

Review of Susitna River Sockeye Salmon Stock Status

By

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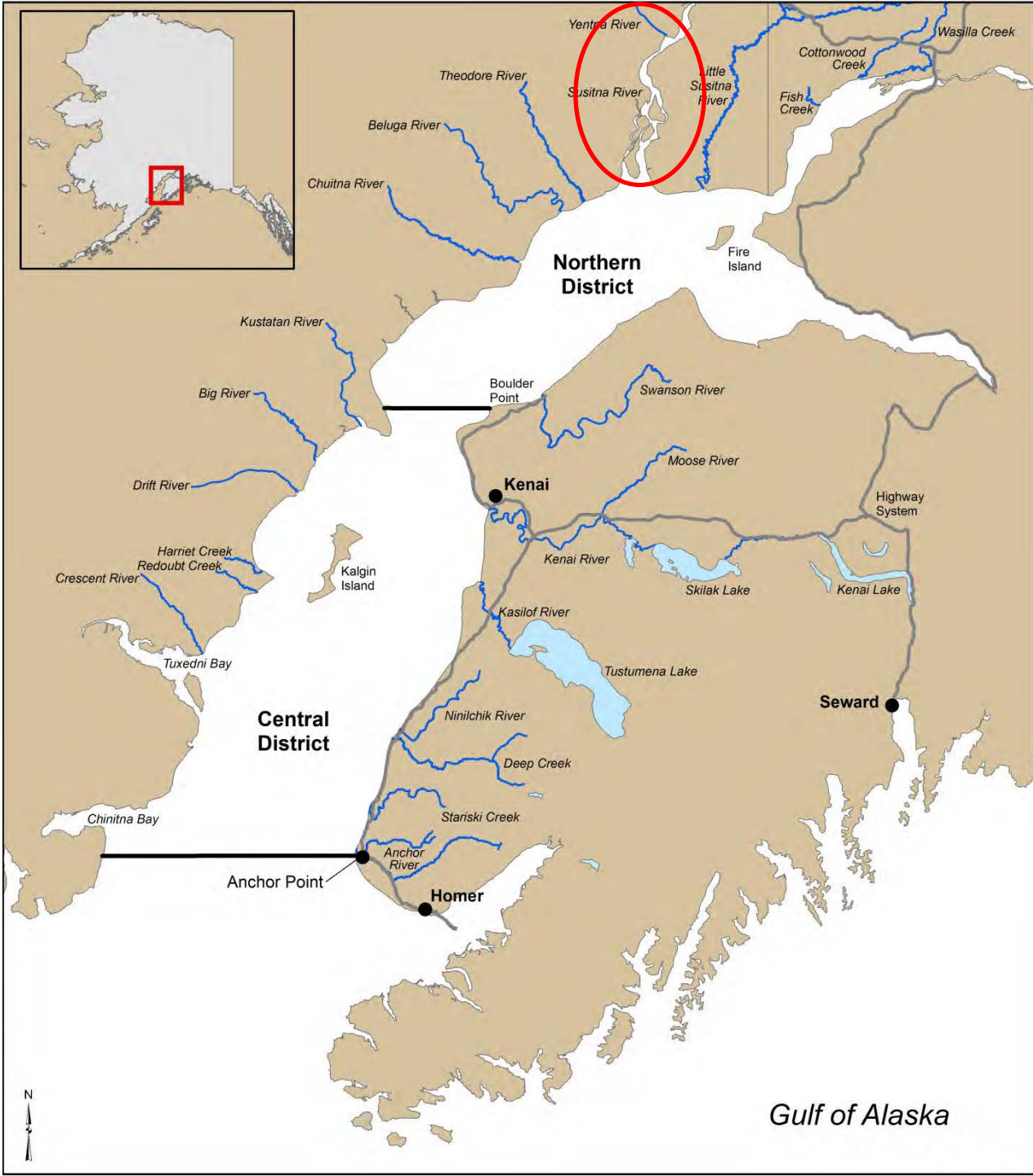
