

Team Members/ Alternates in Attendance

Shawn Hines, Jamestown Tribe
Ben Smith, Water Users Association
Anne Soule, City of Sequim
Judy Larson, Protect the Peninsula's Future
Michele Canale, North Olympic Land Trust
Lorenz Sollmann, USFWS
Mary Ellen Winborn, Clallam County
Robert Brown, Dungeness Beach Association
Robert Phreaner, OPAS
Peter Walker, OPAS
Scott Chitwood, Jamestown Tribe
Don Hatler, Sports Fishing
Matt Heins, Estuary-Tidelands/Riverside Prop. Owner
Marc McHenry, U.S Forest Service

Public Attendance

Sam Brend, Clallam County
Lori DeLorm, JSKT
Robert Knapp, JSKT
Merrill Mcknight, Resident
Ted Stadmueller, Graysmarsh
Ivan Stocker, Graysmarsh
Christopher Burns, JSKT
Phil Johnson, Resident

I. Introductions/ Review Agenda

- Meeting was called to order. Introductions were made. July 13th meeting notes were reviewed and approved. Scott noted that Executive Committee met before regular meeting to discuss whether or not to support I-732, a request which was made at June DRMT meeting. Since there was “no mutual agreement”, (*mutual agreement* defined as “no negative votes” per Ground Rules in DRMT’s Operating Procedures), no DRMT action was taken on this matter. Further discussion at a later date is possible.

Public Comment

- Robert Brown made a comment about irrigation ditches on his property needing to be cleaned out; whose problem is this?- potentially County Roads Department. Mary Ellen suggested Robert go to the next Commissioners meeting to mention it.
- Don Hatler asked if a chemical analysis on the Dungeness has ever been done regarding heavy metals or continuing temperature analysis. Scott said there was an ongoing water quality survey that addresses some of those issues, not sure about heavy metals. Ann said the continuous gauge sites have temperature sensors, can download data. Lori DeLorm said the Jamestown Tribe has continuous data loggers that collect temperature data at various spots. Ann said that the USGS in 1983 or '86 did a study including a comprehensive baseline water quality dataset for all the rivers on the North Olympic Peninsula. Water Resources of Clallam County-USGS-1986.
- Robert Knapp- Batelle did a study in 2003 in some of the smaller streams where they collected sediment around roads and places where they thought there might be heavy metals. In 2010 Robert and Lori worked with Streamkeepers and did a follow up with help of Batelle on that, and Robert left before the analysis was done, not sure if there is a report.
- Matt Heins had an issue with the way Floodplains by Design is being handled through Ecology and as a property manager; probably won't participate in any more Floodplains by Design projects until its cleared up. The fact that some bureaucrat in Olympia can decide to yank a grant from one party and give it to another is one of the issues he has with the process.
- A Happy Valley property owner had a question about mitigation packages in the Dungeness Water Rule Area. He has spoken with Mike Gallagher at Ecology. He wanted to know if tending an 8 x 10 garden by a person who has health problems, used to grow organic vegetables, is permitted under the mitigation package at this time? Phil said he asked Mike Gallagher and he said not if it is as big as 8 x 10.

- Ben Smith said the Conservation District is working on a demonstration project with FFA kids in Sequim, doing roof water collection into cisterns. Collecting enough water to maintain raised beds at the facility. Should have some numbers and figures and help with sizing on what size of cistern it would take to water a certain amount of square footage of vegetables.
- Don Hatler suggested that Mike Gallagher or Amanda Cronin would be the contacts for that question.

