



# 2008 Postseason Review

Prepared for Yukon River Panel Meeting  
Anchorage Alaska  
December 09, 2008

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Fisheries and Oceans Canada

# 2008 Upper Yukon Chinook Salmon Summary

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- Below average run outlook (80,000 to 111,000)
- 2008 Chinook salmon run was anticipated to be similar to 2007 run.
- Run at Eagle Alaska estimated at approximately 38,100
- Yukon Panel set an IMEG of 45,000 based on a JTC recommendation to be assessed using Eagle sonar data
- In 2008 all Canadian escapement indicators were well below average and the IMEG was not achieved
- There were major closures in Canadian commercial, domestic and recreational fisheries and significant cutbacks in First Nation fishing

# Yukon River Salmon Assessment Projects

**Yukon River Watershed**  
The United States and Canada Yukon River Joint Technical Committee

**Project Location by Type**

Dam	Weir and Lake
Weir	Stream
New fishing location	Impounded location
Fish ladder	US-Canada border
Salmon assessment and tagging	Canadian Provincial Boundary

**Population**

1-2000	2001-5000
5001-10000	10001-25000
25001-50000	50001-100000
100000+	Unincorporated town and village

Prepared by:  
Alaska Department of Fish and Game, Division of Commercial Fisheries  
Anchorage, Alaska, USA  
Regina, Alberta, T4S 0A6, Canada  
May 1, 2002

Scale: 1 : 1,000,000  
Projection: Alaska Albers NAD 83



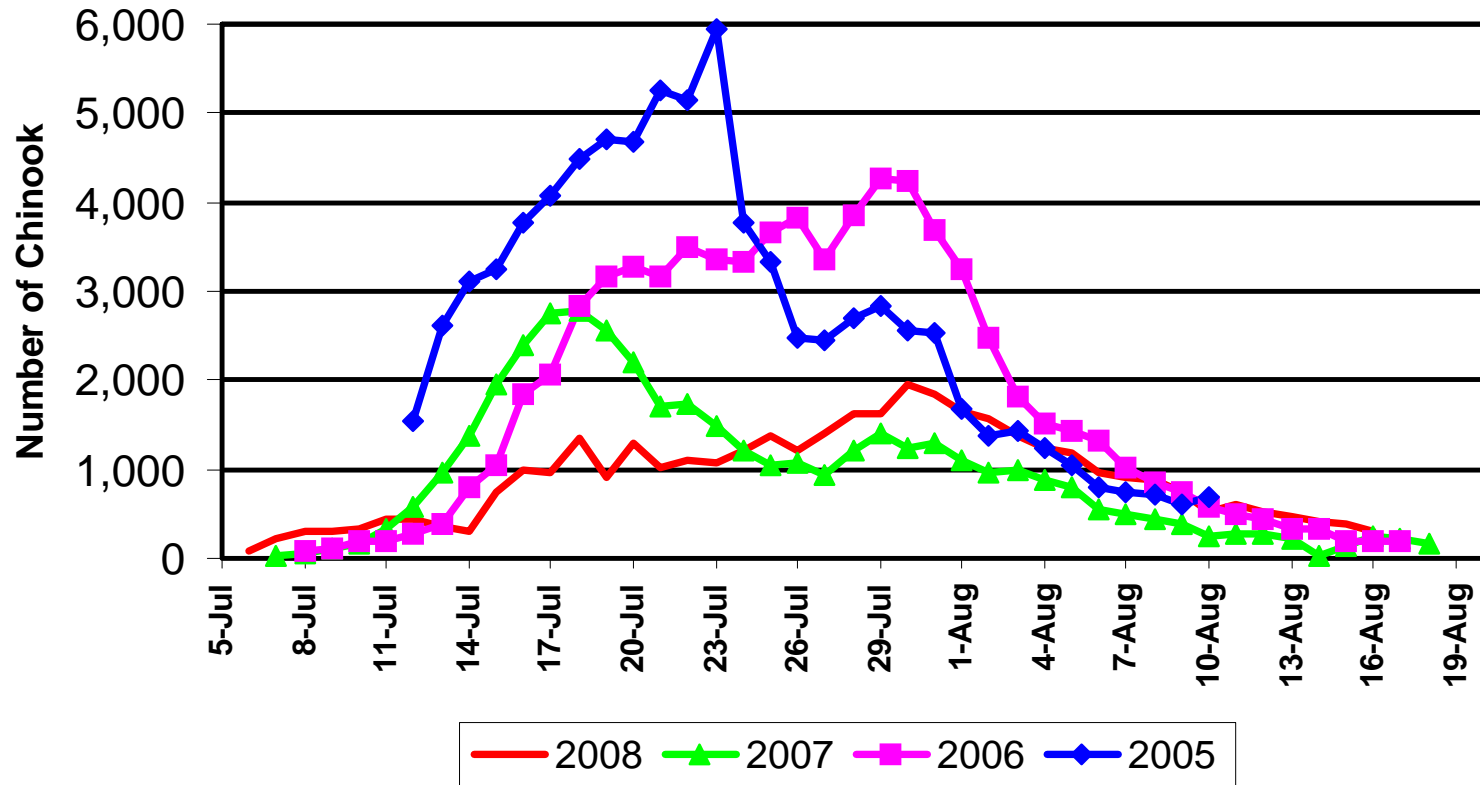
# Eagle Sonar Program

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



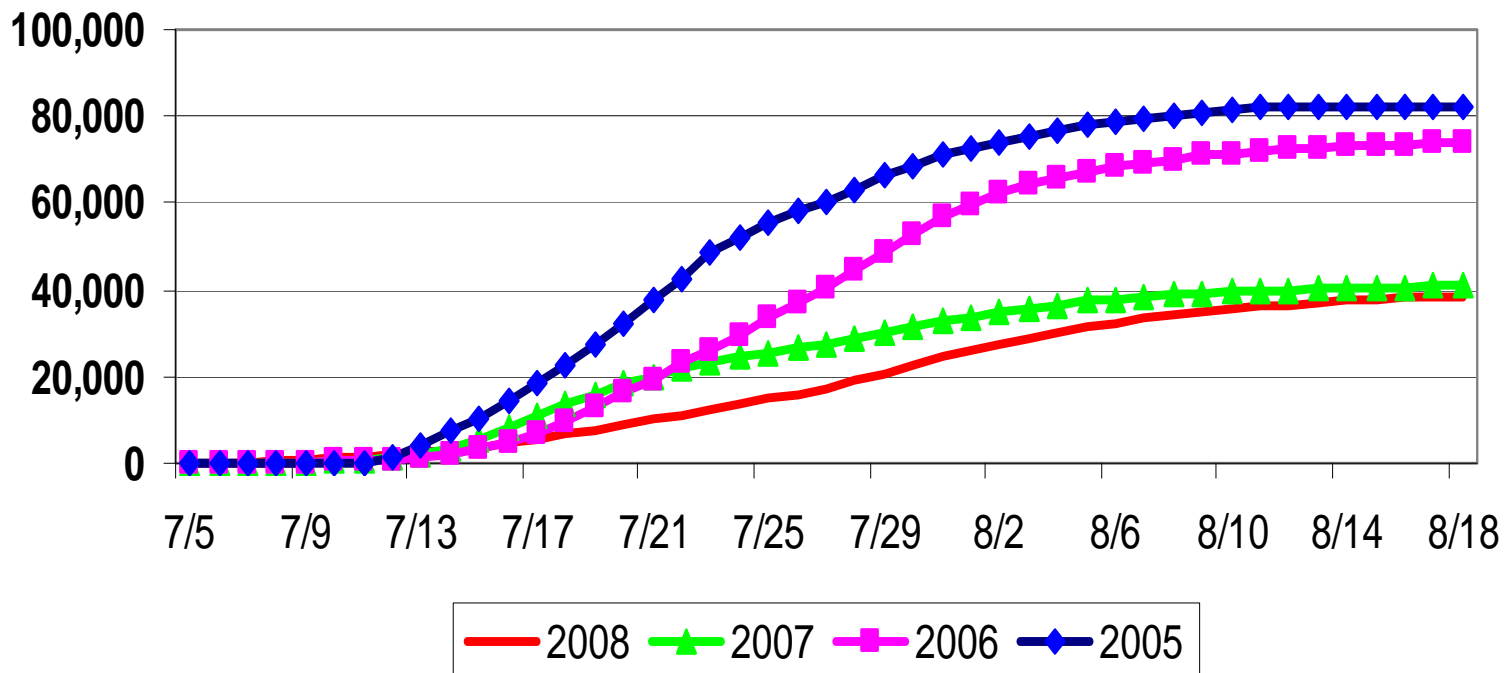
# Daily sonar estimates of Chinook salmon at Eagle Alaska: 2005-2008

## Daily sonar estimates of Chinook salmon at Eagle Alaska: 2005-2008



# Cumulative sonar estimates of Chinook salmon at Eagle Alaska: 2005-2008.

## Cumulative sonar estimated of Chinook salmon at Eagle Alaska- 2005-2008



# Preliminary 2008 Run Reconstruction of Canadian-origin Chinook Salmon

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- Preliminary total run (US and Canadian stocks) approximately 155,800
- Preliminary Canadian-origin run (at mouth) likely ranges from approximately 54,800 to 58,500
- 2008 Canadian escapement target was 45,000
- TAC 9,800 to 13,500
- U.S. allowable catch 7,500 to 10,400
- Canadian allowable catch 2,300 to 3,100
- Eagle Sonar estimate 38,097
- Border escapement estimate 36,097

