

Yukon River Chinook Salmon Outlook 2011

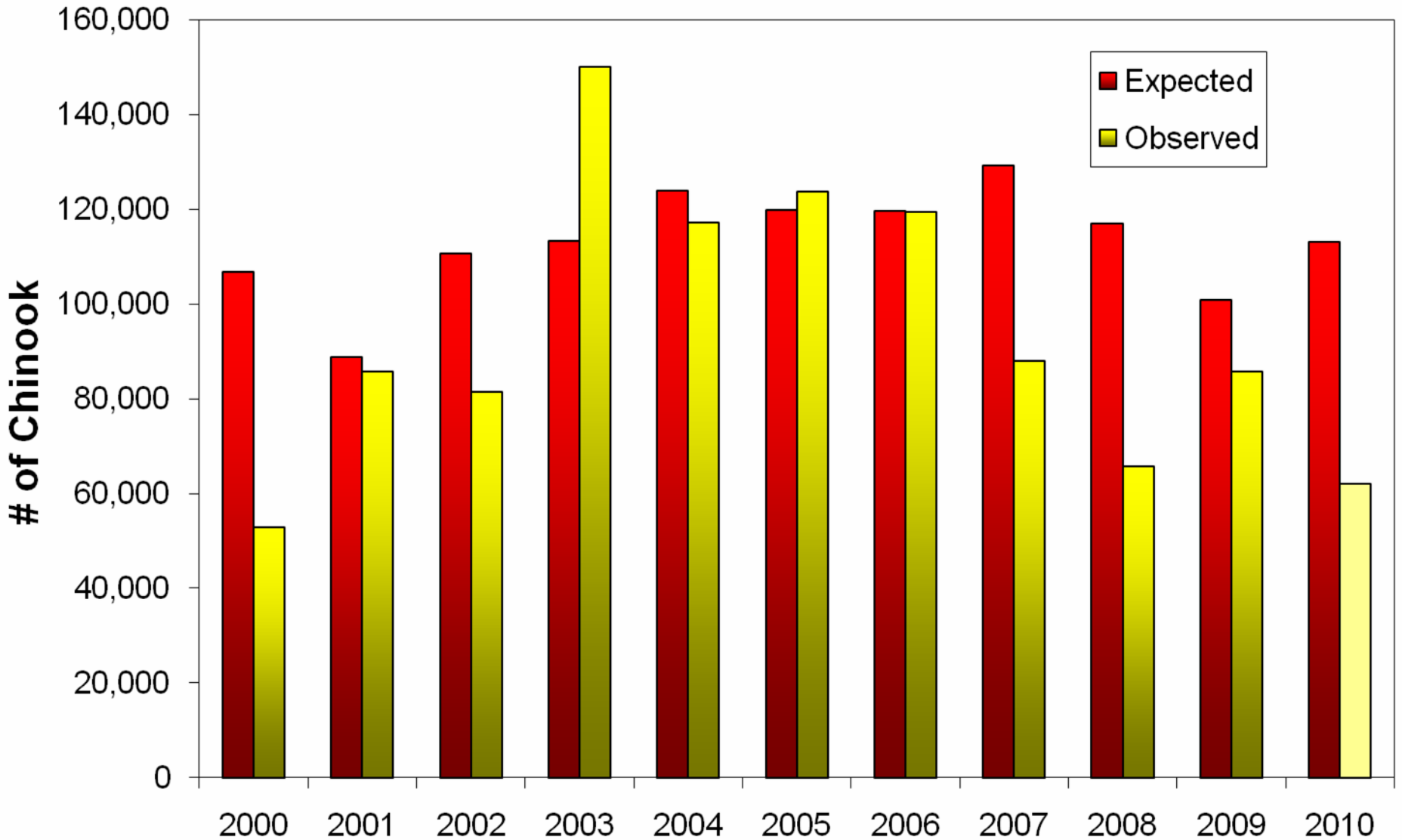


Yukon River Panel meeting, March 2011

2011 Canadian-origin Upper Yukon Chinook Outlook

- Poor to below average run
- Sibling and stock/recruitment (S/R) models produce a run forecast of 108,100
- However, the precautionary outlook range is **65,000-89,000**
 - Lower range is based on recent experience where runs have returned **much lower than preseason outlooks**
 - Models do not account for environmental factors, bycatch, reductions in productivity, and other phenomena

Observed vs Expected Runs Based on Avg of Sibling and Ricker Relationships



2010 Canadian-origin Upper Yukon Chinook

- Outlooks based on a revised database
- Weighted (by age) base level brood year escapement that will contribute to the 2011 run is ~61,400 fish
~57,600 fish- was base level for 2010 run
- Primary brood year escapements exceeded the minimum Interim Management Escapement Goal (IMEG) of 45,000 used in 2008 and 2009, and the range of used 42,500 to 55,000 in 2010.

2004- (age-7) 48,469

2005- (age-6) 67,985

2006- (age-5) 62,630

2007- (age-4) 34,904

Canadian-origin Chinook Escapement Goals

- Recommend continuing 2010 IMEG of 42,500-55,000
 - revised historical escapement database was used in developing the IMEG;
 - escapement is determined from the Eagle sonar estimate minus catches in U.S. and Canada upstream of the sonar site.

Eagle Sonar Program

Left bank (split beam) and right bank (DIDSON)



Potential Factors Influencing the 2011 Run:

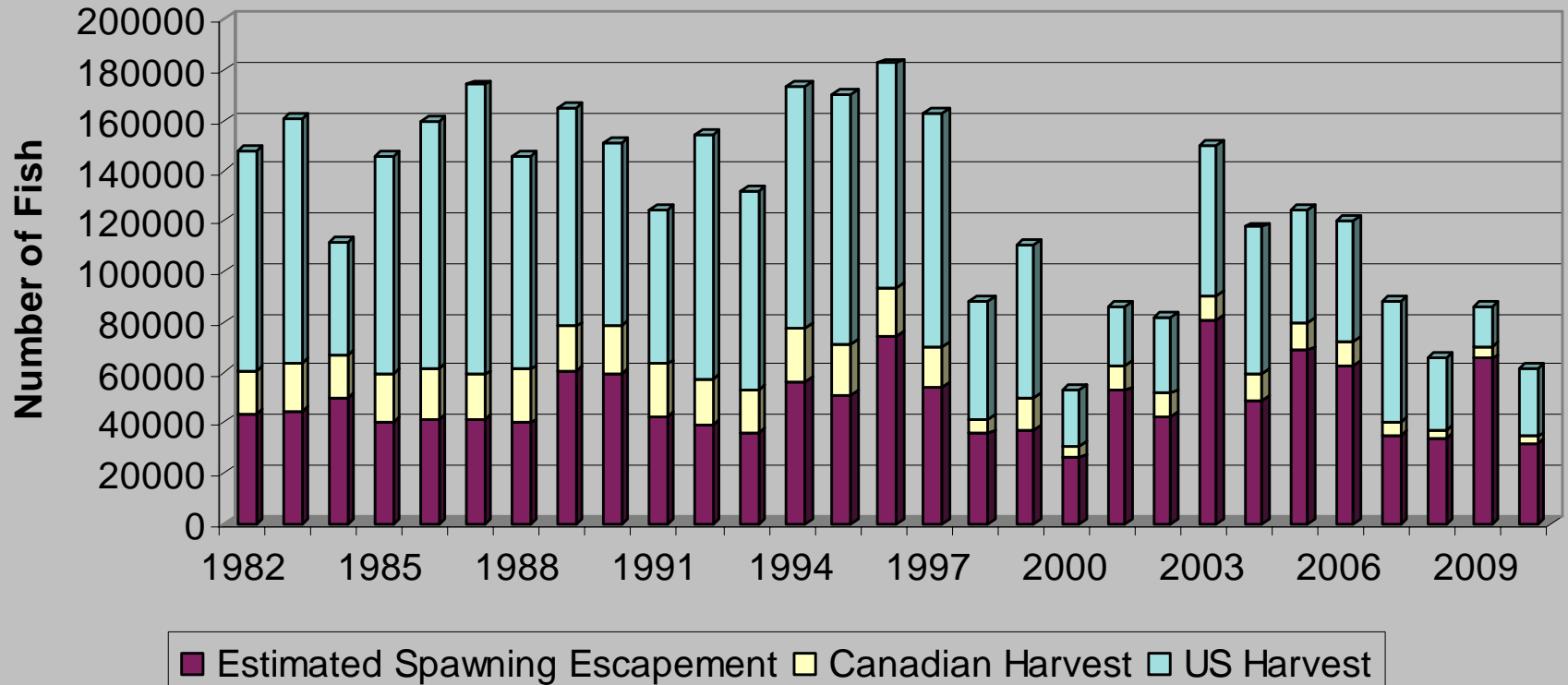
2007 -2010 runs were below average, and lower than model predictions

