



CENTRAL PUGET SOUND

The regional implementation progress report for Central Sound was authored by WDFW, with a separate report on the East Kitsap sub-region provided by the Suquamish Tribe. WDFW states that the response was WDFW's interpretation of co-manager technical meetings and subsequent agreements and that opportunity for review was provided to the tribal co-managers. This region was reviewed by the HSRG in 2002.

HSRG Synopsis and Response

General Description of Region and Hatchery Programs/Issues:

The Central Puget Sound region is one of the largest regions reviewed by the HSRG. It contains four sub-regions—Puyallup River, Green River, Lake Washington and East Kitsap. Each sub-region is different in terms of its harvest goals, habitat conditions and hatchery programs, but the region's hatchery programs predominantly have harvest as their primary goal. Most hatchery programs in the region are large, harvest-oriented Chinook and coho programs, but there are also several smaller, harvest-oriented chum programs. Few conservation programs exist in the region, but there are important conservation programs for spring Chinook in the Puyallup system and a conservation-oriented, harvest program for sockeye in the Lake Washington sub-region. The region includes two of the three largest cities in the state of Washington. Habitat through the region has been negatively affected by population growth, industrial development in estuarine areas, hydroelectric and water supply impoundments. The biggest challenge for co-managers in the region will be developing strategies to operate large programs to meet harvest needs, while meeting conservation goals for stocks with limited natural habitat productivity.

General Overall Comment about the Co-Manager Report:

Based on the implementation progress report, it appears that the sub-regions have progressed at different paces, in terms of implementing hatchery reform. Specifically, the co-managers in the Green River, Lake Washington and East Kitsap sub-regions seem to have made good implementation progress. However, a major shortcoming in the region is the inability to identify hatchery-origin fish. The managers in the Puyallup watershed have made some progress, but appear to still be in the discussion and planning stage for many of the important elements of hatchery reform. No report was received about the White River drainage of the Puyallup sub-region, therefore the HSRG cannot comment on progress in that drainage. The progress report addressed only the HSRG's program-specific recommendations. Focusing only on those recommendations makes it difficult to assess progress in regard to developing clear stock goals or determining how programs will be managed over time. Follow-up conversations with authors of the report, however, indicate that progress in these two areas is again different across the sub-regions, with good progress made in the Green River and Lake Washington sub-regions, and less progress in the Puyallup and East Kitsap sub-regions.

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. Operational recommendations for steelhead have generally been met for all programs in the region.

1. Stock goals and the role of hatcheries

- a) Are short- and long-term management goals/premises for habitat and 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?**

Specific information was not provided to answer this question in the implementation progress report. Follow-up discussions with one sub-basin author indicated that, in at least some sub-regions, this has occurred. Specifically, the co-managers in the Green River and Lake Washington sub-basins have reviewed goals and are in technical agreement. It appears that, in the Puyallup and East Kitsap sub-regions, individual managers are reviewing these goals, but active co-manager discussion has not occurred.

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

Again, specific information was not provided to answer this question in the implementation report. Follow-up discussions with one sub-basin author indicated that, in at least some sub-basins, this has occurred. Specifically, the co-managers in the Green River and Lake Washington sub-basins have reviewed the purpose of each hatchery program and are in technical agreement. Again, it appears that in the Puyallup and East Kitsap sub-regions, individual managers are reviewing the purpose of their programs, but active co-manager discussion has not occurred.

- 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?**

Specific information was not provided to answer this question in the implementation report. Follow-up discussions with one sub-region author indicated that, in at least some sub-basins, this has occurred. Specifically, the co-managers in the Green River and Lake Washington sub-basins have reviewed the program type for of each hatchery program and are in agreement. In the Lake Washington watershed, the broodstock management strategy for the fall Chinook program has been modified to an integrated strategy. Again, it appears that in the Puyallup and East Kitsap sub-regions, individual managers are reviewing their broodstock management strategy, but active co-manager discussion has not occurred.

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?

Comments on this question are confined to the Green River, Lake Washington, East Kitsap and Puyallup River watersheds, where progress reports have been provided. Good progress has been made in the Green River and Lake Washington sub-regions toward implementing effective broodstock management principles for Green River fall Chinook and coho, and Lake Washington fall Chinook and coho. In the Green River, the hatchery fall Chinook broodstock includes approximately 20–30% natural-origin recruits, and some hatchery-origin strays are being removed from the spawning population by a weir at Icy Creek. In order to accomplish the goals of allowing the natural-origin segment to drive the adaptation of this stock, however, additional efforts are likely to be needed to control hatchery straying, and/or to incorporate additional natural-origin fish into the broodstock. For Green River coho, unmarked fish are being incorporated into the hatchery broodstock at a rate of up to 70%. However, since a major portion of the hatchery releases that can contribute to escapement in this watershed are not marked, it is impossible to determine the composition of the hatchery broodstock or the naturally-spawning population. Additionally, the managers report that little effort has been put into evaluating the hatchery stray rate from various coho programs in the watershed. The HSRG strongly supports additional marking and evaluation of the composition of natural spawning, if the co-managers want to effectively integrate this stock.

