

AYK Region Chum and Chinook Salmon Stock Status And relation to BSAI Chinook Bycatch



NPFMC Salmon bycatch Workshop

Anchorage, Alaska

March 26, 2007

Gene J. Sandone

Goals of Presentation

- ✓ **Description of the AYK Region**
- ✓ **AYK Stocks of Concern**
- ✓ **Other AYK Salmon Stocks**
- ✓ **Trends in BSAI Chinook Bycatch**

“Stocks of Concern”

- **Yield Concern**
- **Management Concern**
- **Conservation Concern**

(Sustainable Salmon Fisheries Policy, 2001)

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AYK REGION SALMON STOCKS OF CONCERN DESIGNATIONS

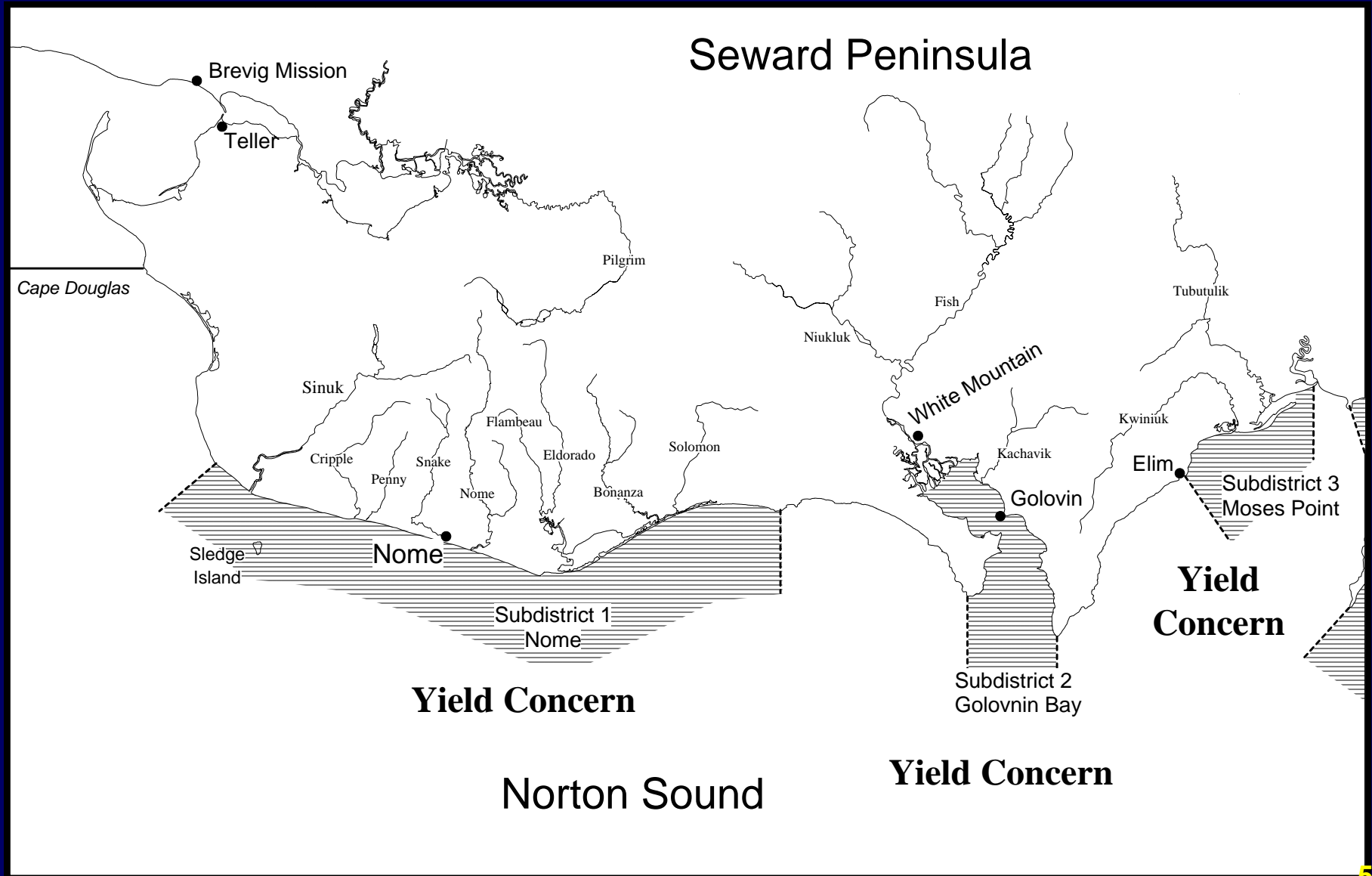
Area, District, or Subdistrict	Salmon Species or Stock	LEVEL OF CONCERN		
		2001	2004	2007
Norton Sound				
Subdistrict 1	Chum Salmon	Management	Management	Yield
Subdistricts 2 and 3	Chum Salmon	Yield	Yield	Yield
Subdistricts 5 and 6	Chinook Salmon	Yield	Yield	Yield

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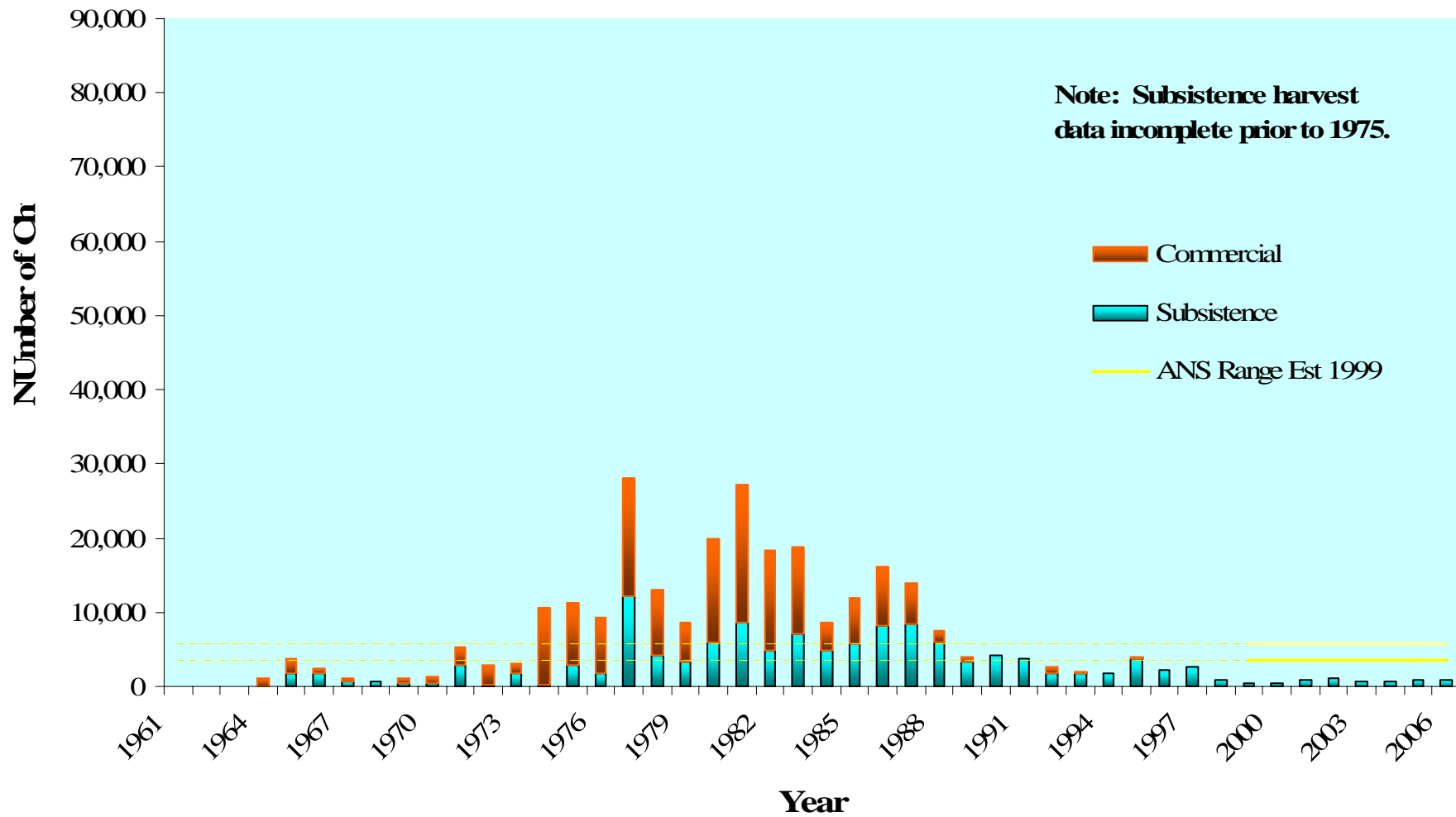
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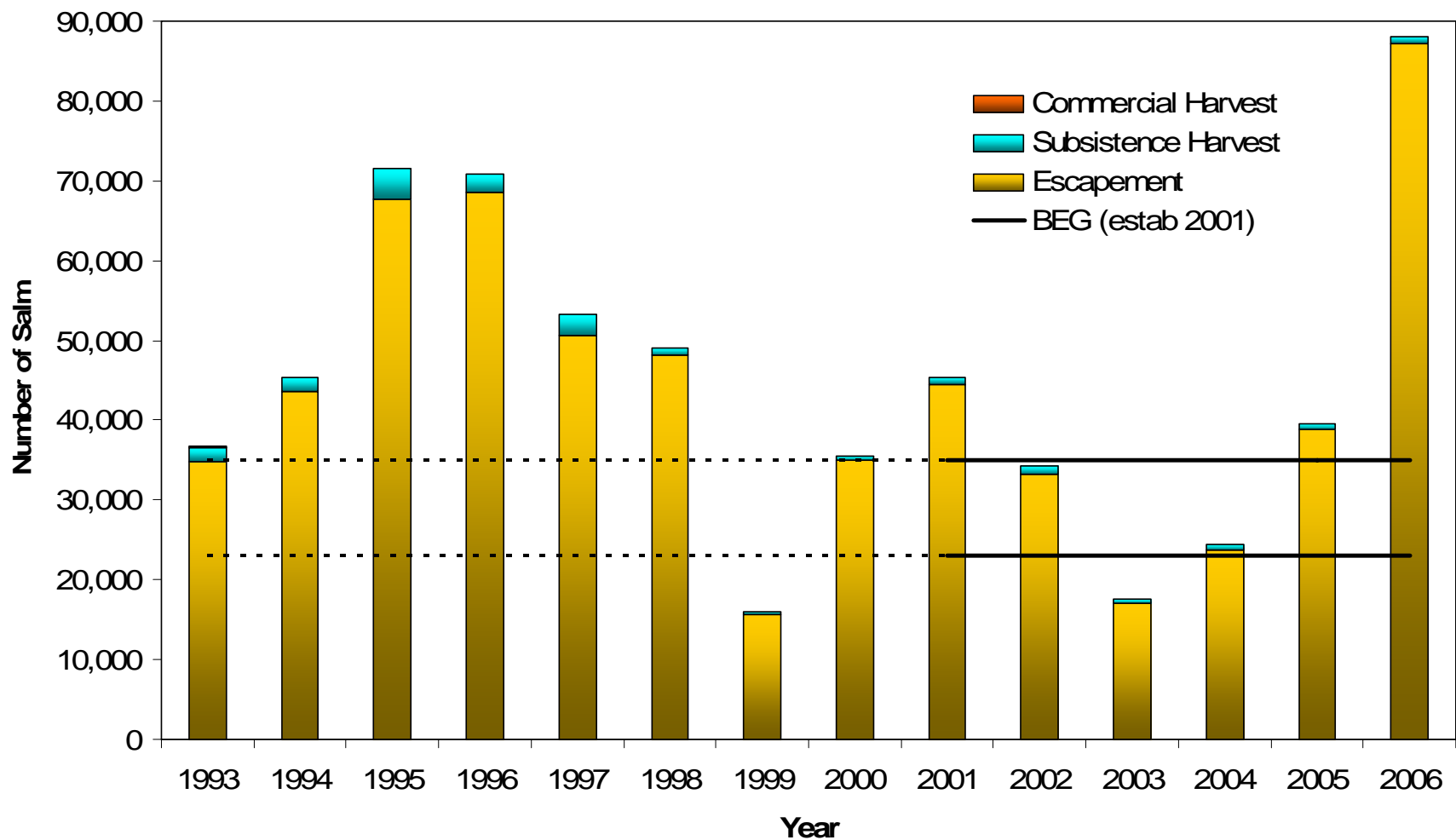
Northern Norton Sound Area Rivers



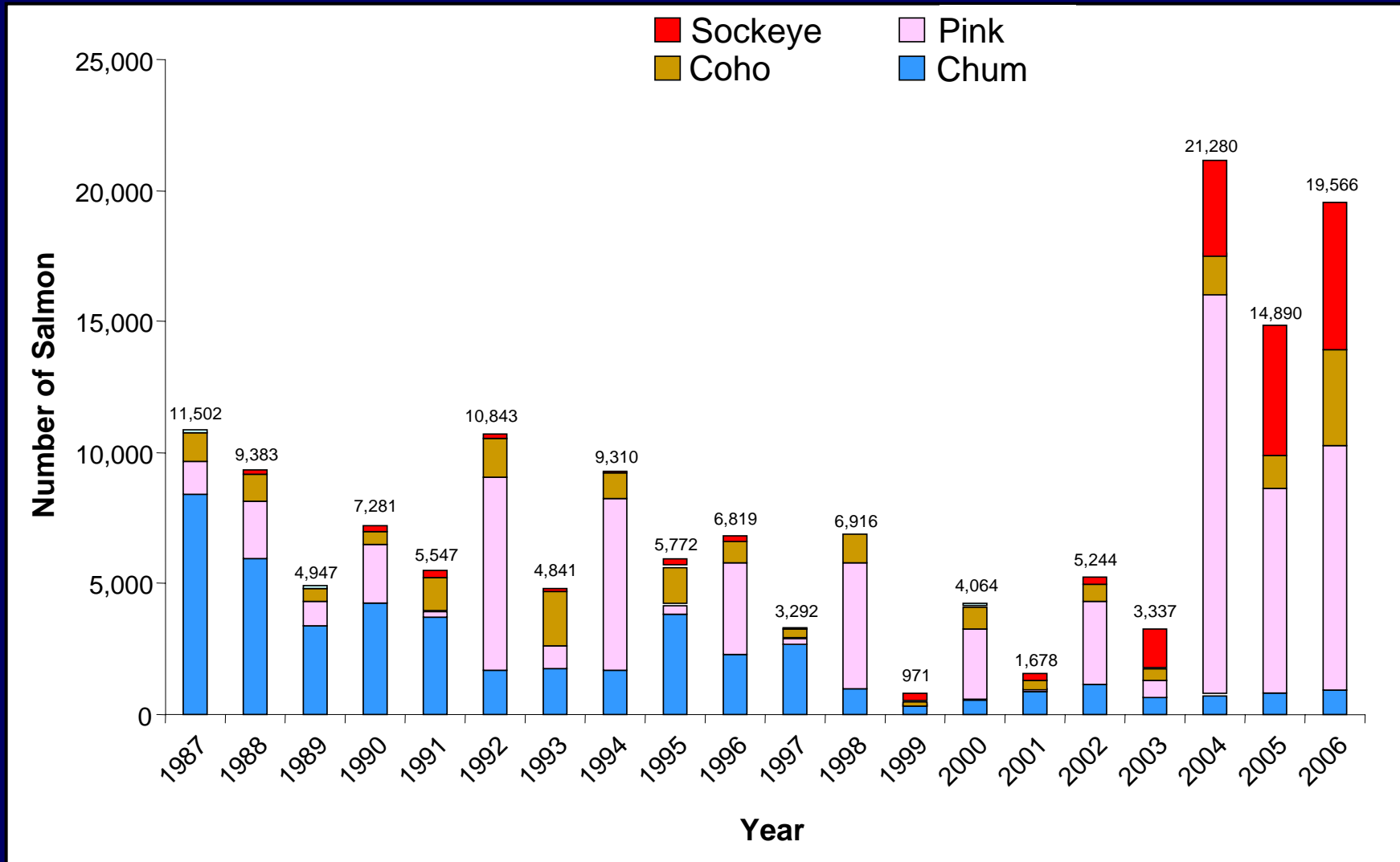
Nome Subdistrict Chum Salmon Harvest, 1961-2006.



Nome Subdistrict Chum Salmon Total Run Size by Harvest and Escapement, 1993-2006.



Nome Subdistrict and Pilgrim River Subsistence Harvest, 1993-2006.

