



May 12, 2010 Meeting Notes
Dungeness River Management Team
Dungeness River Audubon Center
Railroad Bridge Park, Sequim, WA
2:00 – 5:00 P.M.

Notes prepared by: Melissa Coughlin

Team Members/Alternates in Attendance:

Steve Tharinger, Clallam County
Cathy Lear, Clallam County (alt)
Cynthia Nelson, WA Department of Ecology
Scott Chitwood, Jamestown S'Klallam Tribe
Hansi Hals, Jamestown S'Klallam Tribe
Shawn Hines, Jamestown S'Klallam Tribe (alt)
Frank Needham, City of Sequim
Virginia Clark, Dungeness/Quilcene Planning
Les Jones, Dungeness/Quilcene Planning (alt)

Bob Caldwell, Water Users Association
Pete Schroeder, Riverside Property Owners (RM 3.25-4.25)
Al Moore, Riverside Property Owners (RM 0-3.25)
Tom Martin, Clallam County PUD #1
Robert Brown, Dungeness Beach Association
Scott Hagerty, U.S. Forest Service
Michele d'Hemecourt, North Olympic Land Trust
Joe Holtrop, Clallam Conservation District
Judy Larson, Protect the Peninsula's Future

Others in Attendance:

Byron Rot, Jamestown S'Klallam Tribe
Randy Johnson, Jamestown S'Klallam Tribe
Dana Woodruff, Battelle Marine Sciences Laboratory
Steve Breithaupt, PNW Laboratories
John Spolar, Ducks Unlimited
Chuck Lobdell, Ducks Unlimited
Bruce Giddens, Clallam County Parks
Robin Berry, Graysmarsh
Marguerite Glover, Sequim Realtors
Hannah Merrill, Clallam County

Phil Martin, County resident
Elizabeth Van Sickle, Property Owner
Robert Crittenden, Property Owner
Liz Maier, Clallam County Environ. Health
Matt Heins, Dungeness Farms
David Wyman, Dungeness Farms
Steve Rankin, Streamkeepers
Welden Clark, Dungeness River Audubon Center
Powell Jones, Dungeness River Audubon Center
Bob Boekelheide, Dungeness River Audubon Center
Melissa Coughlin, Independent Contractor/note-taker

2:00 P.M.

I. Introductions /Review Agenda / Review and Approval of April 14th DRMT Draft Meeting Notes

- Chairperson Tharinger called the meeting to order at 2:00 P.M.. Introductions all around.
- Agenda was reviewed and "funding source change" was added to first Public Comment timeslot.
- April 14th draft meeting notes were reviewed; changes from Frank Needham, Cynthia Nelson and Judy Larson were noted. Virginia Clark moved to accept the notes with changes; Robert Brown seconded the motion which was passed unanimously.

Public Comment:

- Liz Maier requested a letter from DRMT to DOE to request changing the source of funding of a recently received water quality grant from Federal (Clean Water Act Section 319 funding) to State (Centennial Clean Water Funding). Changing the source of this funding will make it eligible as match for an EPA water quality grant that Clallam County recently received.. The DOE grant will address septic system problems and fund a feasibility study for a waste water treatment alternative in the Three Crabs area. The EPA grant will include a new opportunity for loans for septic repair. Judy Larson made the motion to support the funding change with a comment letter from the DRMT to DOE, the motion was seconded and carried. Judy asked if the grant included data recording costs, Liz answered that the purpose is to find failing systems that are not on file and it is on-going work.

II. Meadowbrook Creek Modeling Report, Steve Breithaupt, Costal & Water Resources Modeling, PNW Labs

- Steve Breithaupt presented, "Hydrodynamic Evaluation of Meadowbrook Creek Restoration Project" which was created by Battelle Pacific Northwest Laboratories (with Taeyun Kim) and Ducks Unlimited. Battelle PNW Labs have done many restoration studies for Ducks Unlimited and other organizations for many years.
- The slide presentation began with a map of Meadowbrook Creek at the mouth of the Dungeness River. Steve explained that the mouth of the river changes as beach morphology changes. The site was visited 1 ½ years ago at the east side of Meadowbrook Creek and a location on north side 3 Crabs Road (2008 flood there).

