

# Pre-Operations Report

**Operation Name: Cougar Camp**  
**County: Tillamook**  
**Management Basin: Lower Nehalem**

**Table 1. Operation Areas, Types and Acres**

Area	Type of Operation	Gross Acres	Net Acres <sup>1</sup>
1	Modified Clearcut	83	80
2	Partial Cut – Moderate	386	134
3	Partial Cut – Moderate	135	127
4	Partial Cut – Light	404	267
Total		1008	608

1. The net acres are based on orthophotos and GIS and exclude roads, stream buffers, reserve area and non-required thinning areas.

## **I. PHYSICAL DESCRIPTION OF OPERATION AREA:**

Slopes in the sale area have primarily a northern aspect. A portion of Area 2 has mainly a southern aspect. Elevations range from 600 to 2440 feet. The major soil types are Killam and Rye.

The sale is located on the ridgeline divide between South Fork Cronin Creek and the Salmonberry River including the moderate to steep slopes of South Fork Cronin Creek to the northeast and the steep slopes of the Salmonberry River to the southwest. There are scattered steep slopes throughout Areas 1 and 2 especially along the tributary draws. The sale is underlain by igneous origin rocks of the Tillamook Volcanics Formation. There is a “landslide deposit” mapped (Wells et. al.) in the upper reaches of the South Fork of Cronin Creek (East portion of Area 3). Refer to the Overview of Harvest Operations in the Summary document for information.

## **II. CURRENT STAND CONDITION:**

**Table 2. Stand Inventory Information<sup>4</sup>**

Area	Prescription	Stand ID <sup>1</sup>	Species	Age	DBH	BA	TPA	SDI	Net Acres <sup>2</sup>
1	MC	203	DF, WH, RA	60	14.8	208	174	65	80
2	PC	204	DF, WH, RA	60	16.5	278	175	51	134
		Target <sup>3</sup>	DF,WH, RA	60	17.3	158	96	32	134
3	PC	205	DF, WH, RA	60	16.0	223	160	52	127
		Target <sup>3</sup>	DF,WH, RA	60	17.7	124	73	28	127
4	PC	206	DF, WH, RA	60	15.5	225	171	55	267
		Target <sup>3</sup>	DF, WH, RA	60	16.6	159	107	38	267

1. The source of stand inventory information is from field reconnaissance cruise plots taken in 2008.

2. The net acres are based on orthophotos and GIS and exclude roads, and stream buffers, and non-required thinning areas. Modified clear cut acres are not contiguous and do not exceed 120 acres.

3. The Target identifies expected stand characteristics (DBH, BA, TPA and SDI) after harvesting has been completed.

4. These numbers are based on plot data taken to this point and final numbers may differ significantly. The directive for minor and major modifications will be followed for further review.

Areas 1, 3, and 4 and the eastern portion of Area 2 burned in the 1945 Salmonberry/Wilson River Fire. The vast majority of the sale area naturally regenerated with a mix of species including Douglas-fir, western hemlock, red alder, western redcedar, and noble fir. Portions of Areas 3 and 4 have been pre-commercially thinned. Stand Level Inventory (SLI) has not been completed on the sale areas but the sale areas are classified as 100% Closed Single Canopy (CSC) according to the district stand summary information (1999). Area 2 and Area 3 will be further evaluated (as defined by the July 2004 guidance, "Planned Sale Inventory Requirements – Alternative to Full Stand Level Inventory").

Area 1 is predominately red alder with pockets of Douglas-fir and western hemlock between draws.

Area 2 is predominately western hemlock with a significant Douglas-fir component. Draws are dominated by red alder with a small component of western redcedar.

Area 3 and 4 are predominately Douglas-fir with a significant western hemlock component. Draws are dominated by red alder. There is also a small component of large noble fir. These species are arranged at various densities throughout the areas.

Overall, the conifer is dense (approximately 50% SDI) in the sale areas. Portions of the sale that were pre-commercially thinned are exhibiting moderate growth with good live crown ratios; other areas have reached stem exclusion, resulting in mortality in the understory conifer and shrub species, receding live crown ratios on dominant trees, and slowed diameter growth. The brush component in the sale areas is primarily composed of sword fern, salmonberry, vine maple, Oregon grape, and huckleberry.