- High seas Chinook salmon bycatch?
 - Marine and freshwater environmental factors?
 - Ocean productivity?
-
-

Are we observing the early stages of a long-term trend?

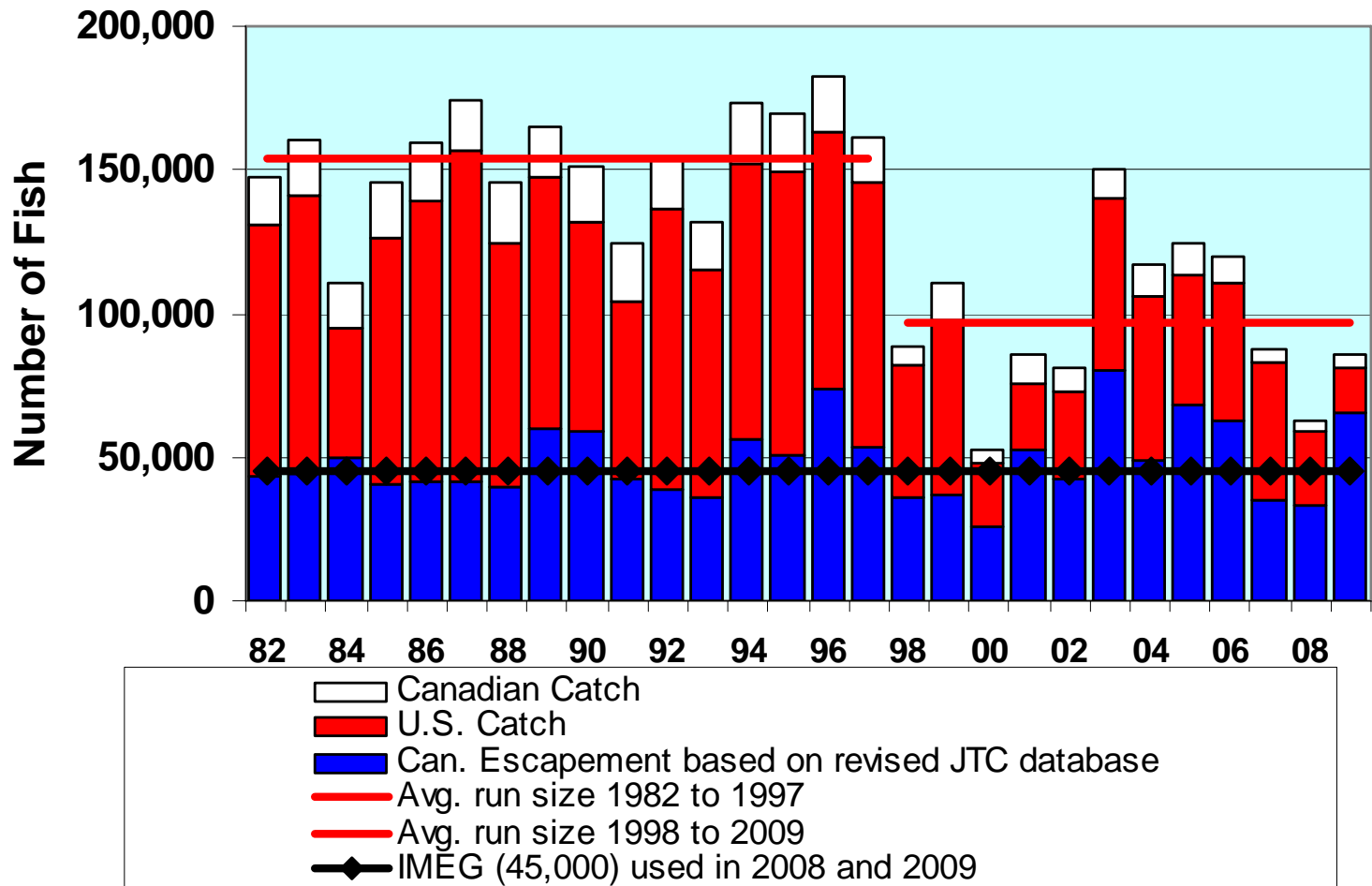
Canadian-origin Chinook Run Sizes (1982 to 2010)

