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Planning Dept  
JUN 25 1 32 PM '55  
GARY H. OLSON

## RETURN ADDRESS:

Paul Tate  
P.O. Box 65  
Underwood, WA 9851

Please Print or Type Information.

## Document Title(s) or transactions contained therein:

1. Wildlife Management Plan
- 2.
- 3.
- 4.

## GRANTOR(S) (Last name, first, then first name and initials)

1. Paul Tate
- 2.
- 3.
- 4.

☐ Additional Names on page \_\_\_\_\_ of document.

## GRANTEE(S) (Last name, first, then first name and initials)

1. Skamania County
- 2.
3. Paul Short Plat
- 4.

☐ Additional Names on page \_\_\_\_\_ of document.

## LEGAL DESCRIPTION (Abbreviated: I.E., Lot, Block, Plat or Section, Township, Range, Quarter/Quarter)

Section 22, T3N, R10E

☐ Complete legal on page \_\_\_\_\_ of document.

## REFERENCE NUMBER(S) OF Documents assigned or released:

Vol. 3 of Short Plats on Page 351

☐ Additional numbers on page \_\_\_\_\_ of document.

## ASSESSOR'S PROPERTY TAX PARCEL/ACCOUNT NUMBER

3-10-22-11-198

☐ Property Tax Parcel ID is not yet assigned.☐ Additional parcel #'s on page \_\_\_\_\_ of document.

The Auditor/Recorder will rely on the information provided on the form. The Staff will not read the document to verify the accuracy or completeness of the indexing information.



Wildlife Management Plan  
#NSA-97-40

Applicant: Paul Tate  
PO Box 65  
Underwood, WA 98651

Prepared by: Wildlife Biology Forever  
Nancy & Rolando Mendez-Treneman  
PO Box 567  
White Salmon, WA 98672  
509-493-4603  
Rolando@gorge.net

Purpose:

This report describes habitat characteristics of the project site and its function as habitat for the western gray squirrel (*Sciurus griseus*). This information is intended to serve as a basis for designing property use in a manner that does not compromise sensitive wildlife areas and the resident western gray squirrel population.

Project Location and Description:

The project is a two lot land division, dividing 10 acres into two 5 acre parcels. The lots are located off Cooper Avenue surrounding Virginia Drive, in Underwood, WA. The legal description is T3N, R10E, Section 22 W.M., Skamania County Tax Lot #3-10-22-11-198.

Affected Species: Western Gray Squirrel (*Sciurus griseus*)

Background Information:

In January and March of 1997 Washington Department of Fish and Wildlife (WDFW) biologists discovered evidence of western gray squirrel presence on the project site as well as adjoining property (#NSA-96-45). These surrounding properties are Tax Lot 801, Coppers Addition, and the Sooter Property. These properties along with the property surveyed in this application (here after referred to as the Tate parcel) form contiguous habitat for the western gray squirrel. Three loose-leaf platforms (drays) and several feeding sites were discovered on the Tate parcel on October 11<sup>th</sup>, 1997 during a survey done by Wildlife Biology Forever (WBF) biologists. Approximately six acres (see fig. 1) of the 10 acre parcel are oak woodland with a variable conifer component. Four acres are pasture/grassland. Important habitat features of the Tate parcel are the presence of mast producing trees, conifers for nest building, and contiguous canopy. On adjacent properties are a seasonal pond and a small stream with an associated impoundment. These parcels support the most westerly nest sites currently known to occur in the Columbia River gorge (#NSA-96-45).

Western Gray Squirrel Status:

The western gray squirrel is the largest native tree squirrel in the Pacific Northwest. This species is associated with oak communities and was historically found from southern Puget Sound to the Columbia river, east along the Columbia River Gorge, and north along the east Cascades to Lake Chelan. Population declines have occurred since 1917 due to disease (mange, mites, fleas), habitat fragmentation and conversion, undependable food supply, competition from other species, human disturbance and hunting. Currently, populations are known of only in southern Puget Sound, the Columbia River Gorge, Chelan and Okanogan Counties, and possible Yakima County. The western gray squirrel is listed as Threatened in Washington, and there are currently no signs of population recovery.

