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THE 1994 NORTH ALASKA PENINSULA SOCKEYE SALMON FISHERIES
FROM NELSON LAGOON EAST TO STROGONOF POINT

By

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and

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INTRODUCTION

The Alaska Peninsula Salmon Management Area includes the South Peninsula from Kupreanof Point west to Scotch Cap and the North Peninsula from Cape Sarichef east to Cape Menshikof (Figure 1). While numerous salmon fisheries are prosecuted within the Alaska Peninsula Management Area, this report is limited to the 1994 sockeye fishery in the 110 mile coastal reach on the North Peninsula from Nelson Lagoon to Strogonof Point (Figure 2). Smaller fisheries occur outside this reach on the North Peninsula, but will not be covered in this report. Harvest data should be considered accurate but preliminary, since the final edition of the 1994 harvest numbers will not be available until after this document is published.

The Nelson Lagoon to Strogonof Point reach is the primary salmon harvest area on the North Peninsula and includes most of the Northern District, one of two districts on the north side of the Alaska Peninsula. By regulation, Northern District commercial salmon fishing is permitted with set gill net, drift gill net and purse seine gear (ADF&G 1992). However, within-area gear restrictions exist. The Nelson Lagoon Section is open to set gill net and drift gill net gear only; the Herendeen-Moller Bay Section to drift gillnet, set gillnet and purse seine gear; the Bear River Section to drift gill net and purse seine gear; and the Three Hills Section is an exclusive drift gill net area. The Ilnik Section is limited to drift gill net and set gill net gear.

The commercial salmon season begins annually in the Nelson Lagoon to Strogonof Point reach area with the opening of the Nelson Lagoon, Herendeen-Moller Bay, and Bear River Sections, and Ilnik Lagoon on 1 May (ADF&G 1992; Figure 2). The Three Hills Section opens on 25 June, the Ilnik Section from Three Hills east to Unangashak Bluffs on 5 July, and the remainder of the Ilnik Section on 15 July.

Although opening dates are established by regulation, actual fishing time on North Peninsula stocks is based on the inseason evaluation of local stock abundance and defined escapement objectives. During the 1 June through 15 September period within the Nelson Lagoon to Strogonof Point area, management emphasis is on four sockeye systems: Nelson River, Bear River, Sandy River, and Ilnik River (Figure 2). The combined escapement goal for these main systems is 394,000-548,000 fish (Table 1). Nelson River and Bear River are the dominant systems. The Nelson River system sockeye escapement goal midpoint is 142,500, and the Bear River midpoint 225,000. Sandy and Ilnik River escapement goals are 40,000-60,000 sockeye salmon (Table 1). All four systems have escapement counting weirs which provide daily escapement information used to manage commercial fisheries.

Local origin sockeye salmon are abundant from Nelson Lagoon to Strogonof Point in June, July, and August (Figure 3). The Nelson River sockeye run begins in mid June, peaks in early July, and is over by mid August. Bear River supports two distinct runs; the early run that begins in mid June, peaks in early July, and ends in late July; and the late run which starts in late July, peaks in early August, and is over in mid to late September. Sandy River run timing is based on the first year escapement weir counts (1994), and begins in mid-June, peaks late June and ends late July. The Ilnik run timing is early and closely parallels the Bear River early run timing.

The sockeye salmon management plan for the Nelson Lagoon to Strogonof Point reach emphasizes local stock management. The Nelson Lagoon Section is managed on the basis of the Nelson River run; Bear River Section for the early and late Bear River and Sandy River runs; the Three Hills Section for early and late run Bear River, Sandy River, and Ilnik River runs; and lastly, the Ilnik Section for Ilnik and Bear River stocks. There is also a non-local stock management consideration for the Ilnik Section that allows time and area closures to protect, in the event of a conservation concern, Bristol Bay Ugashik River sockeye salmon.

Historically, the majority of the North Peninsula sockeye salmon commercial harvest has occurred in the Northern District reach from Nelson Lagoon east to Strogonof Point, with the bulk of this harvest occurring within the Port Moller to Strogonof Point reach (Murphy et al 1994). The average (1984-93) catch in the Port Moller to Strogonof area is 1,891,000 sockeye salmon (Figure 4). During these years, the harvest has been about evenly split between the two areas of Port Moller to Cape Seniavin (48%) and Cape Seniavin to Strogonof Point (52%).

Salmon management requires reasonable knowledge of the migration patterns and susceptibility of the individual stocks contributing to a fishery. The destination of sockeye salmon harvested in North Peninsula Port Moller to Strogonof Point reach has been of concern for both management and allocation reasons. In the early 1920's, there were divergent views on the destination of sockeye salmon caught in the vicinity of Port Moller (Gilbert 1923). One faction held that the run consisted largely of Bear and Sandy Rivers stocks and the other that, at least in the high catch years, most of the fish were of Bristol Bay origin. Several tagging experiments have been conducted in the immediate vicinity of Port Moller and off the mouths of Bear and Sandy Rivers (Gilbert 1923; Hennick 1964). The results indicate that non-local sockeye salmon do not school close to shore in the vicinity of Port Moller. Non-local stocks of Bristol Bay origin have contributed to late June-July fisheries east of Cape Seniavin and to a lesser degree west of Cape Seniavin as determined from scale pattern analysis (Table 2; Barrett and Murphy 1992; Swanton and Murphy 1992; and Murphy and Barrett 1993).

