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at the Dalles Dam,
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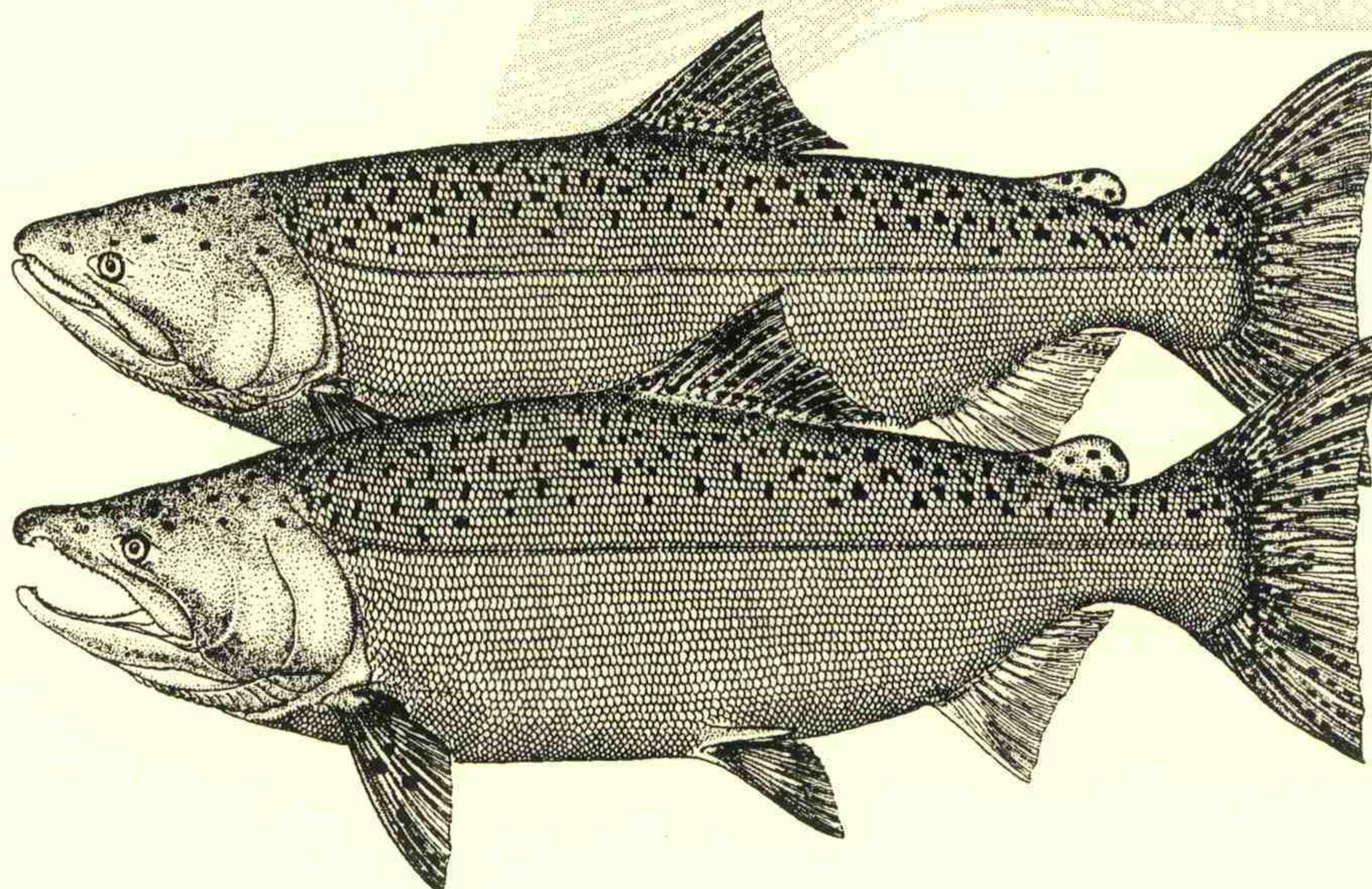
**Northwest Fisheries
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**National Marine
Fisheries Service**

Seattle, Washington

by
Dean A. Brege, Randall F. Absolon,
Benjamin P. Sandford, and Douglas B. Dey

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STUDIES TO EVALUATE THE EFFECTIVENESS OF
EXTENDED-LENGTH SCREENS AT THE DALLES DAM, 1993

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INTRODUCTION

The Dalles Dam, at River Kilometer 308 (River Mile 192), is operated by the U.S. Army Corps of Engineers (COE) and is the second in a series of hydroelectric projects upstream from the mouth of the Columbia River. Completed in 1957, The Dalles Dam is equipped with 22 turbine units, an ice and trash sluiceway, 20 spillbays, and a navigation lock (Fig. 1). Unlike most other hydroelectric projects on the Columbia River, the powerhouse at The Dalles Dam is oriented parallel to the river flow.

The COE has proposed a juvenile fish bypass system for The Dalles Dam similar to those in use at other COE Columbia and Snake River projects. In 1985 and 1986, the National Marine Fisheries Service (NMFS) conducted research at The Dalles Dam to determine the potential fish guidance efficiency (FGE) for yearling chinook salmon (*Oncorhynchus tshawytscha*), sockeye salmon (*O. nerka*), and steelhead (*O. mykiss*) attainable with standard-length submersible traveling screens (STS) (Monk et al. 1986, 1987). Additionally, the vertical distribution of fish entering the turbine intake was measured to determine theoretical fish guidance efficiency (TFGE, an estimate of the percentage of fish theoretically guidable based upon hydraulic model studies and the vertical distribution of fish).