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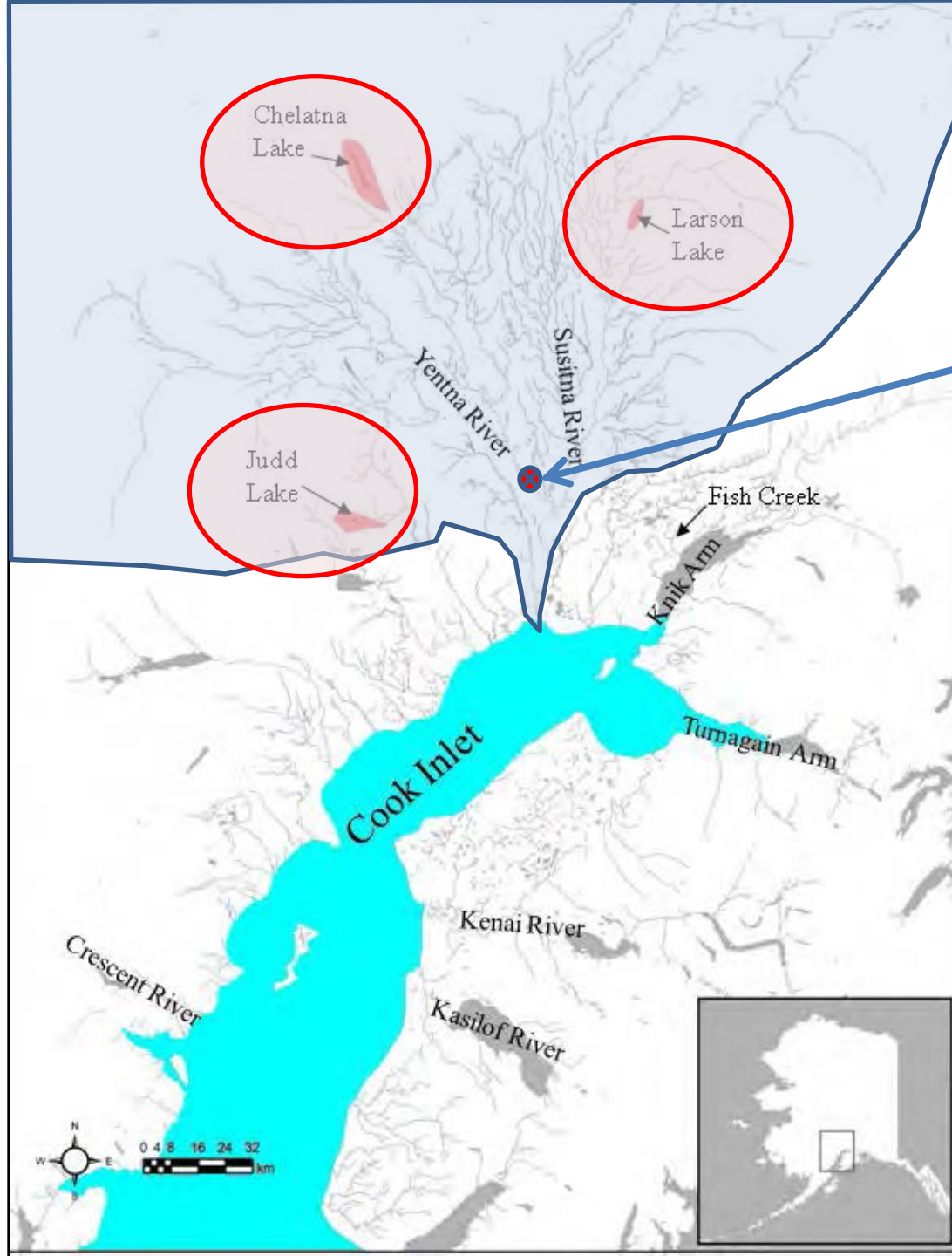
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Outline