There are some large snags in various states of decay and some hard snags created from natural causes. Down wood consists of scattered, large, old logs (36"+) in Class 3 and 4 stages of decay and some windthrow in decay classes 1 and 2. *Armillaria ostoyae* and *Heterobasidion annosum* have been observed at low severity, dispersed throughout Area 4, contributing to down wood.

### III. DESIRED STAND CONDITION AND VISION:

**Table 3. Stand Structure Information**

Area	Stand ID	Current	Post Harvest <sup>1</sup>	Desired Future	Net Acres
1	203	CSC	UDS	GEN	78
		CSC	UDS	LYR	1
		CSC	UDS	OFS	1
2	204	CSC	UDS	GEN	133
		CSC	UDS	LYR	1
3	205	CSC	UDS	GEN	1
		CSC	UDS	LYR	1
		CSC	UDS	OFS	125
4	206	CSC	UDS	GEN	8
		CSC	UDS	LYR	2
		CSC	UDS	OFS	257

*1. The stand is expected to develop into this condition in the five to ten years after this operation is completed except in REG stands which occur after harvest.*

See Section IV: Proposed Management Prescription for more information on Green Tree, Down Wood, and Snag Strategies during operation. Also refer to Landscape Design in the Summary document for more information on strategies to move the district toward Desired Future Condition (DFC) goals.

Area 1: The DFC for this Area is General (GEN). Due to the slow growing alder and dense conifer the present stand is not a good candidate for establishing a pathway that maintains productivity. After the regeneration harvest the stand will be composed of legacy structures retained from the present stand, naturally regenerating red alder, and a young cohort of multiple conifer species. The green trees, including some hardwoods, retained on the site provide a scattered overstory and also contribute to the down wood and snag recruitment as mortality occurs.

Area 2: The DFC for this Area is GEN, Layered (LYR), and Older Forest Structure (OFS). This stand is on a pathway that maintains productivity and provides for complex structure. This stand will be managed for stand density by providing more growing space while capturing anticipated tree mortality in order to allow for individual tree growth as well as developing understory diversity. The vision is for a stand of scattered western hemlock, Douglas-fir, western redcedar, and red alder. The stand will be composed of a mixture of size classes and densities. A new cohort of western hemlock, red alder, Sitka spruce, and western redcedar developing in larger gaps will provide both horizontal and vertical diversity. After thinning in 20-30 years, the stand will have a mixture of sizes, species, and densities. It will likely be in a Layered condition. Periodic thinnings will produce a multilayered stand with some of the larger tree trees approaching 32 inches in diameter. In about 60 years there is a high probability that this stand will meet the requirements of OFS.

Area 3: The DFC for this area is GEN. This stand is on a pathway that maintains productivity and provides for complex structure. The vision is for a

stand of scattered Douglas-fir, western hemlock, Sitka spruce, noble fir, and red alder. The stand will be composed of a mixture of size classes and densities. A new cohort of western hemlock and Sitka spruce developing in the larger gaps will provide both horizontal and vertical diversity. After thinning in approximately 20 years, the stand will have a mixture of sizes, species, and densities and likely be in a Layered condition.

Area 4: The DFC for this area is GEN. This stand is on a pathway that maintains productivity. The vision is for a stand of scattered Douglas-fir, western hemlock, noble fir, and red alder. The thinning will encourage large live crown ratios and individual while limiting significant understory growth. Due to root disease present in the area, Douglas-fir will preferentially be left. The stand will be composed of a mixture of size classes.

#### **IV. PROPOSED MANAGEMENT PRESCRIPTION AND PATHWAY:**

The prescriptions described below are based on the current stand condition such as overall tree and stand growth, species mix, stand density, and stand health.

**See table 2 for prescription targets.**

Area 1: Merchantable Douglas-fir, western hemlock, and red alder will be harvested. Five green trees per acre will be retained and will provide a source of future snags and down wood.

This modified clearcut will remove slow growing red alder, Douglas-fir, and western hemlock. Due to difficult topography and site preparation concerns, reserve trees will be located in Riparian Management Areas (RMA) and along the bottom of the unit. A pre-commercial thinning is anticipated at 12 to 17 years when the crowns begin to close. A commercial thinning will then be planned at age 35 to 40. At this time managers will review density, stand health, and landscape goals to decide future management prescriptions.

