

Pre-Operations Report

Operation Name: Strombo Combo
County: Lincoln
Management Basin: Burnt Woods Ridge

Table 1. Operation Areas, Types and Acres

| Area | Type of Operation | Net Acres |
|------|----------------------|-----------|
| I | Modified Clearcut | 48 |
| II | Moderate Partial Cut | 97 |
| III | Retention Cut | 4 |

I. PHYSICAL DESCRIPTION OF OPERATION AREA:

The operation consists of a modified clearcut unit and two partial cut units. The units lie in the western hemlock vegetation zone. Average rainfall is 68 to 78 inches per year.

Soils in Area I are composed of about 40% Killam and 60% Valino. Valino soils in Areas II and III are present on about 80% of the area with Ork present on the remaining 20% of the acreage. The soil information is derived from a soil survey completed in 1980.

Aspect for Areas I, II, and III is south.

II. CURRENT STAND CONDITION:

Area I supports 57 year old Douglas-fir trees. The north half of the unit received a light commercial thinning 10 years ago. The southern portion of the unit has not been thinned.

Douglas-fir trees in Area II are about 57 years old except for a four acre portion which contains 107 year old Douglas-fir trees. All of the area received a light commercial thinning 10 years ago.

In Area III, 36 year old Douglas-fir trees are present. They are part of the buffer area for the Wolf Creek Progeny site. Any trees marked with red paint and accompanying metal tag are reserve trees. This area received a moderate commercial thinning 10 years ago.

There are some red alder and big leaf maple present in the operation areas.

There are a few snags and some down wood present in Areas I and II but not in Area III.

Brush species consisting of salmonberry, vine maple, sword fern, salal, and elderberry are present in the understory but in small quantities.

The operation areas are classified as Understory (UDS) stand type as determined by Stand Level Inventory (SLI) and district observation.

Table 2. Stand Inventory Information

| Area | Prescription | Stand ID ¹ | Species | Age | DBH | BA | TPA | RD | Acres ² |
|------|-------------------|-----------------------|-------------|-----|-----|-----|-----|----|--------------------|
| I | Modified Clearcut | 18308 | Douglas-fir | 57 | 17 | 202 | 128 | 49 | 32 |
| | | 18309 | Douglas-fir | 57 | 16 | 210 | 150 | 52 | 16 |
| II | Partial Cut | 18815 | Douglas-fir | 57 | 20 | 220 | 101 | 49 | 84 |
| | | 18267 | Douglas-fir | 107 | 25 | 248 | 72 | 50 | 4 |
| | | 18627 | Douglas-fir | 57 | 14 | 125 | 140 | 35 | 9 |
| | | Target ³ | | | 24 | 160 | 51 | 33 | |
| III | Retention Cut | 18868 | Douglas-fir | 36 | 14 | 160 | 150 | 43 | 4 |
| | | Target ³ | | | 16 | 50 | 42 | 13 | |

1 The source of stand inventory information is from SLI, Stand 99, and district plot data.

2 The acres are based on orthophotos and GIS and exclude roads, streams buffers, reserve areas, etc.

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

III. DESIRED STAND CONDITION:

According to the district's landscape design, Area I is designated as desired future condition (DFC) General and is scheduled to become a UDS stand. The landscape design shows the DFC of the extreme east portion of Area II as OFS while the rest of Area II and all of Area III is LYR.

Area I Vision: When the next final harvest occurs in this operation area, the stand will be 60-70 years old and will be in the UDS condition. The area will consist of Douglas-fir with lesser amounts of western hemlock, western redcedar and red alder. A few bigleaf maple will also be present. Where there are gaps in the overstory, there will be an understory of hemlock, cedar, alder and brush (Oregon grape, salal, vinemaple, huckleberry). Legacy trees (about 4-6 per acre) left from the first regeneration harvest will be located in small clumps and also scattered across the area. These Douglas-fir trees will average about 35 inches DBH. Both large and small snags and large and small down wood will be located throughout the unit.