Canadian Chinook Estimated Run Sizes



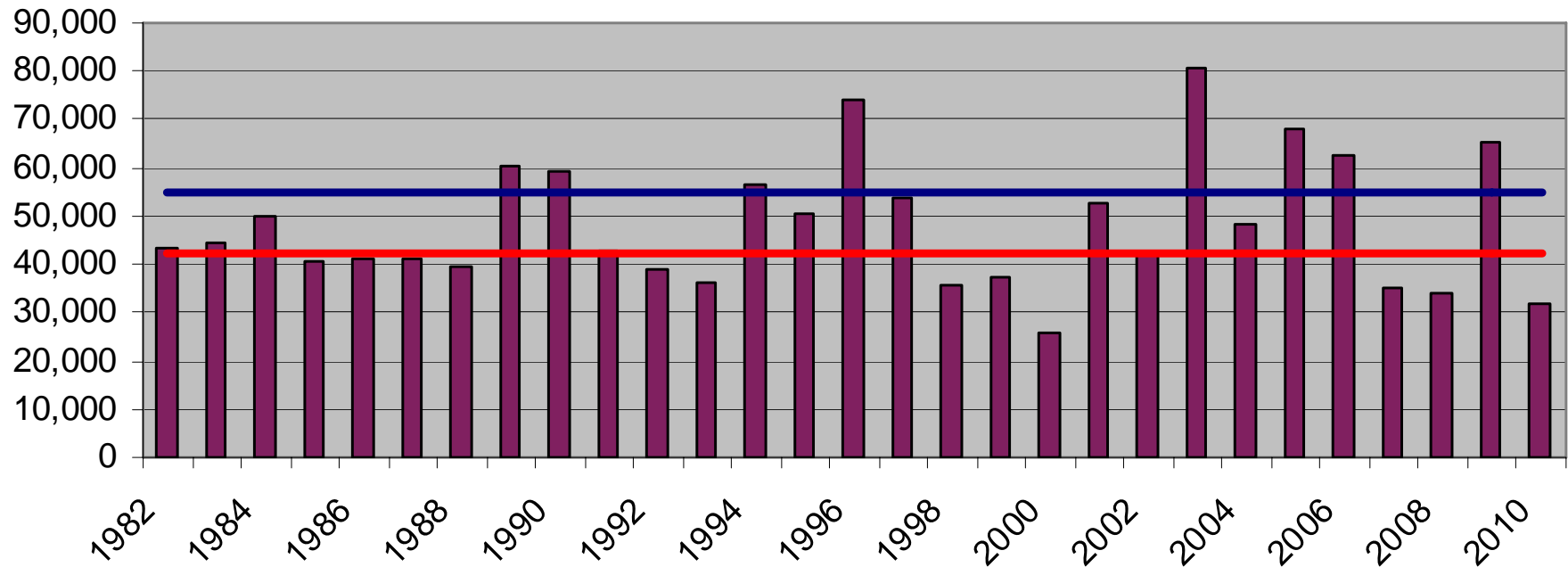
Canadian-origin Chinook Run Sizes

(avg. run size of 153,500 for 1982-1997, and 97,100 for 1998-2009)



1982-2010 Canadian Escapements with Proposed 2010 IMEG Ranges

**Canadian Chinook Spawning Escapement Estimates
(with Current IMEG Range)**



Canadian Chinook Salmon Fisheries Management

- Eagle sonar will be used to determine escapement into Canada.
- Fishing opportunities in recreational, commercial, and domestic fisheries are expected to be limited in 2011.
- Restrictions are not expected to be required in First Nation fisheries unless run abundance is weaker than the lower end of the outlook range.
 - In 2008, FN fisheries reduced to <50% of average
 - In 2009, FN fisheries initially reduced to 50%-75% of average, then a full fishery very late in the season
 - In 2010, FN harvest was 45% of average, the lowest since the 1970's

Potential 2011 Canadian Upper Yukon run sizes

Expected Run Size	Esc. Target	TAC	CDN Share (23%)	U.S. Share (CDN stock)	Border Passage Target
65,000	42,500-55,000	10,000-22,500	2,300-5,175	7,700-17,325	44,800-60,175
89,000	42,500-55,000	34,000-46,500	7,820-10,695	26,180-35,805	50,320-65,695

* uncertainty results in wide range of expected run sizes and potential U.S. and Canadian harvests

Precautionary Fisheries Management

- 2011 Chinook salmon outlook is for a below average to average run
- Inseason management will be based on Eagle sonar program
- Canadian fishers should enter the 2011 season with the expectation that conservation measures may be required

Canadian Fisheries Management Decision Matrix

(2009 Chinook example- with colour coded mgmt. reference points)

	Border Escapement Projections	Fishery	Guideline Harvest	Anticipated Management Action
RED ZONE	<11,000	all	0	No fishing; assessment test fishery closed.
	11,000 – 19,000	TF	1,000	Assessment test fishery only: fish to be distributed by Tr'ondek Hwech'in FN.
		FN	0	Closures considered.
		CF	0	Closed.
		RF	0	Closed, i.e. Chinook quota varied to zero.
		DF	0	Closed.
YELLOW ZONE	19,000 – 54,000	TF	1,000	
		FN	0 to 8,000	Catch target to vary with abundance within zone: 0 at run size of 19,000; 8,000 catch at run of 54,000. Catch is subject to International harvest sharing provisions.
		CF	0	Closed.
		RF	0	Closed, i.e. Chinook quota varied to zero.
		DF	0	Closed.
GREEN ZONE	>54,000	TF	0	Not required. Assessment data collected through commercial fishery.
		FN	8,000+	Unrestricted.
		CF	Variable	Catch target to vary with abundance and be consistent with International agreement on harvest shares.
		RF	100-700	Expected harvest range based on recent harvests. Opportunities subject to abundance and International agreement on harvest shares.
		DF	100–300	Expected harvest range based on recent harvests. Opportunities subject to abundance and International agreement on harvest shares.

Legend: TF = test fishery; FN = First Nation fishery; CF = commercial fishery; RF = recreational fishery; DF = domestic fishery.

2010 Run Reconstruction

Eagle Sonar Estimate	35,074
US Subsistence Catch (above Eagle Sonar)	609
Canadian Border Passage	34,565
Canadian Catch	2,455
Estimated Canadian Escapement	32,010
US Catch Estimate Below Eagle Sonar	27,500
Total Run Size Estimate	62,574
2010 IMEG-Escapement Target	42,500
TAC	20,074

2010 Run Reconstruction (continued)

Harvest Sharing Obligations	TAC	Estimated Harvest	% of TAC Harvested
US share TAC (mid-point of 74-80%)	15,256	27,500	180%
Canadian share TAC (midpoint of 20-16%)	3,613	2,455	68%
US Border Passage Obligation	46,113		
Estimated Border Passage	34,565		
Canadian Upper Yukon Catch			
First Nation	2,455		
Commercial	0		
Domestic	0		
Sport	0		
Total	2,455		

Yukon River Chinook Salmon Outlook 2011 – Drainage-wide



Yukon River Panel meeting, March 2011

2011 Drainage-wide Chinook Outlook

- Poor to below average run
- Based on sibling and stock/recruitment (S/R) relationships, a run of 216,200 is expected in 2011
- However, the precautionary outlook range is **130,000-178,000**
 - Lower range is based on recent experience where runs have returned much lower than preseason outlooks
 - Models do not account for environmental factors, bycatch, reductions in productivity, and other phenomena

Potential US Harvests based on 2011 Outlook

- Low end projection

(65,000 CDN; 130,000 total run)

- Border passage target 44,800-60,200
- US harvest CDN stocks 7,700-17,300

Potential US Harvests based on 2011 Outlook

- Low end projection

(65,000 CDN; 130,000 total run)