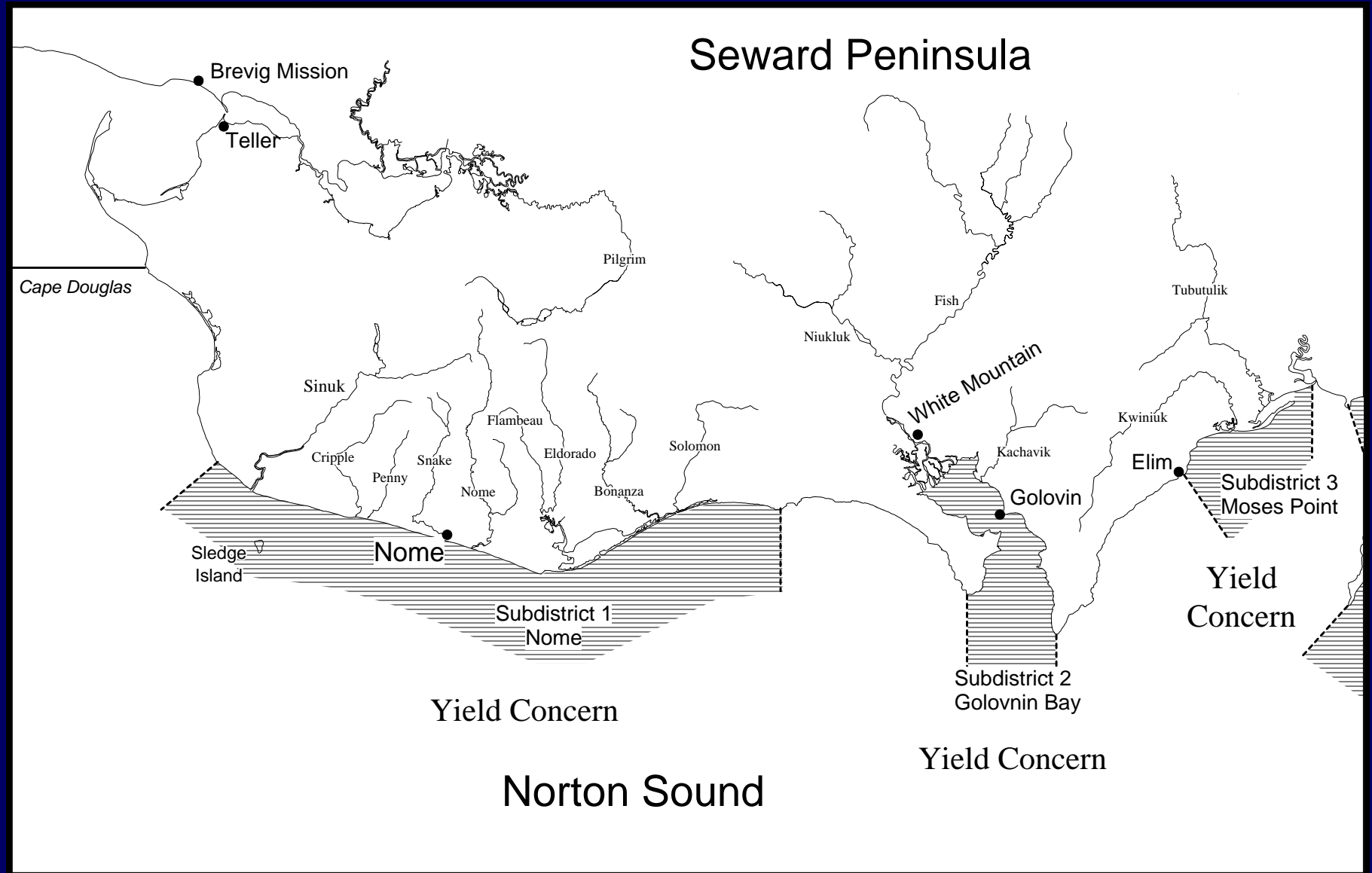


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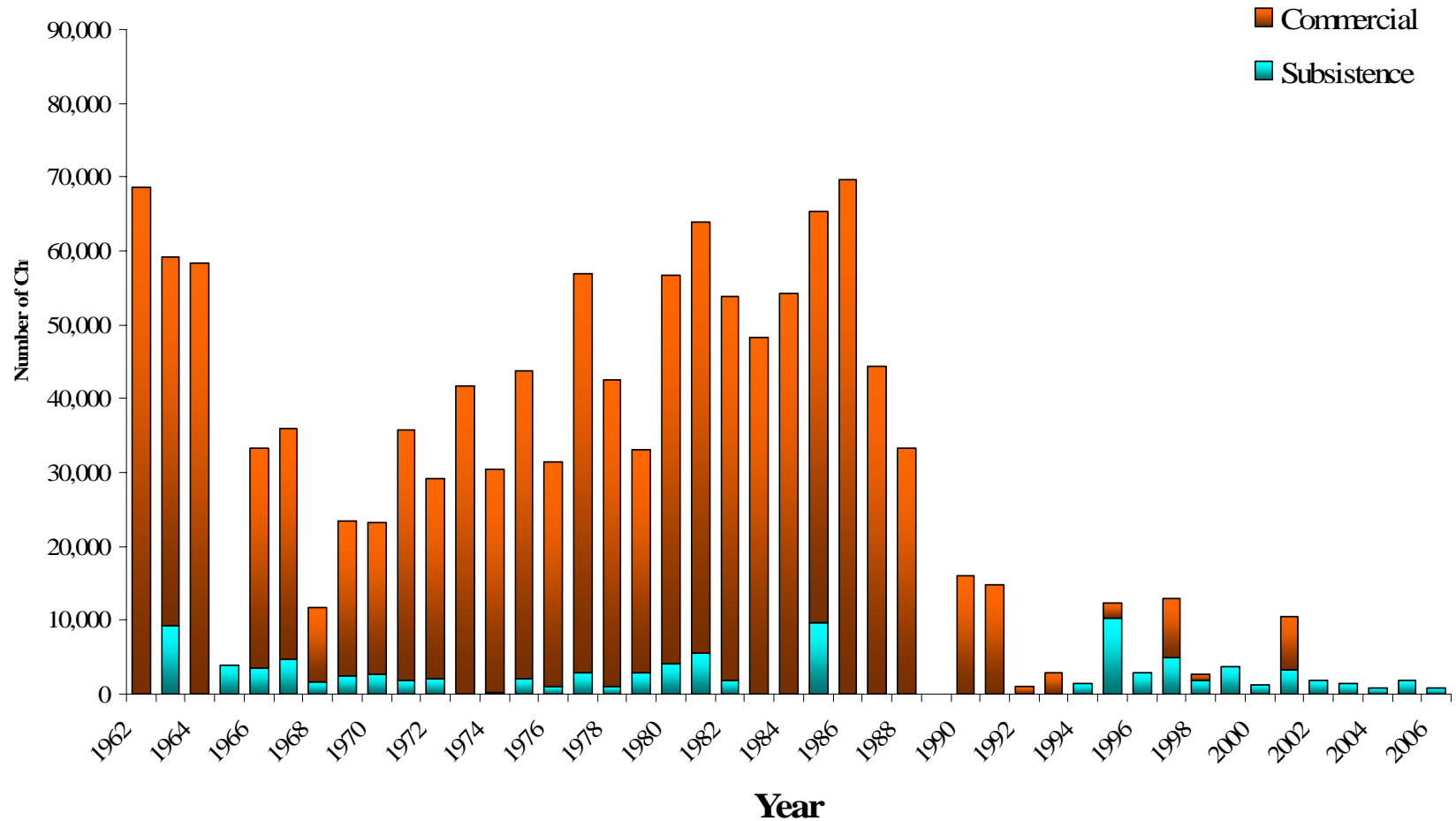
AYK REGION SALMON STOCKS OF CONCERN DESIGNATIONS

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Subdistricts 2 and 3	Chum Salmon	Yield	Yield	Yield

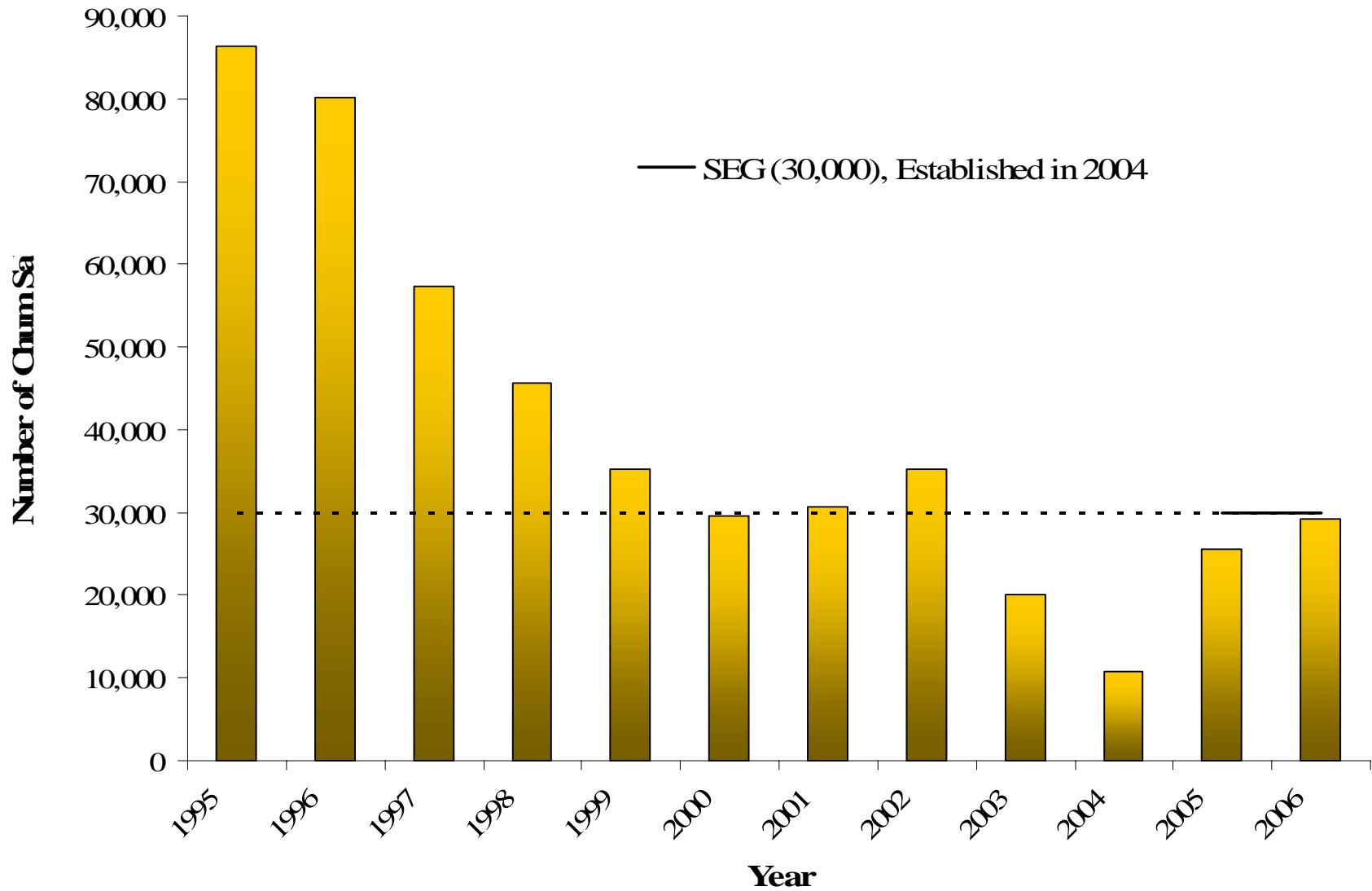
Northern Norton Sound Area Rivers



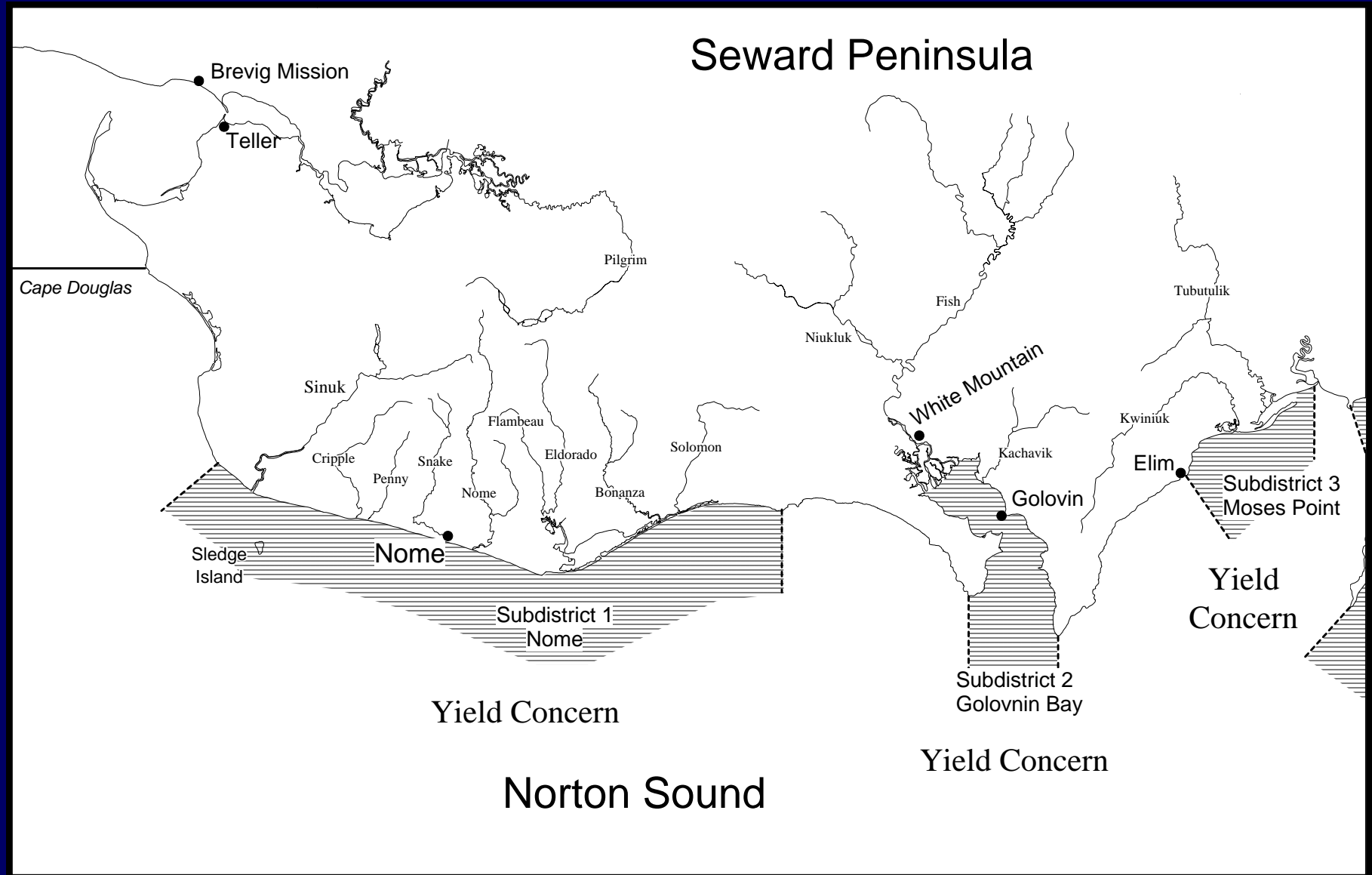
Subdistrict 2 (Golovin) Commercial and Subsistence Chum Salmon Harvest, 1962-2006.



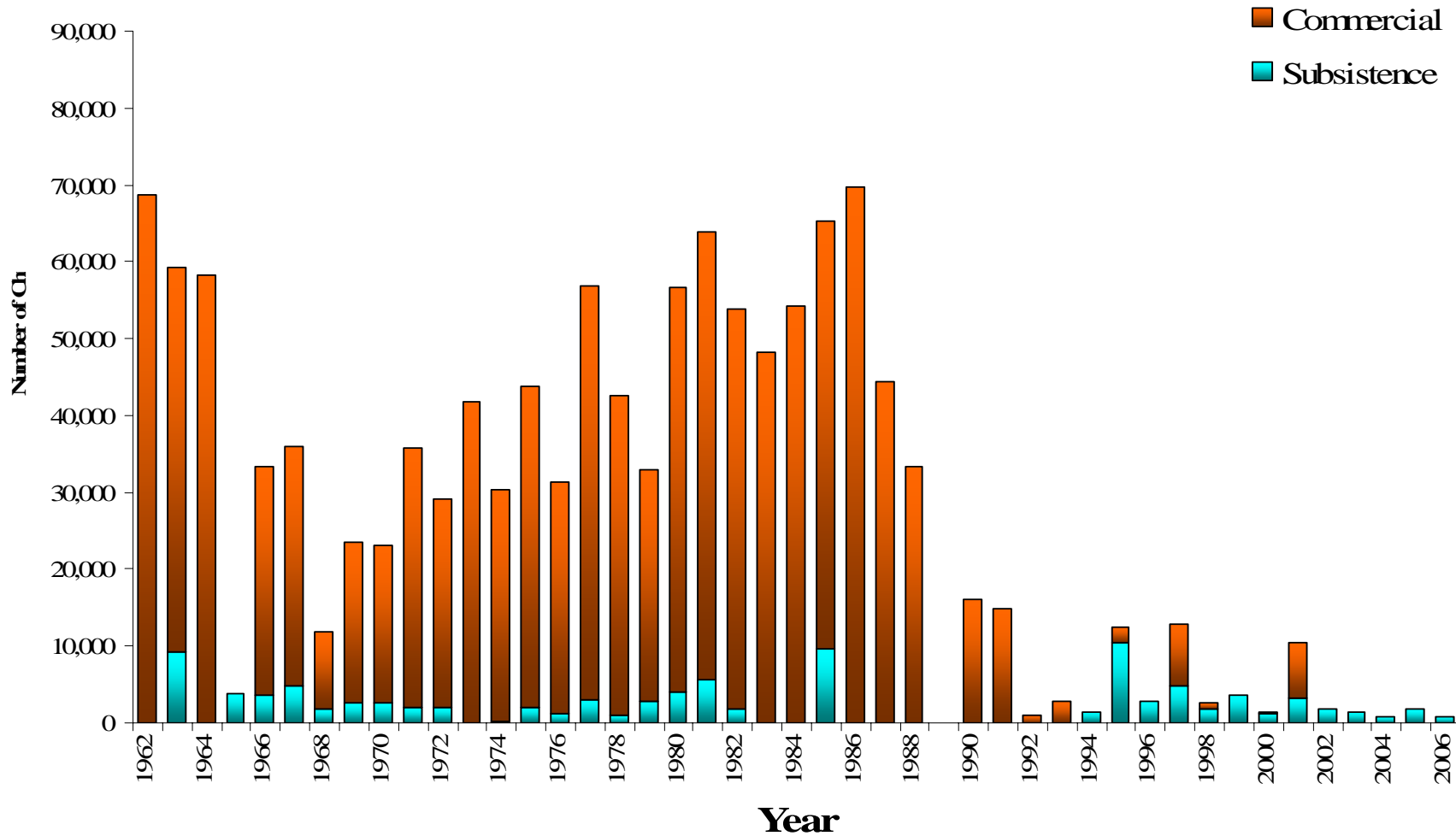
Niukluk River (Subdistrict 2) Chum Salmon Escapement, 1995-2006.



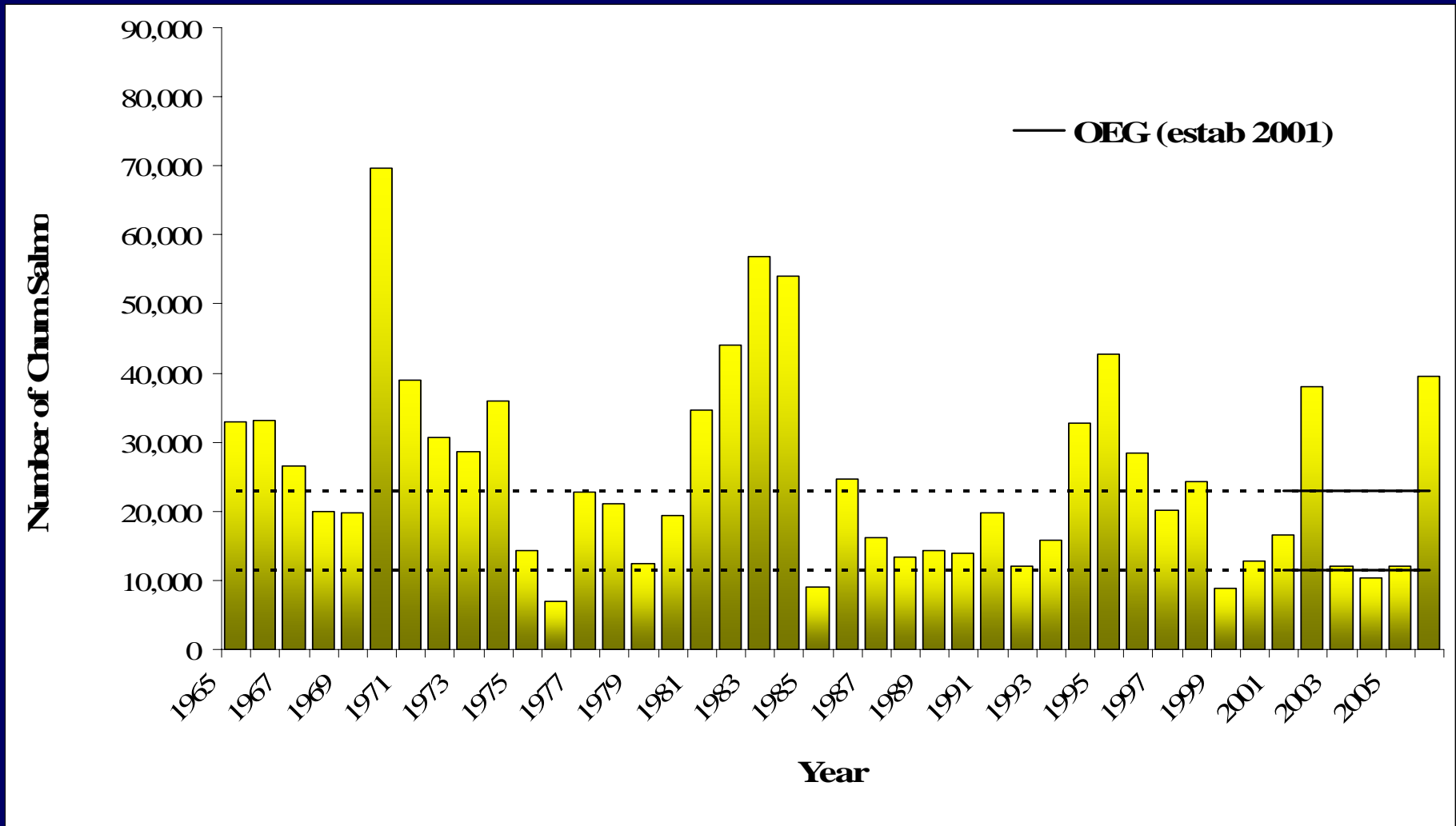
Northern Norton Sound Area Rivers



Subdistrict 3 (Moses Pt.) Subdistrict Commercial and Subsistence Chum Salmon Harvest, 1962-2006.



