**CAMANO ISLAND STATE PARK LAGOON RECONNECTION**

Response to Reviewer Comments

*Skagit River System Cooperative*

*May 1, 2014*

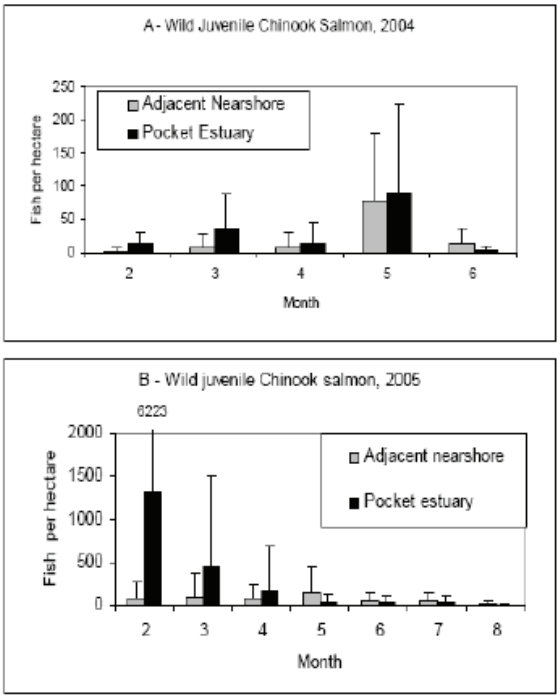
**Comments from SRFB Reviewers:**

1. *Provide key conclusions from previous feasibility study and modeling, including the tidal channel sizing evaluation that was completed.*

   The previous feasibility report (McBride and Beamer 2010) has been uploaded to prism, and our proposal has been updated to include results from the study.

2. *Provide documentation of the utilization of nearshore area at the park by juvenile Chinook.*

   As part of the feasibility study mentioned above (McBride and Beamer 2010), potential fish use of the site was assessed using seasonal fish assemblage data from pocket estuary sites that are both geographically nearby and elevationally similar (Elger Bay, Arrowhead Lagoon). Based on these data, it is highly likely that salmon species including juvenile Chinook and chum salmon will utilize the site during late winter and early-mid spring, with Pacific staghorn sculpins, shiner perch, and three-spined sticklebacks dominating the site during the summer months.




**Average wild juvenile Chinoook density for 2004 (19 sites) and 2005 (6 sites) pairs of accessible pocket estuary and adjacent beach habitat in Whidbey Basin. Pocket estuary habitat was preferred by the fish (from Beamer et al. 2006).**

Elevationally, the site is analogous to other high-elevation tidal channel salt marshes such as Elger Bay. Species assemblages at high and low elevation marshes are comparable, although surf smelt would not be expected at a high elevation site. Similarly, sticklebacks will likely be more abundant and shiner perch less abundant than at lower elevation marshes. (McBride and Beamer 2010).

3. *Is it feasible to estimate how proposed new habitat at the park might translate into a quantifiable increase in carrying capacity for Chinook?*

   Rigorous estimates that include connectivity and other factors have not been used to estimate juvenile Chinook carrying capacity at the site, but based upon the average densities shown above, peak densities could be expected to range from roughly 100 fish/hectare to 1250 fish/hectare. For a project footprint that would encompass 4 acres (1.6 hectare) of the site, this translates to 160 to 2,000 fish.

4. *Coastal hydraulic evaluation must focus on sediment transport near the boat ramp, and how the proposed channel will impact operations (and vice versa).*

   We agree. Our proposal has been updated to make this more explicit.

5. *Elaborate on specific ecological objectives such as whether tidal connection is expected only at high tide or a larger range of the tidal cycle, and how these may drive decisions related to the scope of work of the hydraulic engineering design process.*

   During the previous feasibility, modeling of channel and lagoon sustainability was assessed with the assumption that some excavation of channel and the lagoon would occur. The site can be expected to reach some sort of dynamic equilibrium over time, with as-built channel dimensions adjusting to flow velocities and sediment sizes. Comparison to the similar marshes mentioned above indicates that the site will be accessible throughout much of the tidal cycle under natural conditions. However, the state at equilibrium will depend greatly on the designed channel configuration, which will be informed by a number of factors, including proximity to infrastructure, habitat requirements, and recreational needs, among others. Throughout the design process, a primary objective will be to maximize accessibility throughout the tidal range.