RESULTS

In 1994, a total of 2,711,000 sockeye salmon were harvested in the Nelson Lagoon to Strogonof Point reach of the North Peninsula. This was the third largest sockeye catch on record, but more than one million fish below the 1993 record of 3,784,800. Most of the 1994 catch occurred in the Port Moller to Strogonof Point reach (88%; Figure 4).

Approximately 230 permit holders participated in the 1994 fishery: 43 in Nelson Lagoon and 188 in the Port Moller to Strogonof Point area. Effort inside Herendeen Bay was limited to one set gillnet operator targeting chum salmon in 1994. The majority of the permit holders fished in the Bear River, Three Hills, and Ilnik Sections. The first delivery in 1994 occurred in the Bear River Section on 30 May, the last on 13 September.

The 1994 Nelson Lagoon sockeye harvest was 329,200. This was the sixth largest since 1962 and slightly larger than the 1984-93 average of 316,000 (Figure 5). The peak weekly catch occurred during 26 June-2 July with a catch of 88,700, with the following week harvest of 85,600 sockeye (Figure 6).

The catch of 1,061,200 sockeye salmon in the Port Moller to Cape Seniavin reach, was slightly above the 1984-93 average of 902,000 (Figure 4). The peak weekly harvest occurred during 24-30 July (126,000; Figure 7).

In the Cape Seniavin to Strogonof Point reach, 1,320,500 sockeye salmon were harvested, above the 1984-93 average of 988,000 (Figure 4). The peak weekly harvest on 10-16 July was 348,400 sockeye (Figure 7). In 1994, 56% of the sockeye harvest in the Port Moller to Strogonof Point reach occurred in the Cape Seniavin to Strogonof Point reach, while 44% occurred in the Port Moller to Cape Seniavin area. The sockeye harvest in the Cape Seniavin to Strogonof Point reach post July 31, 1994 was about 265,000 fish, while 496,000 sockeye were taken during the same period in the Port Moller to Cape Seniavin reach.

The Port Moller to Strogonof Point combined catch was 2,381,800 sockeye (Figure 4). The peak weekly harvest (410,600) occurred during the period 10-16 July, with the majority taken in the Cape Seniavin to Strogonof Point reach (348,400; Figure 7). The bulk of the sockeye harvest in the Port Moller to Strogonof Point area occurred in the Bear River Section (46%; 1,059,000 fish), with the Three Hills Section (20%; 482,000 fish) and Ilnik Section (35%; 839,000 fish) accounting for the remainder of the harvest. Weekly catches of 100,000 or more sockeye salmon occurred in the Port Moller to Strogonof reach from 26 June to 3 September (Figure 7).

The sockeye escapement goals for all North Peninsula systems were met or exceeded (Table 1). The indexed total sockeye escapement in the Nelson Lagoon to Strogonof Point reach was about 990,300 (Table 1). Most of the escapement occurred in Bear River (47%), Nelson River system (34%), Sandy River (12%), and Ilnik River (8%). The Bear River escapement was about evenly distributed between early and late run fish. The Bear River early run peak daily escapement occurred on June 28 (28,493), while the late run peak daily escapement was on August 8 (14,085). Nelson River, the second largest escapement system peaked on 9 July (17,459), while Sandy River peak sockeye count occurred on 8 July (8,126). The Ilnik River peak daily escapement was on 14 July (5,145). Meshik and Cinder Rivers, located in the vicinity of Strogonof Point (northeast), had strong sockeye indexed escapements in 1994 (44,900 and 83,400). The entire North Peninsula 1994 indexed total escapement is 1,210,850 sockeye.

DISCUSSION

The 2,381,800 sockeye catch in the Port Moller to Strogonof reach likely includes an unknown number of Bristol Bay fish based on previous stock identification studies, however it is also highly likely that local stocks were a major component of the catch. The interannual variation in migration patterns during abundant Bristol Bay sockeye runs may have impact on the nonlocal

harvest in North Peninsula waters. The peak daily harvest of 91,000 sockeye in 1994 is considerably below previous years peak daily catch.

All major sockeye salmon runs appear to be healthy in the North Peninsula, with all escapement goals met or exceeded in 1994. Sandy River sockeye salmon was enumerated in 1994 for the first time using a weir similar to those at other major sockeye systems on the North Peninsula. The escapement goal of 40,000-60,000 sockeye was exceeded (115,000).

Extensive weekly sampling of the commercial catch areas east of Nelson Lagoon was conducted in 1994. However, the absence of funding for stock identification analysis has made it impossible to define, with any degree of accuracy, the contribution of the local and non local stocks.

