FINAL Meeting Notes
Lewis River License Implementation
Terrestrial Coordination Committee (TCC) Meeting
August 8, 2007
Woodland, WA

TCC Participants Present: (17)

Brock Applegate, WDFW
Ray Croswell, RMEF (9:00am – 10:30am)
Kendel Emmerson, PacifiCorp Energy
Diana Gritten-MacDonald, Cowlitz PUD
Eric Holman, WDFW
Mike Iyall, Cowlitz Indian Tribe
Curt Leigh, WDFW (via teleconference: 9:15am – 10:15am)
Kimberly McCune, PacifiCorp Energy
David Moore, PacifiCorp Energy (11:45am – 12:30pm)
Kirk Naylor, PacifiCorp Energy
Bob Nelson, RMEF
Todd Olson, PacifiCorp Energy
Tim Romanski, USFWS

Cherie Kearney, Columbia Land Trust (9:00am – 10:15am)
Tom Tuchman, U.S. Forest Capital, consultant to Columbia Land Trust (9:00am – 10:15am)

Allison Murray, Kleinschmidt (11:45am – 12:30pm)
Jay Mayer, Kleinschmidt (11:45am – 12:30pm)

Calendar:

September 12, 2007	TCC Meeting	Longview, WA
September 13, 2007	ACC Meeting	Merwin Hydro Facility

Assignments from August 8th Meeting:	
McCune: Draft a letter to Mike Hayden of the Cougar Area Trail Seekers informing him of the TCC's decision on his proposal.	**Complete – 8/10/07**
Emmerson: Mink Memorandum, Corrections for Mink Habitat Suitability Index Approval	**In process**
McCune: Email link to TCC for the FERC - Guidance for Shoreline Management Planning at Hydro Projects	**Complete – 8/8/07**
Emmerson/Naylor: Propose language within the Wetlands Chapter portion of the WHMP that veers away from the Line Intercept Method as proposed in Objective B of the Standards & Guidelines and present to the TCC for review and approval.	**Complete – 9/12/07**

Assignments from July 11th Meeting:	
Naylor/McCune: Draft 2-4 concepts relating to the CATS proposal for ATV use on PacifiCorp lands and distribute to TCC for review and discussion.	**Complete - 8/8/07**
Emmerson/McCune: Upon completion of Goshawk Survey Training notes comments and approval of notes, provide a copy of the final notes to the TCC.	**Complete – 7/27/07**
Applegate: Email Steve Desimone (WDFW) and ask him what he considers to be the definition of an experienced goshawk surveyor.	**Complete - 7/16/07**
Naylor/McCune: Research what the Lewis River Settlement Agreement (SA) and TCC guidelines say specifically about motorized vehicle use on PacifiCorp lands.	**Complete 8/1/07**
Emmerson: Research definition of goshawk trainers' qualifications and provide information to TCC.	**Complete – 7/16/07**

Parking lot items from February 10th Meeting:	
PacifiCorp Wildlife Habitat Management Plan (WHMP) Budget (annual)	
Conservation Agreement – what is wanted?	**Ongoing – 4/28/06**

Review of Agenda

Kirk Naylor (PacifiCorp Energy) called the meeting to order at 9:15am. Naylor conducted a review of the agenda for the day and requested if the TCC had any additions to the agenda. Columbia Land Trust requested they provide the lands update discussion and presentation as the first agenda item due to a scheduling conflict.

Lands Update Discussion

Tom Tuchman (U.S. Forest Capital, consultant to Columbia Land Trust) provided a detailed update and copies of correspondence relating to interests in certain lands, however, this discussion is considered confidential and proprietary and not for public viewing. Discussion took place regarding Skamania County zoning efforts and that both PacifiCorp and the TCC remain neutral on the decision of the Skamania County planning commission. PacifiCorp representatives further clarified that the intent of PacifiCorp is to support the efforts of the TCC and ACC and the compliance requirements of the License.

Diana Gritten-MacDonald (Cowlitz PUD) expressed that Skamania County is a signatory to the Lewis River Settlement Agreement and that the County should be inline for supporting the wildlife habitat conservation efforts.

Ray Croswell (RMEF) provided a detailed update relating to interests in certain lands, however, this discussion is considered confidential and proprietary and not for public viewing.