Western Gray Squirrel Natural History and Habitat Requirements:

Western gray squirrels are a secretive, diurnal species that are active mostly during morning and evening hours. They are active year round. They prefer arboreal travel and therefore require trees of sufficient size and spacing to produce an interconnected canopy. These squirrels usually build round stick nests in large sized conifer trees. Nests are usually at least 20 feet above the ground next to the trunk. They also build loose-leaf platforms (drays) in trees of various sizes, one-third to one half the distance from the top of the tree. These nests and drays are used for cover and resting.

Important foods include acorns, herbaceous plants, hypogeous and epigeous fungi, conifer cones, seeds, berries, and insects. High quality habitat includes a large number of mast bearing trees, such as oak. The most important food items are acorn and pine mast, which are critical during the winter. The squirrels bury the nuts and acorns during the fall to dig up later and eat in the winter. Fungi, especially the subterranean form, are also an important food item.

Breeding takes place between January and May, and pups are born between March and June. Litters consist of 3-5 young. The home range for these squirrels is one half to 2 acres. The females are territorial when the young are in the nest. Males have a territory of 1.25 acres 1.5 acres and females 0.25 to 0.75 acres. Squirrel density ranges from 2 squirrels in one acre to 1 squirrel for 10 acres.

In summary, high quality western gray squirrel habitat has a moderately closed tree canopy; large sized conifers and mast bearing trees, and proximity to water. These components are present on the Tate parcel, except for water, which is on adjoining properties.



**Parcel Survey:**

**Methods:** The Tate parcel was surveyed October 11<sup>th</sup>, 1997. Plant and animal species were sampled and recorded. Four 1/10<sup>th</sup> acre plots (see fig. 1) were used to describe and quantify the habitat. Plant species within the plots were identified. Animal vocalizations, tracks and/or other physical sign of their presence was used as evidence for a species presence. Basal area was estimated using an angle gage, canopy cover with a densiometer, and a clinometer was used to estimate tree height.

The following table summarizes structural attributes of the Tate parcel and the Sooter lot.

Table #1: Plot Characteristics, Tate Parcel

	Lot #1		Lot #2		Sooter Lot
	Plot 1	Plot 2	Plot 3	Plot 4	
average DBH oak (inches)	7.5	10.2	8.4	12.28	
oak/acre	34	120	340	60	
average DBH conifers (inches)	6.6	n/a	13.6	10.11	
conifers/acre	20	0	20	70	
canopy closure (%)	80-90	75-80	65-80	75-90	
basal area (sq. ft./acre)	360	210	120-180		95
average tree spacing (inches)	60	65	68	125	

**Lot #1: Description:**

Lot 1 is ¼ grassland/pasture. The southern 1/4<sup>th</sup> is oak woodland with a conifer component (see fig. 1). This woodland is contiguous with that on lot 2 and other adjoining properties. A road goes through the grassland portion of the lot, as well as underground power and phone lines. The oak woodland habitat in this lot has a dense shrub component, mostly snowberry. Two plots were surveyed in this lot, plots 1 and 2. Several very large trees are in this area: a ponderosa pine: 93 ft tall with a DBH of 22.3" was found, as well as an oak: 65 feet tall with a DBH of 49". Four to six of these large oaks are present on lot 1. A snag, 20 feet in height, with a 30" DBH was found. The land in lot 1 is fairly level, with a gradual uphill slope in the oak woodland to the south. The canopy in the oak woodland portion of the lot is contiguous, allowing for easy arboreal travel by squirrels.

Table 2. Plant Species List for Oak Woodland Portion of Lot #1.

	scientific name		scientific name
big leaf maple	<i>Acer macrophyllum</i>	Oregon oak	<i>Quercus garryana</i>
curly dock	<i>Rumex crispus</i>	Poa sp.	<i>Poa sp.</i>
dandelion sp.	<i>Taraxacum sp.</i>	poison oak (vine)	<i>Rhus diversiloba</i>
dogbrush	<i>Ceanothus integrifolius</i>	ponderosa pine	<i>Pinus ponderosa</i>
Douglas fir	<i>Pseudotsuga muhlenbergii</i>	snowberry	<i>Symphoricarpos sp.</i>
elderberry	<i>Sambucus sp.</i>	St. John's wort	<i>Hypericum perforatum</i>
hawthorn	<i>Crataegus sp.</i>	sword fern	<i>Polystichum munitum</i>
leather fern	<i>Polypodium scolopendria</i>	trailing blackberry	<i>Rubus ursinus</i>
nipplewort	<i>Lapsana communis</i>	wild rose	<i>Rosa nutkana</i>
Oregon grape	<i>Berberis nervosa</i>		