Areas 2 and 3: A partial cut will thin the Douglas-fir and western hemlock to a basal area range of 110ft<sup>2</sup> to 130 ft<sup>2</sup>. All other species (conifer and hardwood) will be reserved.

This partial cut prescription will reduce the conifer stocking to 25-30% to maintain the crown ratios, stand vigor, and develop healthier and larger conifer in the residual stands. The overall stand SDI will be approximately 30%. The harvest prescription is designed to achieve variable densities throughout the areas. The openings and gaps will allow for understory reinitiation of shrubs and tree species creating horizontal and vertical diversity. Red alder dominated areas with conifer components are designated non-required thinning. Unmanaged red alder will be harvested in the next entry. Another thinning will likely be needed in 20 years to keep these stands on a trajectory to complex stand structure. At this time managers will review density, stand health, and landscape goals to decide future management prescriptions.

Area 4: A partial cut will thin the Douglas-fir and western hemlock to a basal area range of 140ft<sup>2</sup> to 160 ft<sup>2</sup>. All other species (conifer and hardwood) will be reserved.

This partial cut prescription will remove the slow growing alder and reduce the conifer stand density to 35-40% which will maintain the crown ratios, stand vigor, and develop healthier and larger conifer in the residual stand. The harvest prescription is designed to achieve variable densities throughout the. Red alder dominated areas with conifer components are designated non-required thinning. Unmanaged red alder will be harvested in the next entry. Another thinning will likely be needed in 15-20 years to maintain productivity in this stand. At this time managers will review density stand health, and landscape goals to decide future management prescriptions

**Down Wood and Snag Strategies**

Existing down wood will be left in the sale areas. Down wood recruitment is expected through mortality and windthrow of residual or leave trees, felled snags, and tops left during harvest. Obvious defect in conifer logs will be bucked out in all harvest areas to enhance down wood levels. Small non-merchantable hardwood and conifer will be retained where possible in harvest units with the expectation they will become short term snags and down wood. Tops resulting from ground yarding will also be left in the unit.

Existing snags not determined to be a safety hazard will be retained and any felled snags will be left for down wood. Creation of snags is expected during harvest activities (rub trees, lift trees, and/or tail trees) and over time by natural processes. One hundred sixty snags will be created in Area 1; two snags per acre. Snags will be created from a minimum 16 inch Douglas-fir or western hemlock and spaced at no more than two snags on any given acre.

**V. ESTIMATED TIMBER AND REVENUE INFORMATION:**

**Table 4. Timber and Revenue**

Ownership		Sale Type	
BOF	CSL	Cash	Recovery
98%	2%	<input type="checkbox"/>	X
Planned Quarter:		--	

	Conifer	Hardwood	Total
Net Volume (MBF)	6,786	823	7,609
Stumpage Value (\$/MBF)*	\$75	\$200	
Estimated Gross Value	\$508,950	\$164,600	\$673,550
		Project Costs:	\$450,000
		Estimated Net Value:	\$223,550

\*Combined Douglas-fir and hemlock stumpage values based on harvest type.

## **VI. HARVESTING AND ACCESS CONSIDERATIONS:**

The sale areas are accessed across private timberland via Burma Road and South Fork Cronin Creek Road. The western portions are currently all weather, crushed rock roads. Burma Road is gated at Foss Road. ODF currently holds a temporary 10 year easement which expires in 2014. The portions of these roads that are in the sale areas will be improved with the sale. See maps for specific road locations and conditions. Lost Lake Road and Quarry Road in Clatsop County will be improved and maintained for construction of and access to a rock source.

Approximately 5.4 miles of existing abandoned roads will be reconstructed which includes grading, rocking, widening, culvert replacement, sidecast pullback, and adding new culverts. This work will bring all roads up to standards described in *the Forest Roads Manual*.

Approximately 1.5 miles of road will be constructed to provide access to cable yarding areas. It is anticipated the the new road construction will be closed after harvest. Ground yarding roads will be closed and water-barred following harvest. See summary document for more information on road closure. The operation will be 85% cable yarding and 15% ground yarding.

