



# PACIFIC SALMON COMMISSION

ESTABLISHED BY TREATY BETWEEN CANADA  
AND THE UNITED STATES OF AMERICA  
MARCH 18, 1985

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Our File: 71001

Your File: April 18, 1996

## MEMORANDUM

TO: Ms. L. Loomis, Chair, Fraser River Panel  
Mr. A.F. Lill, Vice-Chair, Fraser River Panel

FROM: J.C. Woodey, Chief, Fisheries Management Division

RE: Assessment of the classification of stocks to stock group

This memo is in response to Mr. A. Lill's request of April 9, 1996 that staff review the categorization of Fraser River sockeye stocks into generalized migration timing groups and prepare recommendations for realignment if appropriate.

Fraser River sockeye stocks were grouped into Early Stuart, Summer, and Late runs in 1986 by the Panel based upon recommendations made by staff in consultation with technical advisors from the two Sections. The Summer run grouping was further divided into early Summer and mid-Summer run groups in 1988. Categories were established primarily upon differences in migration timing and behaviour and were chosen to provide stock groupings that would permit the Panel to achieve its management objectives. Individual stocks were assigned to groups as shown in Table 1 ordered by estimated average arrival timing (in Area 20).

Concerns have arisen in recent years as to whether the grouping of early Summer stocks is a manageable entity. Of particular concern is that fact that the Chilko stock complex is divided between the south end Chilko Lake stock which is assigned to the early Summer category, and the north end and Chilko River stock, which is included in the mid-Summer category. Questions have also been raised regarding assignment of the Scotch/Seymour stocks to the early Summer Group rather than the mid-Summer Group because their management objectives and timing coincide more with mid-Summer stocks.

Staff now offer the following comments and recommendations regarding the early Summer stock grouping.

This group comprises a large number of stocks most of relatively low abundance which overlap not only themselves, but early in their migration overlap the last of the Early Stuart, and over much of their arrival time overlap the early stages of the mid-Summer Group. By the fact that early Summer stocks arrive between these intensively managed stock groups, achievement of escapement goals has been difficult for the Panel. As well, similarity of scale characters between some early Summer stocks and mid-Summer stocks has presented difficulties in identifying the actual proportion of early Summer stocks when mid-Summer sockeye are present in large numbers.

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Changes to enumeration procedures for the Chilko Lake and River stock complex initiated by DFO in 1990 bring into question the appropriateness of maintaining the south end Chilko Lake spawning population as a separate entity assigned to the early Summer Group, with the more abundant, somewhat later-timed, north end/Chilko River population being assigned to the mid-Summer Group.

Prior to 1990, DFO estimated escapements to the two populations separately and based upon those estimates apportioned smolt production between them for the purpose of making pre-season return forecasts. The practice of providing separate escapement estimates was changed in 1990 and now a single, system-wide escapement estimate is provided. Staff has reviewed scale characteristics, but discrimination of the south end population from the River population by this technique is not possible. Under these circumstances staff concludes that it is inappropriate to maintain a separation between these two stocks as specific escapement goals have not been identified, a factor which further complicates the Panel's ability to achieve goals for true early Summer stocks.

*RECOMMENDATION 1: Staff recommends that the early south end Chilko Lake sockeye be grouped with the mid-Summer run stocks for management purposes unless DFO proposes in future to estimate the escapement to this area separately from the balance of Chilko stocks.*

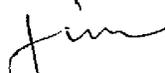
Further realignment of sockeye stocks from the early Summer run to mid-Summer run has been suggested. Specifically, moving the Seymour/Scotch sockeye was discussed. First, in favour of this realignment is the fact that the Seymour/Scotch Group has been fairly abundant on the 1994 and 1995 cycles in recent years thus, requiring the development of harvest management plans rather than passive management. As well, this stock group is racially distinct from other summer run stocks and normally does not need to be grouped with other early Summer stocks for racial analysis. Finally, the later timing of this stock group, compared to the other early Summer run stocks, means that the escapement requirement for the Seymour/Scotch Group must be considered in the management of the early part of the mid-Summer run sockeye group.

On the other hand, less abundant, early Shuswap Lake area stocks, including those bound for Anstey River and Eagle River, which are racially indistinguishable from Seymour and Scotch, would be switched by default. More generally, there are other stocks (Upper Adams River/Momich, Raft River, Nahatlatch River) that appear to have similar timing to the Scotch/Seymour stocks, and a decision would have to be made whether or not to realign these stocks, as well. The difficulty comes from the fact that these latter stocks are not racially distinct from the earlier-timed early Summer stocks (i.e., Raft and Nahatlatch are often grouped with Bowron and Fennell). In view of their apparent timing overlap with Scotch/Seymour, however, it appears to be more appropriate to transfer them to the mid-Summer Group.

*RECOMMENDATION 2: Staff recommends that the Seymour/Scotch stock group (including Anstey and Eagle stocks) be assigned to the mid-Summer stock group for management purposes. Other smaller stocks of similar timing such as Upper Adams River and Raft River should also be included as part of the mid-Summer stock group for management purposes.*

The status of Birkenhead River sockeye has been discussed from time to time, as well. Birkenhead sockeye arrival timing peaks in coastal areas between the mid-Summer stocks and the "true" Late run stocks (e.g., Adams/Lower Shuswap). They delay in the Strait of Georgia for 7-10 days on average before entering the Fraser River from mid-August and mid-September. Birkenhead has been classed as a late run stock but is intermediate in behaviour between mid-Summer and Late runs. However, for the purposes of management, we recommend that Birkenhead remain in the Late run group.

Staff's proposed realignments are summarized in Table 2 for consideration by the Panel.



J.C. Woodey

cc: Fraser River Panel Members and Alternates  
Fraser River Panel Technical Committee

**Table 1.** Current Fraser River sockeye stock groups.

<b>Stock Group</b>	<b>Stocks (ordered by timing)</b>
Early Stuart	Early Stuart
Early Summer	Chilliwack Nadina Bowron Gates Pitt Fennell Taseko Chilko Lake Seymour Scotch Anstey Eagle Upper Adams/Momich Raft Nahatlatch
Mid-Summer	Late Stuart Quesnel Chilko River/north end Lake Stellako
Late Run	Birkenhead Big Silver Weaver Portage Adams Lower Shuswap/Middle Shuswap Cultus Harrison

**Table 2.** Proposed realignment of Fraser River sockeye by stock groups.

Stock Group	Stocks (ordered by timing)
Early Stuart	Early Stuart
Early Summer	Chilliwack Nadina Bowron Gates Pitt Fennell Taseko
Mid-Summer	Chilko Lake Seymour Scotch Anstey Eagle Upper Adams/Momich Raft Nahatlatch Late Stuart Horsefly Chilko River Stellako Mitchell
Late Run	Birkenhead Big Silver Weaver Portage Adams Lower Shuswap/Middle Shuswap Cultus Harrison

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