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Table 1. Sockeye salmon escapement goals and estimated total escapement in 1994 for systems located within the vicinity of the Nelson Lagoon to Strogonof Point reach.

System	Escapement Goal	1994 Estimated Total Escapement
Nelson River System	114,000-178,000	333,400
Bear River		
Early Run	120,000-135,000	260,559
Late Run	80,000-115,000	204,441
Total	200,000-250,000	465,000
Sandy River	40,000-60,000	115,000
Ilnik River	40,000-60,000	75,000
Total	394,000-548,000	988,400

Table 2. Summary of North Peninsula sockeye stock separation studies, 1987-94.

Area	Year	Date	Estimated Stock Composition	Commercial Harvest During Period	Source
Harbor Point - Cape Seniavin					
	1988	19 June - 2 July	96% North Peninsula 4% Bristol Bay (Ugashik)	137,937	Geiger (1989)
	1990	8-21 July	10% Bear River (North Peninsula) 48% Nelson River (North Peninsula) 42% Bristol Bay	118,157	Swanton and Murphy (1992)
	1991-1994		Not available		
Cape Seniavin - Strogonof Point					
	1987	7-13 July	59% North Peninsula 41% Bristol Bay (Ugashik)	1,363	Geiger (1989)
		14-21 July	29% North Peninsula 71% Bristol Bay (Ugashik)	2,162	Geiger (1989)
	1988	19 June - 2 July	90% North Peninsula 10% Bristol Bay (Ugashik)	104,655	Geiger (1989)
		3-9 July	85% North Peninsula 15% Bristol Bay (Ugashik)	396,246	Geiger (1989)
		10-16 July	34% North Peninsula 66% Bristol Bay (Ugashik)	184,511	Geiger (1989)
	1989	5 July (18 hr opening)	64% North Peninsula 36% Bristol Bay (Ugashik)	126,283	Geiger (1989)
	1990	8-21 July	11% Bear River (North Peninsula) 11% Nelson River (North Peninsula) 78% Bristol Bay	763,786	Swanton and Murphy (1992)
	1991-1994		Not available		

