

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

**Date & Time:**            **Wednesday, February 7, 2018  
9:00 a.m. – 11:15 a.m.**

**Place:**                    **Merwin Hydro Control Center  
105 Merwin Village Court  
Ariel, WA 98603**

**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; 12/13/17 Meeting Notes</li><li>➤ Review and Accept November Agenda &amp; 12/13/17 Meeting Notes</li></ul>
9:15 a.m.	Utilities WHMP 2018 Annual Plans and 2017 Reports - Review
10:30 a.m.	Review Land Acquisition Purchase and Sale Agreement <b>(Confidential)</b>
10:45 a.m.	Project Updates <ul style="list-style-type: none"><li>➤ 10.8.5.5 Mitigation Impacts to Wildlife Fund</li><li>➤ 2017 Year-end Financial Reporting</li></ul>
11:00 a.m.	Next Meeting's Agenda <ul style="list-style-type: none"><li>➤ 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></li></ul>
<b>11:15 a.m.</b>	<b><i>Meeting adjourn</i></b>

**Join by Phone**

+1 (503) 813-5252 [Portland, Ore.]  
+1 (801) 220-5252 [Salt Lake City, Utah]  
+1 (855) 499-5252 [Toll Free]

**Conference ID: 8184905**

**FINAL Meeting Notes**  
**Lewis River License Implementation**  
**Terrestrial Coordination Committee (TCC) Meeting**  
**February 7, 2018**  
**Merwin Hydro Control Center**

**TCC Participants Present: (8)**

Bill Richardson, RMEF  
 Kendel Emmerson, PacifiCorp  
 Summer Peterman, PacifiCorp  
 Kim McCune, PacifiCorp  
 Amanda Froberg, Cowlitz PUD  
 Peggy Miller, WDFW  
 Eric Holman, WDFW  
 Erik White, Cowlitz Indian Tribe

**Guest (1)**

Carly Wickham, WDFW

**Calendar:**

March 14, 2017	TCC Meeting	Woodland Police Dept.
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<b>Assignments from February 7, 2018</b>	<b>Status</b>
Froberg: Schedule with the TCC to attend the Devil's Backbone planning meeting; May 2018.	

<b>Assignments from October 11, 2017</b>	<b>Status</b>
Emmerson: To develop a hunting access map for PacifiCorp website that shows closed or restricted hunting areas, roads, and gates.	<b>In progress</b>

<b>Assignments from June 14, 2017</b>	<b>Status</b>
Reynolds: Schedule a conference call with appropriate parties specific to the TNC Conservation Easement.	<b>In progress</b>

<b>Assignments from April 12, 2017</b>	<b>Status</b>
Emmerson/McCune: Contact PacifiCorp's properties department to discuss further TNC detail and report to the TCC at the May meeting.	<b>In progress</b>

<b>Parking Lot Items</b>	<b>Status</b>
WDFW: In regards to 10.3.3, Matching Funds Eagle Island Project the TCC would like a 1-2-page progress report of project status with photos after the grant term expires (12-31-2017).	<b>Provided status update as of 11/8/17</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. Emmerson will add an update on

Unit 1 – Leave Trees and the National Hydro Association’s Outstanding Stewards of Water award application.

The TCC reviewed the December 13, 2017 meeting notes and no changes were requested. The meeting notes were approved without change at 9:15 a.m.

**Public Comment Opportunity:**

None

**Cowlitz PUD Review of 2018 Wildlife Habitat Management Plan (WHMP)**

Amanda Froberg (Cowlitz PUD) emailed an electronic copy of the Swift No. 2 WHMP 2018 (License Year 10) Annual Plan February 5, 2018 for a 30-day review and comment period. Comments are due on or before March 9, 2018. PacifiCorp has posted the draft document to its Lewis River website for viewing at the following link:

[http://www.pacificorp.com/content/dam/pacificorp/doc/Energy\\_Sources/Hydro/Hydro\\_Licensing/Lewis\\_River/li/ar/PUD\\_2018WHMP\\_Draft.pdf](http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/ar/PUD_2018WHMP_Draft.pdf)

Froberg informed the TCC attendees that Appendix C of the document provides the detail for a proposed *Devil’s Backbone Patch Cut Implementation Plan*, which provides detail of the WHMP management goal, objectives, cost and schedule.

