

**FINAL Meeting Notes
Lewis River License Implementation
Aquatic Coordination Committee (ACC) Meeting
August 13, 2009
Conference Call**

ACC Participants Present (14)

Jeremiah Doyle, PacifiCorp Energy
Bernadette Graham-Hudson, LCFRB
Adam Haspiel, USDA Forest Service
David Hu, USDA Forest Service
LouEllyn Jones, US Fish and Wildlife Service
Eric Kinne, WDFW
Erik Lesko, PacifiCorp Energy
Jim Malinowski, Fish First
Kimberly McCune, PacifiCorp Energy
Kathryn Miller, Trout Unlimited
Todd Olson, PacifiCorp Energy
Shannon Wills, Cowlitz Indian Tribe

Ethan Bell, Stillwater Sciences
Jody Lando, Stillwater Sciences

Calendar:

September 10, 2009	ACC Meeting	Merwin Hydro
October 8, 2009	ACC Meeting	Merwin Hydro

Assignments from August 13, 2009 Meeting:	Status:
Lesko: Provide Kathryn Miller (Trout Unlimited) a redline version of the H&S Plan which illustrates all changes made by the Subgroup.	Complete – 8/17/09

Assignments from July 9, 2009 Meeting:	Status:
McCune: Email copies of the Eagle Cliff Trail Feasibility Study Report comment letters from WDFW and USFWS to Pat Frazier (WDFW).	Complete – 7/9/09

Assignments from April 9, 2009 Meeting:	Status:
ACC: Further investigate WDFW carcass survey methods established in 1978 and determine “next step” regarding modifications needed, if any, to the 1978 methods.	Pending – Per Pat Frazier could take 1 – 2 months to put together

Opening, Review of Agenda and Meeting Notes

Todd Olson (PacifiCorp Energy) called the meeting to order at 9:05am. Olson reviewed the agenda for the day and requested any changes/additions. No additional changes were requested with the exception of an earlier email notification to the ACC that Stillwater

Sciences will provide a PowerPoint presentation on the *Lewis River Stranding Monitoring Study Plan*, August 2009 at 9:30am.

Olson requested comments and/or changes to the ACC Draft 7/9/09 meeting notes. No changes were requested. The meeting notes were approved at 9:10am.

Lewis River Stranding Monitoring Study Plan – Stillwater Sciences

Ethan Bell (Stillwater Sciences) provided a PowerPoint presentation ([Attachment A](#)) dated August 13, 2009 to provide an overview of the draft Stranding Monitoring Study Plan and address any initial ACC questions/concerns. The Plan was distributed by PacifiCorp on August 10, 2009 for a 30-day review period. **Comments are due on September 11, 2009.**

Bell identified the study objectives to include measurable factors affecting potential stranding, the relationship of such factors to each other, and the time frame and season within which stranding may occur. In addition, they will evaluate spawning and rearing habitat from Merwin Dam to the downstream end of Eagle Island across a range of minimum flow operational conditions.

The general approach includes a field evaluation at four minimum flows, assessing lowest flows first, identifying Potential Stranding Zones (PSZs), delineating life stage-specific salmonid habitat downstream of Merwin Dam and conducting all mapping on aerial photographs.

Bell discussed the criteria used to identify PSZs and provided photography illustration of examples such as potholes or depressions without egress, gradient less than 5% and substrate consisting of cobble and gravel.

In response to Bernadette Graham-Hudson's (LCFRB) question, Bell noted that side channel areas are also included in the study.

Jim Malinowski (Fish First) requested Stillwater Sciences identify the mechanisms that created the stranding problem and how physical features might be altered to prevent large stranding areas in the future. Bell commented that the Study will identify what features is creating the problem.

Criteria used to evaluate habitat was discussed to include water depth, water velocity, substrate and nexus to literature.

Bell informed the ACC attendees that a guilding habitat criterion (mapping certain species together with similar habitat) will be used to evaluate habitat.

A schedule specific to minimum flow requirements was provided for ACC review. Variation in flow is likely in the fall and winter periods each due to inclement weather/rainfall.

And lastly, Bell discussed the method of analysis and reporting to include a GIS analysis, synthesis of stranding risk (species, life stage, season, flows), habitat maps, critical flows

for habitat and stranding risk and critical changes in flow likely to affect stranding risk and habitat availability.

Malinowski expressed that during the WDFW flow drawdown and carcass surveys he would like to see as many of the fish carcasses in the water rather than on the bank. He requested that field researchers identify if it was apparent if flows were placing the carcasses up on the bank, or carcass survey crews.

