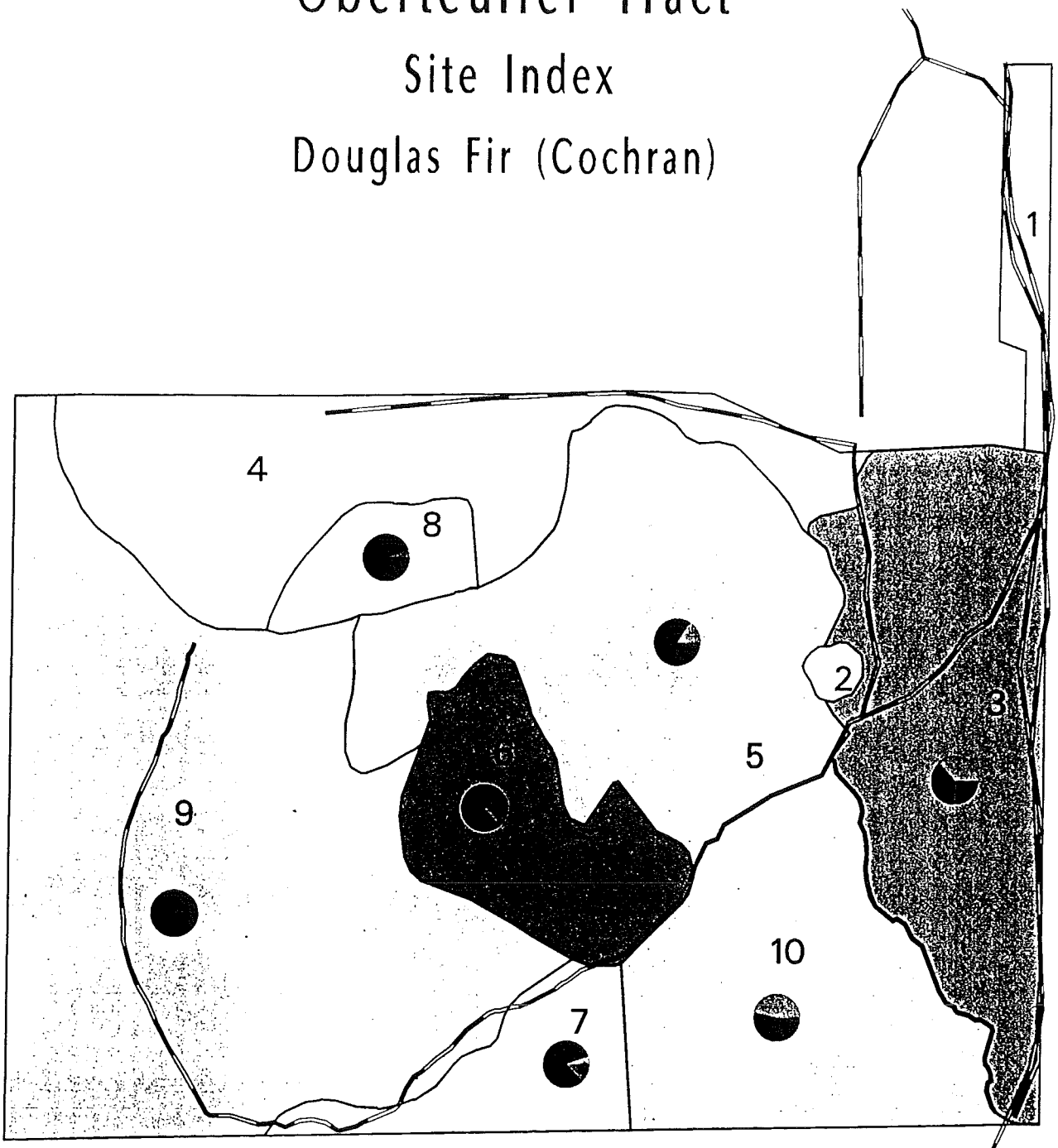
Notes: Map prepared by Oregon State University Research Forests.
May 21, 1997

/gis/workspace/oberteuf/downwood.aml

Oberteuffer Tract

Site Index

Douglas Fir (Cochran)



