

**Lewis River Hydroelectric Projects  
Terrestrial Coordination Committee (TCC)  
Meeting Agenda**

**Date & Time:** Wednesday, May 8, 2019  
9:00 a.m. – 10:00 a.m.

**Place:** City of Woodland  
Police Department (Council Chambers)  
200 East Scott Avenue  
Woodland, WA 98674

**Contacts:** Kendel Emmerson (503) 813-6040; cell 503-703-7734

<b>Time</b>	<b>Discussion Item</b>
9:00 a.m.	Welcome <ul style="list-style-type: none"><li>➤ Review Agenda &amp; 4/10/19 Meeting Notes</li><li>➤ Review and Accept Agenda &amp; 4/10/19 Meeting Notes</li></ul>
9:15 a.m.	<ul style="list-style-type: none"><li>➤ Land Acquisition Update (<b>Confidential</b>)</li><li>➤ TNC Update (<b>Confidential</b>)</li></ul>
9:30 a.m.	Study/Work Product Updates <ul style="list-style-type: none"><li>➤ Report on WDOT pollinator information</li><li>➤ Upper Hanley-Curry options</li><li>➤ Speelyai Canal tree removal</li></ul>
9:45 a.m.	Next Meeting's Agenda Note: all meeting notes and the meeting schedule can be located at: <a href="http://www.pacificorp.com/es/hydro.html">http://www.pacificorp.com/es/hydro.html</a>
<b>10:00 a.m.</b>	<b>Meeting adjourn</b>

Join by phone

[\(503\) 813-5252](tel:5038135252) [Portland, OR] (US)

English (United States)

[\(855\) 499-5252](tel:8554995252) [Toll-Free] (US)

English (United States)

**Conference ID: 631927**

**FINAL Meeting Notes**  
**Lewis River License Implementation**  
**Terrestrial Coordination Committee (TCC) Meeting**  
**May 8, 2019**  
**City of Woodland, Police Station Conference Room**

**TCC Representatives Present: (6)**

Kendel Emmerson, PacifiCorp  
 Summer Peterman, PacifiCorp  
 Kim McCune, PacifiCorp  
 Amanda Froberg, Cowlitz PUD  
 Erik White, Cowlitz Indian Tribe  
 Bill Richardson, RMEF

**Calendar:**

June 12, 2019	TCC Meeting	Woodland Police Dept.
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Assignments from May 8, 2019	Status
Emmerson/Peterman: Report WDOT pollinator information to the TCC at the May 8, 2019 meeting.	<b>Complete 5/8/19</b>

Parking Lot Items	Status
Emmerson/McCune: Contact PacifiCorp's properties department to discuss further TNC detail and report to the TCC at the next meeting.	<b>In progress</b>
Emmerson: Email Dr. Margaret Wild about a field tour and elk management discussion sometime this summer.	<b>In progress</b>

Kendel Emmerson (PacifiCorp) called the meeting to order at 9:05am. Emmerson reviewed the agenda and asked the TCC if there were any changes/additions. No additions were requested.

The TCC reviewed the April 10, 2019 meeting notes and approved at 9:10am without change.

**Public Comment Opportunity:**

None

**Land Acquisition Update (CONFIDENTIAL)**

Seller is reviewing shoreline mgmt. plan; loggers asking for extension to November; seller does not want the extension.

Title review is ongoing. No additional update at this time.

Additional detail around this topic is considered confidential and proprietary and not for public viewing.

**Other (CONFIDENTIAL)**

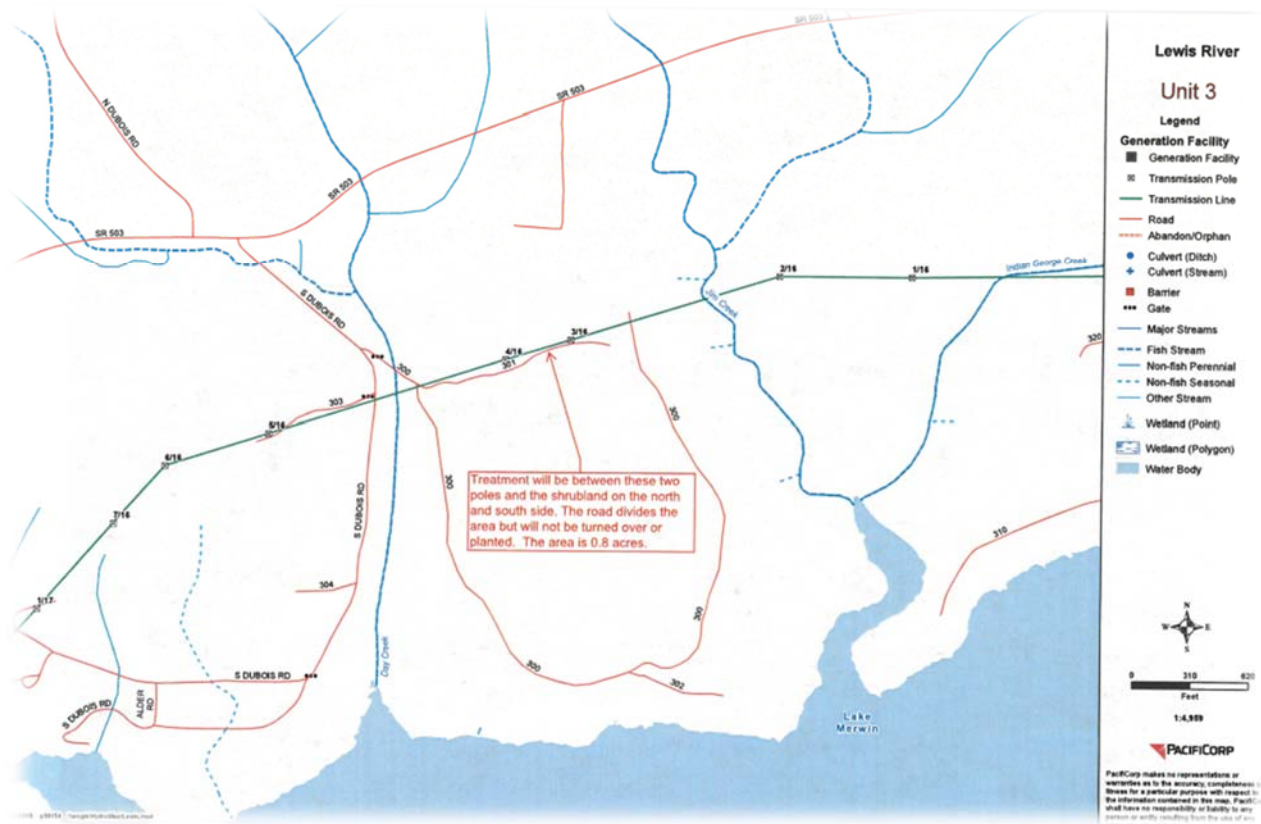
Randy Shaw (TNC) was invited to attend the August TCC meeting and will have further discussion with WDFW regarding holding title.

