Dear Forest Practices Board Members,

In Response to the call for materials related to the finalization of the permanent rule and associated FHAM the Eastside Tribal Caucus would to share the following concepts and material.

You will find in the attached document a summary of data from one watershed in the Quileute Tribes territory. This is an example of thoroughly collected tribal data where we have been able to speak directly with the staff who collected the data and how they collected it. This is one example of a data set that we have high confidence in and is representative of the data and results that our tribes have collected and are represented in the Eastside Tribes FHAM proposal. It also highlights the need to establish a risk allocation to use as criteria to meet when evaluating the existing data. To finalize the metrics associated with Potential Habitat Breaks or a (PHB) there must be a decision made on the risk allocation to determine the metrics that reflect that acceptable risk.

This data is from one entire watershed and offers a great example of the variability on the landscape and the associated metrics that demonstrate the end of fish habitat.

Our caucus worked with all three of our tribe's fish biologists to develop our proposed metrics. Through extensive data sifting, the vast experience our biologists have in our region assessing fish habitat, and discussions with FFR field staff we are confident that our metrics offer the appropriate shared risk and risk allocation to determine fair and legitimate PHB metrics. Also, we focused on the metrics that are easily measured in a repeatable and enforceable manner and can be done by the average landowner.

Section 4. Potential Natural Barriers

1.) **Straight vertical falls or chutes** - with no steps or holding pools; must be composed of non-deformable material. (e.g., bedrock or persistent hardpan; not wood or sediment)

(i) Salmonids in headwater streams less than 5 ft. BFW and (7 ft. vertical falls)

(ii) Anadromous fish, Resident Cutthroat Trout and Bull Trout are likely to occur in BFW greater than 5ft. and less than (10 ft. vertical falls)

2.) **Cascades**-in streams with BFW less than 5 ft. Highly turbulent series of short falls and small scour basins, with very rapid water movement as it passes over a steep channel bottom with gradients exceeding 12% and multiple vertical fall heights of >5 ft.

In streams with BFW greater than 5 ft. with gradients exceeding 16% and multiple vertical fall heights of >8 ft.

- Highly turbulent falls with rapid water movement and steep channels pose barriers to fish movement. Different species have different abilities to navigate step formations that create limitations based on which species, burst speeds and water temperature. Therefore, fish can navigate these falls but when in multiples, the height thresholds are lessened and site specific factors like availability of resting pools becomes a greater factor (Powers and Osborn, 1985)

3.) **Sustained 20% gradient**-for a distance of at least 100 ft. with no resting areas and a BFW greater than 5 ft.

- Data from the relevant BAS and collected by regional experts supports the criteria for potential gradient barriers, "Gradient immediately upstream of the limit of trout distribution in unlogged sites averaged 25.0% vs. 16.7% in logged sites" (Latterell et al. 2003)

3.) **Sustained 16% gradient**-for a distance of at least 100 ft. with no resting areas and a BFW greater than 2 ft.

- Washington State Department of Fish and Wildlife defines a natural point barrier as a falls or chute > 12' in height, and defines a gradient barrier as a sustained slope of >20% over a distance of >160 meters (WDFW 1998 SSHEAR Program)
- We determined the 100ft. metric based on the review of hundreds of data points which indicated the change in gradient above last fish. In most instances these gradient features would persist with moderate variation well past the 100-ft. point. We selected 100 ft. based on best professional judgement and existing data, analysis.

4.) **Sustained 12% gradient**-for a distance of at least 50 ft. with no resting pools and a BFW greater than 1 ft.

- Streams less than 12% gradient usually always support fish. (Trotter, 2000)

(i) Bull Trout are able to negotiate higher gradient cascades than other fish species. When bull trout are known to be present downstream, pre-consultation with WDFW and affected tribe(s) is required

In conclusion, the need to agree on an acceptable risk allocation is critical to the concept of using the existing regional data to develop metrics for PHBs. In addition, we feel the metrics we have provided are reflective of accurate and appropriate metrics. We feel this strategy of appropriate risk allocation is the only way to ensure a reduction in electrofishing and the assurance that we are adequately protecting all potential and restorable fish habitat.

Thank you very much for your consideration of this information.

Respectfully,

Marc Gauthier

UCUT Forest Practices Coordinator

Grader Creek Segment Number	last fish point	BFW (ft.)	OHWM (ft.)	WW (ft.)	Gradient (%)	Fish (Y/N)	Species	AGA Average Gradient Above	AGB Average Gardient Below
	370	4	3	1	9	Y	Cutt	11.6	8.3
B-1	60	3	3	3	15	Y	Cutt	19.4	10.6
B1-A	8	2	2	1	16	Y	Cutt	24.5	15.3
B-2	1	4	3	2	4	Y	Coho	9.62	4
B-8	23	3	2	2	23	Y	Cutt	20.25	14.4
B-9	48	3	2	2	14	Y	Cutt	20.2	7.7
B-9A	1	3	3	3	14	N		10.37	
B-9B	13	2	2	1	12	Y	Cutt	20	8.6
B-13	53	4	4	1	6	Y	Cutt	6	9.7
B-15	24	2	2	2	2	Y	Sculpin	10	5
B-16	64	2	1	1	21	Y	Cutt	22.2	11.1
B-16A	2	1	1	1	9	Y	Cutt	10.16	9
B-19	18	6	5	4	11	Y	Sculpin	7.1	12.5
B-20	64	4	3	2	9	Y	Cutt	12.5	9.4
B-21	53	2	2	2	1	Y	Sculpin	3.3	2.9
Results		3 ft. at 50-50 risk allocation						13.81% average at 50-50 risk allocation	9.17 average at 50-50 risk allocat
		2.1 ft. at 80-20 risk allocation						17.95% average at 80-20 risk allocation	11.92 average at 80-20 risk alloca

Note that these variables are arrived at in combination, BFW and gradient this does not demonstrate the limits of fish habitat as stand alone variables. Fish will utelize smaller BFW streams with lower gradients for example

ion

ıtion