Site Index

- 50 - 59
- 60 - 69
- 70 - 79
- 80 - 89
- 90 - 99
- Other

Species Composition

- Grand Fir
- Douglas Fir
- Ponderosa Pine
- Western Larch
- Engelmann Spruce

Scale = 1:4,800

1 inch = 400 feet

N

Stand Boundary

Road

Notes: Map prepared by Oregon State University Research Forests.
June 23, 1997

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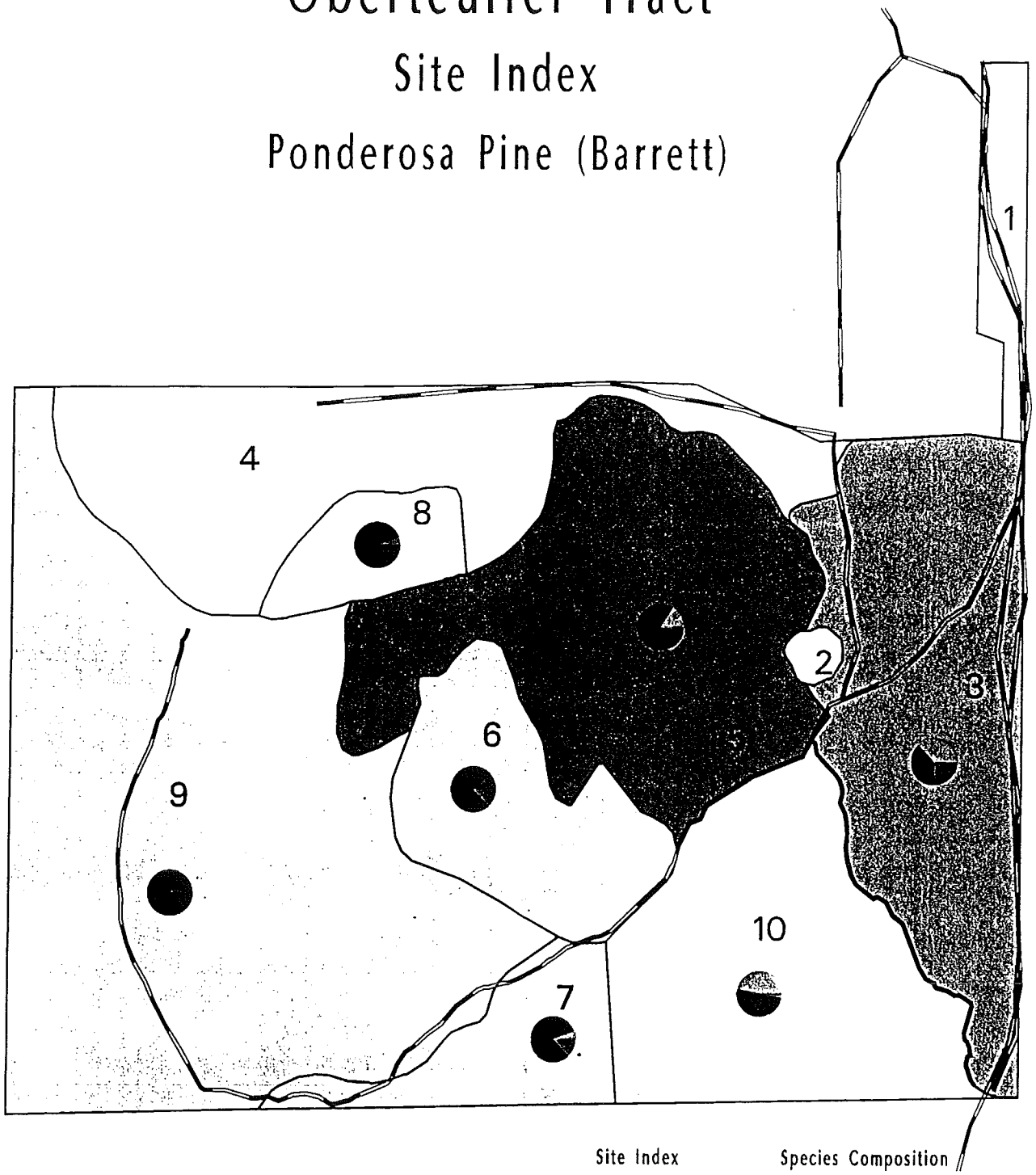
Oberteuffer Tract

Site Index

Ponderosa Pine (Barrett)



Site Index

- 70 - 79
- 80 - 89
- 90 - 99
- 100 - 109
- 110 - 119
- Other
- Stand Boundary
- Road