Additional detail around this topic is considered confidential and proprietary and not for public viewing.

### Report on Pollinator Information along Transmission Lines

Summer Peterman (PacifiCorp) reviewed three (3) areas potentially suitable for pollinators (Units 3, 6 & 12) and the details are provided below for each unit. A cultural review of plots in units 3 & 6 have been requested to confirm our ability to till the soil in the plots to prep for planting. We are researching our ability to use drill seeding assuming it will result in better growth rate. Unit 12 is still under review along with Hanley Curry. We will treat the area with herbicides and plant with the drill seeder without turning over the soil. It will be a good experiment to determine if we can be successful using this method reducing the costs of treatment. It was determined to be beneficial to use flower seed mix on each plot and maintain existing shrubs surrounding the plots allowing for a diverse pollinator area.

Peterman confirmed that WDOT uses a spray, till and broadcast seed method for treating their project areas.





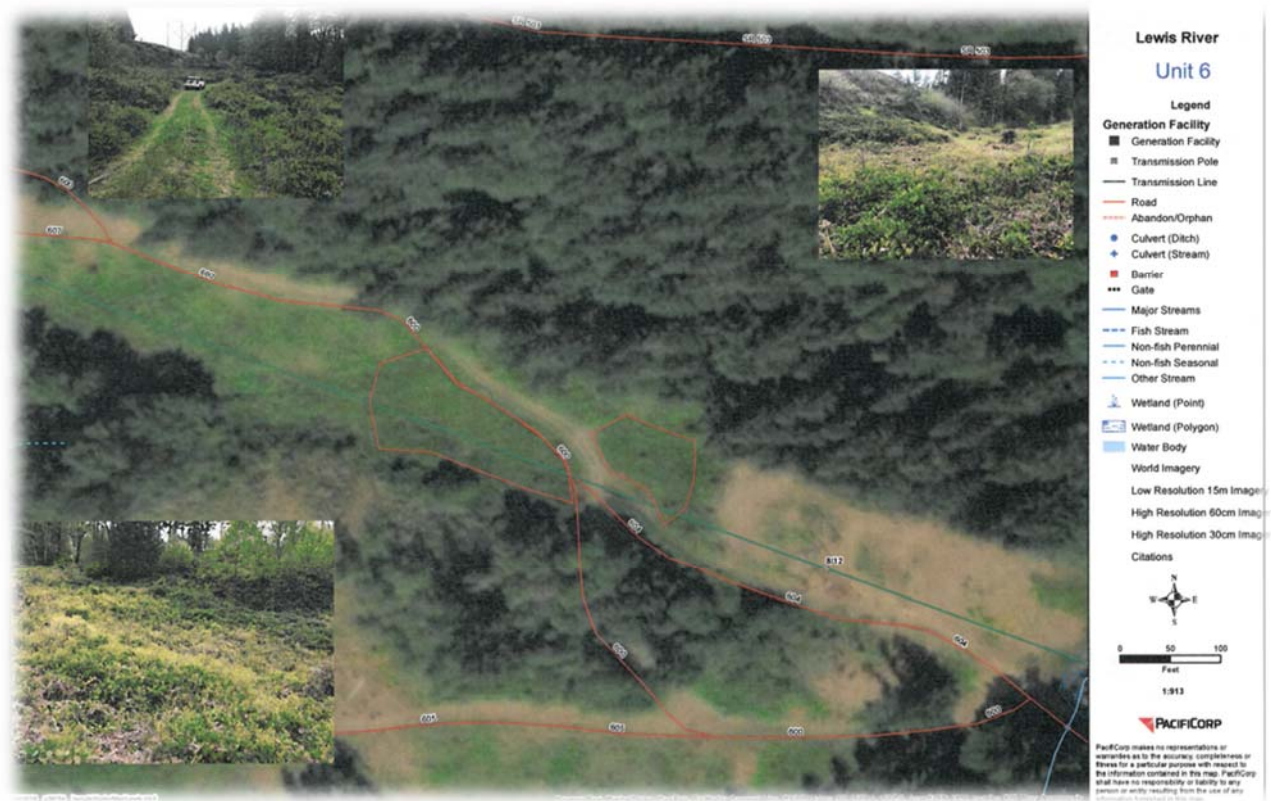
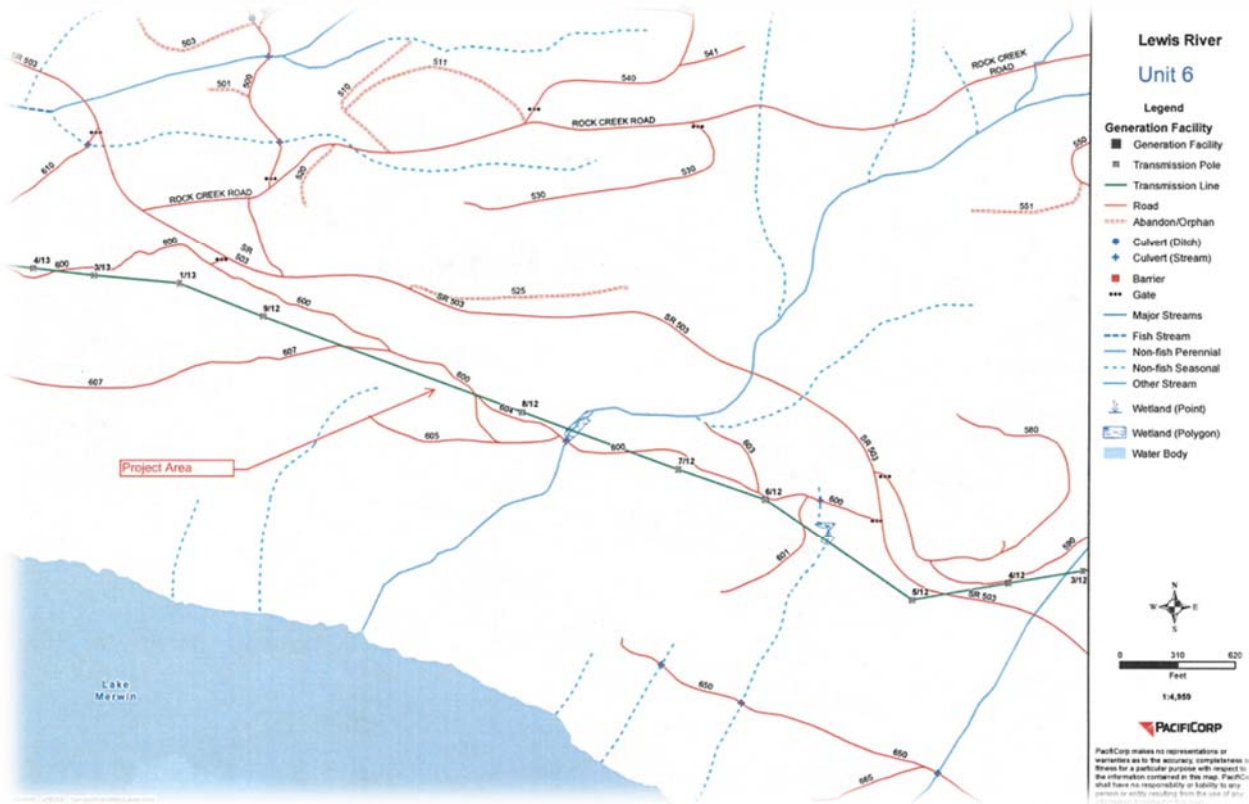
### Unit 3

Treatment area size: 0.8 acres

Current Species: grasses, bracken fern, snowberry, Oregon grape, Himalayan blackberry

This part of the project will be between the two powerline poles (4/16 and 3/16) and the shrubland on the north and south end. It will stay north of the short road (above the berm, see black arrow on Imagery attachment). Once the berm flattens out around the main road (at the intersection) the project will extend to the shrubland. We will not be turning over the road or going into the shrubland.