<Break 10:30am>
<Reconvene 10:40am>

Finalize Meeting Notes

Naylor reviewed the TCC Draft 7/11/07 meeting notes with the TCC attendees, updated the assignment portion and asked for any comments and/or additional changes. The meeting notes were accepted at 10:50am with all changes as previously submitted by WDFW.

Non-motorized vehicle – intent of Settlement Agreement (Discussion and comment)

Kimberly McCune (PacifiCorp Energy) provided a memorandum dated August 1, 2007 (Attachment A) relating to the July 11, 2007 TCC assignment to research what the Lewis River Settlement Agreement (SA) and TCC ground rules say specifically about motorized vehicle use on PacifiCorp lands. McCune communicated to the TCC that the language in the Lewis River SA, TCC Structure and Ground Rules and the Lewis River Draft Recreation Resource Management Plan clearly states that the SA Parties *did not* have ATVs, or any motorized vehicle use in mind as a desirable recreation use that the TCC should encourage or approve.

In addition, McCune also informed the TCC that communication was received from Jim Eychaner of the Washington Interagency Committee for Outdoor Recreation, a Lewis River SA signatory, that he is opposed to any ATV use on recreation trails including the IP road trail once it is developed and that he is not interested in modifying the SA for motorized vehicle use.

The TCC further discussed that the purpose of the TCC is the implementation of terrestrial protection, mitigation and enhancement and as such approval of motorized vehicle use on PacifiCorp's wildlife lands is in conflict with the Lewis River SA.

McCune will draft a letter to Mike Hayden of the Cougar Area Trail Seekers informing him of the TCC's decision on his proposal.

Goshawk Survey Discussion

McCune provided hard copies of the Northern Goshawk Survey Training and Proposed Timber Harvest Areas Habitat Assessment, June 25 and 26, 2007 Summary Notes, which was also emailed to the TCC on July 27, 2007. Kendel Emmerson (PacifiCorp Energy) expressed that the notes were considered final, although, she asked if there was any additional comment. Brock Applegate (WDFW) expressed that he had a few minor edits he would like made. The following addition will be made to the Goshawk Training 6/25 & 6/26/07 Summary Notes, page two, third paragraph, second bullet (added text below is in italics):

- Intensive surveys may be conducted within 1 nesting season during late June, July, and August with experienced observers. "A single Intensive Search Survey may be sufficient to determine goshawk presence within a habitat patch" (Woodbridge and Hargis 2006 Page 3-9).
  Data from Keane and Woodbridge (2002) indicate that single-visit detection rates obtained with this method are about 97 percent at goshawk sites with active nests, 73 percent at sites with occupied nonbreeding status, and 43 percent at unoccupied historical nest stands (table 3.1). If survey objectives require detection of sites with nonbreeding adults, then two visits are required to achieve detection rates greater than 90 percent.

With these edits, the TCC have approved the Goshawk Training Summary Notes, as provided by McCune on 7/27/07.

In addition, Emmerson provided a handout to fulfill an assignment from the 7/11/07 TCC meeting relating to the definition on goshawk trainers qualifications for Intensive Search Surveys (Attachment B). Applegate and Emmerson agreed that TCC members that attended the training are adequately qualified to conduct the Broadcast Acoustical Survey method.

Wetlands Objective Discussion

Emmerson provided a memorandum titled, *Lewis River Wildlife Habitat Management Plan Standard and Guideline's Wetland Habitat Management Objective B* (Attachment C) as a way of informing the TCC the level of effort required to fulfill the Objective.

Mike Iyall (Cowlitz Indian Tribe) suggested that the TCC not obligate themselves to a mandatory spend, but rather consider physical visits by technical members of the TCC to identify priority wetlands as opposed to those that clearly do not meet the requirements.

Naylor suggested not modifying the Objective within the *Standard and Guideline's* document but to make the requested TCC edits within the Wetland Chapter of the Wildlife Habitat Management Plan (WHMP). Naylor further communicated that the desire is to invest money into the habitat rather than processes. PacifiCorp will propose language within the Wetlands Chapter portion of the WHMP that veers away from the Line Intercept Method as proposed in the Objective, and present to the TCC for review and approval.