In 1985, the FGE of STSs at The Dalles Dam ranged from 44 to 55% for yearling chinook salmon, from 73 to 79% for steelhead, and from 8 to 14% (highest FGE obtained when the STS was lowered 0.8 m) for subyearling chinook salmon. From vertical

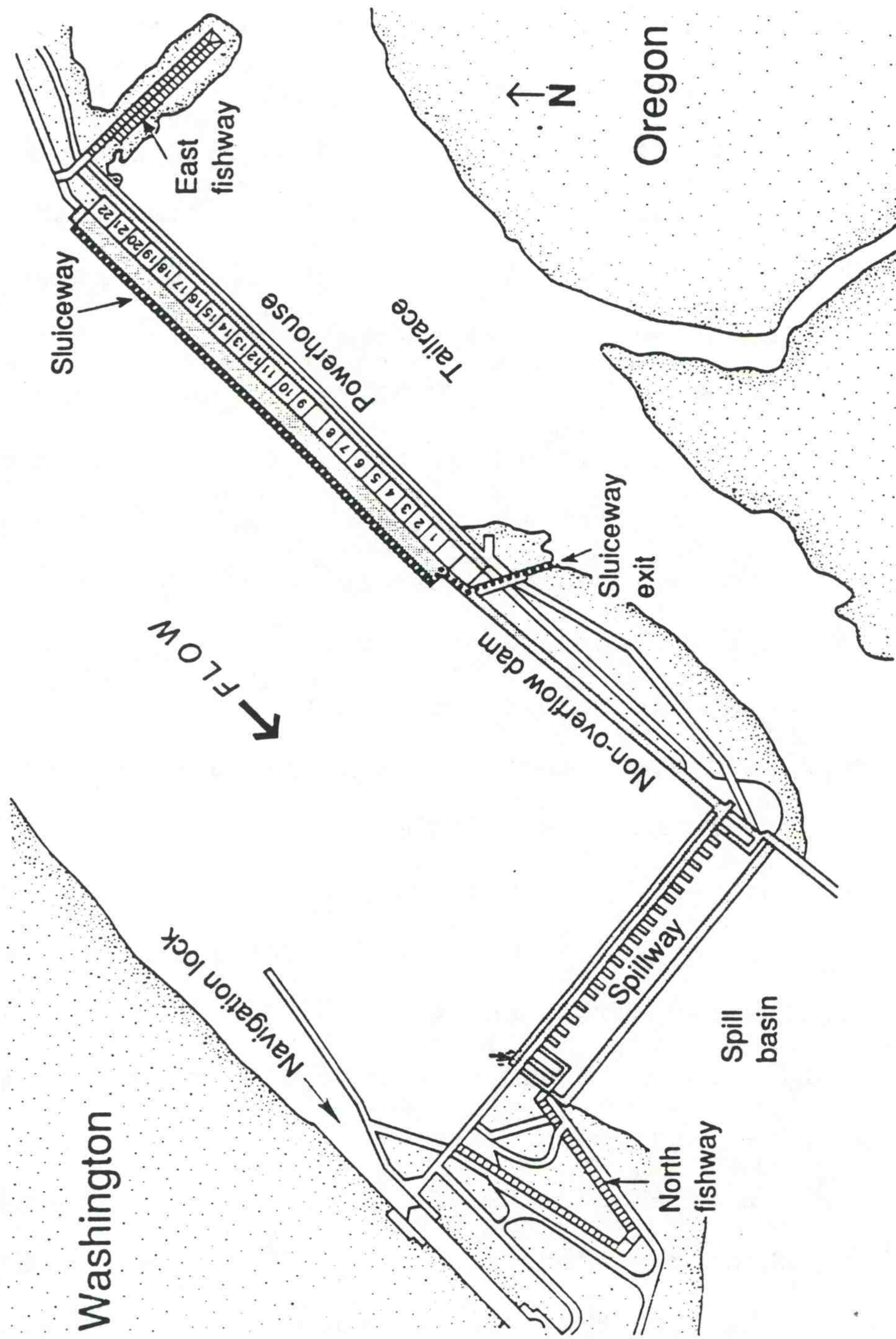


Figure 1.--Overview of The Dalles Dam showing numbering sequence of turbine units and alignment of powerhouse relative to river flow.

distribution measurements, the TFGE of STSs was estimated to be 67% for yearling chinook salmon, 57% for sockeye salmon, 83% for steelhead, and only 22% for subyearling chinook salmon. In 1986, lowering the STS again appeared to enhance FGE compared to an STS at standard elevation (56 vs. 44% for yearling chinook salmon). Although FGE for all species was nearly 90% of the TFGE expected with STSs, FGE was still well below a target level of 70%. These data and the encouraging results from tests with extended-length screens at McNary Dam in 1991 and 1992 (Brege et al. 1992, McComas et al. 1993) suggested that FGE at The Dalles Dam might be improved with longer screens.

Research goals at The Dalles Dam in 1993 were 1) to evaluate the FGE of a prototype extended-length submersible bar screen and extended-length submersible traveling screen, and 2) to evaluate the effects of these extended-length screens and other system components on fish condition. Fish guidance efficiency values obtained with extended-length screens and effects on fish condition were compared to concurrently obtained values with an STS. The test schedule for the 1993 season is shown in Table 1. Specific research objectives in 1993 were to

- 1) Determine the FGE of an extended-length bar screen and an extended-length traveling screen with juvenile salmonids, especially yearling and subyearling chinook salmon, during the spring and summer outmigration and compare to FGE obtained concurrently with an STS.

Table 1.--Test schedule for the 1993 field season at The Dalles Dam.

Test series	Dates	Test turbine unit/slot	Flow ^a (kcfs)	Guidance device ^b	Test type ^c	Porosity of perforated plate (%)
1	26, 28, 30 April	4B	12.3	STS	DES	48
		5A	12.3	ESBS	DES	50
		5B	12.3	ESBS	DES	45
		5C	12.3	ESTS	DES	49
		6A	12.3	ESTS	DES	54
		6B	12.3	ESBS	DES	55
2	6-8, 11, 13-27 May	4B	13.4	STS	FGE	48
		5B	13.4	ESBS	FGE	50
		6B	13.4	ESTS	FGE	54
3	10, 11, 13-27 May	5C	13.4	ESBS	DES	55
4	24-26, 28-30 June 1, 6-10, 12-16, 19-21 July	4B	13.4	ESTS	FGE	54
		5B	13.4	ESBS	FGE	50
		6B	13.4	STS	FGE	48

^aTest Series 1 conducted without fyke-net frames in place;
Test Series 2-4 conducted with fyke-net frames in place.