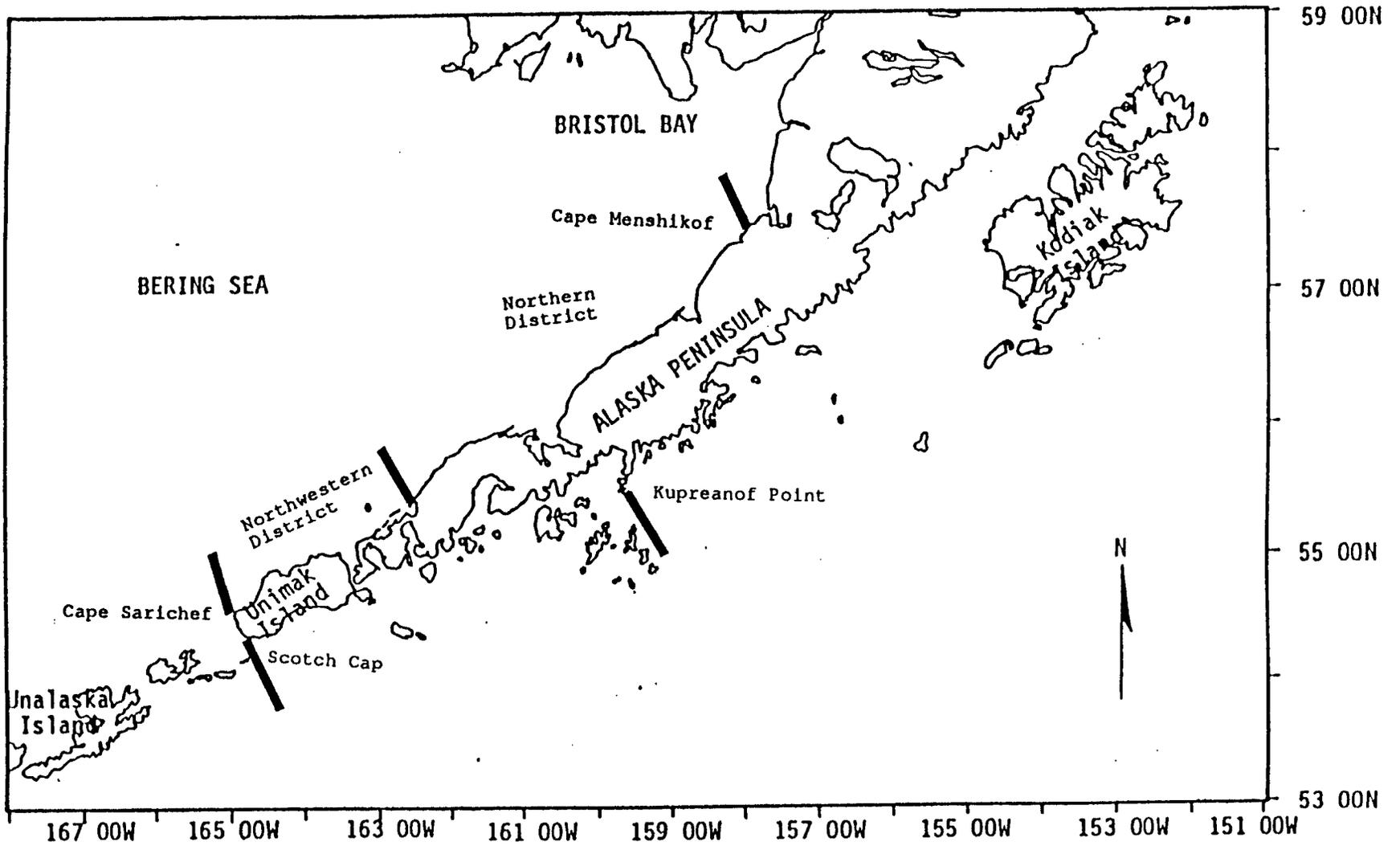


Figure 1. North and South Alaska Peninsula with North Peninsula districts depicted.

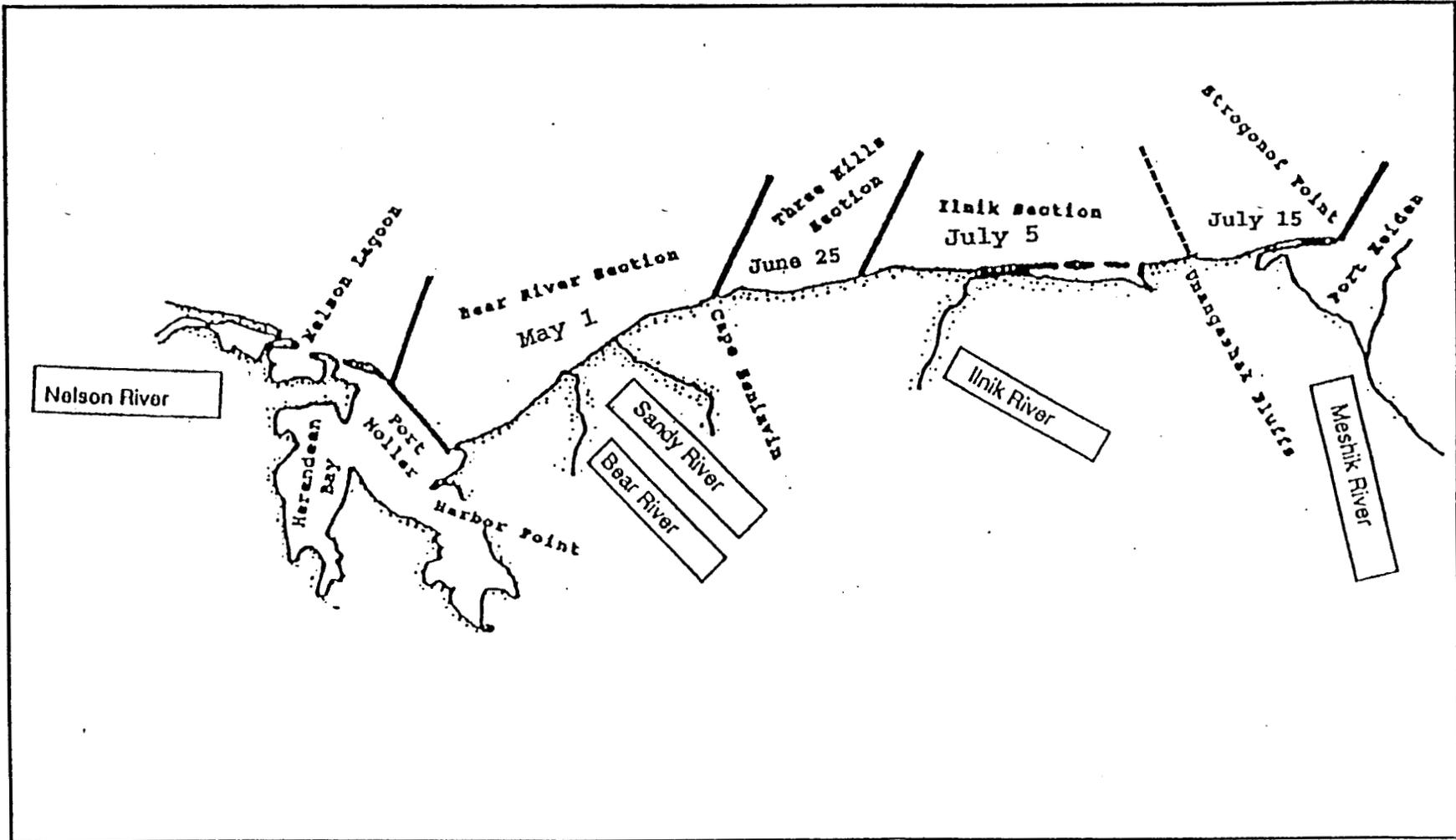


Figure 2. Nelson Lagoon to Strogonof Point reach, with district sections, commercial salmon season opening dates, and major sockeye salmon systems depicted.