Kwiniuk River (Subdistrict 3) Chum Salmon Escapement, 1965-2006.

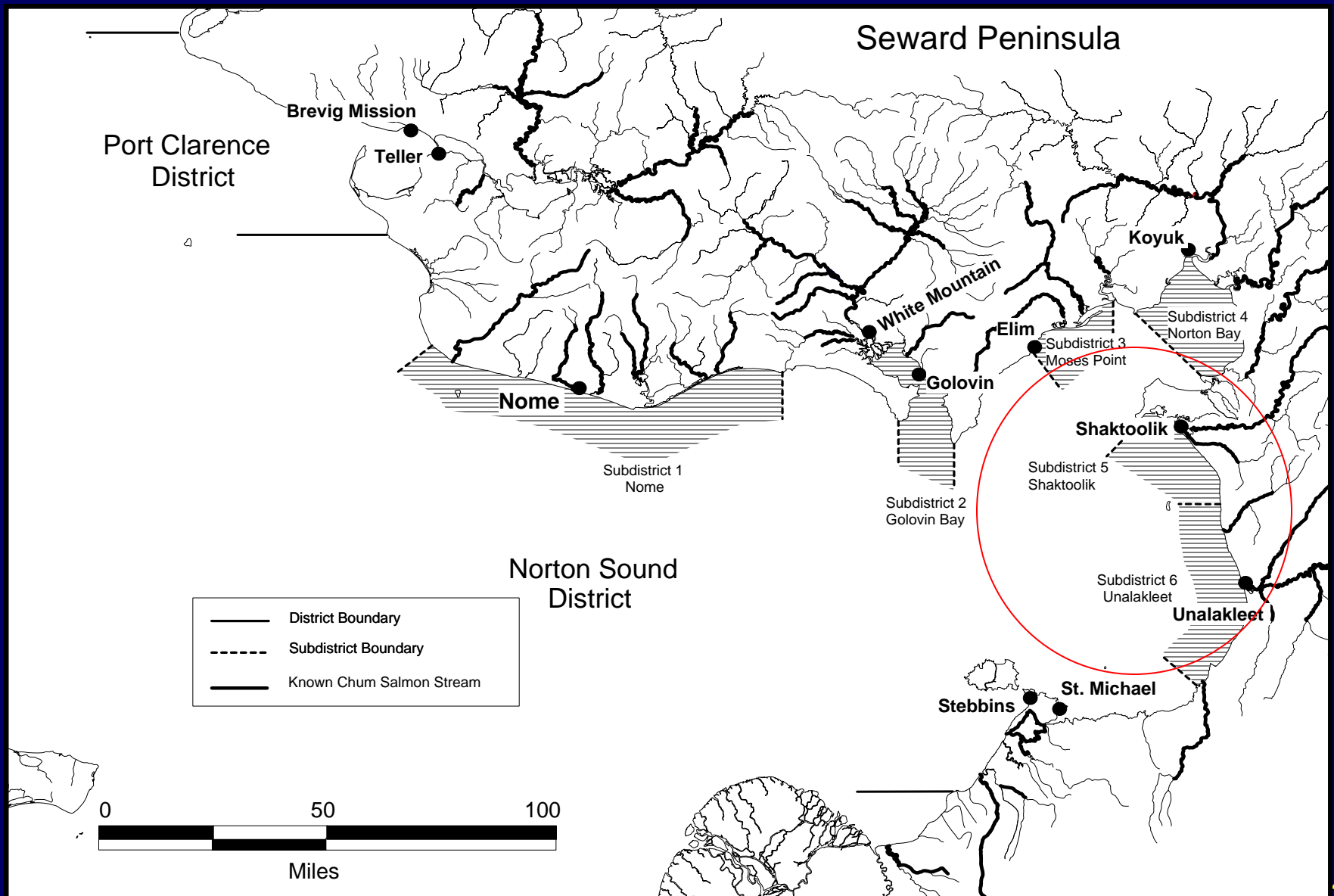


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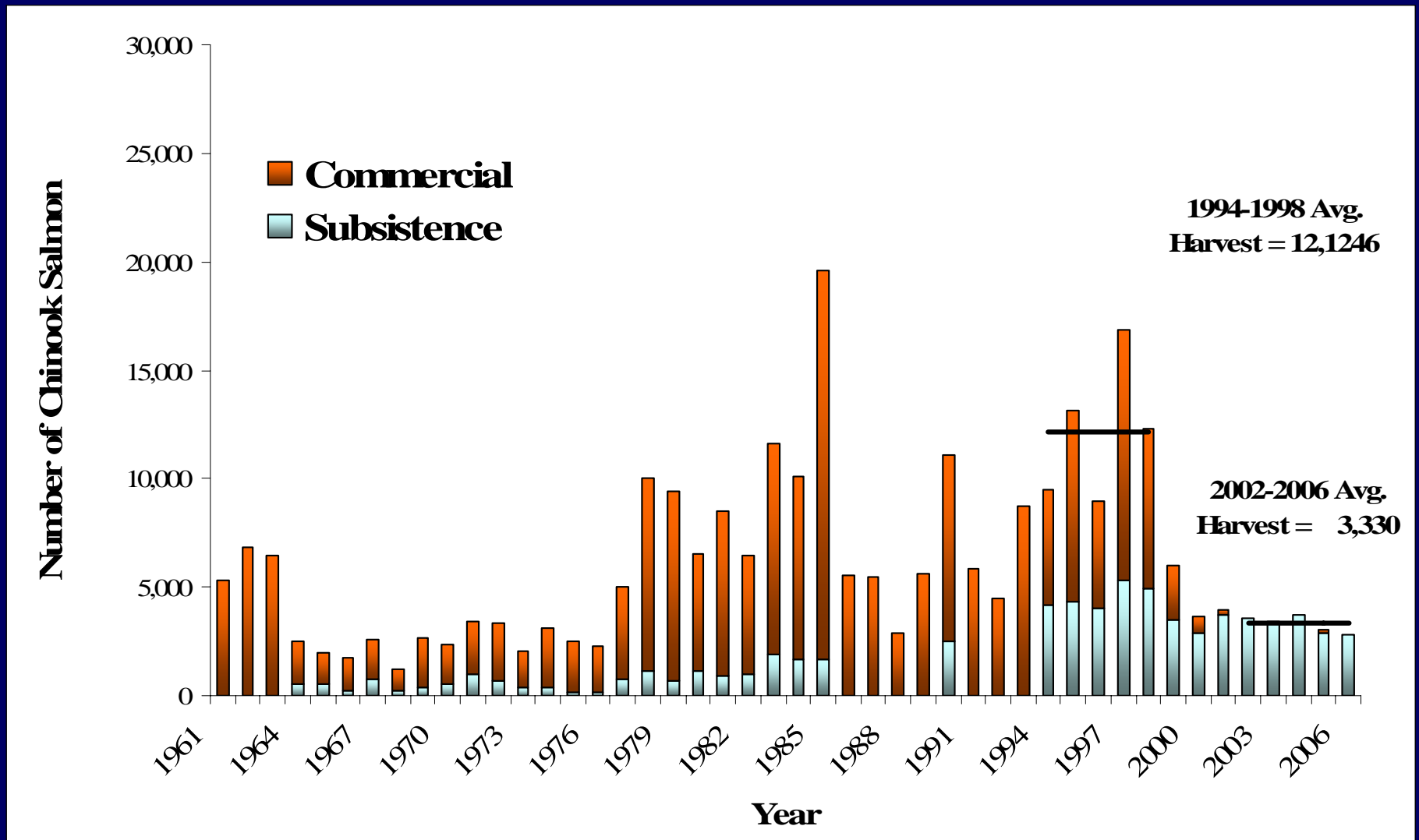
AYK REGION SALMON STOCKS OF CONCERN DESIGNATIONS

Area, District, or Subdistrict	Salmon Species or Stock	LEVEL OF CONCERN		
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Norton Sound				
Subdistricts 5 and 6	Chinook Salmon	Yield	Yield	Yield

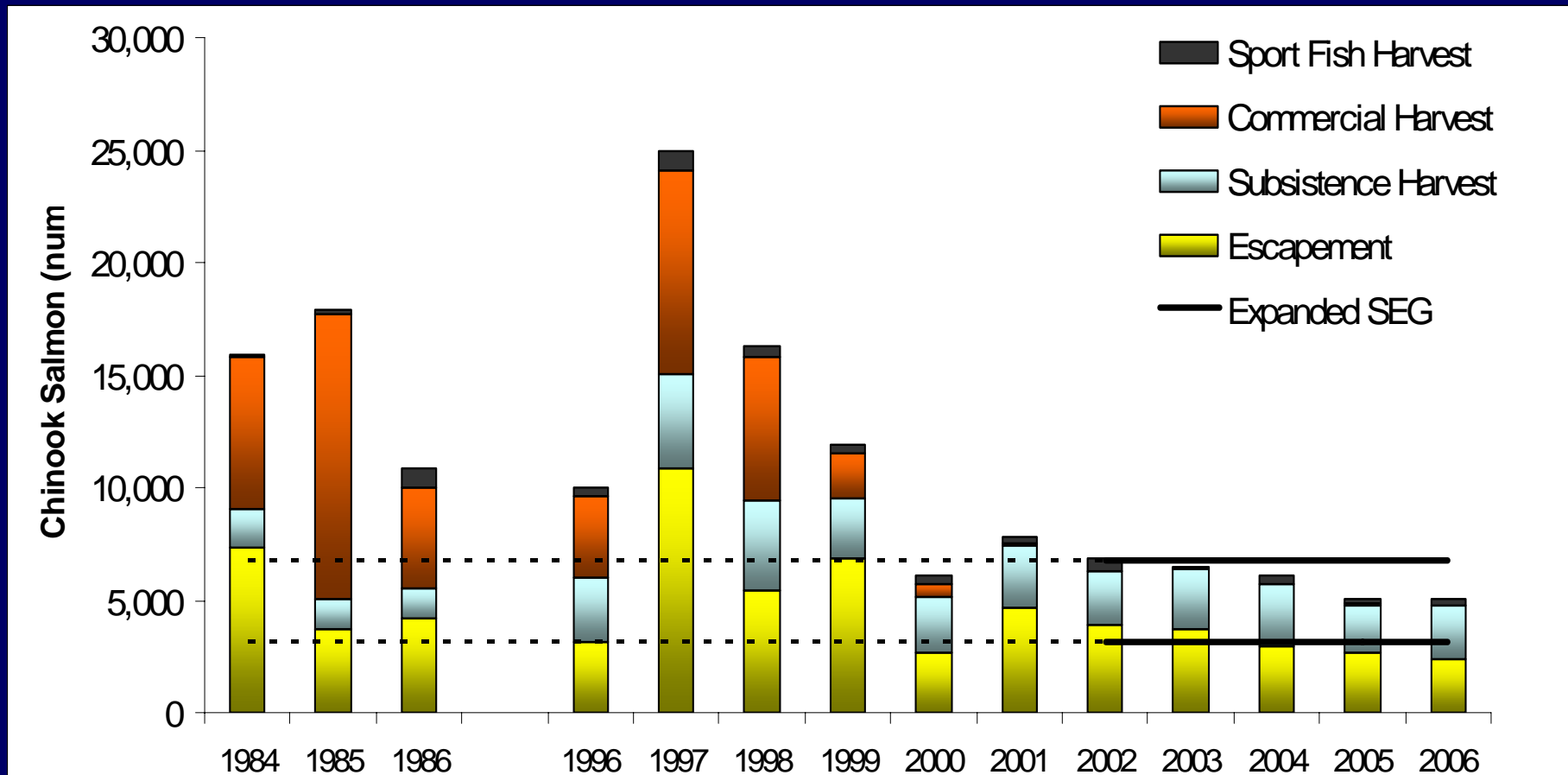
Norton Sound Commercial Salmon Fishing Districts and Subdistricts.



Subdistricts 5 (Shaktoolik) & 6 (Unalakleet) Commercial and Subsistence Chinook Harvest, 1961-2006.



Total Unalakleet River Chinook Salmon Run Size by Harvest and Escapement, 1996-2006



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AYK Region



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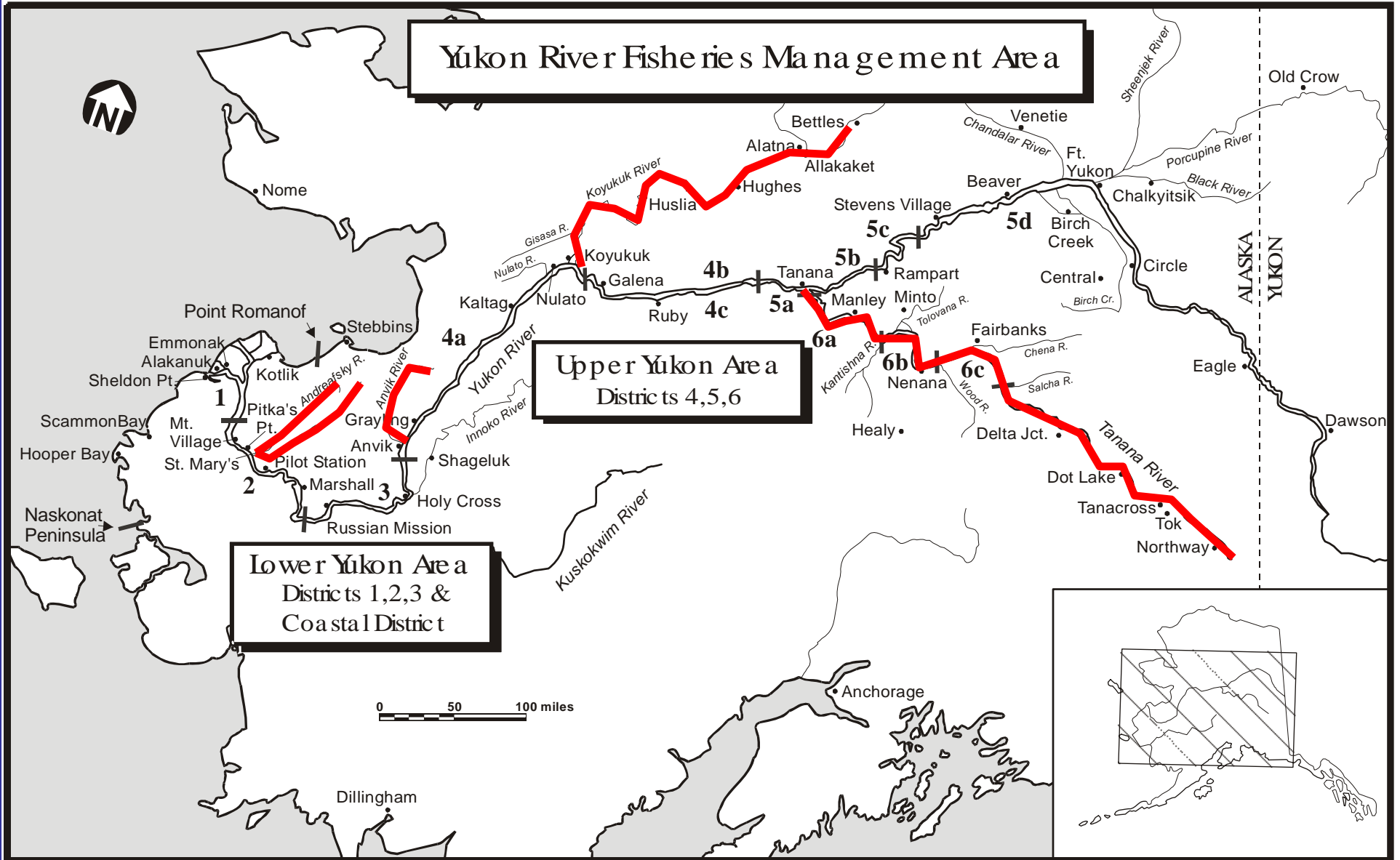
YUKON RIVER SALMON STOCKS OF CONCERN DESIGNATIONS

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Yukon River				
	Summer Chum Salmon	Management	Management	
	Fall Chum Salmon	Yield	Yield	
	Chinook Salmon	Yield	Yield	Yield