^bSTS = standard-length submersible traveling screen,
ESBS = extended-length submersible bar screen,
ESTS = extended-length traveling screen.

^cDES = descaling test, FGE = fish guidance efficiency test.

- 2) Evaluate the effects of an extended-length bar screen and an extended-length traveling screen on juvenile salmonid descaling.

OBJECTIVE 1: FISH GUIDANCE EFFICIENCY OF THE
EXTENDED-LENGTH BAR SCREEN AND THE EXTENDED-LENGTH TRAVELING
SCREEN

Approach

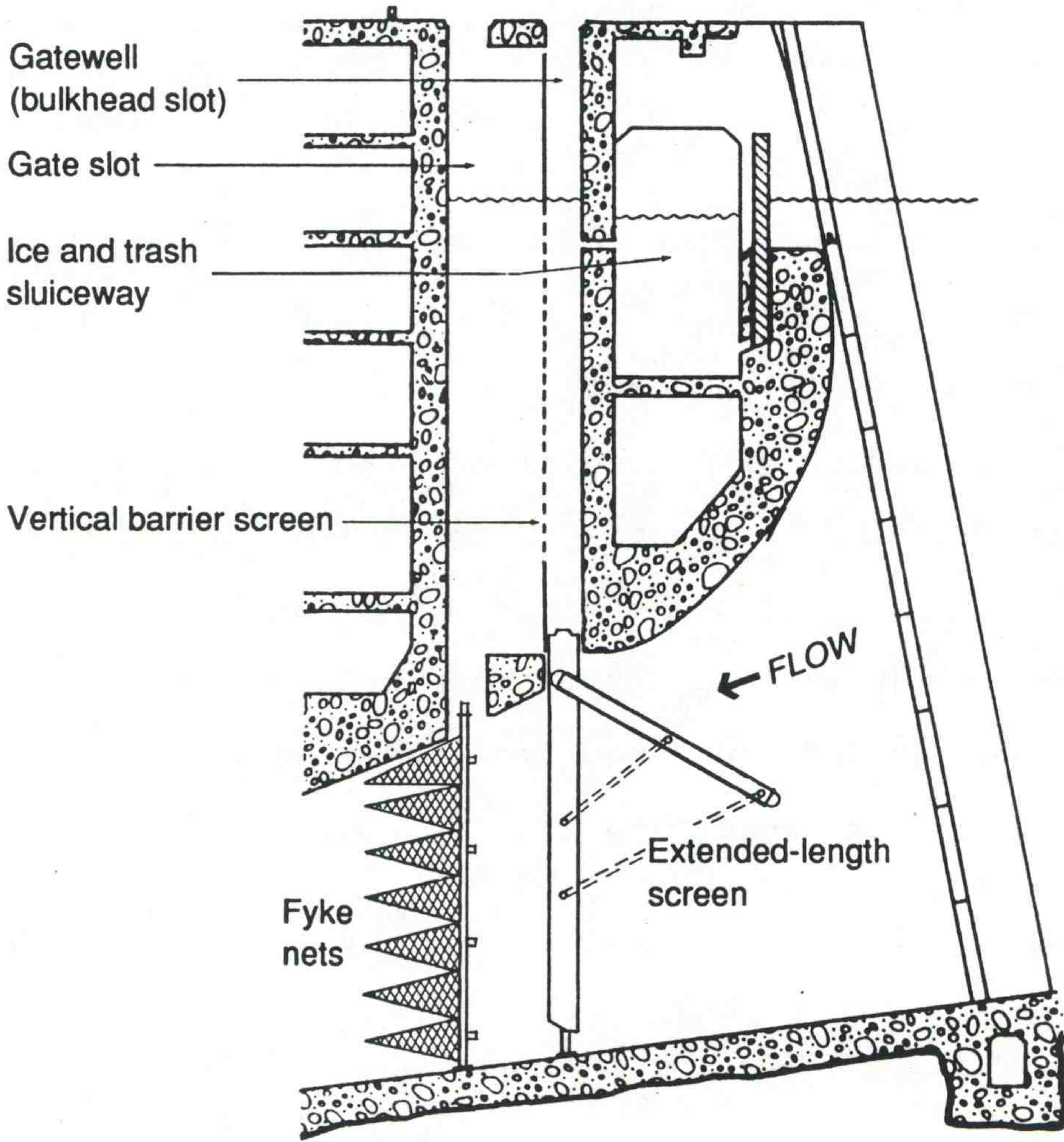
The methods for determining FGE were similar to those used in previous FGE studies with extended-length screens (Brege et al. 1992, McComas et al. 1993). Gatewell dipnet catches provided estimates of the number of guided fish (Swan et al. 1979); fyke-net catches provided estimates of the number of unguided fish (Fig. 2). Fish guidance efficiency for each species was calculated as gatewell catch (guided fish) divided by the total number of fish (guided plus unguided), by species, passing through the turbine intake during the test period:

$$FGE = \frac{GW}{GW+FN} \times 100\%$$

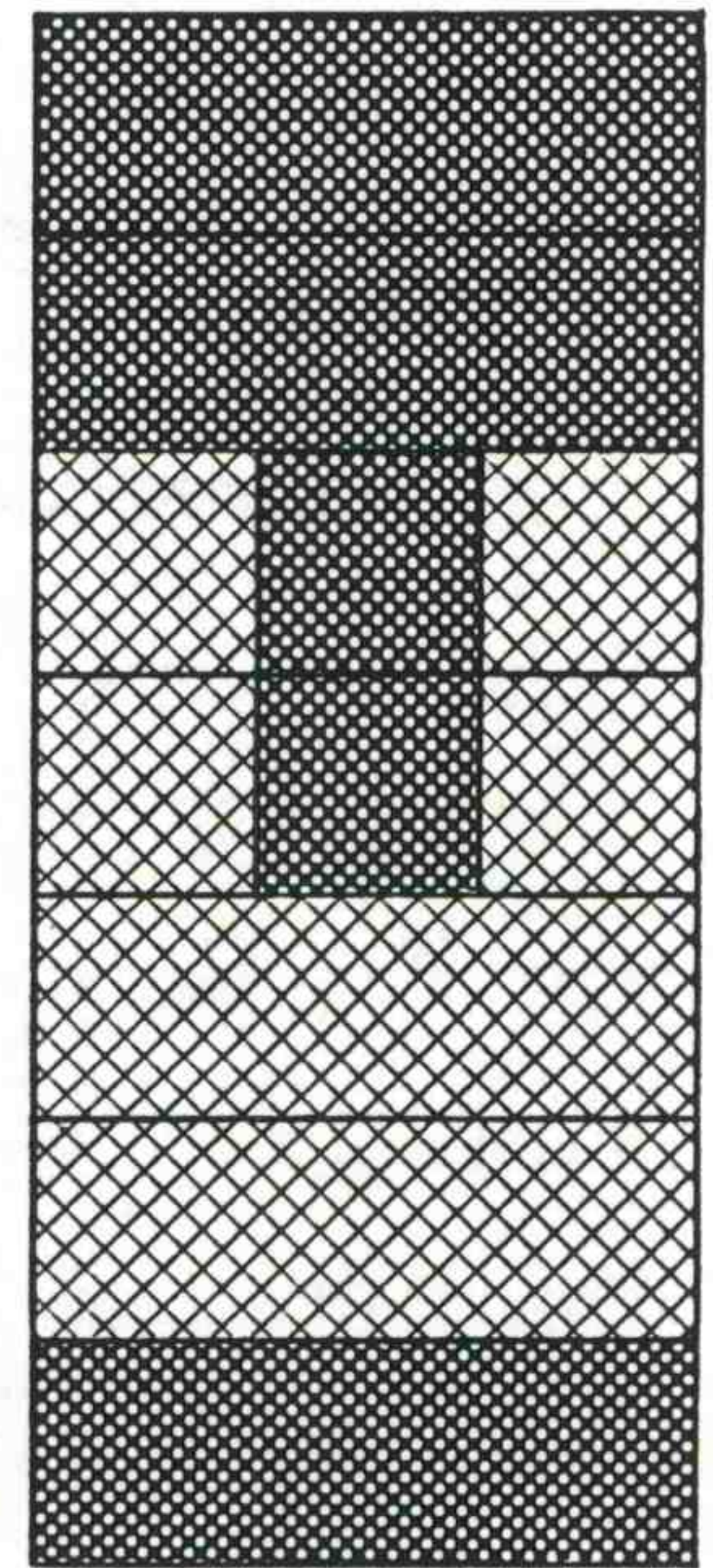
GW = gatewell catch
FN = fyke-net catch

Guided fish were confined to the bulkhead slot by a modified balanced flow vertical barrier screen (VBS) that separated the bulkhead slot from the gate slot (Fig. 2). This VBS, originally designed to be used with STSSs, consisted of seven, 2.7-m high panels, each of which extended across the full width of the slot.

The Dalles Dam cross section



Vertical barrier screen




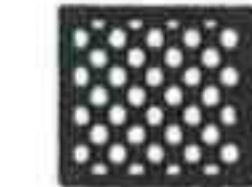
-  Mesh panel with perforated plate back
-  Solid panel

Figure 2.--Cross section of turbine unit at The Dalles Dam with extended-length screen and fyke nets in place.

Each FGE test lasted a minimum of 1 hour and typically began at 2000 h (dusk) and ended between 2100 and 2400 h when it was estimated that the target number of fish (at least 200 total) had been collected in the gatewell and fyke nets. Total numbers of fish collected were monitored by dipnetting the gatewells during the test.

Past FGE studies have utilized fyke nets attached to a frame beneath the STS to collect unguided fish. With the extended-length screens this is not possible since the screen framework fills the entire bulkhead slot from floor to ceiling of the turbine intake (Fig. 2). Therefore, a frame with fyke nets to collect unguided fish was installed in the downstream gate slot. For 1993, redesigned fyke-net frames, more streamlined than older styles, were used to reduce the effect of the frame on flow through the test unit. Newly designed fyke nets were also used to minimize the water resistance and increase flow through the net.

With the extended-length screens and the STS, fyke nets were arranged in three columns (designated left, center, right, as viewed from the downstream side) and seven levels (numbered from top to bottom) (Fig. 2). However, cod ends were not used on the outside columns of the STS fyke-net frame to reduce the number of fish sacrificed during tests. This arrangement was based on previous data for STS fyke nets which indicated nearly equal catches in the left, center, and right columns (Gessel et al.

1986, Brege et al. 1987). Because the proportion of total fyke-net catch for each column is not as predictable with extended-length screens, cod ends were placed on all 21 fyke nets used in FGE tests with these screens. An analysis of fyke-net catch by net column with extended-length screens at McNary Dam is included in McComas et al. (in prep.).

Fish guidance efficiency tests with an extended-length traveling screen, extended-length bar screen, and STS were conducted simultaneously in the center slots of Units 4, 5, and 6 during the spring and summer outmigration. During spring tests, considerably more fish were collected in Unit 4 than in Unit 6. Therefore, the STSs in Unit 4 were switched with the extended-length traveling screens in Unit 6 before the start of the summer outmigration to increase the number of fish collected in the unit with the extended-length screens (Table 2).

Differences in FGE among the STS, extended-length bar screen, and extended-length traveling screen in Units 4-6, respectively, for both yearling chinook salmon and steelhead were examined using analysis of variance followed by a Fisher's Protected Least Significant Difference (FPLSD) multiple comparison procedure (Petersen 1985). Statistical significance was established for $\alpha = 0.05$. Test days on which less than 30 fish of the target species were caught were not used in the analyses. A randomized block design could not be used because of test days with insufficient sample size.

Table 2.--Screen arrangement, by screen type and porosity (%), for 1993 descaling and fish guidance efficiency (FGE) tests at The Dalles Dam (STS = standard-length submersible traveling screen, ESBS = extended-length submersible bar screen, ESTS = extended-length submersible traveling screen).