Applegate agreed with the ocular estimate for identifying the forested wetlands with less than 20 percent shrub cover, but felt that the HEP should measure the 5% change. PacifiCorp explained that the HEP may not likely measure the 5% change in shrub cover. Applegate reminded PacifiCorp that the Settlement Agreement uses the HEP to measure changes in vegetation cover and management objective targets. However, PacifiCorp's concerns with the HEP not detecting a 5% increase in shrub cover may be a valid one.

Shoreline Management Plan – Presentation

Allison Murray and Jay Mayer (Kleinschmidt) presented a PowerPoint presentation titled Lewis River Projects – Shoreline Management Plan (Attachment D) outlining the following:

Kleinschmidt first provided the FERC definition of what is a Shoreline Management Plan (SMP)?

"A comprehensive plan to manage the multiple resources and uses of the project's shorelines in a manner that is consistent with license requirements and project purposes, and addresses the needs of the public."

McCune will email the link to the TCC for the FERC - Guidance for Shoreline Management Planning at Hydro Projects.

Kleinschmidt expressed the importance of stakeholder and public input, which PacifiCorp is addressing by conducting the first of a series of public meetings on August 22, 2007, the necessary interface with Resource Agencies and the need for opportunities for stakeholders review and comment of the draft SMP prior to submittal of the document to the FERC. In addition, the development of an SMP will take place over the next 4-5 months.

Kleinschmidt reviewed the elements of developing an SMP to include:

- Management Goals and Objectives
- Land Use Classifications
- Allowable Uses
- Permitting Policies & Standards
- SMP Update Policies
- Consultation Procedures

The TCC was informed that an SMP is a living document that will evolve as policies are revised as warranted over time and that PacifiCorp is committed to developing a forward looking Shoreline Management Plan, encompassing the spirit and objectives of the Lewis River Settlement Agreement and its dedication to the conservation of fish and wildlife habitat. The SMP will serve as a tool to assist in effectively analyzing appropriate shoreline uses within the Project boundaries, as well as provide a supportable and defensible means for shoreline management and permitting decisions.

Kleinschmidt reviewed the resources which may be involved when developing a SMP such as:

- Public and Private Shoreline Facilities
- Recreation Use & Access
- Water Use and Quality
- Wetlands
- Cultural & Historic Sites
- Land Use and Aesthetics
- Threatened and Endangered Species
- Fisheries & Wildlife
- Public Safety
- Soils/Erosion

A typical FERC review and approval schedule was presented:

1. PacifiCorp files the SMP with the FERC
2. FERC provides public review/comment period
3. FERC requests additional information and/or draft EIS or EA
4. FERC provides approvals of the SMP
5. PacifiCorp implements the SMP.

Implementation was discussed to include the importance of:

- Public Education & Outreach
- Compliance with Policies & Requirements
- Periodic Review of SMP
- SMP Revisions (as warranted over time)

Kleinschmidt discussed what the SMP will do:

- Involve stakeholders
- Identify management policies on PacifiCorp lands and Project waters
- Develop a land use classification system
- Define “allowable uses”
- Identify permitting requirements
- Provide “grandfather” clauses
- Allow PacifiCorp management w/limited FERC oversight

Although, the SMP will not:

- Eliminate FERC oversight
- Eliminate PacifiCorp oversight/jurisdiction
- Change the Lakes overnight
- Address issues outside the Project boundaries
- Guarantee continuation of all current/historic uses

And lastly, Kleinschmidt provided an anticipated schedule for the development of the SMP as follows:

Summer 2007

- Meet with stakeholder groups
- Develop classifications & allowable uses
- Develop permitting policies

Fall/Winter 2007

- Distribute Draft SMP for review and comment
- Public meetings to discuss Draft SMP
- Agency review of Draft SMP
- Finalize SMP and submit to FERC

Summer/Fall 2008

- FERC approves SMP
- PacifiCorp implements SMP policies

Next Meeting’s Agenda

- Shoreline Management Plan; Public Meeting Update
- Lands Update Discussion
- Definition of vegetation cover types as NSO suitable habitat
- WHMP Review of Chapters (?)

Meeting adjourned at 12:45pm.

