EASTERN STRAIT OF JUAN DE FUCA

The regional implementation progress report for Eastern Straits was jointly authored by WDFW and the Jamestown S'Klallam, Lower Elwha Klallam, and Port Gamble S'Klallam tribes. They state that the report represents co-manager agreement at the policy and technical level. This region was reviewed by the HSRG in 2001.

HSRG Synopsis and Response

General Description of Region and Hatchery Programs/Issues:

This region contains a complex of watersheds that drain the northeastern slopes of the Olympic mountain range, including the Dungeness and Elwha rivers and several smaller watersheds. Although each of these sub-regions currently have much habitat of poor quality, they are still producing some level of Chinook, coho, pink, chum, cutthroat and steelhead over portions of the region.

Habitat in the Dungeness drainage is considered poor to fair for salmonids, but is expected to improve if efforts to modify the Dungeness River dikes, to return the river to its meander channels are successful. Major habitat concerns include the diversion of instream flow for irrigation, loss of functional floodplain and estuary in the lower watershed, lack of habitat complexity, substrate instability, and poor riparian condition. Upper watershed tributaries in the Olympic National Park remain in good condition. Significant habitat restoration efforts are underway in the mainstem, where islands of high-quality habitat warrant protection or have high restoration potential for producing naturally spawning salmonids. Both hatcheries in the Dungeness sub-region focus on the conservation of severely depleted salmonids, notably ESA-listed Dungeness spring Chinook. They also maintain a coho program for harvest purposes.

Natural salmonid production in the Elwha River watershed is currently severely impaired due to the presence of the Elwha and Glines Canyon dams. Habitat in the upper watershed is within the Olympic National Park and remains pristine, but fish access is limited to only the lower 4.9 miles of what was historically a 77 mile range. Removal of the dams has been authorized and funded by the US Congress. Habitat condition downstream of Elwha Dam is severely impaired, due to loss of suitable spawning substrate and channel complexity. As in the Dungeness Basin, the emphasis of this sub-region's hatchery programs is on conservation of the remaining stocks of salmonids, including the ESA-listed Elwha fall Chinook. A coho program is maintained primarily for harvest. In recent years, winter steelhead or coho salmon rearing has also taken place.

General Overall Comment about the Co-Manager Report:

The co-managers in this region have taken actions in the past year and half consistent with hatchery reform objectives of improving efficiency and effectiveness of hatchery operations, supporting fisheries, and conserving naturally-spawning stocks. Overall, the response of the Eastern Straits co-managers has been good in meeting the HSRG's recommendations. The effort has been a cooperative process by the co-managers to clearly elucidate hatchery reform issues at both the technical and policy levels. Stock goals and purposes of hatchery programs have been

clearly stated. Managers have identified whether the programs intend to integrate the hatchery populations with, or segregate them from, the naturally spawning segment of the populations, and have incorporated HSRG-recommended hatchery protocols and modifications required for achieving those goals. They have employed new co-manager tools in both the Dungeness and Elwha basins to describe and analyze complex interactions of hatchery fish with natural fish, and have suggested methods to improve the efficiency and effectiveness of hatchery operations in the region. In most cases, these methodologies are being put into practice. The comments below do not pertain to steelhead programs. As discussed elsewhere, the co-managers are reviewing the HSRG's system-wide recommendations for steelhead and will address them in a forthcoming white paper.

1. Stock Goals and the Role of Hatcheries

a) Are short- and long-term management goals/premises for habitat, conservation and harvest of all regional hatchery- and naturally-spawning salmonid stocks clearly stated? Have specific questions raised in the regional review been adequately addressed?

The co-managers have reported goals for most natural and hatchery stocks in the region, and confirmed the goals upon which the HSRG recommendations are based. The majority of HSRG recommendations have been met, or acceptable alternatives proposed. However, no specific goals have been identified for the naturally-spawning coho population in the Dungeness River. The HSRG recommends that the co-managers develop and explicitly state goals for this stock. The co-managers have stated that HSRG recommendations for habitat restoration and subsequent integration of hatchery coho and Chinook on the Dungeness River must await a basin-wide life history study that is proposed by the co-managers, for which funding is being solicited. Information derived from the life history study will apply to all salmonids in the Dungeness Basin. The HSRG strongly supports the proposed study, and recommends that funds be made available as soon as possible.

b) Is the purpose (harvest, conservation, education, etc.) of each hatchery program stated? Have specific questions raised in the regional review been adequately addressed?

The purposes for all hatchery programs are adequately defined and the co-managers have proposed no changes in the purposes of the individual programs since the HSRG's review. The co-managers have answered all HSRG questions related to program purposes.

c) Is the program type (integrated vs. segregated) identified and explained for each hatchery program? Have specific questions raised in the regional review been adequately addressed?

All programs are identified as either integrated or segregated, and all HSRG recommendations satisfactorily addressed. The co-managers have suggested an acceptable alternative to the HSRG's recommendation that the Elwha Restoration Team (ERT)

consider captive broodstocks, in order to reduce risk of demographic loss during dam removal. Instead, they plan to create a reserve population using off-station plants and acclimation techniques in Morse Creek, habitat historically used by Elwha salmonids. The purpose is to reduce demographic, ecological and genetic risks associated with dam removal by creating refugia for Elwha stocks in Morse Creek. These populations will be monitored, with captive broodstocking and other artificial propagation measures invoked only if necessary.