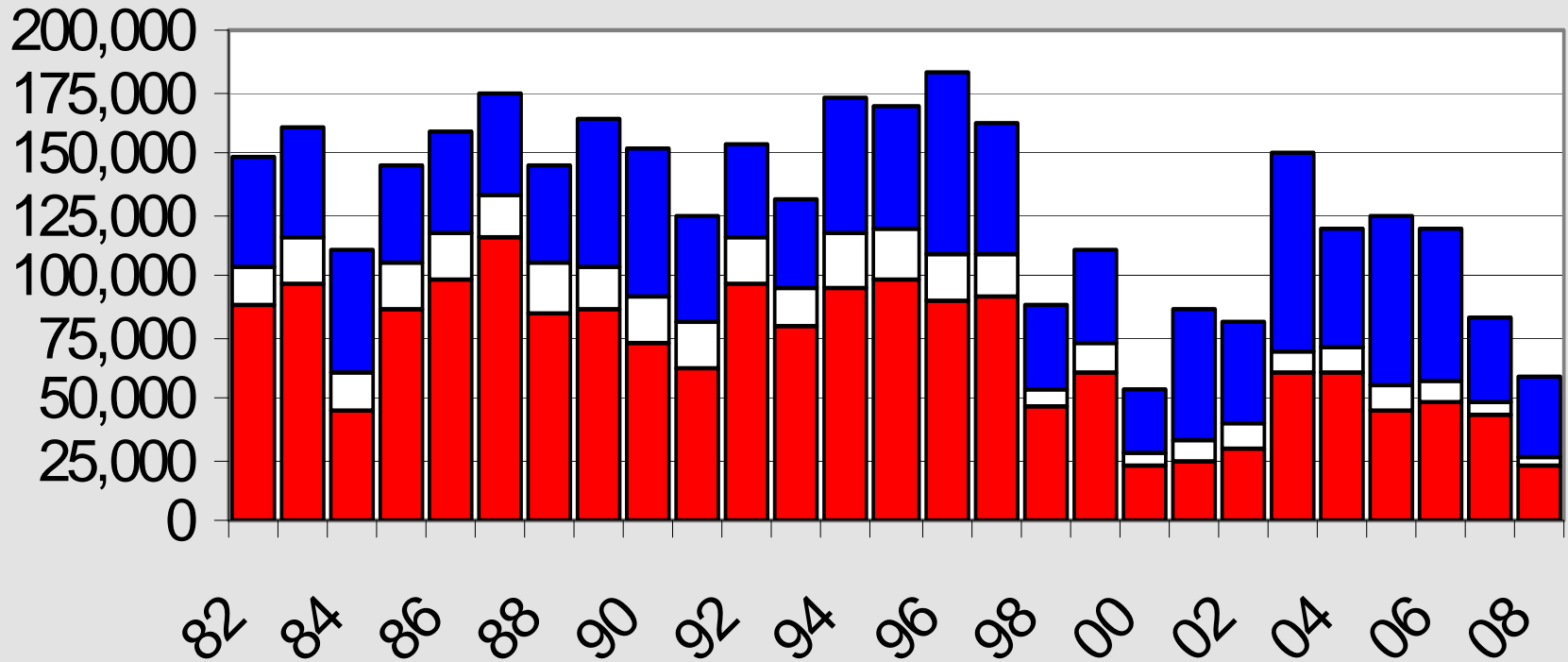
## Summary of Preliminary 2008 Upper Yukon Chinook Run

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Eagle Sonar Estimate	38,097
Estimated Subsistence Catch @Eagle	2,000
Can. Border Estimate based on Sonar	36,097
Canadian Catch	3,399
Canadian Spawning Escapement based on Sonar data	32,698
2008 IMEG- Canadian Spawning Escapement Goal	45,000 (27% below goal)

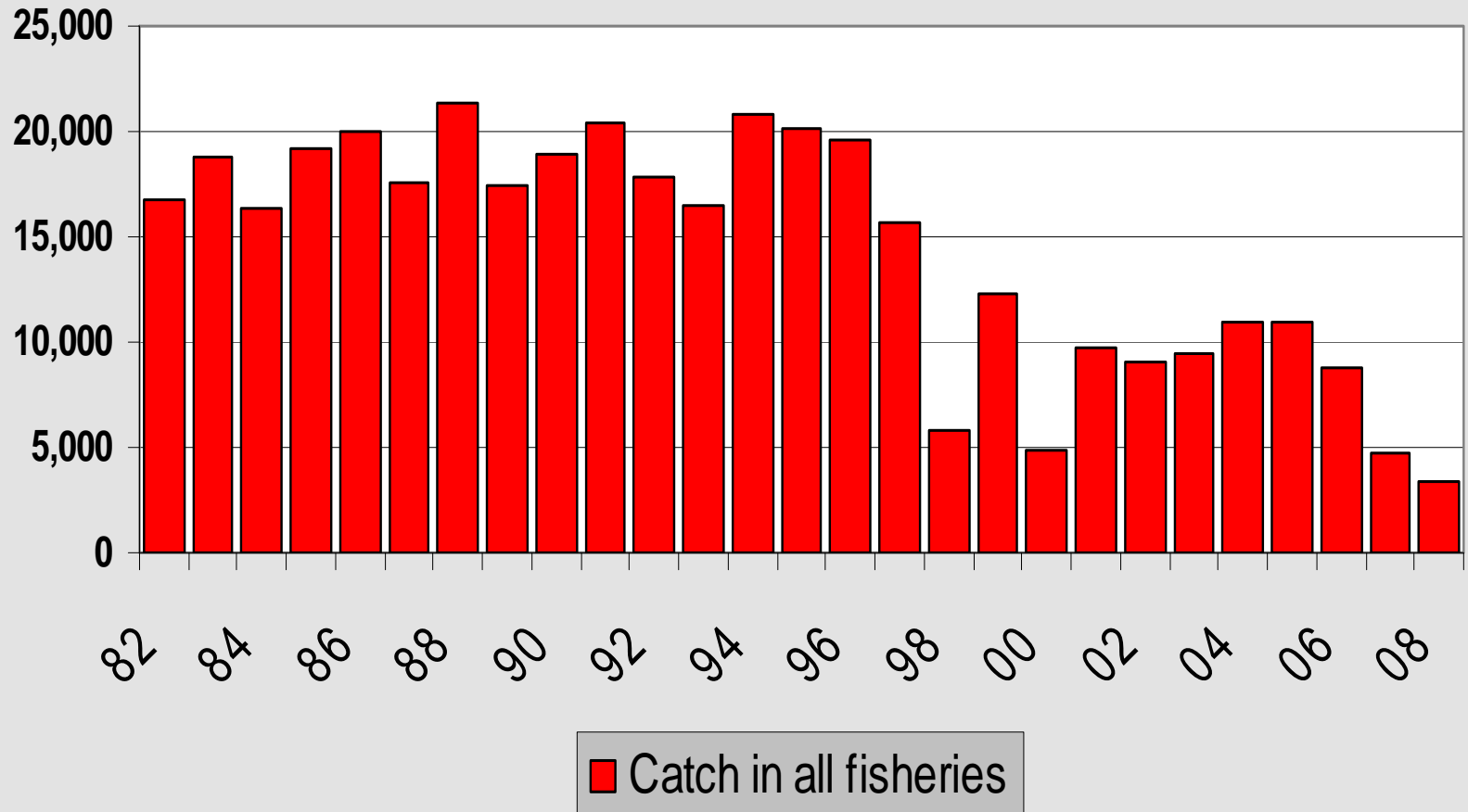
# Canadian Upper Yukon Chinook Salmon Run Size Estimates

(based sonar database conversion)



■ U.S. Catch □ Canadian Catch ■ Can. Escapement

## Canadian Upper Yukon Salmon Catch in combined Aboriginal, commercial, domestic and recreational fisheries 1982-2008



# Aerial surveys of Chinook salmon index areas

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## ➤ Index Areas

Little Salmon

Big Salmon

Nisutlin

Wolf



# Chinook Salmon Aerial Surveys

(for multiple surveys, peak count is used)

	<b>Little Salmon</b>	<b>Big Salmon</b>	<b>Nisutlin</b>	<b>Wolf</b>	<b>Total</b>
2008	93	303	No survey	22	<b>418</b> (incomplete)
2007	451	601	137	54	1,243
2006	1,381	1,140	601	114	3,236
2005	1,519	952	807	260	3,538
2004	1,140	762	330	226	2,458
2003	1,658	3,075	687	292	5,712
2002	526	1,149	280	84	2,039
2001	1,035	1,020	481	154	2,690
<b>2000</b>	<b>46</b>	<b>113</b>	<b>20</b>	<b>32</b>	<b>211</b>
10 yr avg.	861	969	382	141	2,353