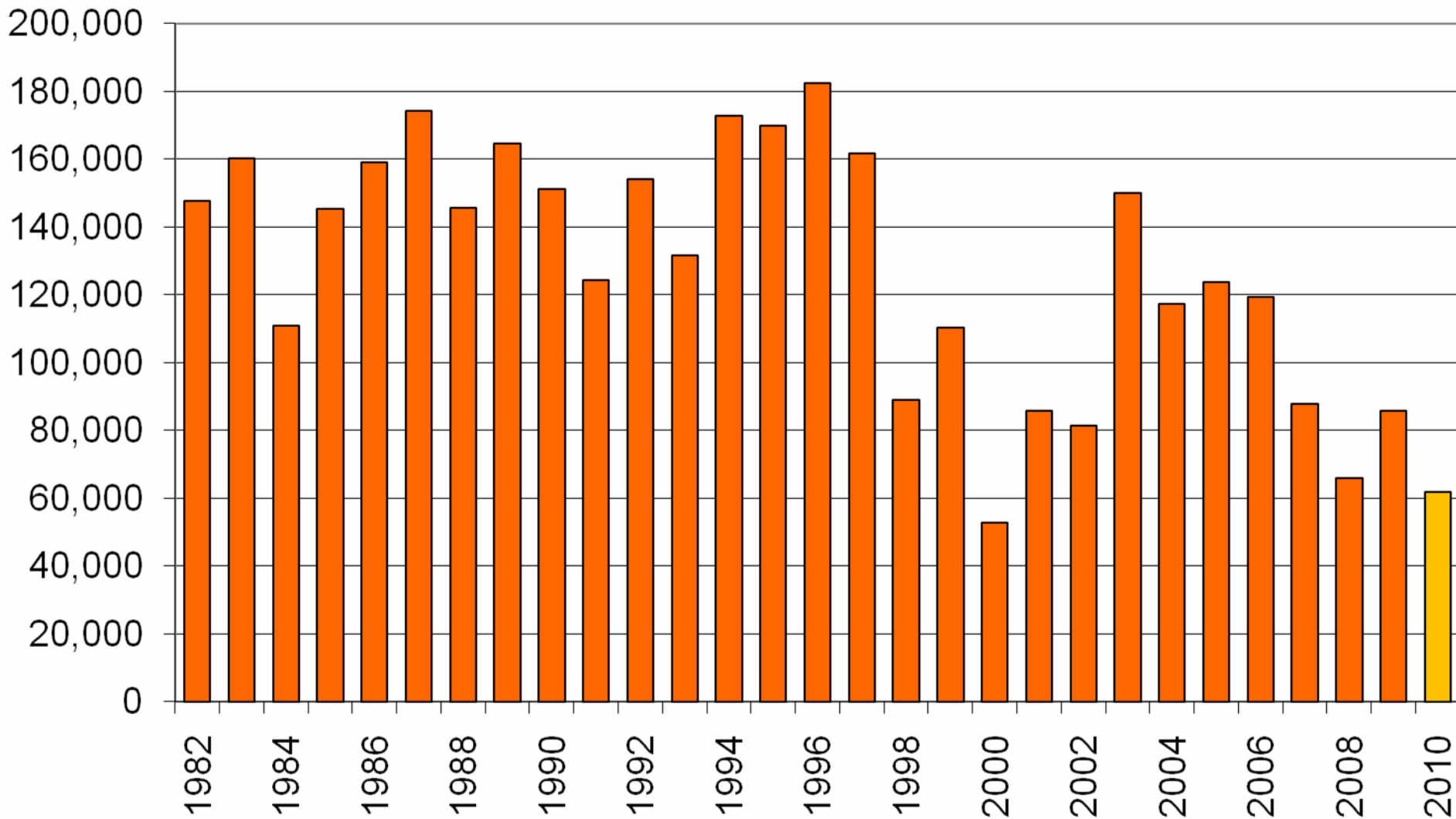
- Border passage target 44,800-60,200
- US harvest CDN stocks 7,700-17,300
- US subs. harvest CDN stocks in 2009 16,100

- Upper end projection

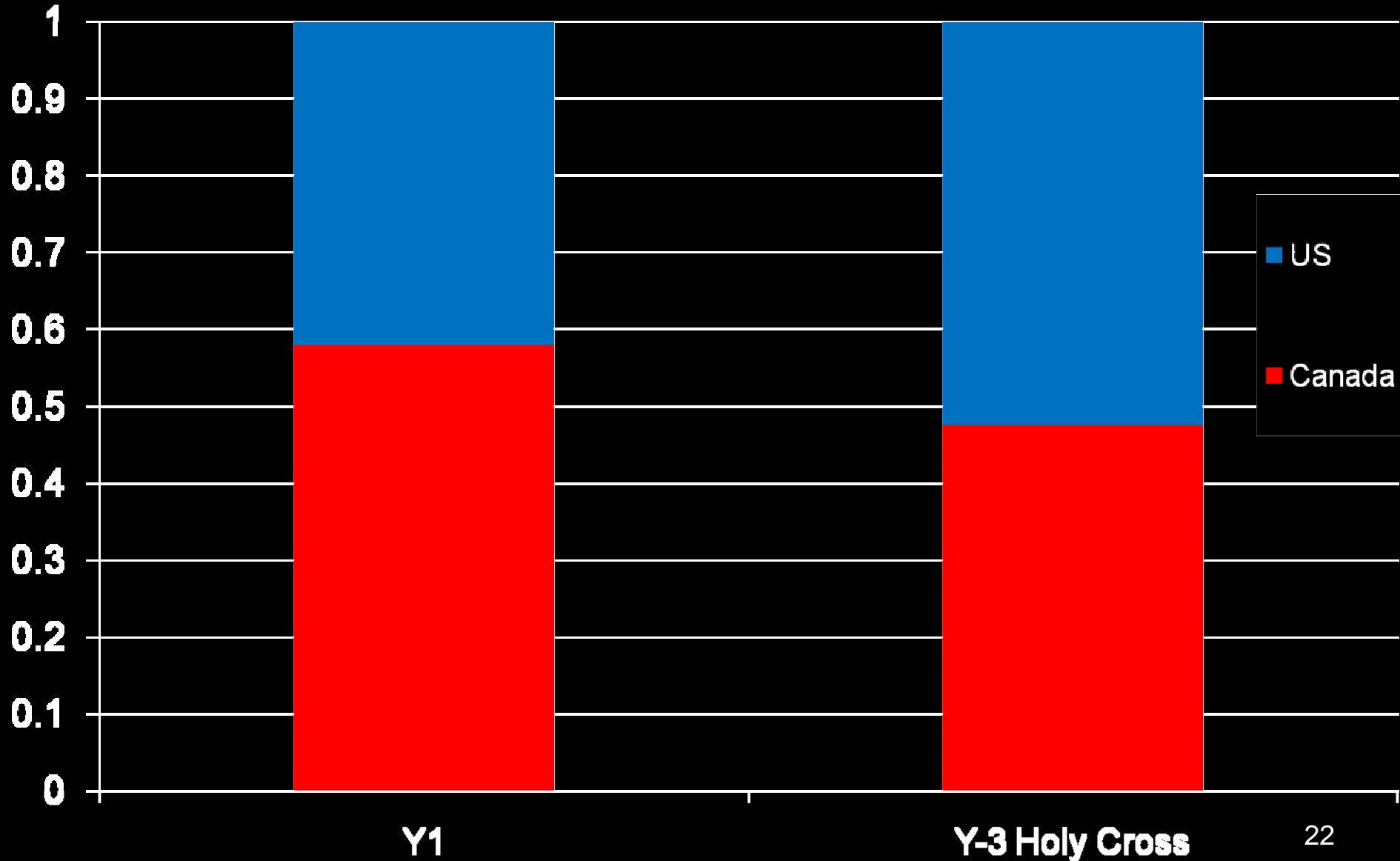
(89,000 CDN; 178,000 total run)

