



Sockeye Escapement Planning

Considerations for 2013

UFFCA Meeting,
March 14, 2013





The Forecast: (Probability that run size will be equal to or less than)

Mgt. Group	P25	P50	P75	Mean Run Size all years	Mean Run Size 2013 cycle
Early Stu	137,000	211,000	331,000	311,000	792,000
Early Summer	130,000	253,000	468,000	478,000	274,000
Summer	2,095,000	3,718,000	6,663,000	3,822,000	6,791,000
Lates	293,000	583,000	1,133,000	2,960,000	834,000



Early Stuart

- 2013 would be dominant cycle year for Early Stuart sockeye but returns will likely be below 2013 cycle average return of 792K(forecast range: 92 to 507K, *median*: 211K);
- 2009 brood year escapement (21,900 effective female spawners) was 2nd lowest observed on this cycle - but spawning success (95%) was slightly higher than the long-term average (89%).
- Comprise a very small proportion of total sockeye forecast at p50 ~ 4.4%.
- Early July peak migration.
- Implications of the escapement strategy for fishing plans will be strongly influenced by in-season run size estimates and management adjustments (MAs) for environmental conditions.
- If in-season abundance and/or MAs indicate no TAC for Early Stuart, have implemented a 3 wk rolling window closure. There is potential for additional restrictions if projected return is very low (below escapement target), to protect $\geq 90\%$ of the run.



Early Summers

- 1 in 2 chance returns will exceed 2013 cycle average return of 274K (forecast range: 73 to 844K, *median*: 253K); Will comprise a very small proportion of total sockeye forecast based on p50 – about 5.3%.
- The mid-point of the pre-season forecast (p50) is close to mean run size for the 2013 cycle, however directed harvest opportunities may be limited depending on MA.
- At p75 the forecast is close to mean returns for all years.
- Late July-early August timing. One week window closure has been used in past to address poor returns of the earliest timed stocks in this run timing group.
- Variable forecasts for individual stocks (relative to stock cycle avg):
 - Gates – strong
 - Fennell, Scotch and Seymour – moderate
 - Bowron, Pitt & Nadina – weak, well below cycle average
- Implications of the escapement strategy for fishing plans will be strongly influenced by in-season run size estimates and management adjustments (MAs) for environmental conditions as well as Early Stuart management approach. One week window closure has been used in past to address poor returns of the earliest stocks in this run timing group. If no Early Stuart window closure and E summers are weak may need for additional actions.



