

Pre-Operations Report

Operation Name: Cow Hollow

County: Clatsop

Management Basins: Lousignot and Northrup

Table 1. Operation Areas, Types and Acres

| Area | Type of Operation | Gross Acres | Net Acres |
|-------|-----------------------------|-------------|-----------|
| 1 | Partial Cut—Moderate | 54 | 51 |
| 2 | Modified Clearcut | 24 | 22 |
| 3 | Partial Cut—Heavy | 127 | 115 |
| 4 | Partial Cut—Moderate | 130 | 111 |
| 5 | Partial Cut—Group Selection | 52 | 31 |
| Total | Partial Cut | 363 | 308 |
| Total | Modified Clearcut | 24 | 22 |
| Total | Combined | 387 | 330 |

I. PHYSICAL DESCRIPTION OF OPERATION AREA:

These sale areas are located in the Lousignot and Northrup Basins. They are in the western hemlock vegetation zone, and are characterized by Douglas-fir stands, with some western hemlock, western redcedar, and red alder. The soil series are Keasey on steeper slopes, with Tillamook or Bradwood on most slopes. Site Index is highest (average 125) on the Tillamook Soil Series and lowest on Keasey (average 110) with Bradwood intermediate (120). The landform consists of Cow Ridge and a portion of its side slopes. Areas 1-4 drain into Lousignot Creek or its tributaries. Area 5 drains into Cow Creek and then into Northrup Creek.

The sale is underlain by sedimentary rocks of the informal Sager Creek formation, informal Northrup Creek formation, and the Pittsburg Bluff Formation, all mudstones and sandstones. Slopes in the operation area range from gentle mountain slopes (5-20%) to precipitous mountain slopes (over 65%), with primarily eastern aspects. Elevations range from 750 to 1,450 feet.

II. CURRENT STAND CONDITION:

Areas 1, 3, 4, and 5--The current stands are generally 58 to 80 years old, and are composed of well stocked Douglas-fir with minor amounts of other conifer species and scattered clumps and stringers of alder. The stands are categorized as Closed Single Canopy (CSC), Understory (UDS), or Layered (LYR). Stand density index (SDI) ranges from 50 to 78.

Area 2--The southern portion of this small area is 62 years old and composed of well stocked Douglas-fir with minor amounts of other species. SDI is 74. The northern part is red alder dominated and 68 years old with an SDI of 68. The entire area is classified as CSC.

The understory in all areas consists primarily of sword fern, Oregon grape, salal, vine maple, huckleberry, and salmonberry. Area 3 has a strong vine maple component.

Table 2. Stand Inventory Information

| Area | Prescription | Stand ID ¹ | Species | Age | DBH | BA | TPA | SDI | Acres ² |
|------|--------------|-----------------------|---------|-----|-----|---------|-----|-------|--------------------|
| 1 | PC--M | 1196 | DF | 65 | 20 | 217 | 97 | 50 | 37 |
| | | 1203 | DF | 62 | 18 | 309 | 173 | 74 | 14 |
| | | Target ³ | DF | | 20 | 150-180 | 73 | 30-40 | 51 |
| 2 | MC | 1203 | DF | 62 | 18 | 309 | 173 | 74 | 8 |
| | | 1208 | WH, RA | 69 | 16 | 273 | 191 | 68 | 14 |
| | | Target ³ | DF,WH,C | | | | 5 | | 22 |
| 3 | PC--H | 23672 | DF | 63 | 19 | 212 | 113 | 51 | 115 |
| | | Target ³ | DF | | 22 | 110-140 | 45 | 20-30 | 115 |
| 4 | PC--M | 1010 | DF, RA | 77 | 19 | 264 | 131 | 62 | 9 |
| | | 1026 | DF | 65 | 20 | 265 | 123 | 61 | 14 |
| | | 1051 | DF | 65 | 18 | 325 | 185 | 78 | 9 |
| | | 1084 | DF | 80 | 18 | 229 | 124 | 55 | 7 |
| | | 23672 | DF | 63 | 19 | 212 | 113 | 51 | 72 |
| | | Target ³ | DF, RA | | 20 | 120-160 | 64 | 25-35 | 111 |
| 5 | PC--M | 23625 | DF, RA | 58 | 16 | 202 | 153 | 52 | 10 |
| | | 1010 | DF, RA | 77 | 19 | 264 | 131 | 66 | 21 |
| | | Target ³ | DF, RA | | 18 | 120-160 | 79 | 25-35 | 31 |