- Border passage target 50,300-65,700
- US harvest CDN stocks 26,200-35,800
- Avg. unrestricted subs. harvest CDN stocks
~30,000

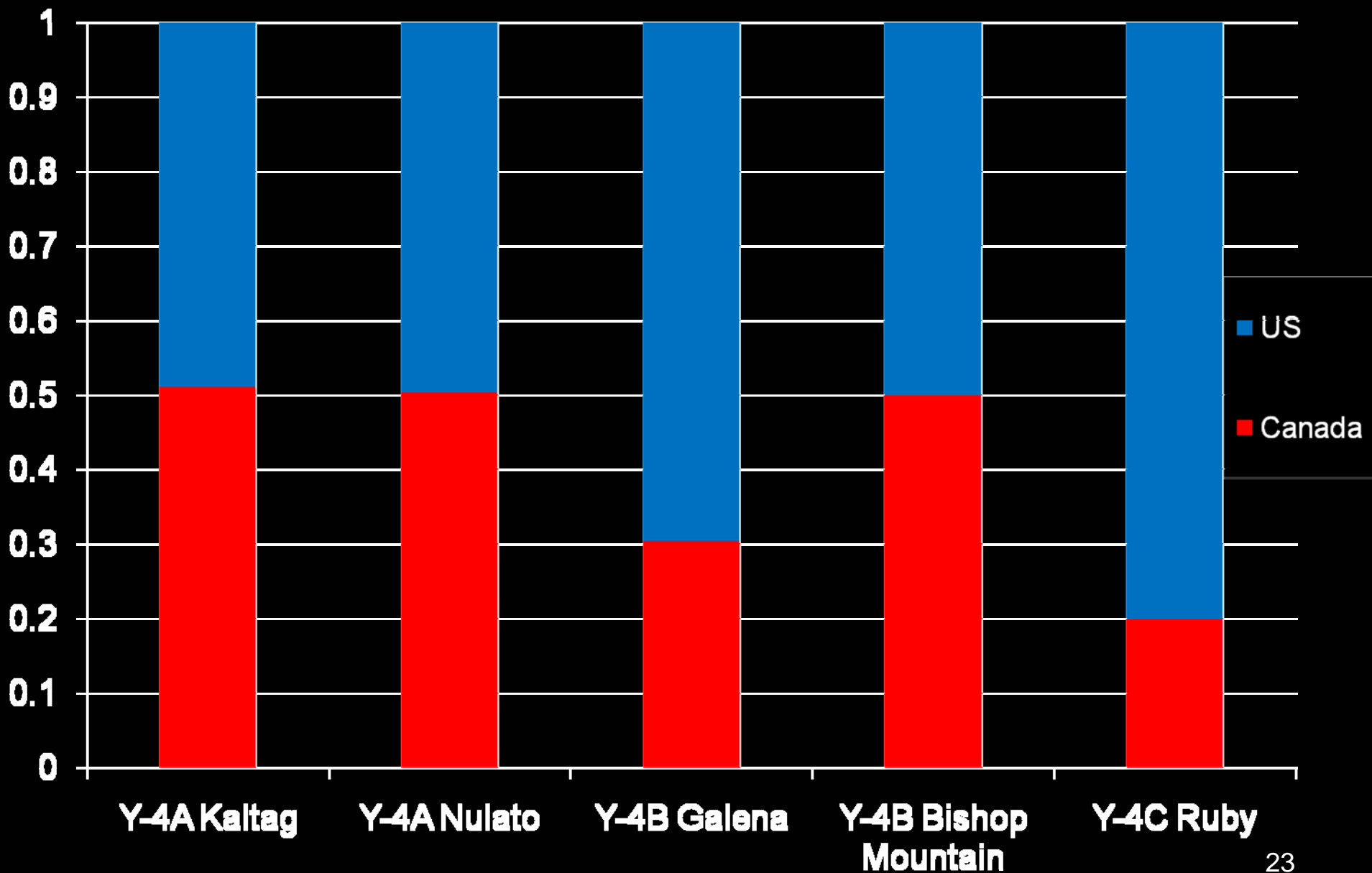
Estimated Total Canadian-origin Chinook Salmon Run



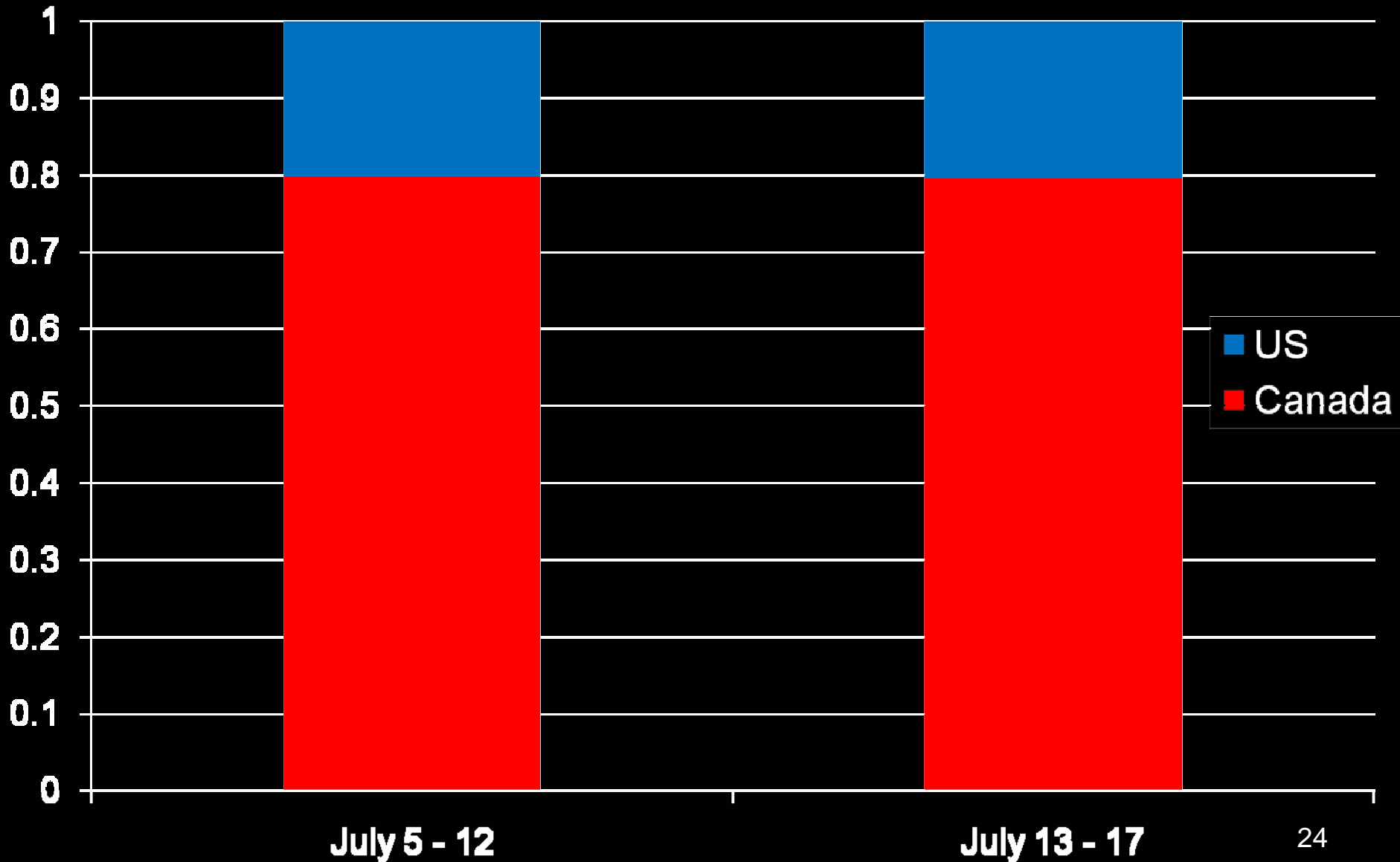
Y1 and Y3 Subsistence Harvest Genetic Proportions