- Background: Meadowbrook Creek was a small estuary with tidal action and fresh water flows that drained into Dungeness Bay. Currently Meadowbrook Creek enters the bay through a mouth that occasionally closes during storms.
- Structure: Sequim-Dungeness Way divides the lower estuary. Meadowbrook Creek flows under Sequim-Dungeness Bridge (constricts flow). ACOE dike cuts off the Meadowbrook slough. Meadowbrook Creek joins with Meadowbrook slough (old river channel). Concrete obstruction (rip rap) in channel upstream of bridge (hydraulic control of the system) / Channel alterations east of Sequim-Dungeness Way to improve drainage.
- Issues: flooding occasionally occurs at 3 Crabs Road and reconnection to Dungeness River. Began collecting water level data in 2006-2007. There was a question if flooding was from the Strait or from Meadowbrook Creek. Conclusion: flooding (1/5/08) was from high tide not from creek. PNW Labs was asked to model different channeling options for reconnecting Meadowbrook Creek.
- Scott Hagerty asked if the dike would remain in place. Steve B. answered it would remain to help drain to Dungeness River. Les Jones (who has lived on 3 Crabs Road for 20 years) said that it has flooded over the road when Meadowbrook Creek went directly into the Strait of Juan de Fuca (instead of Dungeness River).
- Objectives and approach: Increase tidal inundation, maintain tidal functions, operate as a naturally functioning system; Allow fish access and use; Restore flood plain functions; Maintain wetlands functions associated with lower Meadowbrook Creek.
- Objectives of study: Establish current hydrodynamics of Meadowbrook Creek; Analyze alternative restoration action on the hydrodynamics. All alternatives connect Meadowbrook Creek to Dungeness River.
- Approach: Take existing water level data; evaluate and process available data; Set up hydrodynamic model of existing conditions; Calibrate the hydrodynamic model; Evaluate the effect of proposed restoration actions that the model simulates. Found that the model is reliable for this.
- Michele d'Hemecourt asked about the role/partnership of Ducks Unlimited in the study. Steve B. responded that Battelle PNW Labs have a track record with Ducks Unlimited in Puget Sound and the Columbia River, and have looked at the overflow issue and potential for flood. Ducks Unlimited looked to Battelle Labs for a specific service, (3rd party technical credentials) to run model and report back with analysis to Ducks Unlimited.
- Data review: Topography and bathymetry: LiDAR high resolution elevation data (2008), Ducks Unlimited survey, Topography and cross-sections in channels; Hydrodynamics: Tidal evaluations, Dungeness River flows (USGS data), measured water levels (Ducks Unlimited data), salinity. Robert Brown asked where the data for dynamic environment was obtained, and Steve said it was from 2008 survey data and data from March 2009 from Ducks Unlimited. Aerial photos (2006) of different shorelines and survey data were used to define shorelines.
- LiDAR data from Puget Sound showed the proposed location of Meadowbrook Creek connection to the Dungeness River. There was a Jamestown S'Klallam Tribe project (2006) that removed the rip rap at Meadowbrook Creek.
- John Spolar's (Ducks Unlimited) survey data and cross-section data collection in Dungeness River, slough and channel was used to define boundary.
- Model setup: the period of analysis was December 31, 2007 – January 21, 2008. Included peak water surface elevation at Meadowbrook Creek site. 8.87 ft. (2.07 m) on 1/5/08 at 1:07 P.M. Used Battelle's hydrodynamic model of the Strait of Juan de Fuca as basis for detailed model of Meadowbrook Creek: Tidal open boundary conditions; Dungeness River flows (USGS); Estimated Meadowbrook Creek inflow.
- Overall model grid: Large area modeled focused on Dungeness Bay and Meadowbrook site (governed by tidal conditions). Drove model using measured tides (at Port Townsend, Neah Bay, and NOAA data) and compared to measured tide at Port Angeles. Focus was on Meadowbrook Creek site. Judy Larson had a question about the estimated parameter of Meadowbrook Creek inflows (estimated), will Clallam Conservation District piping projects change the tailwater/ditchwater measurements to Meadowbrook Creek, and how does that affect the outcome. Joe Holtrop said the tailwater will be eliminated with piping. Steve B. said that in this event the flow would be very small and would not have much effect, at maximum precipitation, or extreme flow event perhaps it would influence floodwater, but that wasn't evaluated at the Meadowbrook Creek site.
- He then showed the same grid, zoomed in to display bathymetry at site. Grids were built from the data that included channels, creek, slough, river and elevation (displayed by color).
- Overall model grid and boundary conditions: Tidal data (NOAA) at Neah Bay, Friday Harbor data, Port Townsend data and Dungeness River flows (USGS) were used and applied for different areas.
- Hydrodynamic calibration used Port Angeles tidal elevations and data from Meadowbrook Creek station.