- 1 The source of stand inventory information for 5-digit Stand IDs is Stand Level Inventory (SLI) from 2002 to 2003. For 4-digit Stand IDs, the source is OSCUR data from 2002. Age shown is as of 2005.
- 2 The acres are based on GIS and exclude roads, streams buffers, reserve areas, etc.
- 3 The Target identifies expected stand characteristics (DBH, BA, TPA and SDI) after harvesting has been completed.

III. DESIRED STAND CONDITION/VISION:

This operation is located in the Lousignot and Northrup Basins. These basin are dominated by 60 to 70-year old Douglas-fir stands with stringers of alder, that naturally regenerated after logging in the early 1900's. The commercial thinning operations conducted in this basin during the past 10 years have been very successful in developing UDS stand structure that will develop into LYR and OFS structure in time. Areas 1, 3 and 4 of the planned operation will receive similar treatments and similar results are expected. Area 5 is group selection partial cut that will promote layering in a stand that would likely have been unable to achieve that condition through a more standard thinning. Area 2 is a modified clearcut.

Areas 1 and 2 do not have a complex desired future condition. The desired condition of these stands are healthy vigorous stands of mixed conifer and hardwoods.

Area 1 will be thinned in an effort to maintain tree growth and capture future mortality from competition. This stand will have a slightly lighter thinning prescription than in the other partial cut units as understory development is not the primary goal of harvest within this stand. Although not a primary goal, some understory development is anticipated. Minor species will be reserved (i.e., western red cedar and red alder) in order to leave future options for this stand open. It is anticipated that this stand will be reentered in 10-15 years. The sale prescription at that time will likely be a regeneration harvest.

Area 2 will be regeneration harvested and planted with a mixture of red alder, Douglas-fir, and western hemlock. Five to seven of the largest conifer trees per acre will be left to provide a source for natural regeneration and future downed wood and snags. The stands will be planted with a mixture of conifer species. A precommercial thinning is anticipated at 12-17 years when crowns close followed by a commercial thinning at 30-40 years of age to ensure continued growth. At age 45-50 the stand will be evaluated for either additional thinning or regeneration harvest.

Area 3 has a desired future condition of OFS. The thinning prescription is heavier than in Area 4 in an effort to generate more understory development and allow greater growth of the stand. It is anticipated that this entry will increase individual tree growth and allow further development of tree crowns while also further developing understory. Another entry is anticipated in 10-15 years in order to reach the desired future condition target of OFS

Area 4 has a desired future condition of LYR. It is anticipated that this entry will increase individual tree growth and allow further development of tree crowns while also creating understory initiation. All existing understory will be maintained where possible. Another entry is anticipated in 10-15 years.

Area 5 has a desired future condition of LYR. It was anticipated that a standard basal area thinning of this stand would not put this stand on an accelerated pathway to a Layered stand structure. By removing the alder from the three patch cut areas and under planting with cedar it is anticipated that a Layered stand structure can be achieved in an accelerated time frame. Thinning in the other portion of the stand will increase individual tree growth and provide for increased understory development. The immediate post-harvest stand condition is expected to be LYR in some portions and UDS in other portions. As the understory develops, the stands will move toward a layered stand structure.