# Spawning Chinook Salmon in Little Salmon River

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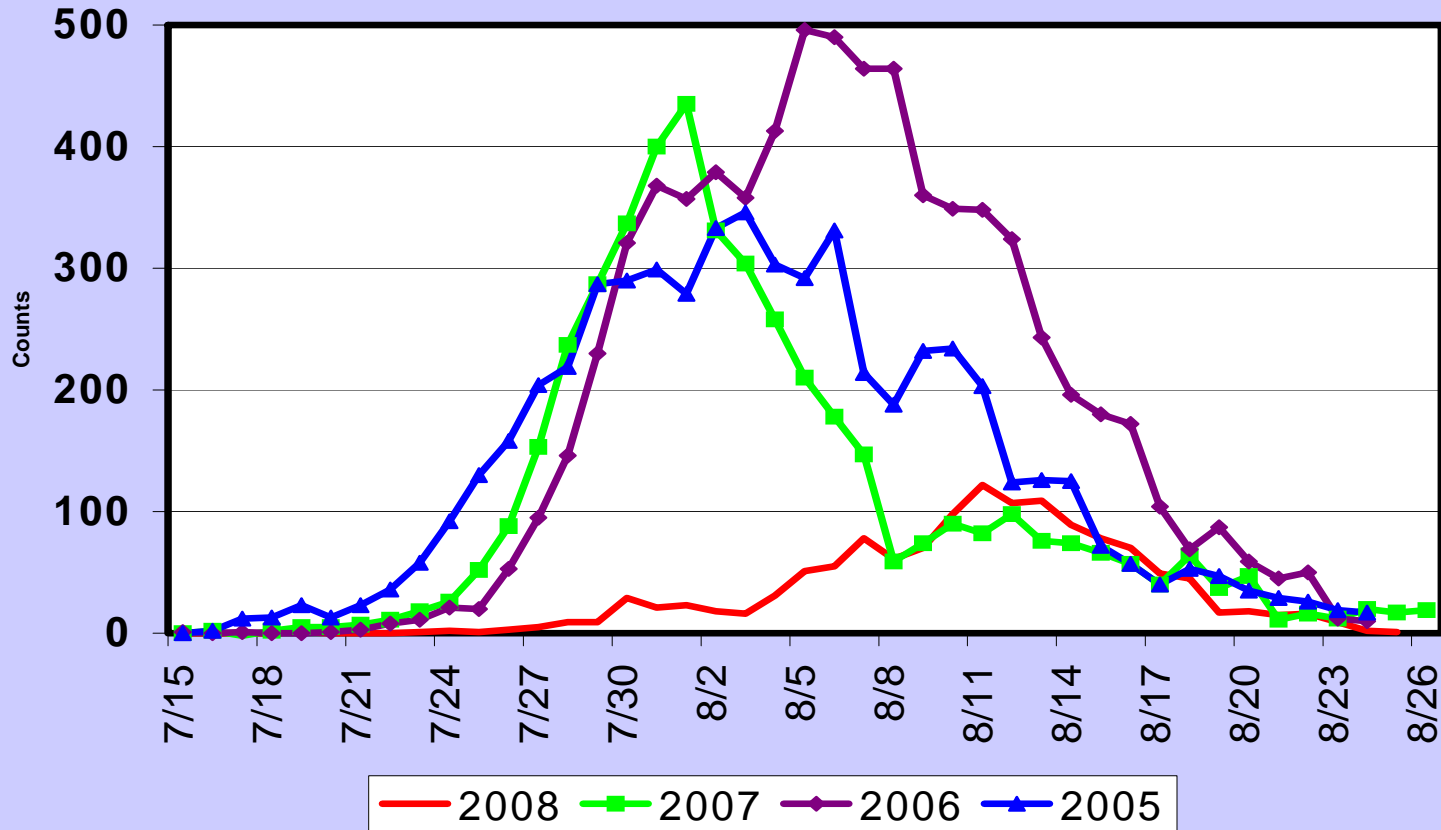
# Big Salmon Sonar Site (high water conditions in 2008)

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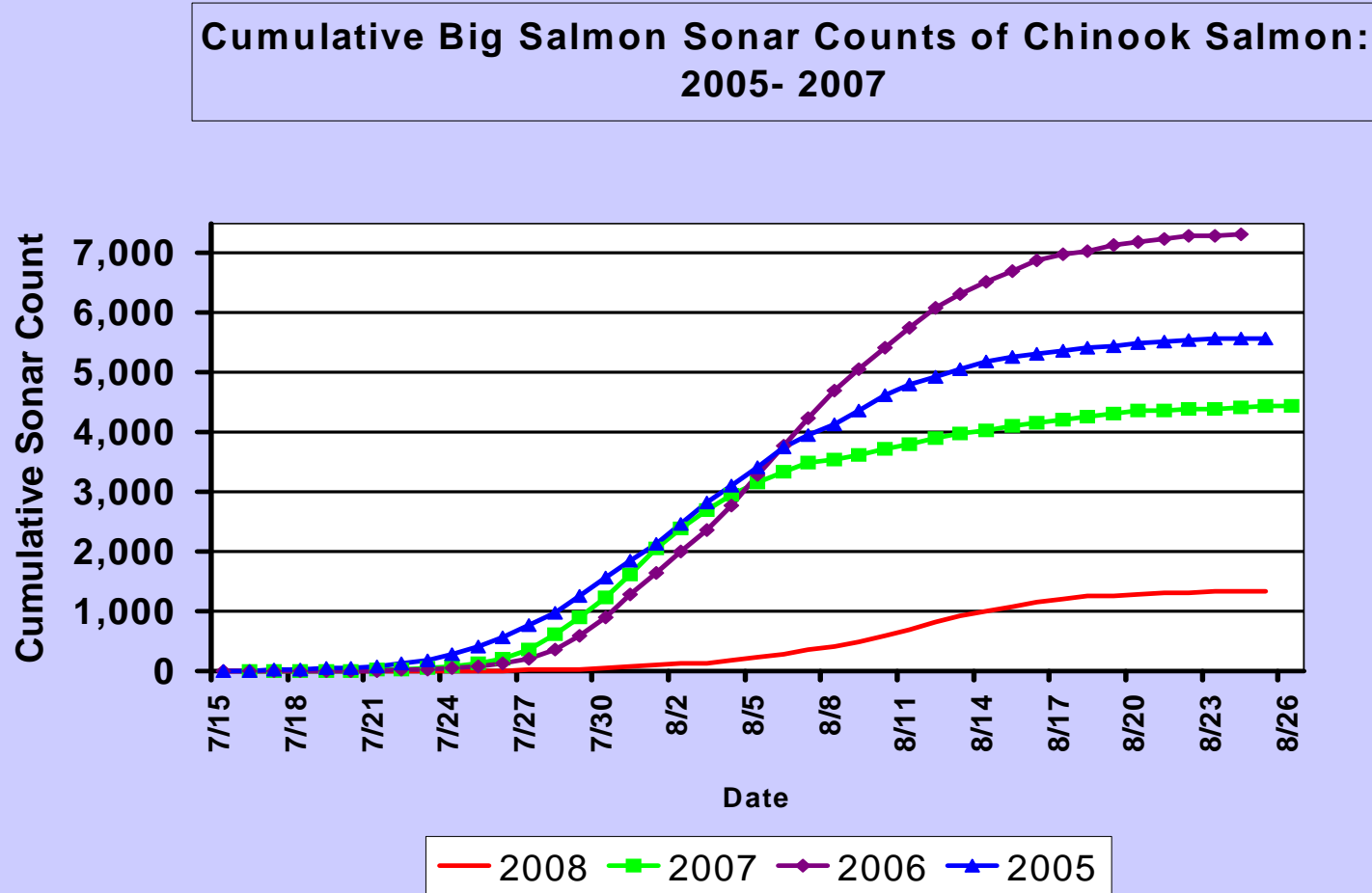


# Daily Big Salmon Sonar Counts of Chinook Salmon: 2005-2008

## Daily Big Salmon River Sonar Counts 2005-2008



# Cumulative Big Salmon Sonar Counts of Chinook Salmon: 2005- 2008 (2008 count was 1,329)



# Big Salmon River- popular recreation site

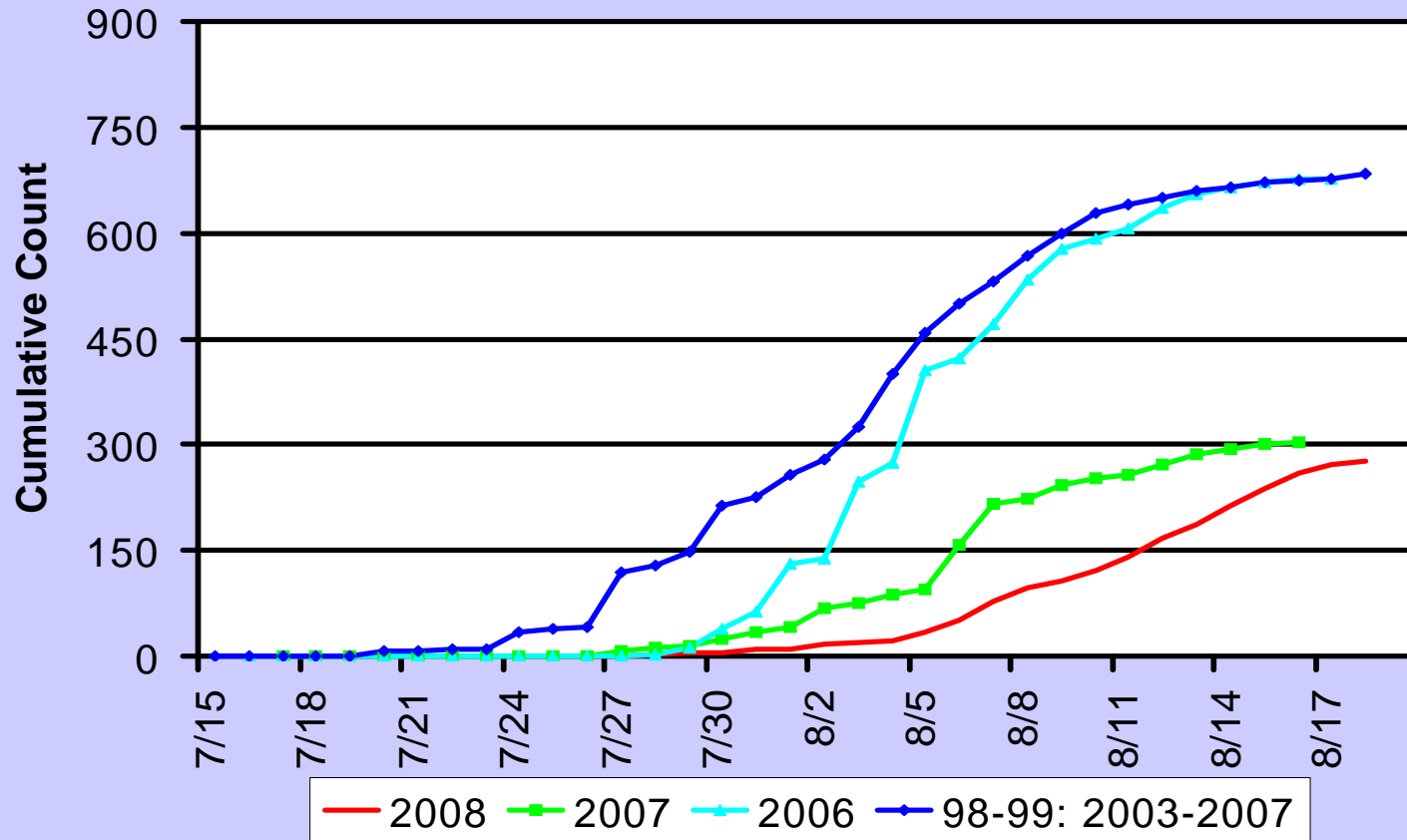
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# 2008 Cumulative Blind Creek Weir Counts of Chinook Salmon