Number and size of patches	One, 5-acre patch.
Cost	Total Logging Cost = \$55,360 Sale Prep, and Admin Cost = \$9,000 Post-harvest documentation = \$3,000 Total = \$67,360 (see Task Description, below)
Schedule	Identify and lay out patches in summer, 2018. Fell trees, limb, and pile slash, and create brush piles in early fall (October) 2019 to avoid the northern spotted owl and northern goshawk breeding/fledging seasons. Burn slash piles in winter (December) 2019 when fire hazard is low.

In addition, Froberg reviewed Table 2.1-1: Anticipated 2018 Annual Plan Budget in 2018 dollars.

Table 2.1-1. Anticipated 2018 (Year 10) Annual Plan Budget (2018 dollars).

<b>2018 Budget</b>		
Dec 26, 2017 Annual Payment	\$18,814	
2017 Carry Forward	\$ 19,245	Does not include 2015 - 2017 Timber Fund
Interest on 2017 Ending Balance	\$ 1,581	
Total 2018 Budget	\$ 39,640	
<b>WHMP Activity</b>	<b>Estimated 2018 Cost</b>	<b>Assumptions</b>
Administration	\$5,000	Includes general oversight and accounting, preparing Annual Report and Annual Plan, contracting, maintaining project files, participating in TCC meetings related to implementing Cowlitz PUD's WHMP.
Annual inspection to monitor and manage public access	\$0	Included in invasive plant surveys.
Invasive plant surveys at high priority sites	\$3,850	Includes labor and mileage. 3% increase over 2017.
Invasive plant species control	\$5,000	Includes 2 herbicide applications in 2018.
2018 Timber Management Fund	\$6,585	Defer at least 35% of the annual payment (not including any other carry forward).
Planning for Devil's Backbone Patch Cut	\$9,000	Based on cost estimates in Appendix C.
Estimated cost of management activities	\$29,435	
Estimated amount remaining in 2018 budget at year end	\$10,205	Any funds not spent by year end, plus accrued interest, remain in the WHMP budget to be carried into the following year. <sup>2</sup>
<b>Timber Fund</b>	<b>Balance</b>	
2015 -2017 Timber Fund Carry Forward	\$20,287	
2018 Timber Fund Carry Forward	\$6,585	
Total	\$26,872	
<b>Total Carry Forward to 2019 Timber Fund + Unspent Budget</b>	<b>\$37,077</b>	

<sup>2</sup> TCC members desire that any unspent monies/carry forward be designated for future timber management activities.

Froberg communicated that a planning meeting to identify and lay out patches will take place summer of 2018 and the TCC is welcome to attend.

**PacifiCorp Review of 2017 Wildlife Habitat Management Report (WHMP)**

Kim McCune (PacifiCorp) emailed an electronic copy of the Lewis River WHMP 2017 Annual Report on February 7, 2018 for a 30-day review and comment period. PacifiCorp has posted the draft annual report to its Lewis River website for viewing at the following link:

[http://www.pacificorp.com/content/dam/pacificorp/doc/Energy\\_Sources/Hydro/Hydro\\_Licensing/Lewis\\_River/li/ar/2017\\_WHMP\\_AR\\_Draft\\_Web.pdf](http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/ar/2017_WHMP_AR_Draft_Web.pdf)

Emmerson provided a cursory review of the following:

*4.0 Wetland Habitat Management* - The Himalayan blackberry in Management Unit 25 started to be managed in 2017. The area between Swift Pond and road 2510 was treated in August. Three new wetlands were added to the WHMP in 2017. Assessment of Palustrine Forested Wetlands shrub cover was completed.

*5.0 Riparian* – Himalayan blackberry was treated within stream buffers of timber harvest areas, riparian buffers were measured and flagged. In addition, three snags were created to replace the loss of larger snag.

*6.0 Shrubland* – PacifiCorp conducted a review of the effectiveness of shrubland management actions in 2017. The results are detailed in Appendix E of the Annual Report. In addition, red alder sapling and poles were removed to make a wildlife passage and open up the canopy that has shaded the forest floor.