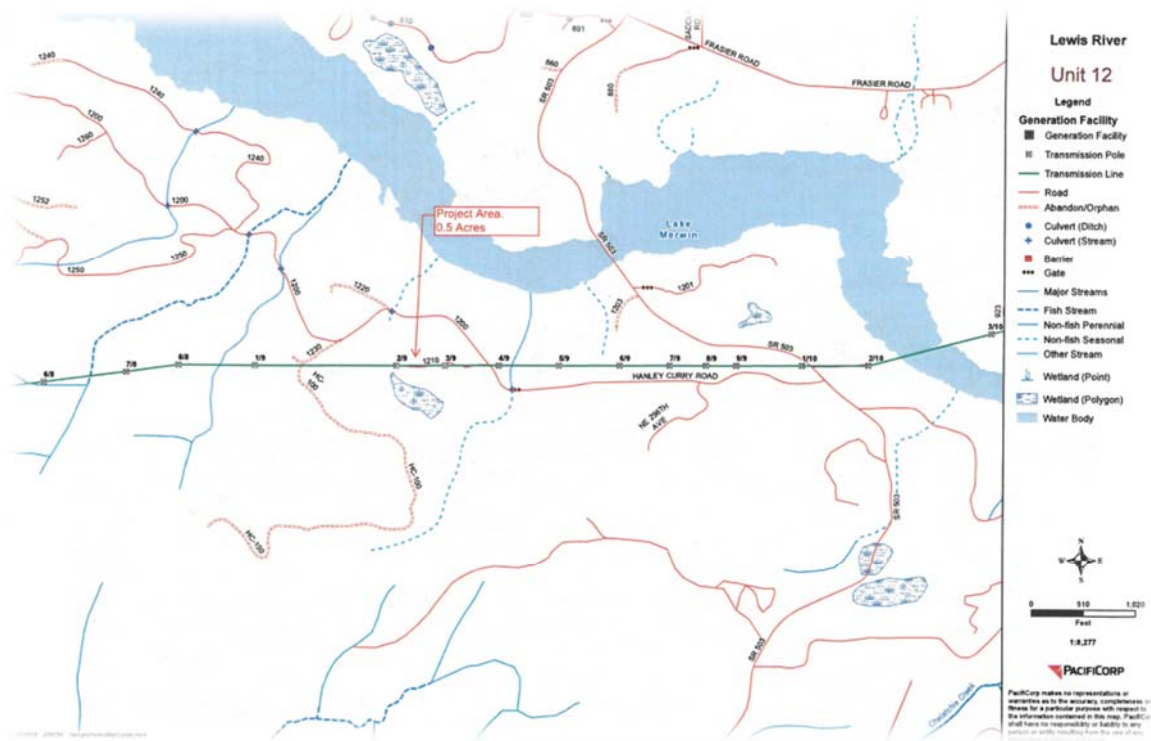
## Unit 6

Treatment area size: 0.7 acres (two sections 0.5 and 0.17)

Current Species: Oregon grape, salal, snowberry, hazel, bracken fern

This area will be in the flat areas on both sides of the 600 road. The area to be treated here are the flat areas in the red circles. This area consists of a heavy Oregon grape and salal. Picture at the top right shows the stump we will consider the lowest spot to be the edge of the treated area and won't go up in elevation from there. Picture bottom left shows the vegetation to be turned over and where the shrubland edge will be. Picture in the upper left shows the road (which will not be turned over) that goes between the two plots. The NW plot will be in the flat area before the hill going up to the powerline pole.





## Unit 12

Treatment area size: 0.5 acres

Current Species: grasses, bracken fern, very little Himalayan blackberry

A seed drill will be used at this site.

### Upper Hanley-Curry Meadow Options

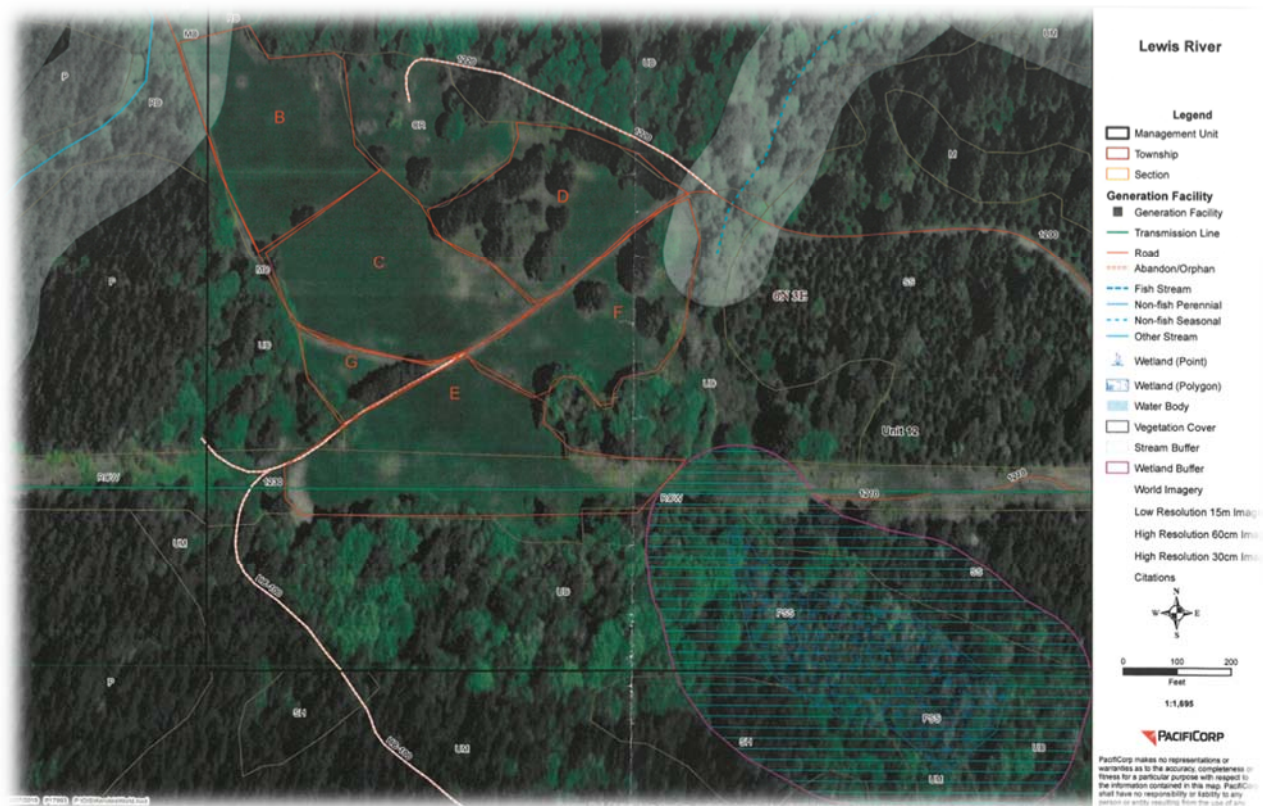
Emmerson informed the TCC attendees that she is waiting to hear if PacifiCorp can drill seed.