**Table 5. Transportation Planning Summary (Miles)<sup>4</sup>**

Activity	Mainline	Collector	Rocked Spur <sup>1</sup>	Dirt Spur <sup>1</sup>
Construct			1.5	
Improve		4.9	0.5	
Maintain <sup>2</sup>		6.4		
Close/Block <sup>3</sup>			1.5	
Vacate <sup>3</sup>				

1. Additional roads may be built by the operator at the time of harvest and will be approved by the State through the Operations Plan. These will be short dead end spurs and closed or blocked after harvest.
2. All roads accessing the sale area will be maintained during the life of the timber sale contract. Maintenance miles in the table are those roads not being constructed or improved.
3. Roads not closed/blocked or vacated at the end of the sale will be reviewed for closure after reforestation is established.
4. The numbers in this table reflect planned Project Work associated with the sale.

## **VII. AQUATIC RESOURCES AND WATER QUALITY:**

South Fork Cronin Creek is a Type F stream that is adjacent to all sale areas. There are also nine unnamed, Type N streams within the sale areas. Oregon Department of Fish and Wildlife (ODFW) 2004 stream surveys revealed no Type F streams within the sale areas. These streams will be reviewed and protected appropriately during sale layout based on flow, topography, and terrain. The

inner and outer riparian zones of these Type N streams will be managed towards mature forest condition.

The Northwest Oregon State Forests Management Plan (FMP) details several site-specific standards designed to protect riparian and aquatic resources and functions. Riparian management areas will be established adjacent to all streams in accordance with the standards described in the FMP. A sub-set of those standards are highlighted for this sale.

Small, Type N streams can influence stream temperature of downstream fish-bearing streams. Equipment will be excluded from the streambank zone (within 25' of the channel) of seasonal, Type N streams to maintain the integrity of the stream channel. A 25' no-harvest buffer will be established along the small, Type N streams. Additional trees including some wildlife trees will be retained resulting in a 30-50 foot buffer. Sufficient trees will be retained within 500' of the confluence with type F streams to achieve 80% shade over streams. A 170' riparian management area is established on all fish streams. Management is allowed beyond 25' in the "inner zone."

Stream buffers within or adjacent to harvest unit boundaries will be managed according to FMP Riparian Strategies. The riparian areas will be reviewed during sale layout for current stand conditions and/or operational constraints for implementing FMP strategies. Riparian management areas result in leave trees adjacent to the stream which protect stream temperature, provide nutrients, protect stream banks, and eventually provide wood to improve fish habitat.

Refer to Aquatic Resource Protection Strategies in the Summary document for information on in the "in stream work period" road work and stream improvement projects.

#### **VIII. T&E SPECIES CONSIDERATIONS:**

The sale areas have been reviewed with the ODF Northwest Oregon Area Biologist.

Surveys for marbled murrelets are not required for due to the absence of potentially suitable habitat.

It was determined that in the sale areas there is potential northern spotted owl habitat within or adjacent to the sale boundary. Surveys have been and will be conducted during the 2006, 2007, and 2008 survey seasons for northern spotted owl. All northern spotted owl surveys were and will be conducted in accordance with USFWS endorsed protocol. There were no northern spotted owl detections during the 2006 survey season.

A northern goshawk was discovered in the proposed sale area in the spring of 2004 during northern owl surveys. The goshawk nest was discovered with two

fully feathered juveniles in the nest that year. The following year, 2005, the nest was observed to have two partially feathered juveniles and one adult goshawk. The nest was not monitored in 2006.

The northern goshawk is listed on the ODFW Oregon Sensitive Species List under the critical category. The northern goshawk is not being considered for listing under the Federal or State endangered species acts. ODF currently has no specific rules or policies requiring special management or consideration of northern goshawk sites when planning forest operations.

A site plan for the goshawk identified on Burma Road is being developed by the ODF Unit Forester and the Area Biologist. The proposed sale area is within the northern goshawk range and prescriptions have been selected to be compatible with the Goshawk Site Plan. The ODF NW Area Biologist will complete the site plan while working in conjunction with foresters who will incorporate the plan into a refined sale prescription.

Streams in this sale are in the headwaters of the Nehalem. As of March 2008, coastal Coho salmon are listed as threatened for the Oregon Coast. The riparian and aquatic strategies combined with road and harvest practices described in this Annual Operations Plan and our Northwest Oregon State FMP are designed to minimize impacts and or restore aquatic habitats that influence aquatic species.