Photograph of lot 1, looking towards lot 2





Lot 1, Plot #1:

Plot one is oak woodland with very few conifers. Within this area in ground cover is 100% consisting of grasses and forbes. Crown diameter for the oaks are about 12-18 feet and for the ponderosa pine 10-15 feet.

Photograph of Plot #1:



Plot #2:

Plot two is very close to plot one, but it was surveyed because the trees have a wider spacing and the ground cover is 80-90% snowberry. A very large oak with a crown diameter of 55-60 feet is in this plot. Elderberry trees of about 20 feet in height are in this area, 3-5 clumps.

Photograph of Plot #2:



Lot #2: Description

Lot #2 is 100% oak woodland/mixed conifer. The northern half is dominated by oak and the southern half by conifer. A road goes through the eastern one third of the lot (see fig. 1), as well as underground power lines and phone lines. The canopy is contiguous throughout the lot allowing for easy arboreal travel by squirrels. Two plots were done, one within the oak-dominated portion (plot 3), and the other centered on a dray discovered in the border area between the oak and the conifer areas (plot 4). Three drays in all were found, along with 4 to 5 feeding platforms where there was evidence that a squirrel used the place for feeding. Evidence included chewed acorns and chewed



mushroom caps. There is an intermittent drainage in this lot (see fig. 1) which was dry at the time of survey. It is 1-3" wide and 6-12" wide.

Table 3: Plant Species list for Lot #2.

	scientific name		scientific name
big leaf maple	<i>Acer macrophyllum</i>	<i>Poa sp.</i>	<i>Poa sp.</i>
California hazel	<i>Corylus cornuta</i>	poison oak	<i>Rhus diversiloba</i>
deer brush	<i>Ceanothus intergerimus</i>	ponderosa pine	<i>Pinus ponderosa</i>
dogwood	<i>Cornus nuttallii</i>	scotchbroom	<i>Cytisus scoparius</i>
elderberry	<i>Sambucus sp.</i>	self heal	<i>Prunella vulgaris</i>
hawthorn	<i>Crataegus sp.</i>	snowberry	<i>Symphoricarpos sp.</i>
Oregon grape	<i>Berberis nervosa</i>	St. John's wort	<i>Hypericum perforatum</i>
Oregon oak	<i>Quercus garryana</i>	strawberry	<i>Fragaria sp.</i>

Lot #2: Plot #3:

Plot #3 (see fig. 1) is mostly oak, 40-45 ft. in height. The ground cover is 100% grasses and forbes. Conifers make up 6% of the trees present; the other 94% are oak.

Lot #2: Plot #4:

Plot #4 (see fig. 1) is centered on a Douglas fir tree containing a dray. One dogwood tree is in the plot, having a DBH of 3.5". There are three conifer stumps in this plot, estimated to be 10 years old, with an average DBH of 18-20". The trees have the largest average DBH of all the plots, as well as the widest spacing. Conifers make up 55% and oaks 45% of the trees present. Ground cover is forbes with some grasses and some bare soil. A photograph of plot 4 is in the section below on evidence of squirrel presence.

Wildlife in the Tate Parcel:

Birds were listed as present if their calls were heard as well as if the birds were seen. The presence of other species was noted if they were seen, heard, or signs were seen of their presence such as scat, footprints, nests, or food remains.