Next Scheduled Meetings

September 12, 2007	**October 10, 2007**
Cowlitz PUD	USFWS
Longview, WA	Lacey, WA
9:00am – 3:00pm	9:00am – 3:00pm

Handouts

1. Agenda
2. Draft meeting notes from 7/11/07
3. Northern Goshawk Survey Training and Proposed Timber Harvest Areas Habitat Assessment, June 25 and 26, 2007 Summary Notes
4. Lewis River – Motorized vehicle use on wildlife lands; Intent of Settlement Agreement, dated August 1, 2007, Attachment A
5. Assignment from 7/11/07 TCC Meeting – Definition of Goshawk Trainers Qualifications, Attachment B
6. Lewis River Wildlife Habitat Management Plan Standard and Guideline's Wetland Habitat Management Objective B, dated August 1, 2007, Attachment C
7. Lewis River Shoreline Management Plan, as provided by Kleinschmidt Energy and Water Resources Consultants, Attachment D

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Attachment A

MEMORANDUM

DATE: August 1, 2007

TO: Terrestrial Coordination Committee

FROM: Kimberly McCune

SUBJECT: Lewis River - Motorized vehicle use on wildlife lands; Intent of Settlement Agreement

The purpose of this memo is to complete the assignment referenced below and inform the Terrestrial Coordination Committee (TCC) of the research completed relating to non-motorized vehicle use on PacifiCorp lands and the intent of the Lewis River Settlement Agreement (SA), dated November 30, 2004:

Assignments from July 11th Meeting:	
Naylor/McCune: Research what the Lewis River Settlement Agreement (SA) and TCC guidelines say specifically about motorized vehicle use on PacifiCorp lands.	**In process**

Upon review of the *Terrestrial and Aquatic Coordination Committees, FINAL Structure and Ground Rules,* dated May 19, 2005 I've included text below which does not specifically address the topic of Off-Road Vehicle (ORVs) use on PacifiCorp lands, however, the document is consistent in its use of language regarding the purpose of the Coordination Committees and any language in the document… *" does not supersede language in the Lewis River Settlement Agreement or any future Federal Energy Regulatory Commission (Commission) licenses which govern this process".*

The purpose of the Coordination Committees is to coordinate:
1.) For the TCC, the implementation of terrestrial protection, mitigation, and enhancement (PM&E) Measures described in Section 10 of the Settlement Agreement

For the TCC, the implementation of terrestrial protection, mitigation, and enhancement (PM&E) Measures described in Section 10 of the Settlement Agreement, and as their primary responsibilities, ... oversee the coordination and implementation of the terrestrial and aquatic PM&E Measures.

In no event shall the TCC or the ACC increase or decrease the monetary, resource, or other commitments made by PacifiCorp and Cowlitz PUD in this Agreement; override any other limitations set forth in this Agreement;

I have also reviewed the SA and the Draft Recreation Resource Management Plan – April 2004 (RRMP) for any language specific to motorized and non-motorized vehicle use in the Yale Recreation Area. Evidenced by the text below extracted from the SA and the RRMP, the intent throughout the documents appear clear that the SA Parties did not have ATVs, or any motorized vehicle use in mind as a desireable recreational use that the TCC should or can encourage.

Settlement Agreement Concerning the Relicensing of the Lewis River Hydroelectric Projects FERC Project Nos. 935, 2071, 2111, 2213

11.2.2.2 Yale/IP Road Phase One. PacifiCorp shall use best reasonable efforts after Issuance of the New License for the Yale Project to secure, at the lowest cost possible, non-motorized multi-use recreational access on the existing Yale/IP Road from the bridge over the Lewis River at the eastern terminus to Healy Road to the west.

11.2.2.5 Yale Trails. By the fifth anniversary of Issuance of the New License for the Yale Project, PacifiCorp shall complete the following capital improvements at Yale Lake: a. PacifiCorp shall promote existing and new non-motorized, multi-use trails in the Yale Project area with signs and brochures.
b. PacifiCorp shall develop a non-motorized, multi-use, natural-surface trail between Saddle Dam Park parking lot and the existing Saddle Dam Trail at the northern end of Saddle Dam

11.2.8 Recreational Access to Project Lands. For each Project, beginning upon Issuance of the New License for that Project, PacifiCorp shall allow appropriate non-motorized, public day use access to all existing and future PacifiCorp-owned lands and, when possible, conservation easements, for wildlife viewing, angling, hunting, and other recreational purposes, subject to capacity restrictions, third party property rights, and PacifiCorp's right to charge fees; provided that such access will be consistent with Commission requirements and will be allowed except where unsafe conditions exist,

11.2.13 Vehicular Access and Use Control. For each Project, beginning upon Issuance of the New License for that Project, PacifiCorp shall: (1) discourage dispersed upland (non-shoreline) camping and motorized use, by keeping Project roads gated and maintained as necessary; and (2) continue to work with adjacent private landowners and agency resource managers to restrict access from their non-Project lands onto PacifiCorp-owned lands where undesirable motorized access is gained, such as to the Yale/IP Road corridor.