In response to a question from Graham-Hudson's regarding how the study results will be used by PacifiCorp, Olson informed the ACC attendees that following the study, findings can be used to see if physical alterations could be done to minimize stranding impacts. The information would be helpful for future Aquatic Fund project opportunities. Study results may also result in ACC discussions of flow reductions for carcass surveys.

Shannon Wills (Cowlitz Indian Tribe) joined

The Stranding Monitoring Study is out to the ACC for a 30-day review and comment period. **Comments are due on or before September 11, 2009.**

Hatchery and Supplementation Plan (H & S Plan) Update

Erik Lesko (PacifiCorp Energy) informed the ACC attendees the H&S Plan is currently out to the ACC for its 30-day review and comment period. The document can be viewed on the Lewis River website at: <http://www.pacificorp.com/Article/Article85126.html>

Comments are due on or before September 7, 2009.

The H&S Plan Subgroup has made some changes to the Plan over many months, keeping in mind the consistency needed with the Hatchery & Genetic Management Plans (HGMPs) and with the Monitoring and Evaluation Plan. Kathryn Miller (Trout Unlimited) asked Lesko to provide her a redline version of the H&S Plan which illustrates all changes made by the Subgroup.

Lesko communicated to the ACC attendees that the H&S Plan is a guideline and a living document which will be under review every five years. In addition, there is an adaptive management piece built into the H&S Plan should the ACC determine changes are needed in the future.

Once comments are received from the ACC, version 8 of the H&S Plan will be provided to the Services for its 60-day review and comment period. Comments will be due from the Services on or before December 1, 2009 to allow PacifiCorp time to incorporate the comments and eFile with the Federal Energy Regulatory Commission (FERC) no later than December 26, 2009.

Study Updates

Olson and Lesko provided the following study updates:

Swift Constructed Channel and Swift Upper Release – Construction began several weeks ago; however the construction crew recently started to get water seepage into the

construction area so work was stopped. The FERC was notified and they asked that PacifiCorp conduct additional engineering at this site. PacifiCorp proposed to the ACC that since a construction crew was in place that they begin work on the Constructed Channel. The ACC approved so PacifiCorp is currently mobilizing its crew. During the Constructed Channel work, flow will be provided to the bypass reach at all times. Lesko, Shrier and Doyle (PacifiCorp Energy) will conduct the necessary fish salvages.

Hatchery Upgrades –

Lewis River Hatchery Pond 15 will be delayed at least a couple of weeks as the sorting table from Reiff Manufacturing is not ready. The new target date for the pond to be functional is September 15.

Speelyai Burrows Pond floor has been poured and the walls will be poured this week. This project is on schedule.

*Stress Release Pond Design –*The comment period closed on July 27, 2009.

Acclimation Pond Plan – Consultants working on a conceptual design.

Water Quality Management Plan – Currently still under Washington Department of Ecology (DOE) review.

Merwin and Swift 90% Design Submittal – Comment period closed on August 10, 2009. The next Engineering Subgroup will be August 18, 2009 and they will continue to move ahead with final design for submission to FERC.

Monitoring and Evaluation Plan (ACC Review Draft) – The Plan is out for a 90-day review and comment period. Comments are due September 21, 2009.

Baseline Monitoring Plan – The Subgroup meet two weeks ago. Within the next two weeks baseline sampling will begin and will include electro-fishing, identifying species composition and obtaining a subsample of tissue samples.

Public Comment

None

New Topics

Olson informed the ACC attendees that PacifiCorp is pursuing additional water rights (higher instantaneous use) at the Swift No. 1 powerhouse for future upgrades. PacifiCorp will keep the ACC apprised of its efforts.

Agenda items for September 10, 2009

- Review August 13, 2009 Meeting Notes
- Update from H&S Plan Subgroup
- Field Trip to include Lewis River Hatchery Pond 15, Speelyai Hatchery Burrow Pond, and Constructed Channel
- Study/Work Product Updates