Table 3. Stand Structure Information

| Area | Stand ID | Current | Post Harvest ¹ | Desired Future | Acres |
|------|----------|---------|---------------------------|----------------|-------|
| 1 | 1196 | LYR | LYR | GENERAL | 37 |
| | 1203 | CSC | UDS | GENERAL | 14 |
| 2 | 1203 | CSC | REGEN | GENERAL | 8 |
| | 1208 | CSC | REGEN | GENERAL | 14 |
| 3 | 23672 | UDS | LYR | OFS | 115 |
| 4 | 1010 | CSC | UDS | LYR | 9 |
| | 1026 | CSC | UDS | LYR | 14 |
| | 1051 | CSC | UDS | LYR | 9 |
| | 1084 | UDS | LYR | LYR | 7 |
| | 23672 | UDS | LYR | LYR | 72 |
| 5 | 23625 | UDS | LYR | LYR | 10 |
| | 1010 | CSC | UDS | LYR | 21 |

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 1 will be autemark thinned to a stand density of 30 to 40%. Hardwood patches and minor species will be reserved. The result of this partial cut should be increased growth to individual trees, and development of conifer and deciduous understory species as the more open tree canopy allows light to reach the forest floor.

Area 2 is a modified clearcut that will be replanted with a mixture of conifer species. Minor species, such as western redcedar, will be reserved from cutting. Larger remnant trees, if present, will be reserved from cutting. In **Area 2**, an average of eight green trees per acre will be scattered and/or clumped throughout the area, with at least 25% in upland areas. In addition, individual and small clumps of non-merchantable alder may be left in operationally feasible areas to provide short term snag recruitment for cavity nesting birds. Minor species such as red cedar will be reserved from cutting, and any existing larger remnant trees will be reserved from cutting.

Reforestation of **Area 2** will be completed with an initial stocking at 300-350 trees per acre with the following species: 75% Dougals-fir and 25% western red cedar. It is anticipated that some natural regeneration of western hemlock will be present on the site. Some excavator slash piling is anticipated on operable ground. Site preparation will be provided through the normal harvesting activities. Trapping of mountain beaver is anticipated to reduce plantation establishment problems. Animal damage through big game browse is anticipated to be high. Tree protection will be prescribed to the newly planted conifer seedlings; Douglas-fir will receive paper bud caps and western red cedar will receive tubes.

Area 3 will be automark thinned to an approximate stand density range of 20 to 30% with Douglas-fir and red alder being the target species for thinning. This area will be thinned to a level that will develop the existing UDS condition into a LYR condition and assist in the development of OFS. The benefits to OFS structure of specifying an upper and/or lower diameter limit will be examined during sale layout. Alternative thinning prescriptions may be applied at a "patch" scale to create variability in the stand.

Areas 4 will be automark thinned to a stand density of 25 to 35%. Hardwood patches which are an acre or more in size will be thinned to the basal area range of 120-160 square feet. Minor species and any hardwood patches less than an acre will be reserved.

Area 5, is a group selection unit that includes three patch cut areas which are all less than five acres in size. These patch cuts are in upland areas and not located within RMA's. All the alder within these patch cut areas will be harvested with all other species being reserved. There is a 13 acre reserved area that separates the three patch cuts. The remaining acres of Area 5 will be thinned to an approximate stand density range of 20 to 30% with Douglas-fir and red alder being the target species for thinning. It is anticipated that the result of this prescription will be development or maintenance of conifer and deciduous understory species and increased growth to individual trees. It is also anticipated that the desired future condition of LYR will be achieved much faster with this prescription because of the group selection harvest within portions of the stand dominated by hardwoods.

Site preparation in the three patch cut areas will be accomplished through normal harvesting activities. Planting of the patch cuts with western red cedar is anticipated. Animal damage through big game browse is anticipated to be high. Tree protection will be prescribed to the newly planted conifer seedlings.

In **Areas 1, 3, 4, and 5**, minor conifer species will be reserved and western hemlock will be favored for leave trees over Douglas-fir.

Areas 1, 3, 4, and 5 include Riparian Management Area (RMA) acreage. The thinning prescriptions above will be applied to the entire area, including the Inner RMA Zone and Outer RMA Zone, in order to maximize the tree size available for future stream structure. No-cut buffers will be retained on all streams for 25 feet each side.