Section B (2.0 acres) & F (1.8 acres) – Will require a soil survey to determine the extent of the wetland. We will plant the area with shrubs giving a visual indicator for the area that will not be mowed in the future. Seed will be determined by availability, deer preference, and price.

Section C (2.3 acres) – We determined this section was in the worst shape and will consider seeding with low shrub mix or planting shrub seedlings.

Section B, D (1.9 acres), E (2.9 acres), G (.5 acres) and F – plant to grasses & forb mix. We are waiting on cultural approval, but drill seeding is less invasive than tilling and has a high success rate.

The orchard will not be considered part of the project area.



### Speelyai Canal Tree Removal

This canal runs into Yale reservoir; canal is a dam feature currently under the FERC inspection. There is blackberry, scotch broom and trees on the fill slope, which is also WHMP lands. Dam Safety is reevaluating the need for tree removal but will be mowing the other vegetation this summer. Emmerson will keep the TCC updated if tree removal will occur



### **Dr. Margaret Wild Tour Update**

Chilton Logging is using their conference room May 29, 2019 at 6:00pm. The attendees will consist of logger and foresters (a broad-brush representation). If interested please contact Kendel Emmerson ([kendel.emmerson@pacificorp.com](mailto:kendel.emmerson@pacificorp.com)) for more detail.

### **Cowlitz PUD Devils Backbone Timber Management Contract Update**

The PUD is hoping to get to the loggers for bid next week.

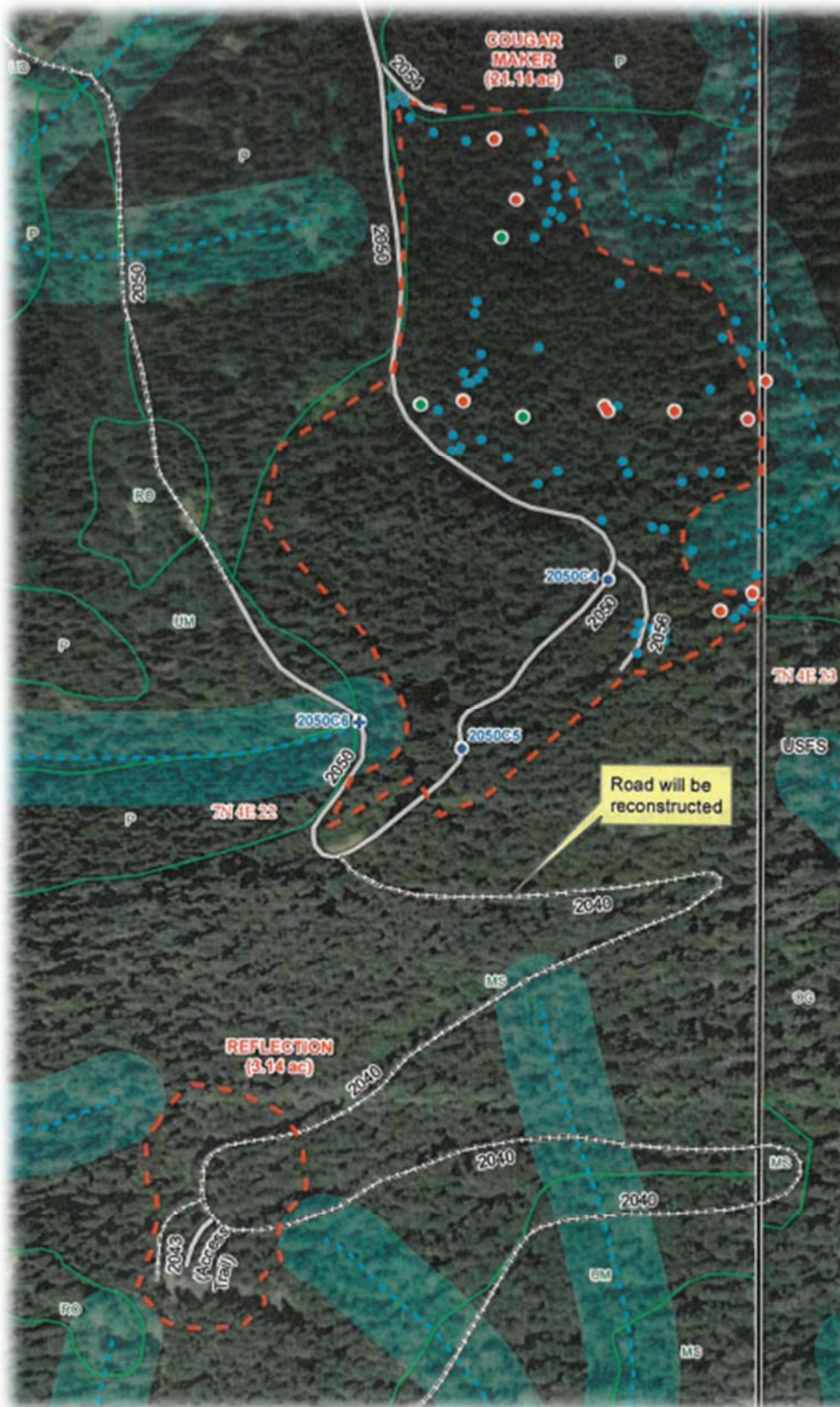
### **Unit 20 – 2019 Proposed Harvest Areas**

Due to low meeting attendance, the field tour portion of this meeting was cancelled. However, the following map and vegetation cover:forage model is provided below or within **Attachment A**. There is quite a bit of elk use, elk area eating sword fern, not any vegetation on the ground. Rehabilitate the road that is currently overgrown by alders. The WHMP goal for Unit 20 is 60/40, however, due to the size of buffers, steep slope, and poor access, there is less than 20% ground that is suitable for timber harvest. It is unlikely that C:F goal would ever be achieved. Presently the C:F is 91:9 and following harvest it is estimated to be 89/11.

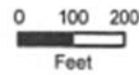
2019 harvest will take place approximately August 2019.