Area II Vision: The LYR condition will be attained in about 30 years when the stand is around 90 years old. At that time, the stand will consist of an overstory of Douglas-fir with a few scattered alder and bigleaf maple. Overstory trees will be both scattered and grouped in small clumps. A second layer consisting of patches of western hemlock, western redcedar, Douglas-fir and red alder will be present. An understory of natural Douglas-fir, alder, bigleaf maple and brush species (vinemaple, Oregon grape and salal) will be present in small gaps and low density areas. Hemlock will be starting to seed-in naturally. Snags and downed wood will be present throughout the stand. By the same time period, the portion of the stand with larger trees will have reached the OFS classification.

Area III Vision: The LYR condition will be attained in about 25 years when the stand is about 60 years old. The overstory will consist of fairly even-spaced Douglas-fir. The second layer will consist of cedar, hemlock and red alder. An understory of brush (vinemaple, huckleberry etc.) and scattered conifer and hardwood will exist in small openings located throughout the stand. Snags and down wood will be present as well.

Table 3. Stand Structure Information

| Area | Stand ID | Current | Post Harvest ¹ | Desired Future | Acres |
|------|----------|---------|---------------------------|----------------|-------|
| I | 18308 | UDS | REG | UDS | 32 |
| | 18309 | UDS | REG | UDS | 16 |
| II | 18815 | UDS | UDS | LYR | 84 |
| | 18267 | UDS | UDS | OFS | 4 |
| | 18627 | UDS | UDS | OFS | 9 |
| III | 18868 | UDS | REG | LYR | 4 |

¹ The stand is expected to develop into this condition in the five to ten years after this operation is completed.

IV. PROPOSED MANAGEMENT PRESCRIPTION:

Area I Anticipated Pathway: This harvest will be a modified clearcut prescription leaving behind about 8-10 green trees per acre that will be greater than 17 inches DBH. The majority of these reserve trees will be Douglas-fir, but some alder and bigleaf maple may also be left. Existing snags that do not pose a safety hazard and all down wood will be retained. Some of the reserve trees will be used for snag and down wood creation.

Site preparation activities will include an herbicide application and mountain beaver trapping. At this time broadcast burning is not planned.

Following completion of site prep activities, the area will be replanted with approximately 70% Douglas-fir, 15% western hemlock and 15% western redcedar at a rate of 436 trees per acre. This planting mix will leave the option open for changing the DFC to a more complex condition if so desired. All cedar

will be tubed to deter elk and deer browse. Once planting is complete, the operation areas will fit the REG classification.

It is likely that at least one herbicide application will be needed within the first 3 years after planting in order to release planted conifer from competing brush. It is also likely that mountain beaver will be trapped again the first year after planting. By age 15 years the stand will have moved from REG to CSC and the area will likely need a pre-commercial thin (PCT) to reduce TPA to around 258. During PCT, the biggest and best trees will be selected to leave, also keeping roughly the same percent species mix as was planted, but allowing up to 10% of the mix to be comprised of naturally occurring hardwood.

At approximately age 30 the stand will be commercially thinned to an RD of 30-35. Thinning will capture harvest volume, maintain stand vigor, and will also move the stand on the pathway from CSC to UDS by opening the overstory enough to allow vegetation to grow in the understory. Approximately 5-10 years following commercial thinning, the UDS condition will be achieved.

In 10-15 years following the first commercial thin, the stand will again be thinned to RD 30-35. This thinning will capture harvest volume and maintain stand vigor. The amount and condition of down wood and snags will be evaluated and more will be created at this time if needed.

In another 10-15 years, tree growth rates will be evaluated and a decision will be made to either conduct a third thinning or to wait until final harvest at 60-70 years old.

Area II Anticipated Pathway: During this commercial entry, this Douglas-fir stand will be thinned to an RD of about 33 and 51 TPA. Average DBH of residual trees will be approximately 17 inches.