6. *Recommend inclusion of wetland delineation and initial consultation with Ecology and ACOE before completing prelim design.*

   Good suggestion. We have incorporated this into our proposal.

7. *Recommend sponsor take low profile in outreach, and instead contract with a consultant experienced in managing such activities.*

   We agree, and are proposing to do just that.

8. *Attention must be paid to generating support for specific project designs within State Parks management: the support for "habitat improvement" that is cited in the Camano Island State Park "CAMP" management plan is a general policy goal that does not necessarily commit State Parks management to any particular project plan.*

   We agree, and will be attentive to this. Note, however that the CAMP document specifically lists "Assess the feasibility of constructing habitat features (pocket estuary) within the Lowell Point beach area important for fisheries habitat enhancement and public education," (State Parks 2013, p. 23) so the document does go beyond a general policy goal. We do understand that State Parks will make further decisions based upon the results of the feasibility assessment, and

is not necessarily committed to implementing restoration. We feel that this is prudent and appropriate.

**Comments from Salmon TAG Reviewers:**

1. *Difficulties with maintaining lagoon opening and still potential for community objections.*

   Preliminary modeling indicates that a lagoon opening will be sustainable, although the final configuration of the channel will have some bearing on long-term stability. The approach we have outlined in the proposed study approach has called for a detailed analysis by a coastal engineer that is intended to definitively address this issue.

   As evidenced by the response to the previous SRFB application for a restoration project at this site, there is very strong public interest in Camano Island State Park and the impacts of park management on visitor uses. During the year-long CAMP planning process initiated by State Parks following the withdrawal of the previous grant application, public comments were solicited on three separate occasions. Comments regarding salmon habitat restoration within the Park were explicitly requested, and while some negative comments were received, we would also note that many more were received in favor. Please refer to page17 in the CAMP document that states; "c*onducting a feasibility analysis for this project has been supported through many public comments during this planning process*" (State Parks 2013). This lead to the decision of State Parks leadership to adopt management objectives for Camano Island State Park that include "*support of a feasibility analysis of developing estuary features at Lowell Point to support nearshore habitat for endangered salmon species needs*" (State Parks 2013). We feel that a project can be developed with input from the project partners and with public involvement that provides access for salmon while still accommodating recreational use, boat launch and other accustomed visitor uses.

   We view public support as a critical component to the success of the project, and we are proposing to continue to involve the community during all parts of the preliminary design process. An outreach strategy will be developed between State Parks, a selected outreach contractor and SRSC early on in the process. We anticipate this strategy will also solicit input from area organizations experienced in conducting outreach activities. Suggestions and/or comments regarding our approach for outreach are welcomed.

2. *Project seems to have complicated construction needs to create a successful restoration.*

   We would disagree. The complication is in design, and construction will flow in accordance to the design specifics. To obtain this degree of specificity we feel there are elements in the project approach that require resolution, both technical and non-technical, in order to inform design and thus construction.

3. *Who is the driving force behind the project, is there a likelihood of high salmon use? Is there any document support for the project?*

   The Tribes represented by SRSC (Swinomish and Sauk-Suiattle), State Parks, and local Salmon advocacy groups have all been scoping this project for the better part of three years. This

coalition, working toward the regional goal of Chinook recovery, is the main driver behind the proposal.

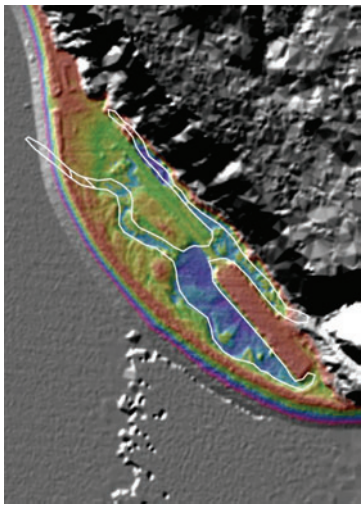
4. *Potential conflict with park users is high, both in regards to access and risk to existing infrastructure, who will be managing the public outreach?*

   In the proposal we have called for budget dedicated to professional support for the public outreach element. We will be seeking qualified professionals trained in outreach approaches and effectiveness to work closely with the project partners throughout the project.

