

off-cycle years (Baker et al. 2009). In 2005 and 2009, normally considered cycle years, we lowered the escapement goal to that of off-cycle years (two million) because it appeared that the cycle had dissipated. We concluded that the cycle had dissipated, not only on poor runs for would-be cycle years, but also on the uncharacteristically low (for cycle years) numbers of age-2.2 fish and Lake Iliamna island spawners ¹.

From 1996 to 2004, commercial fishing was restricted for some seasons in Naknek-Kvichak District. These actions forced the fishery into the Naknek River Special Harvest Area. Also, as directed in 5 AAC 67.025, *Kvichak River Sockeye Salmon Management Plan*, sport fishing restrictions were routinely imposed when inseason escapements were projected to be less than two million fish. Restrictions have generally taken the form of bag limit reductions and area closures designed to minimize potential conflicts with subsistence users. Prior to implementation of the current management plan, the low run in 2000 resulted in a closure of the sockeye salmon sport fishery in the entire Kvichak drainage. Kvichak River sockeye salmon have been utilized for subsistence for centuries. Annual subsistence harvests of Kvichak River sockeye salmon averaged 67,000 fish from 1988–1997 with recent harvests (2001–2010) averaging 45,000 fish (Jones et al. 2012).

The Kvichak River sockeye salmon stock was determined to be a *stock of yield concern* during the January 2001 Bristol Bay board meeting. A *stock of yield concern* is defined (5 AAC 39.222) as “a concern arising from a chronic inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above a stock's escapement needs.” A stock of management concern is defined (5 AAC 39.222) as “a concern arising from a chronic inability, despite use of specific management measures, to maintain escapements for a salmon stock within the bounds of the SEG, BEG, OEG, or other specified management objectives for a fishery.”

Kvichak River Sockeye Salmon Stock of Concern Timeline

Year	Status
January 2001	Initiated as <i>stock of yield concern</i> . <ul style="list-style-type: none"> Modified multiple management plans for additional Kvichak River protection.
December 2003	Reclassified to <i>stock of management concern</i> from its inability to meet escapement goals. <ul style="list-style-type: none"> Stipulated that if the Kvichak River run forecast is <30% above the minimum BEG, fishing will begin in the special harvest areas of Naknek, Egegik, and Ugashik rivers.
December 2009	Reclassified to <i>stock of yield concern</i> because of an increase in return-per-spawner values and total run in previous five years.

¹ Four groups of spawning populations have been genetically identified in the Kvichak River drainage, including: Lake Clark, Northeast Lake Iliamna, Lake Iliamna Islands, and Lake Iliamna Tributaries. It is believed that the Lake Iliamna Island spawners were responsible for producing the large cycle runs that occurred every four to five years.

Stock of Concern Recommendation

From 1996–2004, seven of nine years experienced escapements below the lower end of the escapement goal range (Figure 1). Since 2005, the lower end of the goal has been exceeded each year. Average commercial harvests (yields) have also increased in recent years. The average harvest for the past five years is 4.2 million; this compares to an average harvest of 1.5 million during the poor productive years of 1996–2004. The recent five-year average harvest is also greater than the historical off-cycle (1956 to 1993) average of 3.3 million. Likewise, total runs have increased by more than 50% from 1996–2004 to 2005–2012. Recent years have shown an improvement in the number of Kvichak River sockeye salmon returning to spawn. Returns per spawner have increased from an average of 0.8 for brood years 1991–1995 to an average of 3.4 for the most recent brood years, 2001–2005. The increase in production over the past seven years, coupled with an increase in harvest opportunities leads us to recommend that Kvichak River sockeye salmon be removed from *stock of concern* status. We recommend that no *stocks of concern* in the Bristol Bay Management Area be established.

Literature Cited

Baker, T. T., L. F. Fair, F. W. West, G. B. Buck, X. Zhang, S. Fleischman, and J. Erickson. 2009. Review of salmon escapement goals in Bristol Bay, Alaska, 2009. Alaska Department of Fish and Game, Fishery Manuscript Series No. 09-05, Anchorage.

Jones, M., T. Sands, S. Morstad, T. Baker, G. Buck, F. West, P. Salomone, and T. Krieg. 2009. 2011 Bristol Bay area annual management report. Alaska Department of Fish and Game, Fishery Management Report No. 12-21, Anchorage.

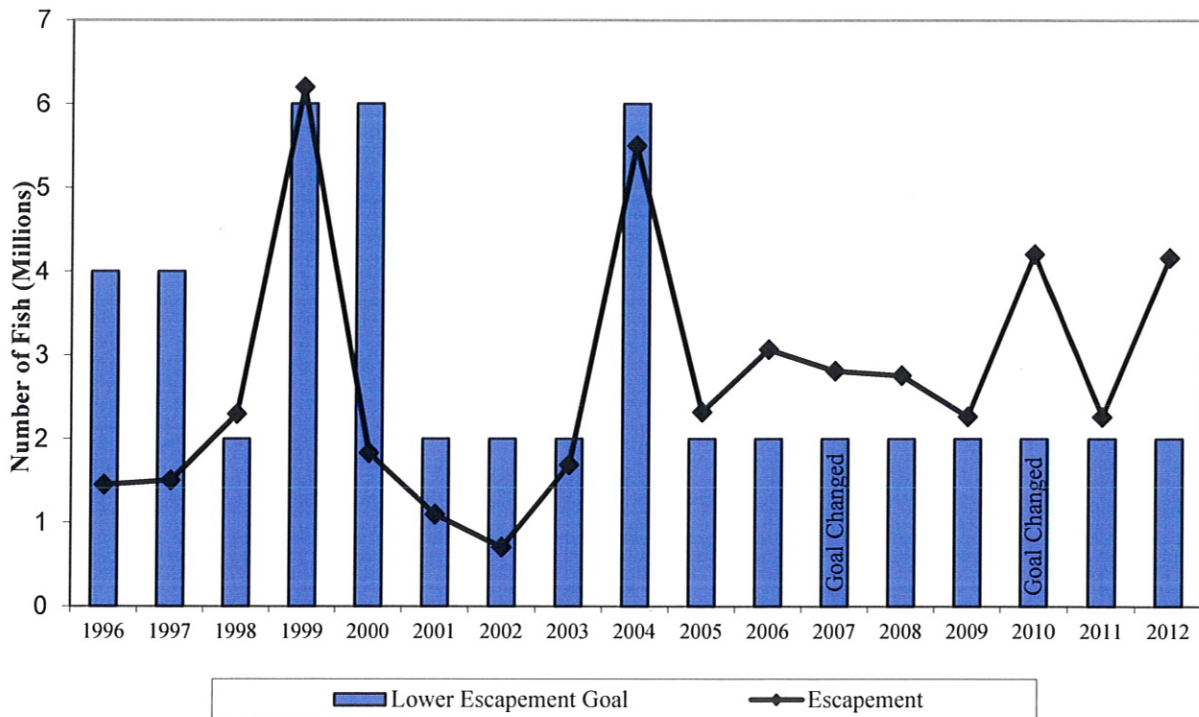


Figure 1.–Kvichak River sockeye salmon lower escapement goals and number of spawners, 1996–2012.