- Model calibration tide at Port Angeles: displayed different dates and measured data and model predictions, Steve Breithaupt said they were found to match pretty well.
- Model calibration: Meadowbrook Creek water level and salinity, constructions use as control to hold back water. Tidal features: tidal forcing produces peaks; downstream control maintains minimum elevation; Meadowbrook Creek inflow (<1 cfs) raises minimum elevations. Bias= +0.08ft. (trend); AME= 0.27 ft (average mean error). Chart was shown for different dates, measured data and model predictions, water level graph and salinity graph. The maximum inundation depth (January 5, 2008) was the flood that led to overtopping of 3 Crabs Road (not too deep), ½ ft and pushed the tidal flow.

Alternatives developed and analyzed:

- Alternative 1: Channel is constructed at the natural channel nearest to Dungeness Bay. Probably the shortest channel construction. Set of results for existing conditions and Alternative 1: Meadowbrook Creek site – water doesn't drain out until after storm passes at storm events. Not enough drainage for system. Same trends on both sides of the road. Confluence: same effect. Dungeness River: additional flow (not much) coming into system. Salinity: fresh water all the time, no increase in salinity. Not much change in inundation.
- Alternative 2: Connects channel to the natural channel furthest from Dungeness Bay. Doesn't drain all the way as it does with the existing condition, but better than Alternative 1. Adequate drainage. Salinity: basically a freshwater tidal system. Not much change in inundation.
- Alternative 3: Channel is same as 2 and is extended and passes underneath Sequim-Dungeness Way. Added extra cross-section to channel flowing under bridge. On the west side it is the same as Alternative 2, Add culvert. Not much difference between 2 and 3, adequate drainage. Salinity: still a freshwater system. Not much change in inundation.
- All the alternatives end up at the Dungeness River – channel connecting creek is different for alternatives.
- Conclusions: Existing conditions: Tidal elevations control peak elevations. Ebb (low) tide is currently controlled by rip rap and upstream inflows (small). Alternatives with connection of Meadowbrook Creek to Dungeness River: Lengthens channel and reduces gradients; doesn't affect high tide elevations; influences ebb tide elevation via new channel conveyance. Alternative 1 has reduced drainage, but Alternatives 2 and 3 have best drainage response, however, during extreme high tides there is less drainage (the tidal exchange is reduced).
- Ducks Unlimited view: Still cross 3 Crabs. Doesn't make it worse, or better, still have tidal condition.
- Tom Martin asked if there would be long-term maintenance of the excavated channels. Steve B. said that the velocity mobilizes silt and fine sand, long-term maintenance isn't part of the plan. Matt H. said that the natural channel there was compromised due to beach erosion around 3 Crabs and rip rap, historically the channel maintained itself. He also stated Dungeness Farms would support Alternative 2 as that avoids beach erosion.
- Timeline: Presenting alternatives for public comment. Feasibility and risk assessment will proceed and the funding has already been acquired.
- Byron mentioned that the slough channel on Dungeness is now connected to a "hot spot" for juvenile Chinook. Expanding the habitat, especially if that means moving out silt – the poor drainage is great for water quality and fish habitat. Salmon over-winter there.
- Steve Tharanger said that Jamestown S'Klallam Tribe and Dungeness Farms are supportive. If DRMT needs to endorse, let Team know.

