

October 20, 2008

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To: Craig W. Collar, Senior Manager, Energy Resource Development  
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Subject: **Comments on the Pre-Application Document for the Admiralty Inlet Pilot Project.**

Dear Mr. Collar,

WDFW appreciates the opportunity review the Pre-Application Document (PAD). The document is informative and, for the most parts, factually correct. In light of your decision to start activities with a pilot site in Admiralty Inlet, I have limited my review to those sections that apply to the Admiralty Inlet Site. I drafted one general comment concerning the document, and perhaps a dozen specific comments, and several comments specifically associated with Table 5-1. Table 5-1 lists the research and monitoring activity needed during the pilot study, and represents the starting point for the inter-agency workgroup investigating the effects of the project.

**General Comment.**

On the issue of salmonid use in the Admiralty Inlet area, the PAD repeatedly focuses on production from nearby small freshwater streams, but does not give adequate treatment of the marine use by salmonids originating from the central Puget Sound, South Puget Sound and Hood Canal regions. Admiralty Inlet is the key marine migration corridor for all species of anadromous salmonids originating from the Skagit River, Stilliguamish River, Snohomish River, Lake Washington Basin, Duwamish/Green River, Puyallup River, Nisqually River Deschutes River, Skokomish River, Hamma Hamma River, Dosewallops River, Duckabush River, and Quilcene River. For coho and chum salmon, considerable production comes from numerous small tributaries in the South Puget Sound and Hood Canal regions. All these rivers are major salmon producers, collectively producing in excess of a 0.3 million adult fish each year. Both out-migrating juveniles, and returning adults pass through Admiralty Inlet. I think it is appropriate to state clearly that Admiralty Inlet is a critical migration corridor. I will elaborate in this more below.

**Specific Comments.**

**P 4-64. 3<sup>rd</sup> Para.** ‘As young salmonids grow, they generally move towards

deeper pelagic areas and feed on nekton. *Most juveniles leave Puget Sound and achieve most of their growth in the ocean. Depending on the species and stock, salmon of Puget Sound origin may rear in the ocean as far south as the Oregon Coast, and as far north as the Bering Sea (Western Alaska). Upon reaching sexual maturity, salmonids generally return to their natal streams to spawn and complete their lifecycle'*

**P 4-64. 3<sup>rd</sup> Para.** ~~Their range extends through the San Juan Islands and British Columbia (NOAA 1995a).~~ *Adults are caught in the ocean off the coasts of British Columbia and Washington State.* I'm not sure what the NOAA source was attempting to say, but the primary rearing area for Puget Sound coho are off the west coasts of Vancouver Island and Washington State. The San Juan Islands are more of a migration corridor than a rearing area.

**P 4-66. Fig 4-7.** This map should be replaced by full Puget Sound map showing the primary migration routes from major coho-spawning areas. The emphasis on nearby coho-bearing streams misses the mark. Coho from local streams and rivers are a relatively small portion of the fish passing through Admiralty Inlet. This document is about a marine development plan, and freshwater impacts are a secondary issue. The fact is, greater than the 80% of the Puget Sound coho production passes through Admiralty Inlet when migrating to and from the ocean.

**P 4-68. Fig 4-8.** This map has the same problems as Figure 4-7.

**P4-71.**

**Add to discussion on Page 4-71.** *"We know from coded wire tag recoveries, genetic analysis and catch patterns that relatively few salmon remain in Puget Sound for their entire marine life history stage (anadromous cutthroat may be an exception). Some chinook and coho are caught by the sport fishery in Puget Sound outside the migration season (August through October), but the numbers are small relative to the sport and troll catches in the Pacific Ocean, and, during the migration season, the net and sport fisheries in Georgia Strait, Juan de Fuca Strait and Puget Sound."*

**P4-73.**

*Salmonids in Admiralty Inlet*

*'A large population of coho resides in the Hood Canal and surrounding freshwater streams (NOAA, 1995). Coho spend a large portion of their rearing in freshwater, but do venture into marine waters for significant periods of time (DON 2006). The proximity of Admiralty Inlet to the Hood Canal and the surrounding freshwater streams suggests that coho are likely found in and around the inlet. In addition, Chimacum Creek supports coho and flows directly into Admiralty Inlet. During the fall, anglers fish for coho in Useless Bay and at Indian Point, which is along the southern end of Admiralty Inlet (Keizer and Nelson 2007).'*

This paragraph is very confusing. The first two sentences imply that coho move in and out of freshwater multiple times. In fact, coho undergo ‘smoltification’ which is a series of physiological changes for surviving in saltwater. These fish cannot re-enter freshwater until they are ready to spawn. They may reside in the estuarine and nearshore areas of Puget Sound for up to three months, but most (>95%) migrate to the ocean for most of their marine life, and it is in the ocean where they acquire most of their growth. They don’t ‘hang out’ in Admiralty Inlet in significant numbers (see Table 28; Hunter 1985). The sport fisheries in Admiralty Inlet out-side the migration season (i.e., August 1 through October 30), targets mostly chinook but has a small by-catch of ‘resident’ coho. Migratory coho pass through Admiralty Inlet from August 1 to October 30. These migratory coho return to numerous rivers and streams throughout South Puget Sound, Central Puget Sound and Hood Canal. Coho from Chimacum Creek probably represent less than 0.1% of the coho run passing through Admiralty Inlet and Hood Canal Coho are less than 30% of the run.