T & E Plant species: The sale areas were checked against the Oregon Natural Heritage Program (ONHP) database of known threatened or endangered listed plant locations as well as local records in the Land Management Classification System (LMCS). No listed plants were identified within or adjacent to the sale areas.

#### **IX. SLOPE STABILITY AND GEOTECHNICAL ISSUES:**

Many steep and very steep slopes are present, especially in the Area 2 on the Salmonberry River side. There are also steep slopes associated with the tributary streams to the South Fork of Cronin Creek. The initial risk assessment by the geotechnical specialist for the sale is high. The geotechnical specialist will be consulted during sale layout field work. The landslide deposit mapped on the geology map (Wells et al.) is not expected to present any significant risk in relation to the sale however if indications of active movement are observed during fieldwork the geotechnical specialist will be consulted.

#### **X. RECREATION RESOURCES:**

The sale areas are designated as Non-Motorized in the *Tillamook State Forest Comprehensive Recreation Plan* (1993). This sale has been reviewed by the District Recreation Coordinator. No OHV trails were identified within or adjacent to the sale areas. Recreational use common to this area includes hunting.

**XI. CULTURAL RESOURCES:**

The *Tillamook State Cultural Assessment* does not list any cultural sites within or adjacent to the proposed sale boundary.

**XII. SCENIC RESOURCES:**

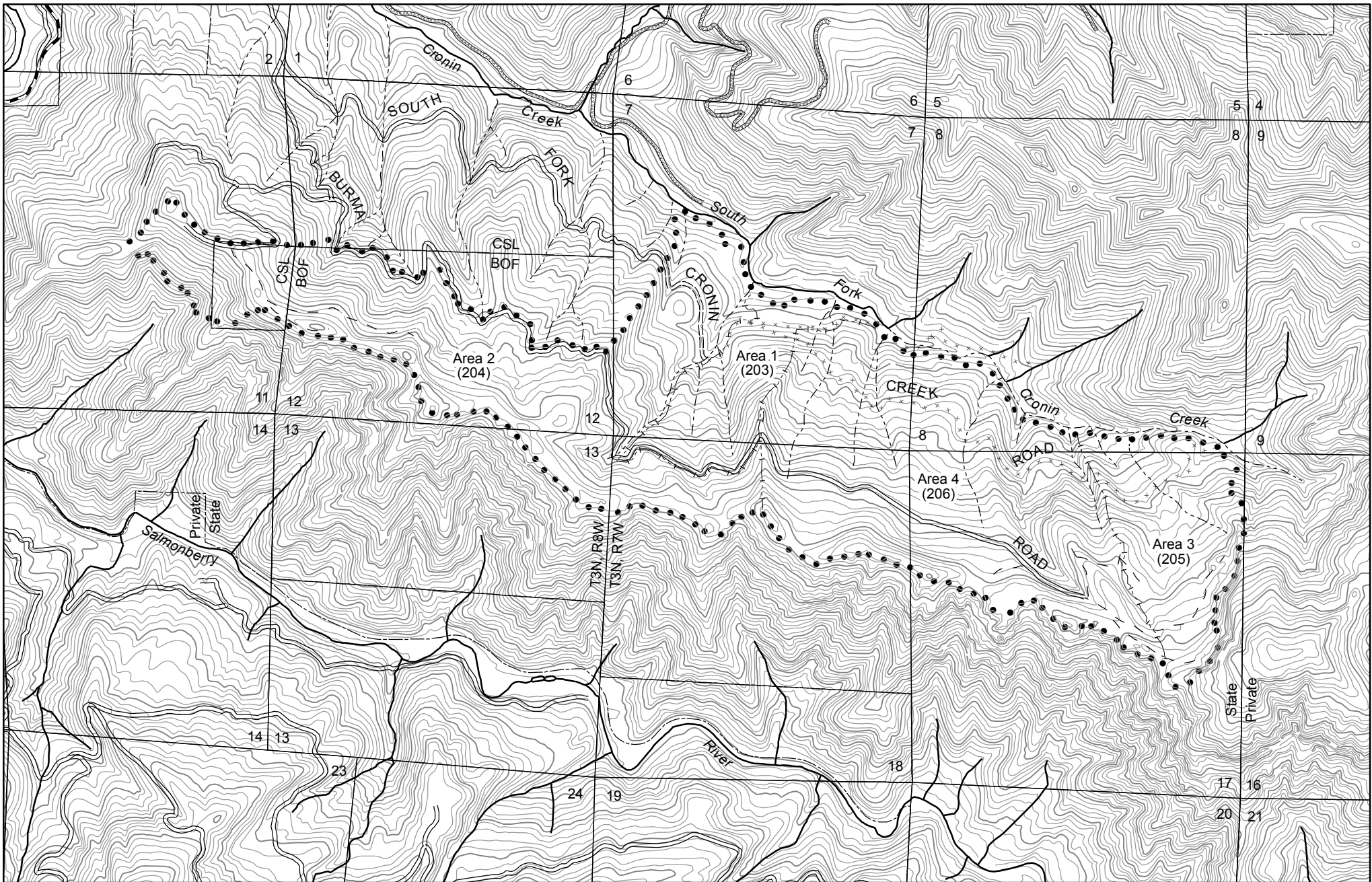
The sale areas have a visual classification of Level 3, low sensitivity. No scenic impact is expected.