Draft Recreation Resource Management Plan (RRMP) – April 2004

1.2 Vision for Recreation Resources, pg. 2, states: *The long-term vision for the project area has been defined by PacifiCorp and stakeholders during the relicensing process. This vision includes how project-related recreation resources should be managed in the project area for the term of the new license and includes the following:*

- *A recognition that not all existing and long-term recreation needs can be accommodated in the project area because of the need to balance resource needs;*
- *Recognition that different project reservoirs represent different types of recreations settings along a spectrum from semi-primitive to rural, including project facilities. It is the desire of the stakeholders and PacifiCorp to preserve this existing range of settings and experiences into the future;*

Exhibit C – Proposed Recreation Measures, Schedules and Costs, No. 5 pg. 2, states: <u>*Trails*</u> – *To enhance trail opportunities at Yale Lake, provide signs at all existing and future non-motorized, multi-use trials…*

Exhibit C – Proposed Recreation Measures, Schedules and Costs, No. 5 pg. 8, states: <u>*Recreational Access to Project Lands*</u> *– Continue the current practice of allowing appropriate non-motorized public day use access to all existing and future PacifiCorp-owned lands, and when possible, conservation easements, for recreational purposes. This would include hunting access, except where unsafe conditions exist, project security need require exclusion of the public or public access may harm protected resources. Public access will be addressed in the proposed I&E Program.*

Exhibit C – Proposed Recreation Measures, Schedules and Costs, No. 10 pg. 8, states: <u>*Vehicular Access and Use Control*</u> *– Discourage dispersed upland (non-shoreline) camping and motorized use by keeping project roads gated and maintained as necessary. Continue to work with adjacent private landowners and agency resource managers to restrict access from their non-project lands onto PacifiCorp-owned lands where undesirable motorized access is gained, such as to the IP/Yale Road corridor.*

In addition, Todd Olson, Program Manager for the Lewis River project received a telephone call on July 20, 2007 from Jim Eychaner of the Washington Interagency Committee for Outdoor Recreation. Jim represented the State of Washington recreational resources during the Lewis River SA process. In review of the Cougar Area Trail Seekers (CATS)-ATV issue that is being discussed within the TCC, Jim wanted to make it known that he is opposed to any ATV use on recreation trails including the IP road trail once it is developed. Jim communicated that he is not interested in modifying the SA for ATV use.

References

PacifiCorp and Cowlitz PUD. 2004. Settlement Agreement Concerning the Relicensing of the Lewis River Hydroelectric Projects. FERC Project Nos. 935, 2071, 2111, and 2213.

PacifiCorp and Cowlitz PUD. 2005. Terrestrial and Aquatic Coordination Committees, FINAL Structure and Ground Rules. FERC Project Nos. 935, 2071, 2111, and 2213

PacifiCorp. 2004. Draft Recreation Resource Management Plan. FERC Project Nos. 935, 2071 and 2111.

Attachment B

Assignment from TCC Meeting 7/11/07

This is a definition on goshawk trainers qualifications taken from Woodbridge, B.; Hargis, C.D. 2006. Northern goshawk inventory and monitoring technical guide. Gen.Tech. Rep. WO-71. Washington, DC: U.S. Department of Agriculture, Forest Service. 80 p.

"Personnel Qualifications and Training
Standardized training materials should be developed and provided to field personnel planning to conduct goshawk surveys. Training materials should include identification of vocalizations of goshawks and sound-alikes, identification of goshawks and other forest raptors, identification of molted feathers of forest raptors, and a detailed description of survey protocol implementation. Voices of Western Forest Raptors
and Sound-Alikes and Feathers of Western Forest Raptors and Look-Alikes are two products distributed with this technical guide for the purposes of training and field survey use. Training sessions should be conducted in association with goshawk study sites where trainees can observe breeding goshawks.