**P4-73.** Add to second paragraph. ‘Currently, there are two key sockeye runs returning to Puget Sound; Baker Lake and Lake Washington. Admiralty Inlet is the primary migration corridor for both of these stocks.’

P4-73. Add to forth paragraph. Admiralty Inlet is a major migration corridor all pink salmon stocks spawning in central Puget Sound, South Puget Sound and Hood Canal.

P4-81. Table 4-23. Add the Ratfish(*hydrolagus colliei*), which is common in deeper water throughout Puget Sound.

P4-97. The emphasis on Hood Canal origin fish is strange. Rewrite first paragraph to the effect that: ‘Admiralty Inlet is the key marine migration corridor for all species of anadromous salmonids originating from the Skagit River, Stilliguamish River, Snohomish River, Lake Washington Basin, Duwamish/Green River, Puyallup River, Nisqually River, Deschutes River, Skokomish River, Hamma Hamma River, Dosewallops River, Duckabush River, and Quilcene River. Coho and Chum make use of many small streams throughout the region. Some Skagit River fish may migrate through Deception Pass and bypass the Admiralty Inlet area, however catch records suggest that many go through Admiralty Inlet and around the southern end of Whidbley Island. For the rest of the river systems, Admiralty Inlet is the primary or exclusive migration corridor out of (juvenile) and into (adult) the Puget Sound region.’

Page 4-97. Table 4-46. Admiralty Inlet is a key migration corridor for most stocks included in the Puget Chinook ESU. The selection of the Elwha River as an example of ‘proximal habitat’ is strange. It’s more that 50 kilometers to the west, and more importantly, Admiralty Inlet is far removed from the primary migration path for Elwha chinook. Few Elwha chinook would stray into the Admiralty Inlet area. Any of the rivers mentioned immediately above would make more sense. Most of them are

considerably closer than the Elwha River. If there is critical habitat in any of the rivers mentioned above, then it should be noted here.

**P4-130. Clarification on Hood Canal Summer Chum and the Georgia Strait/Puget Sound fall/winter chum that originate from Hood Canal.** It should be clarified that the latter stock does return to streams, rivers and hatcheries in Hood Canal, indeed the >95% of the chum returning to Hood Canal are of the Georgia Strait-Puget Sound fall/winter ESU. Thus, anytime you mention ‘Hood Canal’ chum, you need to specify whether you are referring to the endangered summer run, the fall/winter run or both. The heading to Figure 4-48 should specify ‘summer’, and the distinction should be clarified in the text as well.

P4-132. Table 4-48. *‘Since spawning occurs within Hood Canal (Good et al. 2005), the Inlet provides a migratory pathway for all species migrating into the eastern portions of Puget Sound.’* ‘Eastern Puget Sound’ is not the primary rearing area for Hood Canal Summer Chum. These fish migrate to the ocean through Admiralty Inlet. Some degree of straying and juvenile foraging will occur throughout inland marine waters of Puget Sound, but in the end, all these juvenile fish will go through Admiralty Inlet to the ocean and return as adults from the ocean through Admiralty Inlet.

P4-138. Table 4-50. Once again, the author seems to have a notion that Hood Canal is the only part of Puget Sound that extends south of Admiralty Inlet. There are steelhead producing rivers throughout Central Puget Sound, South Puget Sound and Hood Canal, and Admiralty inlet is the key migration corridor for all of these steelhead stocks.

### **Comments on Table 5-1.**

This table will guide research and monitoring activities during the pilot study, and thus, a crucial element of the PAD. Some of these potential mechanisms may be resolved by a commitment to a specific design or operational procedure to avoid the problem, some may be resolved by a literature review of the subject, and some by monitoring or research. Some may also require a combination of strategies to resolve them.

Relative to the first ‘potential mechanism’, “collision risks” should be expanded to ‘collision and cavitation risks’. We’re finding, that with both windmills and hydropower turbines, animals can be killed by cavitation, i.e., severe pressure changes in the vicinity of the blades. It doesn’t always take a direct strike.

We see three other ‘potential mechanisms’. These are:

- 1) Toxicity from anti-fouling paints and coatings; Anti-fouling paints are typically contain tin-based compounds that may be bioaccumulative and toxic.
- 2) Derelict net snagging on sub-surface structures. Gillnets and other types of nets are lost by fishermen and some times get caught on underwater

structures. These become death traps for marine birds, fish and marine mammals.

- 3) Excessive heating of substrate or water from underwater powerlines. My understanding from one source is that underwater powerlines with high voltage drops can get quite hot, reaching temperatures of several hundred degrees F. These may impact organisms in the substrate and on the seabed.

If you have any questions, contact me at 360-902-2542 or [huntemah@dfw.wa.gov](mailto:huntemah@dfw.wa.gov).

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