# Steering Committee FINAL Meeting Summary

Monday, January 25th, 2021 1:00 pm – 3:00 pm
Zoom Meeting ID: 844 4998 5297

**Welcome/Introductions**
Tami Pokorny, Jill Silver, Kevin Featherston, Luke Kelly, Tim Abbe, Jean Fletcher, Mike Ericsson, Steve Morrow, Wendy Largent, Betsy Krier, Bridget Kaminski Richardson, Caroline Walls, Garrett Dalan, Jamie Bass, Jess Helsley, Julie Ann Koehlinger, Kyle Martens, Mara Zimmerman, Nicole Rasmussen, Phil Roni, Raena Anderson, Rich Osborne, Shelby Burgess, Roger Oaks, Katie Krueger, Eric Carlsen, Mike Rohde, and Jessie Huggins

**Agenda Changes/Additions**

No changes or additions

**Approval of the December 21, 2020 Draft Meeting Summary**

No comments, approved by consensus

**Announcements/Comments**

None

**Old Business**

None

**New Business**

Final Draft Assessments:
- Aquatic Habitat Assessment – *Phil Roni, Cramer Fish Sciences*
- Vegetation/Forest – *Kevin Fetherston, Natural Systems Design*
- Channel Migration Zone – *Mike Ericsson and Tim Abbe, NSD*

Mike began by updating the group on the project work completed to date. Assessments completed thus far include: Channel Migration Zone delineation; Vegetation / Forest Conditions; Hydrology and Hydraulics; Geology and Sediment sources. Aquatic Habitats assessment will be completed by mid – Feb.

Once maps are finalized (mid Feb), they will be available for online download via zip file. (Tami can also send out hard copy maps upon request)

<u>Vegetation/Forest – Kevin Fetherston, Natural Systems Design</u>

Kevin Fetherston began discussing the vegetation / Forest conditions. Kevin noted that reaching the goal of this project (MHRP), resiliency, is dependent upon the integrity of the riparian forest condition.

The Riparian Forest Assessment includes:

- Refinement of riparian forest mapping and characterization of forest within and without the Geomorphic Migration Zone (GMZ)
- Mature riparian forests within the adjacent to the GMZ are critical to the resiliency of the natural Hoh River channel pattern and aquatic habitats.
- Mature riparian forests are large tree sources pools and are the foundation of the entire Hoh River ecosystem.
- Long term (100's yrs) resiliency of the Hoh River ecosystem is dependent upon conservation and restoration of mature riparian forests

Kevin reviewed and summarized the forest mapping work completed using first return LiDAR to develop a height structure map (e.g. coniferous >75% cover, deciduous <75% cover, and mixed <75% cover conifer & deciduous).

A photo of the Hoh River and floodplain was shown and within the photo shows a mosaic of riparian vegetation structures (e.g. coniferous >125', Deciduous 75 -125', Mixed 75 – 125', and deciduous < 5')

Kevin showed a map of channel movement since 1939. It showed the GMZ boundary, and tree recruitment to the channel as the river moves and erodes banks (one kind of disturbance), and channel migration is driving forest structure in this example. Other areas have forest structure driven by other disturbance factors (e.g. forest clearing).

A forest typing map was shown, showing different forest structures labeled by different color polygons. This map helps locate potential sources of large wood.

Primary point, what's driving the forest structure is the type of disturbance you have within and outside the GMZ. In ONP disturbance is primarily wind and fire.

Kevin showed an illustration of riparian floodplain forest mosaic, showing floodplain, developing floodplain, terraces, etc.

Showed bar graphs of different types of stand types and heights. One graph for inside the GMZ and one for outside the GMZ.

A comparison of two aerial images was shown (Hoh River in ONP vs Cowlitz River). The Hoh showed more large wood, braiding, diversity of floodplain, forest age, etc. where Cowlitz shows many few habitat features and diversity.

It was noted that we need to reserve as much mature riparian forest as possible to meet our resiliency goal. Mature riparian forest is the keystone element critical to long term resiliency.

Long term resiliency = forest protection and restoration

- Dependent upon preservation of existing mature and developing riparian forests
- Reforestation of cleared riparian areas where possible
- Active revegetation of all engineered log jam projects

Aquatic Habitat Assessment – Phil Roni, Cramer Fish Sciences

Phil presented preliminary results from the Aquatic Habitat Assessment. Results are preliminary because we are waiting on aerial imagery to further delineate large wood in the floodplain.

The Cramer team conducted ~4 days of field surveys to characterize aquatic habitat in the project reach. Habitat features assessed include glides, pools, rapids, riffles, and backwater. Characterized different channel types such as mainstem, braids, and side channels. Also characterized the locations of logjams within the wetted channel and will complete the large wood delineation with aerial imagery.