**XIII. OTHER RESOURCE CONSIDERATIONS:**

Permanent inventory plots are within the sale area. Permanent plot markings will be protected according to guidelines.

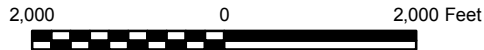
**XIV. LAND MANAGEMENT CLASSIFICATION SUMMARY:**

The sale areas contain Focused and Special, Aquatic and Riparian Habitat and Special, Operationally Limited. See section VII, Aquatic Resources and Water Quality, and IX, Slope Stability and Geotechnical Issues for the management guidelines that will be utilized.



Contour Interval 40'

- Area boundary
- Sale boundary
- Ownership boundary
- Perennial Type-F stream\*
- - - Perennial Type-N stream\*
- == Unsurfaced road
- == Surfaced road
- State/Federal highway
- Legacy road
- x x x Blocked road
- - - Road construction
- County road
- T T Transmission line



**Cougar Camp  
-- Topography --  
2010 SALE PLAN  
TILLAMOOK DISTRICT**

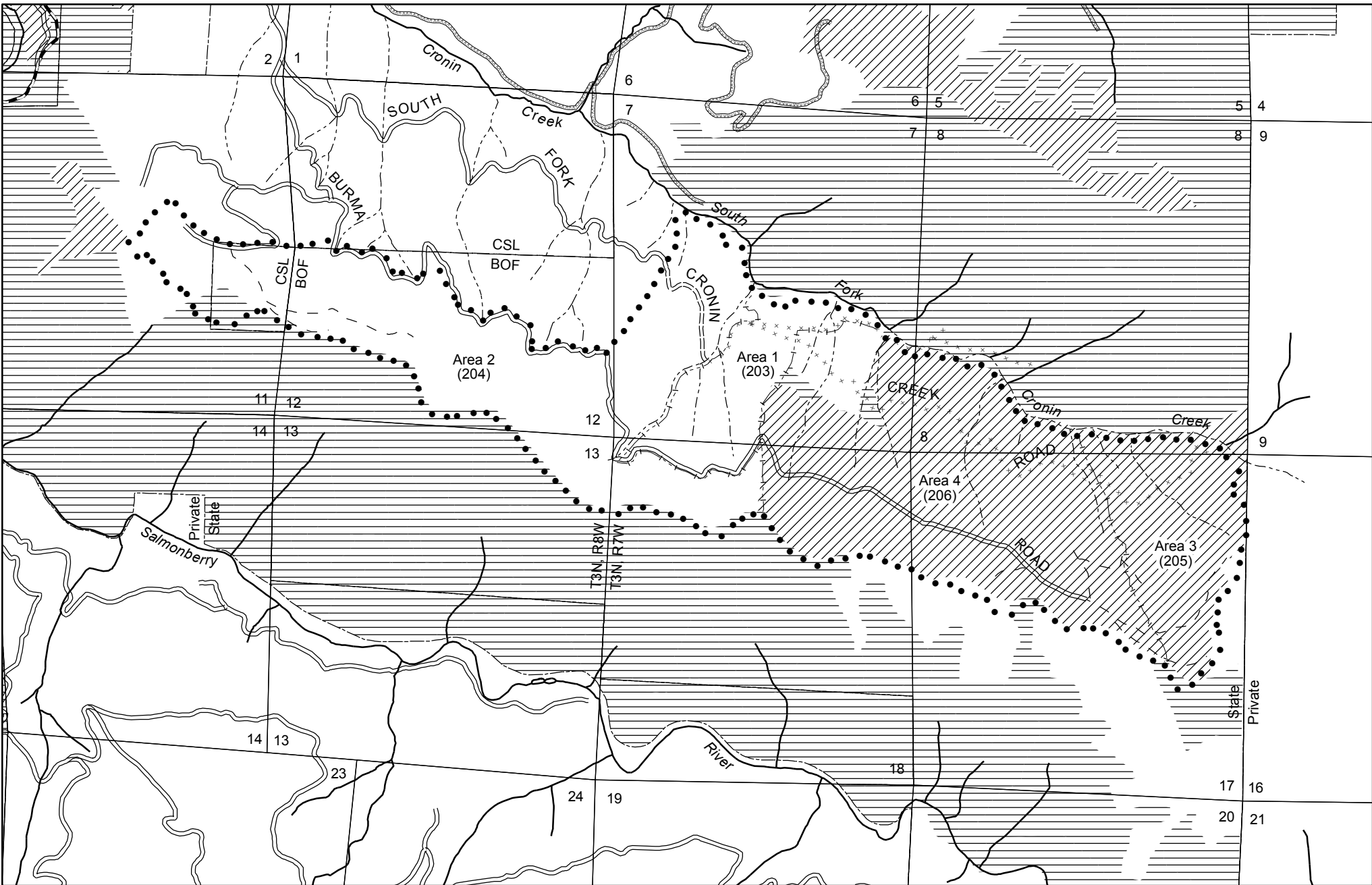
Portions of Sections 7, 8, 17, and  
18, T3N, R7W, and Portions of  
Sections 11, 12, and 13, T3N, R8W,  
W.M., Tillamook County, Oregon

\*Streams of unknown  
fish presence are not  
shown but will be surveyed  
prior to the sale

Tillamook District GIS  
03/09/2009

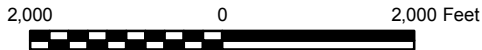
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may not have been prepared for, or suitable  
for legal, engineering, or surveying purposes.

Area	Type of Operation
1	Modified Clearcut
2	Partial Cut
3	Partial Cut
4	Partial Cut



- Desired future condition
- Layered
  - Older forest
  - Area boundary
  - Sale boundary
  - Ownership boundary
  - Perennial Type-F stream\*
  - Perennial Type-N stream\*
  - Unsurfaced road
  - Surfaced road
  - State/Federal highway

- Legacy road
- Blocked road
- Road construction
- County road
- Transmission line