- Description of the area
- Historical overview of stock assessments and escapement goals
- Stock of Concern
- Current stock status
- Factors contributing to reduced yield
- Management actions taken
- Summary



Gulf of Alaska



Yentna
sonar
camp

Historical Timeline

- 1979** BEG of 200,000 established for Susitna River sockeye salmon
- 1981** Bendix Sonar installed on the Yentna River
- 2002** SEG of 90,000-160,000 for Yentna River
- 4-tier percentile approach
 - Assumed 50% of Susitna total production was non-Yentna.
- 2006-2008** Bendix-DIDSON-mark/recapture estimates
- Bendix estimates ~ 50-70 % of DIDSON-based estimates
 - Bendix estimates ~ 30% of mark-recapture estimates
 - Species apportionment was problematic for both sonars
 - Bendix estimates were not good indices of sockeye abundance
- 2008** Susitna sockeye salmon declared a stock of yield concern

-timeline continued-

- 2009** SEG for Yentna River sockeye discontinued
- 2009** Established SEGs for Judd, Chelatna, and Larson Lakes sockeye salmon stocks
- weir-based assessments
 - 4-tier percentile approach
 - post season assessments
- 2009-2015** Continued to estimate run size for Yentna River via fish wheels and genetics
- 2016** Yentna River “sonar camp” discontinued
- No longer able to estimate abundance via genetic mark-recapture
- 2016** Judd Lake weir not operated
- 1 weir on Yentna River (Chelatna Lake) and 1 weir on mainstem Susitna River (Larson Lake)