Snags: In all areas, all existing snags will be retained unless deemed to be safety hazards. In Area 2, if pre-sale activities determine that fewer than two hard snags per acre exist, snag creation or leaving additional live green trees will be implemented to supplement landscape snag levels as defined by the Forest Management Plan. In PC areas, it is anticipated that additional snags will develop during yarding activities by leaving, topping, or girdling damaged rub

trees, tail trees, lift trees, and/or intermediate support trees. Additional snags will be created in Area 3 in order to accelerate this stand toward an OFS condition.

Downed Wood: For all harvesting activities, all existing downed woody debris will be retained. In MC Area 2, additional conifer trees and/or conifer logs will be retained to meet the 600 cubic foot/acre landscape targets for down wood as prescribed in the FMP and Implementation Plan. Obvious defect in conifer logs will be bucked out in the unit to enhance downed wood levels. In partial cut areas, to increase down wood levels, operations will be required to top trees prior to yarding and to yard only merchantable log segments to roadsides.

V. ESTIMATED TIMBER AND REVENUE INFORMATION:

Table 4. Timber and Revenue

| Ownership | | Sale Type | |
|------------------|-----|--------------------------|----------|
| BOF | CSL | Cash | Recovery |
| 100% | % | <input type="checkbox"/> | x |
| Planned Quarter: | | 2 nd | |

| | Conifer | Hardwood | Total |
|-------------------------|-------------|----------------------|-------------|
| Net Volume (MBF) | 5,582 | 1,224 | 6,806 |
| Stumpage Value (\$/MBF) | \$350 | \$300 | |
| Estimated Gross Value | \$1,953,700 | \$367,200 | \$2,320,900 |
| | | Project Costs: | \$141,000 |
| | | Estimated Net Value: | \$2,179,900 |

VI. TRANSPORTATION PLANNING AND HARVESTING:

Access is Highway 202 to either the Northrup Creek County Road and ODF's Cow Ridge Road and/or the Fishhawk County Road and ODF's Greasy Spoon, Cow Creek, and Cow Ridge Roads. Sale access is secured through existing easements.

Approximately 0.4 miles of new gravel-road construction within the sale area will be needed. Most of the sale is accessible from existing roads. The small amount of planned roads will be built as rocked roads to facilitate year-round operations and future harvests.

The Greasy Spoon Mainline is currently in a condition that will support the planned activity. Road improvement of 6.6 miles is planned on the Cow Ridge and Cow Creek Roads and three existing dead-end spurs. Road improvement work will include subgrade leveling, twenty-five miles of brushing, culvert installation, and realignment of a curve at Milepost 12 of Greasy Spoon Road.

An old railroad grade in Areas 3 and 4 was evaluated for vacating and no needs were found. It is not anticipated that this grade will be used for logging as the

current road system, with the addition of some ridgetop spurs, will provide better harvest access.

A combination of cable-yarding systems and ground yarding will be planned. Ground yarding will generally be limited to slopes under 35%. Cable systems will be used on steeper slopes. There will be a significant amount of multi-span and long-span yarding in Areas 3 and 4.

An unnamed collector road on the southern boundary of Area 3 provides access to (spur) Road 1A to 1B of the completed Cow Ridge Combination sale east of Area 3. Due to the exceptionally long reach from the existing and planned road system in Area 3, the eastern end of Area 3 may be yarded to the landing at Point 1B, across the 2003 mixed Douglas-fir/western hemlock plantation in Cow Ridge Combination Area 1. As a result, approximately ½ acre of replanting may be needed. Plantation disturbance can be minimized by extending the area of required full log suspension upslope from the stream between Cow Hollow Area 3 and Cow Ridge Combination Area 1.

A written plan will be required for timber harvest within 100 feet of a Type F stream, Lousignont Creek. Another will be required for hanging skyline cables over Lousignont Creek.