II. Dr. James Karr- “Applying public health lessons to protect river health”

- Dr. James Karr introduced himself as a retired professor from the UW, worked across several departments. Moved to Sequim 10 years ago. The primary connection is the need for society to focus on ecological health as a larger umbrella above public health.
- Dr. Karr discussed the course of health challenges realized and experienced by humans through the ages starting 40,000 years ago. He discussed different aspects of health regarding people during hunter gatherer times, the agricultural revolution, the industrial revolution, and the modern era.
- Then he talked about rivers and society in history. He stressed that (1) rivers have long been a key to the success of humans; including transportation, food source, drinking water and waste removal. (2) The transformation of rivers was seen as a sign of progress; for agriculture, recreation, transportation, etc. (3) In an unprecedented water resource crisis, rivers no longer support human and non-human living systems at the level desired by society. And (4) there are efforts to conserve and restore rivers which reflect increased scientific information, changing societal values, and understanding of relationships. Central core message is need to look beyond plumbing, which is the way rivers have been treated for most of the last century.
- Integration replaces fragmentation, talking about integrating across landscapes from mountain to sea. Prefer the term *eco-system based management* over *ecosystem management* because we should not set our sights on managing the ecosystem, we should manage the ecosystem in the context of our understanding of how ecosystems work, and humans are a part of that ecosystem, so we have to manage humans at least as much if not more than the real ecosystem because it used to take care of itself.
- Historical measures of health focuses on individual; with social wellbeing, there is a focus on economics, and the ecological aspect has been largely ignored.
- Lessons from Public Health: (1) Recognize and respond to changing health challenges (humans and rivers) (2) Avoid unintended consequences – doctor-caused diseases (iatrogenesis) – ex. Introduce species, hatchery fish, river channelization, install large woody debris, water withdrawal, all things we have used at one time or another and some we are reversing ourselves on and all have questionable contexts and components. (3) Employ curative & preventative approaches – rivers, save the best, restore the rest. (4) Employ systematic approach to diagnosis and treatment (ex. Modeling cholera outbreak and curing scurvy with lemons).
- We currently ask, is the water clean and are there salmon? That is not ecological health, it is special interests. Doesn't frame the issue in a way that allows us to take the more integrative approach to understanding.
- How do human activities damage or degrade streams and rivers? There are 5 major ways. (1) water quality (2) physical habitat (3) food resources (4) flow regime (5) biotic interactions.
- Solving Health Problems: (1) awareness of problem (2) understanding cause (3) ability to control cause (4) sense of values that the problem matters (5) political will to conquer the threat.
- Dr. Karr started an organization called Salmon Web out of the UW. The idea was to find ways to engage with the public in protecting rivers, since salmon were the key word to get everyone energized, it was the name. Initiated a conversation with Ed Chadd, interested in people going out and collecting bugs but no money to have the bugs analyzed. So Salmon Web gave money to Streamkeepers to do their first bug samples and that set the stage for what they've done since. Created grading system for biological integrity, IBI (Index for Biological Integrity). A scale that goes from 50 down to 10; Four levels of health: Healthy, Compromised, Impaired, Critically Impaired.
- There has been an increased focus on water chemistry, important but not sufficient, needs incorporation with biology.
- What things were most important in degrading rivers, all over the state: organic enrichment, siltation, habitat degradation, metals, flow, unknown toxicity...

- The way we assess stream health now, is we have groups get together and pick the thing they think is most important, ex. baby fish in a hatchery, put woody debris in. A lot of groups have their favorite thing, so the money goes spread out to lots of places and lots of context without that medical forensic equivalent of understanding the watershed.
- IBI has now been used in 47 states, 30 countries in Europe, and at least 70 countries total. The principles of IBI were employed in these places, they may not have called it IBI, but it was a multi-metric dimensional evaluation of the health of the waters. Ecology is too complex for health to be judged by a single thing. Can't continue using dichotomies. Must use adaptive management- plan, do, check, adjust.
- Robert Phreaner- How do we get funding to do IBI in Clallam County? \$400 dollars per sample. – Don't know the answer to that. Frustrating there has been an increase in money for water chemistry, but no money to evaluate the biological endpoint, which is the goal.
- Judy asked Dr. Karr about his feelings on I-732. -He said it was a way to shift and collect funds. Should be taxing energy use, not income. It isn't exactly what he would do, but gets us moving in the right direction.
- Judy- Still have syllabus online of Attaining a Sustainable Society course? Karr said he has no idea, may be able to get that information to someone. [See attachments].

III. Chris Burns –Smolt Update / 2015 Drought Response

- Why trap juvenile salmonoids? Good measure of productivity, population estimates, migration timing. They trap and count them the first and second week in April, traps out by late June. These are wild fish. Trap in Bell, Matriotti, Jimmycomelately, Dungeness, Siebert, McDonald. State did Bell in 99 stopped in 2010, so we started tracking it.
- Judy- Location on Bell creek? -Downstream of Schmuck Road.
- Ben- Habitat concerns with Bell? – Can't walk it, too brush, maybe has to do with spawning habitat above.
- Judy- Has Streamkeepers done the B-IBI for Bell Creek? Any correlation? – Doesn't look like it. Looks like all streams are impaired according to the B-IBI.
- Ben- Looking at numbers, the drought response here appears to have been effective... – Not for coho or steelhead. They return in 2 years. Next year will be reflective of drought.
- Ann- Suggested that a Streamkeepers update on what they've found on all these indices (B-IBI data and chemistry data) would be beneficial. Last time stream health report came out was in 2004. Might be on SK website.
- Matt Heins- Predator issues at traps? – Yes mostly birds, in the estuaries predators seem to be going up.

Drought 2015-

- Late February/ March started noticing drought conditions. Started mapping "choke points", where fish would have difficult time passing upstream. Water temps near lethal in lower 11.5 miles. Lower than normal dissolved oxygen. Upper habitat cooler/ better, decided to get fish up stream. Had to get funding, permitting, land owner permission. Decided to build rock dams where feasible. Started using rocks/manually creating fish passage-diverted water towards deepest part of channel. Also installed temporary dams in areas where there were no rocks. Other factors- irrigation, sharing water. Project remained until drought subsided. River redistributed rocks during storms. Manually removed the temporary diversion dams that were installed. Pinks swam up after channel modifications, chinook too.
- What should we do different next time? Probably start earlier, make weir improvements, and make a permanent solution to Sequim Prairie irrigation outtake.
- Judy- Did you create a new channel to connect to outtake gate? – Yes, looked good, there is more maintenance when a screen is put in, adjustments to water temperature gauge.
- Don said to keep in mind the possibility of a 1500-acre foot reservoir on River Road, how to best use moving forward. Robert Brown suggested setting up an e-mail database of land owners for efficient use in the future.