- Most hardwood, snags and downed wood will be left.
- All conifer trees other than Douglas-fir will be reserved from cutting.
- Approximately 25 acres of patch cuts will be made (20% of the area), ranging from 0.5 acre to 3 acres in size each. In patchcuts that are greater than one acre in size, a few trees will be marked for retention.
- Patchcut areas will be treated with site preparation herbicides in order to deter brush competition.
- Patchcut areas will be planted at a rate of approximately 360 TPA. Primary species will be western hemlock and western red cedar with a few Douglas fir planted into the larger patchcuts.
- All cedar will be tubed to protect against deer and elk browse.

At least one herbicide application will likely be needed within the first 3 years after planting in order to release planted seedlings from competing vegetation.

Ten to fifteen years after this thinning, the RD is expected to be 50-55 and the stand will be thinned a third time, leaving approximately 30 TPA. Additional patchcuts will be made and replanted to a mix of conifers. Hardwood and conifer will have seeded naturally into the understory. Thinning the stand will capture harvest volume and will allow natural trees to persist in the understory. The amount of natural snags and downed wood will be evaluated. If it is determined that additional amounts are needed, then snags and downed wood will be created. Around this time, trees planted in the first set of patchcuts will be pre-commercially thinned (PCT) if needed.

When the stand is about age 90 years, trees planted in the patchcuts and trees naturally regenerated in the understory will have reached at least 30 feet over 30% of the stand, moving the stand from UDS to LYR. A portion of the stand is expected to have 8 or more TPA larger than 32 inches DBH and enough snags and down wood of the appropriate sizes and decay classes to classify the stand as OFS.

Over time, more of the overstory will become snags or down wood. The understory will gradually become the overstory and will be commercially thinned as needed to encourage understory re-initiation and to keep the stand in the OFS condition.

Area III Anticipated Pathway: At this harvest entry, the stand will be thinned to an RD of about 13, leaving approximately 42 TPA and 50 ft² BA.

- Most snags and downed wood will be left.
- All trees other than Douglas-fir will be reserved from cutting.
- Following harvest, the area will be machine piled if necessary and piles will be burned.
- The stand will be treated with site preparation herbicides in order to deter brush competition.
- The stand will be underplanted with an even mix of western hemlock and western redcedar at a rate of 360 TPA.
- Animal damage mitigation will consist of tubing all cedar to protect against deer and elk browse. Mountain Beaver trapping may also be necessary.

This area will be used as an example of a one-time heavy thinning (Retention Cut) to a level of overstory that allows the LYR structure to be developed without having to thin again in the future.

Future management activities will likely include an herbicide application to release planted seedlings from competing vegetation and pre-commercial thinning of the understory trees. In addition, the amount of natural snags and downed wood will be evaluated over time. If additional amounts are needed, snags and downed wood will be created.

V. ESTIMATED TIMBER AND REVENUE INFORMATION:

Table 4. Timber and Revenue

| Ownership | | Sale Type | |
|------------------|-----|-----------|----------|
| BOF | CSL | Cash | Recovery |
| 95% | 5% | | X |
| Planned Quarter: | 4 | | |

| | Conifer | Hardwood | Total |
|-------------------------|-------------|----------------------|-------------|
| Net Volume (MBF) | 2,900 | 0 | 2,900 |
| Stumpage Value (\$/MBF) | \$350 | | |
| Estimated Gross Value | \$1,015,000 | | \$1,015,000 |
| | | Project Costs: | \$143,000 |
| | | Estimated Net Value: | \$872,000 |

VI. TRANSPORTATION PLANNING AND HARVESTING:

Access to this sale is via Salmon Creek Road, the western portion of Burnt Woods Ridge Road and Stomboulder Road. Salmon Creek Road is in adequate condition for wet weather hauling. Stomboulder Road will require a maintenance lift of rock, bringing it back to it's original design standard. An existing unsurfaced ridgetop spur at the end of Stomboulder Road will be reopened and surfaced for all weather access to Area I.