Table #4: Wildlife Species in the Tate Parcel

	scientific name		scientific name
blacktailed deer	<i>Odocoileus hemionus</i>	red shafted flicker	<i>Colaptes cafer</i>
brown creeper	<i>Cethia familiaris</i>	robin	<i>Turdus migratorius</i>
chickadee	<i>Parus sp.</i>	starling	<i>Sterns vulgaris</i>
kinglet sp.	<i>Regulus sp.</i>	Stellar's jay	<i>Cynaocitta stelleri</i>
pileated woodpecker	<i>Dryocopus pileatus</i>	tree frog	<i>Hyla regilla</i>
red breasted nuthatch	<i>Sitta pygmaea</i>	western gray squirrel	<i>Sciurus griseus</i>

Evidence for the presence of western gray squirrel in the Tate parcel:

Three drays were found in lot two. They were all located in the transition zone between oak woodland on the north half of the lot and the conifer forest on the south half



of the lot. (see fig. 1) Two of the drays were in conifers; one was in an Oregon oak. The characteristics of the dray trees are in the table 4

Table 4: Characteristics of Dray Trees

Dray Tree & Species	DBH (inches)	Height of tree (ft)	Height of Dray (ft)	Distance between dray trees (ft)
1. Douglas fir	11.2	40-45	35	
2. Douglas fir	15.3	70	25	100
3. Oregon oak	14	50-55	31	100

The average DBH for the three drays, ignoring that they are different species is 13.5 inches. This is a larger DBH than the average DBH in any of the plots. The drays

appear to be between 25 and 35 feet above the ground, regardless of the height of the tree itself.

Several feeding platforms were discovered where the squirrels sit to eat acorns, fungus, etc. The platforms are usually stumps, rocks or other objects that are 1 to 4 feet in height. Photographs of two of these sites are below. Acorns and mushrooms were the foods being consumed at these feeding platforms.

From this evidence it can be said that at least one squirrel uses the Tate parcel for resting and feeding. Considering that six acres are suitable habitat for the squirrel, this parcel could hold a maximum of 12 squirrels, with a minimum of one squirrel. One squirrel will build multiple drays, so all three drays may have been built by the same squirrel.

Photograph of Dray Tree #2 Plot 4 centers on this tree.

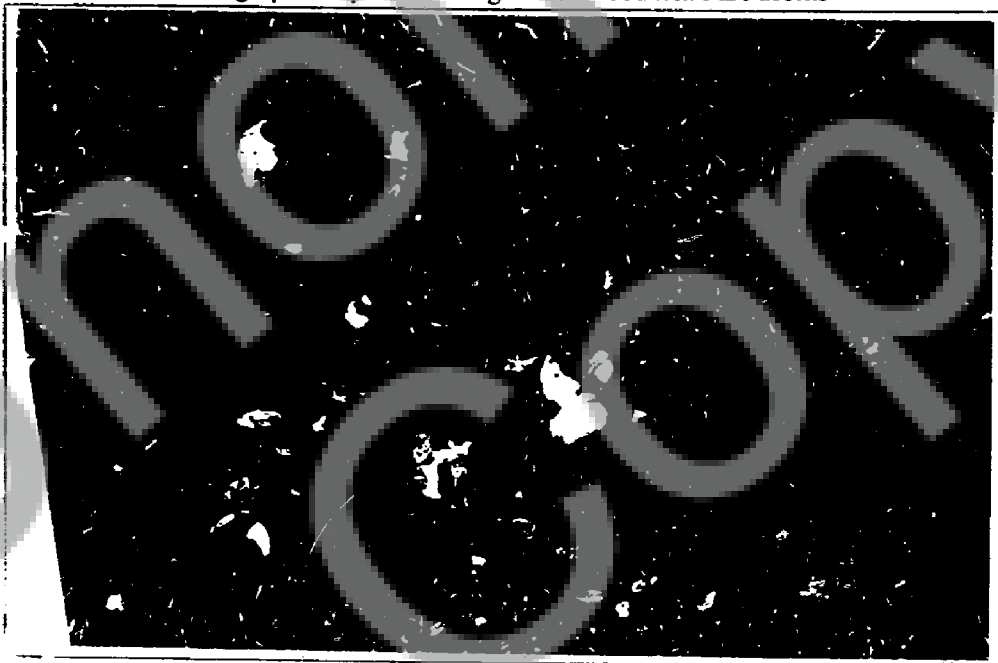


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Photograph of a squirrel feeding station in plot 4, the food item is a mushroom.