# WHMP - Unit 20

## 2019 Proposed Harvest Areas



- Leave Tree**
  - SNAG
  - GRT
  - WRT
- ▭ Proposed Harvest
- ▬ Road
- ⋯ Abandon/Orphan Rd
- ▭ Section
- ▭ PacifiCorp Land
- - - Non-fish Seasonal
- ▭ Stream Buffer
- Ditch Culvert
- + Stream Culvert



1:3,400



04/29/2019  
U:\Projects\Hydro\Lewis\Harvest\Unit  
20\Aerial Map.mxd

## MU 20

Present C:F 91:9

WHMP Goal C:F 60:40

Post-Harvest estimated C:F 89:11

Permanent Forage goal is 5% and presently 9.8%. No permanent forage recommended

Total Acres =934.7

Manageable Acres = 144.2

Percent of Manageable acres = 15%

### Manageable acres are defined as follows:

This is the total amount of acres within the management unit that are available to manage for cover:forage. This is calculated by taking the total acres of the MU and subtracting acres of that are classified as **Reserved Habitat Acres**, **Restricted Acres**, **No Access** and **Marginal Access**.

**Reserved Habitat Acres** = VCTs that are not suitable for forestry management or timber harvest are not allowed, such as OW and OG.

**Restricted Acres** = Acres within WHMP buffers (e.g. riparian, wetlands, shoreline, raptor nest, bald eagle roosting staging areas), **Priority Mature Stand**, or **Conservation Covenants**.

**No Access** = Areas that are inaccessible due to location, size of suitable acres, and slope. Suitable acres that are  $\geq 1000$  feet from PacifiCorp-owned road (this does not include orphaned or abandoned roads, or secondary highways) will be considered to have No Access. Suitable Acres that  $\leq 2.0$  acres in size and  $\geq 1000$  feet from the nearest suitable acres will be classified as No Access. Suitable acres that  $>60\%$  slope will be classified as No Access.

**Marginal Access** = This include all areas that are difficult to access because the suitable acres are between 40-60% slope and/or  $>500$  feet from a PacifiCorp-owned road, not including orphaned or abandoned roads, or secondary highway.

THA boundaries were largely driven by topography and riparian buffers.

### **Cougar Maker 21.14 acre clear cut**

Require 169 leave trees. Have already marked 83 of the trees

Vegetation cover type is Mid-successional conifer forest.

Primarily dominated with hemlock have actually marked Douglas-fir as green reserve tree.

Believe prior timber harvest was high grade timber selection and then allowed to self-seed. This why there are no Douglas-fir and large western hemlocks.

Some opportunity for retaining large logs still need to be mapped.

Likely to be replanted with hemlock, noble fir, and Douglas-fir. Red alder only grows along the roads and is not expected to do well due to snow pack and wind.

### **Reflection Point 3.14 acre clearcut**

Vegetation cover type is Mid-successional conifer forest.

Trees conifer species more varied but root-rot pockets.

Will plant with the same only potentially pine around the board.

Requires 25 leave trees.

## **Agenda items for June 12, 2019**

- Review May 8, 2019 Meeting Notes
- Land Acquisition Update (**Confidential**)
- TNC Update (**Confidential**)
- Study/Work Product Updates
- Devils Backbone Timber Mgmt. Contract Update
- Tour Units 34, 36 & 39, time permitting

## **Next Scheduled Meeting**

June 12, 2019
Location: Woodland Police Station, Conference Room



**Attachments:**

- May 8, 2019 Meeting Agenda
- **Attachment A** – Cover:Forage Model, updated January 28, 2019