Access to Area II will utilize the eastern surfaced ridgetop spur off Stomboulder road, and four unsurfaced spurs which will be reopened. The eastern surfaced spur will receive a maintenance lift of rock.

Salmon Creek road passes over an industrial forest landowner and a small woodland owner. Permanent easements are in place.

Existing roads provide timber harvest access to 100% of the operation acreage. Because existing road already access the majority of the sale area, no other transportation alternatives were considered.

Wet weather access is planned for Area I and 80% of Area II.

Two nonfish passable stream crossing culverts (21" & 36") along Salmon Creek road are planned for replacement with fish passable structures. These culverts are on tributaries of Salmon Creek (SE ¼ of sect. 23 & SW ¼ of sect. 24, T.11S., R.9W., W.M). Written plans for these crossings will be supplied by ODF.

Approximately 1.1 miles of improvement will be needed. This consists of re-opening existing roads, one of which will be surfaced.

Harvesting timber in the operation areas will require a combination of 90% cable yarding and 10% ground skidding.

All unsurfaced roads will be waterbarred and blocked to vehicular traffic after harvesting operations are completed and/or at the beginning of the wet weather season.

Table 5. Transportation Planning Summary (Miles).

| Activity | Mainline | Collector | Rocked Spur | Dirt Spur |
|-------------|----------|-----------|-------------|-----------|
| Construct | | | | |
| Improve | | | 0.2 | 0.9 |
| Maintain | | 4.0 | 0.8 | |
| Close/Block | | | | 0.9 |
| Vacate | | | | |

VII. AQUATIC RESOURCES AND WATER QUALITY:

Water flowing from streams in the operation areas is part of the Yaquina River System.

There are no type F streams within or adjacent to any of the operation areas.

A type N stream is present in the southern part of Area I. A buffer averaging 50-75 feet horizontal distance will be posted on either side of this stream. No trees will be felled within the buffer except to facilitate cable yarding. In the remaining portion of the Riparian Management Area (RMA) zones sufficient trees will be retained to comply with current standards.

A type N stream is present in Area II. A 25' horizontal distance buffer will be established on either side of these streams. No harvesting will be allowed within the buffer except to facilitate cable yarding. The partial cut thinning prescription will retain sufficient trees in the RMA to comply with current standards.

Vegetation along type N streams consists of Douglas-fir and red alder trees and brush species such as salmonberry, elderberry, sword fern, and vine maple.

There are no domestic water intakes in the vicinity of the operation area.

Activities that will take place in proximity to the streams, listed above, include timber felling and yarding. The following measures will be employed to minimize impacts to the stream: 1) no timber will be felled within the buffer except to facilitate cable yarding, 2) timber above the buffer will be felled away from or parallel to the stream, 3) timber will be yarded away from the stream, where possible, 4) if it is necessary to yard logs across the stream, logs will be fully

suspended above the buffer vegetation, and 5) single end suspension of logs will be required elsewhere in the units.

Other requirements designed to minimize impacts to streams include seasonal restrictions for road construction and log hauling.

VIII. T&E SPECIES CONSIDERATIONS:

The operation area was determined to be suitable habitat for northern spotted owls and marbled murrelets by the area wildlife biologist. Surveys for northern spotted owls and marbled murrelets were conducted in 2007 with no detections and will be continued in 2008.

The operation area was checked against district knowledge for any listed plant locations. The operation area was also checked against the Oregon Natural Heritage Program (ONHP) database of known listed plant locations. No listed plant records were identified within the operation area.

IX. SLOPE STABILITY AND GEOTECHNICAL ISSUES:

This assessment is based on analysis of USGS 1:24,000 topographic maps.

There are isolated high landslide hazard locations in Areas I and II. Area I drains to Salmon Creek. Area II drains to an unnamed tributary of Wolf Creek. The risk of landslides delivering directly to Salmon Creek from Area I is low. The risk of landslides delivering directly to the unnamed tributary of Wolf Creek from Area II is moderate to low.

The geotechnical specialist will be consulted if evidence of recent landslide activity is identified during sale layout.