Table 5. Transportation Planning Summary (Miles).

| Activity | Mainline | Collector | Rocked Spur | Dirt Spur |
|-------------|----------|-----------|-------------|-----------|
| Construct | 0 | 0 | 0.4 | 0 |
| Improve | 0 | 5.7 | 0.9 | 0 |
| Maintain | 3.6 | 5.7 | 0.9 | 0 |
| Close/Block | 0 | 0 | 0 | 0 |
| Vacate | 0 | 0 | 0 | 0 |

VII. AQUATIC RESOURCES AND WATER QUALITY:

Type F Streams: Areas 1, 2, and 5--There are no Type F streams within Areas 1, 2, and 5. **Area 3**--Lousignont Creek, a medium Type F stream, parallels the eastern boundary for approximately 1,000 feet. **Area 4**--Lousignont Creek, a medium Type F stream, parallels the eastern boundary for approximately 1,000 feet.

Areas 3 and 4 are in proximity to a stream, Lousignont Creek, which has contains listed fish. A possible haul route, the Greasy Spoon Road, crosses Fishhawk Creek, which also has historically contained listed fish. Therefore, per ODF's Salmon Protection Policy for State Forest Operations, contract provisions will be included to reduce the likelihood of adverse effects on listed fish. Specific

standards will include: (1) hauling on roads which are in proximity to streams in which "listed" fish are present will be allowed only during weather conditions and at use levels commensurate with the capabilities of road drainage systems and (2) implementation of riparian management area strategies in accordance with the FMP, Appendix J, "Management Standards for Aquatic and Riparian Areas", pages J-1 through J-16, for perennial Type N streams that are within 500 feet of streams in which listed fish are present.

Type N Streams: There are small perennial Type N streams in all sale areas. All streams were examined by ODFW in May, 2004 to determine stream type and classification. Specific riparian management area strategies required in the FMP will be implemented. The FMP riparian management area strategies that will be implemented are found in the FMP, Appendix J, "Management Standards for Aquatic and Riparian Areas", pages J-1 through J-16.

VIII. T&E SPECIES CONSIDERATIONS:

The ODF Northwest Area Biologist determined on April 19, 2004 that Areas 3, 4, and 5 contained suitable habitat for marbled murrelets. Some small patches of western hemlock and Douglas-fir have suitable moss-covered platforms. Surveys for all sale areas were conducted in 2004 and 2005 with no detections.

All sale areas were surveyed for northern spotted owls in 2004 and 2005 with no detections.

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

IX. SLOPE STABILITY AND GEOTECHNICAL ISSUES:

The initial hazard-and-risk assessment from the geotechnical indicates that there are only a few isolated high-landslide-hazard locations along ridgetops within Areas 3 and 4. The risk to Lousignont Creek, Cow Creek, and their tributaries is low. If high-landslide-hazard locations are identified during fieldwork, the geotechnical specialist will be consulted.

X. RECREATION RESOURCES:

This area receives dispersed recreation, which includes hunting, fishing, camping, target shooting, and driving forest roads. The Clatsop State Forest Recreation Plan does not list any specific activities for this portion of the basin.

XI. CULTURAL RESOURCES:

No known cultural resources are within or adjacent to the operation.

XII. SCENIC RESOURCES:

The sale area is in a landscape of low visual sensitivity (Level 3) with the exception of four acres each in Areas 4 and 5. These acres are in focused stewardship for Level 2 visual management and lie along the Greasy Spoon Road. Steps will be taken to insure the visual areas are managed consistent with FMP visual management objectives. (FMP, "Scenic Resources", pages 4-105 to 4-107).

XIII. OTHER RESOURCE CONSIDERATIONS:

There is no private land adjacent to the timber sale areas. Three survey corners need to be found and protected within Areas 4 and 5.

XIV. LAND MANAGEMENT CLASSIFICATION SUMMARY:

There are eight acres of focused stewardship for visual management in Areas 4 and 5. See Section XII, Scenic Resources, for the management guidelines to be utilized. All other acres in Areas 1-5 are classified as "general management."