Photograph of squirrel feeding station: food items are acorns





Summary of habitat on the project site with respect to western gray squirrel

The project site has large trees for nesting and mast producing trees (oak and pine) for food. The canopy is contiguous to allow for easy arboreal travel. Wooded portions of the Tate parcel have a higher basal area than the adjoining Sooter property (see #NSA-96-45). A limited amount of thinning from below (tree with a DBH of <10 inches) could occur, with retention of a basal area above 120 sq. ft. and attention paid to keeping a contiguous canopy (closure above 75%). The large number of oak trees provide an excellent food supply, and numerous above ground fungi were observed and are eaten by the squirrels.

The drays were all found in the transition zone between conifer and oak woodland, indicating that the squirrels may prefer large conifers for cover and resting with a close proximity to oak trees that have an excellent food source: acorns. We recommend that no development activity occur within 50 feet of a dray tree and that tree removal is limited to what is absolutely necessary for development. Oaks are a slow growing species and are not easily replaced. Their retention is important to maintain a high quality food supply, while retaining large conifers will insure adequate nesting and dray trees for the squirrels.

The evidence indicates the Tate parcel is a high quality habitat for the western gray squirrel. Maintaining this habitat quality will depend on limiting development activities to the management plan conditions below.

Management Plan Conditions:

1. Residential development in lot 2 (including road construction, clearing, vegetation removal, and other land disturbing activities) is limited to the building site in fig. 1.
2. New road construction on lot 2 is limited to an access road to a building site (see fig. 1.). This road must stay within the boundaries of the building site in fig. 1. Any other road construction will require a separate review (see #3 below). All road routes will follow a 'best path', minimizing the number of trees removed. Extreme effort will be made to keep any tree above a DBH of 10".
3. A separate wildlife management plan is required for the proposed access road up the south border of the property. This road will allow access to adjacent properties (these actions are desired by the owners).
4. Residential development in lot 1 is limited to grassland/pasture habitat, at least 50 feet away from oak woodland habitat, except as described below.
5. The existing road on lot one is 'removed' and a new road put along the northern border of the property. (see fig. 1) The new road will meet up with the existing road on lot 2. The existing road on lot 2 will be left in place.

6. Building sites and road routes will be chosen to minimize impact on the transition zone between oak and conifer areas of lot 2. Trees above a DBH of 10 inches will be retained if at all possible and canopy closure maintained at a level of 75% or more when possible.
7. Areas outside of those indicated in the items above (1-6) are designated core habitat areas and shall be depicted on the final subdivision map. Core habitat areas shall be protected in perpetuity through deed restrictions.
8. Core habitat areas as described above shall be left in a natural state. Unless otherwise authorized through a plan amendment as provided below, the following activities shall not occur within designated habitat areas: construction of any structure, removal, excavation, grading, or dredging of soil, sand, gravel, or other materials; dumping, discharging, or fill with any material; or the destruction or alteration of vegetation through clearing, harvesting, or intentional burning; EXCEPT as provided in #9 below:
9. Removal of downed woody material and limited tree limbing (lower 1/3 of tree) may occur as minimally necessary to abate fire hazard, upon the written recommendation of the Skamania County Fire Marshal.

Effective date of wildlife management plan:

This wildlife management plan becomes effective upon execution by all parties and shall be binding on the owner(s), his successors, assignees, or purchasers. Any obligations made herein by the owner(s) shall be enforceable against all of their heirs, assignees and successors in interest into whose ownership the real property, Tax lot #3-10-22-11-198, Section 22 of T3N, R10E, W.M., may pass.

Legal description of Tax lot #3-10-22-11-198

Lot 4 of Howard Sooter Short Plot as shown on the map thereof recorded in Book 3, page 87 of the Short Plots PLUS that portion of Lot 4 of the Virginia Tate Short Plot as shown on the map thereof recorded in Book 3, page 107 of Short plots, all records of Skamania County Auditor.

Duration and amendment of wildlife management plan:

This wildlife management plan shall remain in effect in perpetuity, and may be altered or amended only based on mutual written agreement of the Skamania County Department of Planning and Community Development, State of Washington Department of Fish and Wildlife, and the property owner(s). No parties may amend or alter this management plan unilaterally.