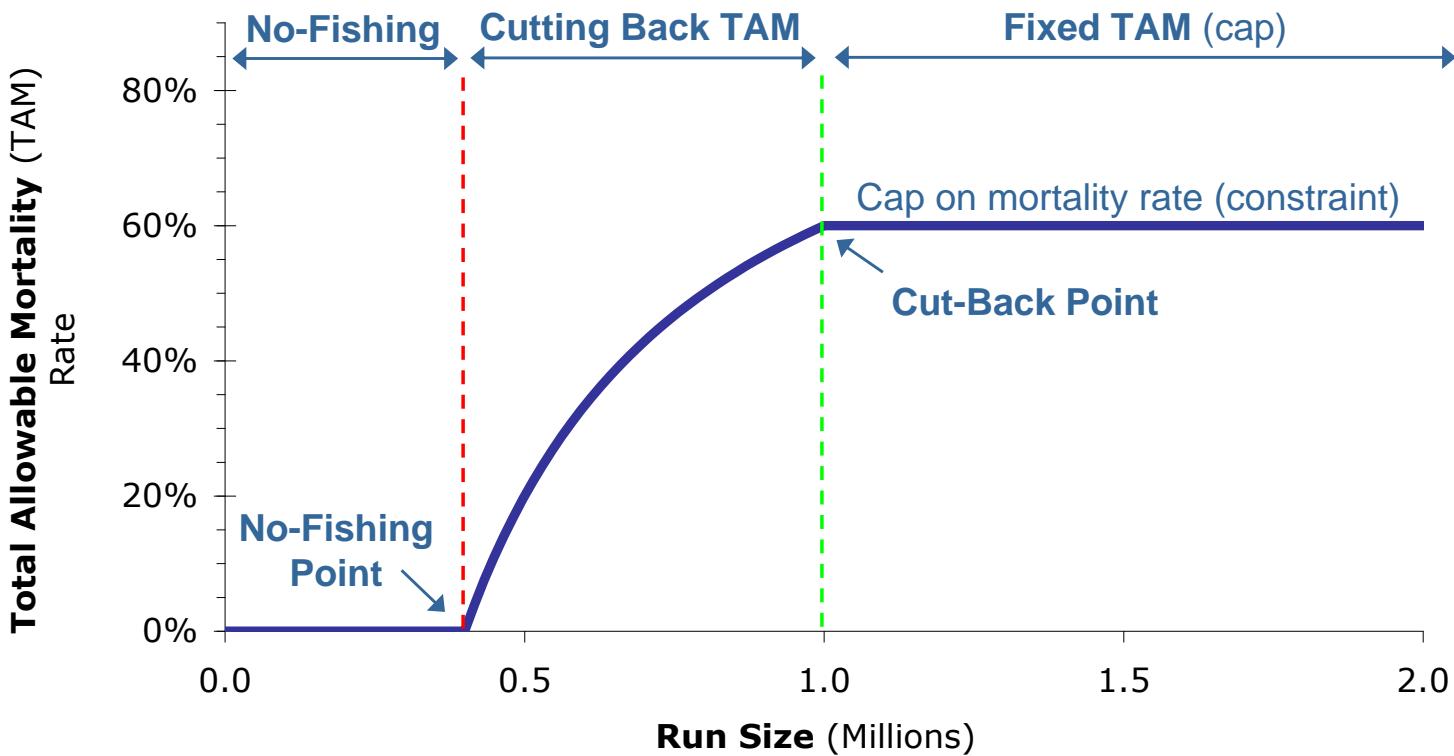
Summers

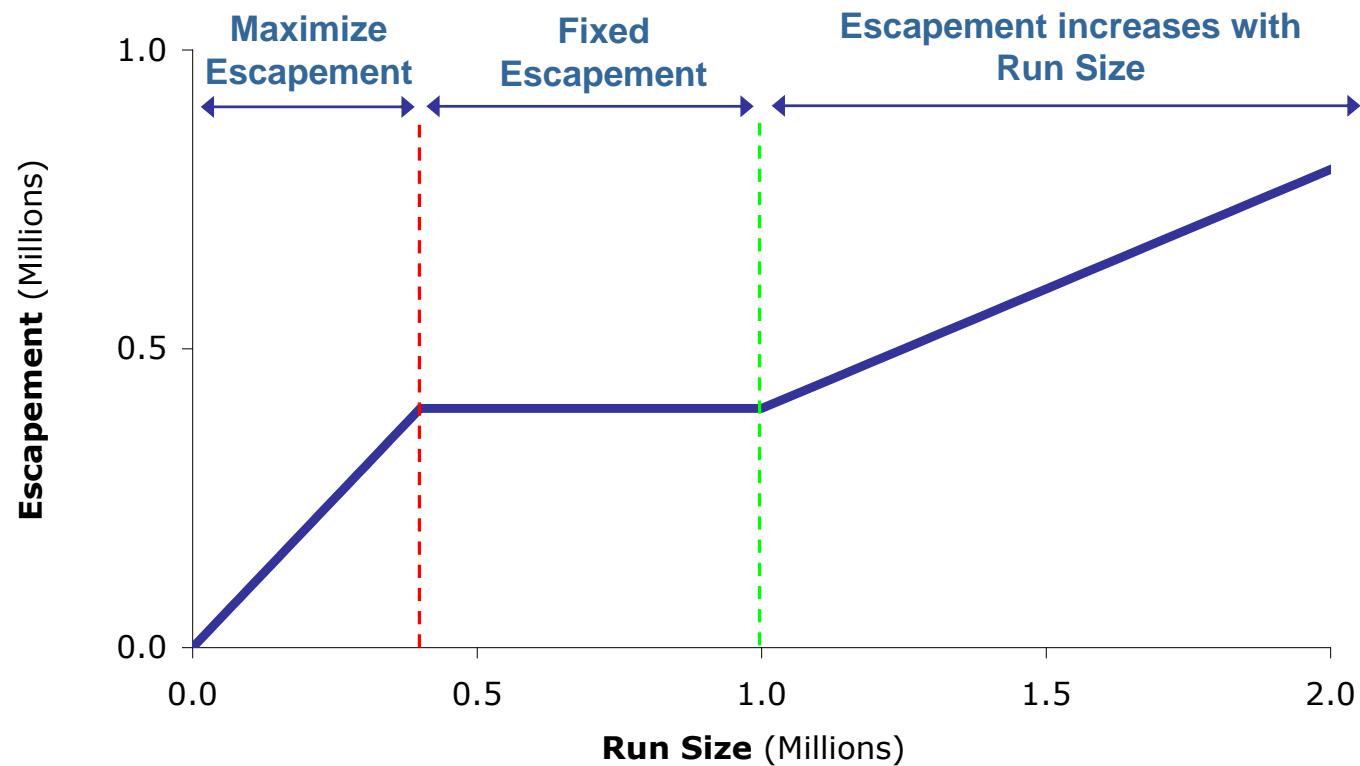
- Summer Run sockeye make up a majority (78%) of the 2013 run size forecast and will be focus of harvest opportunities. Cycle average is 6.8 million; forecast range of 1.2 to 12.1 million, median is 3.7 million.
- Timing – early August, overlapping with Early Summers.
- Harvest may be limited by constraints on co-migrating stocks of concern.
- Variable forecasts for individual stocks (relative to stock cycle avg):
 - Chilko and Raft – strong (but Raft a small contributor)
 - Stellako and Harrison – moderate, with uncertainty around Harrison given limited data on returns for large spawner abundances that occurred in brood years.
 - Late Stuart - weak (cyclic stock and this would be a dominant year)
 - Quesnel – normally the dominant component of the timing group but even the p75 forecast is well below the mean run size for this cycle line. May no longer be a dominant cycle – a factor to consider.