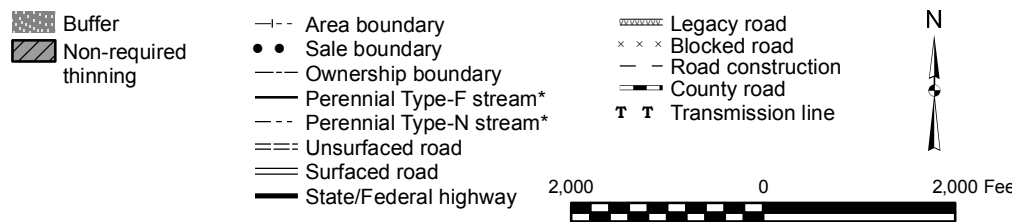
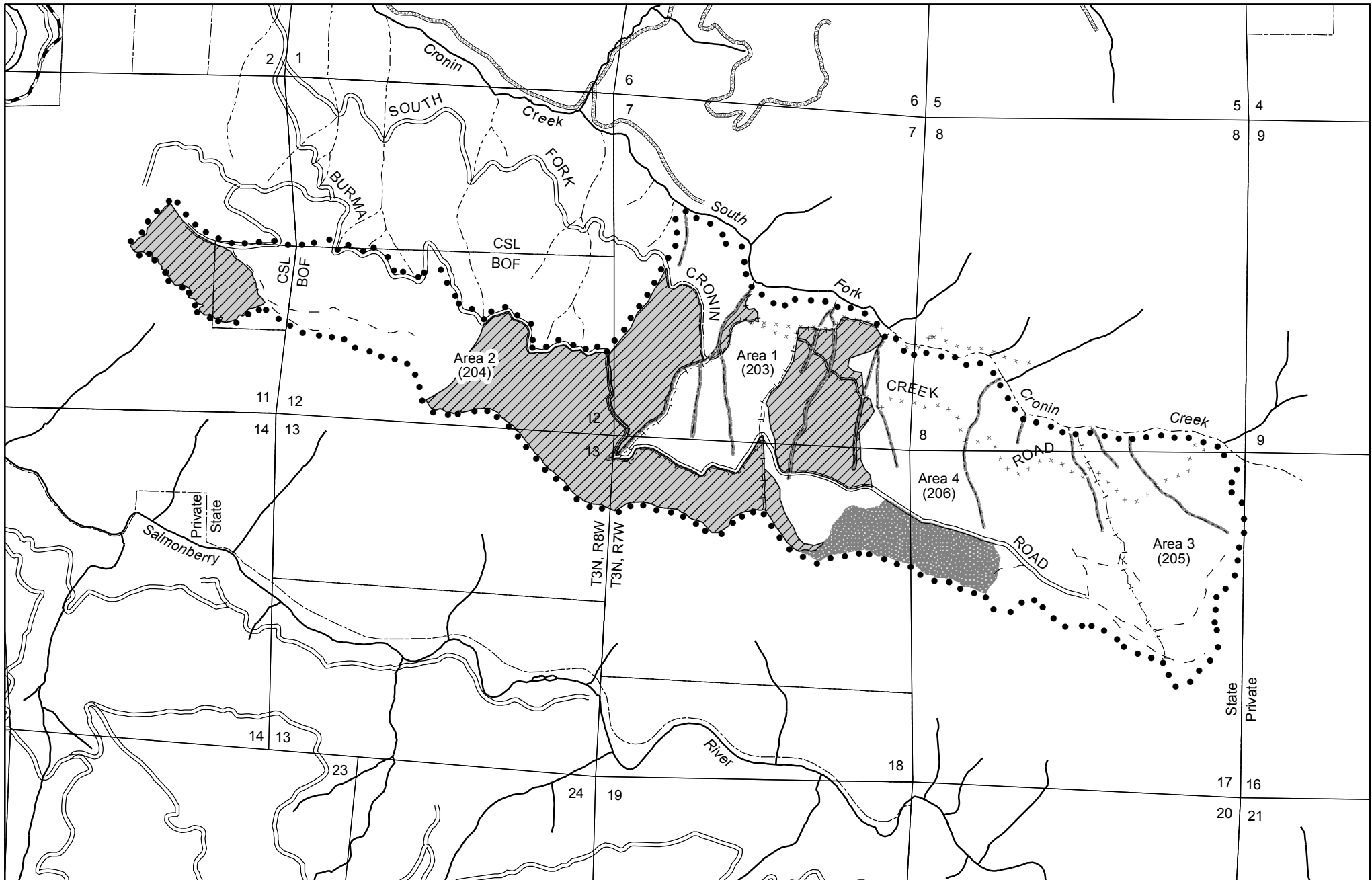
**Cougar Camp**  
**-- Current and Future Condition --**  
**2010 SALE PLAN**  
**TILLAMOOK DISTRICT**

Portions of Sections 7, 8, 17, and  
 18, T3N, R7W, and Portions of  
 Sections 11, 12, and 13, T3N, R8W,  
 W.M., Tillamook County, Oregon

\*Streams of unknown fish presence are not shown but will be surveyed prior to the sale

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Area	Type of Operation
1	Modified Clearcut
2	Partial Cut
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**Cougar Camp**  
**-- Key Resources --**  
**2010 SALE PLAN**  
**TILLAMOOK DISTRICT**  
 Portions of Sections 7, 8, 17, and  
 18, T3N, R7W, and Portions of  
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Area	Type of Operation
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