III. Microbial Source Tracking Study & Dungeness Effectiveness Monitoring Study Results, Dana Woodruff, Battelle Marine Sciences Laboratories

- Presentation: "Fecal Coliform Trends in the Dungeness Watershed, Dungeness Bay" was based on the microbial source tracking and fecal coliform trends found in the last ten years. Partners in the study: Jamestown S'Klallam Tribe, Battelle Marine Science Labs, Clallam County, Clallam Conservation District, Department of Health, Department of Ecology and EPA Region 10 (funding agency).
- Overall goal of the watershed grant was to target water quality improvement innovations, BMP (best management practices) implementation, effectiveness monitoring, and public outreach.
- The study timeframe was 2005-2009, with monitoring occurring through January 2008. A number of sites had been monitored previously and that data was included in the study.
- MST study: Host organism detection; 10 years trend analysis in watershed and bay; monitoring the effectiveness of the irrigation piping; septic system repair effectiveness monitoring. Also looked at nutrients as part of the study, but won't be going over that today.
- History: Initial 2000 closures at the mouth of the Dungeness Bay. 2003-2004 there were extended closures for shellfish harvesting both from seasonal (November – January) to year-round closures.

- In the trends study, over 2,100 fresh water samples were analyzed (monthly collection from 1998-2008). Over 1,200 Dungeness Bay samples (collected monthly from 1999-2008).
- Purpose of MST Study was to find the sources of bacterial contamination in the Dungeness watershed that contributed to the closures in the Dungeness Bay.
 - Phase 1: Ribotyping study (analyzed by IEH), took over 1,000 samples from 6 stations from May 2006-May 2007 and targeted a large variety of species.
 - Phase 2: Bacteroides PCR study (analyzed by the EPA), collected 42 samples at larger number of sites (lower Dungeness River and Dungeness Bay), from December 2008-January 2009 (winter only), and targeted human and ruminant only.
- **MST Phase 1** ribotyping study added local sources (Dungeness Bay, domestic animals, farm animals, human, Olympic Game Farm) to a large library of source database. Local sources included 105 samples from 41 species. 4 freshwater and 2 marine sites were studied.
- MST Ribo-sampling: 1,163 E. coli bacteria from environmental samples during the 1-year study; 92% match of environmental samples to sources; 34 species/groups were identified in the watershed. Attempted to match the water samples to DNA sources. Not a quantitative study; results are based on sub-sample to get an idea of what is the watershed. Matches were high for this type of study at 92%.
- With this method the scientists get as close as they can with species identification, and if not identified specifically it goes to a larger group, such as “avian”.
- Of all the identified sources (34 species) identified during the year study (included fresh water and marine): total number of isolates from bacteria was 1,164.
- Species were placed in groups for analysis: for example: Bird grouping included: avian, crow, goose, gull, waterfowl. Wild mammal grouping included: beaver, deer, elk, marine mammal, otter, rabbit, raccoon, rodent.
- Total marine water isolates: 265. Evidence that some were moving into the bay (not surprising). Looked for seasonal patterns, but found none.
- Looked at human derived sources through time in fresh water and marine: Found in all sites at some point during the year. Is this due to failing septics? It was surprising to see so many human sources out in the bay. Nothing statistically significant, lot of birds, lot of animals. Not much can be done with some sources, but human, farm, domestic contributions (about 25%) can be influenced by changing behavior and practices. If you include influence from raccoons, the percentage increases to 32%.
- **MST Phase 2:** PCR study, different method – Human and ruminant analysis: 3 sampling events, 42 samples collected. Found ruminant and human in samples at Casselary Creek; found human source at Meadowbrook Creek. Found predominantly bird and wild mammal in watershed and bay. Evidence of human-derived source throughout lower watershed.
- Trends: Looking at trend of fecal coliform throughout watershed. Looking at patterns in the data to see what is happening through time at the stations with trend analysis. Looked at the following sites: Dungeness River, Matriotti Creek, Meadowbrook Creek, Golden Sands slough, irrigation ditches, Bell Creek, Dungeness Bay and general landscape trends between water body type, reach locations (mouth, lower, middle, upper – based on sample locations), season, month, during the wet (October-March) and dry (April – September) seasons (determined using rainfall data – not the same as irrigation seasons). Found higher concentration of fecal coliform during the dry season and the tributaries and irrigation ditches had higher concentrations than the Dungeness River. By reach: there was an increase in concentration as water moved downstream. There was no statistically significant linear trend (either increase or decrease) during the 11 years of study. There is a seasonal trend.
- Fecal coliform trends in Dungeness River: Increased concentration downstream, no statistically significant decrease or increases during the 11 years examined. There is an increase in concentration in the summer.
- Fecal coliform trends in Matriotti Creek: Plotted by one station for the 11 years. Seasonal trends can be identified.
- Irrigation piping effectiveness monitoring: monitored upstream and downstream before and after piping. The tailwater has been eliminated with piping, so there really is no downstream monitoring locations. Looked for upstream stations that had been monitored for awhile. Found piped site that had a ditch positioned above the pipe that captured stormwater from bluff, but it wasn't effective in showing piping reduces fecal coliform.
- Studied septic repairs: 9 repairs were looked at, data from upstream and downstream from before and after repair – didn't see any significant changes in the fecal coliform data, just nutrient change. However, this was not consistent sampling, and monitoring stations may have been too far from the repair. Not enough data to see cumulative impact.