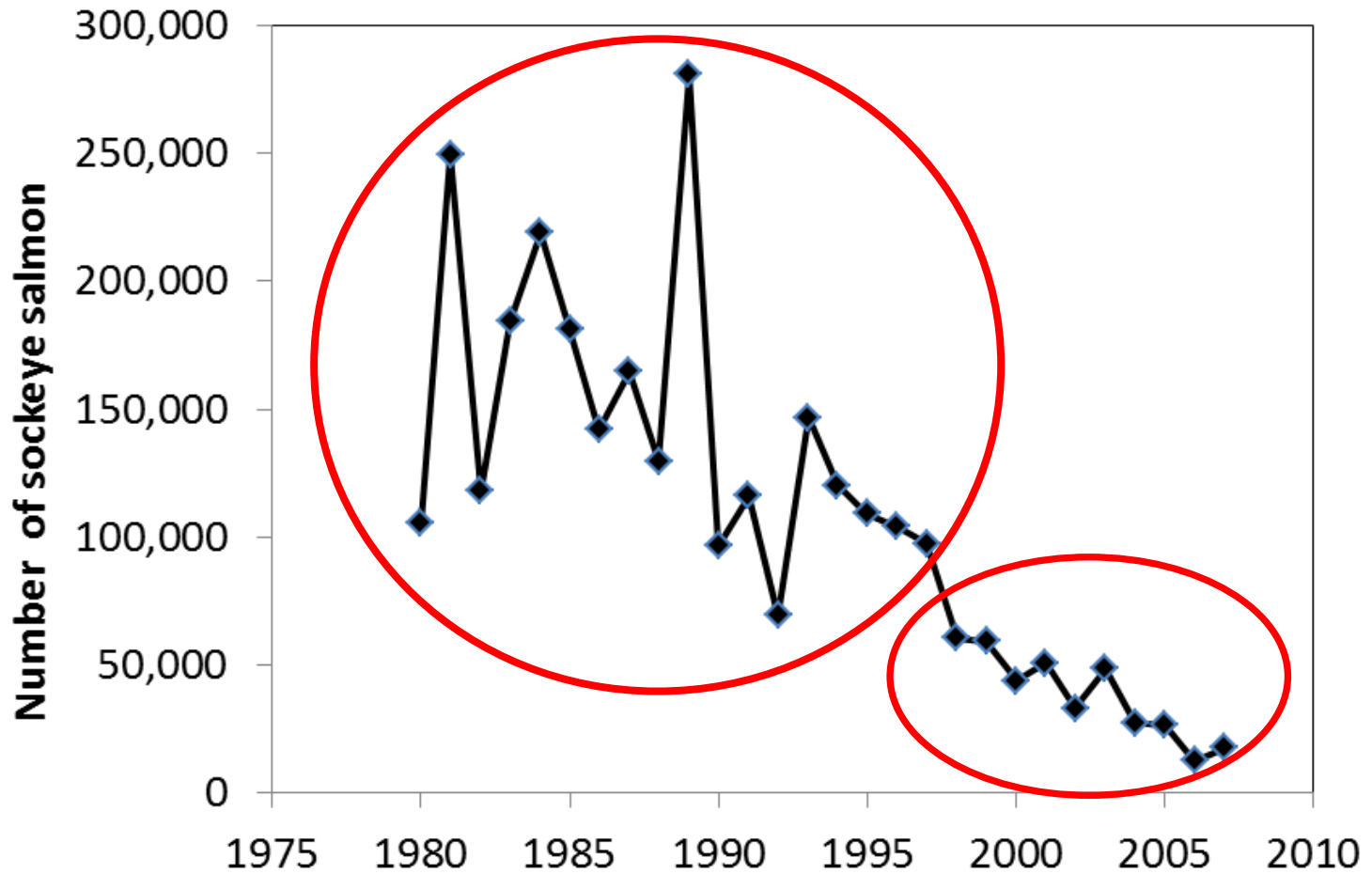
Stock of Concern

- In 2008, Susitna River sockeye salmon were designated a **stock of yield concern**.
- “Yield Concern” means a concern arising from chronic inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above a stock’s escapement needs.

Why was Susitna sockeye designated a stock of yield concern in 2008?

- Missed SEG (90,000-160,000 for Yentna River) 5 years 2000-2007
- Reduced harvest in the Northern District