Test	Slot								
	4A	4B	4C	5A	5B	5C	6A	6B	6C
Initial descaling	STS	STS	STS	ESBS	ESBS	ESTS	ESTS	ESBS	ESTS
	48	48	48	50	45	49	54	55	34 ^a
Spring FGE	STS	STS	STS	ESBS	ESBS	ESBS	ESTS	ESTS	ESTS
	48	48	48	45	50	55	49	54	34
Summer FGE	ESTS	ESTS	ESTS	ESBS	ESBS	ESBS	STS	STS	STS
	49	54	34	55	50	45	48	48	48

^a 34% porosity ESTS acquired from McNary Dam.

For subyearling chinook salmon, differences in FGE among the traveling screen, extended-length bar screen, and STS in Units 4-6, respectively, were examined using randomized block analysis of variance, followed by a FPLSD multiple comparison procedure (Peterson 1985). A day was considered a block. Significance was established for $\alpha = 0.05$.

Results and Discussion

Yearling Fish

Testing for FGE began on 6 May and the target number of 20 replicates was achieved on 27 May. Spill was curtailed until 2200 h for the first six tests. The remaining tests were conducted with high spill volumes due to the high flows in the Columbia River during the test period. The high spill volumes during the tests resulted in the collection of less than the desired numbers of fish. Yearling chinook salmon numbers during the period of spill curtailment ranged from 43 to 415 (mean 140). During the spill period, fish numbers ranged from 2 to 152 (mean 41) despite an increase in the duration of individual tests.

Analyses of yearling chinook salmon tests included 15, 14, and 13 replicates for the extended-length traveling screen, extended-length bar screen, and STS, respectively. The steelhead, coho salmon (*O. kisutch*), and sockeye salmon analyses are based on a range of two to seven replicates. The results of all FGE tests are summarized in Appendix Table 1.

For yearling chinook salmon, mean FGE was significantly higher for the extended-length bar screen (73%) than for the

extended-length traveling screen (60%) and both were significantly higher than the STS (44%) ($F = 32.3$, $P < 0.0001$; $FPLSD = 7\%$). Figure 3 shows daily fluctuations in FGE for yearling chinook salmon. For steelhead, mean FGE was significantly higher for the extended-length bar screen (83%) than for the extended-length traveling screen (67%) and the STS (62%) ($F = 11.4$, $P = 0.001$; $FPLSD = 10\%$). Fish numbers for other salmonid species were too low for statistical comparisons; however, mean FGE for coho salmon was 93, 95, and 75%, and for sockeye salmon 53, 37, and 17% for the extended-length bar screen, extended-length traveling screen, and STS, respectively.

Net-level catches are shown in Figure 4. With extended-length screens, the highest fyke-net catches were in Net Levels 5 and 6, while with the STS, the highest catch was in Net Level 4.

Net catches were not evenly distributed among the three fyke-net columns with both extended-length screens. Net catches for the left, center, and right columns were 42, 28, and 30%, and 35, 33, and 32% for the extended-length bar screen and extended-length traveling screen, respectively. Since the center-column net catch for the extended-length bar screen was less than one-third of the total catch, expanding the center-column net catch by three (as with the STS) might have produced positively biased FGE estimates with yearling chinook salmon; however, flows into the nets may be different with only the center column in use.

