

Nooksack River Floodplain Integrated Planning Team
November 2, 2017 Meeting Notes
Central Shop Training Room
10 am – 2 pm

Attendees:

Charles Ifft, Fred Likkel, Chad Yunge, Rollin Harper, Bo Westford, Wendy LaRocque, Alan Chapman, Kara Kuhlman, Lisa Cook, Alex Levell, Steve Banham, Janet Curran, Ned Currence, Treva Coe, Carol MacIlroy, Eric Grossman, Chris Elder, Andrew Hicks, Andy Wiser, Joel Ingram, Richard Kessler, Seth Ballhorn, Theresa Mitchell, Frank Corey, Duane Holden, Deb Stewart, Gary Goodall, John Thompson, Lonni Cummings, Paula Harris, Travis Bouma, Denise Doezema, Albert DeBoer, Scott Bedlington, Jeff DeJong, Ron Bronsema, Jerry Juergens, Rod VanDeHoef, Scott Hulse, Ray Timm, Rich Appel, Jill Jacoby, Kyla Walters, Lindsie Fratus, Dillan Honcoop, Guillaume Mauger, Mike Swenson, Rolf Haugen, Chris Clark, Landon VanDyk, Roderic Perry

Facilitation:

David Roberts (Kulshan Services), Katie Moore-Drougas (Kulshan Services)

Welcome Intros, Agenda, Ground Rules, Announcements

Fred Likkel: Acknowledgement for Roger Bajema who passed away over the weekend.

He was a member of the Whatcom farming community and was someone who was not afraid to speak up. As one person said to me – the world became a much less interesting place.

Presentations

Overview of 1999 Comprehensive Flood Hazard Management Plan – Paula Harris, Whatcom County

Paula presented the background and specifics of the 1999 CFHMP using maps, photos and diagrams from the old plan. The following key questions and comments were discussed during the presentation:

- Comment – FHM stands for Flood Hazard Management.
- In the blue zone, are residential buildings still allowed?
 - Response: In the part of the floodplain that is outside of the floodway, you can build a residence, but in a floodway, you cannot legally build a residence. (Note: the blue shading in the slides shows the entire floodplain but does not distinguish the part that is floodway)
- Comment – All the flooding (blue shaded) shown in the presentation is according to the Federal Emergency Management Agency's (FEMA) 100-year¹ flood mapping. New mapping is not finalized yet.
- How is the current model (not featured) different from the FEMA 100-year flood mapping (featured in this presentation)?
 - Responses:

¹ Defined by FEMA: *The 100-year flood has a one percent chance of being equaled or exceeded during any given year. It can also be termed the "one percent "flood since this relates the event to an annual time period instead of a 100-year time period.*

- The FEMA model was based on cross-sections surveyed in the 1960's, and an older one-dimensional steady-state hydraulic model.
- The new model is much more detailed, is based on 2006 topography and levee surveys; it is unsteady so simulates the flood wave moving through the system. It was calibrated to 5 recent flood events.
- The 100-year flow rate is higher in the new model based on work done to calibrate to the 1990 flood.
- Will the new model be used in this process?
 - Response:
 - Yes, the new model will be utilized in this planning process.
- Comment – Once maps are officially adopted they will be used for permitting, but until then the science will be used for planning.
- If discharge is higher than was captured in the FEMA 100-year maps, how is the current plan lacking?
 - Responses:
 - It's a concept plan. It did not have the benefit of a detailed model to evaluate alternatives.
 - The objective is to take this concept plan and build from it by incorporating the technical work that is being done to support this planning process.
- Comment – When the flood plan was done in 1999 it was focused on the flood issues. The need for habitat for salmon was acknowledged, but no specifics were included in the plan. Now we are trying to address those needs.

- Break -

Nooksack Salmon: Status and 3H's – Ned Currence, Nooksack Indian Tribe

Ned presented on Nooksack salmon status and habitat, hatcheries and harvest.

- Comment – Farming and fish community talk past each other. The goal is to start working together. The focus of this presentation is to be an open discussion.
- Comment – 3 H's (in title) stand for Habitat, Hatcheries, and Harvest. There is a 4th which is hydropower (not used often but considered part of habitat).
- Who is stopping the hatchery programs?
 - Responses:
 - Environmental groups are thinking hatchery programs are hurting the wild runs of salmon.
 - Some hatchery programs were reduced by fisheries co-managers early on after the ESA chinook listing (1999) to try to aid in recovery.
 - WDFW has reduced some programs due to budget constraints (i.e. eliminating Kendall coho)
- Spawning for Coho typically happens where?
 - Response:
 - It probably does not happen in main stem – it will be in tributaries, both in the lowlands as well as up high in the watershed.
- Comment – The clay bank slide is really important site. When the slope fails it can create an impoundment that backwaters the mainstem cutting off discharge downstream, with the potential to kill a lot of juvenile salmon in the dewatered channel downstream due to the rapid drop in surface water elevation. (Note: it also can result in dangerous overbank flows with the potential for a major channel shift)
- Has anyone determined if the growth in the number of predators is a problem for salmon?
 - Response:
 - There is a concern about seals and sea lions.
 - Marine survival is way down for Coho, chinook and steelhead from 20 years ago.
 - Introduced fish species do not appear to be causing big problems, with possible exception of brook trout being a problem for bull trout.