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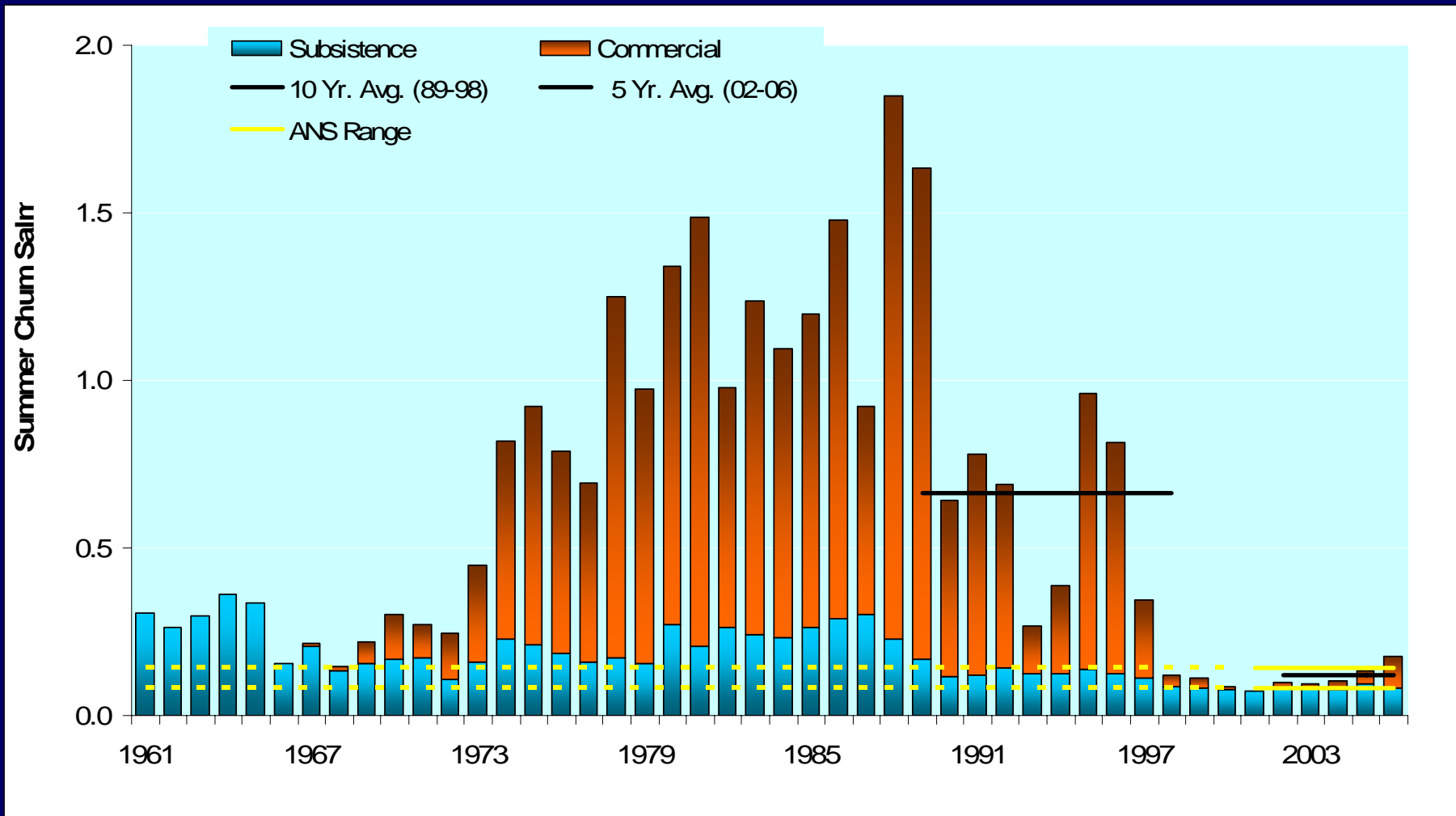
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Yukon River				
	Summer Chum Salmon	Management	Management	

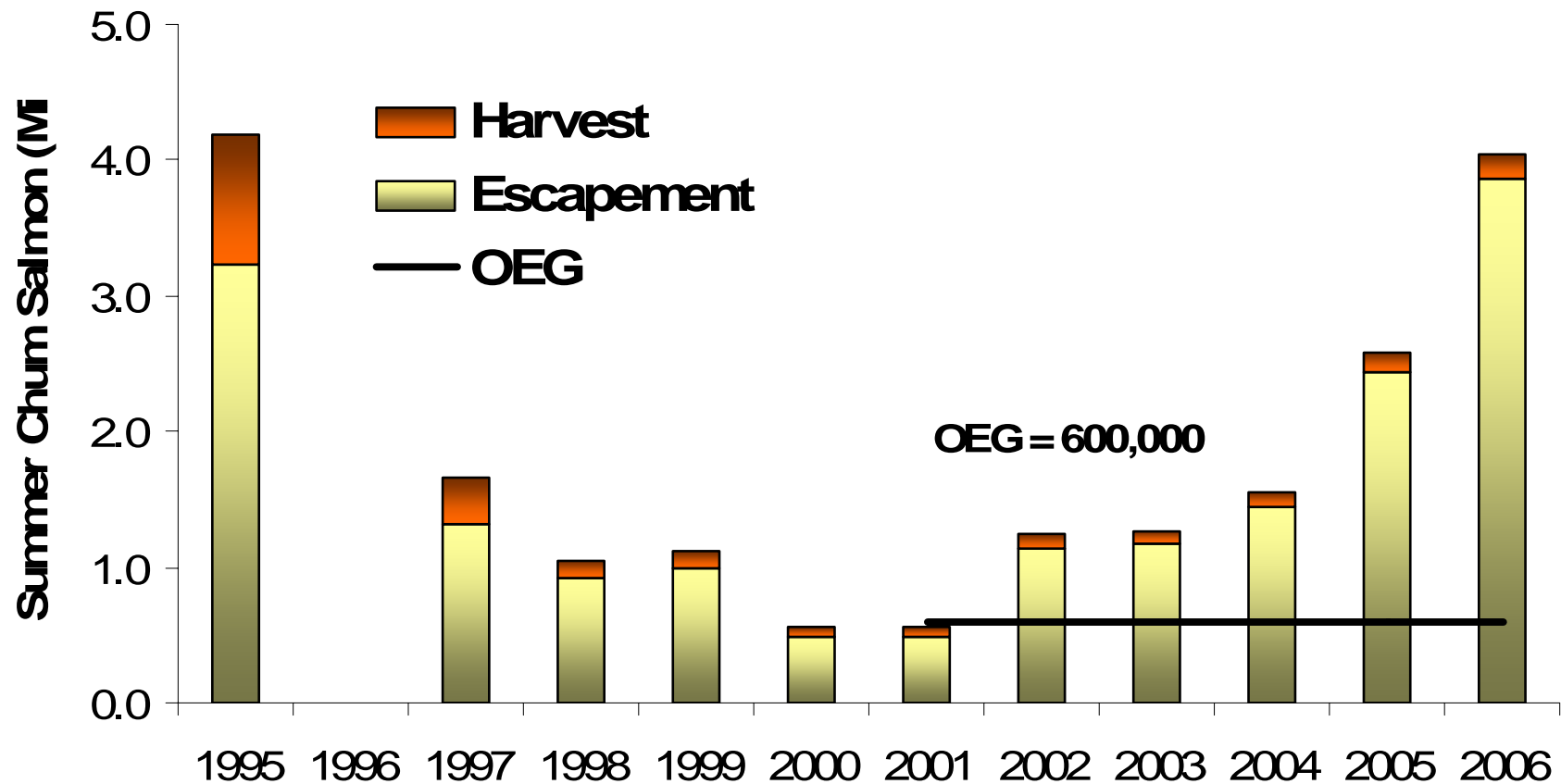


Alaska portion of the Yukon River drainage showing communities and fishing districts.

Yukon River Subsistence and Commercial Summer Chum Harvest 1961-2006

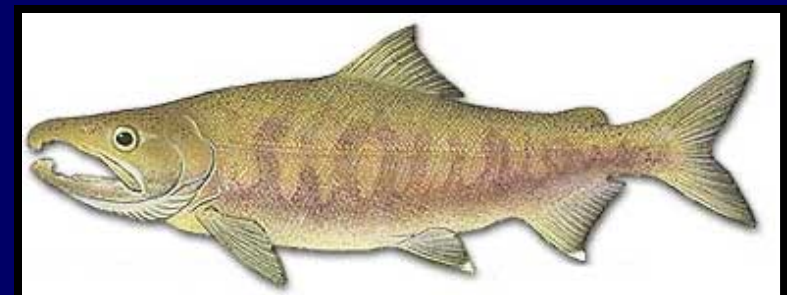


Yukon River Summer Chum Total Run



Summer Chum Tributary Escapement

- Anvik River
 - SEG achieved in 4 out of the last 5 years
- Gisasa River/ Koyukuk River Drainage
 - Record Escapements
 - 2005 – (172,259)
 - 2006 – (225,225)
- Salcha River/ Tanana River Drainage
 - Record Escapements
 - 2005 – (193,085)
 - 2006 – (111,869)

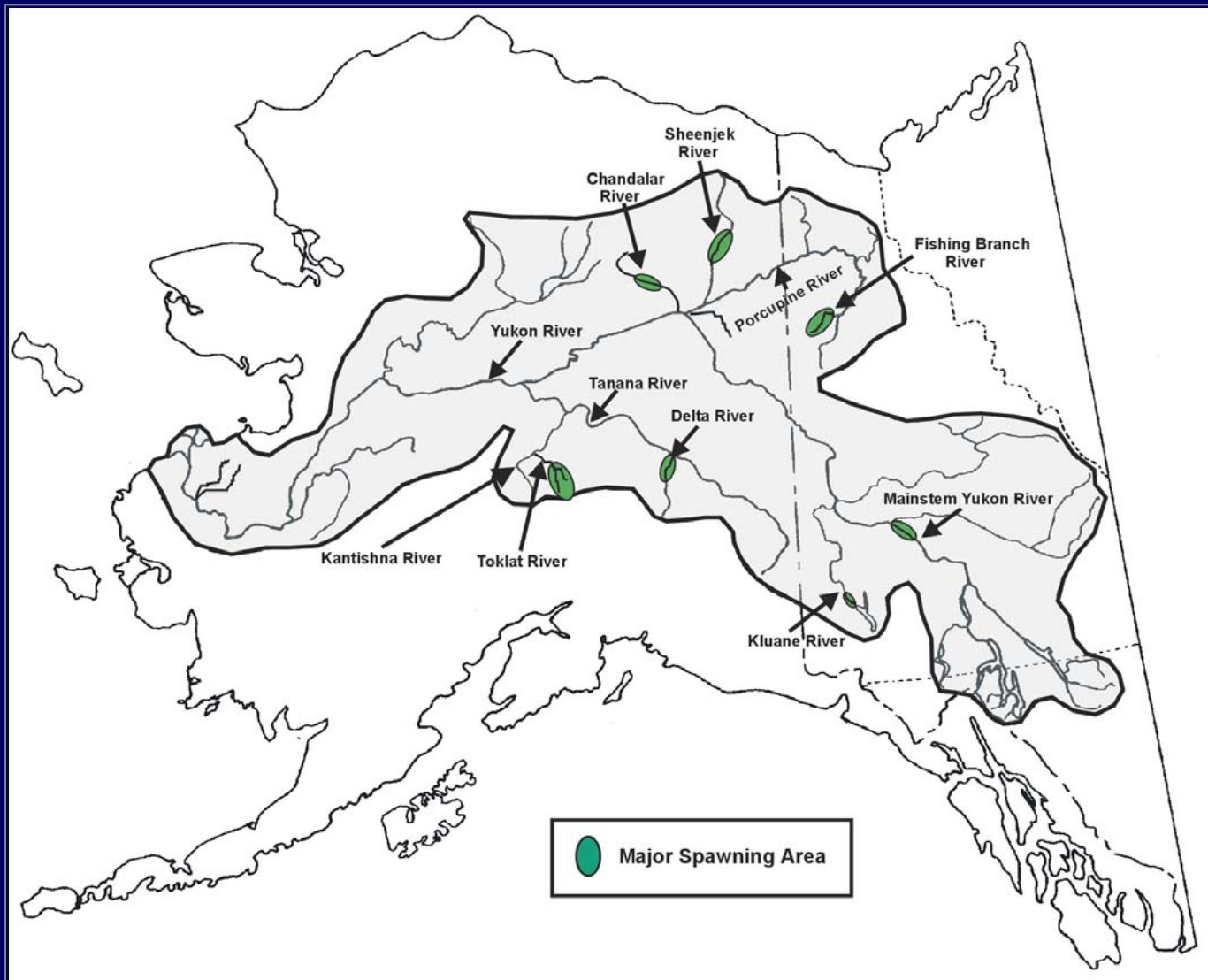


ALASKA BOARD OF FISHERIES

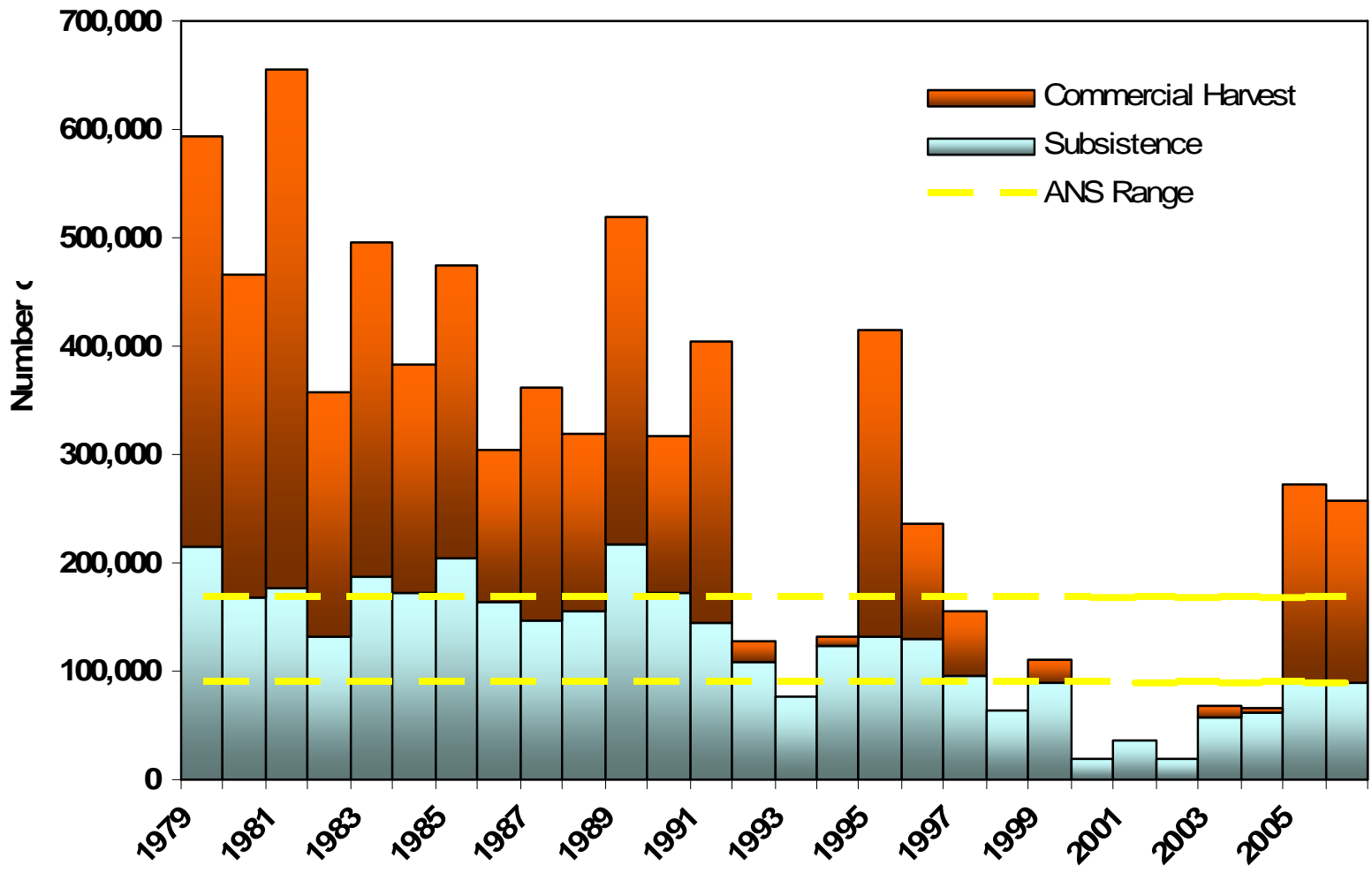
YUKON RIVER SALMON STOCKS OF CONCERN DESIGNATIONS

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Yukon River				
	Fall Chum Salmon	Yield	Yield	

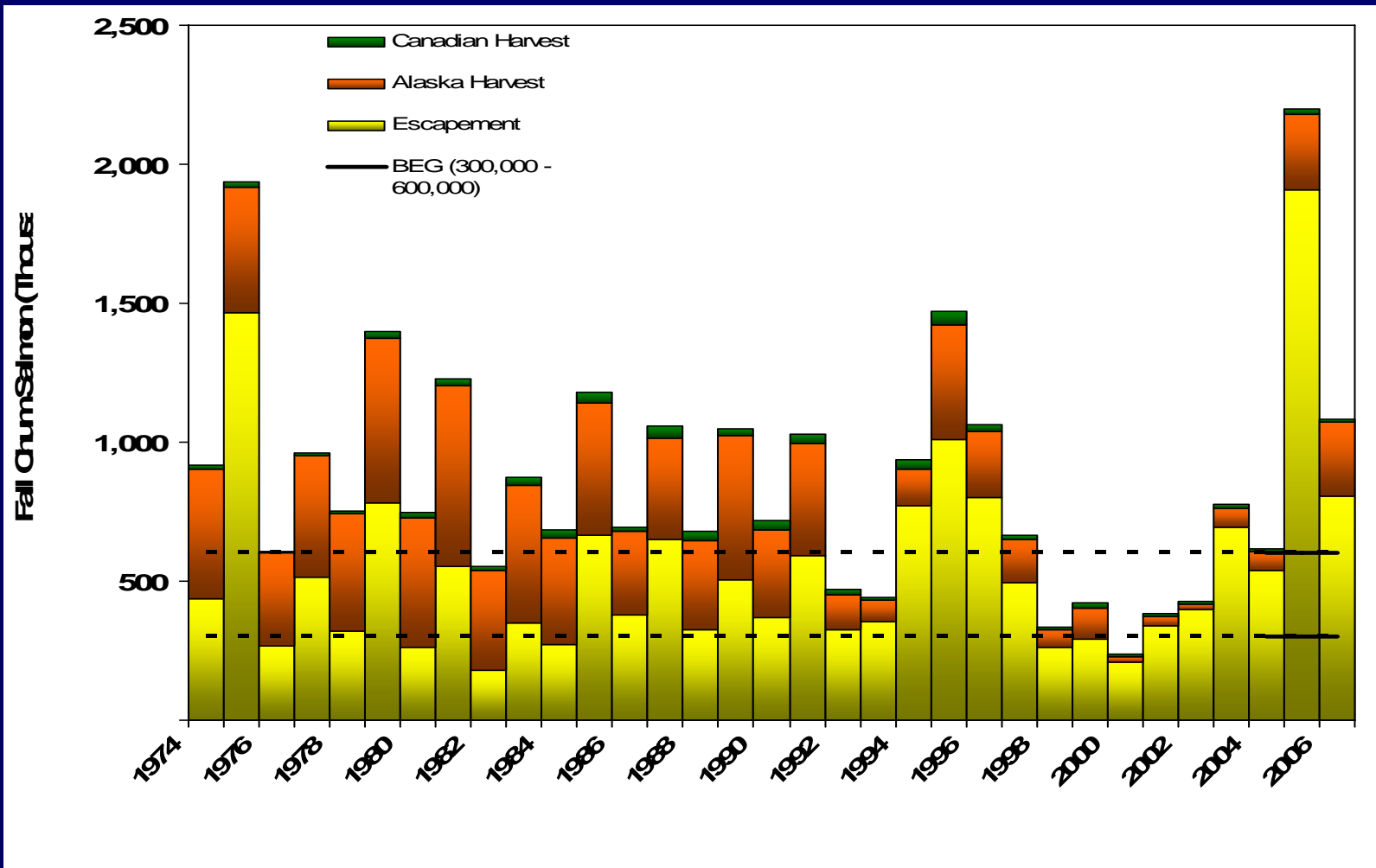
Map of Major Fall Chum Salmon Spawning Areas



Yukon River Fall Chum Salmon Alaska Subsistence and Commercial Harvest, 1979-2006