- Fecal coliform trends in Dungeness Bay: Higher concentration in prohibited area; no statistically significant increase or decrease in 10 years; wet season has higher concentration than dry (opposite of fresh water finding); distinct seasonal trend: similar freshwater and bay concentration during the wet season, during the dry season concentration decreases in the bay and increases in fresh water.
- Higher concentrations of fecal coliform are found in tributaries and ditches than in the Dungeness River, and it is more pronounced in the lower watershed.
- There is no evidence for consistent decrease of fecal coliform over 10 years based on the stations in the study and the statistical analyses and criteria decided on for the study. Birds and wild animals are significant contributors to bacterial contamination of the Dungeness watershed and bay, however, about 25% of the sources perhaps can be remediated. Grants, mitigation measures, repairs and public outreach can help.
- Dana Woodruff's presentation contains charts, graphs, and data that aren't shown here; final reports of these two studies and summary report of the overall project can be found in the Environmental Planning section of the Jamestown S'Klallam website: (<http://www.jamestowntribe.org>), contact information can also be found in the report.

IV. Dungeness Landing County Park Renovation, Bruce Giddens, Clallam County Parks

- Bruce Giddens from Clallam County Parks came to the meeting to ask support from the DRMT as he applies to the Recreation and Conservation Office for an Aquatic Lands Enhancement Grant to renovate the pier at Dungeness Landing County Park. He brought a few one-page handouts to circulate that showed the pier in four shots to help describe what he proposes at the site. He had drawn red lines to show where he proposes to resurface the remaining pier with wood or asphalt and add railing (public access and wheelchair access). He would like a letter of support from the DRMT.
- The Old Oyster House was removed in January, 2010, leaving the pier and 16 – 24 creosote treated pilings (the half under the area he outlined). May band some of the creosote pilings with stainless steel or replace. Educational, interpretive signs will also be part of the project.
- Robert Brown said he would like to see arrows on the pavement at the parking area (signs are being ignored). Robert would also like to see planning for extending the pier for public crabbing and fishing.
- Steve Tharinger asked if Team was interested in the project – it was positively received so he asked Bruce to develop a draft letter to be sent to Shawn Hines who will take it from there.