Species Composition

- Grand Fir
- Douglas Fir
- Ponderosa Pine
- Western Larch
- Engelmann Spruce

Scale = 1:4,800

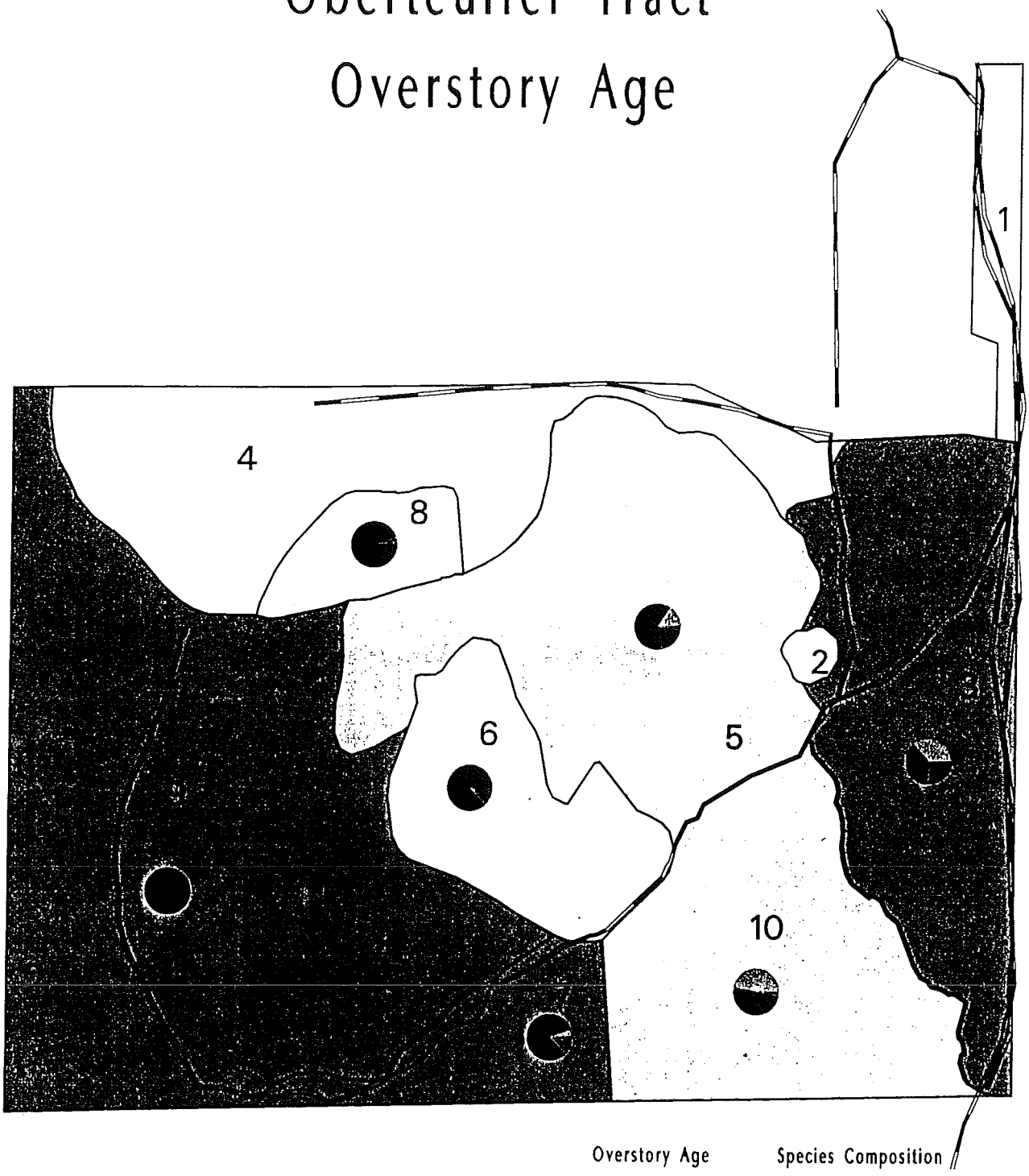
1 inch = 400 feet

N

Notes: Map prepared by Oregon State University Research Forests.
June 23, 1997

/gis/workspace/oberteuf/sitepp.aml

Oberteuffer Tract
Overstory Age



Overstory Age
- 31 years
- 77
- 91 - 96
- 100 - 105
- Other

Species Composition
- Grand Fir
- Douglas Fir
- Ponderosa Pine
- Western Larch
- Engelmann Spruce

