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RE: Review of the Clallam County SMP Update – Inventory and Characterization Report

Cathy,

I am pleased to present to you initial comments on the Clallam County Draft Inventory and Characterization report. I approached my review from two angles:

- 1) Technical review of listed site-specific conditions relevant to coastal hazards and coastal processes
- 2) A resident of Clallam County

You will find that most of my comments and suggested edits focus on improving the clarity of the document, providing information on public access or shoreline features not included in the reach summaries and providing insight and references on the science under-pinning the content of the report.

As a general comment the new work produced by Randy Johnson of the Jamestown S'Klallam Tribe and Dave Parks of the WA DNR quantifying rates of bluff retreat in the Sequim Bay (Johnson only?), Dungeness (Johnson and Parks) and Elwha (Parks only) drift cells should be incorporated into those sections as soon as they are available. These quantified rates of bluff retreat should be viewed as best available science and should inform the environmental designations chosen for these reaches.

My comments are presented in the order of reading, as a set of numbered comments. I've referenced my comments to page (using a capital "P") and either paragraph (using little "p") or line (using "l") I did not review the freshwater shoreline section or reach summaries for areas I am unfamiliar with.

Comments start here:

1. I like Figure 1-1. It succinctly presents the status of the SMP update process
2. P 1-3, p2. Is integration with other SMP's (i.e. Port Angeles and Sequim) a goal of the planning process?

3. P 1-6 p1 lists “promoting public access as a goal” and it is this goal that I feel is most underserved by this report. Some of my subsequent comments address recommended improvements.
4. P 3-1 p4. Recommend changing “barrier beaches (spits)” to “barrier beaches (including spits)”.
5. Page 3-2, p1. Recommend changing “Bluff toe erosion tends to occur relatively slowly but can be exacerbated during wet weather periods, storm surges or during4 extraordinarily high tides.” To “Bluff toe erosion can occur rapidly during wet weather periods, storm surges or during extraordinarily high tides”. The erosion typically happens quite rapidly but can be quite episodic.
6. Is Figure 3-1 really near the mouth of Salt Creek (as referenced in text)
7. P 3-3, p 2. Is there a reference for this paragraph asserting that a smaller tidal range is associated with greater bluff erosion? Ah, in the references I see Rosen, 1977. This might be a bit spurious to use an old reference from the Chesapeake Bay to justify a process-based conclusion in Puget Sound/Strait of Juan de Fuca?
8. P 3-3 p3. Using the term “wind-generated” waves is a bit misleading in the SJDF I think. All surface gravity waves on the ocean are wind-generated, but we can distinguish between local, short period waves and ocean-generated long-period waves in the Strait of Juan de Fuca. Both may be important in different ways to the alongshore transport of sediment. I would recommend eliminating “wind-generated” and simply using “waves” or “surface waves”.
9. P 3-4, p 2. Suggest changing, “When people build bulkheads, construct overwater structures such as piers and docks, remove vegetation or cause other shoreline modifications these processes become altered and the functionality of the nearshore environment is diminished.” to “When people build bulkheads, construct overwater structures such as piers and docks, remove vegetation or cause other shoreline modifications these processes may become altered and diminish the functionality of the nearshore environment.”
10. Section 3.1.1.1. NICE! I am glad this is included in this planning document.
11. P 3.-5, p 2. I suggest changing this paragraph to read in order to align it with ubiquitous terminology and conceptual models: “Rising sea levels could have a major influence on the marine shoreline environment. There are two main components of sea level rise – “true” sea level rise, which is controlled by global processes such as the warming of the oceans and the melting of ice; and “relative” sea level rise, which is controlled by regional processes including tectonic uplift and land subsidence. Relative sea level rise is of great importance on a regional scale, since typically communities are interested in the relative position of the land and the sea. Even as the “true” global sea level rises, geologic studies of the north Olympic Peninsula indicate that the land is predominately rising as well. As a result “relative” sea level rise may be slightly less in, for example, Neah Bay (where tectonic uplift appears to be out-pacing “true” sea level rise) than it will be in Olympia, where the land is subsiding.
12. Table 3-1 may be misleading, since spatial patterns of relative sea level rise change from west to east along the peninsula. We also need to acknowledge that the “true” rate of slr used in the Mote report was from the IPCC 2007 report, which did not include some sources of sea level rise that are now viewed as important. Additionally, the rates of tectonically induced vertical land movement don’t take into account the possibility of a tectonic event, which could cause

dramatic sudden subsidence in areas that are currently rising from the sea. Over the long-term, in other words, those vertical land movement rates may be zero or even negative. There is a disclaimer in the table caption, but certainly some planners may focus on the notion that we may experience negative or zero relative sea level rise.