V. Shoreline Master Program Update, Cathy Lear, Clallam County

- Cathy Lear said that next month at the DRMT meeting there will be a report on the results from the River Restoration workgroup on the Shoreline Master Plan. They will be asking for input on the Shoreline Jurisdiction map and Public Access Areas map for the Dungeness area. Need DRMT to verify accuracy and any additions.
- Big picture: Received a grant from EPA to look at “no net loss” of ecological functions: (1) at the beginning of update look at indicators and barriers to make effective in the update, and identify what those might be. (2) Monitoring in an SMP area that has already had plan adopted (Jefferson County has adopted their SMP). (3) DOE to look around Puget Sound at ecological function for indicators and barriers of “no net loss”. This “no net loss” of ecological functions affects how we approach the whole SMP update.
- WRIA 20 has begun to hold regional forums on the west end. Getting started on shoreline inventory and characteristics.
- Watershed Planning – we have the grant funding to support DRMT note-taking and other DRMT logistics for the next couple of years. Match required for this grant.
- Steve Tharinger added that Clallam County did well to partner with Jefferson County for EPA grant. Also, Jefferson and Clallam Clean Water Districts partnered for another grant. Successfully received both grants.
- Jefferson County also received a Watershed Assistance Grant that provides technical assistance for landowners.
- Hannah Merrill has hardcopy and CDs of key documents of progress so far with the SMP update available.

VI. Other Business / Announcements

Dungeness Instream Flow and Water Management Rule Updates, Cynthia Nelson, WA DOE

- On-track to file the draft Rule this quarter.
- Issues: Instream flow levels: agreed to levels during the watershed planning stages (1994), but some people are now rethinking the implications. Metering: Due to statutory requirements metering is in the state-wide

laws. Too much mis-information has been spreading about metering. Only those water rights awarded after the Rule has been adopted will be required to meter.

Mitigation requirement: setting up Rule so new developments can access water, through reallocation of existing water rights – can be different means (withdrawal during high flows, aquifer recharge). Want people to contribute to mitigation so the water exchange can offset potential impact. New water users are NOT expected to restore the flow, just the potential impact.

- More outreach is planned, especially meetings with specific groups.
- Sarah Ferguson, rule-writer, is moving to Switzerland in August.
- Robert Brown said that the cumulative effect from the increase in technology (low-flow toilets, low water washers) should make a difference in actual water consumption. Cynthia agreed and said the larger purveyors (PUD) that control input and output will be able to demonstrate. Outreach encourages conservation and efficiencies.
- Judy Larson said the County should talk to people in the community development area about codes requiring LID, grey water use, etc. for any new construction.
- Scott Chitwood asked for an update on the Reclaimed Water Rule. Cynthia said it was on-track. Frank Needham added that on June 2nd and 3rd the group is meeting in Lacy for final draft of that Rule. In review for group working on it. It will be out for public comment.
- Pete Schroeder asked about a specific example of new building, old well. Cynthia said they need to prove beneficial use for period of time (can be for livestock, irrigation, etc.).

Public Comment

- Pete Shroeder told group about a 40 minute movie, “Buried in Sawdust”, documenting the restoration of an estuary after 50 years of accumulated waste. He thought it could somehow be tied into the branding process with the restoration projects. The movie is about the Discovery Bay estuary and examines the chemical contamination of the bay resulting from 50 years of milling waste and is produced by the North Olympic Salmon Coalition (film by Shelly Saloman). Could be considered for a DRMT agenda item. Steve said they will discuss it at the Executive Committee meeting.
- Michele d’Hemecourt offered to give an update on North Olympic Land Trust Dungeness area activities and conservation easement successes as an upcoming agenda item.
- Judy Larson commended the City of Sequim on their “Earth Day” efforts.

VII. Meeting Adjourned at 5:10 P.M.

Handouts:

- Copies of pictures of site for improvement at Dungeness Landing was passed around.