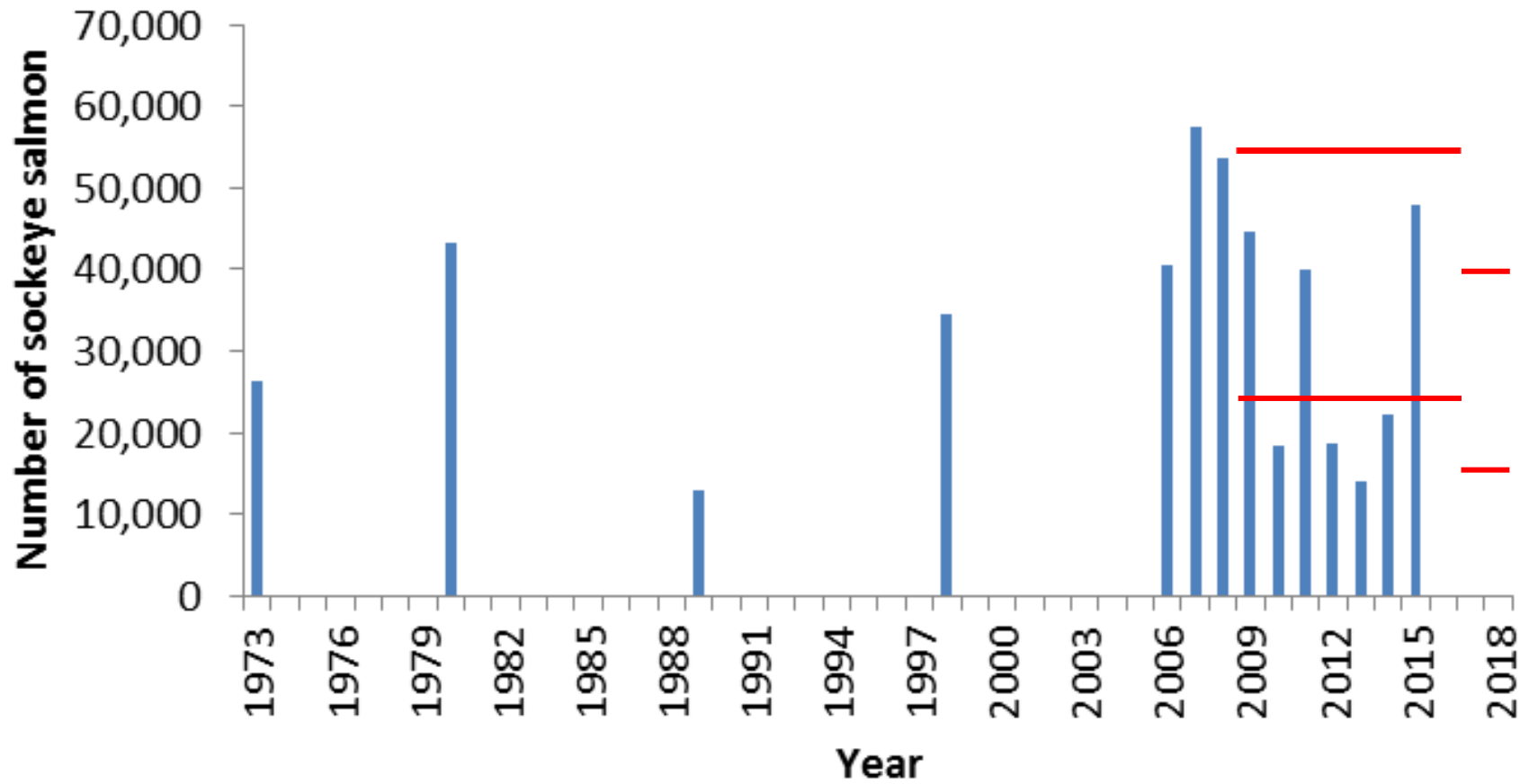
Northern District harvest 1980-2007