*Adjourn 10:00am*



Updated 1/28/19		MANAGEMENT UNITS																												
	TOTAL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
<b>COVER</b>																														
Old Growth (>26" dbh)	468.8		33.9					30.0				23.1	15.1			8.8	35.6	17.9	6.6		12.7	3.8	6.9	13.1					6.1	
Mature Conifer (21-26" dbh)	696.3	3.6	17.5	4.3	30.3		75.0			23.9	8.3	31.0	29.0	51.5	49.5	35.3	36.5	48.0	37.3		31.1	31.8	26.8	39.0		5.3		6.2		
Mature Conifer (Thinned) > than 5 years since commercially thinned	110.1		5.1	5.9		15.3	62.2					4.8	3.1			11.6														
Mid-Successional Conifer (16-20" dbh)	2384.6	25.5	32.4	57.5	26.3	130.3	200.4	62.9	61.2	55.1	58.6	8.0	11.7	60.9	6.0	60.7		86.4	114.0	54.4	146.7	44.1	151.1	13.5		1.5	144.3	140.7	73.9	
Mid-Successional Conifer (Thinned) > than 5 years since commercially thinned	138.1	10.9			2.2	28.5	51.8	10.1	2.5	11.0																			21.0	
Upland Mixed (conifer 30-70%)	2144.5	20.2	76.7	83.9	84.3	18.6	119.9	233.0	138.4	55.9	38.2	81.6	101.6	86.4	18.4	120.6	130.4	78.3	98.5	12.8	125.5	41.8	85.3	58.9	4.0	25.8	33.4		70.6	
Upland Mixed (Thinned) > than 5 years since commercially thinned	5.3							3.4				1.9																		
Young Upland Mixed	33.4							3.2			8.7				8.1		7.0				6.4									
Pole Conifer (8-15" dbh)	2904.1	14.4		22.5	55.7	21.8	13.7	32.1	7.4	73.1	354.0	57.1	55.9			92.8	104.2			6.8	432.9					53.2		22.7	8.0	
Pole Conifer (Thinned); (8-15" dbh) > 5 years since commercially thinned	202.9		34.5	41.3	14.8		72.3	31.3	4.4								4.4													
Lodge Pole Pine	71.7																					65.1			6.6					
Riparian Mixed	214.2			13.8	7.5		11.5	5.5	7.7	10.4			1.0			40.2					82.2	3.8			2.4	10.2	10.1			
<b>subtotal</b>	<b>9373.9</b>	<b>74.6</b>	<b>200.2</b>	<b>229.1</b>	<b>220.9</b>	<b>214.4</b>	<b>606.8</b>	<b>411.5</b>	<b>221.5</b>	<b>229.4</b>	<b>467.8</b>	<b>207.5</b>	<b>217.4</b>	<b>198.7</b>	<b>82.1</b>	<b>370.1</b>	<b>318.1</b>	<b>230.6</b>	<b>256.4</b>	<b>74.0</b>	<b>837.5</b>	<b>190.4</b>	<b>270.1</b>	<b>124.5</b>	<b>12.9</b>	<b>1.5</b>	<b>239.0</b>	<b>184.3</b>	<b>129.9</b>	<b>78.6</b>
<b>FORAGE</b>																														
Young Upland Deciduous	42.3				14.4	2.5	1.0					1.3	1.0	2.8		3.5	12.1		2.5										1.2	
Mature Conifer (Thinned) < 5 years since commercially thinned	21.7															1.6													20.1	
Pole Conifer (Thinned); (8-15" dbh) < 5 years since commercially thinned	94.7	7.8				30.4					4.0					31.2				21.2										
Upland Mixed (Thinned) < than 5 years since commercially thinned	4.1																			4.1										
Mid-Successional Conifer (Thinned) < than 5 years since commercially thinned	1.7								1.7																					
Riparian Shrub	4.2																								4.2					
Riparian Deciduous	173.3	5.6	2.7			11.3	11.0	0.5	2.0		17.5		2.3			8.8	4.0	25.7				5.7			33.5	21.4		1.3	7.4	
Upland Deciduous (>70% deciduous)	1535.1		7.8	18.8	34.4	22.8	39.1	10.9	1.6	71.0	20.3	118.2	92.1	0.9	11.4	62.9	32.3	90.7	90.7	48.7	22.8	123.1	246.8	42.1	10.2	50.3	212.7	30.9		3.9
Oak Woodland	10.3	0.6				2.0	7.3	0.4																						
Right-Of-Way	235.9	5.5	18.0	18.1	16.3	3.0	32.9	4.7		13.7				11.8			18.2	4.6	27.9	3.5	14.0	21.1				19.6				
Recreation	53.1						1.6		3.6	0.3	0.4			1.7					1.8	1.2		42.5								
Meadow	123.1			5.8			0.6	4.4	2.5		16.1	2.5	17.4		2.5	3.6		28.0	3.7		3.4				2.0	6.6	2.3		1.0	
Shrub	53.5			5.9	3.7	3.5	3.2					1.2			2.9												3.6			
Orchard	9.1						1.3			1.1	1.3	0.9	2.4			2.2														
Agriculture	30.2										30.2																			
Seedling / Sapling (5-8" dbh)	1622.6	10.2	24.7	12.6	24.6	50.9	73.4	62.4	23.1	24.4		23.1	71.6			1.2	8.9	118.8				13.0		11.7			28.7	14.8	3.6	
Seedling / Sapling (New) (<4"dbh)	1444.6	26.6		7.0	31.2	17.3	38.9	28.7	13.1		53.3	28.8			20.4	30.7		14.4	24.8	8.2	27.8						16.7			
Wetland (Palustrine Wetland)	90.2						0.2		5.5	3.7	8.2	8.0	2.1			1.0	1.5	0.4				30.9		0.1	4.2		11.3			
<b>subtotal</b>	<b>5549.7</b>	<b>56.3</b>	<b>53.2</b>	<b>68.2</b>	<b>124.7</b>	<b>143.7</b>	<b>210.3</b>	<b>112.1</b>	<b>53.1</b>	<b>114.2</b>	<b>152.6</b>	<b>183.7</b>	<b>202.4</b>	<b>2.6</b>	<b>40.8</b>	<b>154.3</b>	<b>64.4</b>	<b>286.3</b>	<b>149.3</b>	<b>86.9</b>	<b>80.9</b>	<b>223.2</b>	<b>246.8</b>	<b>54.0</b>	<b>54.1</b>	<b>126.0</b>	<b>247.3</b>	<b>65.8</b>	<b>7.1</b>	<b>11.3</b>
<b>COVER &amp; FORAGE TOTAL</b>		<b>130.9</b>	<b>253.4</b>	<b>297.3</b>	<b>345.6</b>	<b>358.1</b>	<b>817.1</b>	<b>523.6</b>	<b>274.6</b>	<b>343.6</b>	<b>620.3</b>	<b>391.2</b>	<b>419.8</b>	<b>201.3</b>	<b>122.9</b>	<b>524.3</b>	<b>382.5</b>	<b>516.9</b>	<b>405.7</b>	<b>160.9</b>	<b>918.5</b>	<b>413.6</b>	<b>517.0</b>	<b>178.4</b>	<b>67.0</b>	<b>127.5</b>	<b>486.3</b>	<b>250.1</b>	<b>137.0</b>	<b>89.9</b>
<b>NEITHER</b>																														
Lacustrine Unconsolidated Bottom	0.0																													
Riverine Unconsolidated Shore	25.3															3.0						0.1			14.2				2.0	
Sparse veg.; Disturbed; Developed	35.0		0.6				0.1	1.4	1.5	2.1	4.5	1.2		1.1				0.9				0.5			5.4	9.0	0.5	3.6	1.3	
Highway ROW	79.9		4.2		2.9	0.7	8.1		2.4				2.0					0.3	9.8	1.3	4.9	5.9		1.8	1.8	6.7	5.2	5.3		
Rock Outcropping and Talus	39.8					1.6	3.0	1.7			0.7			2.3						1.9	11.4	0.3							5.7	
Residential	6.3								0.6	1.6									1.8	2.0			0.3							
Open Water	47.4					0.2				1.6	20.2	7.0				0.5	1.2					2.8		0.1	3.6	6.7			0.2	
<b>subtotal</b>	<b>233.7</b>	<b>0.0</b>	<b>4.8</b>	<b>0.0</b>	<b>2.9</b>	<b>2.3</b>	<b>11.4</b>	<b>3.1</b>	<b>4.5</b>	<b>5.2</b>	<b>25.5</b>	<b>8.2</b>	<b>2.0</b>	<b>3.3</b>	<b>0.0</b>	<b>0.0</b>	<b>3.5</b>	<b>4.2</b>	<b>11.8</b>	<b>3.3</b>	<b>16.3</b>	<b>10.0</b>	<b>0.0</b>	<b>0.1</b>	<b>24.9</b>	<b>17.4</b>	<b>7.2</b>	<b>5.2</b>	<b>16.8</b>	<b>1.3</b>
<b>TOTAL ACRES</b>	<b>15,157.3</b>	<b>130.9</b>	<b>258.1</b>	<b>297.3</b>	<b>348.5</b>	<b>360.5</b>	<b>828.5</b>	<b>526.7</b>	<b>279.1</b>	<b>348.8</b>	<b>645.8</b>	<b>399.4</b>	<b>421.8</b>	<b>204.6</b>	<b>122.9</b>	<b>524.3</b>	<b>386.1</b>	<b>521.1</b>	<b>417.5</b>	<b>164.2</b>	<b>934.7</b>	<b>423.6</b>	<b>517.0</b>	<b>178.5</b>	<b>92.0</b>	<b>145.0</b>	<b>493.5</b>	<b>255.2</b>	<b>153.8</b>	<b>91.1</b>
<b>MANAGEABLE ACRES</b>	<b>5,308.9</b>	<b>70.1</b>	<b>79.8</b>	<b>113.3</b>	<b>181.6</b>	<b>180.8</b>	<b>373.9</b>	<b>119.2</b>	<b>119.4</b>	<b>195.3</b>	<b>252.9</b>	<b>139.0</b>	<b>194.8</b>	<b>9.7</b>	<b>17.1</b>	<b>154.0</b>	<b>81.2</b>	<b>190.4</b>	<b>141.2</b>	<b>103.7</b>	<b>144.2</b>	<b>110.4</b>	<b>8.0</b>	<b>10.0</b>	<b>7.6</b>	<b>26.0</b>	<b>231.8</b>	<b>91.4</b>	<b>76.6</b>	<b>0.0</b>
<b>PERCENT OF MANAGEABLE ACRES</b>	<b>35%</b>	<b>54%</b>	<b>31%</b>	<b>38%</b>	<b>52%</b>	<b>50%</b>	<b>45%</b>	<b>23%</b>	<b>43%</b>	<b>56%</b>	<b>39%</b>	<b>35%</b>	<b>46%</b>	<b>5%</b>	<b>14%</b>	<b>29%</b>	<b>21%</b>	<b>37%</b>	<b>34%</b>	<b>63%</b>	<b>15%</b>	<b>26%</b>	<b>2%</b>	<b>6%</b>	<b>8%</b>	<b>18%</b>	<b>47%</b>	<b>36%</b>	<b>50%</b>	<b>0%</b>
<b>COVER / FORAGE RATIO</b>		<b>0.57</b>	<b>0.79</b>	<b>0.77</b>	<b>0.64</b>	<b>0.60</b>	<b>0.74</b>	<b>0.79</b>	<b>0.81</b>	<b>0.67</b>	<b>0.75</b>	<b>0.53</b>	<b>0.52</b>	<b>0.99</b>	<b>0.67</b>	<b>0.71</b>	<b>0.83</b>	<b>0.45</b>	<b>0.63</b>	<b>0.46</b>	<b>0.91</b>	<b>0.46</b>	<b>0.52</b>	<b>0.70</b>	<b>0.19</b>	<b>0.01</b>	<b>0.49</b>	<b>0.74</b>	<b>0.95</b>	<b>0.87</b>
Lewis River Wildlife Habitat Management Plan recommended ratio (=/-5%)		50:50	60:40	50:50	60:50	60:40	50:50	50:50	55:45	50:50	50:50	60:40	60:40	85:15	70:30	70:30	70:30	50:50	50:50	60:40	60:40	NSO	NSO	70:30	NSO	15:85	70:30	70:30	50:50	50:50
Acres to achieve 5% permanent forage		3.51	3.99	5.66	9.08	9.04	18.70	5.96	5.97	9.77	12.65	6.95	9.74	0.49	0.86	7.70	4.06	9.52	7.06	5.19	7.21		0.50		1.30	11.59		3.83	0.00	
Current Permanent Forage Acres		6.1	18.0	29.8	20.1	8.5	45.4	9.5	8.0	18.5	55.8	12.5	33.7	0.0	5.4	5.8	19.2	34.1	32.0	3.5	17.4		0.1		37.5	5.9	0.0	1.0	0.0	
Meets (Y/N) permanent Forage goal		Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y	N	Y		N		Y	N		N		
Most recent Timber Harvest		2017	2002	2016	2013	2004	2012	2017	2017	2002	2014	2010	2005		2017	2018	1992	2010	2010	2016	2013						2012	2008		2011
Percent of SS/SS1 in Management Unit		28%	10%	7%	16%	19%	14%	17%	13%	7%	8%	13%	17%	0%	17%	6%	2%	26%	6%	5%	4%	0%	0%	7%	0%	12%	6%	6%	2%	0%