Stand Boundary
Road

Scale = 1:4,800

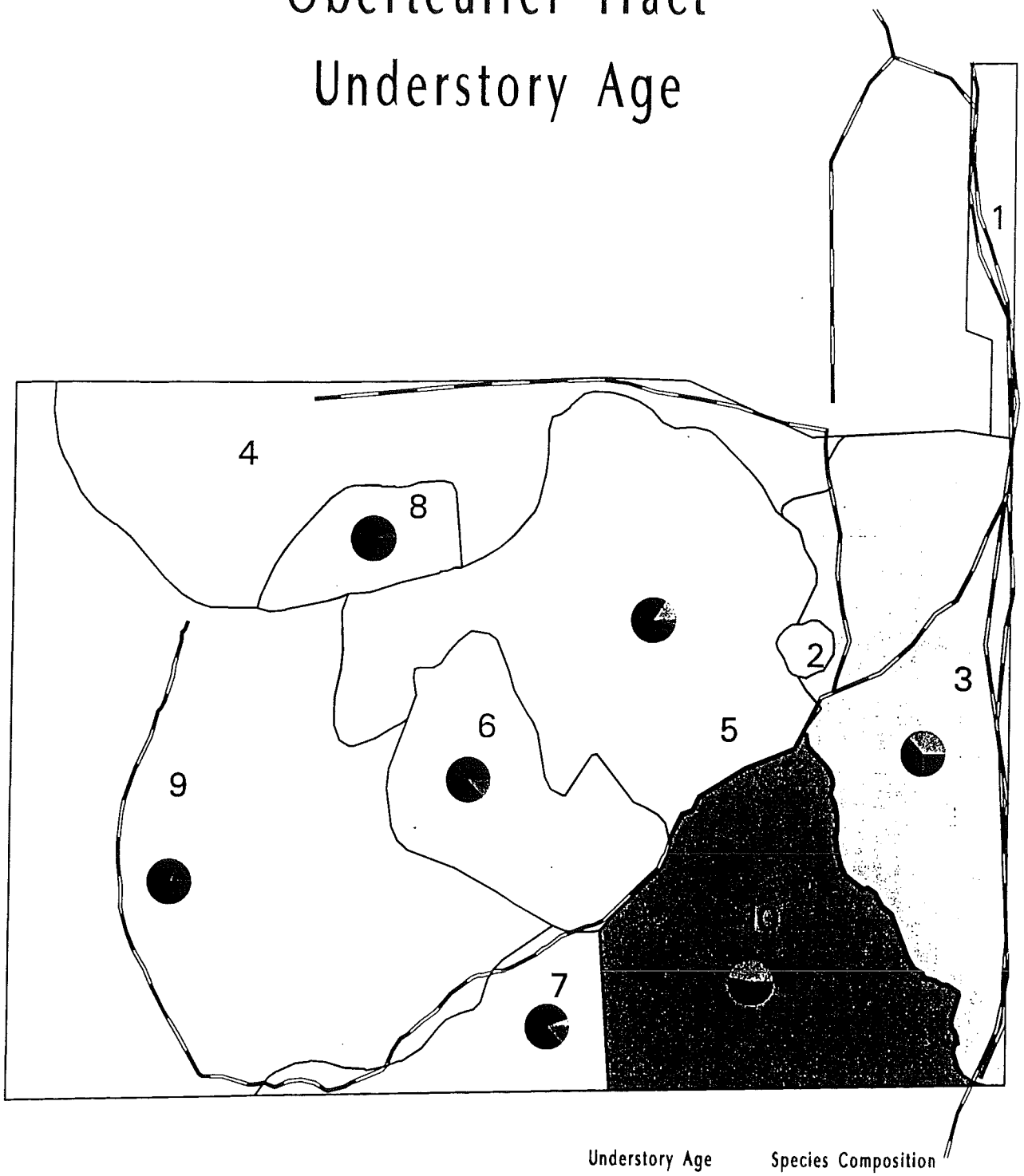
1 inch = 400 feet

N

Notes: Map prepared by Oregon State University Research Forests.
June 23, 1997

/gis/workspace/oberteuf/overage.aml

Oberteuffer Tract
Understory Age



Understory Age

- 32 years
- 40 - 45
- 60
- 78
- No Understory

Species Composition