X. RECREATION RESOURCES:

The only recreation taking place in the operation area is hunting, fishing and ATV use.

XI. CULTURAL RESOURCES:

The operation area was checked for cultural resources with the district's GIS inventory. No cultural resources are located in the vicinity of the operation area.

XII. SCENIC RESOURCES:

There are no scenic resources associated with this operation.

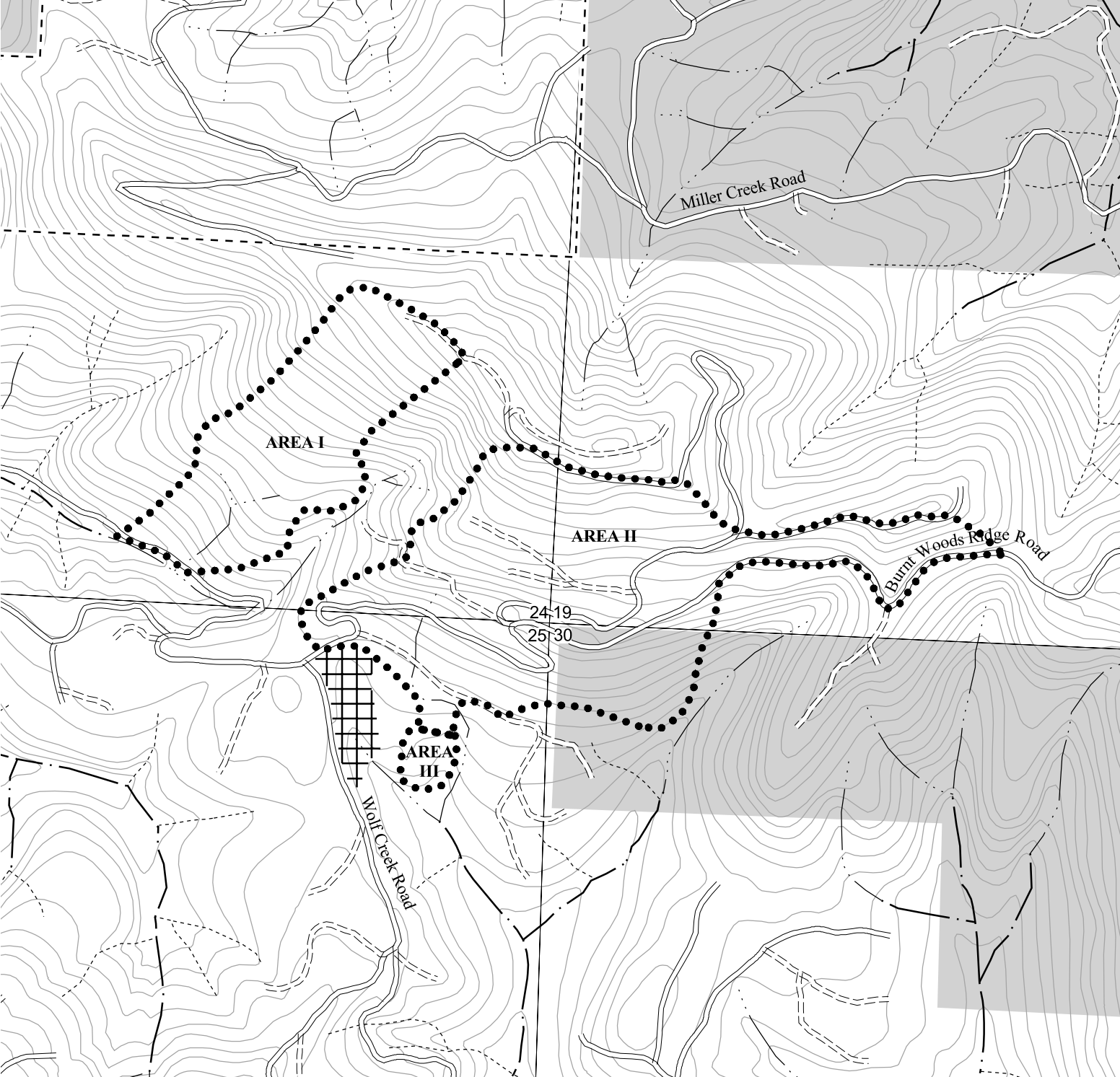
XIII. OTHER RESOURCE CONSIDERATIONS:

