



THE STATE  
of **ALASKA**  
GOVERNOR BILL WALKER

## Department of Fish and Game

DIVISIONS OF SPORT FISH and COMMERCIAL FISHERIES

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### MEMORANDUM

TO: Members  
Alaska Board of Fisheries

DATE: September 22, 2016

FROM: Scott Kelley, Director *ms Kelley*  
Division of Commercial Fisheries

SUBJECT: Lower Cook Inlet  
Stock of Concern  
Recommendations

Thomas Brookover, Director *TB*  
Division of Sport Fish

The *Policy for the management of sustainable salmon fisheries* (SSFP; 5 AAC 39.222) directs the Alaska Department of Fish and Game (department) to report to the Alaska Board of Fisheries (board) on the status of salmon stocks and identify any stocks that present a concern related to yield, management, or conservation during regular board meetings. This memorandum summarizes the results of the stock of concern evaluation for Lower Cook Inlet (LCI) salmon stocks for the 2016–2017 board regulatory cycle. The evaluation includes input from regional and area management staff from both fishery divisions.

Currently, there are 41 escapement goals in LCI (Munro and Volk 2016). During the 2016 escapement goal review process all king, sockeye, pink, coho, and chum salmon stocks in LCI were examined by the escapement goal review committee for potential stock of concern status. The committee identified two chum salmon stocks and one sockeye salmon stock as candidates for stock of concern designation. Only one, McNeil River chum salmon, is recommended for stock of concern status.

#### McNeil River chum salmon

The current sustainable escapement goal range (SEG) for McNeil River chum salmon is 24,000–48,000 fish. This goal was established in 2007 and first implemented in 2008 (Otis and Szarzi

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2007). The average McNeil River chum salmon escapement from 1976–2016 was approximately 25,100 fish (Figure 1). The most recent 10-year average (2007–2016) was approximately 18,000 fish, 10% lower than the previous 10-year average and 33% lower than the average for all years. Despite minimal commercial harvest between 1989 and 1992, and no commercial harvest since 1993, chum salmon escapements to this system in 4 of the past 6 years have been well below the SEG range, averaging 19,200 fish annually. In seven of the last 10 years (2007–2016), the SEG range was not achieved (Figure 1). While McNeil River chum salmon did meet the SEG range in 2016 (26,300), the recent trend of poor escapement performance justifies the department recommending McNeil River chum salmon be designated a stock of management concern.

### **Big Kamishak River chum salmon**

The current SEG range of 9,350–24,000 was not met in four of five years from 2011–2015 (Table 1). There has been little commercial fishing effort or harvest on this stock in recent years. Recent escapements were likely underestimated due to a combination of poor viewing conditions and reduced aerial survey coverage. Therefore, the department does not recommend designating Big Kamishak chum salmon a stock of concern.

### **Aialik Lake sockeye salmon**

The current SEG range of 3,700–8,000 has been achieved four times (2006–2008, 2010) between 2006 and 2015 (Table 1). Escapements since 2010 were likely underestimated due to a combination of poor water clarity and reduced survey coverage. The SEG adopted in 2002 was developed using escapement data when water in Aialik Lake was clearer. Recent higher air temperatures have resulted in increased melting of the glacier that flows into Aialik Lake. Therefore, the water has become more turbid and the ability of the observer to see salmon within the lake has declined. The department is currently exploring other means to monitor this stock more effectively (e.g. remote video) and does not recommend designating Aialik Lake sockeye salmon a stock of concern at this time.

As part of the LCI escapement goal and stock of concern oral presentation to the board on November 30, 2016, staff will include a brief review and status update for McNeil River chum salmon. Staff will also provide the board a written stock status report and action plan for McNeil River chum salmon (Otis et al. *In prep*).

### **Literature Cited**

- Munro, A. R., and E. C. Volk. 2016. Summary of Pacific salmon escapement goals in Alaska, with a review of escapements from 2007 to 2015. Alaska Department of Fish and Game, Fishery Manuscript Series No. 16-04, Anchorage.
- Otis, E. O., and Szarzi, N. 2007. A review of escapement goals for salmon stocks in Lower Cook Inlet, Alaska, 2007. Alaska Department of Fish and Game, Fishery Manuscript No. 07-04, Anchorage.
- Otis, E.O., G. Hollowell, and J.W. Erickson. *In prep*. McNeil River Chum salmon stock status and action plan, 2016. Alaska Department of Fish and Game, Special Publications Report, Anchorage.