(2008 count was 276; 191 sampled of which 88 (46% were female)

2008 Cumulative Blind Creek Weir Counts of Chinook Salmon  
(2006 and average counts also included)

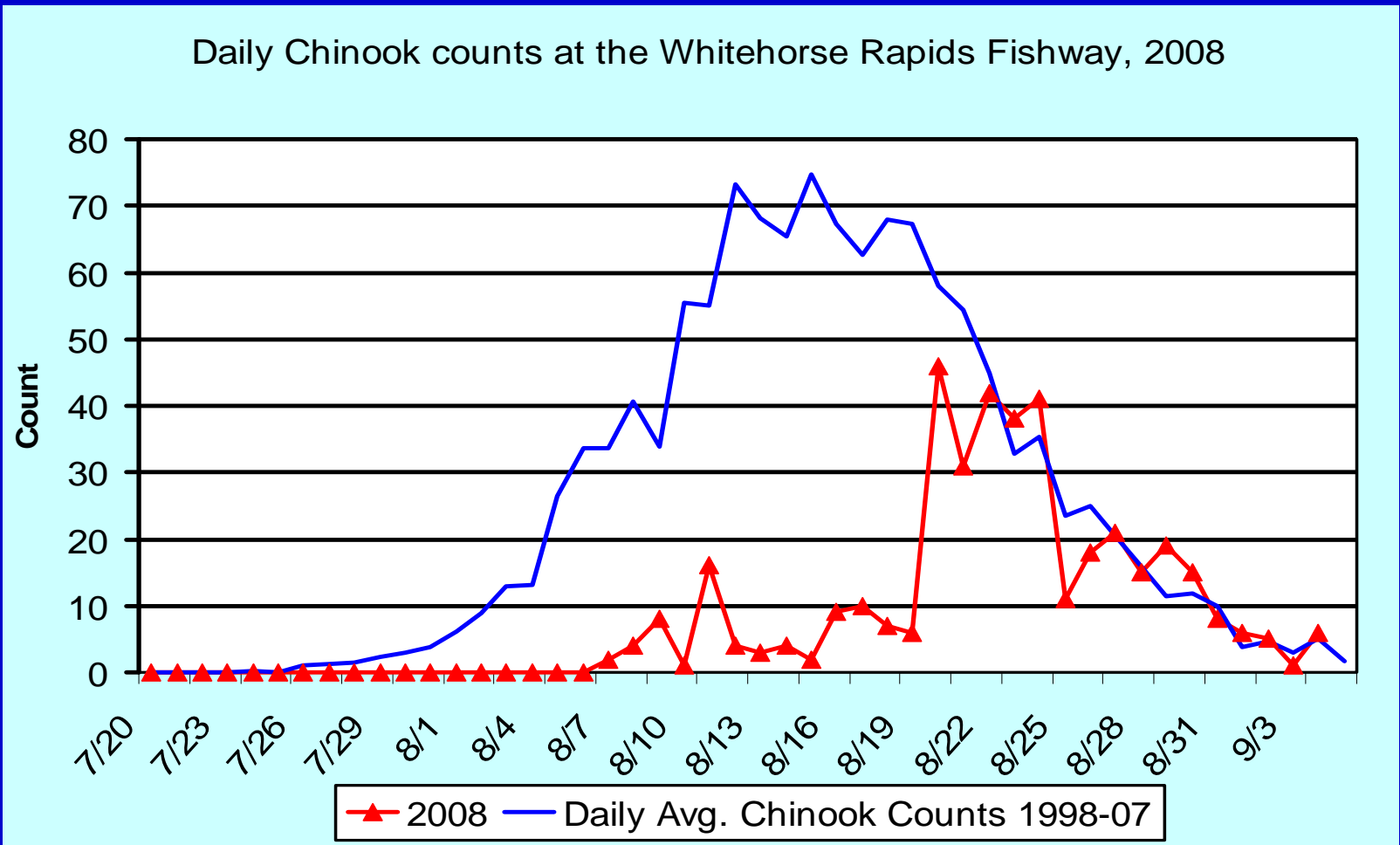


# Whitehorse Rapids Fishway Chinook salmon enumeration since 1959

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# Daily Chinook Counts at the Whitehorse Rapids Fishway, 2008



Hatchery: 144 male and 73 female (33.6%)

Wild: 107 male and 75 female (41.2%)

TOTAL: 399: 251 male and 148 female (37.1%)

# Chinook genetic results weighted by 2008 Eagle Sonar Count

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AREA	PERCENT	(SE)
Lower Tributaries	9.1	(1.5)
Stewart	7.8	(2.3)
Kluane-White	0.5	(0.9)
Pelly	20.7	(3.0)
Mainstem	32.3	(4.2)
Carmacks Area	15.1	(3.7)
Teslin	13.4	(2.7)
Upper Yukon Tributaries	1.1	(0.9)

- Lower Tributaries include Chandindu and Klondike Rivers
- Carmacks Area includes Little Salmon, Big Salmon, Tatchun and Nordenskiold
- Upper Yukon Tributaries include Takhini River and Whitehorse Fishway



## Chandindu River

Chinook and Chum weir program funded through R&E discontinued

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# White River Drainage

braided river of glacial origin-Yukon River is turbid below White River confluence

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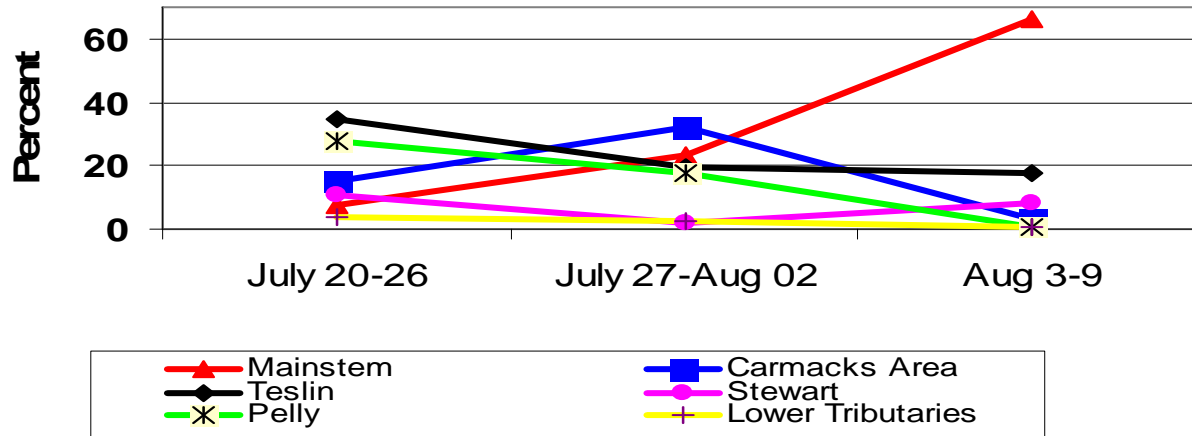


# Fraser Falls- Upper Stewart River

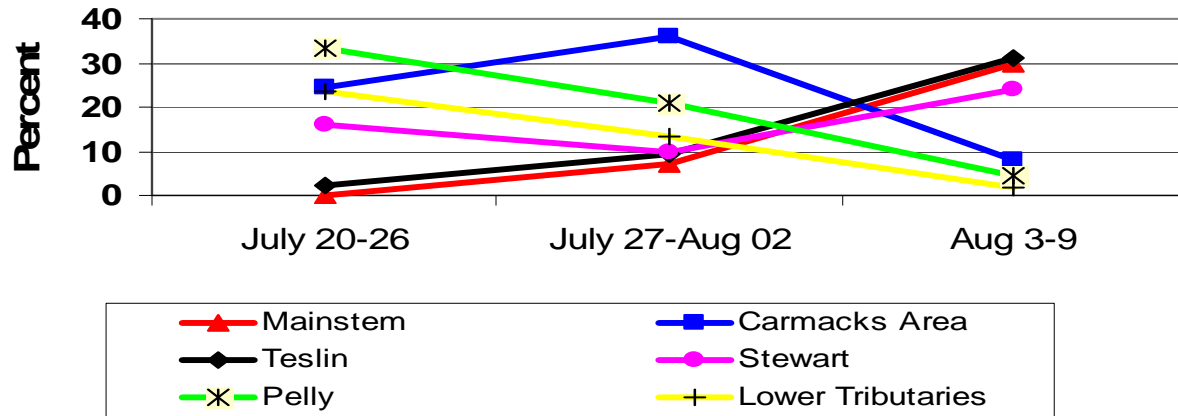
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**2008 Upper Yukon Chinook Timing By Regional Group  
Eagle Sonar**



**2008 Upper Yukon Chinook Timing By Regional Group  
DFO Wheels**



# Summary of 2008 Canadian Chinook Salmon Fisheries

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- It was apparent that the Upper Yukon Chinook salmon run was weaker than the preseason outlook
  - Average size and percentage females was a concern during early portions of run
- Based on the Eagle sonar information the Management Response was as follows:
  1. Commercial and domestic fisheries were closed for entire season
  2. Retention limits in recreational (sport) fishery were varied to zero effective July 11. Tatchun Creek and Yukon River near Tatchun closed to all recreational fishing effective July 11 (area where most fishing occurs)
  3. First Nations within Upper Yukon and Porcupine drainages implemented measures to reduce their aboriginal fisheries to approximately 50% of recent average