The Wolf Creek Progeny Site exists to the west of Area III. Partial cutting in Area III is located in the buffer around the progeny site. However, there are trees in

Area III that are marked with red paint and a metal tag that must be protected during harvest operations.

XIV. LAND MANAGEMENT CLASSIFICATION SUMMARY:

Areas I and II have about 13 acres of Focused, Aquatic and Riparian Habitat, around the non-fish streams within the units. See Section VII, Aquatic Resources and Water Quality, for the management guidelines to be utilized. Area III has four acres of Special, Research and Monitoring, that is the Wolf Creek Progeny Site buffer.



STROMBO COMBO
 FY 09 AOP
 WEST OREGON DISTRICT
 ATTACHMENT A : TOPOGRAPHY
 PORTIONS OF SECTIONS 19 & 30, T11S, R8W
 AND SECTIONS 24 & 25, T11S, R9W, W.M.
 LINCOLN COUNTY, OREGON

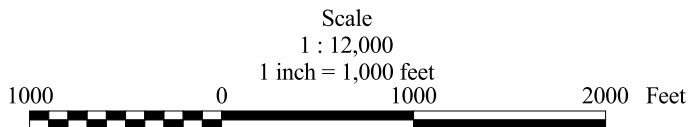
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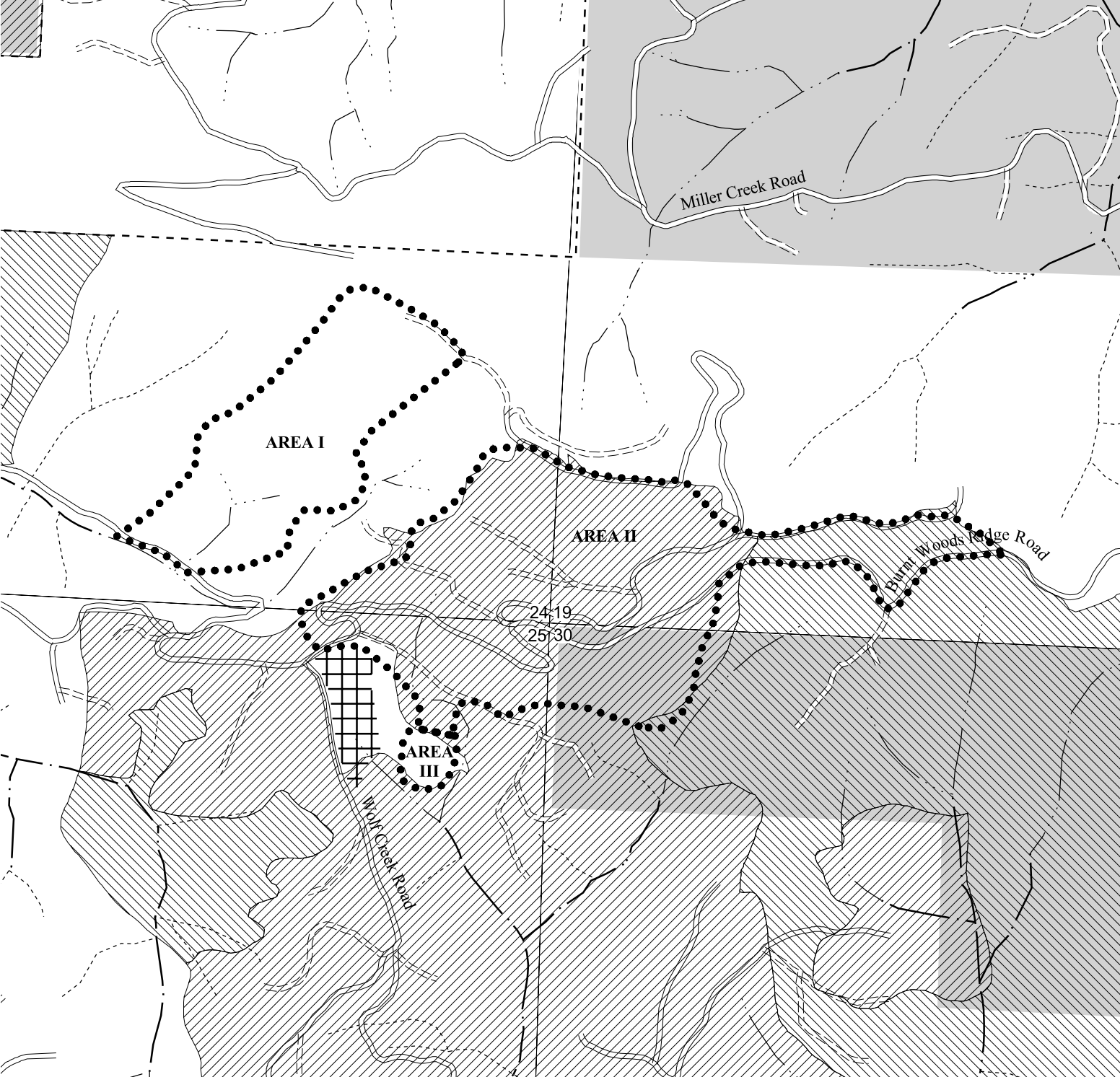
- Sale Area
- Roads**
- ==== Surfaced Road
- ==== Unsurfaced Road
- Streams**
- Fish
- · · Nonfish
- · · · Unknown
- - - State Forest Property Boundary
- Common School Land
- Progeny Area
- Forty Foot Contour Lines