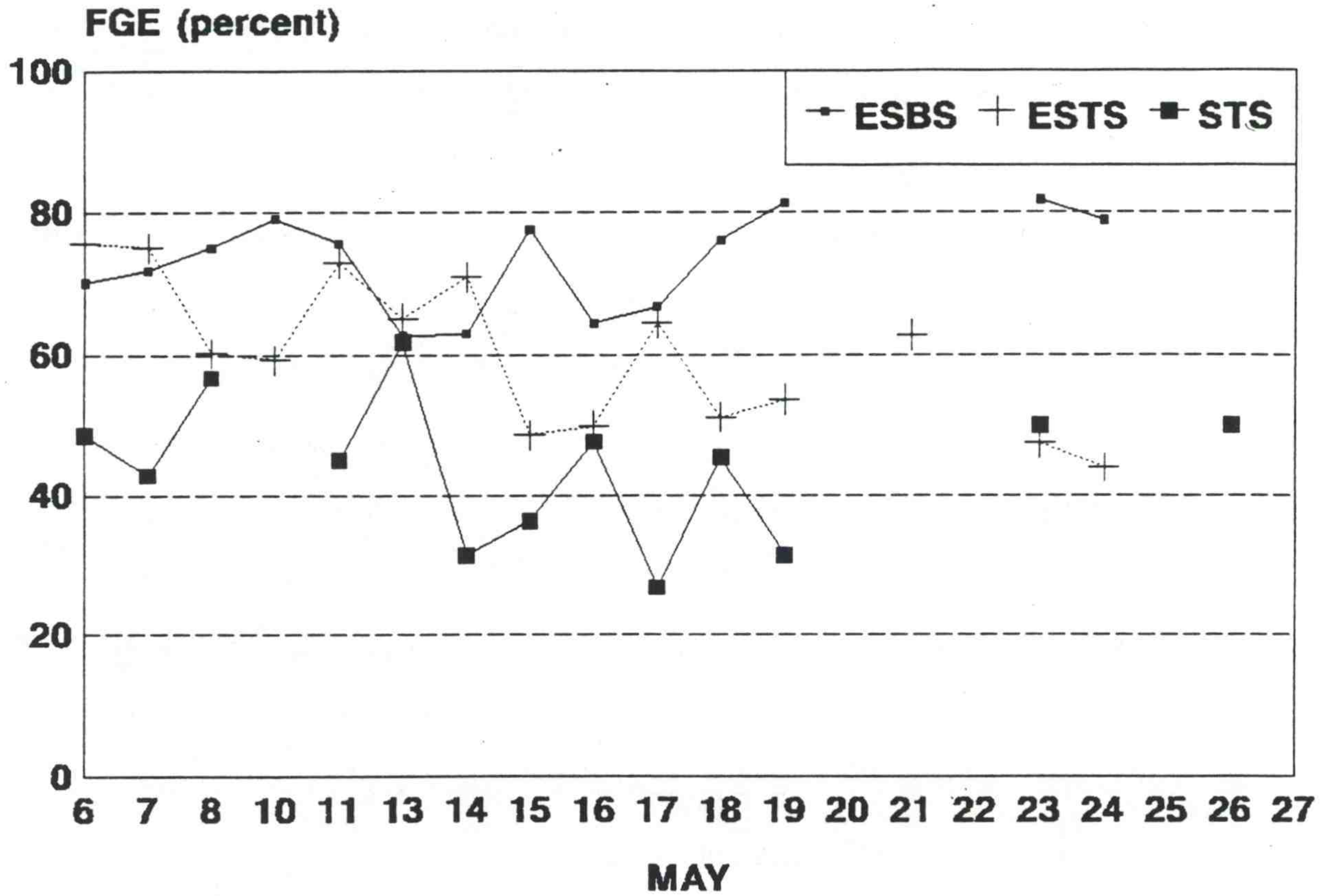


Figure 3.--Daily fish guidance efficiency (FGE) for yearling chinook salmon at The Dalles Dam, 1993 (ESBS = extended-length submersible bar screen, ESTS = extended-length submersible traveling screen, STS = standard-length submersible traveling screen). Data points for test days with less than 30 fish are not included.

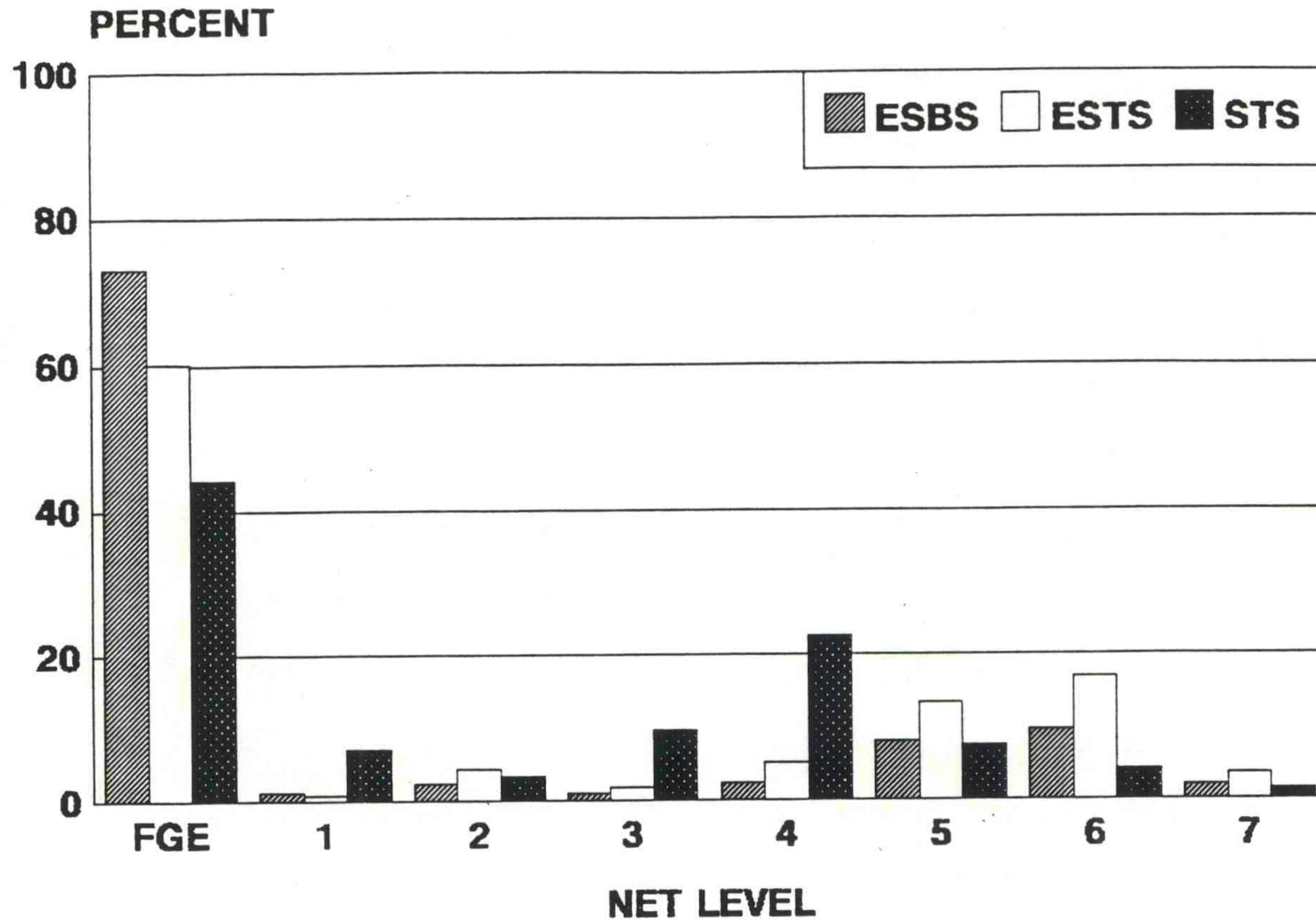


Figure 4.--Yearling chinook salmon seasonal fish guidance efficiency (FGE) and fyke-net catch by net level at The Dalles Dam, 1993 (ESBS = extended-length submersible bar screen, ESTS = extended-length submersible traveling screen, STS = standard-length submersible traveling screen).

Subyearling Fish

Subyearling chinook salmon FGE testing began on 24 June and concluded on 21 July. Other juvenile salmonid species were captured, but not in sufficient numbers for statistical analysis (Appendix Table 1).

Spill during the summer FGE tests was less than 2 kcfs (compared to an average spill of 108 kcfs during spring FGE tests). This discharge, through Spillbay 1, was for attraction into the spillway entrance of the adult collection system.

Numbers of fish collected during the 20 FGE tests with subyearling chinook salmon were much higher (range 32 to 631, mean 263) than those collected during the spring tests.

Mean FGE for subyearling chinook salmon was significantly higher for the extended-length bar screen (59%) than for the extended-length traveling screen (51%), and the FGE for both extended-length screens was significantly higher than for the STS (23%) ($F = 301.7$, $P < 0.0001$; $FPLSD = 3\%$). Figure 5 shows the daily fluctuations in FGE for subyearling chinook salmon.