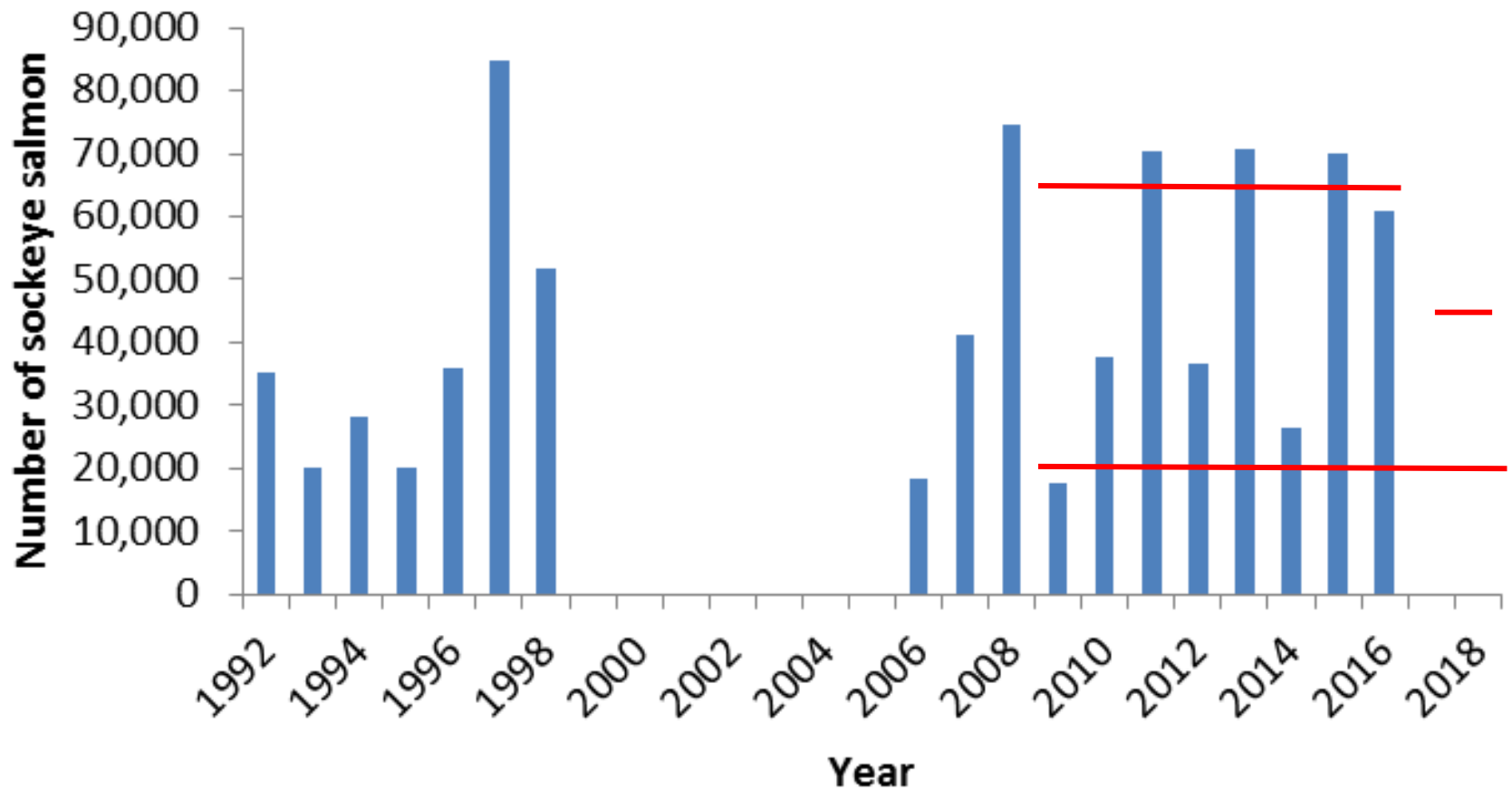
Susitna River sockeye salmon abundance and harvest (2006-2015)