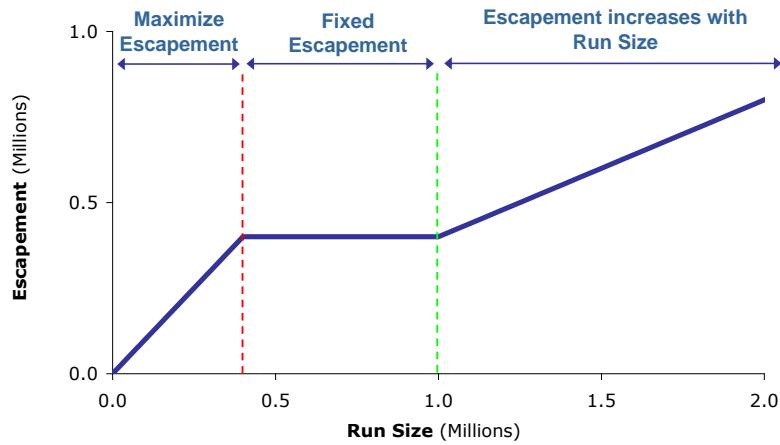
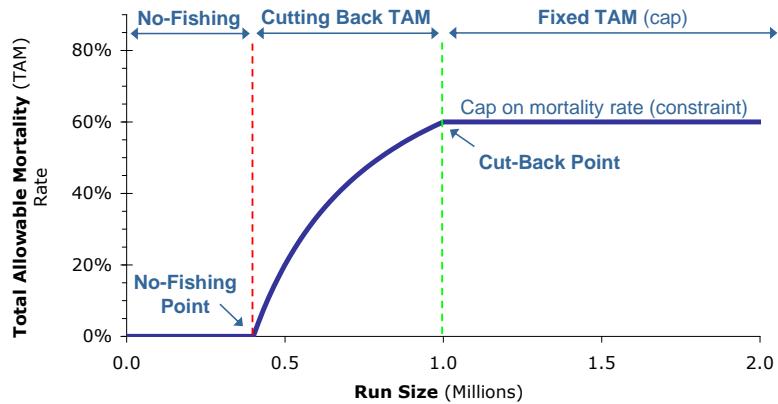