*7.0 Farmland* – Spring mowing was conducted May 2017 and summer mowing August 2017 in addition to conducting a Savannah sparrow survey in Hamm Fields using an Area Search method.

*8.0 Orchards* – Pruning activities occurred at Upper and Lower Hanley Curry in addition to treating for common periwinkle, thistle, scotch broom, Himalayan blackberry and red alder, where appropriate.

*9.0 Transmission Line Right-of-Way* – All invasive plant species control work was completed by applying herbicide at sites identified below.

Towers	Planned	Actual	Target Species						
			Invasive Plant Species					Seedlings	
			Scotch Broom	Himalayan Blackberry	Canada thistle	Bracken fern	Other	Douglas-fir	Red Alder
<b>Cougar Line</b>									
1/3-5/3	Yes	Yes	X	X		X			
<b>Lake Line</b>									
*	*	*	*	*	*	*	*	*	*
<b>Speelyai Line</b>									
3/18-5/18	Yes	Yes	X	X					
8/12-4/13	Yes	No	X	X	X	X			
1/5-1/6	Yes	No				X			
4/14-8/14	No	Yes		X		X	X		
2/19-PL	Yes	Yes	X						

*10.0 Unique Area/Habitat* – Annual oak stand inspections occurred September 21 – December 5, 2017. By recommendation of the TCC, twenty-four new oak trees were planted east of the newly made Osprey Meadow.

*11.0 Forestland Habitat* – Emmerson informed the TCC attendees that Appendix G of the Annual Report was revised since the draft report and appendices was provided to the TCC (see **Attachment A**) last week. A substantial effort was completed in 2017 to improve the Cover: Forage Model by

developing criteria to model manageable acres and developing a differentiation for commercially thinned THAs as cover or forage. Appendix G provides a copy of the cover:forage model. The following is description of the substantive revisions.

The manageable acres are the total amount of acres within a manageable unit (MU) that are available to manage for cover:forage. This is calculated by taking the total acres in a MU and subtracting acres of that are classified as Reserved Habitat Acres, Restricted Acres, No Access and Marginal Access. Previously the No Access and Marginal access areas were determined by evaluating maps and updated annually, therefore these terms were modeled using the following definitions:

- Reserved Habitat Acres = Vegetation Cover Types (VCTs) that are not suitable for forestry management or timber harvest are not allowed, such as Oak Woodland (OW) and Old-growth (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 are > 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 < 2.0 acres in size and > 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.

All commercial thinning that are less than 5 years from harvest year will provide forage and commercial thinning that is more than 5 years from harvest year will be identified as cover. This applies to Mature Conifer- thinned (M-t), Mid-Successional Conifer-thinned (MS-t), Upland Mix-thinned (UM-t), or Pole Conifer-thinned (P-t).

Please see the 2017 Annual Report at the link provided above (Pages 20 – 45) for further detail.

**TCC comments are due on or before March 9, 2018.**

#### **PacifiCorp Review of 2018 Wildlife Habitat Management Plan (WHMP)**

Kim McCune (PacifiCorp) emailed an electronic copy of the Lewis River WHMP 2018 Annual Plan on February 7, 2018 for a 30-day review and comment period. PacifiCorp has posted the draft annual plan to its Lewis River website for viewing at the following link:

[http://www.pacificorp.com/content/dam/pacificorp/doc/Energy\\_Sources/Hydro/Hydro\\_Licensing/Lewis\\_River/li/ar/2018\\_WHMPAnnualPlanDraft\\_web.pdf](http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/ar/2018_WHMPAnnualPlanDraft_web.pdf)

Emmerson provided a cursory review of the following:

*9.0 Farmland* – Regularly schedule annual management actions will occur in 2018 and will include restoring Lower Hanley-Curry Meadow.

*13.0 Forestland Habitat* – In 2018 a total of approximately 62 acres are scheduled for clear-cut and 16 acres of commercial thinning in Units 15 & 34.