Year	Inriver Abundance Estimates			CF	SF	Total	Total	Harvest
	Yentna	Susitna	Total	Harvest	Harvest	Harvest	Run	Rate
2006	311,197	107,000	418,197	56,218	2,308	58,526	476,723	0.12
2007	239,849	87,883	327,732	262,623	4,647	267,544	595,276	0.45
2008	233,677	70,772	304,449	153,041	4,403	157,730	462,179	0.34
2009	139,168	79,873	219,041	103,455	9,682	113,238	332,279	0.34
2010	151,744	38,716	190,460	116,932	5,449	120,805	311,265	0.39
2011	290,801	23,646	314,447	227,957	5,872	234,352	548,799	0.43
2012	109,981	31,823	141,804	180,143	5,395	185,346	327,150	0.57
2013	186,972	41,564	228,536	192,783	9,360	198,111	426,647	0.46
2014	144,441	22,933	167,374	122,887	6,084	128,215	295,589	0.43
2015	266,290	44,217	310,507	122,395	5,411	127,723	438,230	0.29
Mean	207,412	54,843	262,255	153,843	5,861	159,705	421,959	0.38

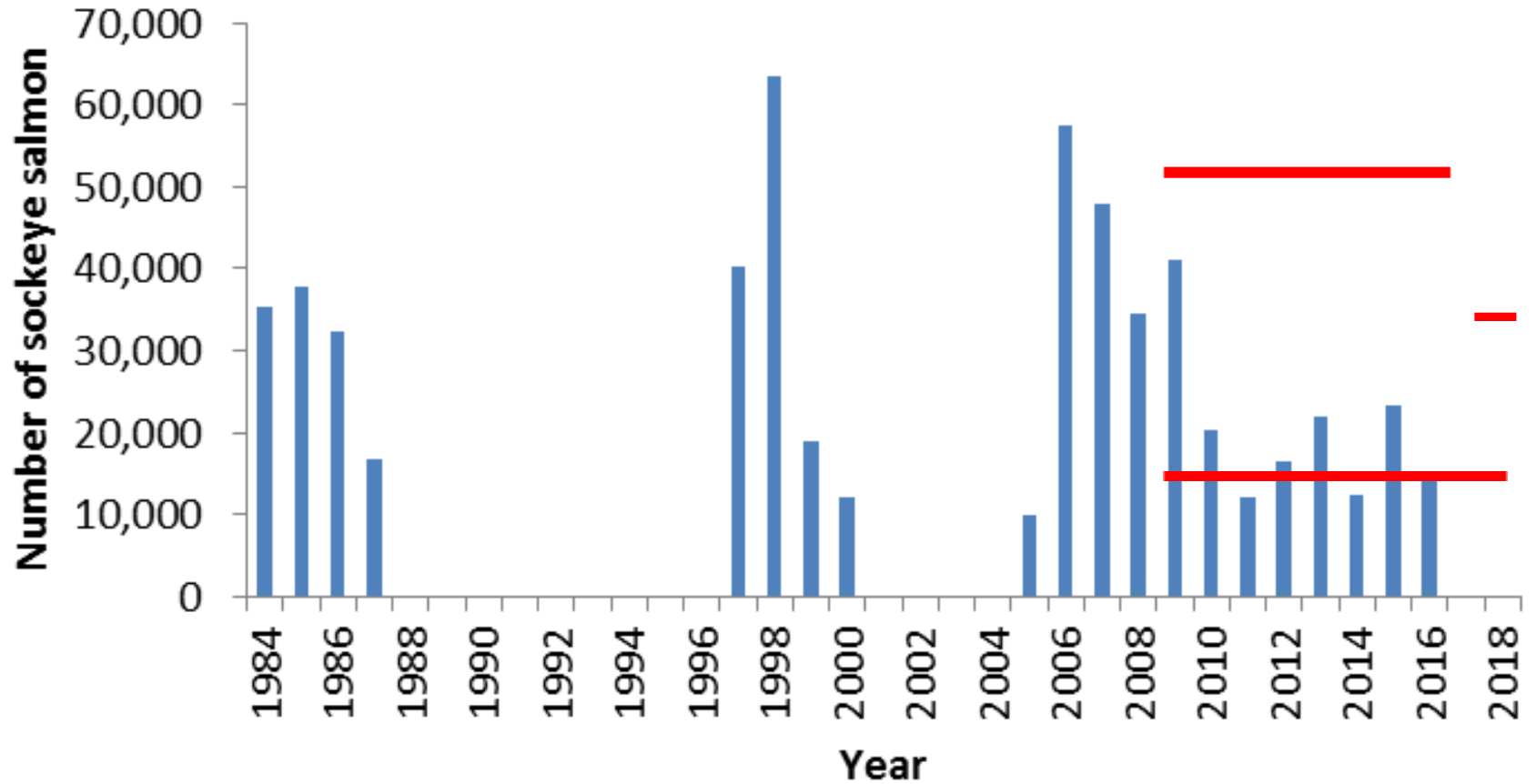
Judd Lake



Chelatna Lake



Larson Lake



How do these 3 weirs represent production for the Susitna watershed?

- Judd and Chelatna (~44.1% of total Yentna escapement)
- Larson Lake (~52.5% of total mainstem Susitna escapement)

Potential Factors Contributing to Reduced Yield

- Reduced marine survival
 - Natural mortality
 - Harvest in fisheries (commercial, subsistence)
- Reduced freshwater survival
 - Harvest in fisheries (sport, subsistence)
 - Loss or alteration of habitat (natural and anthropogenic)
 - Introduction of invasive species (Northern pike)
 - Changes in water quality and quantity
 - Pathogens

Management and Regulatory Actions

2008 – 2016 (Northern District set gillnet)

- Reduced gear from 3 to 1 or 2 set gillnets per permit in the Northern District from July 21 through August 6

2014 – present (Central District drift gillnet)

