



THE STATE
of **ALASKA**
GOVERNOR SEAN PARNELL

DIVISIONS OF SPORT FISH and COMMERCIAL
FISHERIES

Central Region Office
333 Raspberry Road
Anchorage, AK 99518-1565
Main: 907.267.2105
Fax: 907.267.2442

MEMORANDUM

TO: Jeff Regnart, Director
Division of Commercial Fisheries

DATE: September 18, 2013

Charles O. Swanton, Director
Division of Sport Fish

THRU: Tracy Lingnau, Regional Supervisor
Division of Commercial Fisheries, Region II

SUBJECT: Lower Cook Inlet
Escapement Goal
Memo

James J. Hasbrouck, Regional Supervisor
Division of Sport Fish, Region II

FROM: Lowell Fair, Regional Research Coordinator
Division of Commercial Fisheries, Region II

Jack W. Erickson, Regional Research Coordinator
Division of Sport Fish, Region II

The purpose of this memo is to inform you of our progress in reviewing and recommending escapement goals for Lower Cook Inlet (LCI). Escapement goals in this management area have been set and evaluated at regular intervals since statehood. This effort has resulted in many of the stocks having long-term historical databases. LCI escapement goals were last reviewed by the department (Otis et al. 2010) during the 2010–2011 Alaska Board of Fisheries (board) cycle.

In March 2013, an interdivisional salmon escapement goal review committee, including staff from the divisions of Commercial Fisheries and Sport Fish, reviewed existing salmon escapement goals in the LCI management area. The review was based on the *Policy for the management of sustainable salmon fisheries* (5 AAC 39.222) and the *Policy for statewide salmon escapement goals* (5 AAC 39.223). Two important terms are:

5 AAC 39.222(f)(3) “biological escapement goal” or “(BEG)” means the escapement that provides the greatest potential for maximum sustained yield . . .;” and

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5 AAC 39.222(f)(36) “sustainable escapement goal” or “(SEG)” means a level of escapement, indicated by an index or an escapement estimate, that is known to provide for sustained yield over a 5 to 10 year period, used in situations where a BEG cannot be estimated or managed for. . .;”

The committee determined the appropriate goal type (BEG or SEG) for each salmon stock with an existing goal and considered other monitored, exploited stocks without an existing goal. Based on the quality and quantity of available data, the committee determined the most appropriate methods to evaluate the escapement goals. Due to the thoroughness of the previous analyses by Otis (2001), Otis and Hasbrouck (2004), Otis and Szarzi (2007), and Otis et al. (2010), this review re-analyzed only those goals with recent (2010–2013) data that could potentially result in a substantially different escapement goal from the last review, or those that should be eliminated or established. For LCI stocks, the available data were most appropriate for SEG type goals.

Salmon escapements are primarily monitored by multiple aerial and/or foot surveys of stream reaches that can be monitored. The resulting escapement indices do not provide absolute abundance estimates suitable for estimating biological escapement goals. Consequently, escapement goals were evaluated for LCI stocks using percentiles of observed escapement estimates or indices that also incorporated contrast in the escapement data (Bue and Hasbrouck *Unpublished*). Methods used to evaluate the escapement goals and the rationale for making subsequent recommendations will be described in a published report (Otis et al. *In prep*) available prior to the December 2013 LCI board meeting. Following the review, the committee estimated escapement goals for each stock, compared those estimates with the current goal, and agreed on a recommendation to keep the current goal, change the goal, or eliminate the goal.

There were 40 escapement goals evaluated in LCI (Table 1). The committee recommends most escapement goals remain status quo, with two exceptions. The committee recommends changing the Mikfik Lake sockeye salmon aerial survey SEG of 6,300–12,150 to a video-based SEG of 3,300–14,000. This change is the result of replacing aerial survey assessments with 14 years of video counts. The committee also recommends establishing a pink salmon SEG for Dogfish Lagoon Creeks. Currently, this stock does not have an escapement goal; however, with recent improvement in market conditions for pink salmon, the fishing fleet is targeting some of these smaller stocks. Establishment of a goal would allow the department to better manage this fishery.

An oral and written report concerning escapement goals, with specific recommendations, will be presented to the board in December 2013. These reports will list all current and recommended escapement goals for LCI, as well as a detailed description of the methods used to reach recommendations. Subsequent to the board meeting, a follow-up memo will be prepared to include escapement goal recommendations to division directors for final approval.

Literature Cited

- Bue, B. G., and J. J. Hasbrouck. *Unpublished*. Escapement goal review of salmon stocks of Upper Cook Inlet. Report to the Alaska Board of Fisheries November 2001 (and February 2002). Alaska Department of Fish and Game, Division of Sport Fish, Anchorage.
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Table 1—Summary of current escapement goals and recommended escapement goals for salmon stocks in Lower Cook Inlet.