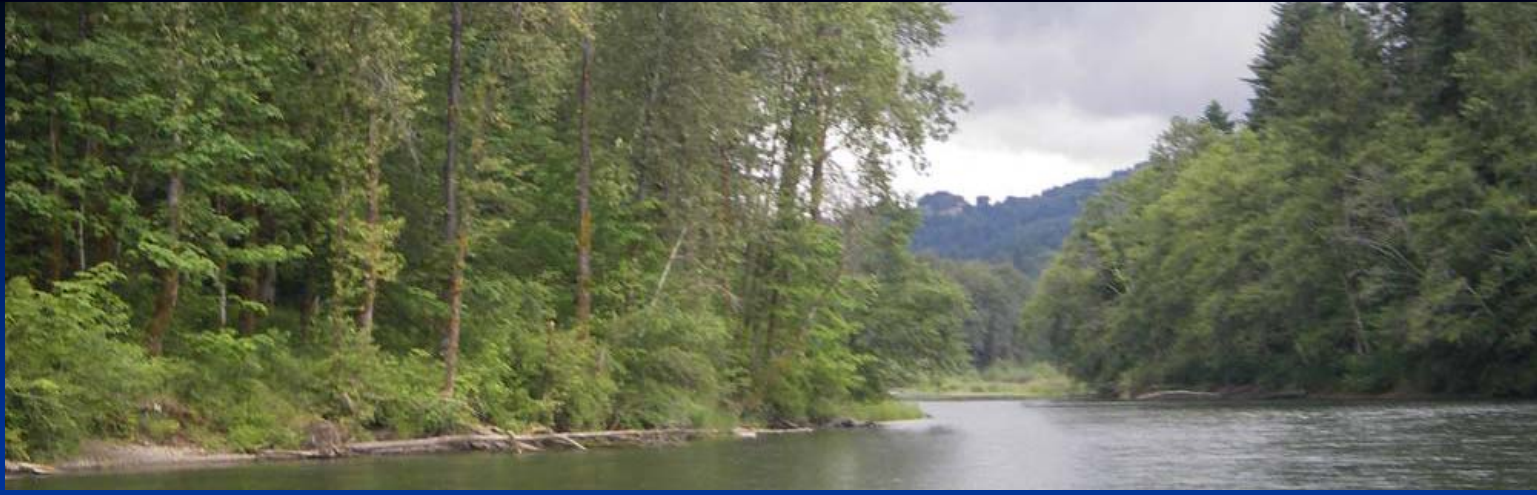
Next Scheduled Meetings

September 10, 2009	October 8, 2009
Merwin Hydro Control Center	Merwin Hydro Control Center
Ariel, WA	Ariel, WA
9:00am – 3:00pm	9:00am – 3:00pm

Meeting Adjourned at 10:10 a.m.

Handouts

- Final Agenda
- Draft ACC Meeting Notes 7/9/09
- [Attachment A](#) – Lewis River Stranding Monitoring Study Plan PowerPoint Presentation, dated August 13, 2009



Lewis River Stranding Monitoring Study Plan

Draft for Aquatic Coordination Committee

Stillwater Sciences

13 August 2009

Objectives

- Identify measurable factors affecting potential stranding, the relationship of such factors to each other, and the time frame and season within which stranding may occur.
- Evaluate spawning and rearing habitat from Merwin Dam to the downstream end of Eagle Island across a range of minimum flow operational conditions.