Phil showed a map of the project reach with different habitat types labeled (e.g. glide, pool, riffle, etc.)

The aquatic habitat assessment is broken down into sub-reaches (5 total sub reaches). It was noted that they did not survey all side channels due to time limitations and locations in the floodplain.

Phil showed a table with each subreach length, mean channel width, total pools, total pool area, percent pool area, pools per mile, channel widths per pool, etc. Next, a bar graph was shown illustrating the quantity of habitat types per subreach.

The assessment showed relatively good amount of slow water habitat (good salmon rearing habitats).

The piece that we don't have just yet, is mapping out all of the wood and jams in the CMZ. Once we have this, the habitat types per subreach data can be completed, and this data will also highlight areas that are depleted of wood.

Phil showed a bar graph illustrating riverbank composition per subreach was shown, illustrating amount of bar edge, hydromodified, natural bank, and riprap.

Tim asked how side channels were defined. Phil answered: Side channels are defined as channels separated by forested bar, vs braids that are separate channels across gravel bars / bare substrate.

Jill asked if they would be looking to quantify the amount of eroded bank with no riparian forest. Phil answered, and this is not in the scope of their work. Mike noted that the project is looking at erosion rates based on forest condition. Jill noted that there are several sections eroding where there will be no recruitment for a long time, and hopefully this being considered in the restoration recommendations.

Tami asked the NSD and Cramer team if they had comments on trends in habitat, and also about the exposed and eroding marine clay deposits. No habitat 'trends' were noted. Mike noted the clay is mostly concentrated in two spots (above Oxbow and Spruce Canyons). Clays formed behind terminal moraine in a glacial lake. These clays contribute fine sediment and potential landslides. Generally, fine sediment is not beneficial to salmon habitat. Tim noted that the fines coming in from other areas (e.g. debris flow areas upstream) may be of more concern (but to be determined).

Phil noted that their survey characterized dominant sediment types (visually), and in summary the level of fines seemed to be ok.

Jill noted that the fines are certainly present, and deposition of fines is accumulating in specific areas. (via personal field experiences).

Luke asked about existing / historical cross sections or channel profiles. Phil noted that they have not been looking into that kind of data. Jill noted that BoR did a channel profile in ~2004 for the watershed assessment.

Luke asked about the use of 'structure for motion'. Is this something to consider? Tim answered that S for M is good for reach scale application, but not the best for larger areas. Phil recommended Green LiDAR for the whole reach (far superior for these purposes). Mike noted that the S for M is based on first return LiDAR and could be useful for specific target areas.

Jill asked if FHA has any cross-section data, and Stephen M. didn't think so, but he will look into it.

Channel Migration Zone – Mike Ericsson and Tim Abbe, NSD

Mike presented the final results from the CMZ mapping work

Updated CMZ used BoR 2004 CMZ; 2013 LiDAR; Geologic Mapping; Historic air photos, interviews and anecdotal accounts, recon level field investigation

Different zones mapped out include: Historic Migration Zone (HMZ); Active Geomorphic MZ (GMZ); Erosion Hazar Area (EHA); Avulsion Hazard Area (AHZ); Geotechnical Hazard Area (GHA); Alluvial Fan Hazard Area (AFH); and Channel Migration Zone (CMZ).

HMZ and GMZ are areas where erosion can certainly occur, whereas EHAs are areas outside of HMZ and GMZ but still potential at risk of channel migration and therefore erosion.

CMZ delineation – drivers of channel migration:

- Hydrology
- Geology
- Sediment supply
- Vegetation
- Bank erosion
- Wood loading

Reach specific drivers of channel migration

- Valley geologic composition
- Valley Forest Composition
- Sediment Deposition Trends
- Channel forms

CMZ delineation Continued...
Valley Geologic Composition of the Hoh is:

- Post glacial alluvium and glacial (low – moderate bank height)
- Glacial (high bank height)
- Bedrock

Valley Forest Composition

- Soil cohesion from rooting mass

- More mature forest = lower erosion rate
- Pioneering trees and shrubs = higher erosion rate
- Local influence that varies spatially and temporally

Sediment deposition trends

- Supply limited (incision, straighter channel w/ lower erosion rate) VS
- Transport limited (deposition, braided/wandering forms with higher erosion rates)
- The Hoh River = high sediment supply as well as ample transport capacity.