Survey crews should consist of two people with one person assigned as crewleader. The survey crew leader should have field experience with goshawks and knowledge of goshawk vocalizations, signs, and behavior, and the ability to train inexperienced partners. At the completion of each survey visit, data entry forms and maps should be assembled and reviewed for inconsistencies or incomplete data by the survey crew leader."

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Attachment C

DRAFT
MEMORANDUM

DATE: August 1, 2007

TO: Terrestrial Coordination Committee

FROM: Kendel Emmerson

SUBJECT: Lewis River Wildlife Habitat Management Plan Standard and Guideline's Wetland Habitat Management Objective B

The purpose of this memo is to inform the Terrestrial Coordination Committee (TCC) of the level of effort required to fulfill the Wetland Habitat Management Objective B:

> *Identify forested wetlands with < 20 percent shrub cover and manage to increase overall shrub cover by at least an additional 5 percent (as determined by the line intercept method) without tree harvest by Target Year (TY) 17 to benefit the yellow warbler and mink.*

PacifiCorp is in the process of developing the Lewis River Wildlife Habitat Management Plan (WHMP). A schedule and effort is estimated for each habitat management area task to assist in budgeting both money and effort. The estimated level of effort to implement Objective B to be statistically accurate is labor intensive and could be considered cost prohibitive. This memo provides an estimate of effort to complete Objective B using line intercept methods and proposes alternatives to reduce the level of effort and meet the objective.

Forested wetlands were classified during relicensing as Palustrine Forested Wetlands (PFO) if the area was palustrine habitat and dominated by woody vegetation greater than 20 feet in height. Twenty-four PFO areas, totaling approximately 32 acres, were identified on WHMP lands. Individual PFO areas range in size from 0.01 to 9.55 acres (PacifiCorp and Cowlitz PUD 2004A).

Line Intercept Method

Objective B requires that the line intercept method be used to estimate percent shrub cover in the PFO areas. This method determines canopy cover by noting the point on a transect (line) where the canopy of a shrub begins and the point at which it ends. These intercepts are added, and then divided by the total transect length; the result is a percent cover for each shrub species intercepted by the transect (USDI-BLM 1998).

The number of transects required to be statistically accurate is a function of the PFO area's natural variability estimated as **coefficient of variation (CV)** and the predetermined requirements for **accuracy** and **precision** (Fairweather 2005**)**. For Objective B, enough transects are required to detect a 5 percent change in the **mean (average)** shrub cover over a 17 year time span. A condensed pilot study was conducted to determine the CV of 5 of the 24 PFO areas: Beaver Bay Wetland (3.70 and 9.55 acres), Cresap Campground Wetland (estimated 3.00 acres), Lake Line Wetland (1.05 acres), and North IP Pond (1.01 acres). The placement of three 100-feet long transects was randomly selected within each PFO area.

Table 1 below shows the results of the pilot study and the number of transects required for each PFO area using the coefficient of variation equation:

$$n = \frac{(t)^2 \times (CV)^2}{(AE)^2}$$

PFO areas are independent of each other, therefore the number of transects (n) will be different for each PFO area and dependent on the PFO area's CV. In addition, the number of the transects must be capable of detecting a 5 percent change between the PFO area's shrub cover means over time, therefore the **allowable error (AE)** can not be greater than 5 percent. The total number of transects (n) has been determined for different **confidence levels**.

Table 1: Pilot Study Number of Transects Using the Coefficient of Variation Equation with a 5 Percent Allowable Error

PFO Area (Acres)	Standard Deviation	Mean	CV	AE	Total number of Transects (n) per Confidence Level (t)		
					80%	90%	95%
					t value 1.3	t value 1.7	t value 2.0
Beaver Bay (3.70)	6.70	8.40	0.80	5%	430	735	1018
Beaver Bay (9.55)	10.30	37.30	0.28	5%	52	88	122
Cresap Campground (estimated 3.0)	11.50	33.00	0.35	5%	82	140	194
Lake Line (1.05)	19.50	65.40	0.30	5%	60	103	142
North IP (1.01)	11.00	10.50	1.05	5%	742	1269	1756

A minimum of 1,366 transects would be required to estimate canopy cover within an 80% confidence level for the 5 PFO areas sampled during the pilot study. Transects during the pilot study required 2 people approximately 30 minutes per transect. It is reasonable to assume that an average of 10 transects could be completed per 8 hour day. Therefore to complete the above listed PFO area at an 80 percent confidence level would require 2 people (1366 transects / 10 transects per day) 137 days or about 2200 man hours (2 people x 8 hour field days x 137 days). This estimated level of effort would only provide canopy cover

estimates for 5 of the 24 PFO areas and is obviously extremely labor intensive and costly to implement.