## Preliminary 2008 Chinook Catch Summary: Upper Yukon and Porcupine

	Aboriginal	Com	Dom	Sport	Test	Total Upper Yukon	Porcupine Aboriginal
2008	2,885	1	0	0	513	3,399	27
10-yr avg.	6,103	2,308	94	313	621	8,678	229

# Chinook Summary

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- Canadian Escapement goal was 45,000
- Estimated escapement was 32,700, (27% below goal)
- Commercial and Domestic fisheries closed
- Sport fishery restricted
- FN's imposed restrictions to their fisheries

# Where do we go from here?

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- Weak Canadian-origin runs in 2007 and 2008
- 2009 run may also be weak
  
- JTC is tasked with developing a long-term escapement goal based on the best scientific information- used IMEG of 45,000 in 2008
- Need to use a precautionary approach



# Review of 2008 Fall Chum Salmon Assessment and Management

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# 2008 Upper Yukon Fall Chum Salmon Summary

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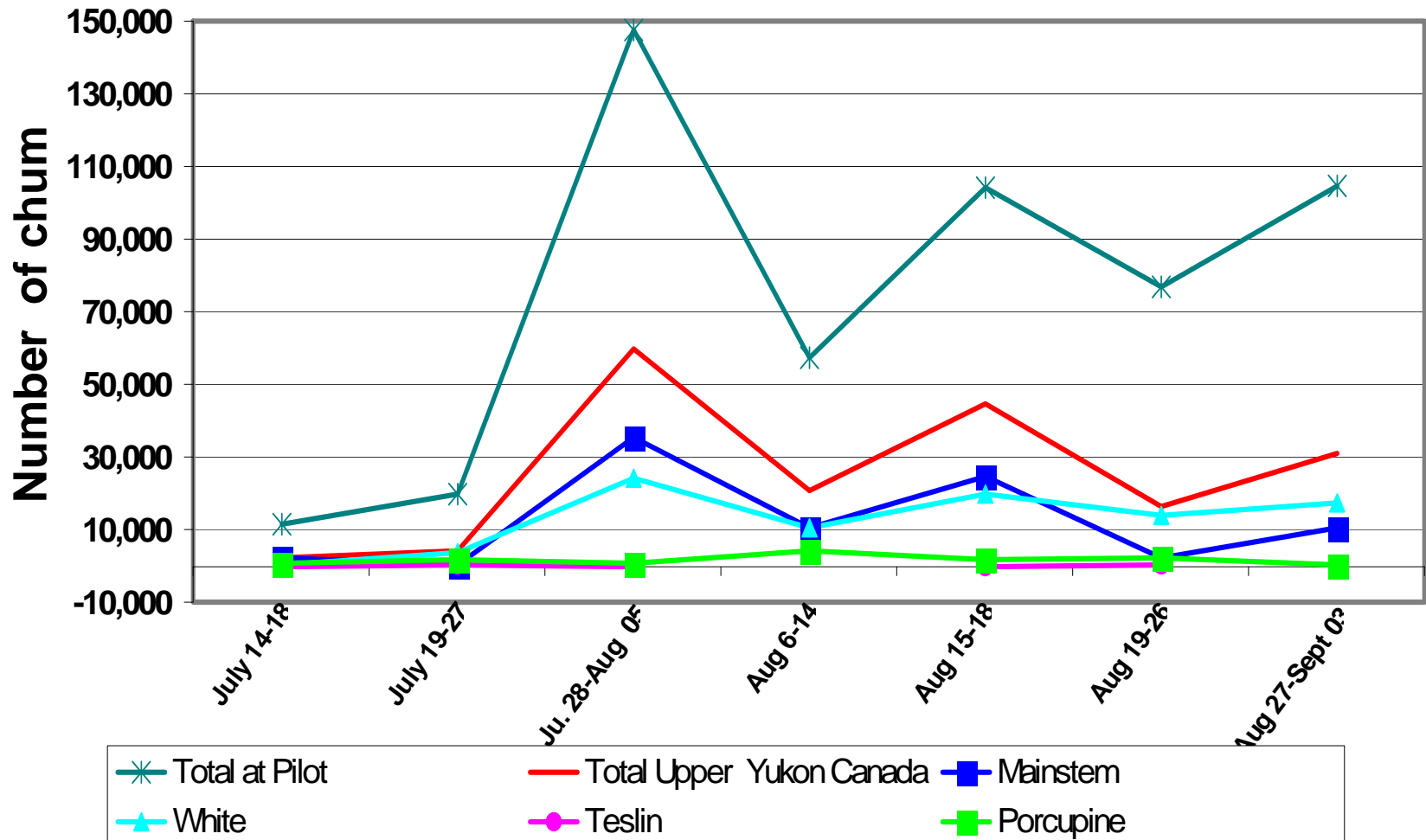
- An above average run outlook of 229,000
- Yukon Panel set escapement goal at >80,000 based on a JTC recommendation
- Number of chum salmon entering Canada was determined from the Eagle sonar program
  - Third year Eagle sonar program counted fall chum salmon
- The 2008 fall chum salmon run was slow developing
- In-season U.S. information was available from:
  - Sonar program located at Pilot Station
  - DNA analyses (USF&WS) for the “pulses” of fish observed at Pilot Station
  - Rampart Rapids fish wheel program in the upper drainage

**Table In-season Pilot Station Chum estimates and USF&WS GSI data to forecast return (by stock) to Canada**

<b>Time Period</b>	<b>Pilot Chum Estimate</b>	<b>Fall Chum Estimate</b>	<b>Cdn Porc</b>	<b>Cdn MS</b>	<b>White</b>	<b>Teslin</b>	<b>Upper Yukon</b>	<b>TOTAL CANADA</b>
June 9-15	26,026	208	26	52	26	0	78	104
June 16-22	248,900	996	0	249	124	124	498	498
June 23-29	480,895	3,847	481	481	240	240	962	1,443
Jn. 30-July 06	605,137	4,841	0	1,815	303	303	2,421	2,421
July 7-13	426,182	17,473	426	1,279	426	0	1,705	2,131
July 14-18	70,970	11,568	923	2,129	71	0	2,200	3,123
July 19-27	72,686	19,625	1,890	363	3,707	73	4,143	6,033
Ju. 28-Aug 05	174,262	147,426	697	35,549	24,048	0	59,598	60,295
Aug 6-14	66,506	57,461	3,990	10,508	10,441	0	20,949	24,939
Aug 15-18	109,131	104,002	1,528	24,773	19,753	0	44,525	46,053
Aug 19-26	79,917	76,640	2,238	2,078	14,065	80	16,223	18,461
Aug 27-Sept 03	113,881	104,771	228	10,591	17,424	2,733	30,748	30,976
Sept 04-07	6,075							
Summer Period	1,858,110							
Fall Period Sampled	616,383	509,925	10,571	83,862	89,438	2,886	176,187	186,758
Summer/Fall Period	2,480,568	548,858	12,427	89,867	90,629	3,553	184,050	196,477

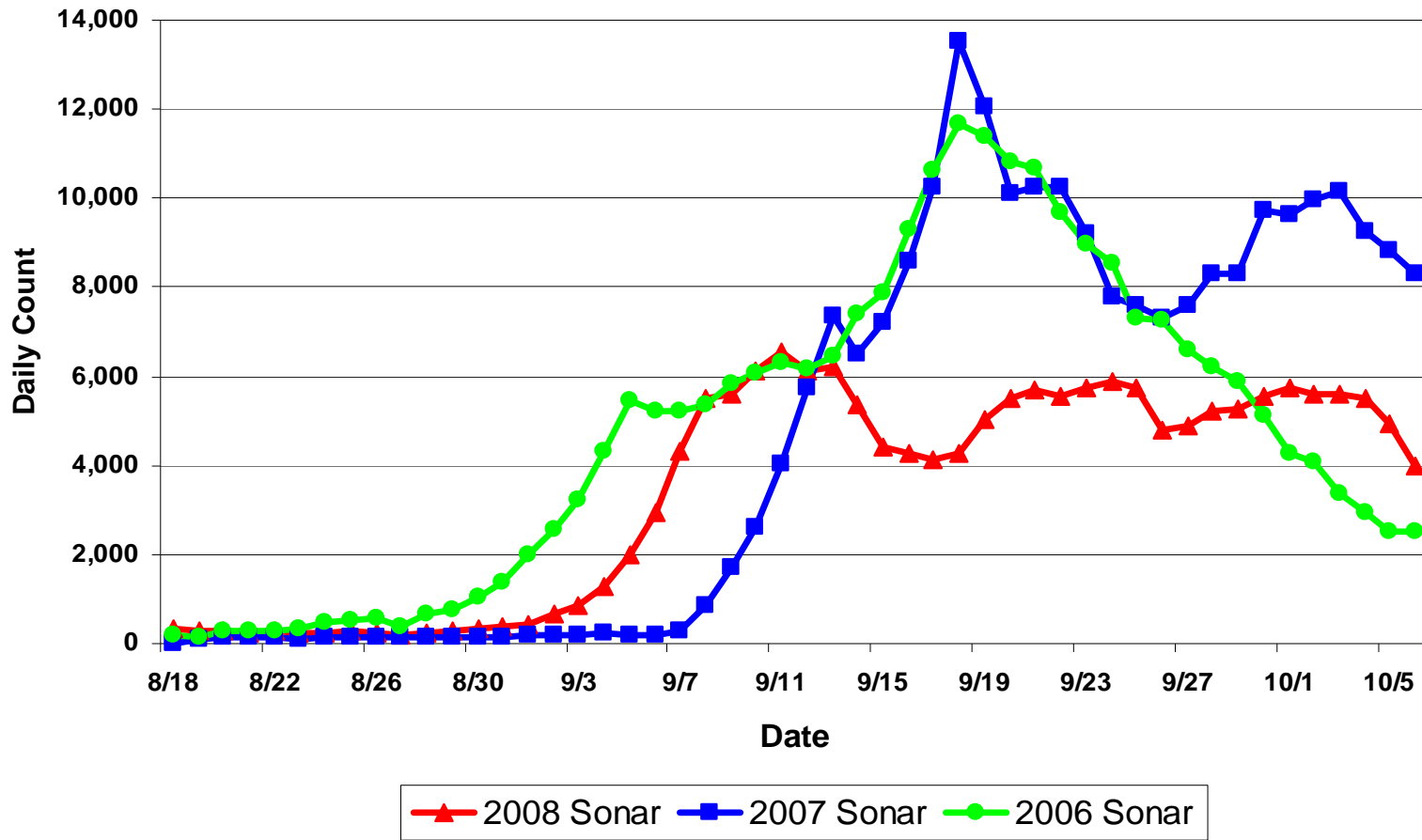
# In-season Fall Chum GSI estimates at Pilot Station