Lori DeLorm- Jamestown

- Temperature and dissolved oxygen monitoring on the Dungeness in small intervals – measured temperature every half hour, put in deep pools preferably around wood. Locations: Upper Dungeness Site above Two Forks, Grey Wolf close to concrete Bridge, USGS gauge, Dungeness Meadows, Railroad Bridge Park and Ward Road. Didn't use either USGS or Ecology gauge for this data. The railroad bridge gauge was lost; Ward Road gauge was removed when the river rose. Temperatures are compared against Ecology Water Standards.
- 7DADMax- 7 day average of the daily max temp. Lori showed a graph of the temperature data compared to the Ecology Water Standards. The upper river exceeded limits in some places.
- Dissolved oxygen: levels looked pretty good on the upper Dungeness. 9.5 is the criteria you don't want to drop under. Not continuous sampling. Took a sample and sent back to lab on ice and also used a hand held probe, they produced similar readings. Starting at Dungeness Meadows; it started not meeting the 9.5 criteria.
- Compared 2015, 2016 data with similar years that had low flows and also looked at high water years and see what differences there might be, any trends. Haven't found out a good way to add flow to the charts. It would be great to have continuous dissolved oxygen loggers.

IV. Robert Knapp, Dungeness Drift Cell Report

- Robert gave an update about the Dungeness Drift Cell Report the Jamestown Tribe has developed. It is now available on a webpage of the Jamestown S'Klallam Tribe:
http://www.jamestowntribe.org/programs/nrs/Dungeness_DriftCellConservationStrategy_07-16_noappendices.pdf
- Talked about drift cell formation, characteristics. Dungeness drift cell is largely non-stream related; sediment mostly comes from highly erodible bluffs. Place where most of the sediment ends up is called an accretion land form, spit, beach of some kind. Wanted a systematic way to talk about the drift cell, so created "Drift Cell Miles", modeled after Stream miles; about 15 miles on the Dungeness Drift Cell, from Spit, westward. 0 is at the end of the spit, 15 at the supposed end of the drift cell. As the Spit grows, it will either go negative or start over.
- Also have to look at the drift cell from a conservation standpoint to decide what are our interests, what are we trying to conserve? Through a lot of meetings came up with a prioritization of all the parcels that are within a certain distance of the bluff edge. Didn't extend beyond Morse Creek because that section is pretty heavily armored by the railroad.
- How did we prioritize this? From the tribal perspective sediment delivery to the spit is the most important thing. Don't have gauges that keep track of sediment amounts from specific locations so have to make educated assessments. Some things that can be measured are: Proximity to spit, erosion rates, whether parcel is at beach or behind, and bluff height (all together called Geophysical Sediment Delivery Based Index). From this, developed a score for each parcel.
- Ben- Why do we want to grow the spit? – Robert said it's not necessarily to grow, it is to maintain the spit. The spit encloses the bay, there is a lot of great habitat inside the Bay, the beaches along the drift cell and the spit are good habitat, protects human infrastructure. We believe that you have to have enough sediment to maintain it... the fact that it is growing is probably good. If we block off too much of the sediment, we see the spit go away.
- Ediz Hook has clearly been eroding away, it has been sediment starved, it is still lengthening, it will lengthen even as it's cannibalizing itself. Dungeness Spit will continue to lengthen if you cut off the sediment until it begins breaching and creates ever smaller islands. Seeing evidence that suggests that some of those spits are narrowing up, which suggests that the sediment supply has been compromised. Seems to be a natural consequence of drift cell processes. The lengthening is kind of a red herring in terms of sediment budget.
- Recognized that other organizations may wish to do drift cell conservation. So came up with other metrics so other organizations can come up with their own prioritization. The underlying goal is to protect the sediment source for Dungeness Drift Cell to maintain a healthy Dungeness Spit. Came up with conservation implementation criteria.
- Judy- Is any of this information going to be provided for the Shoreline Master Program update, i.e. the Planning Commission? – Answer: Probably too late in the process to get into the SMP now.

- If can't move the house further back than what is estimated to be the 100-year amount of erosion, then probably isn't worth using state funds.
- Ben- why would state or public funds even be available for moving a house? – Answer: it is one of many strategies to try to figure out how you manage this. There isn't an entity that is clearly defined to deal with that.

Public Comment-

- I-732– Already know one person who would be against supporting the initiative.
- Robert Brown would like to get update from Mike Gallagher on new monitoring meters.