15.0 Raptor Site - Aerial bald eagle and osprey nest surveys will occur twice in 2018. Unit 34 timber harvest will have an intensive northern goshawk survey conducted in June 2018.

16.0 Public Access – PacifiCorp anticipates having to control at least two sites for unauthorized motorized vehicle access. Additional sites for gating or blocking roads will be selected based on the annual surveys or as needed depending on severity of trespass and feasibility.

**TCC comments are due on or before March 9, 2018.**

<Break 10:20am>

<Reconvene 10:30am>

**2017 Terrestrial Fund Year-end Accounting**

Kim McCune (PacifiCorp) providing the following accounting as of December 31, 2017.

Lewis River License Implementation					
Lewis River WHMP Fund (Fee Simple Lands)					
Section 10.8.2					
Release Date	Funds Received	Expense	Interest	Balance	Notes
12/31/2016				(13,444.29)	
12/31/2017	546,203.21	(464,798.61)	-	990.91	Expenditure for 2017
		<b>Total Spent to Date:</b>		<b>\$(3,711,485.55)</b>	
		<b>Balance Remaining:</b>		<b>\$ 547,194.12</b>	

Lewis River License Implementation					
Lewis River WHMP Fund (Conservation Easement Lands)					
Section 10.8.2					
Release Date	Funds Received	Funds Expended	Balance	Notes	
12/31/2016			\$ -		
12/31/2017	\$ 283.00	\$ (278.68)	\$ -	Expenditure for 2017	
		<b>Total Spent to Date:</b>	<b>\$ (2,126.94)</b>		
		<b>Balance Remaining:</b>	<b>\$ 283.00</b>		

Lewis River License Implementation					
Lewis River LWD Fund - Haul					
Section 7.1.1					
Release Date	Funds Received	Funds Dispersed	Balance	Notes	
4/20/2016			\$ 1,013.42		
4/20/2017	\$ -	\$ (3,986.58)	\$ 1,013.42		
9/11/2017	\$ -	\$ (3,000.00)	\$ 13.42	Chilton Logging (Morris Trucking)	
		<b>Total Spent to Date:</b>	<b>\$ (19,986.58)</b>		
		<b>Balance Remaining:</b>	<b>\$ 13.42</b>		

Lewis River License Implementation					
Swift No. 1 & Swift No. 2 Land and Habitat Protection Fund					
Section 10.2, 10.2.1					
Release Date	Funds Received	Expense	Interest	Balance	Notes
12/26/2017	\$ 655,182.00		\$ 103,967.90	\$ 1,880,380.65	
		<b>Total Spent to Date:</b>		<b>\$(7,929,974.69)</b>	
		<b>Balance Remaining:</b>		<b>\$ 1,880,386.65</b>	



**10.8.5.5 Mitigation Impacts to Wildlife Fund**

McCune informed that mitigation funds (see table below) from the Cowlitz PUD Interconnect project are available for TCC use at any time. It is the preference of the TCC to use the funds in 2018.

Lewis River License Implementation Mitigation for Impacts on Wildlife Section 10.8.5.5					Funding Start Date: 11/1/2016
Totals:					
	\$ 10,172.00	\$ -	\$ -	\$ 10,172.00	
Release Date	Funds Received	Expense	No Interest	Balance	Notes
11/1/16	\$ 10,172.00	\$ -	\$ -	\$ 10,172.00	WO ILR-IMPWILD
12/31/17	\$ -	\$ -	\$ -	\$ 10,172.00	Once expenditure is made JV to 10057444, ROW/Permitting-Trans Line (DA)
	\$ -	\$ -	\$ -		
	\$ -	\$ -	\$ -		

**Land Acquisition Purchase and Sale Agreement Update (CONFIDENTIAL)**

McCune reported the current balance of land acquisition funds as of 12/31/2017. Additional detail around this topic is considered confidential and proprietary and not for public viewing.

**Outstanding Stewards of America’s Water Award Application**

Emmerson informed the TCC attendees that PacifiCorp has submitted a request for the award and may have a reply later this month.