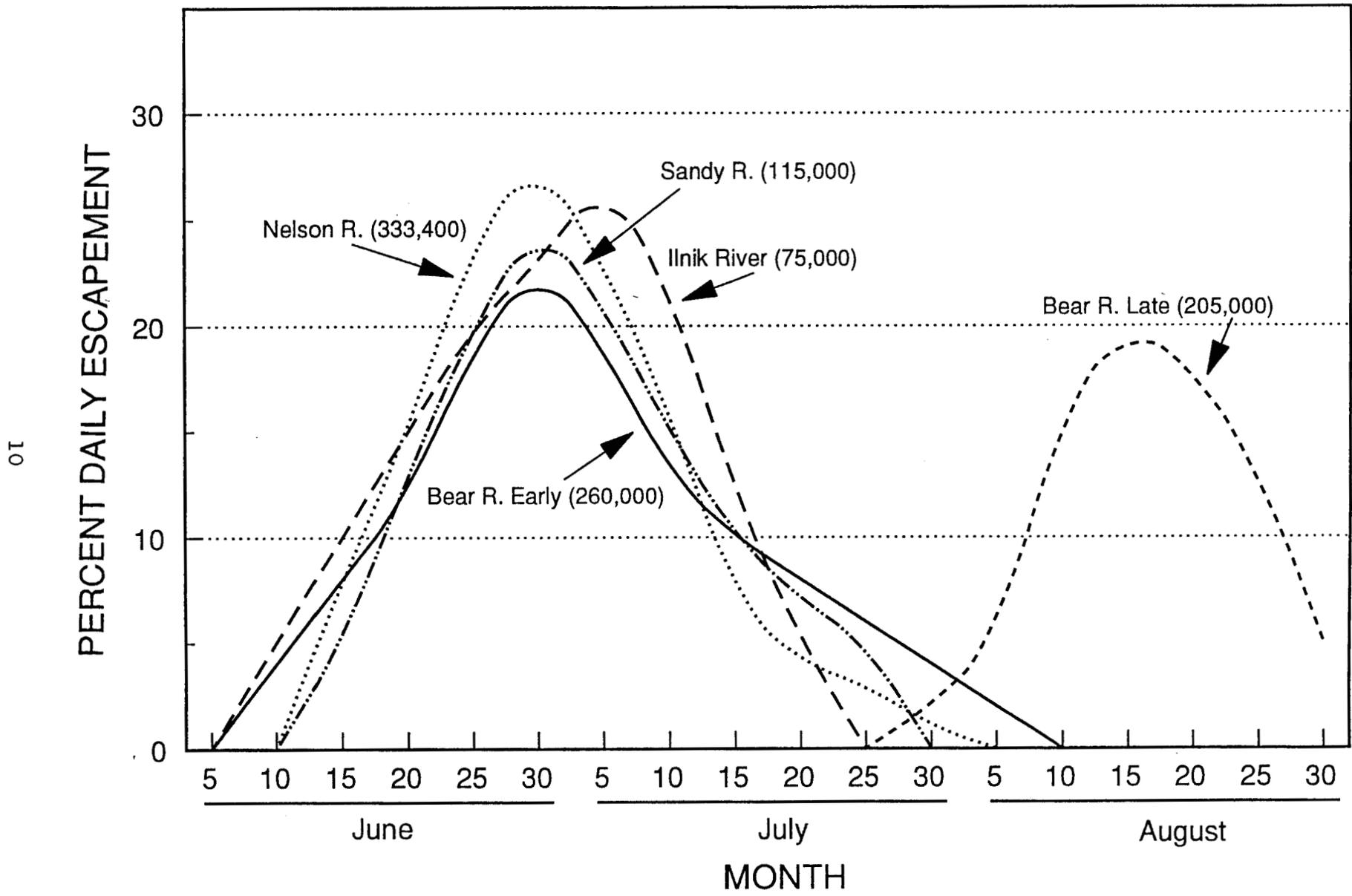


Figure 3. Smoothed run timing of selected major North Peninsula sockeye salmon stocks with 1994 estimated total escapement (Nelson and Sandy Rivers back-calculated 5 days to fishery).