Estimated In-season abundance of Canadian fall chum stocks at Pilot Station in 2008

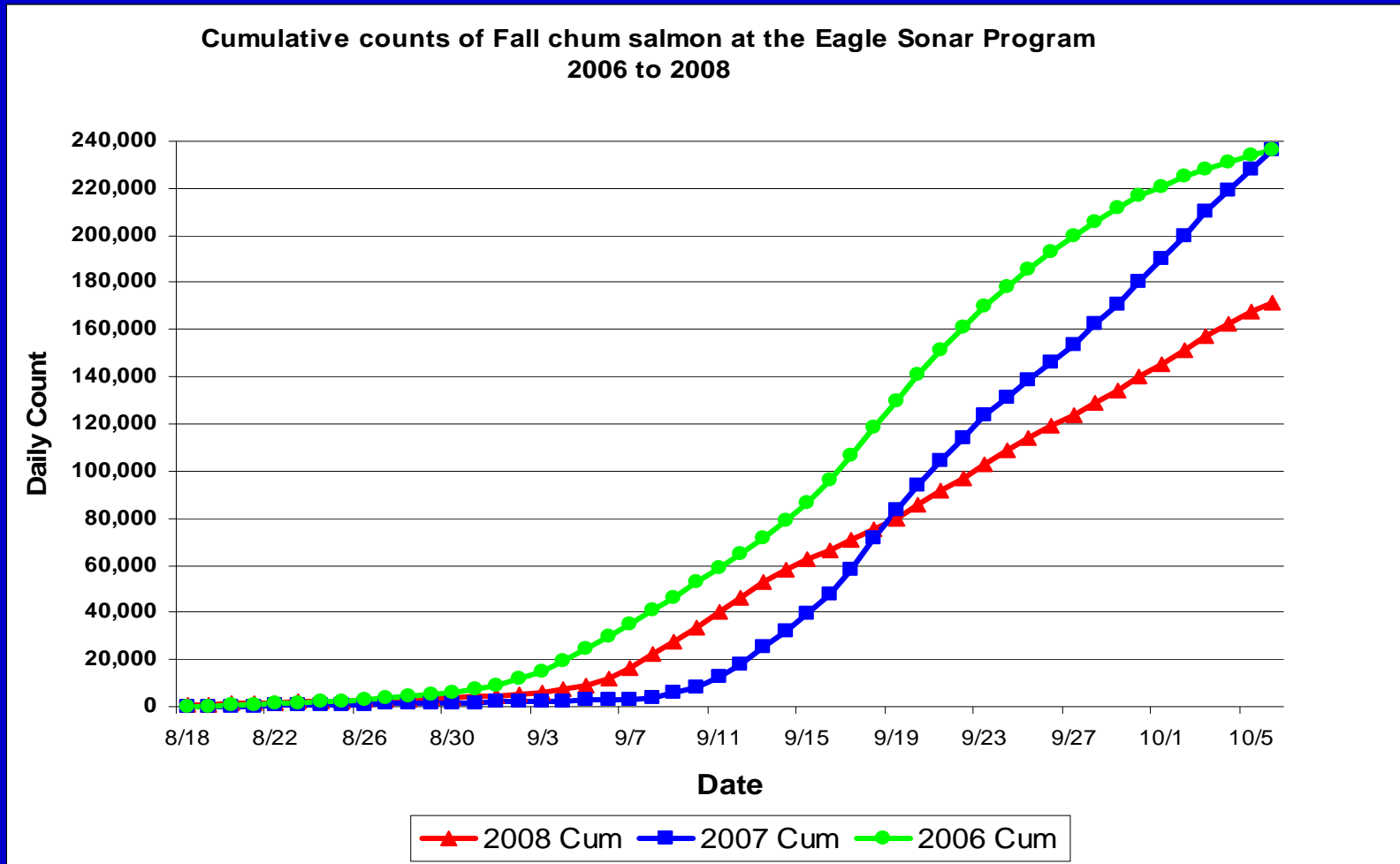


# Daily Eagle sonar count of fall chum

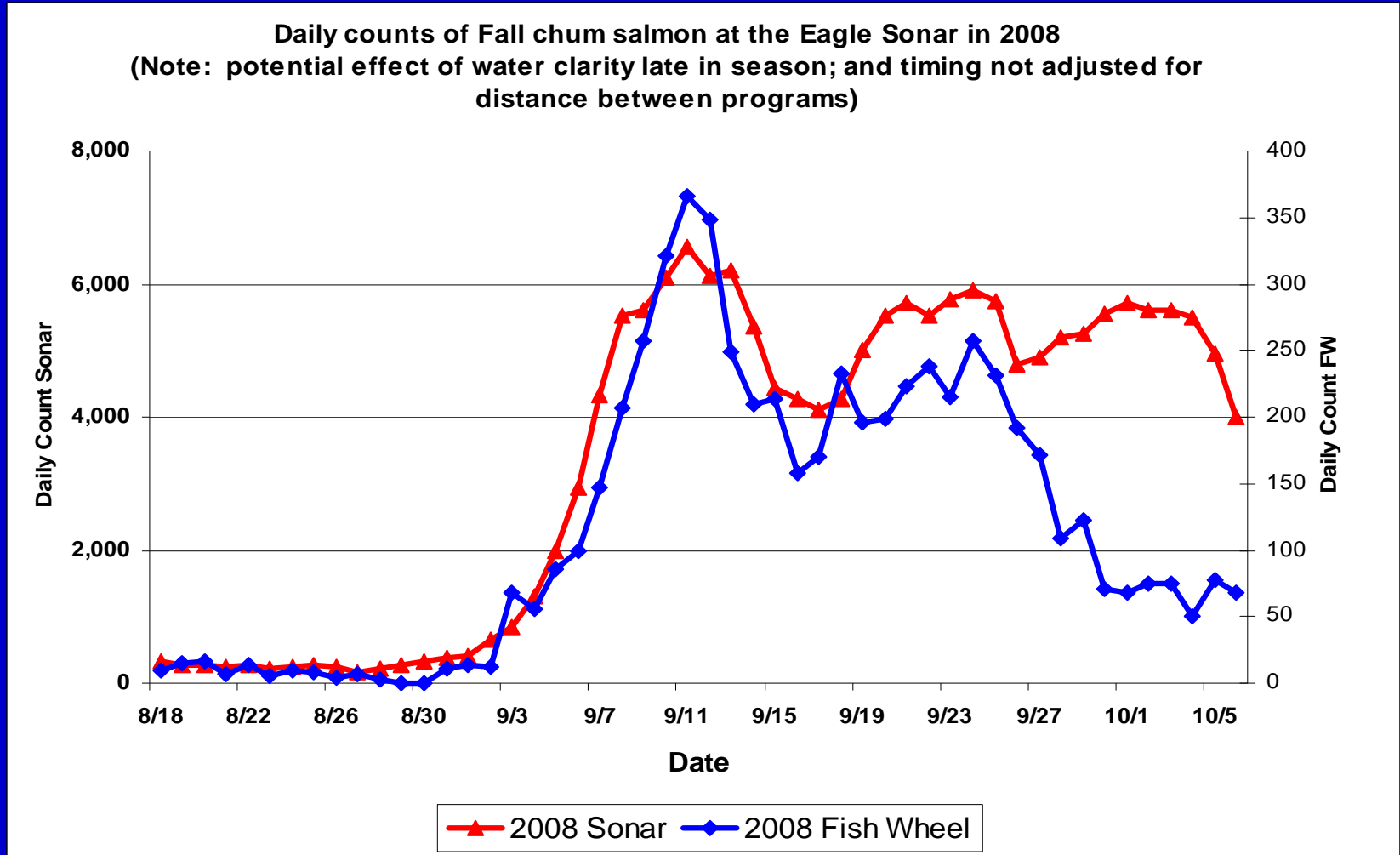
Daily counts of Fall chum salmon at the Eagle Sonar Program  
2006 to 2008