Updated 1/28/19		TOTAL	30	31-1	31-2	31-3	31-4	31-5	31-6	31-7	31-8	31-9	31-12	31-13	31-14	31-15	31-16	32	33	34	35	36	37	38	39	
<b>COVER</b>																										
4	Old Growth (>26" dbh)	468.8		6.1	8.5								0.1	0.2			14.8	0.8		8.6					215.9	
5	Mature Conifer (21-26" dbh)	696.3	9.1	10.0	5.1				1.5	1.0	0.4				5.3							1.2	3.5	38.1		
6	Mature Conifer (Thinned) > than 5 years since commercially thinned	110.1																		2.0						
7	Mid-Successional Conifer (16-20" dbh)	2384.6								4.7		15.0					1.5	3.2	299.0		56.1	38.8	67.5	3.2	67.7	
8	Mid-Successional Conifer (Thinned) > than 5 years since commercially thinned	138.1																								
9	Upland Mixed (conifer 30-70%)	2144.5	37.6	8.5	15.7		4.2			10.3								6.1	11.4					7.7		
10	Upland Mixed (Thinned) > than 5 years since commercially thinned	5.3																								
11	Young Upland Mixed	33.4																								
12	Pole Conifer (8-15" dbh)	2904.1																	39.5	599.4	681.7	77.6	71.4		6.1	
13	Pole Conifer (Thinned); (8-15" dbh) > 5 years since commercially thinned	202.9																								
14	Lodge Pole Pine	71.7																								
15	Riparian Mixed	214.2			0.7			1.1	0.3									5.9								
16	<b>subtotal</b>	9373.9	46.7	24.6	30.0	0.0	4.2	1.1	1.9	16.1	0.4	15.0	0.1	0.2	5.3	14.8	2.2	15.2	360.5	599.4	737.8	117.6	142.5	264.9	73.8	
<b>FORAGE</b>																										
18	Young Upland Deciduous	42.3																								
19	Mature Conifer (Thinned) < 5 years since commercially thinned	21.7																								
20	Pole Conifer (Thinned); (8-15" dbh) < 5 years since commercially thinned	94.7																								
21	Upland Mixed (Thinned) < than 5 years since commercially thinned	4.1																								
22	Mid-Successional Conifer (Thinned) < than 5 years since commercially thinned	1.7																								
23	Riparian Shrub	4.2																								
24	Riparian Deciduous	173.3			0.6		0.3											3.9	3.5						4.4	
25	Upland Deciduous (>70% deciduous)	1535.1		6.6	2.6	3.6												5.0								
26	Oak Woodland	10.3																								
27	Right-Of-Way	235.9																2.9								
28	Recreation	53.1																								
29	Meadow	123.1																	3.2		0.7	1.3		11.7	3.9	
30	Shrub	53.5																		24.6	5.0					
31	Orchard	9.1																								
32	Agriculture	30.2																								
33	Seedling / Sapling (5-8" dbh)	1622.6																	310.3			203.2	250.6	96.8	160.0	
34	Seedling / Sapling (New) (<4"dbh)	1444.6																	103.2	50.3	46.6	199.5	161.5	100.3	395.0	
35	Wetland (Palustrine Wetland)	90.2																	5.7	1.8					5.5	
36	<b>subtotal</b>	5549.7	0.0	6.6	3.1	3.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.8	426.0	76.7	52.3	404.0	412.0	213.2	564.4	
37	<b>COVER &amp; FORAGE TOTAL</b>		46.7	31.2	33.1	3.6	4.5	1.1	1.9	16.1	0.4	15.0	0.1	0.2	5.3	14.8	2.2	27.0	786.5	676.1	790.0	521.6	554.5	478.1	638.2	
<b>NEITHER</b>																				0.0	0.0	0.0	0.0	0.0	0	
39	Lacustrine Unconsolidated Bottom	0.0																		0.0	0.0	0.0	0.0	0.0	0	
40	Riverine Unconsolidated Shore	25.3		0.5															3.6	0.0	0.0	0.0	0.0	1.8	0	
41	Sparse veg.; Disturbed; Developed	35.0				0.7												0.8		0.0	0.0	0.0	0.0	0.0	0	
42	Highway ROW	79.9		0.5															16.1	0.0	0.0	0.0	0.0	0.0	0	
43	Rock Outcropping and Talus	39.8																		0.0	9.0	0.1	2.1	0.0	0	
44	Residential	6.3																		0.0	0.0	0.0	0.0	0.0	0	
45	Open Water	47.4		0.4														2.9	0.0	0.0	0.0	0.0	0.0	0.0	0	
46	<b>subtotal</b>	233.7	0.0	1.5	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	19.7	0.0	9.0	0.1	2.1	1.8	0.0	
47	<b>TOTAL ACRES</b>	15,157.3	46.7	32.7	33.1	4.3	4.5	1.1	1.9	16.1	0.4	15.0	0.1	0.2	5.3	14.8	2.2	30.6	806.2	676.1	799.0	521.7	556.6	479.9	638.2	
48	<b>MANAGEABLE ACRES</b>	5,308.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	233.0	311.5	352.6	223.8	226.6	146.0	391.4	
49	<b>PERCENT OF MANAGEABLE ACRES</b>	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	29%	46%	44%	43%	41%	30%	61%	
50	<b>COVER / FORAGE RATIO</b>		1.00															0.56	0.46	0.89	0.93	0.23	0.26	0.55	0.12	
51	Lewis River Wildlife Habitat Management Plan recommended ratio (±5%)		NSO	RB	RB	RB	RB	RB	RB	RB	RB	RB	RB	RB	RB	RB	RB	RB	RB	30:70	50:50	50:50	50:50	50:50	70:30	50:50
52	Acres to achieve 5% permanent forage																		11.65	15.57	17.63	11.19	11.33	7.30	19.57	
53	Current Permanent Forage Acres																		8.9	26.4	5.6	1.3	0.0	11.7	9.4	
54	Meets (Y/N) permanent Forage goal																		N	Y	N	N	N	Y	N	
55	Most recent Timber Harvest																		2013	2018	2015	2016	2013	2016	2016	
56	Percent of SS/SS1 in Management Unit		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	51%	7%	6%	77%	74%	41%	87%