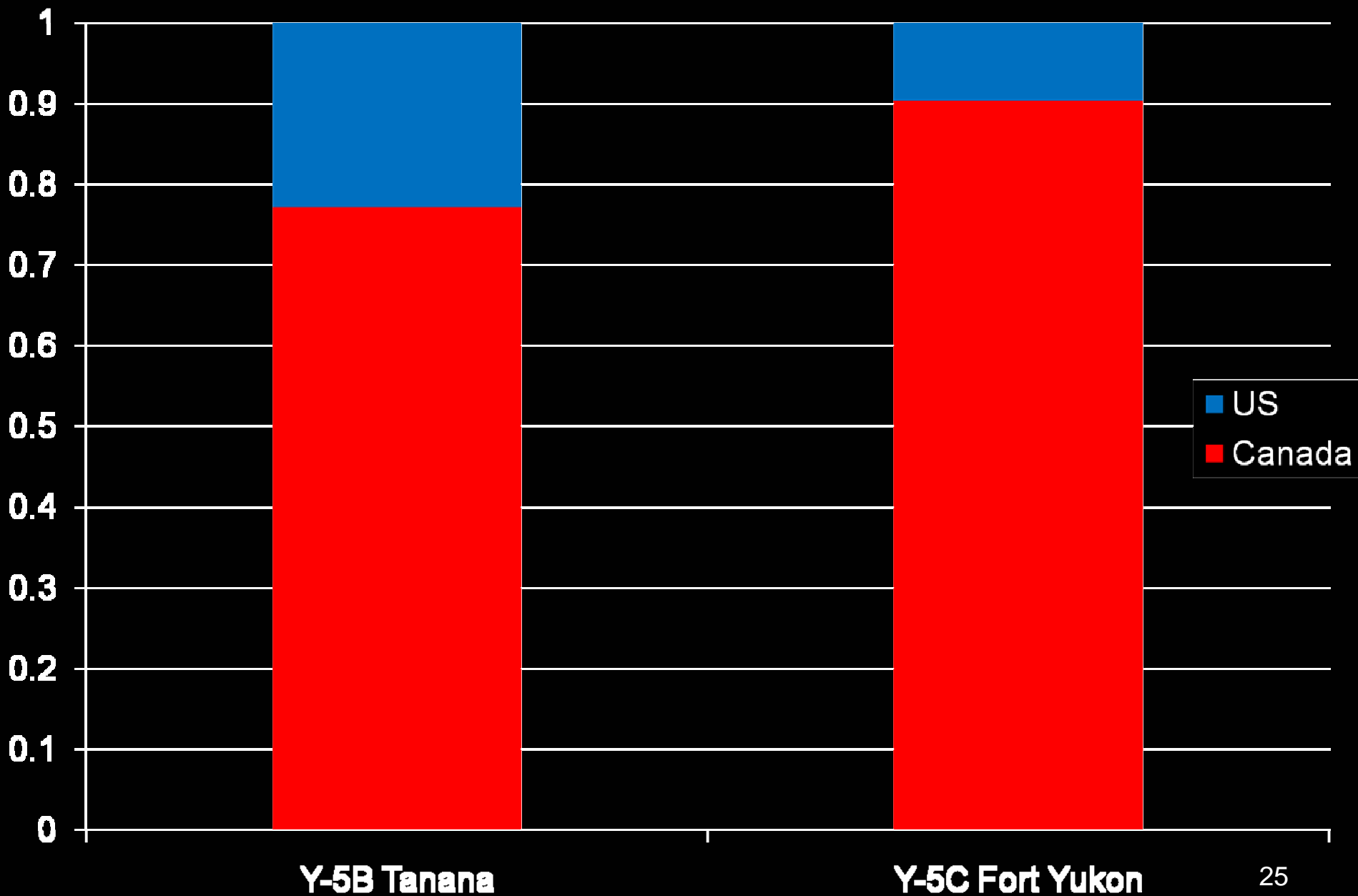
Y-4 Subsistence Harvest Genetic Proportions



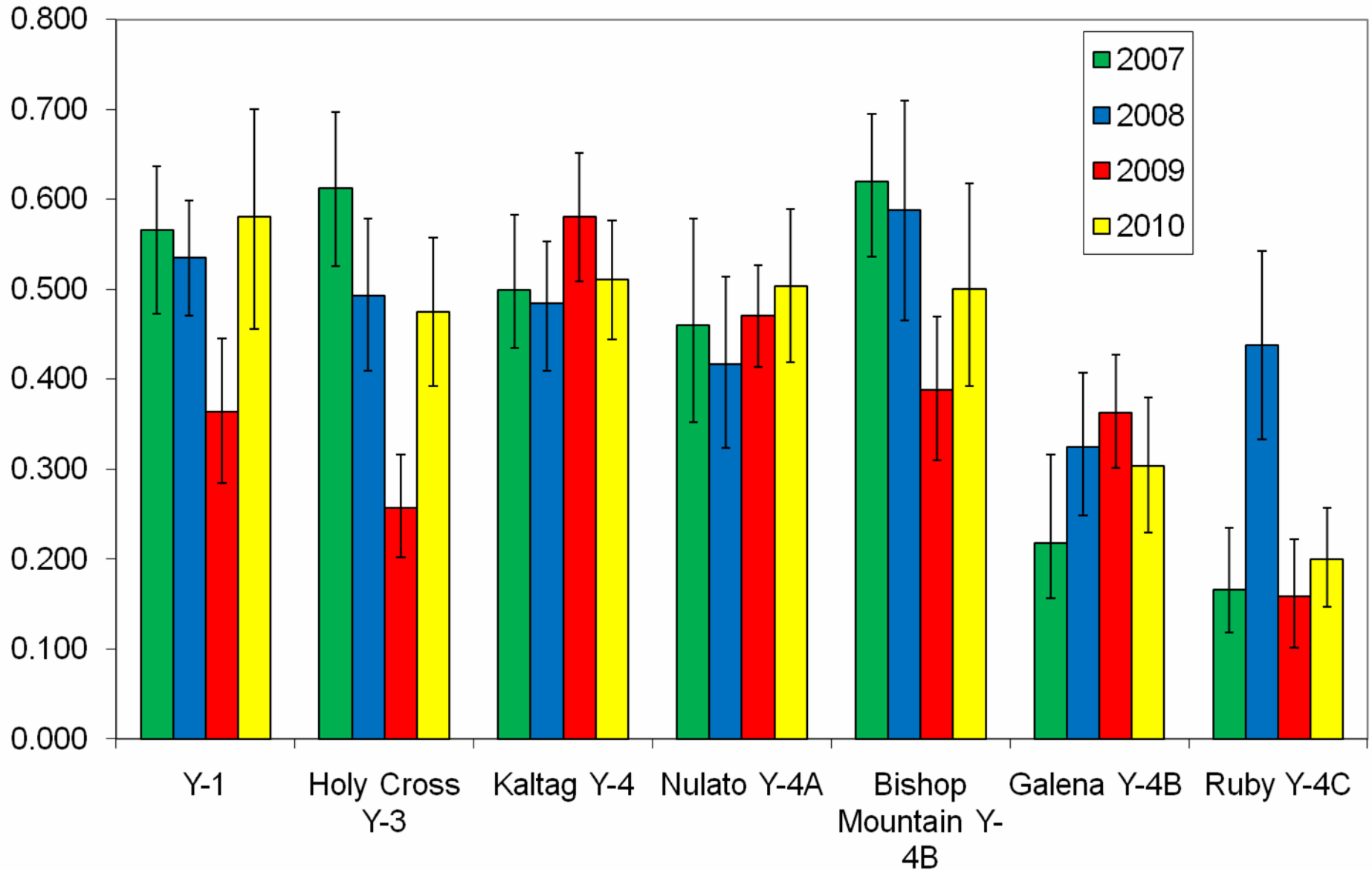
Rapids Subsistence Harvest Genetic Proportions