The following are proposed alternatives to reducing the level of effort and overall cost of implementing Objective B.

Proposed Alternatives

1) Increase the allowable error

The allowable error is the denominator in the coefficient of variation equation; therefore increasing the AE from 5 to 20 percent would significantly decrease the number of transects per PFO area. Table 2 below shows the number of transects required per PFO area with an allowable error of 20 percent and at different confidence levels.

Table 2: Pilot Study Number of Transects Using the Coefficient of Variation Equation with a 20 Percent Allowable Error

Area (Acres)	Standard Deviation	Mean	CV	AE	Total number of Transects (n) per Confidence Level (t)		
					80%	90%	95%
					t value 1.3	t value 1.7	t value 2.0
Beaver Bay (3.7)	6.70	8.40	0.80	20%	27	46	64
Beaver Bay (9.6)	10.30	37.30	0.28	20%	3	6	8
Cresap Campground (estimated 3.0)	11.50	33.00	0.35	20%	5	9	12
Lake Line (1.1)	19.50	65.40	0.30	20%	4	6	9
North IP (1.1)	11.00	10.50	1.05	20%	46	79	110

To complete Objective B for the above listed 5 PFO areas would require a minimum 85 transects for an 80% confidence level. Therefore to complete the 5 PFO areas at an 80 percent confidence level would require 2 people (85 transects / 10 transects per day) 9 days or about 144 man hours (2 people x 8 hour field days x 9 days). Although this significantly decreases the level of effort to determine the shrub cover means, it would mean increasing mean shrub cover by 15 percent more in the PFO areas that are less then 20 percent mean shrub cover. Because each PFO wetland is unique it is difficult to determine if the management costs of increasing the mean shrub cover would exceed costs for estimating the shrub cover within a PFO wetland.

2) Change Method of Assessment

Another option is to use an alternative method for assessing the shrub cover mean. The Merwin WHMP transmission line right-of-way (ROW) shrub cover enhancement projects have been effectively monitored since 1989 with circular plots and photo documentation (Beak Consulting 1988). The photo documentation will provide a reference of the overall habitat condition and vegetation composition. The circular plots will provide an ocular estimate of the shrub canopy cover and vegetation composition.

These same methods could apply in the PFO areas and would significantly reduce the level of effort and overall cost to implement Objective B and still provide documentation of vegetation change. Permanent photo stations could be establish and placed at each of the circular plots and in areas that are representative of the PFO area. Each circular plot will have a radius of 23.6 ft ($1/20^{th}$ of an acre) and will be randomly placed throughout the PFO area. The shrub canopy cover and species will be recorded for each plot. Twenty percent of the total PFO area will be assessed, which will equal 5 circular plots per acre. This was determined with the following information:

$$1 \text{ acre} = 43{,}560 \text{ft}^2$$

$$43{,}560 \text{ ft}^2 \text{ x } 0.20 = 8{,}712 \text{ ft}^2$$

$$8{,}712 \text{ ft}^2 / 5 = 1{,}742 \text{ ft}^2 \text{ for each circular plot}$$

$$r = (1{,}742 \text{ ft}^2 / \Pi)^{1/2} = 23.6 \text{ ft}$$

After the completion of the 5 plots per acre, each PFO area's CV will be calculated and the Coefficient of Variation equation will be used to determine if additional plots will be needed to achieve an AE of 5 percent. Initially 160 circular plots will be required to complete the 20 percent of the known PFO acres on WHMP lands. If we assume that 2 people can complete 10 plots per day, then this would require a minimum of 2 people (160 circular plots / 10 circular plots per day) 16 days or about 256 man hours (2 people x 8 hour field days x 16 days).

Terminology

Accuracy: the degree of conformity of a measured or calculated quantity to its actual (true) value.

Allowable Error: An estimate of how close the data is to the true value

Coefficient of Variation (CV): a unitless quantity indicating the variability around the mean in relation to the size of the mean determined by the standard deviation divided by the mean

Confidence Level: is the degree of confidence that we are within the allowable error (or 5 percent of the true value). This is often described as the t-value, where t values for 80%, 90%, and 95% equal 1.3, 1.7, and 2.0, respectively.