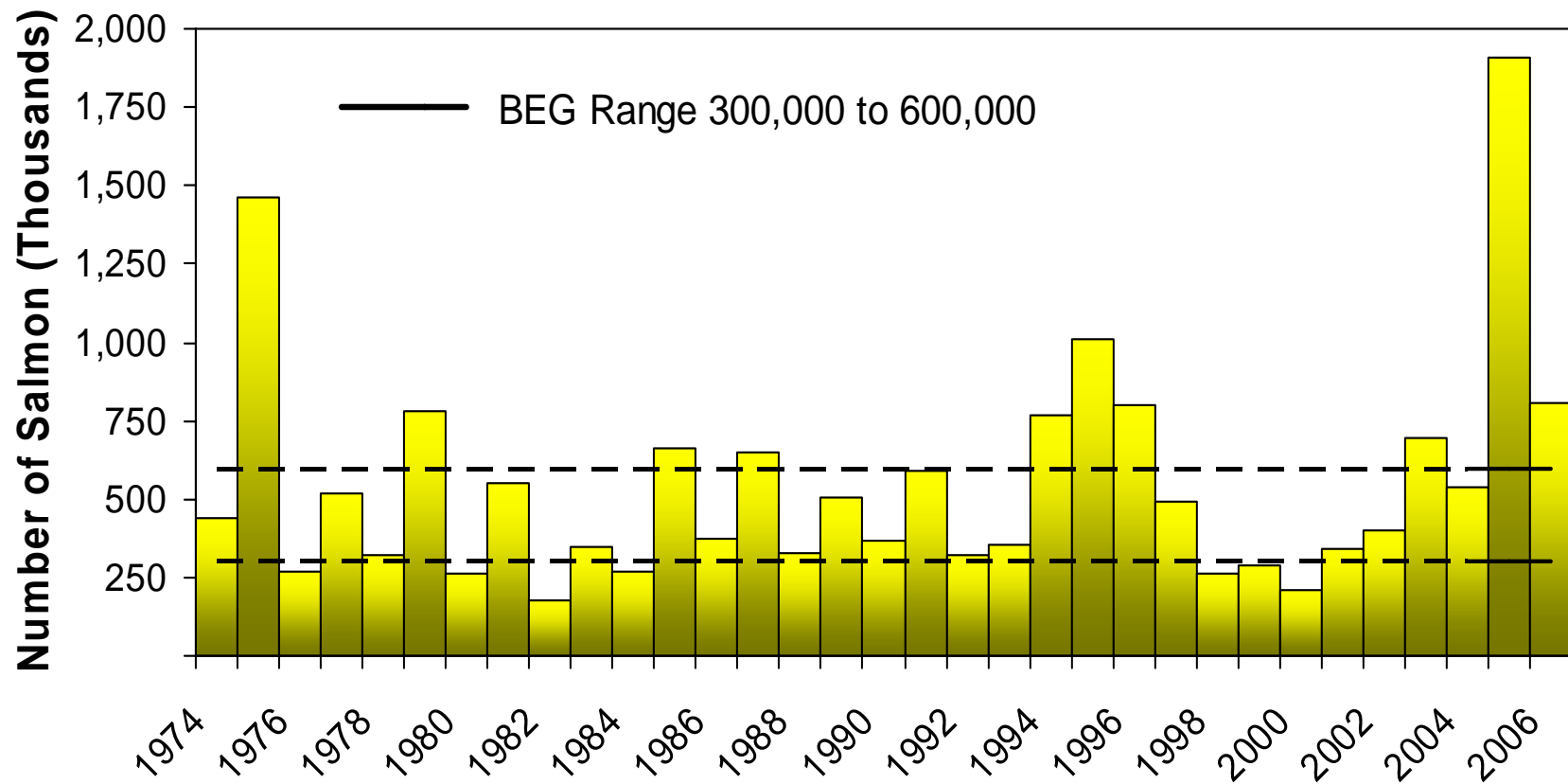


Yukon River Fall Chum Salmon Reconstructed Total Run Size



Fall Chum Salmon Escapements

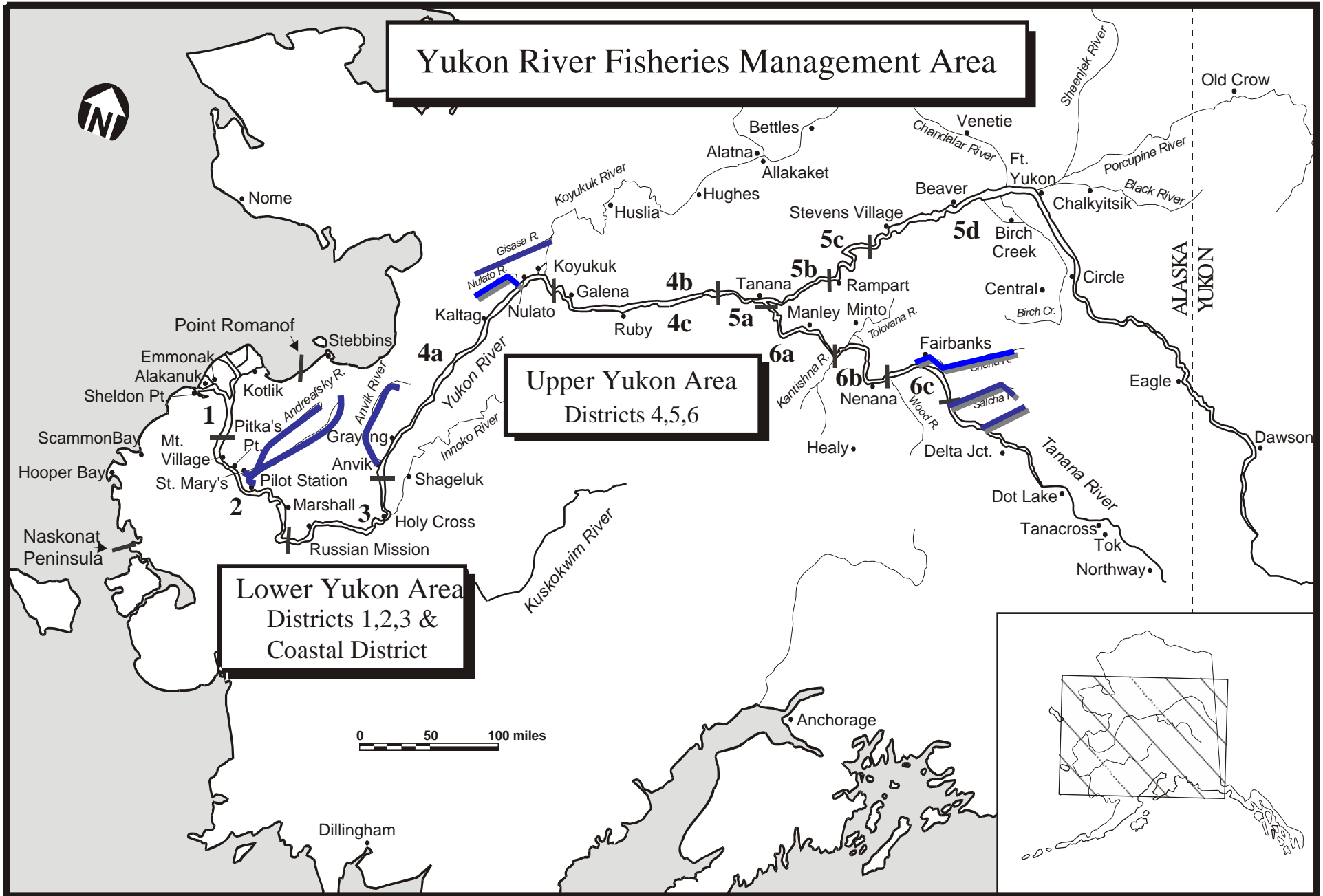
Yukon River Drainage 1974-2006



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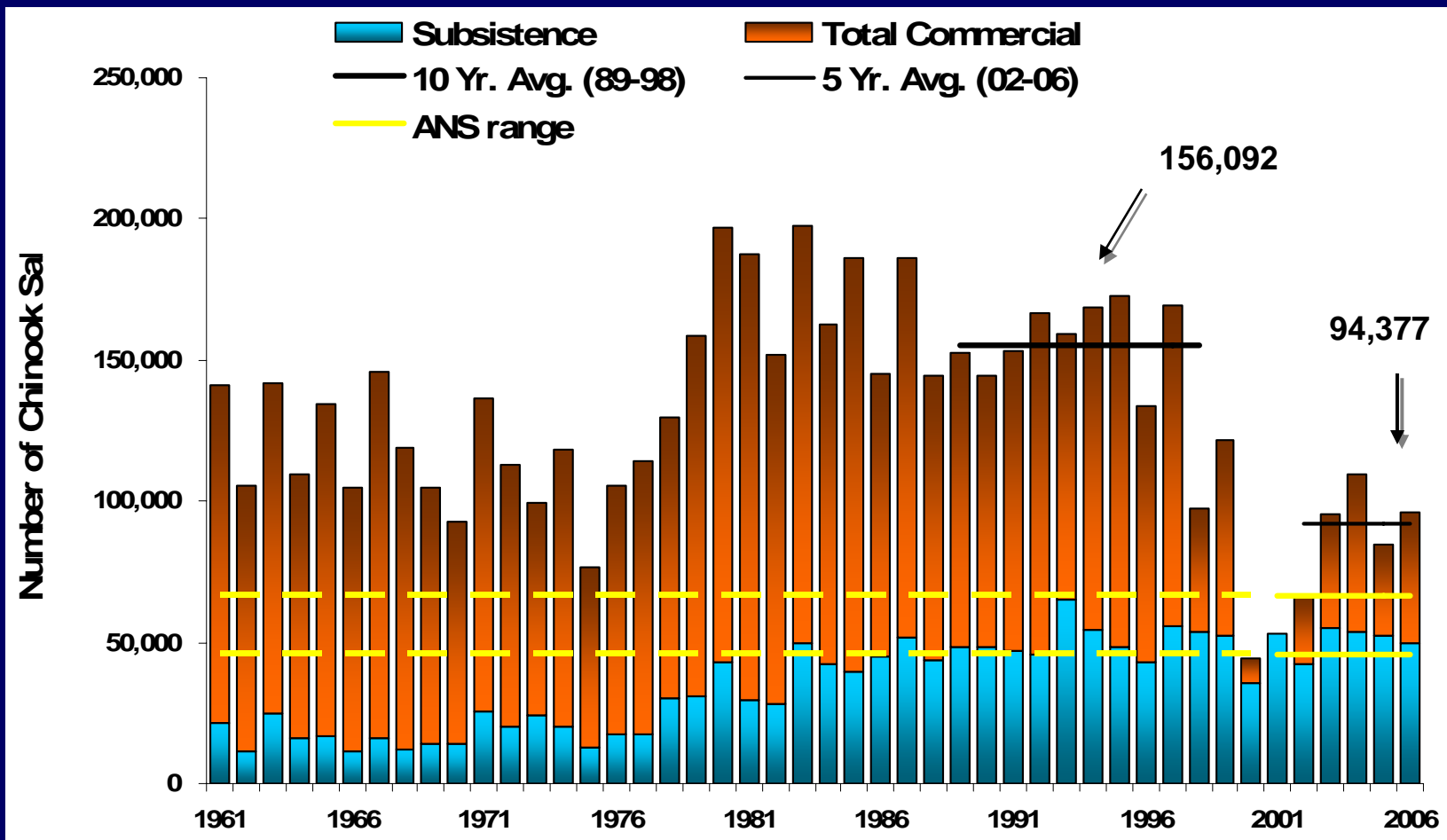
YUKON RIVER SALMON STOCKS OF CONCERN DESIGNATIONS

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Yukon River				
	Chinook Salmon	Yield	Yield	Yield

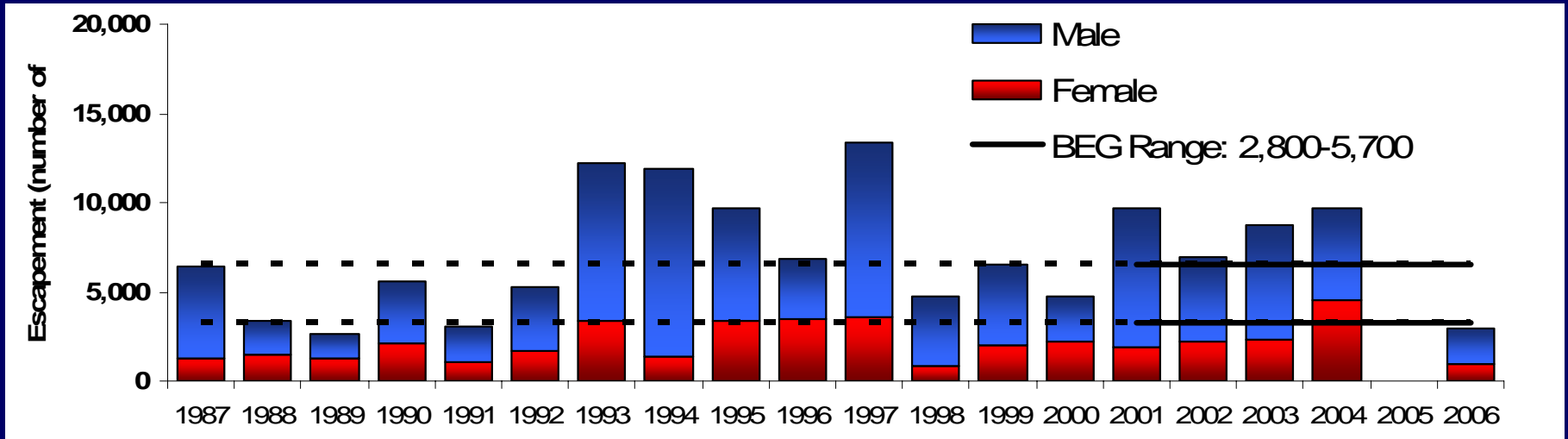


The Yukon Area showing communities, fishing districts, and subdistricts.