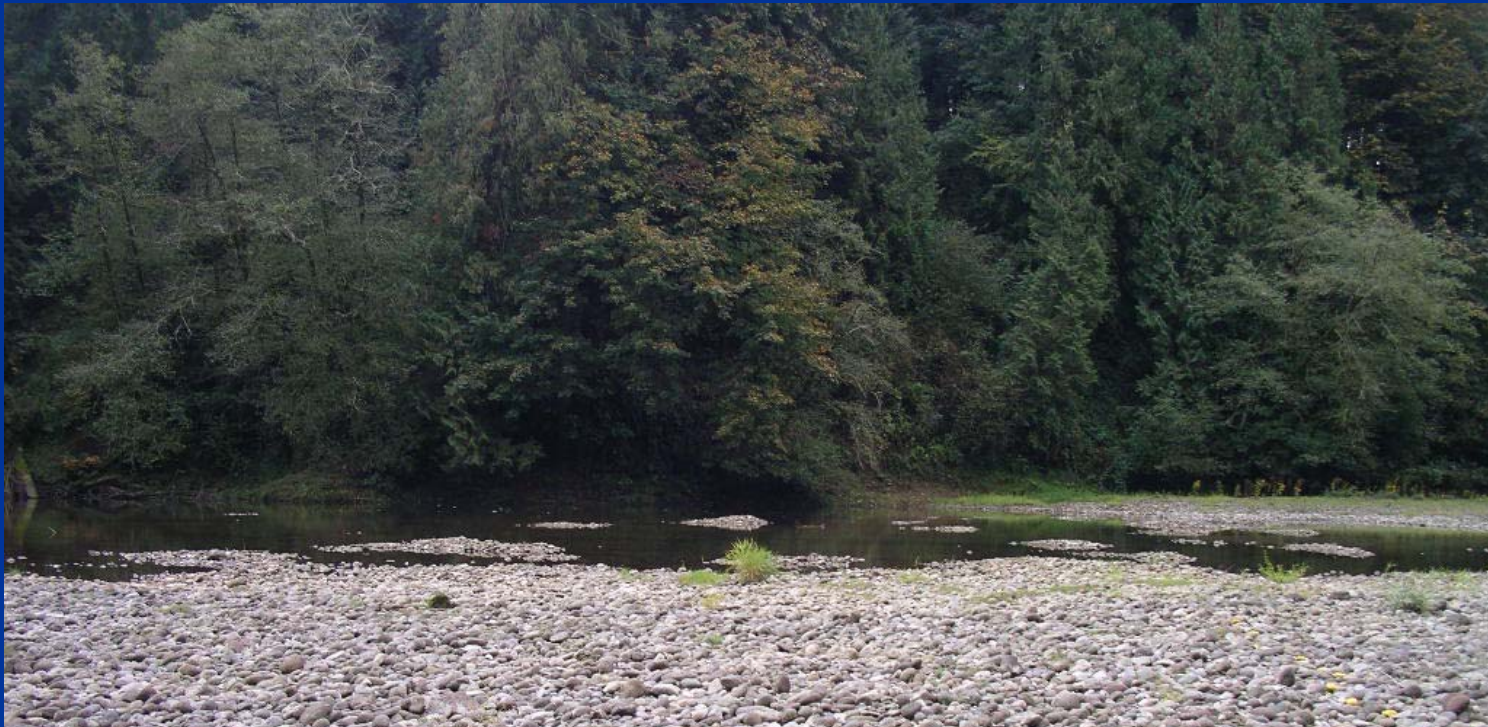
General Approach

- Field evaluation at four minimum flows
 - Assess lowest flows first
- Identify Potential Stranding Zones (PSZs)
- Delineate life stage-specific salmonid habitat downstream of Merwin Dam
- All mapping conducted on aerial photographs

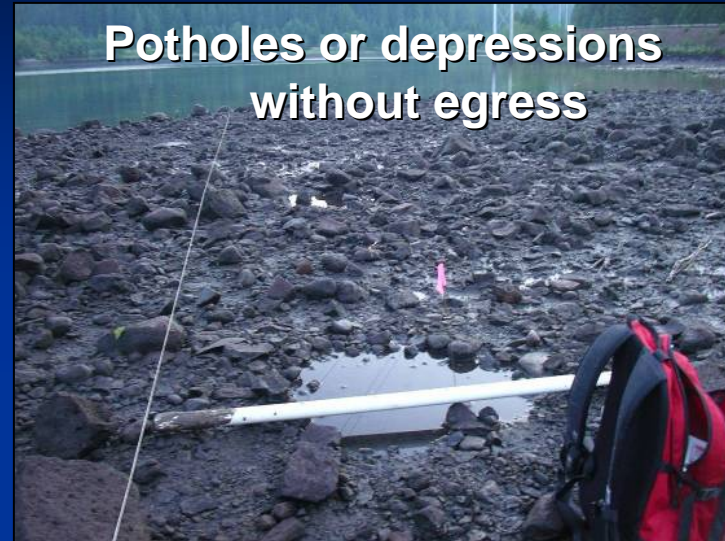


Approach: Criteria Used to Identify Potential Stranding Zones

- Potholes or depressions without egress
- Gradient less than 5%
- Substrate consisting of cobble and gravel



Approach: Criteria used to Identify Potential Stranding Zone



Approach: Field Mapping (PSZs)