Net-level catches are shown in Figure 6. As during the spring season, the highest fyke-net catches with extended-length screens were in Net Levels 5 and 6, while with the STS the highest fyke-net catch was in Net Level 4.

Net catch was not evenly distributed among the three net columns for either of the extended-length screens. Net catches for the left, center, and right columns were 41, 30, and 29%, and 36, 36, and 28% for extended-length bar screen and extended-length traveling screen, respectively. Since the center-column

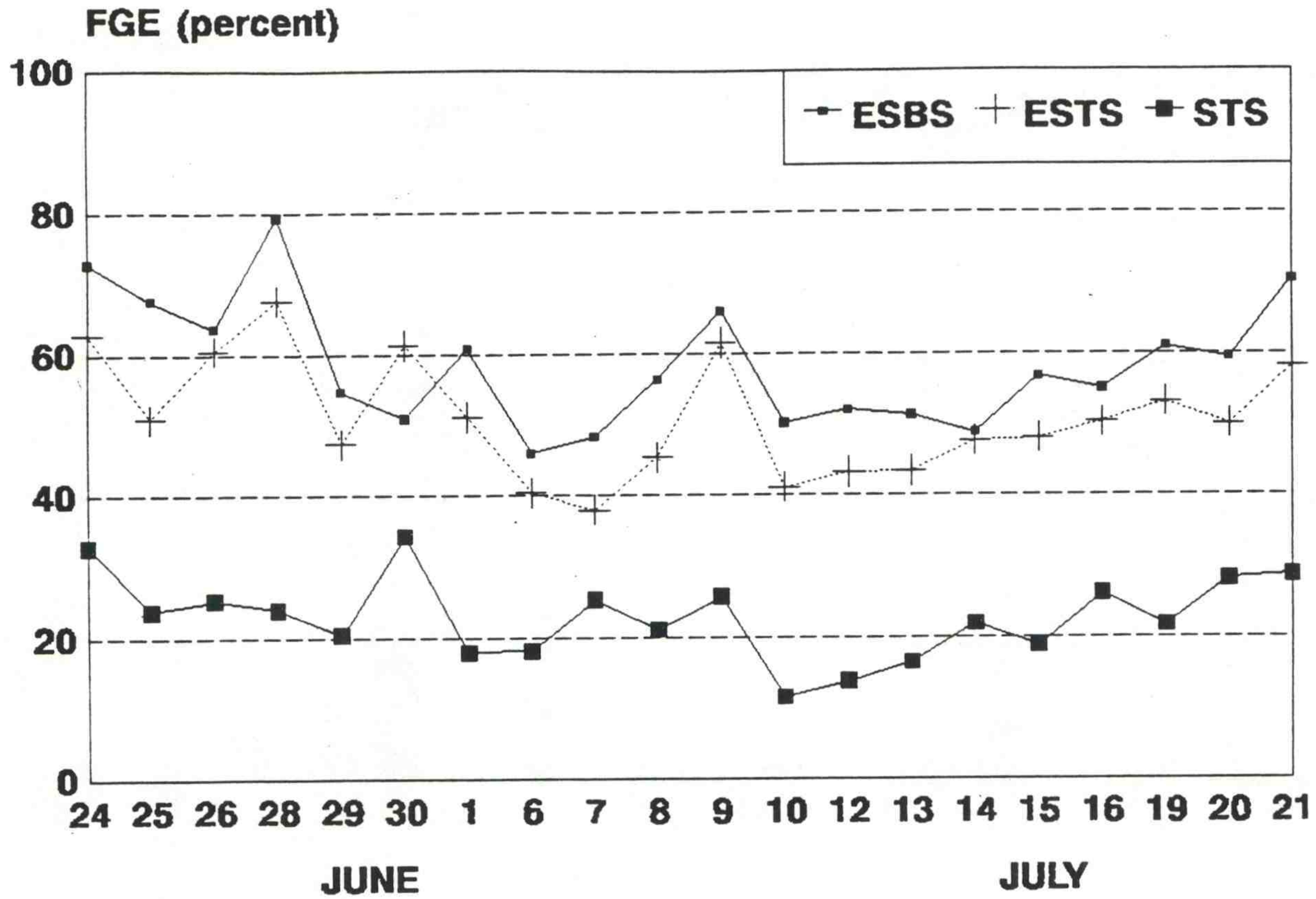


Figure 5.--Daily fish guidance efficiency (FGE) for subyearling chinook salmon at The Dalles Dam, 1993 (ESBS = extended-length submersible bar screen, ESTS = extended-length submersible traveling screen, STS = standard-length submersible traveling screen).