13. Section 3.1.1.1. It may be worth pointing out that for shoreline planning purposes it is not only sea level rise that is of importance, but also changing climate conditions (wind stress which can cause extreme high tides, larger waves and associated run-up) which can increase the risk of coastal flooding. I will work to provide relevant references.
14. Table 3-6. The second to last box is perhaps more appropriately labeled “beach grain size”?
15. For planning purposes, the CGS shoreline characterization scheme is really nice.
16. If Figure 3-9 (and others like it) it would be beneficial to the reader if there were arrows in the x-axis label pointing east and west
17. P 3-23 p 1. Given the potential but generally un-demonstrated importance of understory kelp I think that the use of “kelp” should be changed to “overstory kelp”, perhaps with a brief description (i.e. referring specifically to Bull Kelp and, to a degree, *Macrocystis* sp.) included.
18. Figure 3-10. This is a phenomenal photo, but is not Bull Kelp. It is *Pterygophora*, and these stems were pulled up into the intertidal from deeper water, apparently during a storm. It is not a good illustration of the point made in paragraph 1, page 3-25.
19. P 3-32 p1. The statement “Kelp forests and eelgrass meadows are largely unimpaired” should be re-considered, since we lack the data with which to make a quantitative comparison. Land use impacts, and in particular sedimentation due to agriculture and logging, may have impacted both eelgrass and kelp earlier in this century.
20. P 3-33, p4 (in point 2). Is it possible to insert an ear-mark here that essentially creates an adaptive management structure for low-bank development. Development should take into account sea level rise predictions, and it seems safe to assume given the trajectory of climate science sea level rise forecasting will improve dramatically over the life of this planning document. That should be acknowledged somehow?

Reach Specific Sections:

Section 4.1: Not Reviewed

Section 4.2: Not Reviewed

Section 4.3: Not Reviewed

Section 4.4: Not Reviewed

Section 4.5: No Comments

Section 4.6:

- 1) P 4-18 p2 and 4-18 p5. Regarding public access, I think that it should an essential addition to this report to quantify public access points (available now from DOE) per shoreline mile. That would give a better representation of true access potential than the metrics used here.

The statements, “over 10% of the shoreline in the reach is publicly owned and accessible by land” and “all of the publicly owned shoreline is already accessible” is incorrect. In fact, close to 100% of this shoreline is publicly owned (at least below OHW), but much of it is functionally inaccessible – an important distinction for planning purposes. Access is not only a recreation issue, but also an education/outreach and hazard/response issue.

- 2) P 4-18 line 28. This statement is demonstrably false. There are two lots of private tideland between Dungeness Spit and Morse creek, with the remainder of the tidelands and shoreline below OHW public. Access through the private tidelands is not currently restricted, but could be in the future. Therefore the public shoreline between the private access at Morse Creek and those private tidelands is functionally inaccessible. Access is possible, but not legal, through MacDonald Creek and Siebert Creek without compromising bluff stability. Improving access along this reach should be included as a management priority, as in, for example, section 4.9.

Section 4.7:

- 1) P4-19 p3. “Net shore-drift within the reach is entirely eastward”. There is strong evidence suggesting that there is a reach with westward net shore drift just to the west of the Elwha River mouth.
- 2) P4-19 line 18. The reference here is to the pipeline/riprap complex within city SMP jurisdiction.
- 3) P4-20 line 15. Lack of public access to the public shoreline between Dry Creek and Angeles Point should be addressed here. There is an existing passable access from both the lot at the base of Hill road and Crown Point park. It is not clear if both cross private land. A mention of this in the plan is desirable, and a goal of building access at this point should be included
- 4) P 4-19, line 40. Using the Seattle Times for a reference on abalone decline seems ill-advised to me. If poaching is the sole cause of decline (as is stated), there should be better documentation available.
- 5) P 4-21 line 23. Access to the eastern end of angeles point through the transfer facility/dry creek should be emphasized in the management section. There is an existing easement and road in place.

Section 4.8: No Comments

Section 4.9:

- 1) P 4-23 line 13: change “pockets” to pocket, or remove altogether. Crescent Bay isn’t really a “pocket” beach.
- 2) P 4-24 line 16: there is an attached breakwater associated with a boat ramp at Whiskey Creek Beach Resort that should be mapped?
- 3) P 4-24 line 12: change to, “As a result, the nearshore area of the reach is used by many species for feeding, migration and rearing.”

- 4) P 4-25 line 6: This statement can be cut and paste directly into the section covering from Morse Creek to Dungeness Spit, excluding the bit about DNR land. This applies to the management goal on Line 20 as well.

Section 4.10:

- 1) P 4-25, line 29: change to “bluff-backed”

Section 4.11

- 1) P 4-28, line 28. I think that this statement should be re-worded to include something like, “without the acquisition of public access easements”.

Section 4.12

- 1) P 4-30, line 3. See previous comment.

Section 4.13: No Comments

Section 4.14

- 1) Map 2c, associated with this section. There are layers on the map with no legend entry, or there is color skew. Is the orange on the shoreline referenced to slope stability?

Section 4.15

- 1) No section discussing public access?

Section 4.16: No Comments

Section 4.17

- 1) A photo is included at the end of this section showing rip-rap, but no mention is made in the text of the % of this stretch (or linear distance) that has mapped armoring. Such a metric would be a useful baseline against which reduced function could be measured.

Section 4.18

- 1) See comment above.

Section 5: Not Reviewed

Section 6: Not Reviewed

Section 7:

- 1) It seems that Section 7 would benefit from some discussion of SMPs developed by entities within or adjacent to Clallam County – Port Angeles, and Jefferson County, for example.

References:

- 1) Additional references to consider may include:
 - a. Puget Sound Shorelines and the Impacts of Armoring— Proceedings of a State of the Science Workshop, May 2009, available at: <http://pubs.usgs.gov/sir/2010/5254/>
 - b. There is updated climate change and sea level research available (Snover et al. 2005 is used here). I will try to put together a relevant bibliography