5. *Critical question: Was this site ever a lagoon, or a freshwater wetland? Seems to be too elevated for natural processes. Maybe occasional wash over.*

   This topic was originally addressed during preliminary feasibility study (McBride and Beamer 2010). While historic maps do not show a lagoon at the site, it clearly exhibits topographic features and elevations that indicate that a lagoon was once present at the site. Hugh Shipman, a coastal Geologist with the Washington Department of Ecology, agrees with this assertion, as noted in the final CAMP document (State Parks 2013):

   > *"The low area of Lowell Point began as a large wetland and/or lagoon behind a long curving spit. Because it is low-lying, portions are subject to flooding during unusually high tides. This area was very likely a tidal marsh and lagoon prior to development. There appears to have been a tidal inlet at the north end. The details aren't completely clear, but this is consistent with observations of the current landscape and with similar features around the Sound. This area has been identified by the Skagit River System Cooperative for a potential area for habitat restoration project to help in the recovery of wild Skagit Chinook salmon populations."*



**Shaded relief map of Lowell Point, with relict lagoon and inlet channel outlined. Low elevation areas are shown in blue and purple.**

6. *It isn't certain that this site was historically available to juvenile salmon.*

   Please see Response 5, above.

7. *There may not be sufficient fresh water influx to produce truly estuarine conditions. It may be more of a tidal lagoon than a true estuary when reconnected to the salt water*.

This is a possibility; however, we would hope to more specifically address this in the preliminary design study proposed here. Even so, coastal lagoons supplied with freshwater only through runoff still offer growth and survival benefits for juvenile salmon as compared to the adjacent nearshore (Beamer et al. 2014). Furthermore, a relatively substantial freshwater wetland currently exists at the site, and the same freshwater that creates this wetland will likely reduce salinity within the lagoon to some degree. This will be addressed in our study.

8. *Cost of $217K seems high when compared to Iverson and Kristoferson projects.*

   The Kristoferson Creek culvert replacement project is s a very different kind of project, which, will likely offer smaller habitat benefits than the Camano Island State Park. The Iverson project is more similar. However, that project only seeks to address selected components of the full study that will be necessary for preliminary design. Furthermore, the Iverson might have very different outreach requirements, or have budgeted less for meeting this need.

9. *"I remain unconvinced that there was ever a consistent surface connection between the wetland behind the beach berm and tidal water in this high energy location. More than modeling is needed to demonstrate the existence of such a connection. Early aerial photos, peat core samples, etc. Too public a location for an unsuccessful project."*

   As noted in both our proposal and in the preliminary feasibility study (McBride and Beamer 2010), modeling was not used to demonstrate the historic existence of a surface connection. Topographic evidence was used to back up our assertion of the presence of a lagoon and channel. Modeling was used to evaluate the sustainability of one estimate of historic channel size, and not to establish whether a channel had ever been present. Early aerial photos and maps have been reviewed and are unfortunately inconclusive. Outside of SRSC, well-respected coastal geologist(s) agree with the assertion that a channel and lagoon was likely present, as noted above (State Parks 2013).

   We agree that this is too public a location for an unsuccessful project, which is why we are proposing a detailed feasibility and engineering assessment with a strong public outreach component, all directed towards the preparation of a solid preliminary design. Preliminary feasibility indicates that a channel opening at the site will be sustainable but will depend on channel configuration. This will be evaluated fully during our engineering analysis and, while we do not anticipate this to be the case, if the results of the analysis indicate that a tidal channel and lagoon complex will not be self-sustainable over the long term we will not move forward with design. We are not interested in constructing a project that requires extensive long-term maintenance; nor are we interested in expending funds to construct projects that have not been fully scoped for feasibility and have an unknown likelihood of success.

10. *Unclear yet whether restoration is feasible.*

    Hence the need for the study we are proposing.