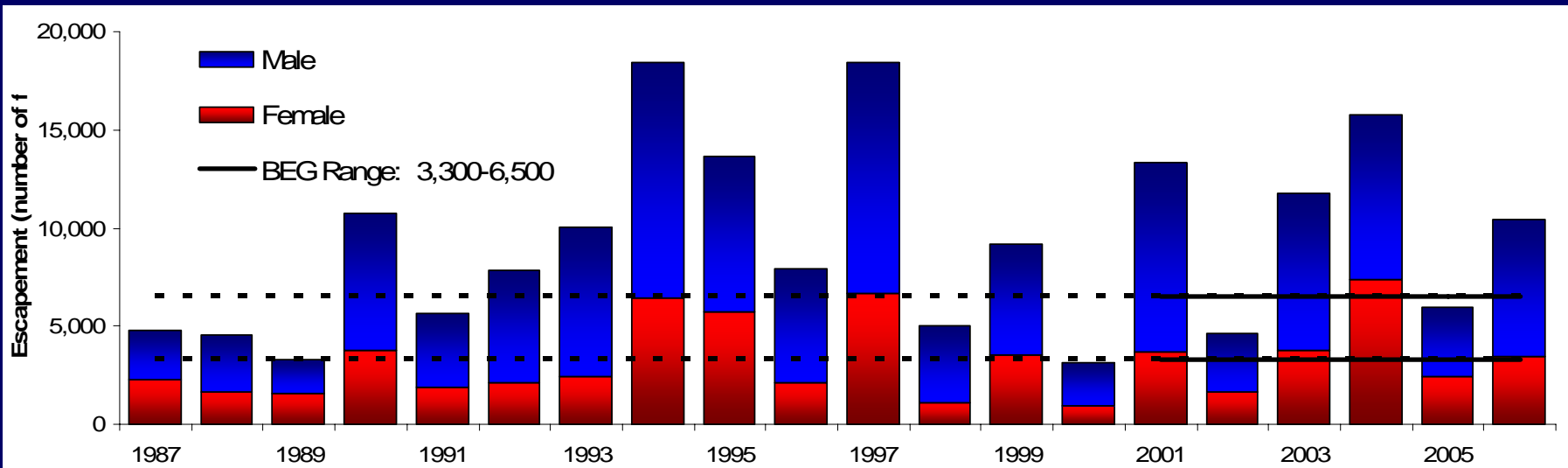
Alaskan Chinook Harvest 1961-2006



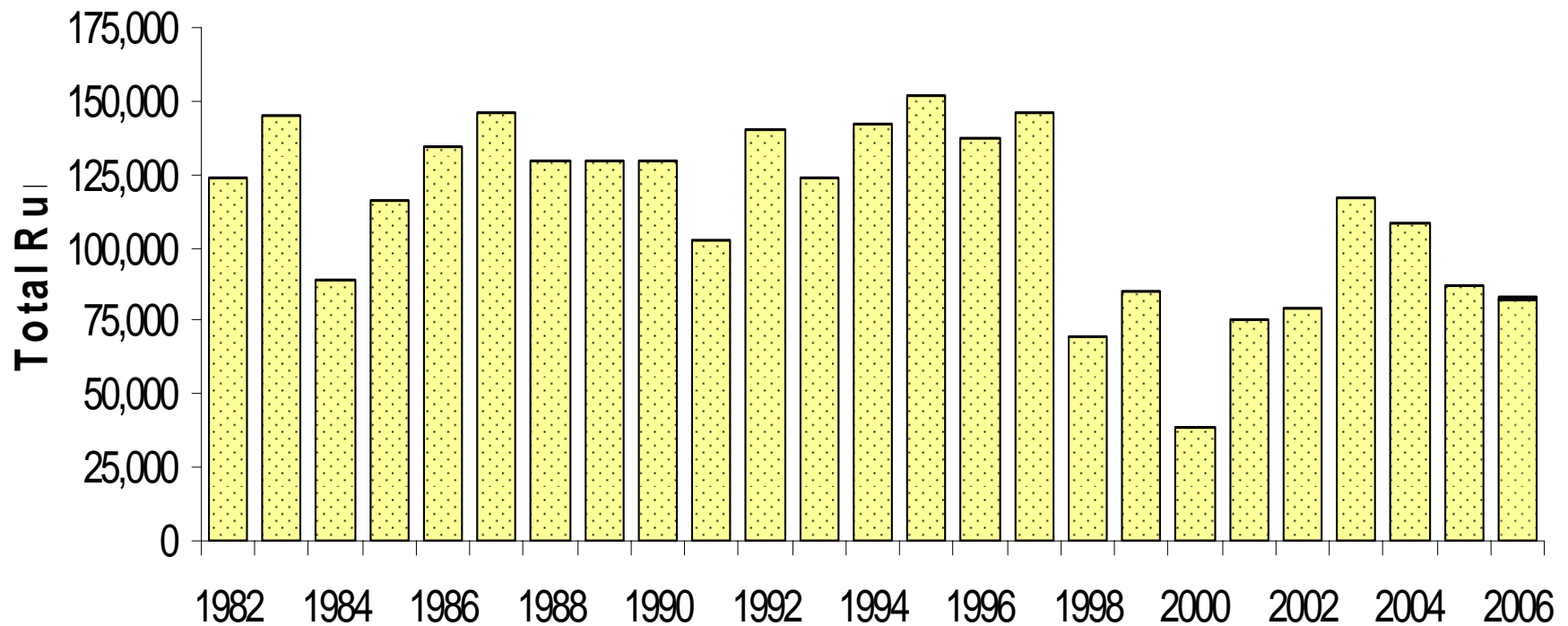
Chena River Chinook Salmon Escapement



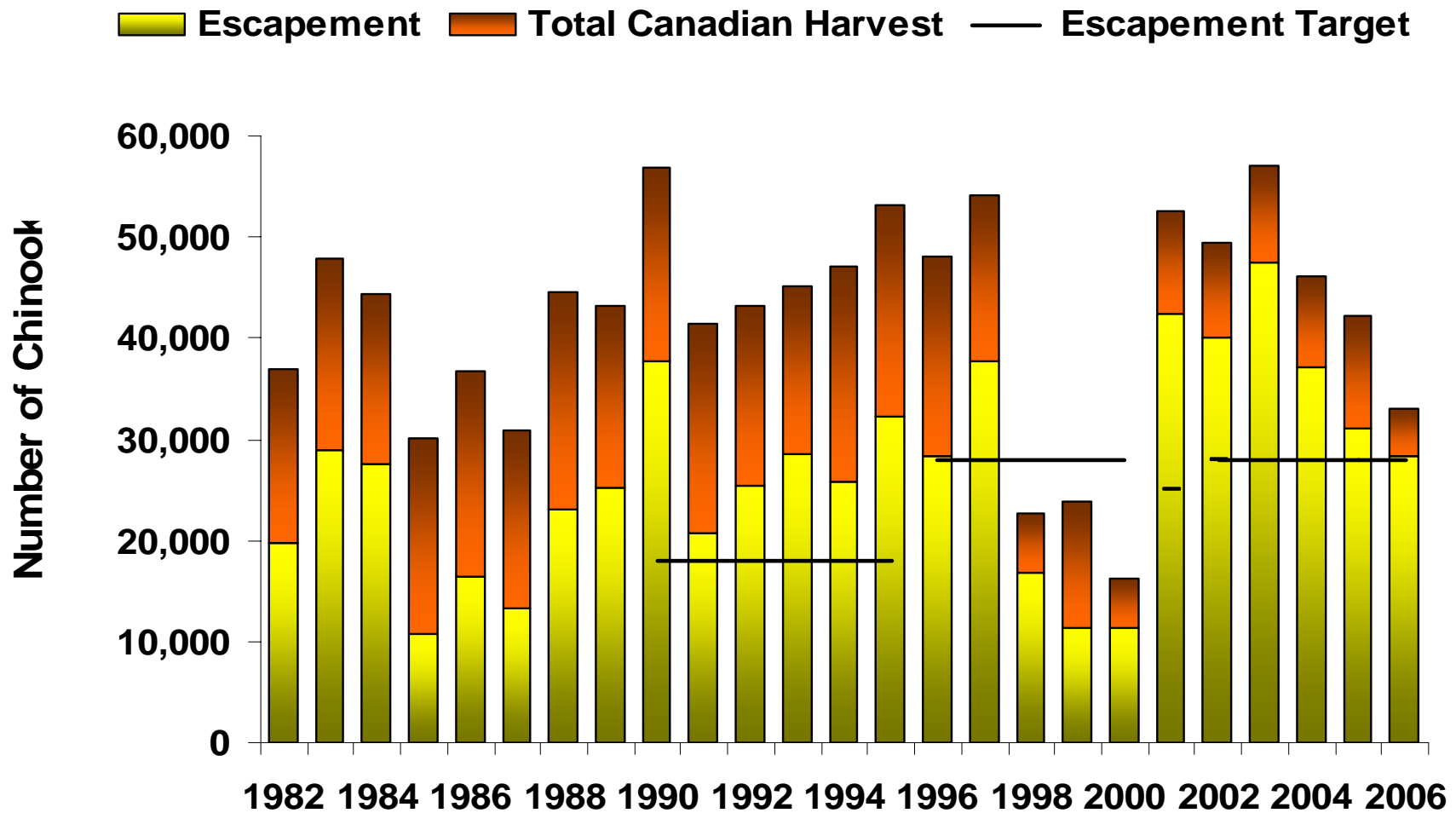
Salcha River Chinook Salmon Escapement



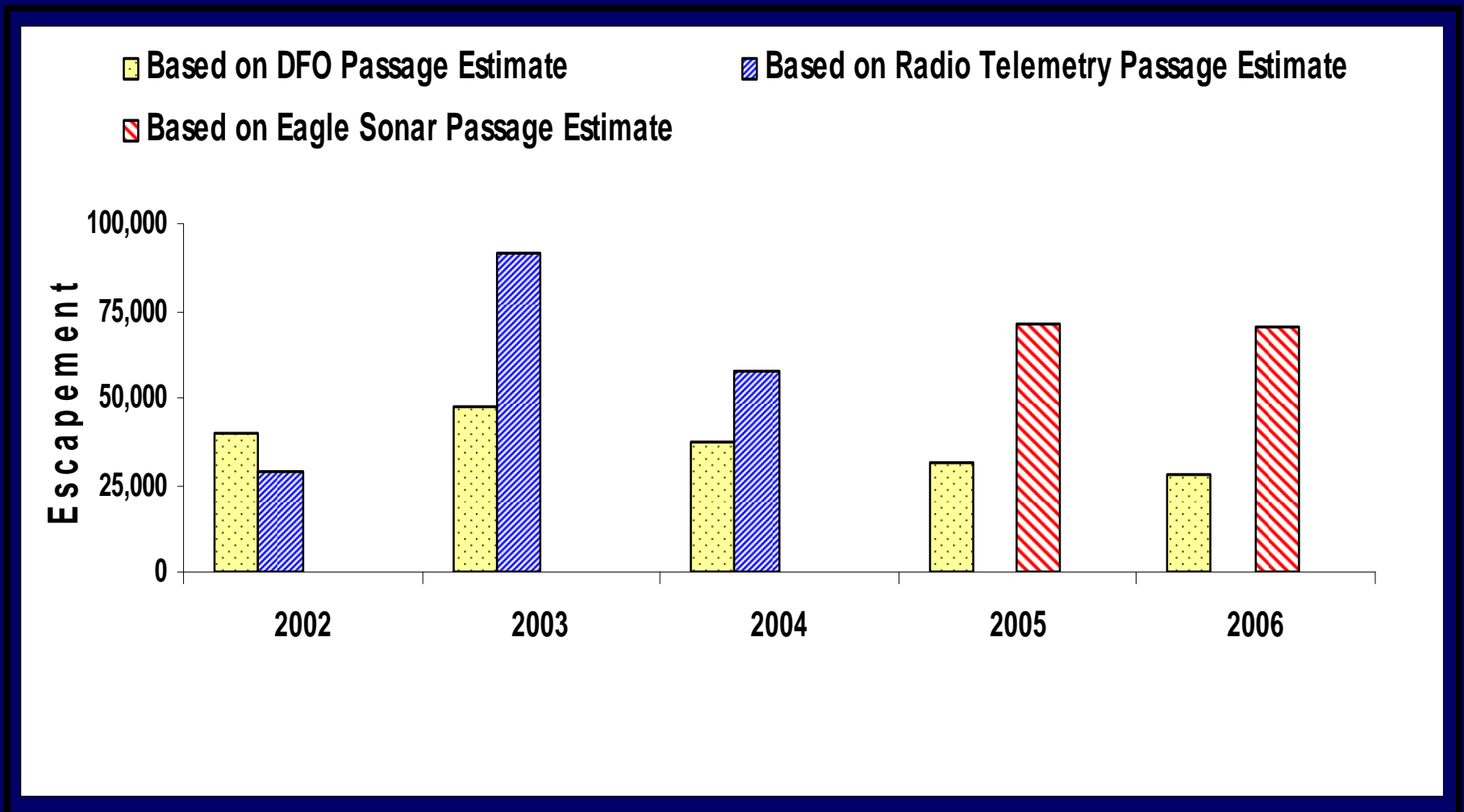
Canadian-Origin Chinook Salmon Total Run Size, 1982-2006



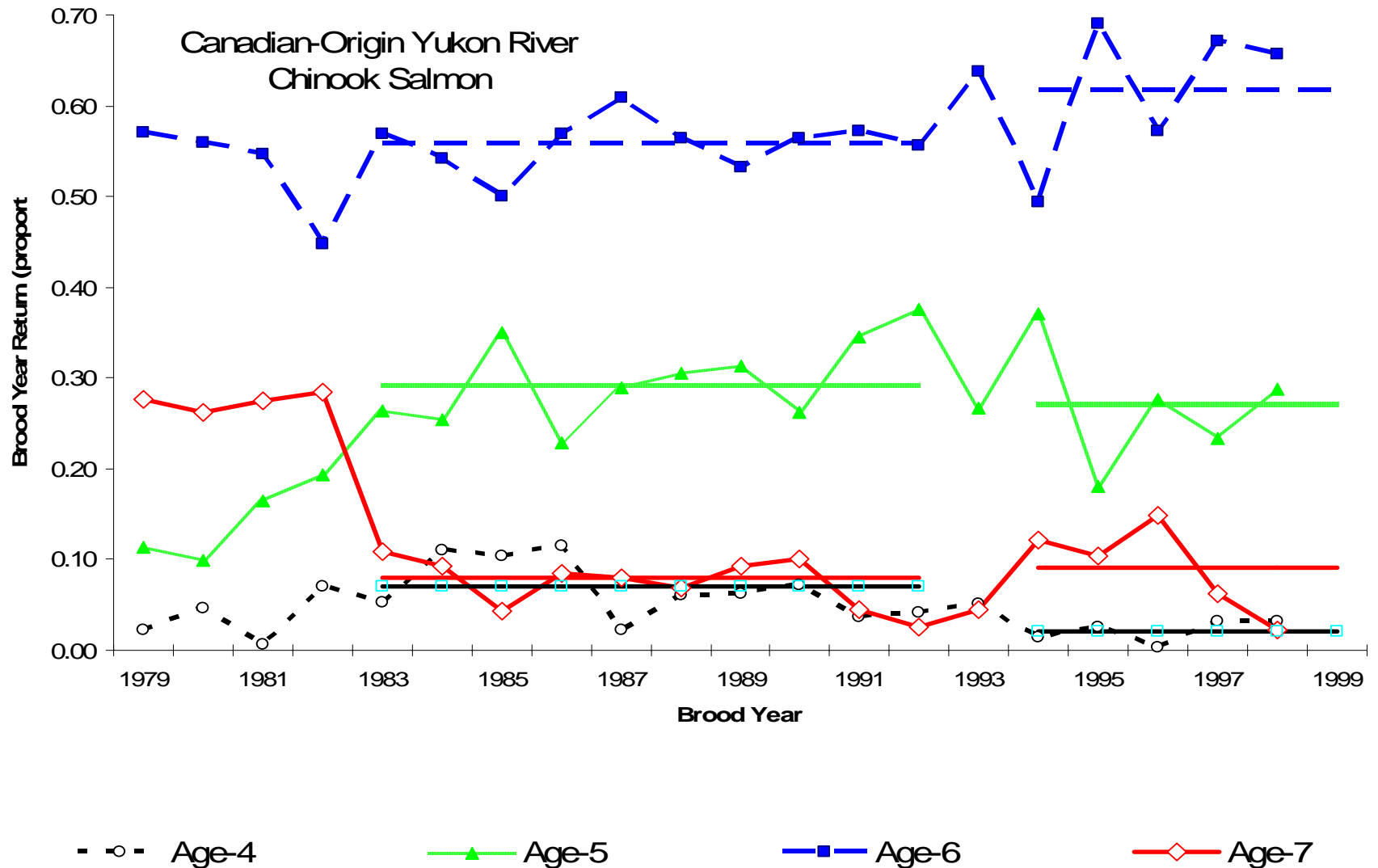
Border Passage of Canadian-Origin Chinook Salmon by Harvest and Escapement (CDFO data), 1982-2006



Chinook Border Passage into Canada 3 methods, 2002-2006



Canadian-origin Chinook Salmon Age-class Composition of the Brood Year Return, 1979 - 1998



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YUKON RIVER SALMON STOCKS OF CONCERN DESIGNATIONS

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Yukon River				
	Summer Chum Salmon	Management	Management	
	Fall Chum Salmon	Yield	Yield	
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AYK Region



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Kuskokwim River				
	Summer Chum Salmon	Yield	Yield	
	Chinook Salmon	Yield	Yield	

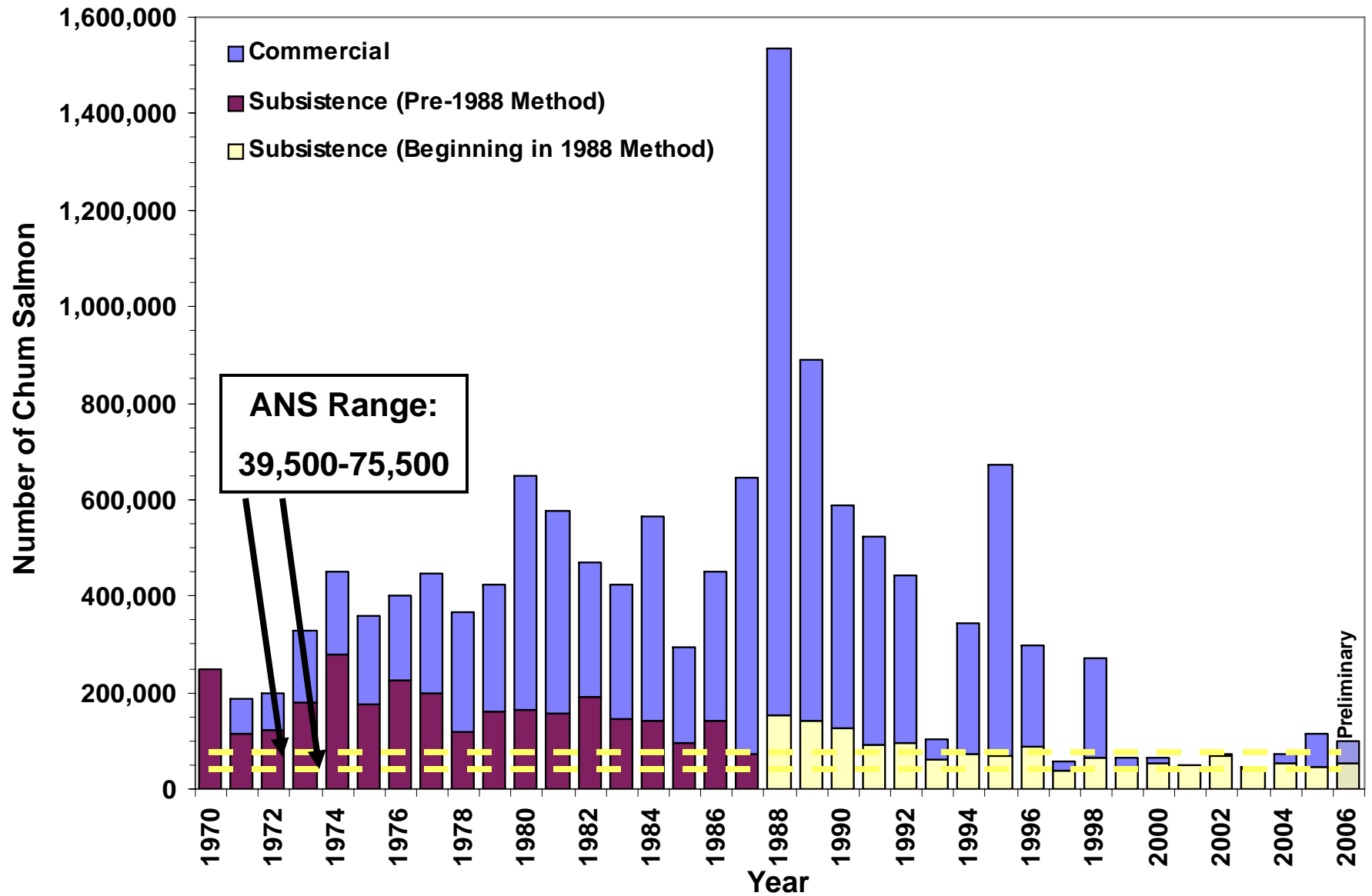
Kuskokwim Management Area



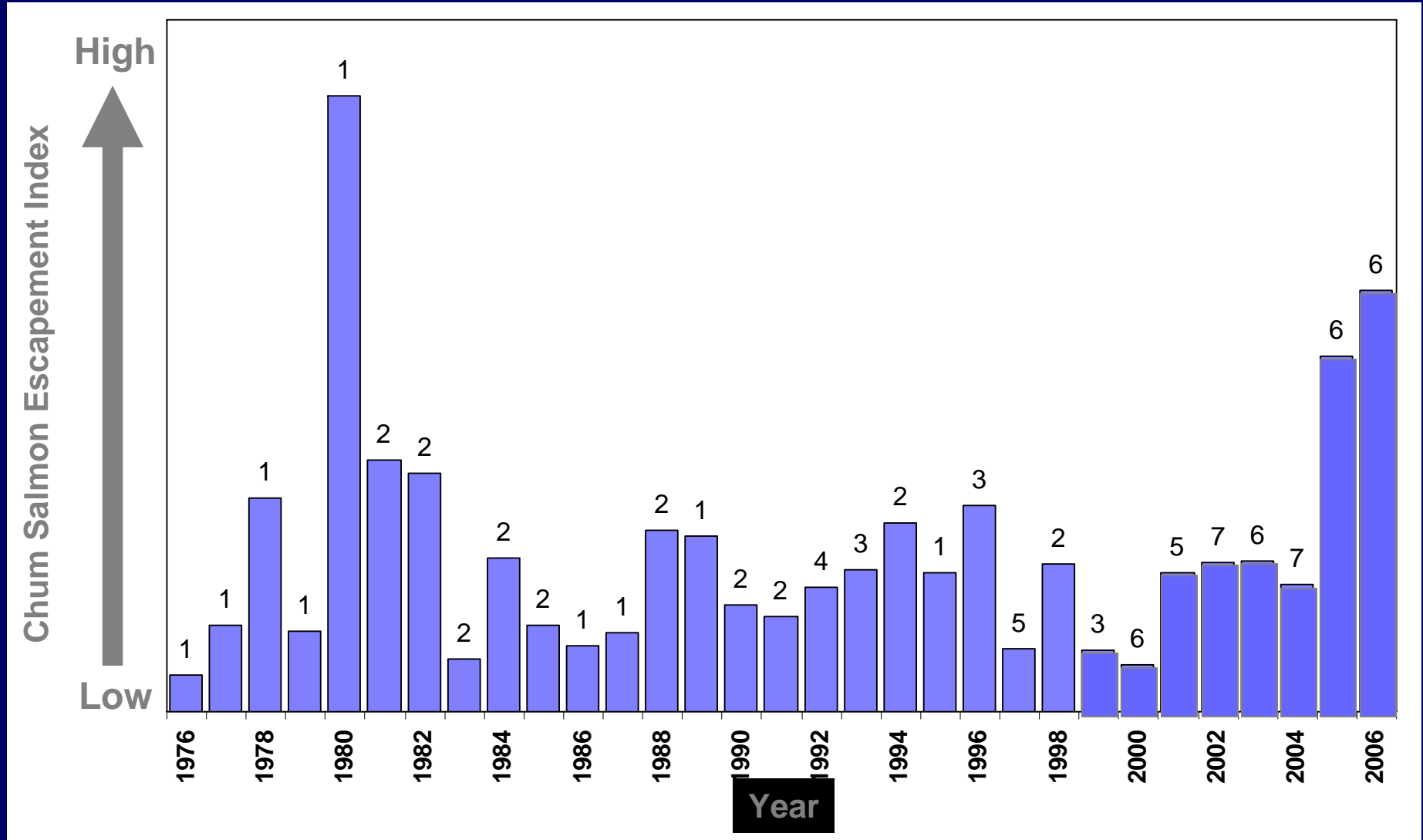
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Kuskokwim River				
	Summer Chum Salmon	Yield	Yield	