# Cumulative Eagle sonar count of fall chum

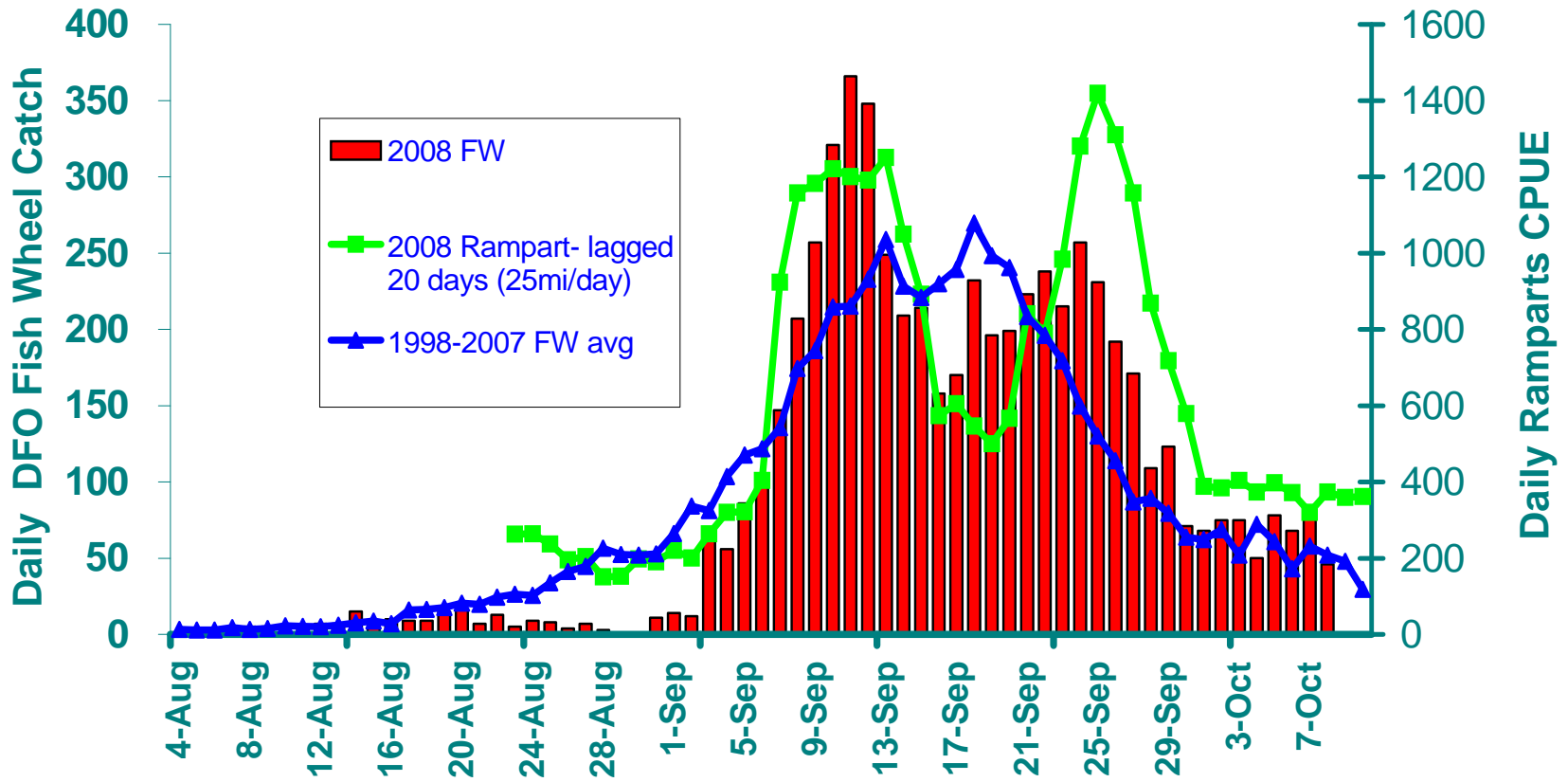


# Daily Sonar count and Fish Wheel catch in 2008



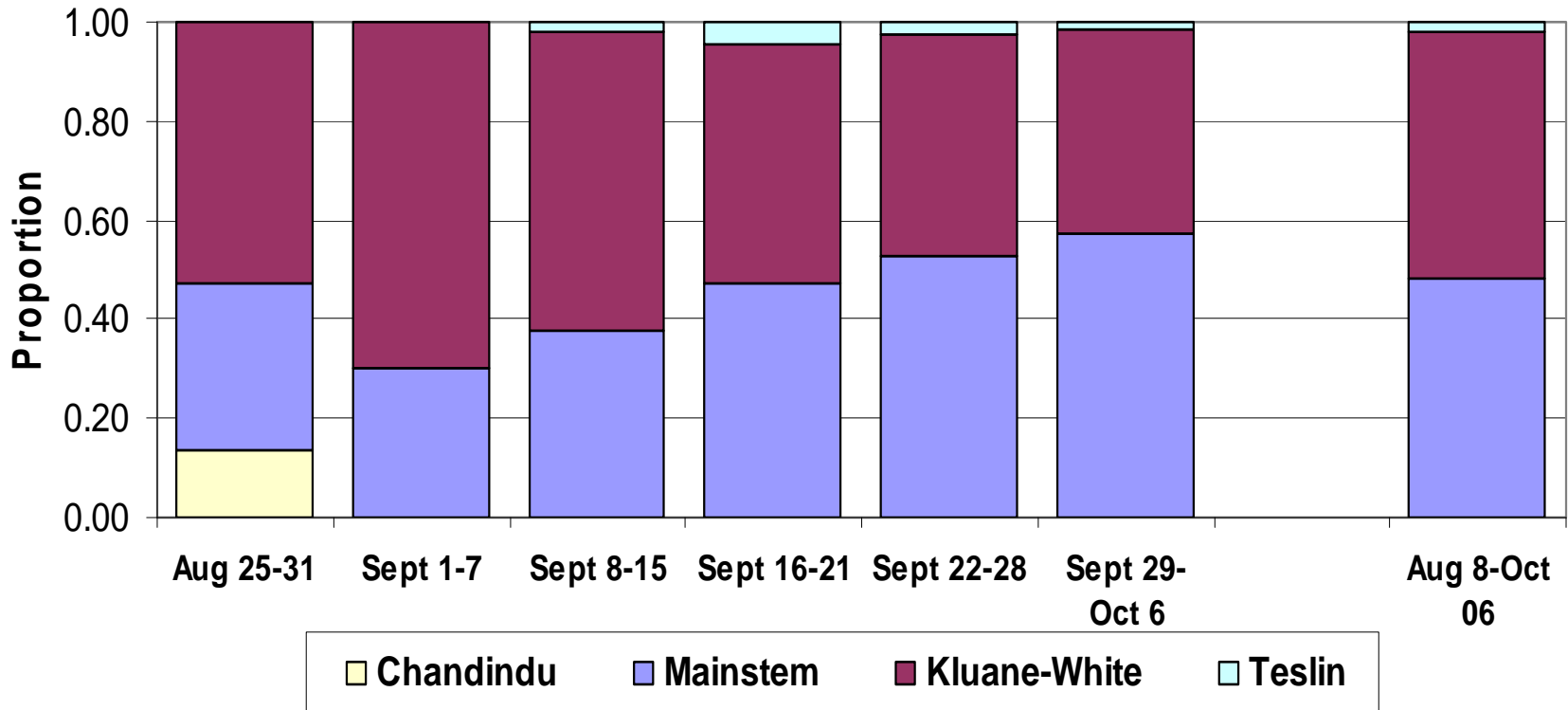
## 2008 Daily Counts of Fall Chum Salmon - Bio Island Fishwheels

( 6,173 caught and 5,992 tagged )



# Fall Chum genetic results weighted by 2008 Eagle Sonar Count

## 2008 Upper Yukon Fall Chum Salmon Timing By Regional Stock Group



# Summary of 2008 Fall Chum Salmon Run

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Eagle Sonar Estimate (171,347 expanded by timing)	191,375
Potential Subsistence Catch near Eagle Ak.	13,000
Can. Border Escapement based on Sonar	178,375
Canadian Catch (comm. 3,905 and FN 2,068)	5,973
Spawning Escapement based on sonar	172,402
Canadian Spawning Escapement Goal	>80,000

- This summary does not include U.S. catches below the community of Eagle Alaska

## Summary of 2008 Canadian Upper Yukon Fall Chum Salmon Fisheries

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- It was apparent from the Pilot Station and Eagle sonar programs that the Upper Yukon fall chum salmon run was of sufficient strength to meet the escapement goal and provide fishing opportunities
- Management response to the run strength was as follows:
  1. Commercial and domestic fisheries were opened earlier (Aug 31) in the 2008 season than usual.
    - Five fishery periods: fisheries were open for a continuous 4 week period from Sept 19-October 17
  2. Restrictions were not imposed on aboriginal fisheries
- Live-release test fishery (fish wheels) was not used in 2008