Unit 1 – DNR spoke with PacifiCorp’s transmission & distribution staff and they need to dig a road down 8’. This means a huge cultural survey is needed. In addition, DNR needs to re-distribute the soil along the transmission line. PacifiCorp prefers DNR harden the road so it can be used in perpetuity. Too many trees were left along the transmission line so ten trees need to be topped or felled. Douglas-fir, Cherry, red alder and bigleaf maple are among the trees too close to the transmission line.

*<11:15am Meeting Adjourned>*

**Agenda items for March 14, 2018**

- Review February 7, 2018 Meeting Notes
- Review ACC/TCC 2017 Annual Report
- Land Acquisition Update (Confidential)
- Unit 1 Field Tour
- Study/Work Product Updates

**Next Scheduled Meeting**

March 14, 2018
Location: Woodland Police Dept.

**Attachments:**

- February 7, 2018 Meeting Agenda
- **Attachment A** – Revised Cover:Forage Model and corresponding map



1	Updated 1/3/18	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	27.00	28
3	<b>COVER</b>																													
4	Old Growth (>26" dbh)	468.62		33.86					29.97				23.08	15.11		8.62	35.61	17.93	6.58		12.71	3.83	6.93	13.07					6.12	
5	Mature Conifer (21-26" dbh)	696.70	3.56	17.55	4.30	30.25		75.04			23.88	8.27	30.99	28.90	51.46	49.48	35.74	36.46	47.99	37.33		31.09	31.78	26.79	39.04		5.36		6.21	
6	Mature Conifer (Thinned) > than 5 years since commercially thinned	121.13		5.12	5.92		15.26	62.69				4.84	3.09				22.24													
7	Mid-Successional Conifer (16-20" dbh)	2418.59	25.14	32.38	57.49	26.27	130.25	200.74	62.93	61.20	55.05	58.58	8.02	11.73	60.85	6.01	60.73		86.40	113.96	54.43	146.73	44.07	151.08	13.49		1.52	143.83	175.64	73.86
8	Mid-Successional Conifer (Thinned) > than 5 years since commercially thinned	138.07	10.93			2.24	28.48	51.76	10.13	2.54	10.99																		21.00	
9	Upland Mixed (conifer 30-70%)	2143.20	20.18	76.72	83.86	84.26	18.64	119.94	232.92	136.35	55.93	38.21	81.59	101.53	86.36	18.43	120.79	130.45	78.28	98.35	11.59	125.51	41.76	85.35	58.88	3.96		25.85	33.43	
10	Upland Mixed (Thinned) > than 5 years since commercially thinned	5.32							3.43			1.90																		
11	Young Upland Mixed	33.38							3.18			8.67			8.15		6.99					6.40								
12	Pole Conifer (8-15" dbh)	2990.59	14.40		22.52	55.67	21.78	13.66	32.09	7.41	73.14	354.03	57.43	55.91			128.65	104.25			6.77	432.86						53.25	22.73	
13	Pole Conifer (Thinned); (8-15" dbh) > 5 years since commercially thinned	202.87		34.54	41.28	14.75		72.31	31.26	4.35							4.37													
14	Lodge Pole Pine	71.74																				65.12			6.61					
15	Riparian Mixed	213.75			13.77	7.47		11.85	5.54	7.69	10.36			0.99			39.34					82.23	3.84			2.36		10.24	10.08	
16	<b>subtotal</b>	9503.96	74.21	200.17	229.14	220.93	214.41	607.98	411.44	221.55	229.35	467.76	207.86	217.27	198.67	82.07	416.13	318.12	230.60	256.23	72.79	837.53	190.40	270.14	124.47	12.93	1.52	238.53	219.15	129.92
17	<b>FORAGE</b>																													
18	Young Upland Deciduous	44.15				14.42	2.49	0.97				1.31	0.98	2.79		3.47	13.94		2.55										1.22	
19	Mature Conifer (Thinned) < 5 years since commercially thinned	0.00																												
20	Pole Conifer (Thinned); (8-15" dbh) < 5 years since commercially thinned	63.47	7.81				30.42					4.01										21.23								
21	Upland Mixed (Thinned) < than 5 years since commercially thinned	5.33																				5.33								
22	Mid-Successional Conifer (Thinned) < than 5 years since commercially thinned	1.69							1.69																					
23	Riparian Shrub	4.21																								4.21				