- Grand Fir
- Douglas Fir
- Ponderosa Pine
- Western Larch
- Engelmann Spruce

Stand Boundary

Road

Scale = 1:4,800

1 inch = 400 feet

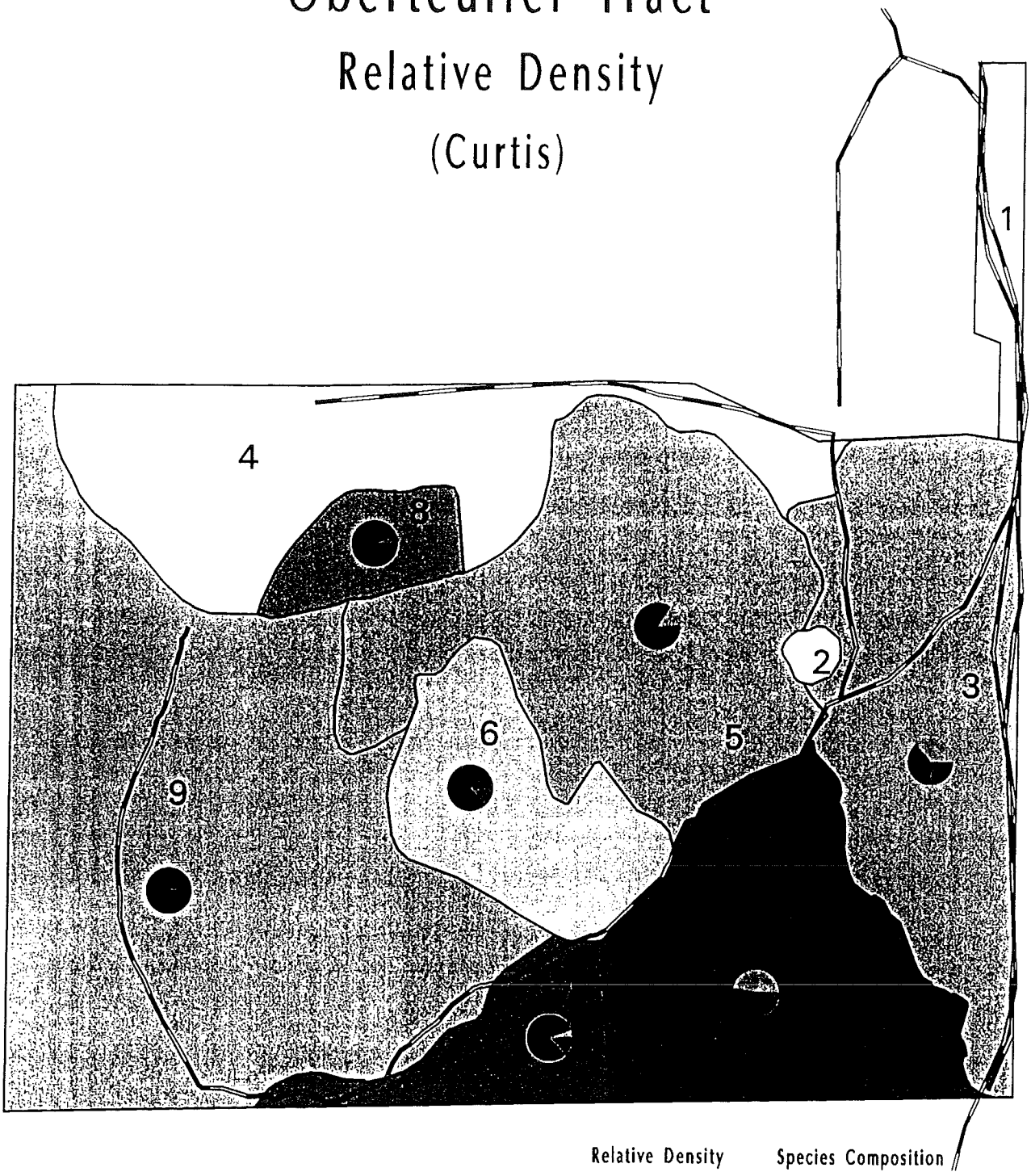
Notes: Map prepared by Oregon State University Research Forests.
June 23, 1997

/gis/workspace/oberteuf/underage.aml

Oberteuffer Tract

Relative Density

(Curtis)