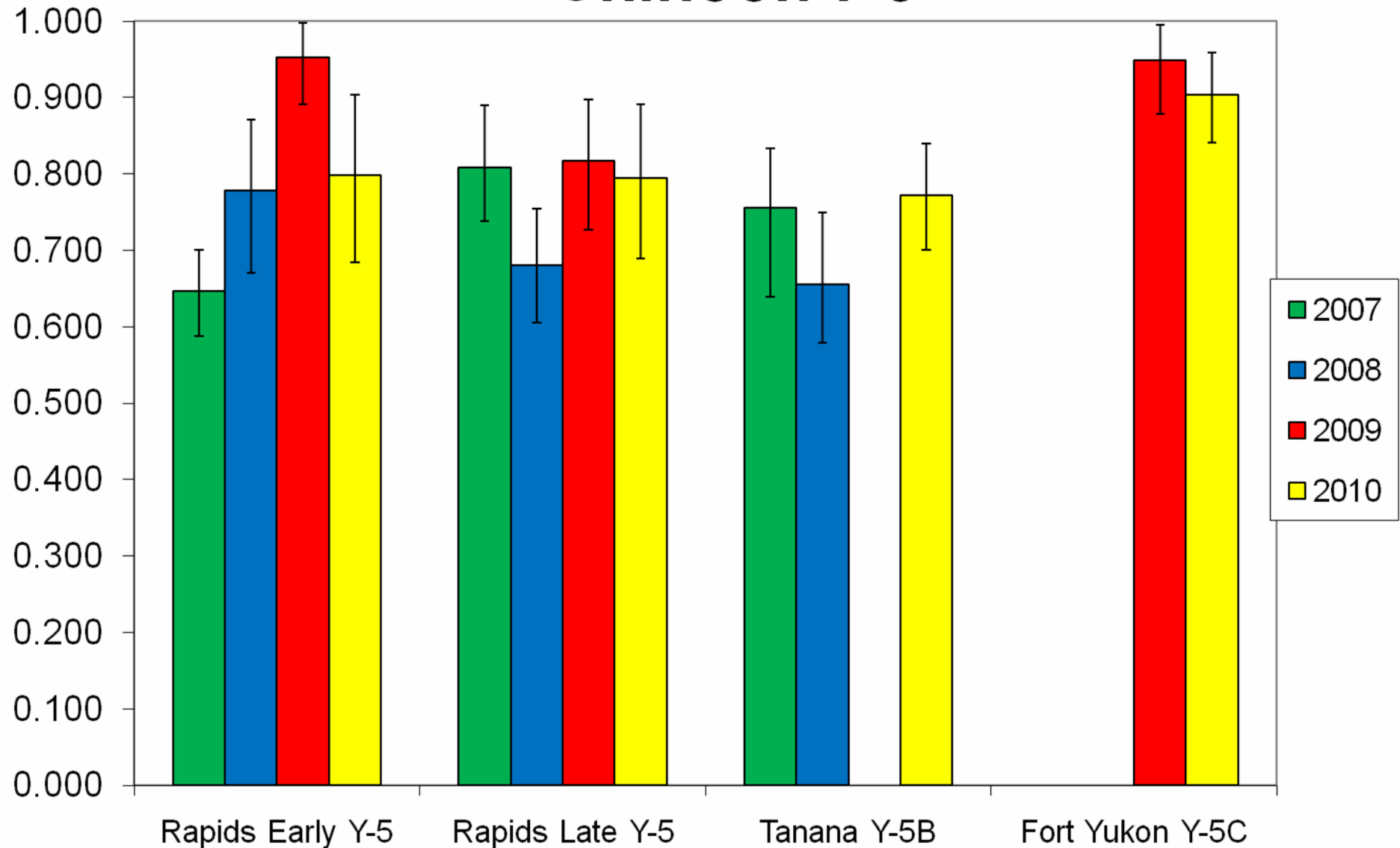
Y-5 Subsistence Harvest Genetic Proportions