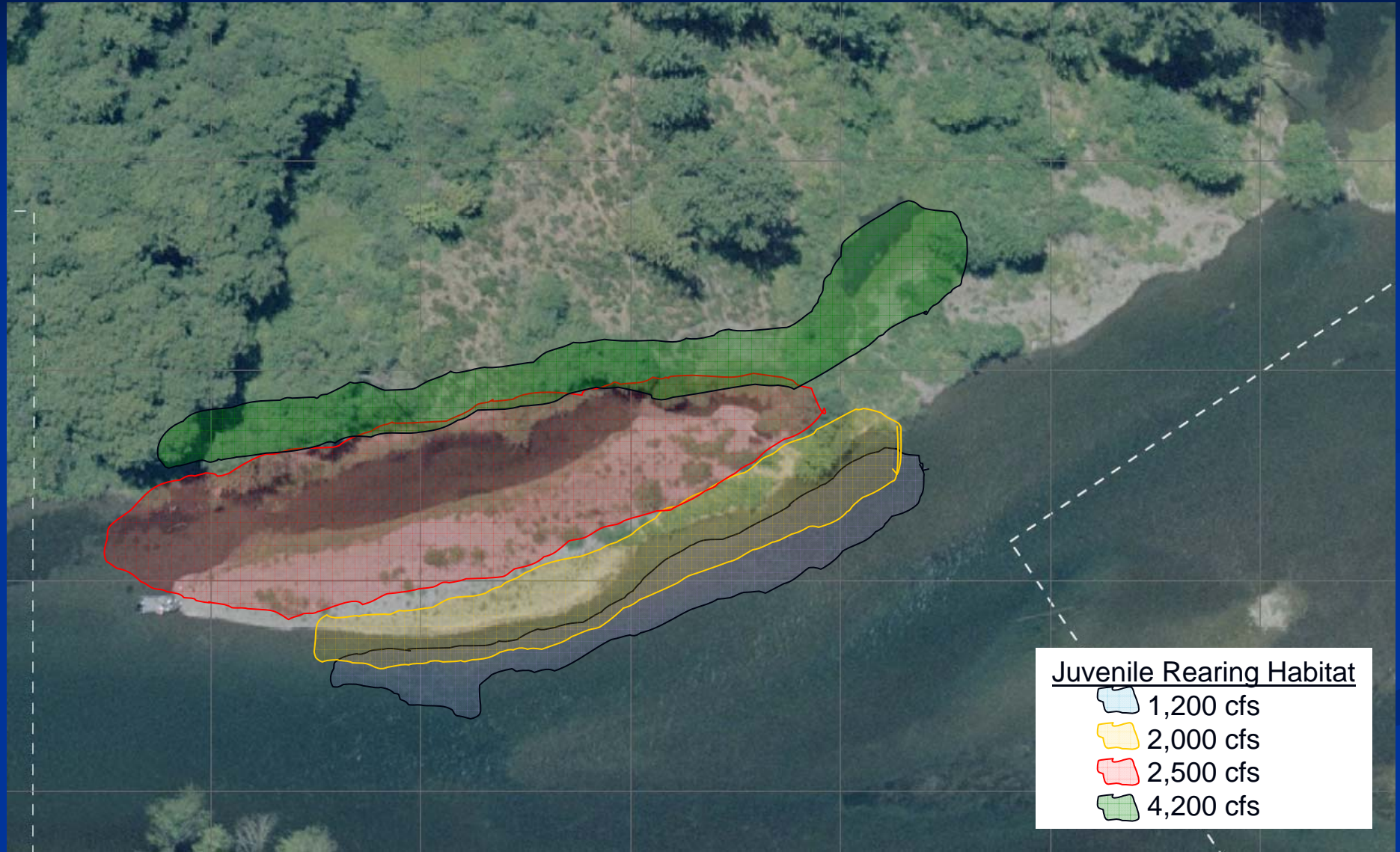
Approach: Criteria Used to Evaluate Habitat