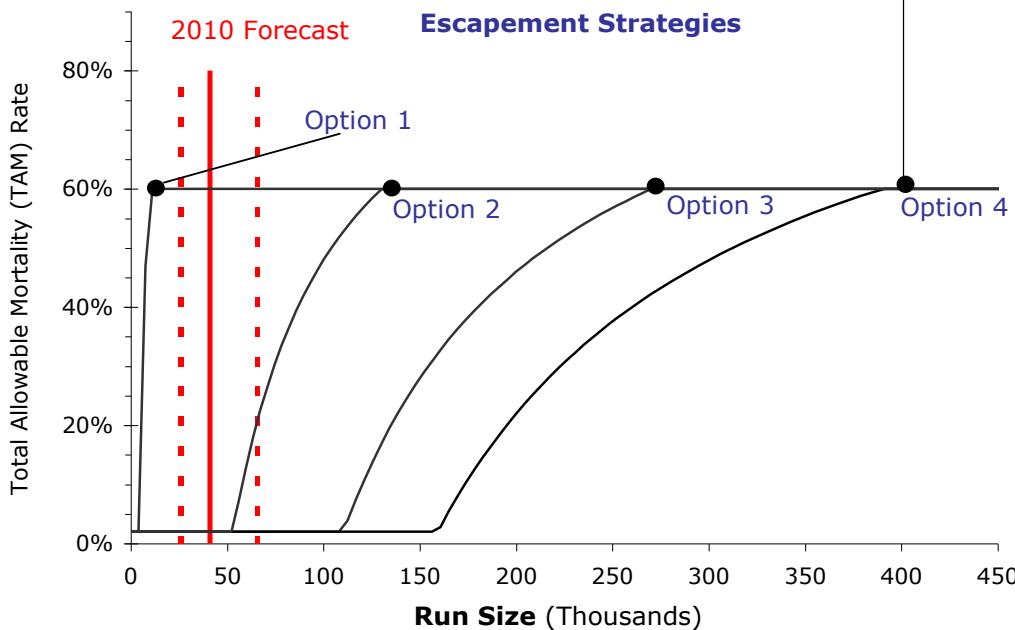
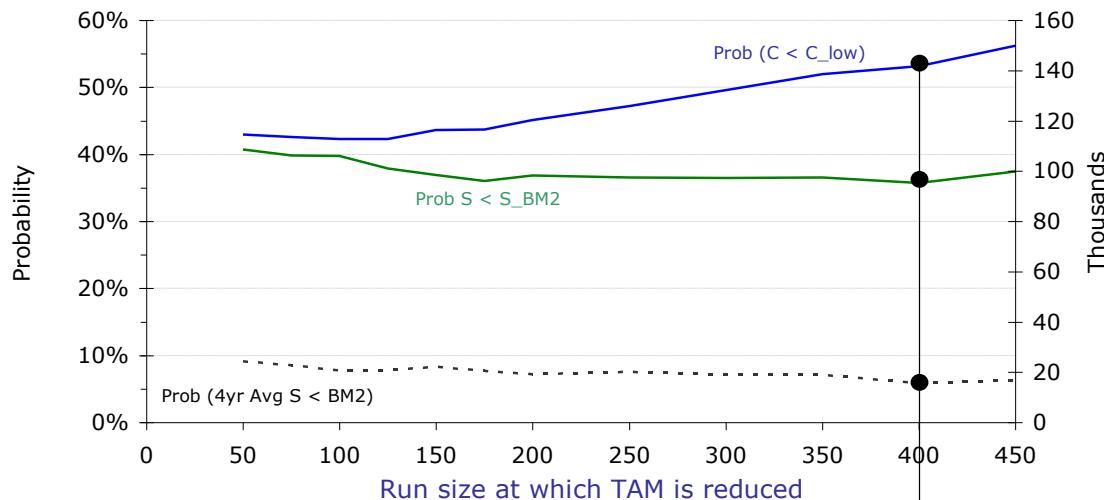
Lates

- Total return of Late Run (excluding Harrison) in 2009 was the third smallest return on this cycle since the 1950s, but total escapement in the 2009 brood year was the third largest on this cycle.
- Late Run sockeye make up a small proportion of the 2013 run size forecast (~ 12% of the total return at p50 forecast).
- Cycle average is 834K, forecast range of 167K to 2.1 million; median of 583K
- Timing is mid-late August - Historically, ocean migration timing of Late Run Sockeye was similar to Summer Run but Late Run delayed river entry by 4-6 weeks.
- Since mid-1990s, Late Run sockeye have entered the Fraser River much earlier, and have experienced very high levels of en-route and/or pre-spawn mortality. I
- 2009-2011: the Late Run delay off the river mouth had increased to approximately two weeks.
- In 2012, there was little to no delay. *Planning for 2013 will need to make assumptions about what the delay will be.*







**Performance Indicators**



Fisheries and Oceans
Canada

Pêches et Océans
Canada



Next Steps

- DRAFT IFMP anticipated later this week.
- First Nations will need to consider Escapement Plan options i.e. implications for conservation and harvest opportunities.
- Will likely be a need to implement sharing arrangements for one or more of the management groupings – input on approach is welcome.