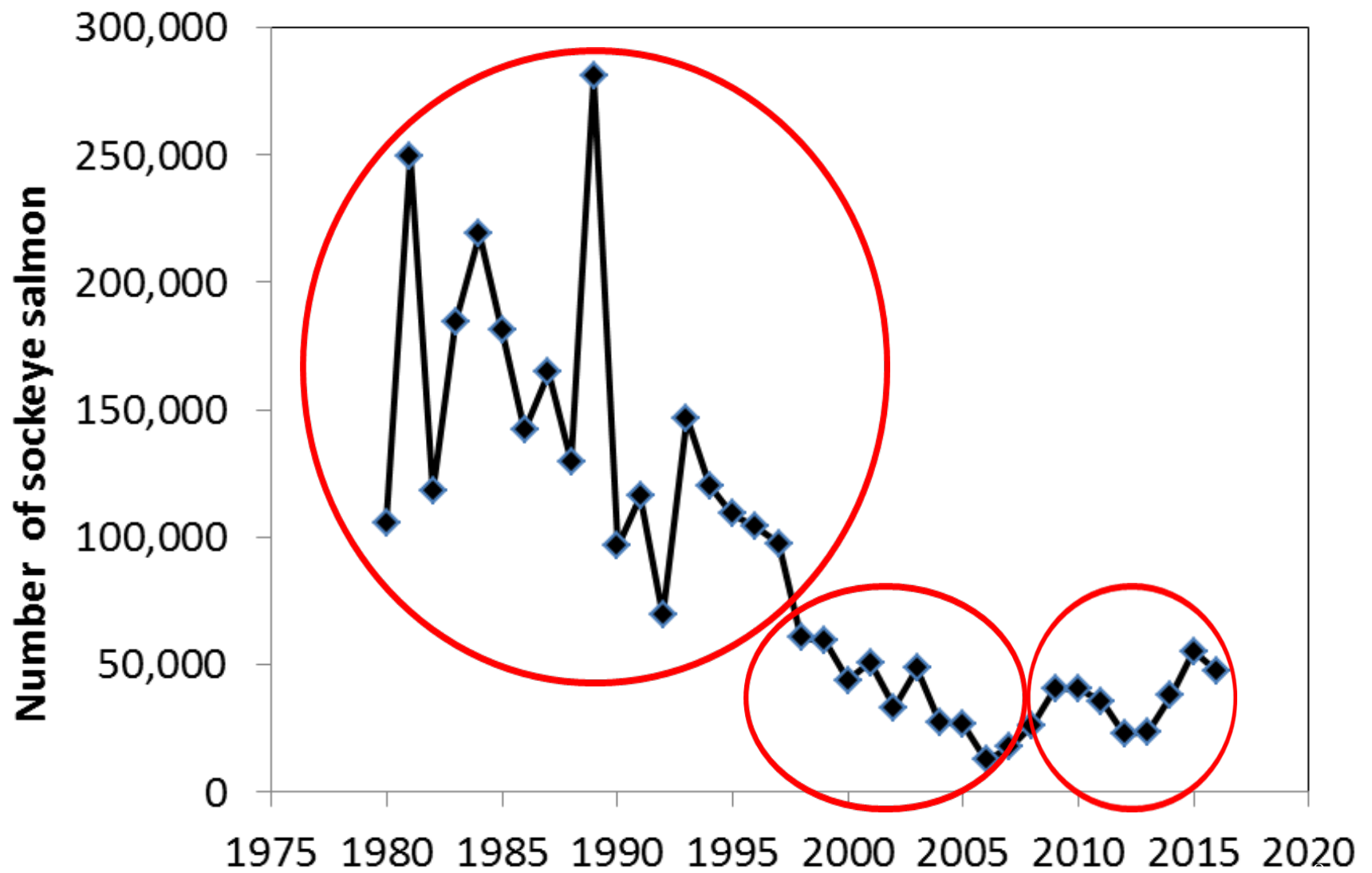
- From July 9–5 both regular periods are currently restricted to Drift Gillnet Area 1 (waters south of Kalgin Island)
- From July 16–31 there are drift gill net restrictions for sockeye that are dependent on the run tier for Kenai sockeye salmon

Management and Regulatory Actions

2014 – 2016 (Larson Creek)

EO authority utilized inseason to make the escapement goal.

Northern District harvest 1980-2016



Summary

- Remain a **Stock of Yield Concern**
- The board and the department have taken action to reduce harvest
- Harvest for Northern District has not rebounded to pre-1998 levels
- The department will reevaluate in 3 years

Questions?