Proportion of Canadian-origin Chinook in Subsistence Harvest Y1-Y4



Proportion of Canadian-origin Chinook Y-5

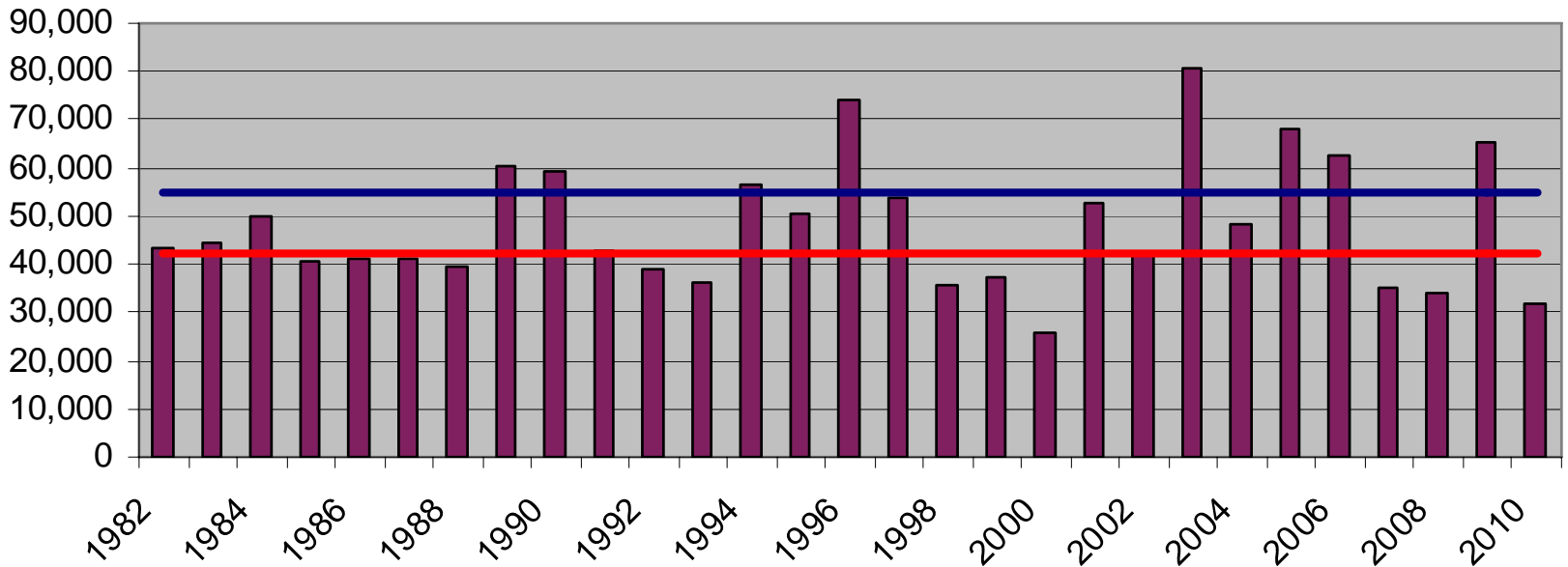


Thank You



1982-2010 Canadian Escapements with Proposed 2010 IMEG Ranges

**Canadian Chinook Spawning Escapement Estimates
(with Current IMEG Range)**



- Upper range of 2010 JTC recommendation (55,000)
- Option 1, Lower range of 2010 JTC recommendation (40,000)
 - ◆ Option 2, Lower range of 2010 JTC recommendation (45,000)

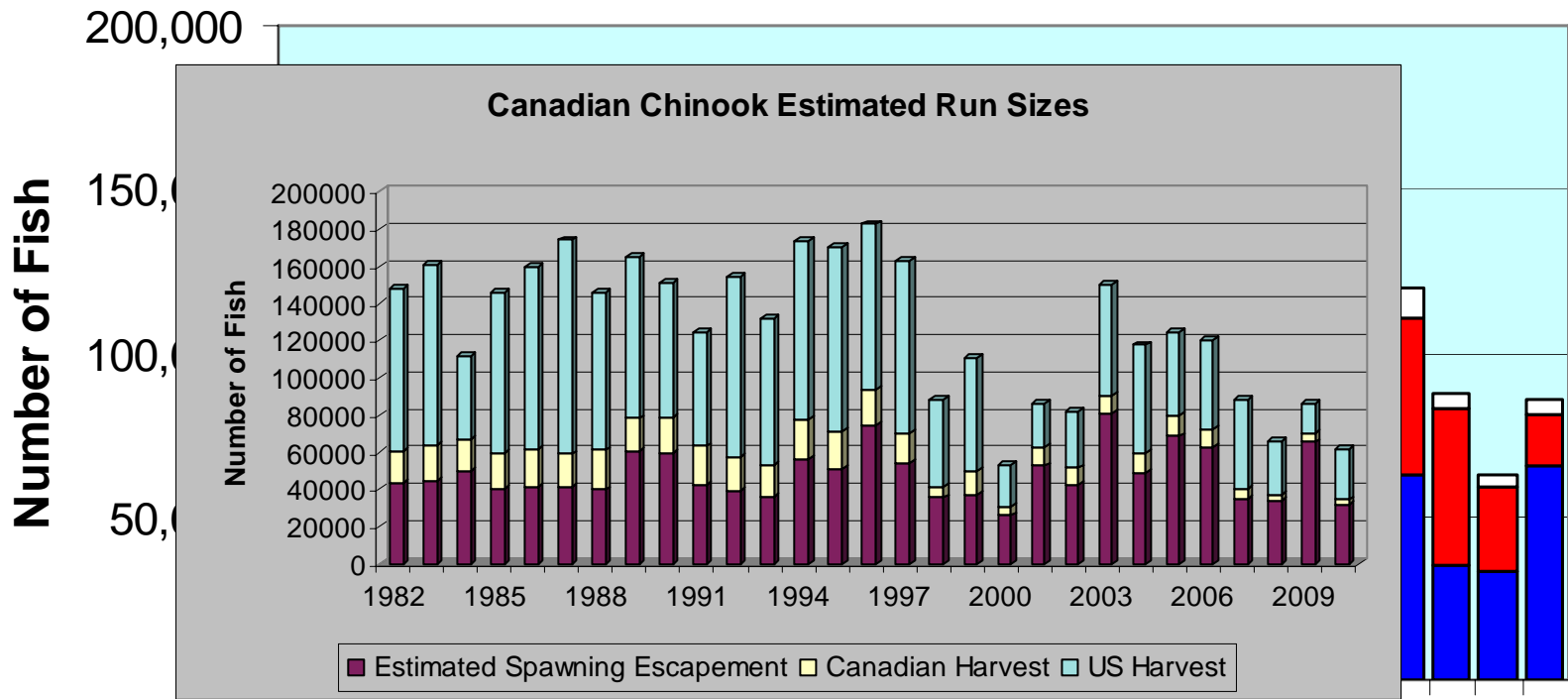
2010 Run Reconstruction

Eagle Sonar Estimate		69,957
U.S. subsistence catch (above Eagle sonar)		382
Canadian Border Passage	Eagle Sonar Estimate	35,074
	US Subsistence Catch (above Eagle Sonar)	609
		69,575
Canadian Catch	Canadian Border Passage	34,565
	Canadian Catch	2,455
	Estimated Canadian Escapement	32,010
		4,297
Estimated Canadian Escapement	US Catch Estimate Below Eagle Sonar	27,500
	Total Run Size Estimate	62,574
	2010 IMEG-Escapement Target	42,500
	TAC	20,074
		65,278
U.S. catch estimate below Eagle sonar		15,618
Total Run Size Estimate		85,575
2009 IMEG- Escapement Target		45,000
TAC		40,575

2009 Run Reconstruction (continued)

Harvest Sharing Obligations		TAC	Estimated Harvest	% of TAC Harvested
U.S. share TAC (mid-point of 74-80%)		31,243	16,000	51%
Cdn share TAC (mid-point of 20-26%)		9,332	4,297	46%
Harvest Sharing Obligations		TAC	Estimated Harvest	% of TAC Harvested
US share TAC (mid-point of 74-80%)		15,256	27500	180%
Cdn share TAC (midpoint of 20-16%)		3,613	2455	68%
				50%
U.S. Bo	US Border Passage Obligation	46,113	54,332	
	Estimated Border Passage	34,565		
Estimate	Canadian Upper Yukon Catch		69,575	
	First Nation	2,455		
	Commercial	0		
	Domestic	0		
Cana	Sport	0		
	Total	2,455		
First Nation		3,791		
Commercial		364		
Domestic		17		
Sport		125		
TOTAL		4,297		

Canadian-origin Chinook Run Sizes (1982 to 2010)



82 84 86 88 90 92 94 96 98 00 02 04 06 08

- Canadian Catch
- U.S. Catch
- Canadian Escapement based on revised JTC database