24	Riparian Deciduous	173.15	5.56	2.65			11.34	10.97	0.54	1.97		17.46	2.26			8.62	4.01	25.71				5.74			33.47	21.45			1.31	
25	Upland Deciduous (>70% deciduous)	1536.06		7.78	18.85	34.37	22.76	39.08	10.89	1.63	70.99	20.28	118.24	91.32	0.91	11.45	65.44	32.30	90.73	90.68	47.88	22.75	123.06	246.81	42.10	10.18	50.34	212.65	30.90	
26	Oak Woodland	10.18	0.59				1.95	7.19	0.44																					
27	Right-Of-Way	235.05	5.54	18.05	18.13	16.35	3.03	32.84	4.67		13.73		10.92				18.20	4.60	27.88	3.50	14.03	21.10					19.58			
28	Recreation	53.10					1.60			3.65	0.32	0.37			1.68					1.78	1.24	42.46								
29	Meadow	115.30		5.77			0.60	4.42	2.47		16.06	2.51	17.52			2.44		28.00	3.72		3.37				2.04	6.60	2.31		0.96	
30	Shrub	53.48		5.89	3.74	3.46	3.16					1.18			2.89												3.61			
31	Orchard	8.74					1.27			1.08	1.32	0.52	2.41			2.15														
32	Agriculture	30.24									30.24																			
33	Seedling / Sapling (5-8" dbh)	1612.59	10.22	24.71	12.57	24.60	50.93	73.39	62.36	23.07	24.42		23.14	73.23		1.20	8.89	118.81				12.98			11.73			29.21	3.64	
34	Seedling / Sapling (New) (<4"dbh)	1382.70	26.97		7.00	31.21	17.34	37.88	28.79	13.12		53.33	28.84		22.98	14.41		14.42	24.81	8.95	27.79							16.71		
35	Wetland (Palustrine Wetland)	89.41					0.16		5.48	3.71	8.17	7.97	2.08			1.00	1.50	0.43				30.14			0.12	4.22	11.34			
36	<b>subtotal</b>	5418.85	56.69	53.19	68.21	124.70	143.74	209.12	112.12	53.08	114.25	152.55	183.37	202.54	2.59	40.78	108.20	64.41	286.32	149.32	88.13	80.93	222.50	246.81	53.95	54.11	126.02	247.78	30.90	7.13
37	<b>COVER &amp; FORAGE TOTAL</b>		130.90	253.35	297.35	345.63	358.15	817.10	523.56	274.63	343.60	620.32	391.23	419.80	201.26	122.85	524.33	382.53	516.92	405.55	160.92	918.46	412.90	516.96	178.42	67.05	127.54	486.31	250.05	137.05
38	<b>NEITHER</b>																													
39	Lacustrine Unconsolidated Bottom	0.40															3.03					0.13			14.16				1.97	
40	Riverine Unconsolidated Shore	24.72																								5.40	8.97	0.54		3.60
41	Sparse veg.; Disturbed; Developed	35.03		0.59				0.08	1.37	1.53	2.05	4.49	1.19		1.06				0.85			0.51				1.79	1.79	6.67	5.17	5.32
42	Highway ROW	79.96		4.19		2.87	0.73	8.14		2.41				2.02					0.29	9.83	1.35	4.91	5.88							
43	Rock Outcropping and Talus	39.81				1.61	2.99	1.74				0.73			2.26						1.91	11.36	0.30							5.69
44	Residential	6.27							0.58	1.56									1.83	1.96								0.34		
45	Open Water (PAB RUB LUB)	47.49					0.17			20.24	7.02					0.50	1.22					2.85		0.05	3.57	6.66			0.19	
46	<b>subtotal</b>	233.67	0.00	4.78	0.00	2.87	2.34	11.38	3.11	4.52	5.18	25.46	8.21	2.02	3.31	0.00	0.00	3.53	4.19	11.79	3.26	16.27	10.00	0.00	0.05	24.93	17.43	7.21	5.17	16.76
47	<b>TOTAL ACRES</b>	15156.47	130.90	258.13	297.35	348.50	360.49	828.48	526.67	279.14	348.78	645.78	399.44	421.83	204.57	122.85	524.33	386.05	521.11	417.33	164.17	934.72	422.90	516.96	178.48	91.97	144.97	493.52	255.22	153.81
48	<b>MANAGEABLE ACRES</b>	5812.27	75.39	97.74	113.39	185.11	182.51	414.63	123.74	119.83	197.96	272.15	153.61	196.31	9.90	21.03	175.20	90.45	190.41	147.91	103.70	196.39	116.48	52.63	13.49	7.61	28.33	254.63	95.58	76.72
49	<b>PERCENT OF MANAGEABLE ACRES</b>	0.38	0.58	0.38	0.38	0.53	0.51	0.50	0.23	0.43	0.57	0.42	0.38	0.47	0.05	0.17	0.33	0.23	0.37	0.35	0.63	0.21	0.28	0.10	0.08	0.08	0.20	0.52	0.37	0.50
50	<b>COVER / FORAGE RATIO</b> Amount Cover is displayed		0.57	0.79	0.77	0.64	0.60	0.74	0.79	0.81	0.67	0.75	0.53	0.52	0.99	0.67	0.79	0.83	0.45	0.63	0.45	0.91	0.46	0.52	0.70	0.19	0.01	0.49	0.88	0.95
51	Lewis River Wildlife Habitat Management Plan recommended ratio (±5%)		50:50	60:40	50:50	6																								