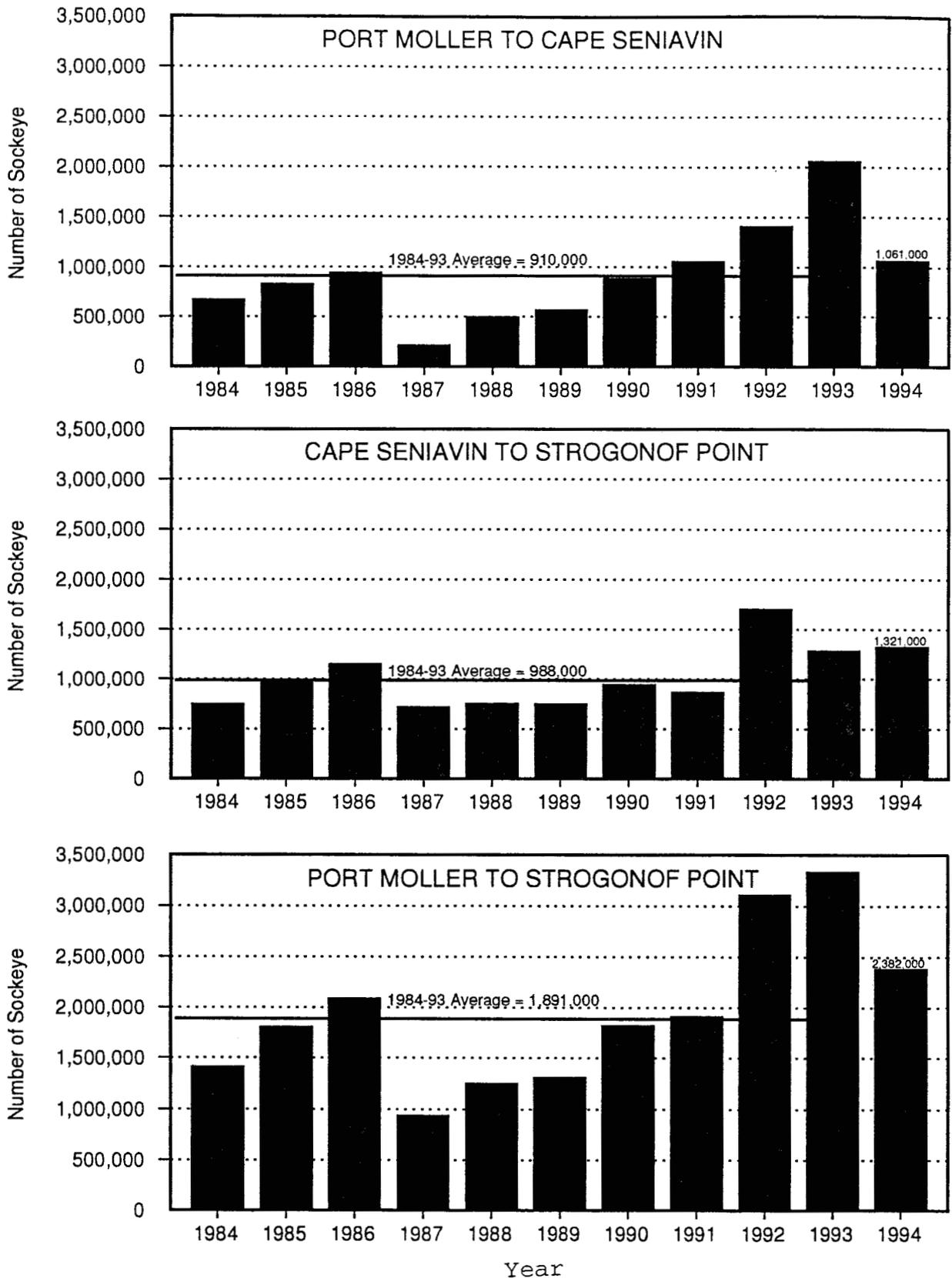


Figure 4. Port Moller to Strogonof Point sockeye salmon catches, 1984-94.