System	Current Escapement Goal			Recommended Escapement Goal		
	Goal	Type	Year Adopted	Range	Escapement Data ^a	Action
King Salmon						
Anchor River	3,800–10,000	SEG	2010	3,800–10,000	Weir/Sonar	No Change
Deep Creek	350–800	SEG	1993	350–800	SAS	No Change
Ninilchik River	550–1,300	SEG	2008	550–1,300	Weir	No Change
Chum Salmon						
Port Graham R.	1,450–4,800	SEG	2002	1,450–4,800	MFS	No Change
Dogfish Lagoon	3,350–9,150	SEG	2002	3,350–9,150	MFS	No Change
Rocky River	1,200–5,400	SEG	2002	1,200–5,400	MFS	No Change
Port Dick Creek	1,900–4,450	SEG	2002	1,900–4,450	MAS/MFS	No Change
Island Creek	6,400–15,600	SEG	2002	6,400–15,600	MAS/MFS	No Change
Big Kamishak R.	9,350–24,000	SEG	2002	9,350–24,000	MAS	No Change
Little Kamishak River	6,550–23,800	SEG	2002	6,550–23,800	MAS	No Change
McNeil River	24,000–48,000	SEG	2008	24,000–48,000	MAS	No Change
Bruin River	6,000–10,250	SEG	2002	6,000–10,250	MAS	No Change
Ursus Cove	6,050–9,850	SEG	2002	6,050–9,850	MAS	No Change
Cottonwood Cr.	5,750–12,000	SEG	2002	5,750–12,000	MAS	No Change
Iniskin Bay	7,850–13,700	SEG	2002	7,850–13,700	MAS	No Change
Pink Salmon						
Humpy Creek	21,650–85,550	SEG	2002	21,650–85,550	MFS	No Change
China Poot Creek	2,900–8,200	SEG	2002	2,900–8,200	MFS	No Change
Tutka Creek	6,500–17,000	SEG	2002	6,500–17,000	MFS	No Change
Barabara Creek	1,900–8,950	SEG	2002	1,900–8,950	MFS	No Change

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Seldovia Creek	19,050–38,950	SEG	2002	19,050–38,950	MFS	No Change
Port Graham R.	7,700–19,850	SEG	2002	7,700–19,850	MFS	No Change
Dogfish Lagoon Creeks		SEG		400–8,100	MFS	New Goal
Port Chatham	7,800–21,000	SEG	2002	7,800–21,000	MFS	No Change
Windy Cr. Right	3,350–10,950	SEG	2002	3,350–10,950	MFS	No Change
Windy Cr. Left	3,650–29,950	SEG	2002	3,650–29,950	MFS	No Change
Rocky River	9,350–54,250	SEG	2002	9,350–54,250	MFS	No Change
Port Dick Creek	18,550–58,300	SEG	2002	18,550–58,300	MAS/MFS	No Change
Island Creek	7,200–28,300	SEG	2002	7,200–28,300	MAS/MFS	No Change
S. Nuka Island Creek	2,700–14,250	SEG	2002	2,700–14,250	MAS/MFS	No Change
Desire Lake Cr.	1,900–20,200	SEG	2002	1,900–20,200	MAS	No Change
Bruin River	18,650–155,750	SEG	2002	18,650–155,750	MAS	No Change
Sunday Creek	4,850–28,850	SEG	2002	4,850–28,850	MAS	No Change
Brown's Peak Creek	2,450–18,800	SEG	2002	2,450–18,800	MAS	No Change
Sockeye Salmon						
English Bay	6,000–13,500	SEG	2002	6,000–13,500	PAS/Weir	No Change
Delight Lake	5,950–12,550	SEG	2002	7,550–17,650	PAS/Weir	No Change
Desire Lake	8,800–15,200	SEG	2002	8,800–15,200	PAS/Weir	No Change
Bear Lake	700–8,300	SEG	2002	700–8,300	Weir	No Change
Aialik Lake	3,700–8,000	SEG	2002	3,700–8,000	PAS	No Change
Mikfik Lake	6,300–12,150	SEG	2002	3,300–14,000	Video	Change in Range
Chenik Lake	1,880–9,300	SEG	2002	3,500–14,000	PAS/Weir	No Change
Amakdedori Cr.	1,250–2,600	SEG	2002	1,250–2,600	PAS	No Change

^a SAS = Single Aerial Survey, MAS = Multiple Aerial Survey, PAS = Peak Aerial Survey, MFS = Multiple Foot Survey.