Life stage	Habitat characteristic	Range of "good" values	Supporting literature
<i>Chinook salmon</i>			
Spawning	Depth	0.15–1.2 m (0.5–4 ft)	Primary: Lewis River Habitat Suitability Index Curves based on 0.5 suitability (PacifiCorp 2004) Secondary: Bovee (1978), Bell (1986), and Bjornn and Reiser (1991)
	Velocity	0.3–1.1 m/s (1.0–3.5 ft/s)	Primary: Lewis River Habitat Suitability Index Curves based on 0.5 suitability (PacifiCorp 2004) Secondary: Bovee (1978), Bell (1986), and Bjornn and Reiser (1991)
	Substrate (D_{50})	11–69 mm (0.4–2.7 in)	Primary: Kondolf and Wolman (1993) Secondary: Thompson (1972)
Fry rearing	Depth	<0.6 m (<2.0 ft)	Primary: Everest and Chapman (1972) Secondary: Lister and Genoe (1970), Stuehrenberg (1975)
	Velocity	<0.2 m/s (<0.7 ft/s)	Primary: Everest and Chapman (1972) Secondary: Lister and Ganoe (1970), Stuehrenberg (1975), Thompson (1972)
Juvenile rearing	Depth	0.3–1.1 m (1.0–3.5 ft)	Primary: Lewis River Habitat Suitability Index Curves based on 0.5 suitability (PacifiCorp 2004) Secondary: Everest and Chapman (1972)
	Velocity	0.03–0.5 m/s (0.1–1.5 ft/s)	Primary: Lewis River Habitat Suitability Index Curves based on 0.5 suitability (PacifiCorp 2004) Secondary: Hardin-Davis et al. (1991), Everest and Chapman (1972)
<i>Coho salmon</i>			
Spawning	Depth	0.15–0.9 m (0.5–3.0 ft)	Primary: Lewis River Habitat Suitability Index Curves based on 0.5 suitability (PacifiCorp 2004) Secondary: Thompson (1972) as cited in Bjornn and Reiser (1991)
	Velocity	0.09–0.8 m/s (0.3–2.7 ft/s)	Primary: Lewis River Habitat Suitability Index Curves based on 0.5 suitability (PacifiCorp 2004) Secondary: Thompson (1972) as cited in Bjornn and Reiser (1991)
	Substrate (D_{50})	5–35 mm (0.2–1.4 in)	Primary: Kondolf and Wolman (1993) Secondary: None
Fry rearing	Depth	<0.24 m (<0.8 ft)	Primary: Bugert et al. (1991) Secondary: Bisson et al. (1982), Sullivan (1986), Dolloff (1983)
	Velocity	<0.1 m/s (<0.3 ft/s)	Primary: Bjornn and Reiser (1991) Secondary: Reeves et al. (1989)
Juvenile rearing	Depth	0.15–1.4 m (0.5–4.5 ft)	Primary: Lewis River Habitat Suitability Index Curves based on 0.5 suitability (PacifiCorp 2004) Secondary: Sheppard and Johnson (1985), Dolloff and Reeves (1990)

Approach: Guilding Habitat Criteria

Guild name	Minimum polygon area (m ²)	Cover type and/or substrate criteria	Velocity (m/s)		Depth (m)	
			Minimum	Maximum	Minimum	Maximum
Spawning guilds						
Chin/Chum	4.3	D ₅₀ of 10–65 mm	0.3	1.1	0.15	1.5
Stld/Coho	2.8	D ₅₀ of 10–40 mm	0.3	0.9	0.15	0.9
Fry rearing guilds						
Chin/Chum	2	none	none	0.2	none	0.6
Stld/Coho	2	none	none	0.15	none	0.3
Juvenile rearing guilds						
Chin	2	none	0.03	0.5	0.3	1.1
Coho	2	Within 1 m (3 ft) of cover	none	0.14	0.15	1.4
Stld	2	none	0.09	0.8	0.2	none

Approach: Field Mapping (habitat evaluation)



Minimum Flow Requirements

Period	Flow (cfs)
July 31–October 15	1,200
October 16–31	2,500
November 1–December 15	4,200
December 16–March 1	2,000
March 2–15	2,200
March 16–30	2,500
March 31–June 30	2,700
July 1–10	2,300
July 11–20	1,900
July 21–30	1,500

Flow Selection

Target flow (cfs)	Season and rationale	Stranding assessment objectives	Habitat assessment objectives
1,200	Late summer (July 31 through October 15) and during WDFW fall spawning surveys. Target flow is also similar (within 300 cfs) to summer (July 21–30).	Assess dewatering risk for redds and stranding risk for juveniles when flows are reduced during fall spawning surveys.	Assess habitat availability during low flow conditions.
2,000	Winter (December 16 through March 1). Target flow is also similar (within 100 cfs) to summer (July 11–20).	Assess stranding risk for juveniles.	Assess habitat availability during low flow conditions for rearing.
2,500	Fall (October 16 through October 31), winter (March 16 through March 30). Target flow is also similar (within 300 cfs) to flows occurring during winter, spring, and summer (March 2 through July 10).	Assess stranding risk for vulnerable emergent fry and juveniles.	Assess habitat availability for spawning and rearing during moderate flow conditions.
4,200	Early winter (November 1 through December 15).	Assess stranding risk for juveniles.	Assess habitat availability for rearing during high flow conditions.

Analysis and Reporting

- GIS analysis
- Synthesis of stranding risk (species, life stage, season, flows)
- Habitat maps
- Critical flows for habitat and stranding risk
- Critical changes in flow likely to affect stranding risk and habitat availability