Relative Density

- 21 - 25
- 26 - 30
- 31 - 35
- 36 - 40
- 41 - 45

Species Composition

- Grand Fir
- Douglas Fir
- Ponderosa Pine
- Western Larch
- Engelmann Spruce

Stand Boundary

Road

Scale = 1:4,800

1 inch = 400 feet

Notes: Map prepared by Oregon State University Research Forests.
June 23, 1997

/gis/workspace/oberteuf/curtis.aml

Oberteuffer Tract

Soils

Stand Boundary
Road

9A	40C
9B	42C
11D	46D
12D	58E
18E	59E
19E	68C
39C	69C

Scale = 1:24,000

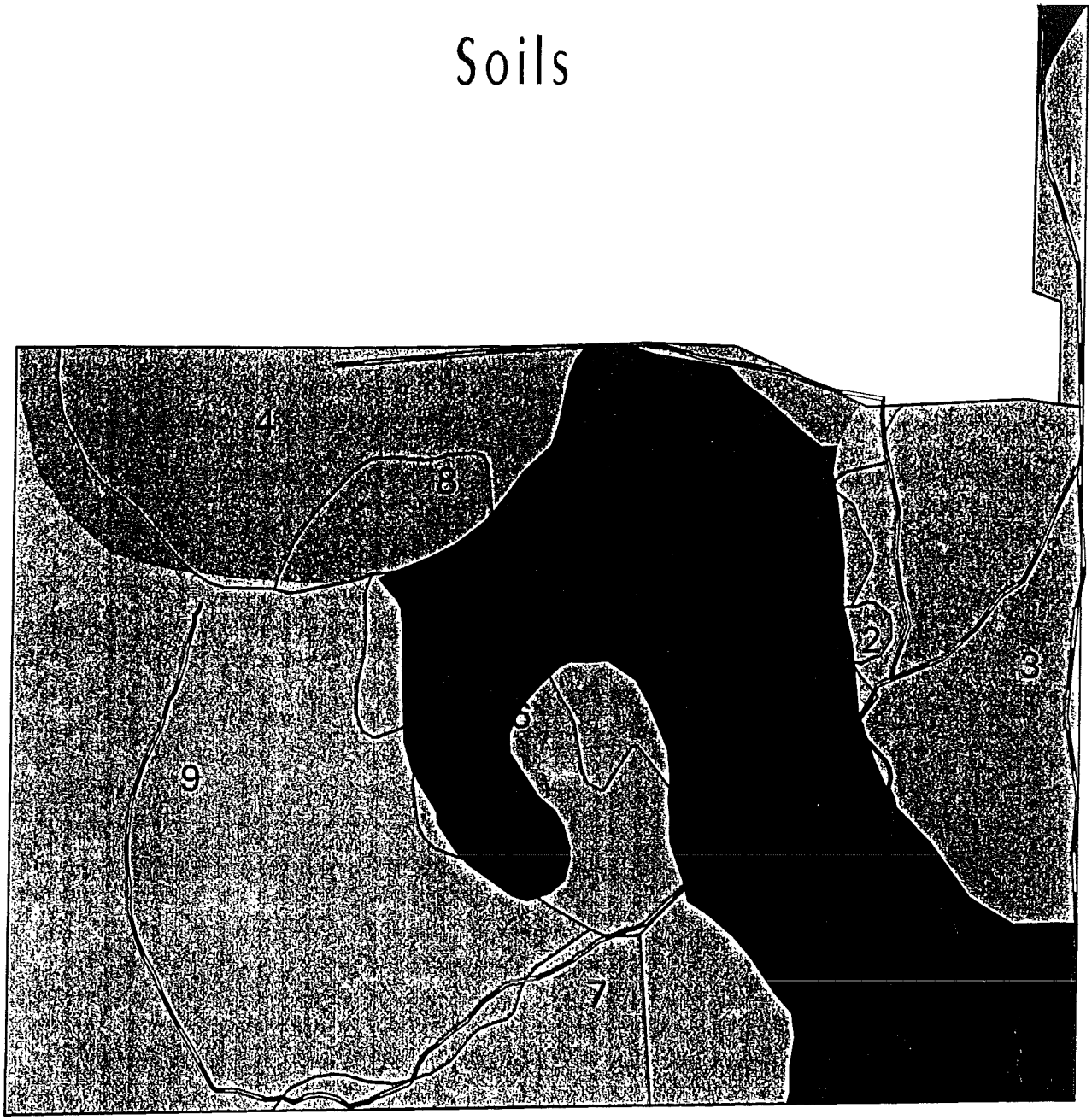
1 inch = 2,000 feet

Notes: Map prepared by Oregon State University Research Forests.
June 22, 1997

/gis/workspace/oberteuf/obersoil.aml

Oberteuffer Tract

Soils



Scale = 1:4,800

1 inch = 400 feet

N

Road

Stand Boundary

19E - Hall Ranch stony loam,2-35% slopes

39C - Lookingglass silt loam,2-12% slopes

40C - Lookingglass very stony silt loam,2-20% slopes

59E - Tolo silt loam,12-35% slopes

Notes: Map prepared by Oregon State University Research Forests.
June 22, 1997

/gis/workspace/oberteuf/obesoil1.aml

Cultural Resource Summary and Prehistory for the OSU Research Forest Oberteuffer Tract

by
Ann Bennett Rogers

The Oberteuffer tract was inventoried for cultural resources in 1996. Prefield work suggested that there was a high likelihood of encountering cultural resources as the Woodlot Management Plan mentions that on the Oberteuffer property , which included the OSU Research Forest Oberteuffer tract, mentions numerous arrowheads had been found. Two cultural resources were identified during the survey. These are shown on Figure 1. One isolated basat flake and a site consisting of boulders, some with manufactured cupulas. Cupulas are a type of rock art often associated with important ceremonial events. The private land ownership patterns in the vicinity of the Oberteuffer tract has not resulted with a large number of cultural resources formally recorded. The majority of cultural resource sites recorded in this area of the Oregon are associated with Federal land management activities, which occur primarily at higher elevations.