Cover:Forage Model Instructions by ROW			
ROW(S)	ROW Title	Instructions	Data Maintenance
ROW 1	Update	Last date that GIS data was inputted into spreadsheet	Update manually as needed
ROW 3-16	COVER	These are the vegetation cover types (VCT) that provide cover habitat	Acres provided by GIS and subtotal are formulated
ROW 17-36	FORAGE	These VCT that provide forage habitat	Acres provided by GIS and subtotal are formulated
ROW 37	COVER AND FORAGE TOTAL	These are total acres of cover and forage combined.	This total is formulated
ROW 40-46	NEITHER	These vegetation cover types do not provide cover nor forage and so are not included in the cover:forage calculation.	Acres provided by GIS and subtotal are formulated
ROW 47	TOTAL ACRES	These are the cover, forage, and neither acres combined and should be equal to total acres within the management unit (MU)	This total is formulated
ROW 49	MANAGEABLE ACRES	<p>This is the total amount of acres within the management unit that are available to manage for cover:forage. This is calculated by taking the total acres of the MU and subtracting acres of that are classified as <b>Reserved Habitat Acres, Restricted Acres, No Access and Marginal Access.</b></p> <p><b>Acres</b> = VCTs that are not suitable for forestry management or timber harvest are not allowed, such as OW and OG. <b>Reserved Habitat</b></p> <p><b>Restricted Acres</b> = Acres within WHMP buffers (e.g. riparian, wetlands, shoreline, raptor nest, bald eagle roosting staging areas), Priority Mature Stand, or Conservation Covenants.</p> <p><b>No Access</b> = Areas that are inaccessible due to location, size of suitable acres, and slope. Suitable acres that are <math>\geq 1000</math> feet from PacifiCorp-owned road (this does not include orphaned or abandoned roads, or secondary highways) will be considered to have No Access. Suitable Acres that <math>\leq 2.0</math> acres in size and <math>\geq 1000</math> feet from the nearest suitable acres will be classified as No Access. Suitable acres that <math>&gt;60\%</math> slope will be classified as No Access.</p> <p><b>Marginal Access</b> = This include all areas that are difficult to access because the suitable acres are between 40-60% slope and/or <math>&gt;500</math> feet from a PacifiCorp-owned road, not including orphaned or abandoned roads, or secondary highway.</p>	Acres provided by GIS
ROW 50	PERCENT OF MANAGEABLE ACRES	Total amount of Manageable Acres divided by the total MU acres. This provides the percent of acres available to manage for cover:forage habitat.	This total is formulated
ROW 50	COVER:FORAGE RATIO	The total acres of COVER(ROW 17) divided by the COVER AND FORAGE TOTAL (ROW 39). All cells highlighted in Orange are $> 5\%$ of the WHMP recommended ratio (ROW 54). All cells highlighted in Yellow are $< 5\%$ of the WHMP recommended ratio (ROW 54). All cells with no highlighting are within $5\%$ of the WHMP recommended ratio (ROW 54) or no WHMP recommendation has been determined.	This total is formulated
ROW 51	Lewis River Wildlife Habitat Management Plan Recommended Cover:Forage Ratio	COVER:FORAGE ratios that were provided in the Lewis River Wildlife Habitat Management Plan Forestry Management Chapter Section 12.5.2. NSO = the entire MU is within a Northern Spotted Owl circle and cannot be managed for cover:forage. RB = the entire MU is within a riparian/shoreline buffer and cannot be managed for cover:forage. C:F ratio in red mean the C:F ratio was determined after the WHMP because lands were acquired after license issue, revised due to additional acres added to the MU after the license, or WHMP never assigned a ratio.	These are inputted from the WHMP and should not change
ROW 52	Acres to achieve 5% permanent forage	This is determined by finding 5% of the total manageable acres (ROW 50) for all management units that have a c:f recommended ratio	This total is formulated
ROW 53	Current Permanent Forage	This is determined by the sum of VCTs that regardless of succession or management activities provide forage, which include the following VCT: OW, ROW, MD, SH, AG, OR, and PW are rows are highlighted green	This total is formulated
ROW 54	Meets (Y/N) permanent Forage goal	If ROW 55 $>$ then ROW 54 then Yes if ROW 55 $<$ then ROW 54 then no.	Manually updated
ROW 55	Most Recent Timber Harvest	This is the year of the most recent year that timber harvest was completed.	Manually updated
ROW 56	Percent SS/SS1 of Management Unit	WHMP Section 12.5.1 Forestland Best Management Practices Page 12-10 Timber Harvest Area Scheduling and Planning bullet 3 "Distribute harvest units throughout the Management Unit in time to avoid having more than 25 percent of the clearcut areas within 10 years of age" . If the percentage is greater than 25% need to determine the amount acres less than 10 years in age before scheduling a timber harvest. $MU \geq 25\%$ are highlighted in orange and $MU < 25\%$ in yellow.	This total is formulated. The highlighting needs to be updated.