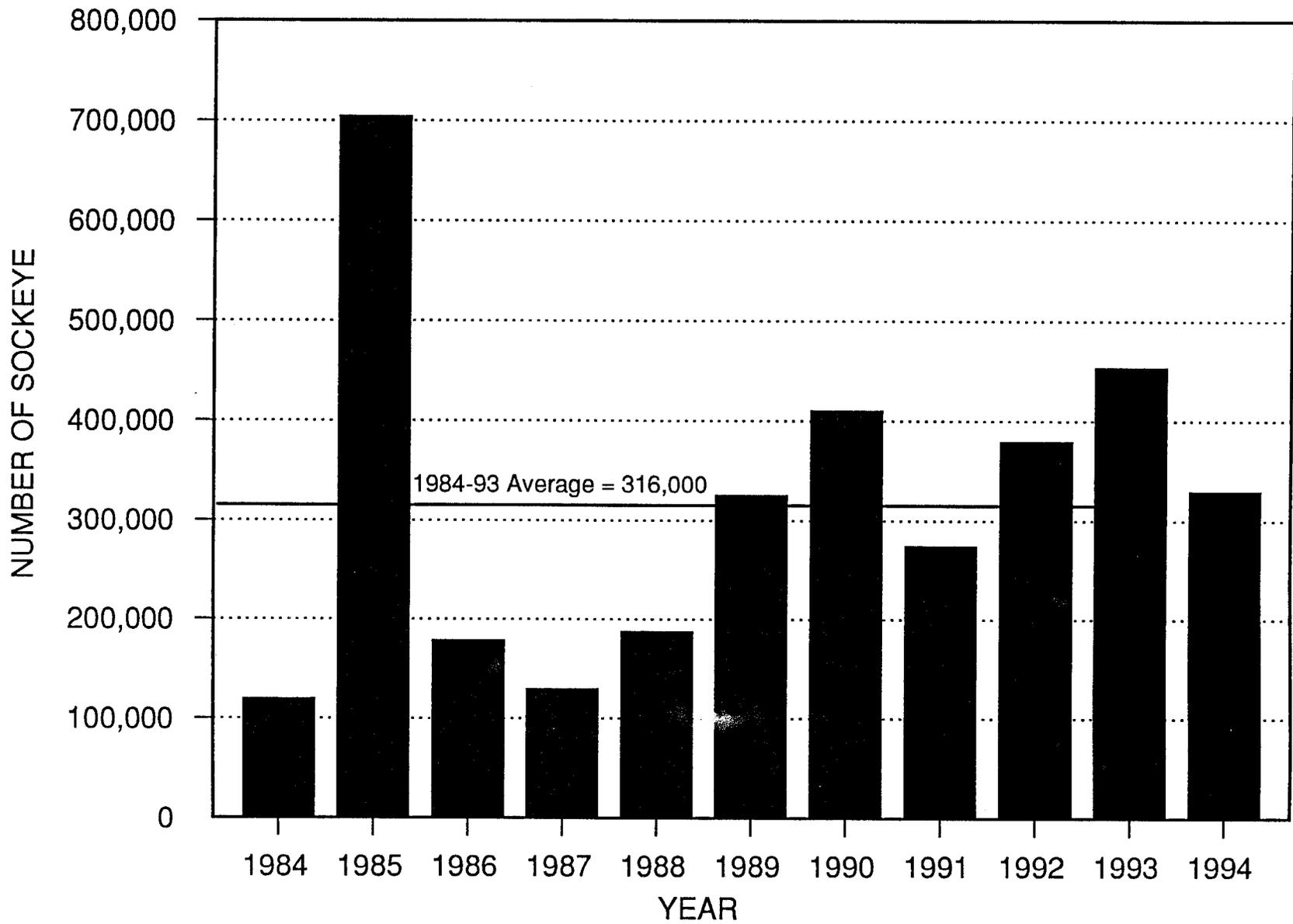


Figure 5. Nelson Lagoon commercial sockeye salmon catches, 1984-94.