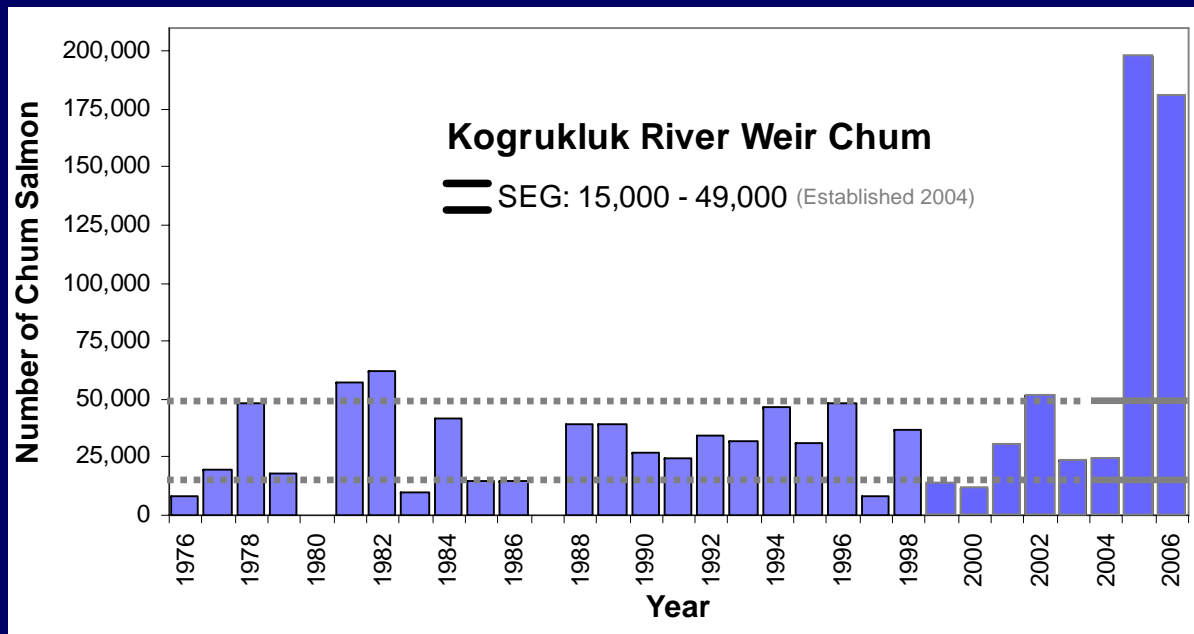
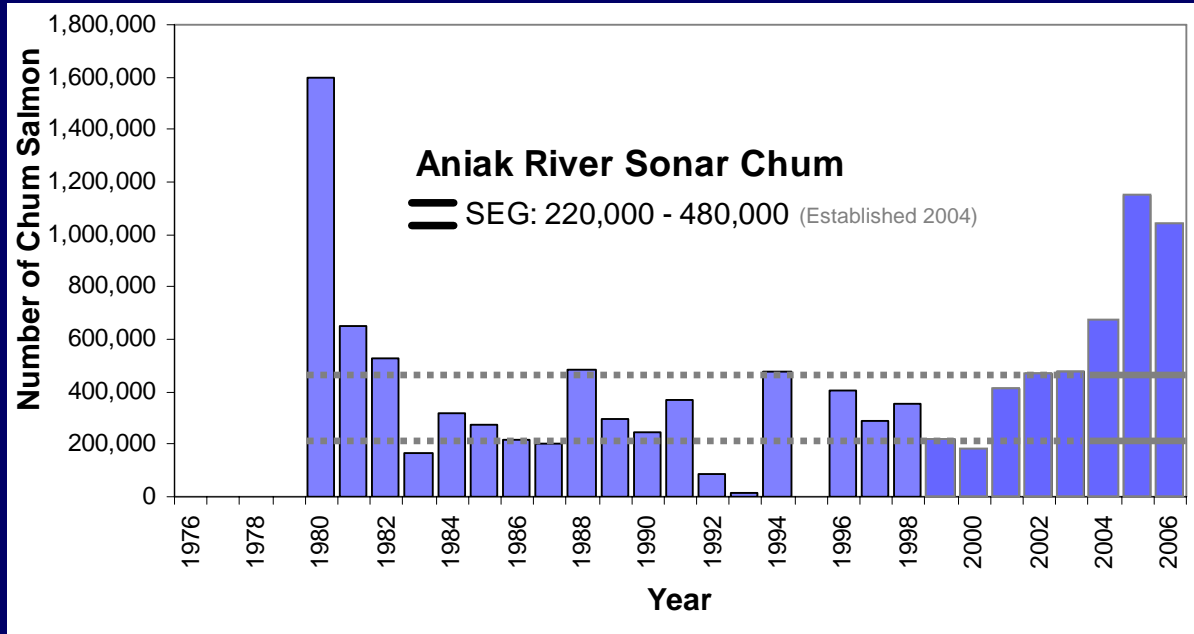
Kuskokwim River Chum Salmon Harvest



Kuskokwim River Chum Salmon Escapements



Kuskokwim River Chum Salmon Escapements

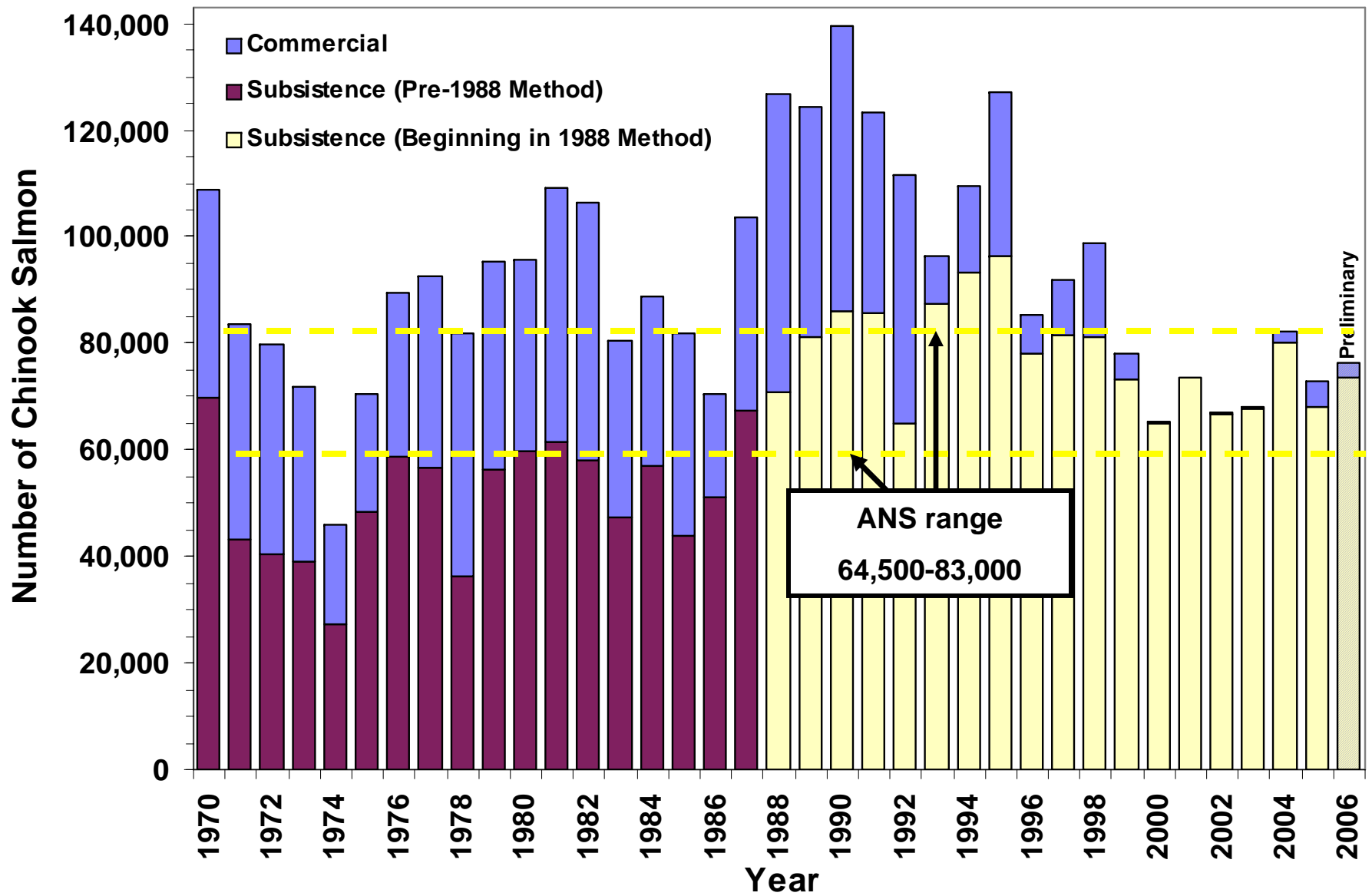


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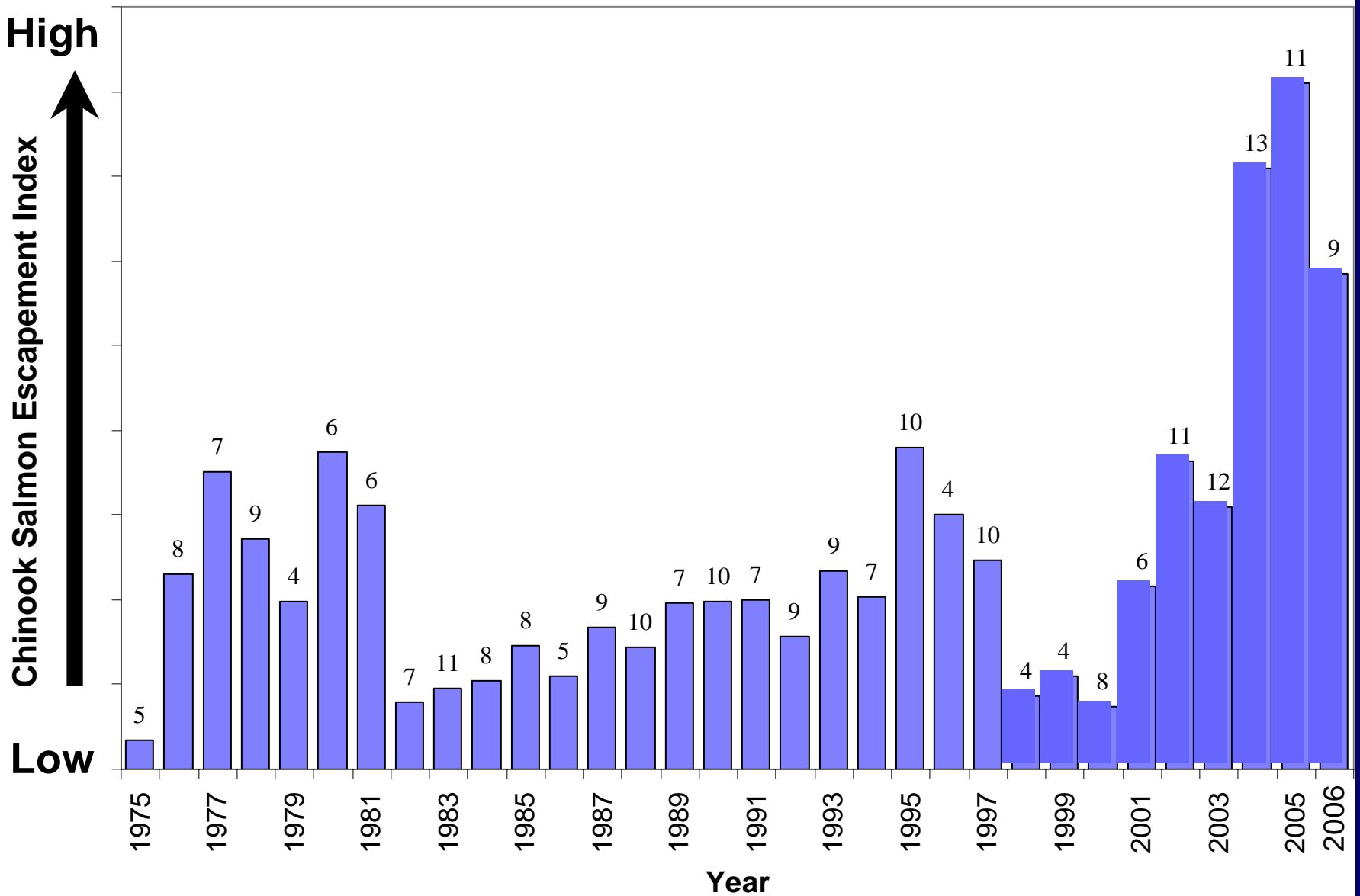
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Kuskokwim River				
	Chinook Salmon	Yield	Yield	

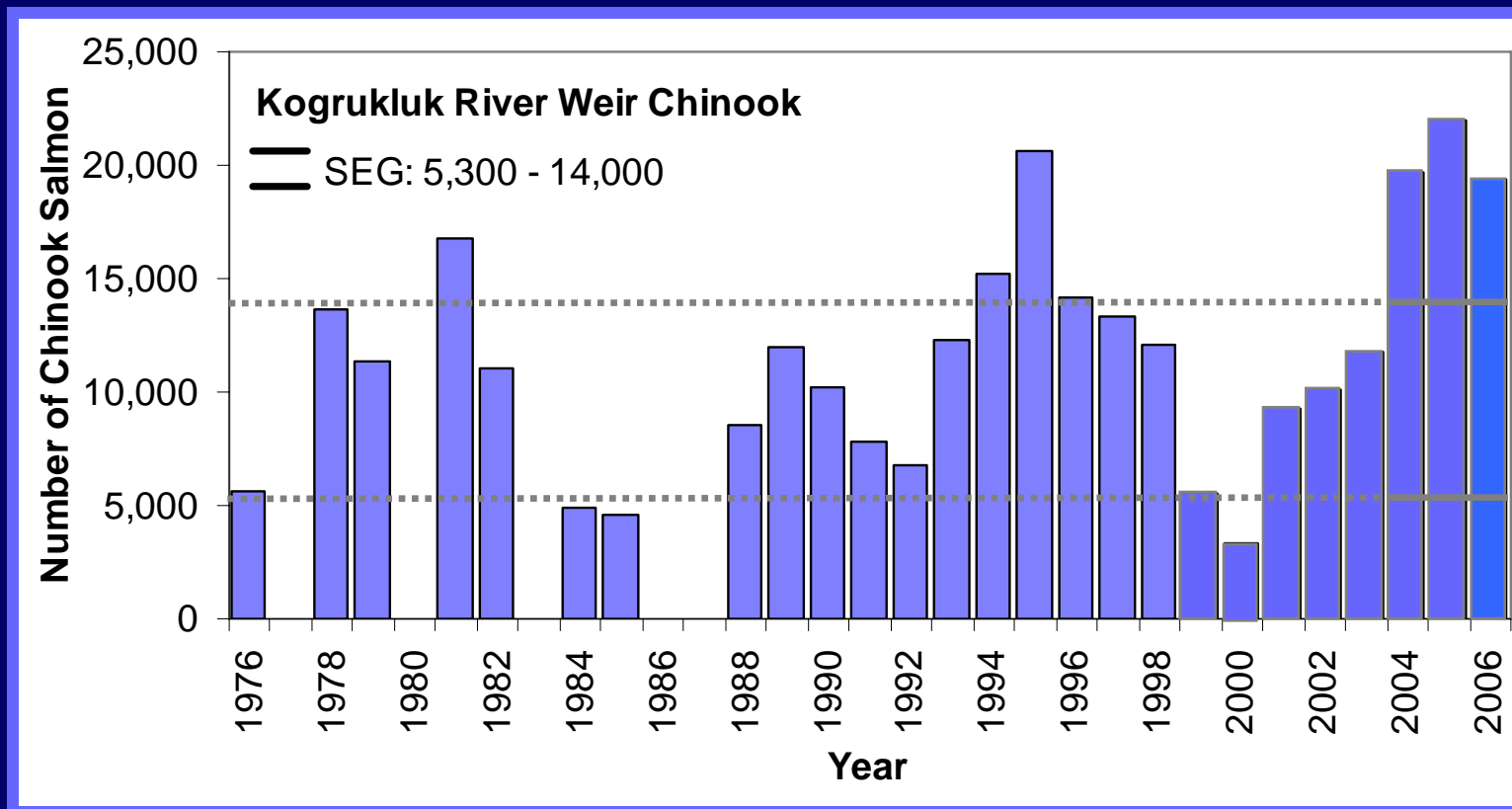
Kuskokwim River Chinook Salmon Harvest



Kuskokwim River Chinook Salmon Escapement



Kuskokwim River Chinook Salmon Escapement



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Kuskokwim River				
	Summer Chum Salmon	Yield	Yield	
	Chinook Salmon	Yield	Yield	