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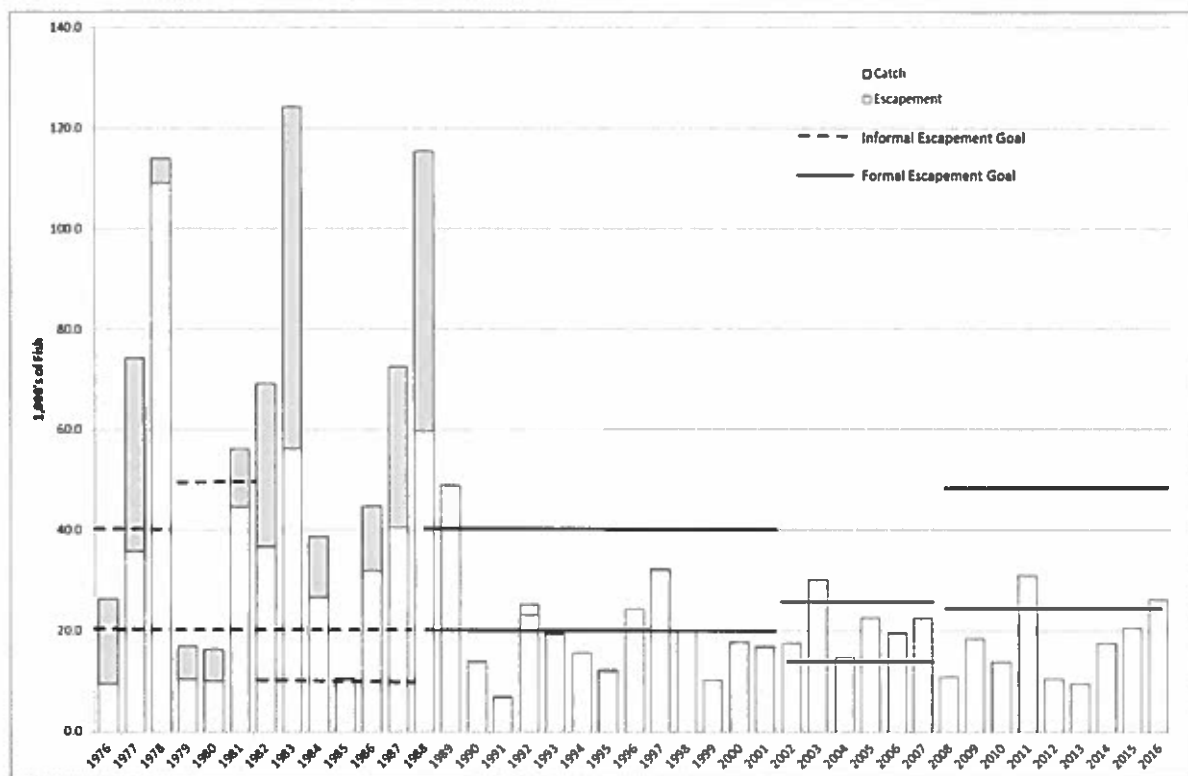


Figure 1.—Commercial harvest, aerial survey indices, and escapement goals for McNeil River chum salmon, 1976–2016.

Table 1.—Escapement goals and escapement indices (rounded to the nearest 100 fish) for Aialik Lake sockeye salmon and Big Kamishak River chum salmon, 2006–2015.

Stock	Current SEG	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Big Kamishak River - chum salmon	9,350–24,000	58,200	14,800	4,500	15,000	-	5,500	12,400	3,300 <sup>a</sup>	5,700 <sup>a</sup>	7,000 <sup>a</sup>
Aialik Lake - sockeye salmon	3,700–8,000	4,800	5,400	4,200	3,100	5,300	3,500 <sup>a</sup>	2,100 <sup>a</sup>	3,500 <sup>a</sup>	500 <sup>a</sup>	3,200 <sup>a</sup>

Note: Shaded cells identify years that stocks did not meet the lower bound of the SEG.

<sup>a</sup> Escapements were likely underestimated due to a combination of poor water clarity and reduced survey coverage.