Boundary lines depicted on Attachment C are approximate; exact locations and site specific management activities will be determined during the sale preparation process.

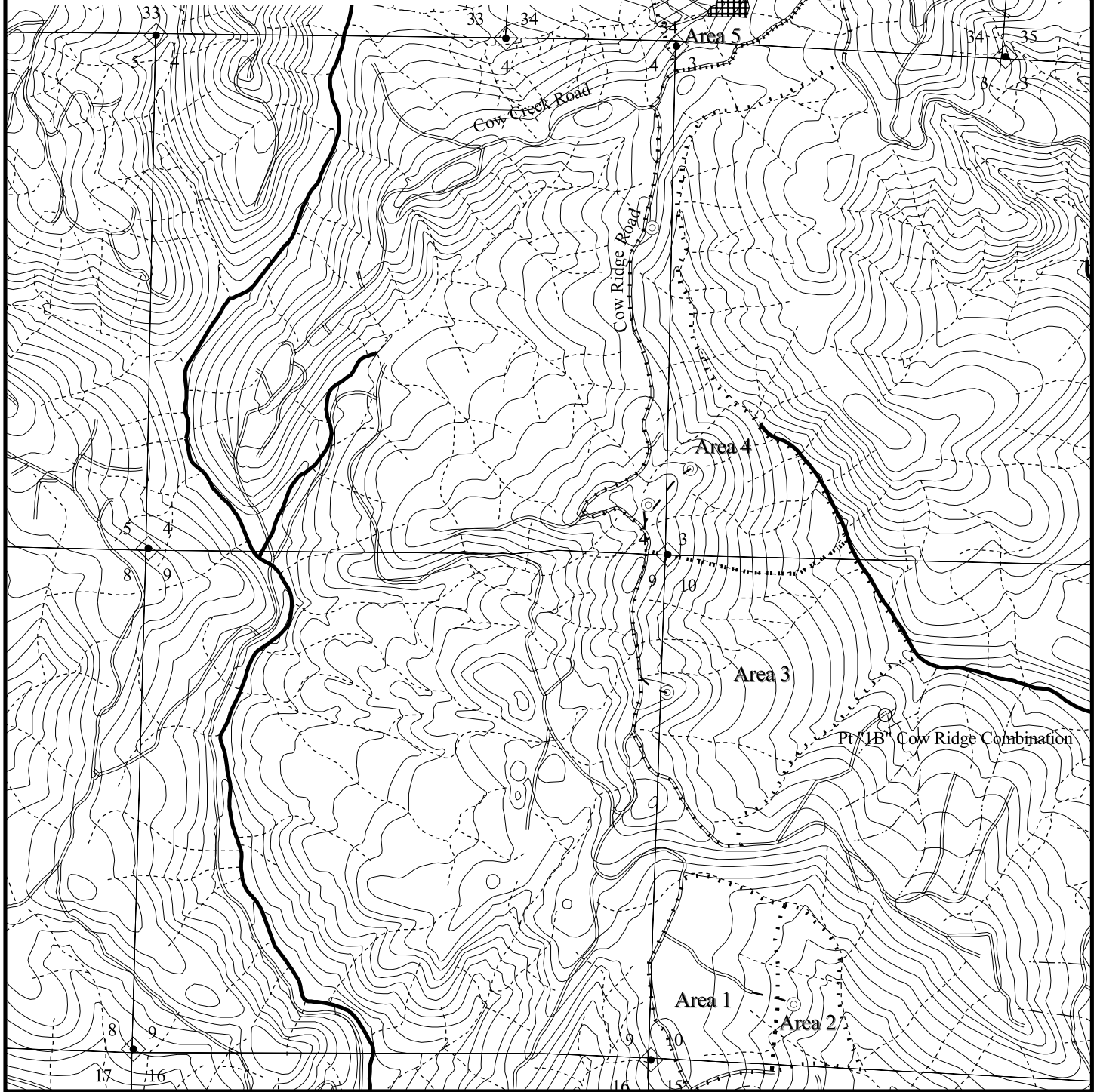
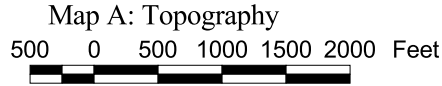
**FY 2007
Cow Hollow**
Portions of Sections 3, 4, 9, 10, & 15,
T6N, R6W, & Section 34, T7N,
R6W, W.M., Clatsop County, OR