Good News

Other AYK Region Salmon Stocks 2005-2006

➤ Below Average:Average

- Norton Sound Chinook
- Kuskokwim Bay Coho
- Kuskokwim River Coho

➤ Average:Above Average

- Yukon River Coho
- Kotzebue Chum

➤ Above Average:Record

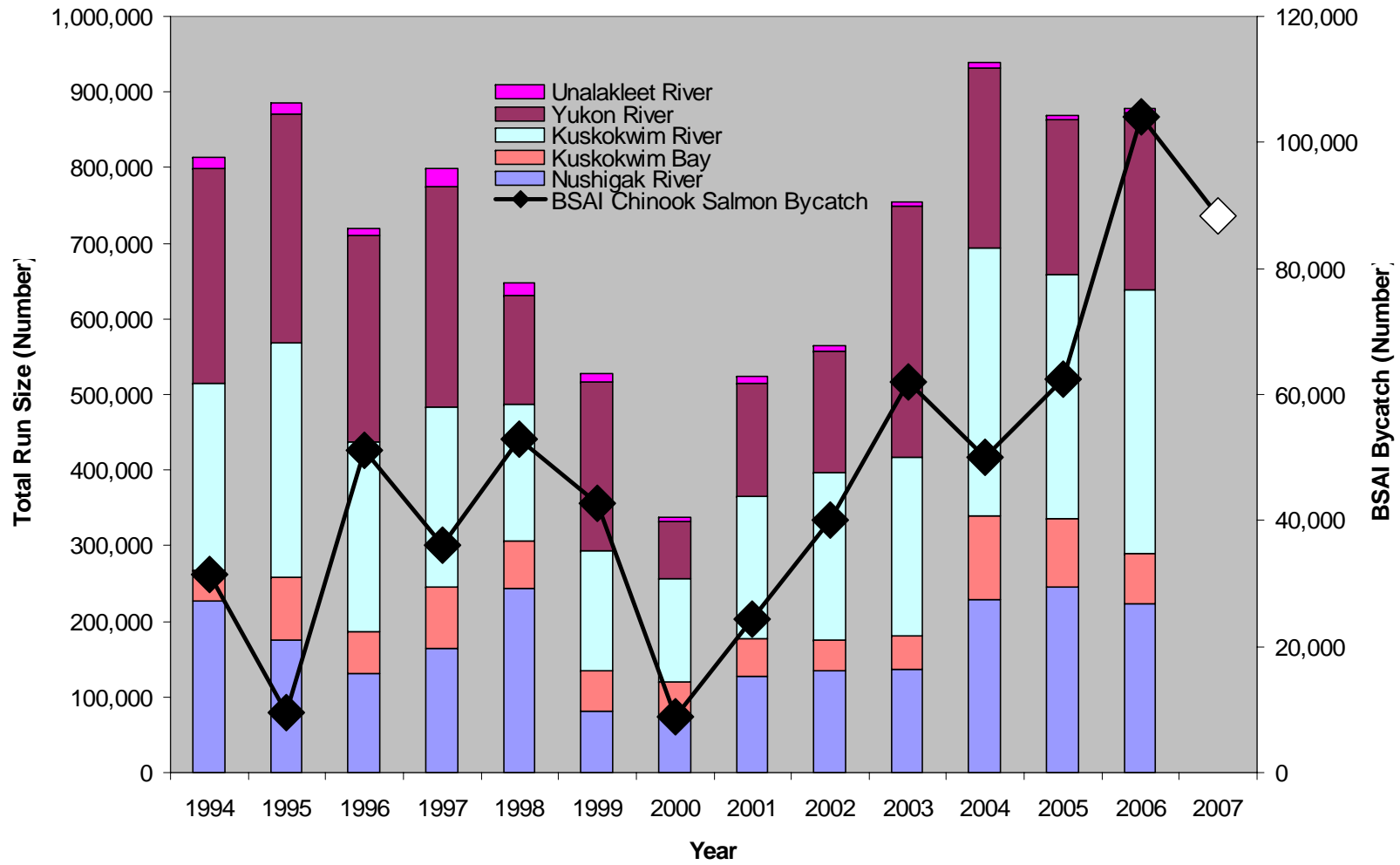
- Norton Sound Coho
- Norton Sound Sockeye
- Kuskokwim River Sockeye
- Kuskokwim Bay Sockeye

Western Alaska Chinook Salmon and the BSAI Bycatch

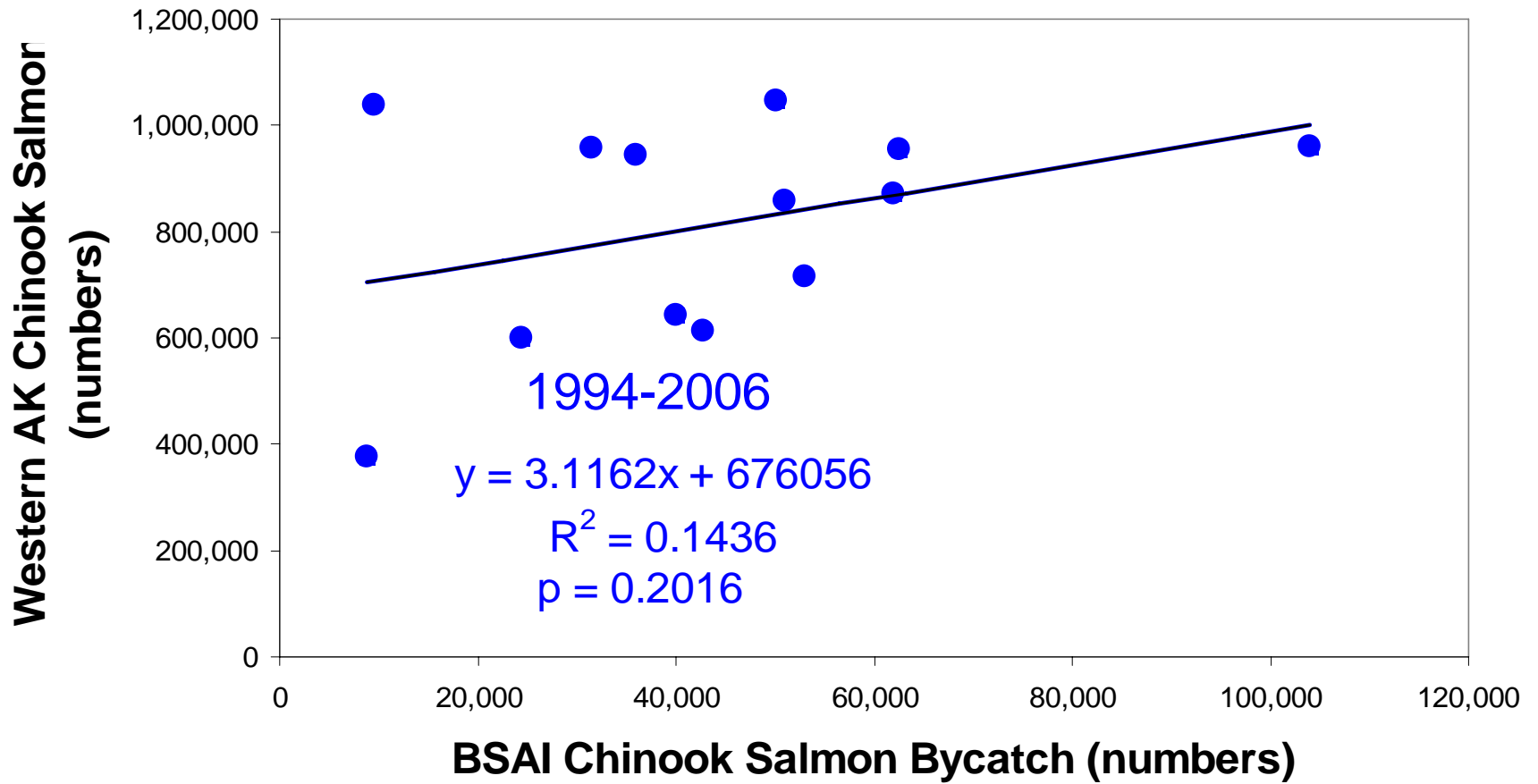
- Assumptions

- Based on: Myers, K. et al. 2003. Estimates of the bycatch of Yukon River chinook salmon in U.S. groundfish fisheries in the eastern Bering Sea, 1997-1999. Final Report to the Yukon River Drainage Fisheries Association, Contr. No. 04-001. SAFS-UW-0312, School of Aquatic and Fishery Sciences, University of Washington, Seattle. 59 p.
- 1997-1999 Averages:
 - 56% of the Chinook salmon BSAI bycatch originates from Western Alaska;
 - Of that bycatch that is Western Alaska origin:
 - 40% originate in the Yukon River;
 - » Avg. AEQ = 0.875
 - 26% originate in the Kuskokwim Area;
 - » Avg. AEQ = 0.851
 - 34% originate in the Bristol Bay Area;
 - » Avg. AEQ = 0.825

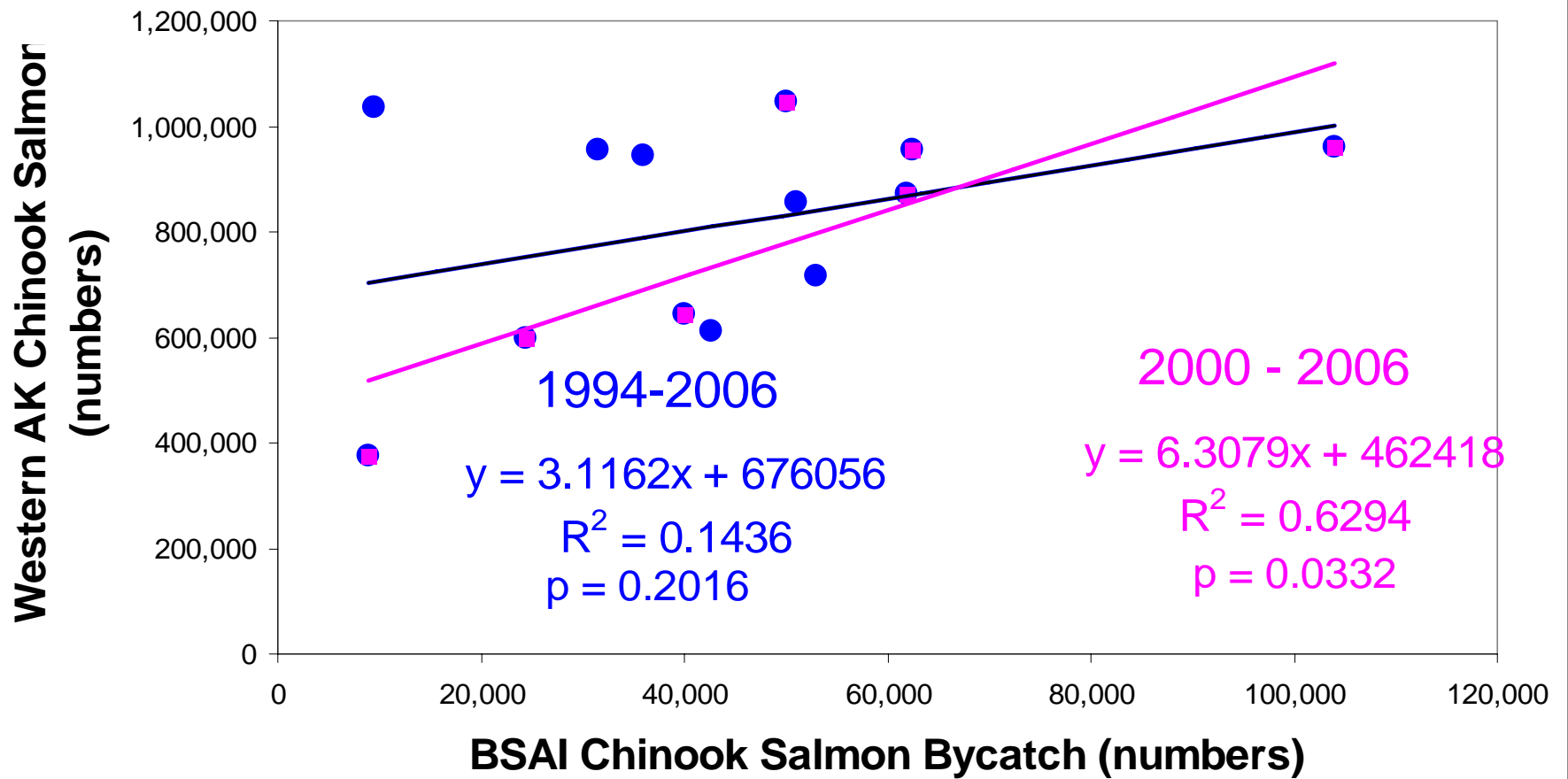
**Western Alaska Chinook Salmon Run Size and
the Total BSAI Bycatch of Chinook Salmon, 1994-2006**



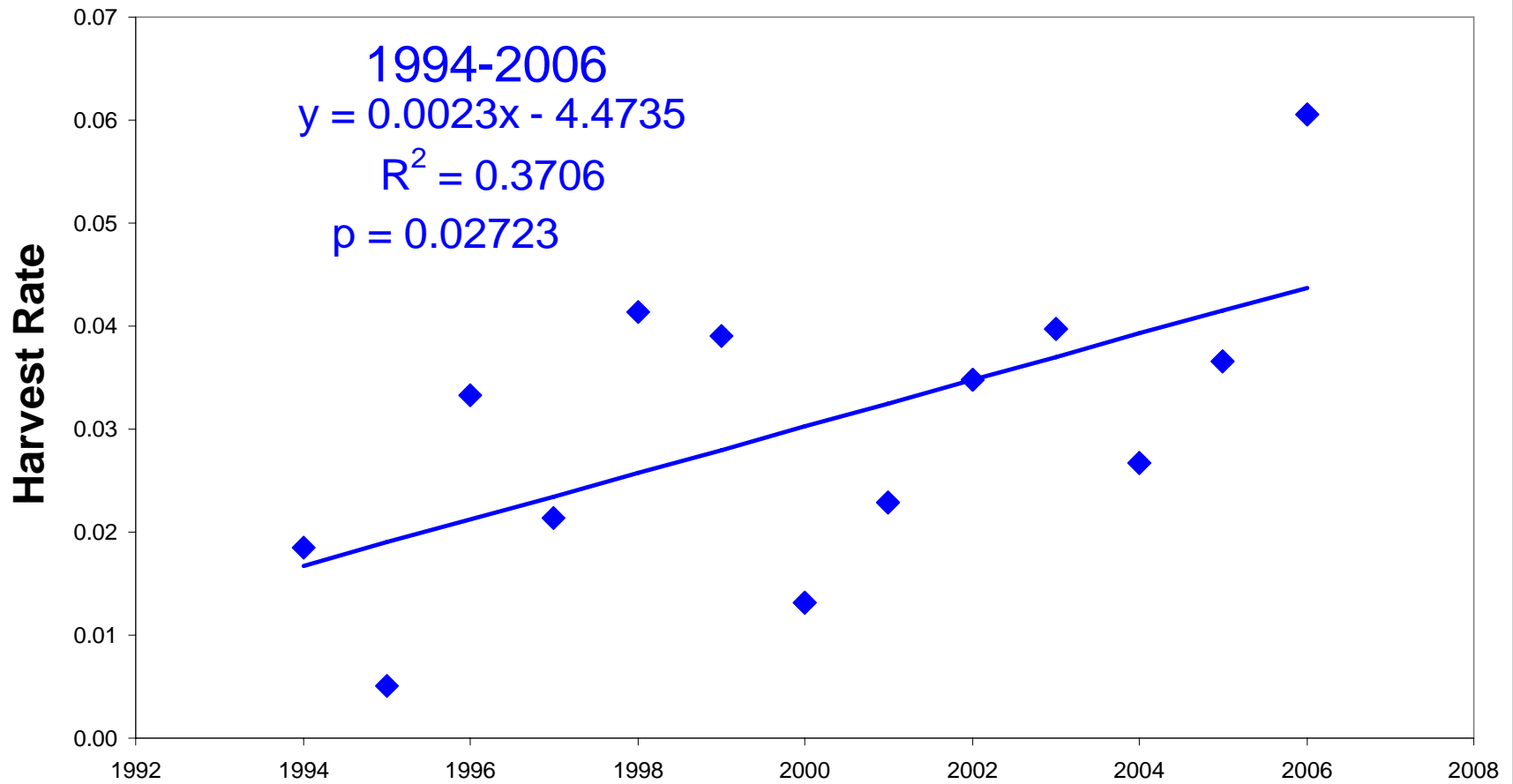
**BSAI Chinook Salmon Bycatch
versus
Total Western Alaska Run Size**



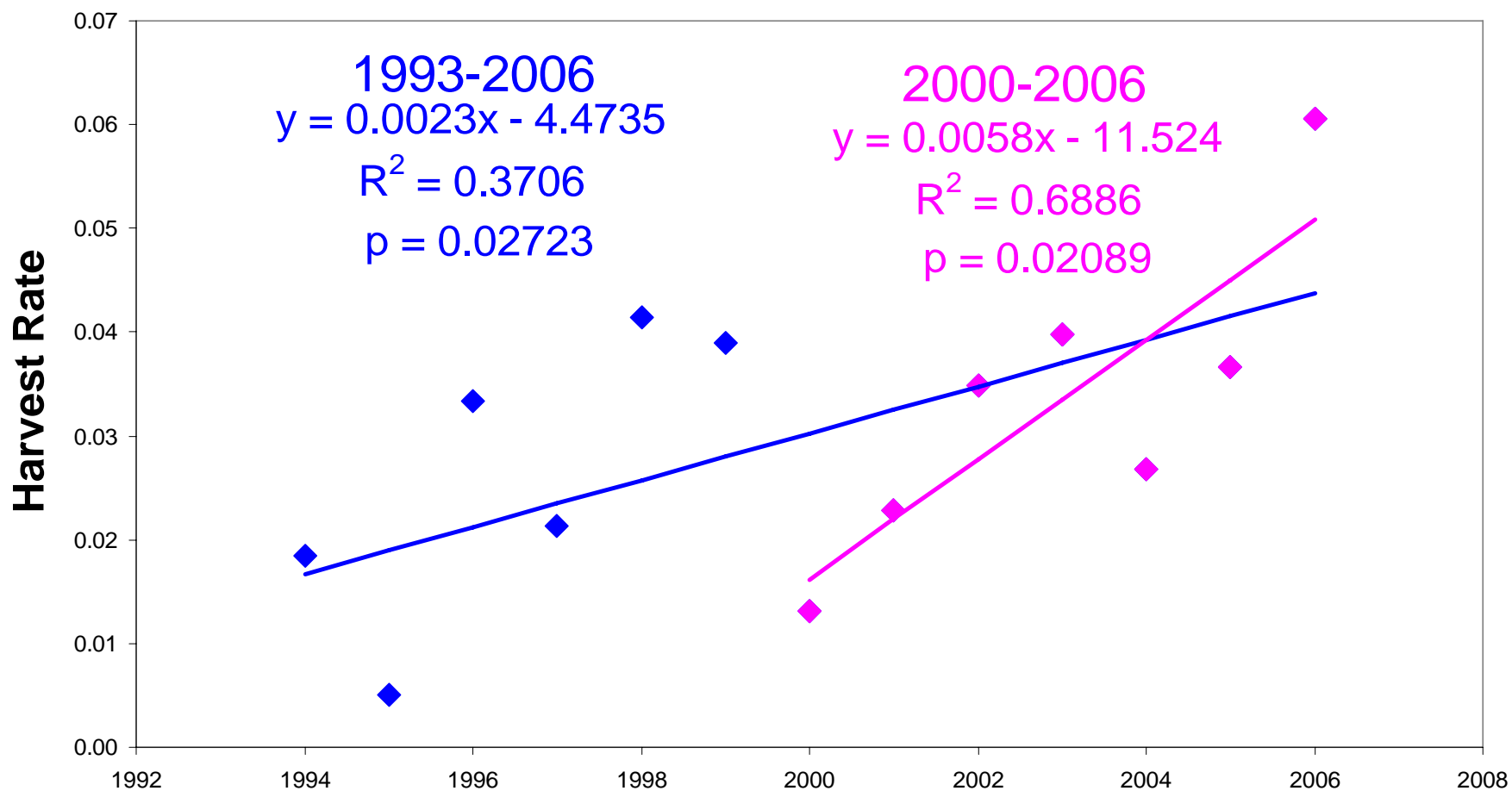
BSAI Chinook Salmon Bycatch versus Total Western Alaska Run Size



Harvest Rate on Western Alaska Chinook Salmon by the BSAI Ground Fishery



Harvest Rate on Western Alaska Chinook Salmon by the BSAI Ground Fishery



**Estimated Possible Lost Revenue to Commercial Inriver
Bristol Bay, Kuskokwim, and Yukon Area Chinook Salmon Fishers, 1993-2006**