Good progress has also been made in the East Kitsap sub-region toward implementing effective broodstock management principles. The fall Chinook harvest program in this sub-region had already met these principles, but the HSRG had concerns about the effectiveness of these strategies for the coho net pen and fall chum programs. Since the review, the co-managers have suspended all coho net pen releases. While this decision was not driven solely by the desire to more effectively segregate the program, suspension of the program effectively eliminates any straying risks that may have occurred. Should this program be reactivated, the HSRG suggests that the co-managers review their harvest and conservation goals for coho stocks in the sub-region and design a program that is consistent with those goals. The co-managers also recognize the need to begin incorporating natural-origin fish into the hatchery broodstock for the East Kitsap fall chum program. The implementation report indicates that this will be accomplished as program funding allows. The HSRG supports funding for implementation of this broodstock policy. However, alternate goals or enhancement strategies may need to be developed for this stock, if funding to implement the preferred option is not available.

In the Lake Washington sub-region, good progress has been made for many programs. The Lake Washington sockeye program is probably the model for broodstock management, monitoring and evaluation and adaptive management in the entire region. In addition, efforts are being made at Lake Washington fall Chinook and coho programs to integrate the hatchery broodstock with natural stocks in the sub-region. The progress report states that, in both of these programs, approximately 10% of the hatchery broodstock is now made up of natural spawners. However, since the level of current



hatchery straying was not reported, it is impossible to determine if this approach will effectively integrate the hatchery and natural populations. Additional efforts to limit hatchery straying, or further incorporate natural-origin recruits into the broodstock, are likely needed. In particular, the integration of the Lake Washington fall Chinook program will likely require further collection of broodstock from the natural populations in north Lake Washington tributaries.

In the Puyallup River, the report points to progress in reducing straying risks from some programs, but actions to improve stock integration have yet to occur. The report says that discussions are occurring regarding collection of natural-origin broodstock for the fall Chinook and coho program, but final decisions on the exact approach have not been made. The Puyallup Tribe has constructed a new facility that should reduce straying of returning fall Chinook.

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?

In the East Kitsap sub-region, several programs have been resized to be more consistent with stock goals for harvest and conservation. Most notably, the coho net pen program has been suspended, partially as the result of changing harvest goals. Permanent reduction is being considered for fall Chinook releases from satellite locations at Grovers, Dogfish and Clear creeks. In addition, fry releases have been reduced both in number and location in for East Kitsap coho, to be more consistent with the primarily educational purpose of the program. Chum programs are also being discontinued in central and south Kitsap streams, where populations no longer appear to need supplementation. 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.

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?

Many of the recommended changes in hatchery operational guidelines are being implemented. The report indicates that most other operational changes will be adopted as facilities are improved. For example, spawning guidelines have been adopted to increase effective population sizes in most hatchery programs, and efforts are being made to incorporate all portions of the run timing into the hatchery broodstock. Infrastructure improvements at the Green River Hatchery should significantly improve the ability to meet suggested operational changes, such as allowing volitional releases of hatchery fish. A major shortcoming in the region is the inability to identify hatchery-origin fish. In certain watersheds, for example the Green River, a major portion of hatchery coho releases has not been marked. In order to accurately estimate the composition of hatchery fish spawning naturally, and to accurately collect natural-origin spawners for hatchery broodstock, all major releases of coho need to be marked.



3. Steps taken to track progress toward expected outcomes

Please see general HSRG comments about managing for success. The progress report provided no information in regard to developing a monitoring and evaluation or adaptive management plan for the region, necessary elements for managing for success into the future. Therefore, the HSRG can make no comment in regard to the co-managers' progress in this area. The HSRG strongly recommends the development of an adaptive management plan, as well as a comprehensive monitoring and evaluation program.

a) Will status of major stock goals (e.g. harvest and escapement) be monitored over time?

No information was provided on this topic; therefore, the HSRG can make no comment in regard to this question (see above).

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

No information was provided on this topic; therefore, the HSRG can make no comment in regard to this question (see above). 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?

Catch contribution and spawning escapement estimates are made annually for stocks in the region. Although not specifically addressed, marking and tagging proportions are high throughout the region. As noted earlier, however, the managers report that little effort has been put into evaluating the hatchery stray rate from various coho programs in the Green River watershed. They also note that additional funding will be required to expand assessment efforts, including accurately determining stock composition of natural spawners, as well as collection of natural-origin recruits for incorporation into hatchery broodstocks. 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.