| Approximate Net Acreage | |
|-------------------------|----------|
| MC Acres | PC Acres |
| Area 1 (PC) - | 51 |
| Area 2 (MC) - | 22 |
| Area 3 (PC) - | 115 |
| Area 4 (PC) - | 111 |
| Area 5 (PC) - | 31 |
| Total = | 22 |
| Total Sale Acres = | 330 |



LEGEND

- Group Selection Area
- Green Tree Retention Area
- Timber Sale Boundary
- Ownership Boundary
- Existing Roads
- New Road Construction
- New Construction Landings
- Existing Landings
- Type F Streams
- Type N Streams
- Unknown Streams
- 40ft. Contour Intervals



**FY 2007
Cow Hollow**
Portions of Sections 3, 4, 9, 10, & 15,
T6N, R6W, & Section 34, T7N,
R6W, W.M., Clatsop County, OR

| | MC Acres | PC Acres |
|--------------------|----------|----------|
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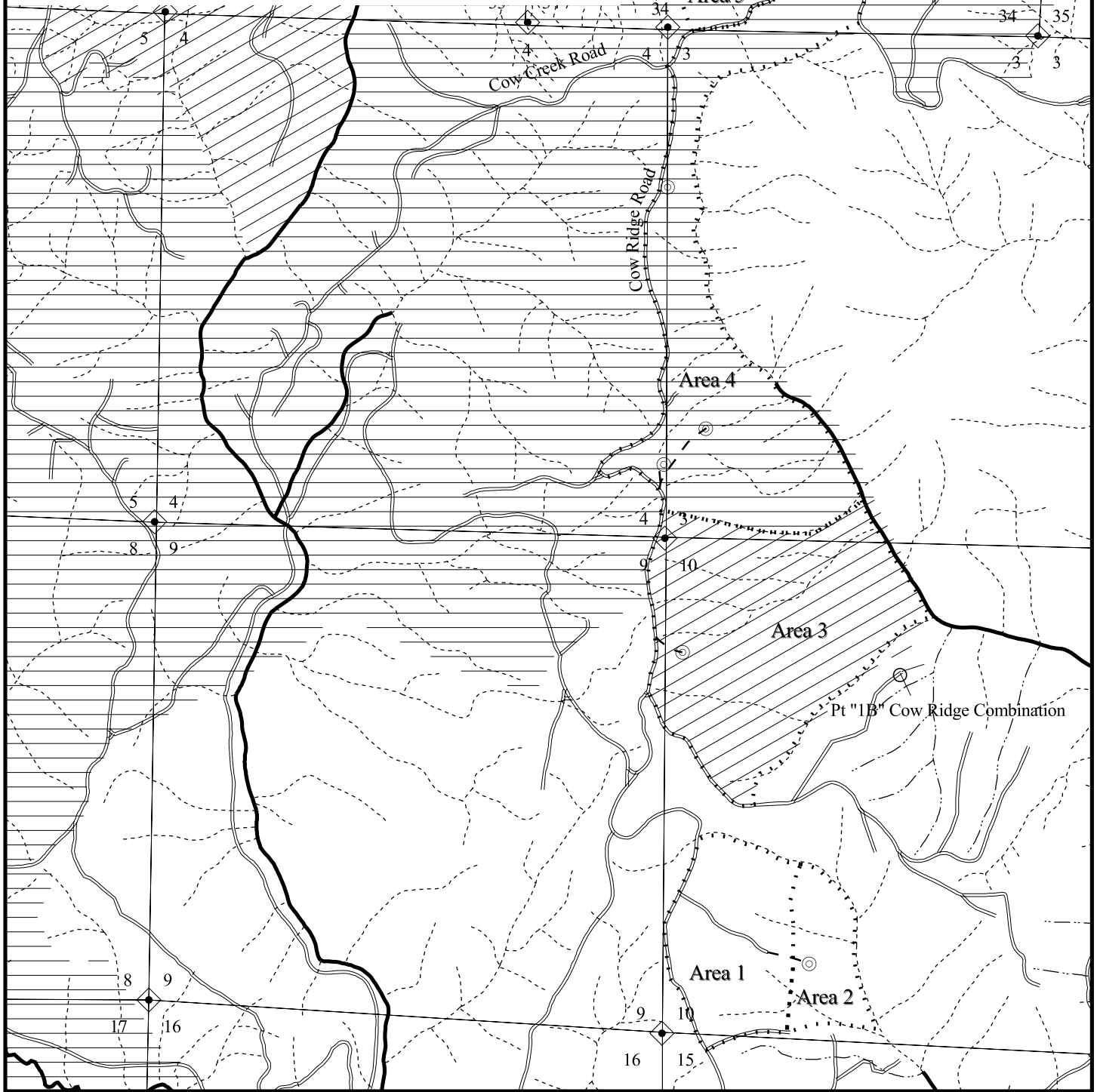
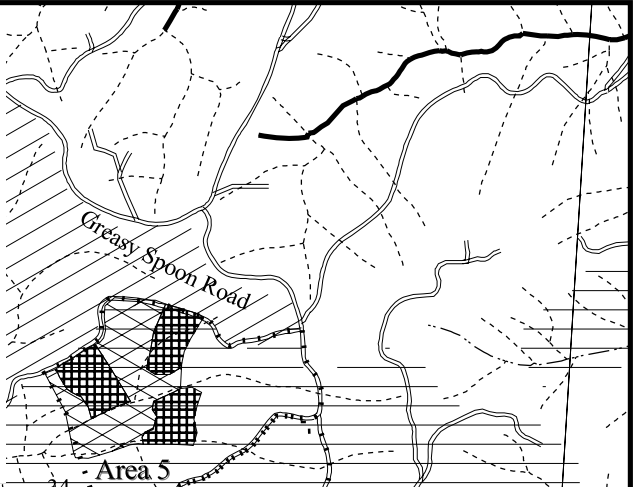