Signatures:

We, owners of the above tract of land, hereby agree to all terms and conditions of this wildlife management plan:

Paul R. Tate 2-15-98  
Owner Date Owner Date

Owner Date Owner Date

On this day personally appeared before me Paul R. Tate, to me know to be the individual(s) described in and who executed this instrument, acknowledged that they signed the same as their free and voluntary act and deed, for the uses and purposes therein mentioned.

Geoff M. Miller 2-15-98 My Commission Expires: 11-9-99  
Notary Public Date

Reviewed and Approved for Compliance with Skamania County Title 22

Harpreet Sandhu 2/13/98  
Harpreet Sandhu, Director, Skamania County Planning and Community Development Date

Attachments: Fig. 1  
Aerial Photograph of Parcel  
Parcel location on Township map

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TATE PARCEL  
Aerial view



Planimetric Map: the scale is 1cm for 1 km of ground

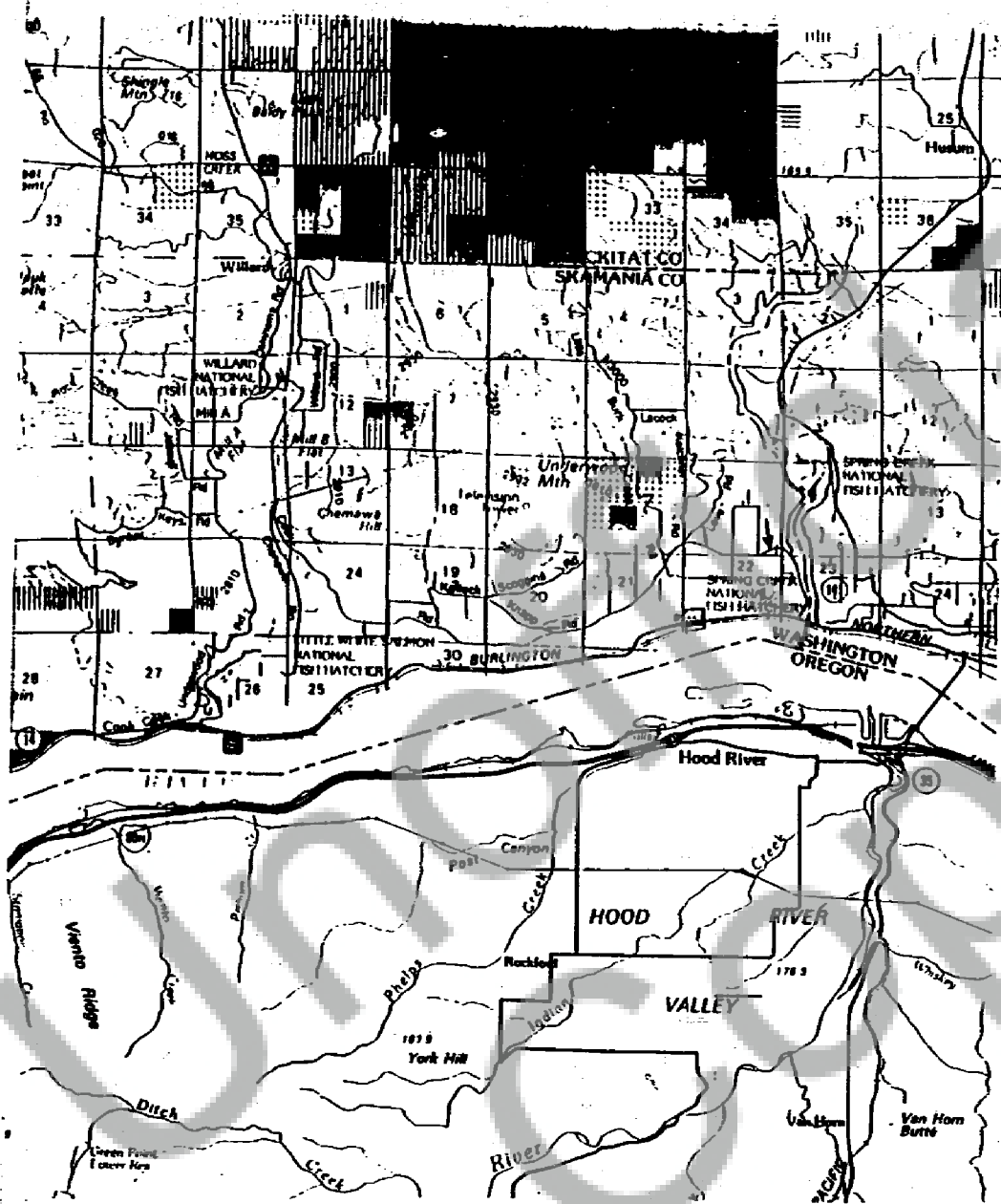
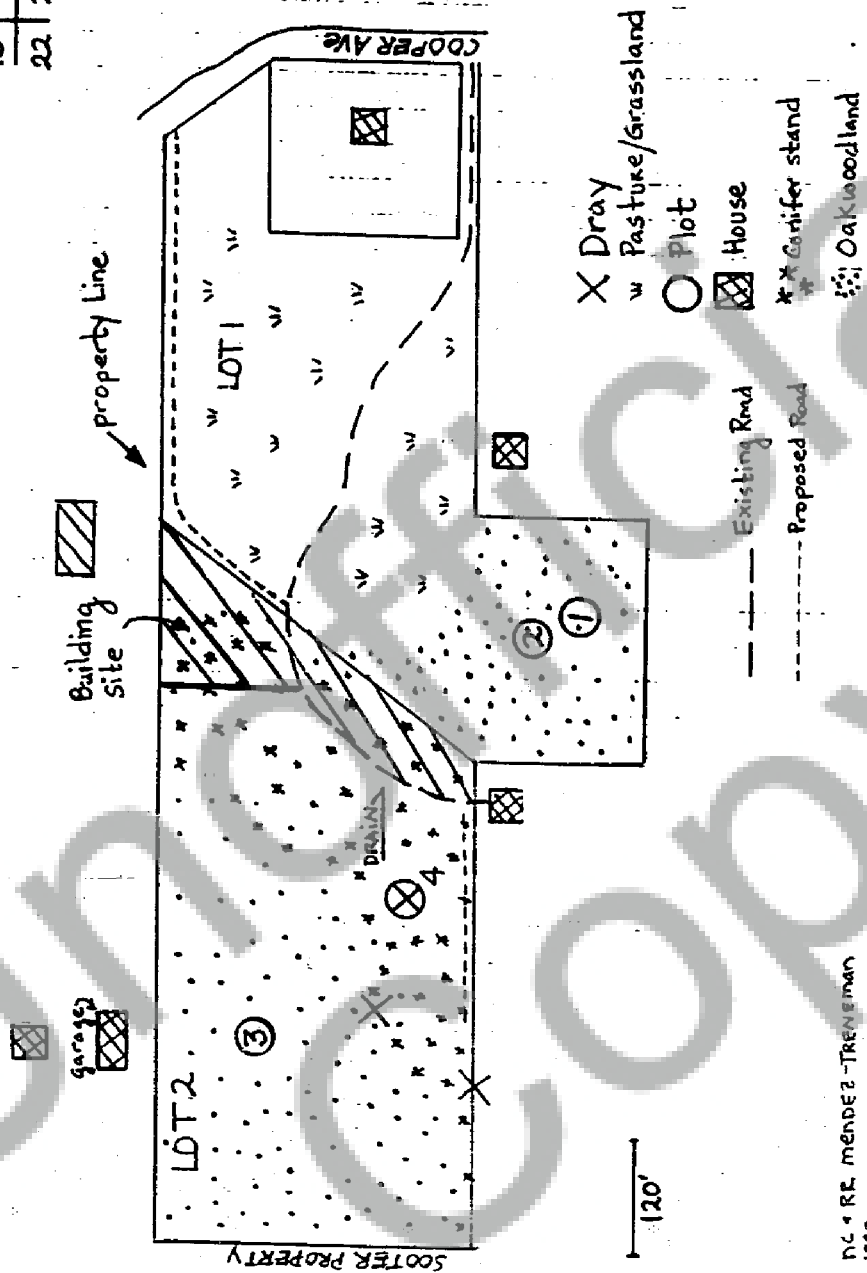


Fig. #1: TATIE PARCEL

15 14  
N 22 23



R. R. MENDIZ-TREIMAN  
1997