2. Steps Taken (Decisions Made and Actions Taken) Towards Meeting Short- and Long-Term Expectations

a) Has significant progress been made to achieve desired hatchery- and naturally-spawning proportions in the hatchery broodstock and on the spawning grounds for integrated and segregated programs?

The co-managers applied the AHA tool to the hatchery program for Dungeness Chinook and concluded that, under current habitat conditions, integrating hatchery- and naturally-spawning broodstock at this time would result in increased demographic risk of extinction. The aim of the hatchery program is to conserve this severely depleted population in a hatchery gene bank, pending improvements in habitat. An AHA analysis of the segregated Dungeness coho hatchery program gave similar results, demonstrating that poor habitat condition does not allow integrating the hatchery program at this time. It will remain as a segregated conservation program. This is a logical, scientific approach, given current conditions. To integrate the program today would require a significant reduction in smolt production, because of the difficulty in obtaining a sufficient number of natural-origin returning fish for the hatchery broodstock. However, as conditions improve and abundance increases, the managers should consider converting to an integrated program.

According to the co-managers, the final decision to integrate hatchery production for coho and Chinook at the Dungeness hatchery awaits the outcome of a proposed life history study, and determination of the productivity and capacity of wild salmonids in the Dungeness River Basin.

At the request of ERT, the HSRG reviewed the Elwha River Restoration Plan. However, neither this plan nor the co-managers' implementation progress report for the Elwha sub-region included specific strategies for achieving desired hatchery- and naturally-spawning proportions in the hatchery broodstock and on the spawning grounds for integrated and segregated programs. The HSRG recommends that broodstock management strategies for all stocks affected by the restoration plan be developed prior to its implementation.

b) Have steps been taken to size programs consistent with goals for all hatchery- and naturally-spawning stocks? Have specific questions raised in the regional review been adequately addressed?

By and large, the co-managers have met HSRG recommendations to size programs consistent with goals for all hatchery- and naturally-spawning stocks. They have

developed an alternative conservation hatchery program following closure of the Chinook captive broodstock at Hurd Creek hatchery. This new hatchery program gets eggs from naturally-spawning stocks and produces a mix of zero-age and yearling smolts, as per HSRG recommendations. While progress has been made, the managers in this region have generally not developed goals for harvest contribution of hatchery programs explicit enough to specifically size the programs to meet these needs.

The HSRG notes that the Dungeness fall pink program at Hurd Creek Hatchery has been terminated for lack of funds. This stock, which is the only pink salmon stock in the lower Dungeness River, is recognized by the managers to be of high biological significance and at critical population viability. In addition, riverine habitat is inadequate and the short-term prognosis for habitat restoration is poor. In light of these factors, the HSRG recommends that the co-managers review program options or alternatives to reinstitute the conservation hatchery program for this depleted population.

c) Have steps been taken to better meet hatchery operational guidelines, from broodstock collection through release? Have specific questions raised in the regional review been adequately addressed?

Operational guidelines for natural rearing protocols, selection of broodstocks, densities, flows, spawning matrices, proportional mixes of zero-age and yearling smolts, etc., have been met. The Lower Elwha Klallam Tribe is to be commended for its successful implementation of an enriched rearing environment in the earthen pond at the tribal hatchery.

3. Steps Taken to Track Progress toward Expected Outcomes

Please see general HSRG comments about managing for success.

a) Will the status of major stocks (e.g., harvest and escapement) be monitored over time?

The Elwha River Restoration Plan includes provisions for monitoring recovery (escapement) of Elwha River stocks following dam removal. However, no specific discussion on monitoring the status of stocks was presented in the implementation progress report for the Eastern Straits region.

b) Will contributions of each hatchery program towards its purpose be monitored over time (e.g. contributions toward harvest and escapement)?

No report was given on methodologies (tagging, marking, etc.) to be used in assessing contribution of hatchery programs to conservation or harvest. There was no discussion on methods to assess the proportion of hatchery- or natural-origin fish on the spawning grounds.

There was no discussion of whether the system will be adaptively managed. Suffice to say that the Elwha managers will make appropriate mid-course corrections as data becomes available during dam removal. The co-managers have made the most of their available resources in this region. However, the potential need to expand spawning ground surveys and stock identification sampling programs, in particular, should be reviewed as a part of the development of a comprehensive monitoring plan for the region. Stable funding is needed for long-term monitoring of stock composition on the spawning grounds. The monitoring of hatchery contributions to harvest and natural spawning escapement is critical for tracking the success of both integrated and segregated programs.

c) Will contributions of hatchery-origin fish to broodstock and natural escapement be estimated with sufficient accuracy and precision over time?

There was no discussion of methodologies that will be used to ensure that data gathered will have the desired accuracy or precision. It is likely that additional spawning surveys and biosampling will be needed in this region, as in others, in order for adequate accuracy and precision to be achieved.