RC 035

What is the essence of adopting the Advisory Panel (AP) recommendations?

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The AP's two recommendations will result in relatively small changes to the ADF&G proposed escapement goal ranges and will more explicitly guide management toward the lower and upper end of the escapement goal ranges, depending on the strength of runs to fishing districts. Under many future run scenarios it would likely be difficult to distinguish the effects of the proposed changes. The effects of recommended regulatory changes for the Board of Fisheries to consider would be the greatest during periods of small runs. The new escapement goals, ADF&G or AP-recommended, will increase escapements when runs are above average.

ADF&G delayed adopting its proposed escapement goals for two seasons (2013 and 2014) and were set to adopt new goals in 2015. ADF&G sets SEGs, not the Board of Fisheries.

First, the AP recommended that ADF&G not change the lower bound of the old goal and pair it with their proposed upper bound. This widens each of four ranges by 100,000 fish at their lower bound, and less for Igushik (50,000) and Nushagak (30,000). A 100,000 fish adjustment downward lowers the overall midpoint of a range by 50,000 fish. Recall that the midpoint of the overall range is what is often used to address the waiving of the 48-hr transfer. ADF&G was a member of the AP and has agreed to adopt the SEGs recommended by this study's AP.

Second, and contingent on the revised goals being adopted, the AP recommended to the Board of Fisheries that it adopt regulatory changes in management plans:

> *The Department will manage for escapement to fall within the lower or upper half of the adopted river-specific escapement goal ranges, commensurate with pre-season and ongoing in-season assessment of run strength to the fishing district.*

The Board meets on March 17, 2015 to consider this recommendation. Keep in mind this language would probably be tweaked with its intent maintained, should it be adopted.

Table 1 (below) shows the goals used through 2014, the original ADF&G proposal, and the AP-proposal, as well as the upper and lower half of the AP-recommended escapement goal ranges. The lower ranges of the AP goal would be used, to the extent practical, for runs believed to be below average, and the upper range would be used for above average runs. The net effect of the regulatory change on escapement (and catches) in the future is difficult to quantify into numbers of fish for a few reasons. The most important is because ADF&G has typically varied escapement within the escapement goal range as a function of run size, similar to what the above regulatory language is specifying. The AP's recommended changes to the management plans makes explicit what is often already done, and, in a sense provides "comfort" to industry that this would continue under the new and significantly wider SEG ranges.

Having said this, some approximations of the extreme effects on achieved escapement between the AP-recommended and ADF&G recommended goals are possible, and occur when all stocks are either small or large. If all stocks were to return below average, and management was able to distribute escapement across the lower half the AP-proposed ranges, there would be about 1.6 million fewer fish in the escapement compared to the ADF&G proposed goals if managed across the entire range. If all runs were above average, management under the AP-

recommended goals would result in about 1 million more fish in the escapement than under proposed ADF&G goals. As noted above, ADF&G already varies escapement across the ranges in a similar manner, so these are a *maximum* theoretical differences if escapements were spread across the entire new ADF&G range, independent of run strength, and all stocks were small or all large in a given year (all things unlikely). The study's results suggest that the AP-proposed goals are both biologically and economically robust.

Finally, the AP-recommended regulatory change was deliberately intended to provide management with flexibility. One aspect of flexibility is that management is to consider run strength to the district. In mixed-stock districts, the goals for individual stocks might be affected by management of other stocks. For example, in an effort to harvest an abundant stock, management might strive to reach the lower half of one of the stocks even if above average in run size, if managing for the upper half of the range would hinder harvesting the abundant stock. This is an extreme scenario, and in most cases, the overall effect will simply be to achieve higher escapements when individual stocks are large compared to when small.

Table 1. Old and proposed escapement goals for six sockeye salmon stocks in Bristol Bay, March 2015.

	Number of Fish in Thousands					
	Escapement Goal Ranges and Midpoints					
Stock	Old SEGs (thru 2014)	ADF&G proposed SEGs for 2015	**Advisory Panel (AP) Recommended**	Lower half of AP EG range	Upper half of AP EG range	Average run size (millions), 1977-2014*
Ugashik						
Lower	500	600	**500**	500	950	3.7
Upper	1,200	1,400	**1,400**	950	1,400	
Mid	850	1,000	**950**			
Egegik						
Lower	800	900	**800**	800	1,400	7.8
Upper	1,400	2,000	**2,000**	1,400	2,000	
Mid	1,100	1,450	**1,400**			
Igushik						
Lower	150	200	**150**	150	275	0.84
Upper	300	400	**400**	275	400	
Mid	225	300	**275**			
Naknek						
Lower	800	900	**800**	800	1,400	4.3
Upper	1,400	2,000	**2,000**	1,400	2,000	
Mid	1,100	1,450	**1,400**			
Wood						
Lower	700	800	**700**	700	1,250	4.6
Upper	1,500	1,800	**1,800**	1,250	1,800	
Mid	1,100	1,300	**1,250**			
Nushagak						
Lower	370	400	**370**	370	635	1.6
Upper	840	900	**900**	635	900	
Mid	655	700	**635**			
Kvichak	----------no change----------					

** The median of historical total returns, 1977-2014 using run reconstructions by Cunningham et al. (2012). Note that these are larger than the 1956-2014 medians used in analysis of TR-based EG policy in the report (i.e., those in Appendix C of EG report).*