1	Updated 1/3/18																									
2	TOTAL	29	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	36.00	37.00	38	39.00	
3	<b>COVER</b>																									
4	Old Growth (>26" dbh)	468.62		6.20	8.49								0.11	0.25		14.82	0.78		8.61						215.93	
5	Mature Conifer (21-26" dbh)	696.70		9.09	9.95	5.11			1.55	1.00	0.35				5.32							1.17	3.52	38.14		
6	Mature Conifer (Thinned) > than 5 years since commercially thinned	121.13																	1.98							
7	Mid-Successional Conifer (16-20" dbh)	2418.59								4.73		15.03						1.46	3.25	298.99	56.08	38.80	67.50	3.16	67.24	
8	Mid-Successional Conifer (Thinned) > than 5 years since commercially thinned	138.07																								
9	Upland Mixed (conifer 30-70%)	2143.20	70.59	37.63	8.46	15.71	4.21			10.33								6.07	11.41					7.68		
10	Upland Mixed (Thinned) > than 5 years since commercially thinned	5.32																								
11	Young Upland Mixed	33.38																								
12	Pole Conifer (8-15" dbh)	2990.59	7.99																39.52	649.72	681.69	77.62	71.44		6.08	
13	Pole Conifer (Thinned); (8-15" dbh) > 5 years since commercially thinned	202.87																								
14	Lodge Pole Pine	71.74																								
15	Riparian Mixed	213.75			0.68			1.12	0.32									5.87								
16	<b>subtotal</b>	9503.96	78.58	46.72	24.61	29.98	0.00	4.21	1.12	1.86	16.06	0.35	15.03	0.11	0.25	5.32	14.82	2.24	15.18	360.50	649.72	737.77	117.60	142.46	264.91	73.31
17	<b>FORAGE</b>																									
18	Young Upland Deciduous	44.15																								
19	Mature Conifer (Thinned) < 5 years since commercially thinned	0.00																								
20	Pole Conifer (Thinned); (8-15" dbh) < 5 years since commercially thinned	63.47																								
21	Upland Mixed (Thinned) < than 5 years since commercially thinned	5.33																								
22	Mid-Successional Conifer (Thinned) < than 5 years since commercially thinned	1.69																								
23	Riparian Shrub	4.21																								
24	Riparian Deciduous	173.15	7.41		0.56		0.27											3.87	3.52					4.43		
25	Upland Deciduous (>70% deciduous)	1536.06	3.88		6.63	2.57	3.57											5.01								
26	Oak Woodland	10.18																								
27	Right-Of-Way	235.05																2.91								
28	Recreation	53.10																								
29	Meadow	115.30																	3.17		0.65			8.80	3.87	
30	Shrub	53.48																		24.60	4.96					
31	Orchard	8.74																								
32	Agriculture	30.24																								
33	Seedling / Sapling (5-8" dbh)	1612.59																	310.26			203.20	250.55	99.47	160.01	
34	Seedling / Sapling (New) (<4" dbh)	1382.70																	103.23		46.64	200.79	161.47	100.55	395.45	
35	Wetland (Palustrine Wetland)	89.41																	5.72	1.81					5.54	
36	<b>subtotal</b>	5418.85	11.29	0.00	6.63	3.13	3.57	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.79	425.91	26.41	52.25	403.99	412.02	213.25	564.88	
37	<b>COVER &amp; FORAGE TOTAL</b>		89.87	46.72	31.24	33.12	3.57	4.48	1.12	1.86	16.06	0.35	15.03	0.11	0.25	5.32	14.82	2.24	26.97	786.41	676.12	790.02	521.58	554.48	478.16	638.19
38	<b>NEITHER</b>																									
39	Lacustrine Unconsolidated Bottom	0.40		0.40																						
40	Riverine Unconsolidated Shore	24.72																	3.62					1.81		