- We see a lot of habitat recovery, but the fish populations continue to decline. Why are we recovering all this habitat and it is still not making a difference?
 - Response:
 - If you look at all of the recovery work we have done, it is very small scale compared to the amount of habitat recovery needed.
 - Climate change is also a contributing factor. Changes in hydrology. We experience higher peak flows, which scours redds, and lower flows in the summer.
- Comment – With respect to the small tributaries, the amount of development along those tributaries adds to the warming temperatures. Without the capacity to hold water on the land you have less water to flow in the stream and the water left becomes warmer during the summer.
- Comment - When you have disrupted habitat-forming processes it takes a long time to restore them. We are continuing to see declines for Chinook. Not really recovering. The [Millie Judge Report](#) indicates salmon recovery continues to lose ground, and is not gaining ground (losing habitat faster than restoring it).
- Does warm water make fish migrate to the ocean faster?
 - Responses:
 - Warmer water can cause earlier emergence and faster growth within reason, but it is within a certain range. The warmer the temperature, the more susceptible fish are to disease. When the temperature exceeds 70 degrees fish are in serious trouble.
- What was the reasoning to develop hatcheries in 1899?
 - Response:
 - They wanted more fish and saw the runs were going down.
- What does NOR and HOR stand for?
 - Response:
 - Natural Origin Recruit and Hatchery Origin Recruit.
- Define escapement?
 - Responses:
 - Population abundance: The number of fish in a population that returns to successfully spawn on the spawning grounds.
- Why would we expect more NORs to come back if you have more HORs spawning?
 - Responses:
 - The goal of the Kendall N/M Fork chinook program is to increase abundances of natural spawners in the population to increase the NOR (wild) abundance in the next generation. However, NOR abundances are not returning in the numbers expected, which suggests we have a habitat capacity ceiling under current conditions. ▽
- Can you explain how Canada and Alaska fishing affect our chinook populations?
 - Responses:
 - The Endangered Species Act includes Alaska and they have to fish consistent with ESA obligations, but the same law does not bind Canada.
 - The Pacific Salmon Treaty is an allocation Treaty for sharing harvest consistent with hatchery and wild production from the respective geographic areas (Alaska, British Columbia, Southern US). The planning process for species annexes happens every 8 to 10 years.
 - A significant portion of Nooksack fish are caught in British Columbia, with smaller portions in Southeast Alaska and Washington.
- Comment – We look at fall Chinook primarily as a Hatchery stock. Native fall Chinook are considered extinct, and our stock is considered reintroduced and resembles Green River fall chinook genetically. While wild fall Chinook are listed under ESA, they are not subject to the same harvest restrictions.
- Comment – View from Lummi. There are too many people and not enough salmon. Primary focus is fish. The Lummi have a hatchery to fish. It is a Tribal right to protect the watershed to produce fish to harvest. The issue is there needs to be funding for hatcheries. Basic drive is to get hatcheries back in production.
- Are there any success stories somewhere in the PNW? Example where it is working to increase stock?
 - Responses:

- Presentation by David Montgomery entitled King of Fish shows the impact of people on the land.
- There are small examples in the Pacific Northwest, but none that are large – sweeping.

- Lunch Break -

Climate Change – Guillaume Mauger, Climate Impacts Group

- The average temperature is going to double in the future?
 - Responses:
 - Not discussing average temperature; the heaviest rain events will be 22% more intense in the future.
 - Looking at the implications to flooding versus drainage. We don't have a lot of information on shoulder seasons (Spring and fall).
 - We know that intensity is going to go up overall. Twenty percent in terms of rainfall, but this does not equate to stream flow.
- Does this model show relationship between ocean circulation and ocean climate as they impact the land base?
 - Response:
 - The model is trying to capture ocean dynamics to the best extent they can.
- Comment - All it takes is less snowfall and more rainfall. In the early days of warming, there is going to be a very large early effect.
 - Response:
 - Next 100 years we will see additional 50% of snow go away with initial snowpack melting.

Sea-Level Rise and Coastal Squeeze – Eric Grossman, USGS

- What is SLR?
 - Response:
 - Sea level rise
- Comment - Bob Mitchell has modeled how snowpack and glaciers will be changing. He predicts that there will be a 30% reduction in glacial ice by 2100. This prediction is based on 20 different climate change models. We are uncertain if the magnitude is right, but the trajectory looks correct. In the last 70 years, we have lost 25% of all glaciers.
- Comment – North Fork Nooksack River has been propped up by melting glaciers. As the glaciers melt the North and Middle Forks are going to be very different rivers.
- Comment – There is no other watershed in this area that has the capacity to be able to implement the routing and storage we are proposing, but it is going to be challenging.
- One of the issues about the lower river project under the Puget Sound Nearshore Ecosystem Restoration Project is the increasing tidal flow that might generate sufficient currents to keep the channels open. Do you have calculations on that?
 - Response:
 - Not yet, but we are defining some potential ways to implement this and that would be a key aspect of it.
 - We are still looking to do that work.
- Can you predict the amount of saltwater in the groundwater levels found and how that will impact cropping?
 - Response:
 - We have not done that yet.
 - We have a couple proposals out to start instrumenting wells to determine tidal influence. It would be easy to get instruments to measure salinity.

To see presentations or notes from today's meeting visit Whatcom County [site](#) for more information.

Approve name of group

Consensus: everyone is okay with group name Nooksack River Floodplain Integrated Planning Team (FLIP).

What went well and what we could work on

Positives:

- Appropriate technical level
- Attendance, particularly from agricultural community

Improve:

- More interactions from group, less presenting
- Send in questions prior to meeting
- Faster distribution of lunch