Mean (average): the sum of the values divided by the number of values.

Precision: the degree to which further measurements or calculations show the same or similar results repeatability of measurement

Standard Deviation: is the square root of variance and is measure of the spread of the values

Variance: a measure of a set of values statistical dispersion or the how the values spread around the expected value.

References

Beak Consulting. May 1988 (Draft). A Procedures Manual for Monitoring the Merwin Right-of-Way Wildlife Habitat Management Program. Portland, Oregon. 15 pp.

Fairweather, Stephen. August 2005 (Draft). How Many Cruise Plots Do We Need for a Stand-Based Forestry Inventory? Mason, Bruce, and Girard. Portland, Oregon.

PacifiCorp and Cowlitz PUD. 2004A. Lewis River Hydroelectric Projects Technical Report 5.1 TER 1 Vegetation Cover Type Mapping. FERC Project Nos. 935, 2071, 2111, and 2213

PacifiCorp and Cowlitz PUD. 2004B. Lewis River Hydroelectric Projects Technical Report 5.2 TER 2 Habitat Evaluation Procedures (HEP) Study. FERC Project Nos. 935, 2071, 2111, and 2213

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Lewis River Projects
Shoreline Management Plan

Shoreline Management Plan Development Process

What is a Shoreline Management Plan (SMP)?

"A comprehensive plan to manage the multiple resources and uses of the project's shorelines in a manner that is consistent with license requirements and project purposes, and addresses the needs of the public."

(Federal Energy Regulatory Commission (FERC) Guide to Shoreline Management Planning)

Shoreline Management Plan Process Overview

- Stakeholder & Public Input
- Development of SMP
- FERC Review & Approval
- Implementation

Stakeholder & Public Input

- Public Listening Session(s)
- Interface with Resource Agencies and other Stakeholders
- Opportunities for Review of Draft SMP

Development of Shoreline Management Plan

SMP Elements

- Management Goals and Objectives
- Land Use Classifications
- Allowable Uses
- Permitting Policies & Standards
- SMP Update Policies
- Consultation Procedures

Development of Shoreline Management Plan

Management Goals and Objectives

PacifiCorp is committed to developing a forward looking Shoreline Management Plan, encompassing the spirit and objectives of the Lewis River Settlement Agreement. The SMP will serve as a tool to assist in effectively analyzing appropriate shoreline uses within the Project boundaries, as well as provide a supportable and defensible means for shoreline management and permitting decisions.

Development of Shoreline Management Plan

What Resources May Be Involved?

- Public and Private Shoreline Facilities
- Recreation Use & Access
- Water Use and Quality
- Wetlands
- Cultural & Historic Sites
- Land Use and Aesthetics
- Threatened & Endangered Species
- Fisheries & Wildlife
- Public Safety
- Soils/Erosion

FERC Review & Approval

- PacifiCorp Files SMP with FERC
- FERC Provides Public Review/Comment Period
- FERC Requests Additional Information and/or Drafts EIS or EA
- FERC Approval of SMP
- PacifiCorp Implements SMP

Implementation

- Public Education & Outreach
- Compliance with Policies & Requirements
- Periodic Review of SMP
- SMP Revisions (as warranted over time)

What the Shoreline Management Plan Will Do

- Involve stakeholders
- Identify management policies on PacifiCorp lands and Project waters
- Develop a land use classification system
- Define “allowable uses”
- Identify permitting requirements
- Provide “grandfather” clauses
- Allow PacifiCorp management w/limited FERC oversight

What the Shoreline Management Plan Will Not Do

- Eliminate FERC oversight
- Eliminate PacifiCorp oversight/jurisdiction
- Change the Lakes overnight
- Address issues outside the Project boundaries
- Guarantee continuation of all current/historic uses

Anticipated Schedule

Summer 2007

- Meet with stakeholder groups
- Develop classifications & allowable uses
- Develop permitting policies

Fall/Winter 2007

- Distribute Draft SMP for review and comment
- Public meetings to discuss Draft SMP
- Agency review of Draft SMP
- Finalize SMP and submit to FERC

Summer/Fall 2008

- FERC approves SMP
- PacifiCorp implements SMP policies

Comments or Questions?