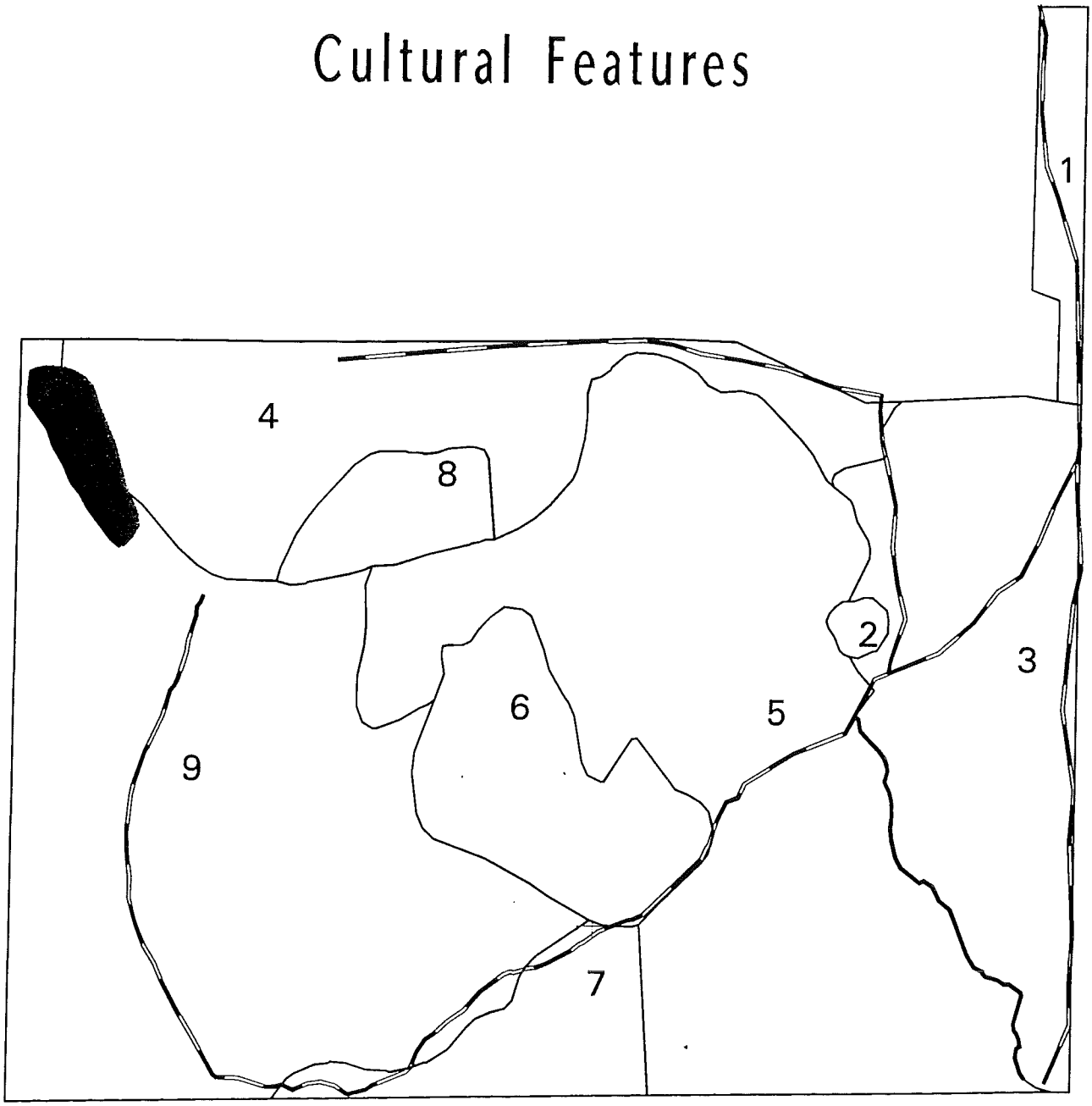
Background

The Oberteuffer tract falls into the cultural region commonly referred to as the Plateau. A general overview of Plateau culture can be found in Hunn (1991). Subsistence was based on a seasonal rounds. Winter villages and summer camps were strategically located to exploit seasonally available resources. Figure 2 provides a model of the seasonal resources exploited ethnographically. Plant items and fish made up two-thirds or more of the diet. The importance of bison has been shown prior to the historic period (AD 1805) in the archaeological record. Winter villages are associated with the long communal house, circular tipi lodge, semi-subterranean menstrual lodge for women and the sweat lodge for men. During the summer, scattered camp locations adjacent to food procurement locations and water. Other summer camps were associated with trails, and trading and other social activities. Wallowa Lake was one of these trading areas.

Oberteuffer falls into the boundary area between the Nez Perces and the Cayuse tribes. The early fur trappers, explorers, homesteaders and government officials identified and placed people they encountered into specific groups or tribes. They made the assumption, based on their Euroamerican preconceived notions that aboriginal organization centered on the tribe with distinguishing characteristics. For the Nez Perce and Cayuse, the physical appearance, place names and cultural traits identified groups. Sorting out these conflicts within the historic literature has been a major source of ethnographic work. This makes it difficult to conduct general statements about either group, and is further exasperating in the area where groups overlapped or boundaries shifted as populations moved into and out of an area. It is likely that membership in a particular group was highly flexible due to intermarriage, group mobility and the large geographic areas (Hudson et al. 1978). The

Oberteuffer Tract

Cultural Features



Stand Boundary

Road

Cupula Petroglyphs

Basalt Flakes

Scale = 1:4,800

1 inch = 400 feet

Notes: Map prepared by Oregon State University Research Forests.
May 21, 1997

/gis/workspace/oberteuf/obercul.aml

Figure 2: Seasonal Rounds from Hunn (1991)

Cayuse are seen as occupying the area lying between the Columbia River and the Blue Mountains. East of the Cayuse were the Nez Perces who centered their activities along the Imnaha River on the south, the east slope of the Blue Mountains on the north. This general distribution does not represent the territorial extent of these ethnographic populations.