41	Sparse veg.; Disturbed; Developed	35.03	1.27			0.73												0.77								
42	Highway ROW	79.96		0.50															16.12							
43	Rock Outcropping and Talus	39.81																			8.97	0.14	2.12			
44	Residential	6.27																								
45	Open Water (PAB RUB LUB)	47.49		0.51														2.90	0.03	0.03						
46	<b>subtotal</b>	233.67	1.27	0.00	1.41	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.66	19.77	0.03	8.97	0.14	2.12	1.81	0.00	
47	<b>TOTAL ACRES</b>	15156.47	91.14	46.72	32.64	33.12	4.31	4.48	1.12	1.86	16.06	0.35	15.03	0.11	0.25	5.32	14.82	2.24	30.63	806.19	676.16	798.99	521.72	556.60	479.97	638.19
48	<b>MANAGEABLE ACRES</b>	5812.27	0.03	0.00	0.02	0.02	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.55	247.43	318.71	359.99	303.64	326.90	150.19	391.95	
49	<b>PERCENT OF MANAGEABLE ACRES</b>	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.31	0.47	0.45	0.58	0.59	0.31	0.61	
50	<b>COVER / FORAGE RATIO</b> Amount Cover is displayed		0.87	1.00														0.56	0.46	0.96	0.93	0.23	0.26	0.55	0.11	
51	Lewis River Wildlife Habitat Management Plan recommended ratio (=/-5%)		50:50	NSO	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		0.00																12.37	15.94	18.00	15.18	16.34	7.51	19.60	
53	Current Permanent Forage Acres		0.00																8.90	26.41	5.61	0.00	0.00	8.80	9.41	
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		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.06	0.77	0.74	0.42	0.87	



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 are VCTs 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 38-46	NEITHER	These vegetation cover types do not provide either cover or forage, therefore 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 48	MANAGEABLE ACRES	This is the total amount of acres within the management unit (MU) 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</b> , <b>Restricted Acres</b> , <b>No Access</b> and <b>Marginal Access</b> . <b>Reserved Habitat Acres</b> = VCTs that are not suitable for forestry management or timber harvest are not allowed, such as OW and OG. <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. <b>No Access</b> = 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. <b>Marginal Access</b> = 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.	Acres provided by GIS
ROW 49	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 16) divided by the COVER AND FORAGE TOTAL (ROW 37). All cells highlighted in Orange are $> 5\%$ of the WHMP recommended ratio (ROW 51). All cells highlighted in Yellow are $< 5\%$ of the WHMP recommended ratio (ROW 51). Cells with no highlighting are within $5\%$ of the WHMP recommended ratio (ROW 51) 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 ratios in <b>red</b> mean the C:F ratio was determined after the WHMP was finalized either 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 48) 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 53 $>$ then ROW 52 then Yes if ROW 53 $<$ then ROW 52 then no.	Manually updated
ROW 55	Most Recent Timber Harvest	This is the year of the most recent 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.





Yellow = marginal access  
 Red = No access

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