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Map B: Desired Future Conditions

500 0 500 1000 1500 2000 Feet

- LEGEND**
- Desired Future Condition
 - Layered
 - Older Forest Structure
 - Group Selection Area
 - Ownership Boundary
 - Timber Sale Boundary
 - Existing Roads
 - New Road Construction
 - New Landing Construction
 - Existing Landings
 - Type F Streams
 - Type N Streams
 - Unknown Streams
 - Green Tree Retention Area



FY 2007
Cow Hollow

Portions of Sections 3, 4, 9, 10, & 15,
T6N, R6W, & Section 34, T7N,
R6W, W.M., Clatsop County, OR

Approximate Net Acreage
MC Acres PC Acres
















| | | |
|---------------|----|-----|
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| Area 2 (MC) - | 22 | |
| Area 3 (PC) - | | 115 |
| Area 4 (PC) - | | 111 |
| Area 5 (PC) - | | 31 |
| Total = | 22 | 308 |

Total Sale Acres = 330

Map C: Key Resources

500 0 500 1000 1500 2000 Feet

LEGEND

-  Group Selection Area
-  Ownership Boundary
-  Timber Sale Boundary
-  Existing Roads
-  New Road Construction
-  New Construction Landing
-  Existing Landings
-  Type F Streams
-  Type N Streams
-  Unknown_streams.shp
-  Salmon Anchor Habitat Boundary
-  Green Tree Retention Area
-  Quarries & Stockpiles
-  Quarry
-  Stockpile