This product is for informational use and may not have been prepared
 for or be suitable for legal, engineering or surveying purposes.
 Users of this information should review or consult the primary data
 and information sources to ascertain the usability of the information

APPROXIMATE NET ACRES

| | | |
|----------|----|------------|
| AREA I | 48 | ACRES (MC) |
| AREA II | 97 | ACRES (PC) |
| AREA III | 4 | ACRES (RC) |



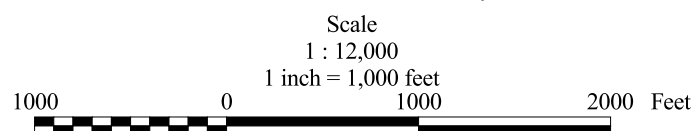


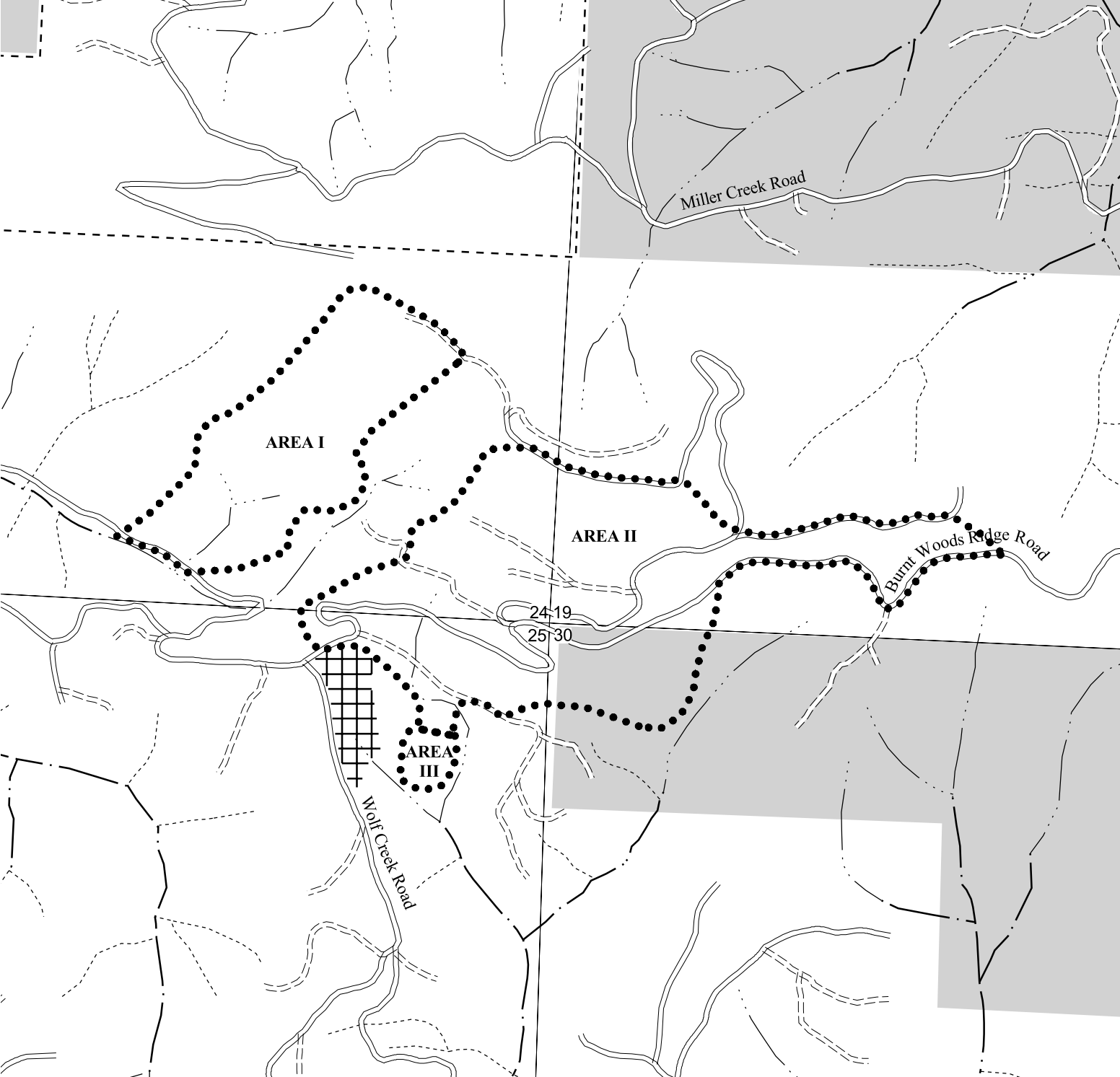
STROMBO COMBO
 FY 09 AOP
 WEST OREGON DISTRICT
 ATTACHMENT B : DESIRED FUTURE CONDITION
 PORTIONS OF SECTIONS 19 & 30, T11S, R8W
 AND SECTIONS 24 & 25, T11S, R9W, W.M.
 LINCOLN COUNTY, OREGON

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- Legend**
- Sale Area
 - Roads**
 - ==== Surfaced Road
 - ==== Unsurfaced Road
 - Streams**
 - Fish
 - - - Nonfish
 - Unknown
 - - - State Forest Property Boundary
 - Common School Land
 - + + Progeny Area
 - Desired Future Condition**
 - LYR
 - OFS





STROMBO COMBO
 FY 09 AOP
 WEST OREGON DISTRICT
 ATTACHMENT C : KEY RESOURCES
 PORTIONS OF SECTIONS 19 & 30, T11S, R8W
 AND SECTIONS 24 & 25, T11S, R9W, W.M.
 LINCOLN COUNTY, OREGON

- Legend
- Sale Area
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 - + Progeny Area

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Scale
1 : 12,000

1 inch = 1,000 feet

1000 0 1000 2000 Feet



APPROXIMATE NET ACRES

| | | |
|----------|----|------------|
| AREA I | 48 | ACRES (MC) |
| AREA II | 97 | ACRES (PC) |
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