The Obetueffer tract is located in close proximity the historic dividing line between the Cayuse and Nez Perce that was established by Old Chief Joseph. This area may therefore be associated with a landscape marker. McWhorter (1952) documents in the summer of 1872, Indian Agent John B. Monteith met with Young Chief Joseph in an attempt to quell the growing animosity of the Nez Perce with white intrusions in the Wallowa Valley. Monteith is directly quoted as reporting that "Joseph opened the council by saying-his father (Old Joseph) planted a stick on the mountain between the Grand Ronde Valley and the Wallowa, that now that stick had grown to a large tree, that the whites were trying to get on their side and drive them away from the food, that his father bequeathed to him that country for subsistence of himself and band and wanted all whites to leave the valley." In Ruby and Brown (1972) there is another reference to a landscape marker. "Patrick Gass, *Journal of the Voyages and travels of a Corps of Discovery*, 210-211. Lewis and Clark gave a flag to a Nez Perce Indian who was suppose to have taken the flag from Lewis and Clark to plant in the Grand Ronde Valley as a token of peace between the Snakes and the Nez Perces, Cayuses, and Walla Wallas. Wilkes, *United States Exploring Expedition*, IV, 394-395. Forty five years after the Lewis and Clark expedition of 1804-06 would place the date at 1849-51. Both accounts give evidence for the placement of a landscape marker in the vicinity of Oberteuffer. Thus the area is potentially associated with significant events between the Cayuse and the Nez Perce.

Prehistory

There is considerable time depth identified for the Oberteuffer area. The prehistory of theis area of the Plateau is summarized in Aikens (1993). Specific sites in the vicinity of Oberteuffer are summarized below. These sites provide some perspective in placement of the Oberteuffer finds in context.

The site of Piltcher Creek (35UN147), located 11 miles south of Le Grande is probably the most significantly reported archaeological excavation in vicinity of the Oberteuffe tract at this time (Brauner 1985). Other sites in the area include the Stockhoff Basalt Quarry (35UN52), Marshmeadow site (35UN95) and the Ladd Canyon site (35UN74). More recent archaeological work conducted under the auspices of the Oregon Department Transportation near Elgin may contribute significantly to our understanding but, has not been formally reported yet. These sites provide insights into the prehistory of the area and has implications for the Oberteuffer Tract. The Stockhoff Basalt Quarry is equated with the upland aspect of the southern Plateau culture are and the Cascade Phase (8000-4000 BP) of the Lower Snake River drainage. The data suggest the site was used as a seasonal big-game hunting and processing area, with a primary function for quarrying and the reduction of basalt to large bifacially

worked blanks. In 1980 the site was revisited by archaeologist and the initial occupation was determined to be between 10,700 and 5700 BP. The Ladd Canyon and Marshmeadow sites were occupied after the eruption of Mount Mazama (7000 BP). Marshmeadow appears to span the Holocene from 10700 BP to 480 BP. The meadow near the site currently supports camas lilies in abundance. The artifacts from the site provide evidence of tool manufacture and repair as well as discard of damaged hunting tools. The bones of mountain sheep, pronghorn and bison were recovered. All three of these sites were intermittently occupied into the historic period. Marshmeadow and the Ladd Canyon sites functioned as seasonal base camps for big game hunting. Pilcher Creek is primarily dated on the basis of Glacier Peak ash at 11,200 BP and the first occupants of the site and a Mazama ash lens dating to 7000 BP. Of the artifact materials recovered at Pilcher creek 88 percent were manufactured of locally available fine grained basalt, eight percent were obsidian and the remaining four percent were cryptocrystalline silica, various volcanic materials, quartzite and soapstone. The obsidian was sourced to eastern Oregon and southwest Idaho.

Summary

The Oberteuffer tract is located in an area known to contain significant cultural resources and rich in the cultural history of the Nez Perce and Cayuse. The materials identified on the tract relate to this use of the area. I would suspect that a major site exists on a portion of the property that was once owned by the Oberteuffers. This is because of the reference to "numerous arrowheads" and the landscape down slope from the OSU Oberteuffer tract would be suitable for such a site. The materials encountered on the OSU property reflect the types of materials that one would expect to locate close to a seasonally utilized site. The isolated basalt flake probably relates to some procurement activity that was carried on prehistorically at the tract. The cupula site suggests that there is a major site near the tract. The historic accounts relating to Old Chief Joseph contribute to these cupulas representing a marker for land use or demarcation of some sort. Further archival record work is needed to refine our understanding of this rock art site.

Management of the tract for timber resources should not be impacted by these resources. The isolated flake by itself is not significant. If ground disturbing activities occur in the area of the flake the area would be reinspected to insure no additional material was exposed. If timber management activities occur when the ground is frozen or over- the- snow, then further inspection should not be required. In the area of the cupulas, caution should be taken not to further disturb the boulders that contain cupulas. Some of the boulders contain them, some do not. Some of the boulders are also characterized by natural depressions, which are not cupulas. The boulders that have been relocated appear to have been moved as part of plowing activities. The cupulas are on an edge of a stand of young pines. Future management should look at not disturbing these boulders during ground disturbing activities and a monitoring plan should be developed during any planning for this area.

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