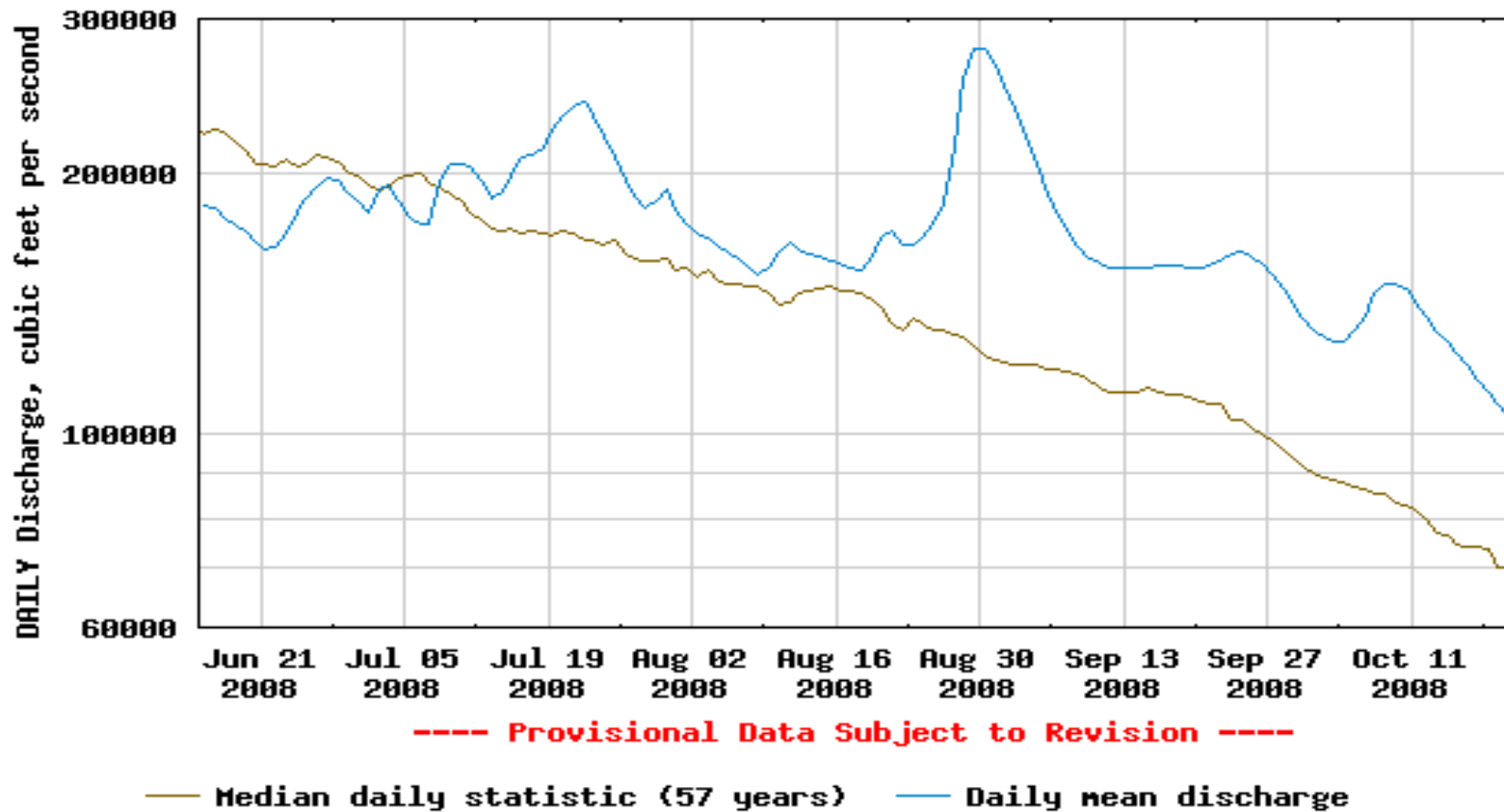
## Preliminary Fall Chum Catch Summary: Upper Yukon and Porcupine

	Aboriginal	Com	Dom	Sport	Test	Total Upper Yukon	Porcupine Aboriginal
2008	2,068	3,905	0	0	0	5,973	3,436
10-yr avg.	2,473	6,279	2	0	(1,580)	8,126	3,847

# High Water Conditions throughout 2008



USGS 15356000 YUKON R AT EAGLE AK



## Additional Comments- 2008 Upper Yukon Chum Salmon

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- Higher than average numbers of chum salmon were migrating when the sonar and tagging programs ended in early October- this is similar to 2007
- A mark-recapture estimate will be calculated post-season
- There was good agreement between the Eagle sonar and mark-recapture estimates in 2006 and 2007

## Preliminary Coho Catch Summary: Upper Yukon and Porcupine

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	Aboriginal	Com	Dom	Sport	Test	Total Upper Yukon	Porcupine Aboriginal
2008	0	0	0	0	0	0	200*
10-yr avg.	0	2	0	2	0	4	249

\* fishing has hampered by ice conditions

# 2008 Porcupine River Chum Salmon Highlights

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- Yukon Panel set an IMEG of 22,000-49,000 for Fishing Branch River for 2008-2010 period
  - Previous longstanding goal was 50,000 to 120,000
- In-season genetic data from Pilot Station suggested Fishing Branch run was weak
- Porcupine mark-recapture estimate was 21,724 (95% confidence interval 16,556-26,892)
- Weir counts expanded by timing data suggested lower end of escapement goal would be achieved as late as October 03
- Fishing Branch weir count of 18,551 to October 11 was been expanded to 20,055.

# Fishing Branch River weir

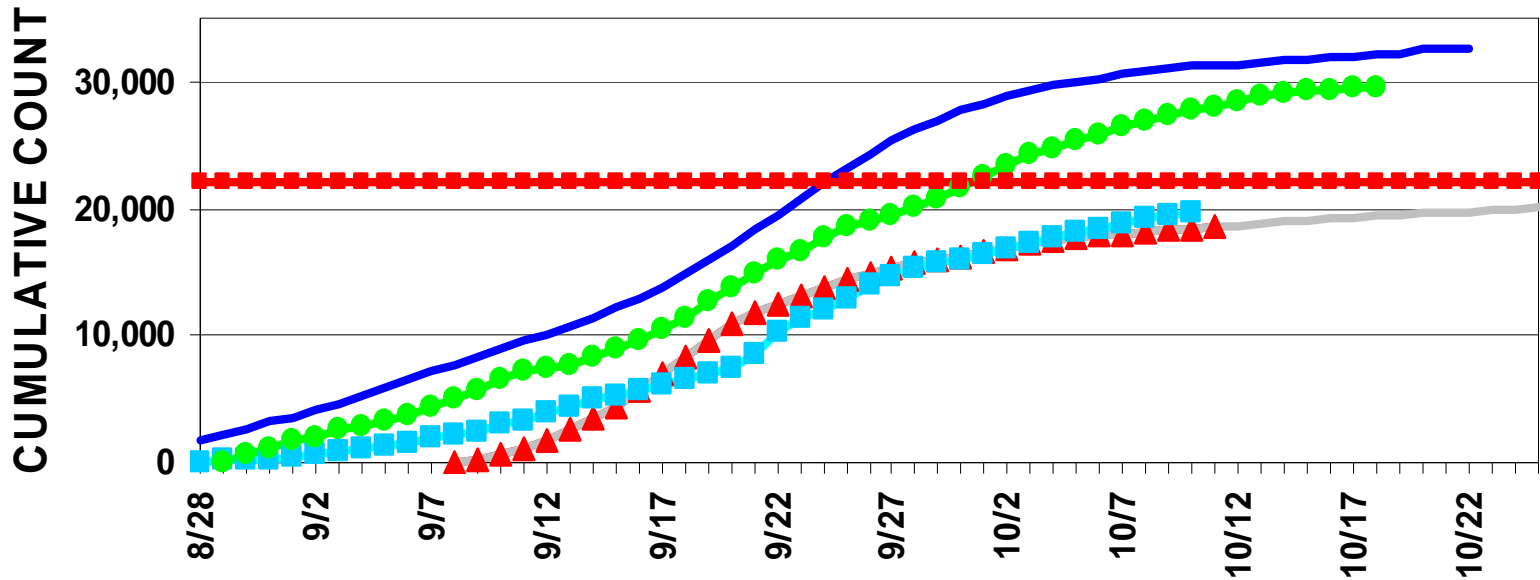
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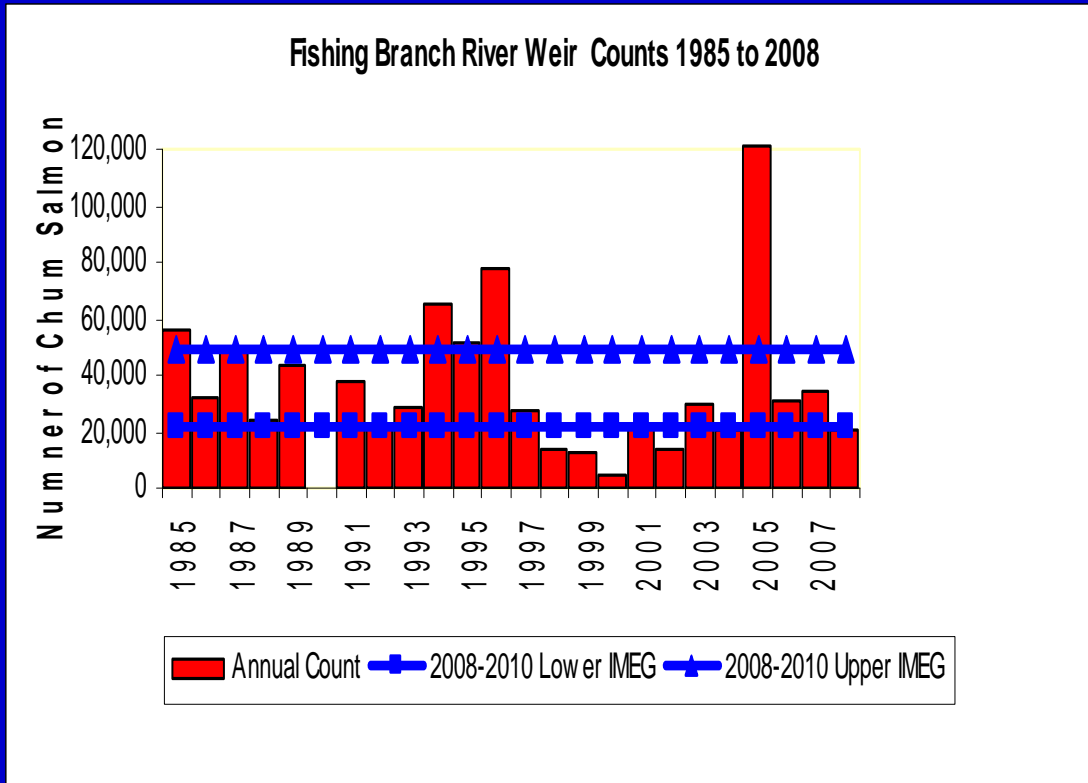
# 2008 Cumulative Fishing Branch River Weir Count

(count to Oct 11 (18,551) was expanded to 20,055)

## Cumulative Counts of Chum Salmon at the Fishing Branch Weir, 2008



# Fishing Branch Weir Counts





# The End



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## Aboriginal fish camp on the Pelly River



- Preliminary U.S. share estimate of 18,700 to 22,400
- Outlook was 80,000 to 111,000