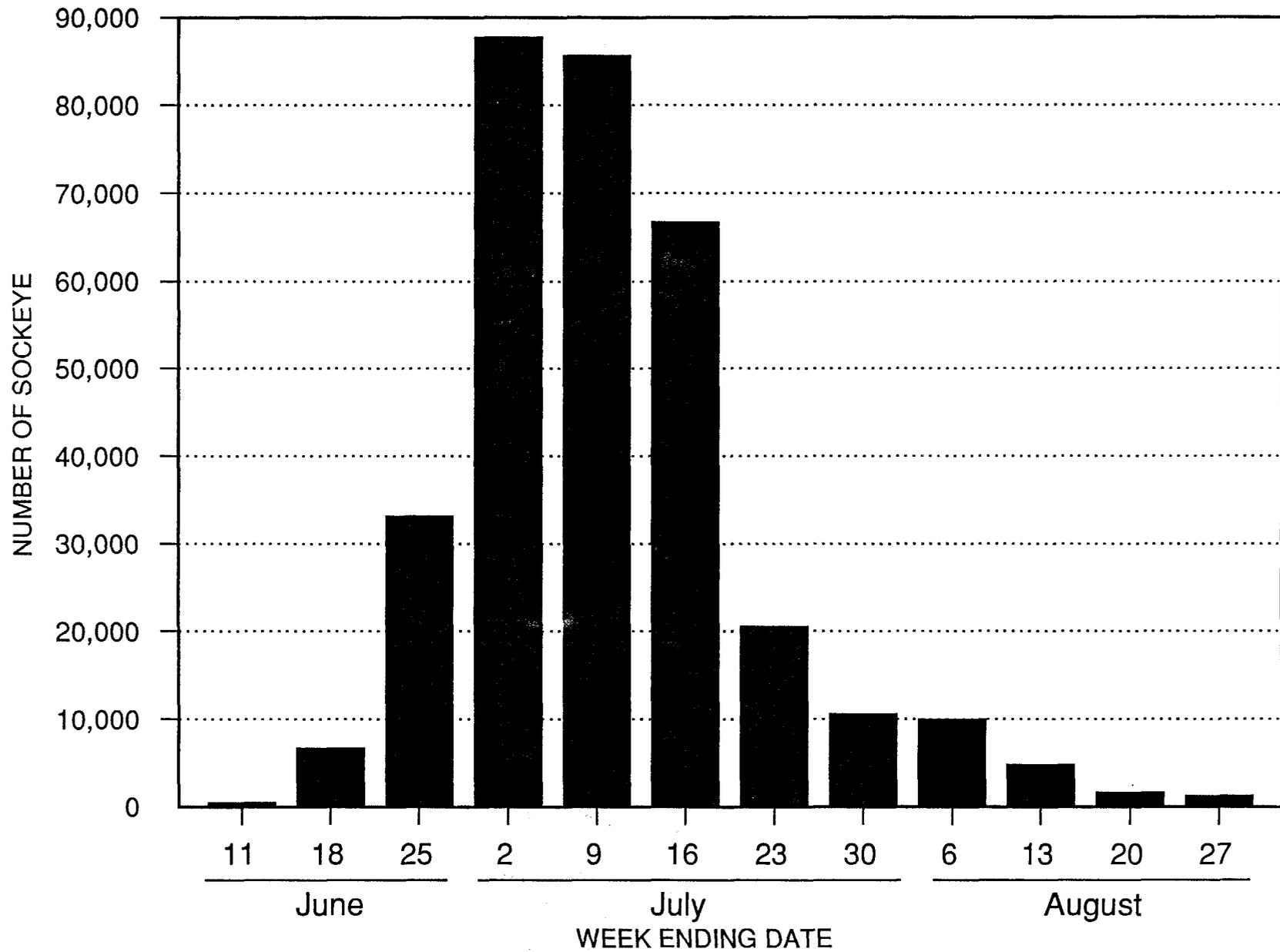


Figure 6. Nelson Lagoon commercial sockeye salmon harvest by week, 1994.

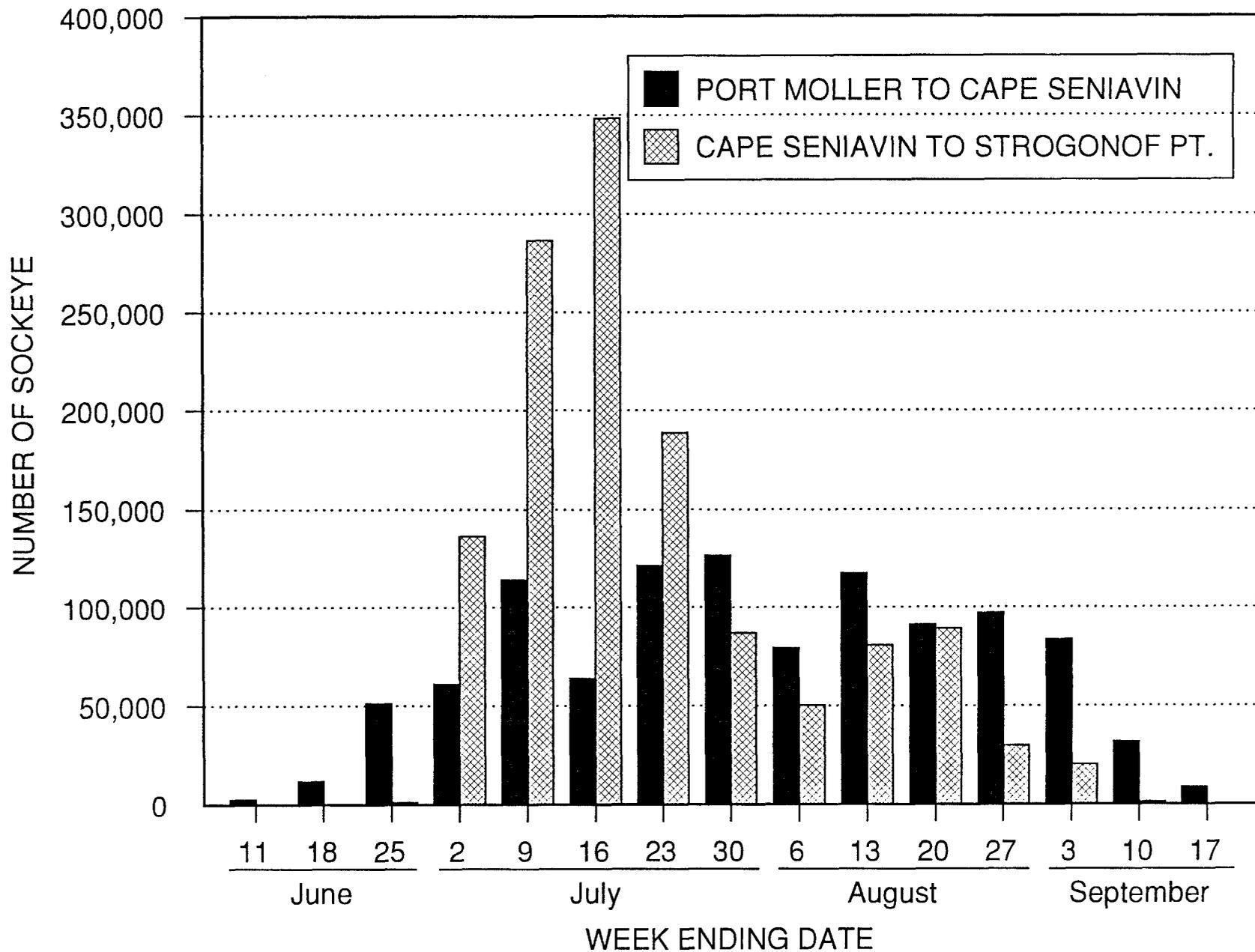


Figure 7. Port Moller to Strogonof Point sockeye salmon harvest by week, 1994.

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