Channel form

- The Hoh seems cyclical between single and multithread.
- Currently, single thread ~75% of project reach length
- Avulsion common however lateral erosion predominated channel migration (lack of forested islands)

Mike showed example maps/images showing the difference between new CMZ and the 2004 BoR CMZ. The new CMZ covers a larger area and includes the different mapped zones (e.g. HMZ, GMZ, etc.).

A map of the Fletcher Ranch was shown, and Mike noted that river had not migrated into this area for over 100 years.

Mike showed images of CMZ boundary and how the channel could potentially interact with alluvial fans.

A CMZ map was shown of the Brandeberry area, and it was noted that there are a lot of structures in the hazard zone area.

Mike will put the maps on the project shared drive. Let Tami or Mike know if you need a copy of the maps via flash drive/USB or hard copy. Please review and provide comments. Comments should be sent to Tami.

**News and Projects Updates – *All***

<u>Near-term Projects</u>

Luke gave the group an update on two Hoh-restoration related meetings (RE: upcoming SRFB round and Glacial retreat impacts/trends project development). The SRFB sponsors meeting went well. Active projects and currently proposed projects (e.g. FHA/County Oil City Rd engineering feasibility study, WCRRI Oil City Rd barriers proposal, etc.) were discussed. Tami, Jill, Luke, and others are working to find LiDAR funding, particularly for the middle Hoh, but also looking long term for another LiDAR flight for entire Hoh (below ONP). Otherwise, there are no apparent Hoh watershed-related proposals coming forward for this round of SRFB funding. That said, it is early in the proposal process and there is still time to put forward a SRFB proposal.

The glacial retreat meeting also went well. We discussed what is known about glacial retreat and how it potentially translates to salmon habitat. The discussion covered a basic summary of what do we know vs don't know about the Hoh glaciers (available literature, etc.). LiDAR was also discussed during this meeting, and multiple years of LiDAR data would be very useful in potentially correlating glacier retreat

and impacts on salmon habitat downstream. Anyone interested in joining this conversation is welcome to join, and please let Luke know if interested.

Recent Highwater Events

Tami shared that unfortunately the Carson house (Brandeberry red house) went into the river during recent high-water event. Unfortunately, there is no easy way for a proactive approach for these situations (no county derelict vessel program for houses/structures). There may be some funding to assist clean up, but really there does not appear to be incentives or proactive approaches at this time.

Upper Hoh Road Project (Western Federal Lands)

Stephen provided an update via the Zoom chat:
"...the Upper Hoh River Road bank & crossings project: FHWA has received 4 separate bids for the construction project. The acquisitions department is reviewing the bids for adequacy, likely award the contract in late February - early March."

Other

Jill shared an update for 10K Years Institute's invasive plant work in the project reach and on the Fletcher Ranch. In summary, her crew completed (blackberry work): Over 1,175 hrs and 20 days in the field; surveyed over 14 acres; treated over 5.6 acres; applied Aquaneat 1.3 gallons. Black berry is cut and then cut stump treated with Aquaneat. Jill showed a map of treated areas over two years (on Fletcher Ranch) and some photos of the progress. Treated areas will soon be ready for inter-planting conifers as/when prescribed. Bob asked about going in with the rotary cutter next, and Jill recommended waiting a bit until the Aquaneat has a chance to work into rhizomes.

**Announcements/Comments**

Tami thanked Jill and 10K Years Institute for helping meet the deliverables of the project in regard to invasive plant management and all the hard work they are doing.

Bridget noted that DNR's stance on structures that end up in state owned aquatic lands are the owner's responsibility. DNR has been able to work as facilitators to help people gain access to remove structures and such, but otherwise it is the owner's responsibility. DNR does have small crew(s) that can help clean up (in some circumstances), but still not DNR's responsibility to remove or clean up. DNR has a derelict vessel program too, but the list of derelict vessels is very long and prioritized based on impacts to ecosystem and natural resources. This work can be very expensive.

Bridget also noted the LiDAR available via DNR's LiDAR Portal website. Tami noted the Hoh data is listed on the site, but the link appears to be broken.

Jill noted the Carson house that went in the river has shed material, including metal roofing, that is now in the Hoh channel(s). Jill's crew will likely take a look later in the week and possibly get some footage to document the unfortunate event.

Rich noted that the LiDAR project has been added to the NPCLE project list. Rich also noted that Kevin Bennett may already have the LiDAR data as a result of recent work with OESF. Kyle shared a link to DNR

LiDAR portal site and speculated that there appears to be 2018/19 data (standard, not green LiDAR) available for the Hoh downstream of the park boundary. To be determined.

**Next Agenda**
Monday, February 22nd, 1pm – 3:00 pm Remote Only

**Adjourn**