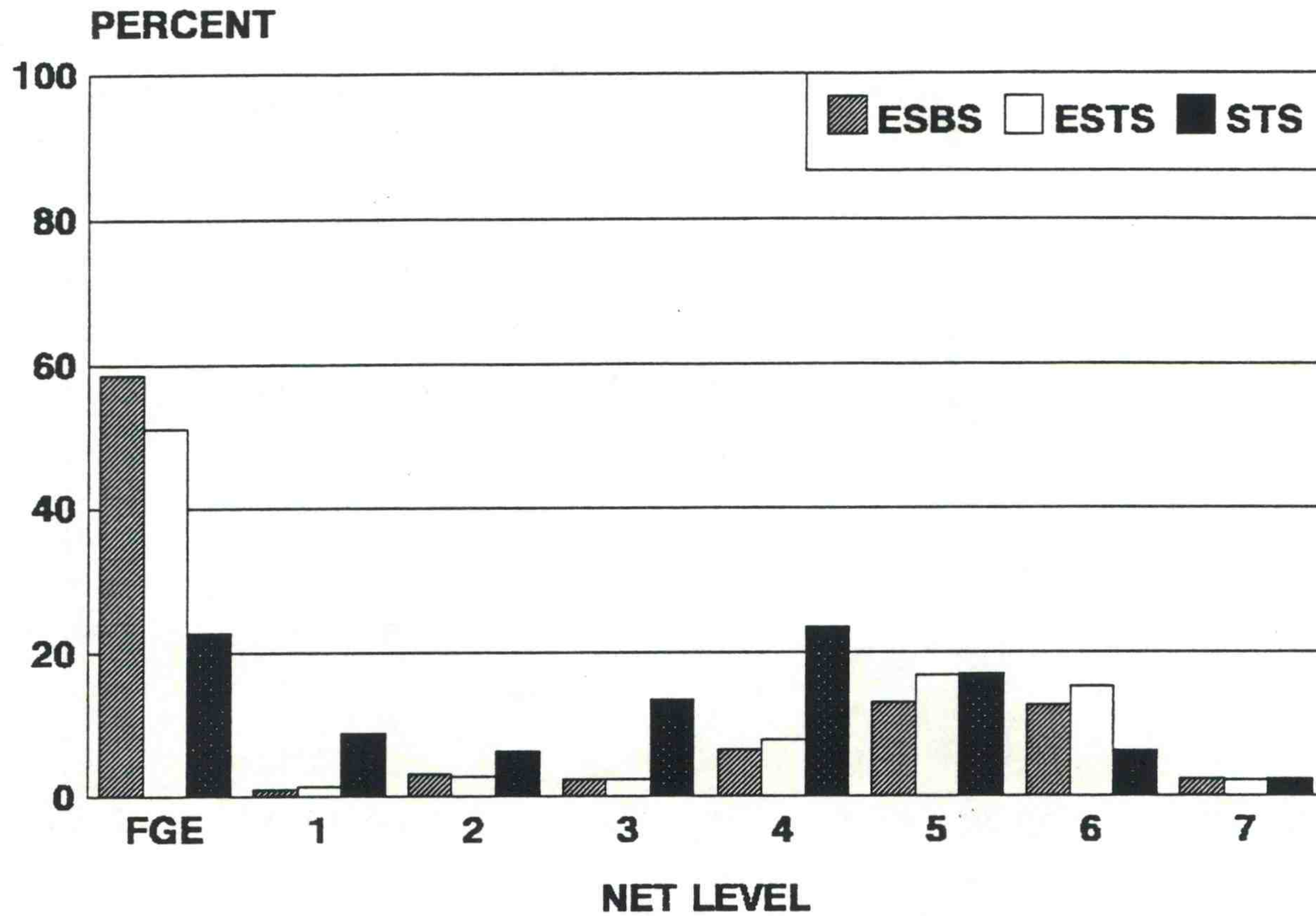


Figure 6.--Subyearling chinook salmon seasonal fish guidance efficiency (FGE) and fyke-net catch by net level at The Dalles Dam, 1993 (ESBS = extended-length submersible bar screen, ESTS = extended-length submersible traveling screen, STS = standard-length submersible traveling screen).

net catch varied from one-third of the total catch, expanding the center-column net catch by three (as with the STS) might have produced positively biased FGE estimates for the extended-length bar screen and negatively biased FGE estimates for the extended-length traveling screen with subyearling chinook salmon.

OBJECTIVE 2: EFFECTS OF EXTENDED-LENGTH SCREENS ON FISH
CONDITION

Approach

Fish condition was monitored during descaling and FGE tests using standard Fish Transportation Oversight Team descaling criteria (Ceballos et al. 1993). Initially, a series of three descaling tests was conducted to determine if any of the screen types or configurations severely affected fish condition. Screens were arranged to compare various screen types, perforated plate porosity combinations, and resultant approach velocities (Table 2).

The turbine units containing the test screens were dipnetted prior to the start of a test to remove any residual fish. The units were then started and run for several hours or until a sufficient number of fish had been collected. The units were then shut down and the accumulated fish dipnetted out, anesthetized, and examined.

Personnel from the COE's Waterways Experiment Station monitored the possible impingement of juvenile salmonids on the extended-length screens using a video camera technique previously used during the 1992 FGE testing at McNary Dam (McComas et al. 1993). Screens were also examined for impinged fish when they

were raised for maintenance or during camera equipment adjustments.

Statistical comparisons for fish condition were made with methods and parameter values similar to those used for FGE analyses.

Results and Discussion

Yearling Fish

Results of initial descaling tests (Test Series 1, Table 1) indicated that descaling with the extended-length screens, used in combination with selected perforated plate porosities, was similar to descaling with the STS (control). Yearling chinook salmon descaling with the extended-length bar screen (50% porosity), the extended-length traveling screen (54% porosity), and the STS (48% porosity) was 4.8, 4.9, and 4.5%, respectively (Table 3).

During FGE tests, mean descaling (Test Series 2, Table 1) for yearling chinook salmon was 4.8, 5.1, and 6.1%, and for steelhead 6.0, 3.4, and 5.3% for the extended-length bar screen, extended-length traveling screen, and STS, respectively. Daily fluctuations in yearling chinook salmon descaling are shown in Figure 7. There were no statistically significant differences among the extended-length bar screen, extended-length traveling screen, and the control condition (STS) for either yearling chinook salmon or steelhead. Fish numbers for other salmonid species were too low for statistical comparisons; however, mean descaling for coho salmon was 2.1, 2.3, and 2.6%, and for sockeye

Table 3.--Descaling test results at The Dalles Dam, 1993 (STS = standard-length submersible traveling screen, ESBS = extended-length submersible bar screen, ESTS = extended-length submersible traveling screen). Mean descaling and total catch are combined results of three separate tests.

		Slot					
		4B	5A	5B	5C	6A	6B
Screen type		STS	ESBS	ESBS	ESTS	ESTS	ESBS
Porosity of perf. plate (%)		48	50	45	49	54	55
Est. approach velocity (fps) ^a		2.75	2.75	2.44	1.95	2.75	2.87
Yearling chinook	Mean descaling (%)	4.5	4.8	7.6	6.3	4.9	8.2 ^b
	Total catch	287	459	230	54	104	77
Steelhead	Mean descaling (%)	2.3	3.0	26.7	16.7	11.1	19.6 ^b
	Total catch	85	75	39	9	8	22

^a Approach velocity calculated at a turbine unit discharge of 13.4 kcfs.

^b Bar sweep malfunctioned during the first two tests. In the third test, descaling for both chinook and steelhead was 0%.

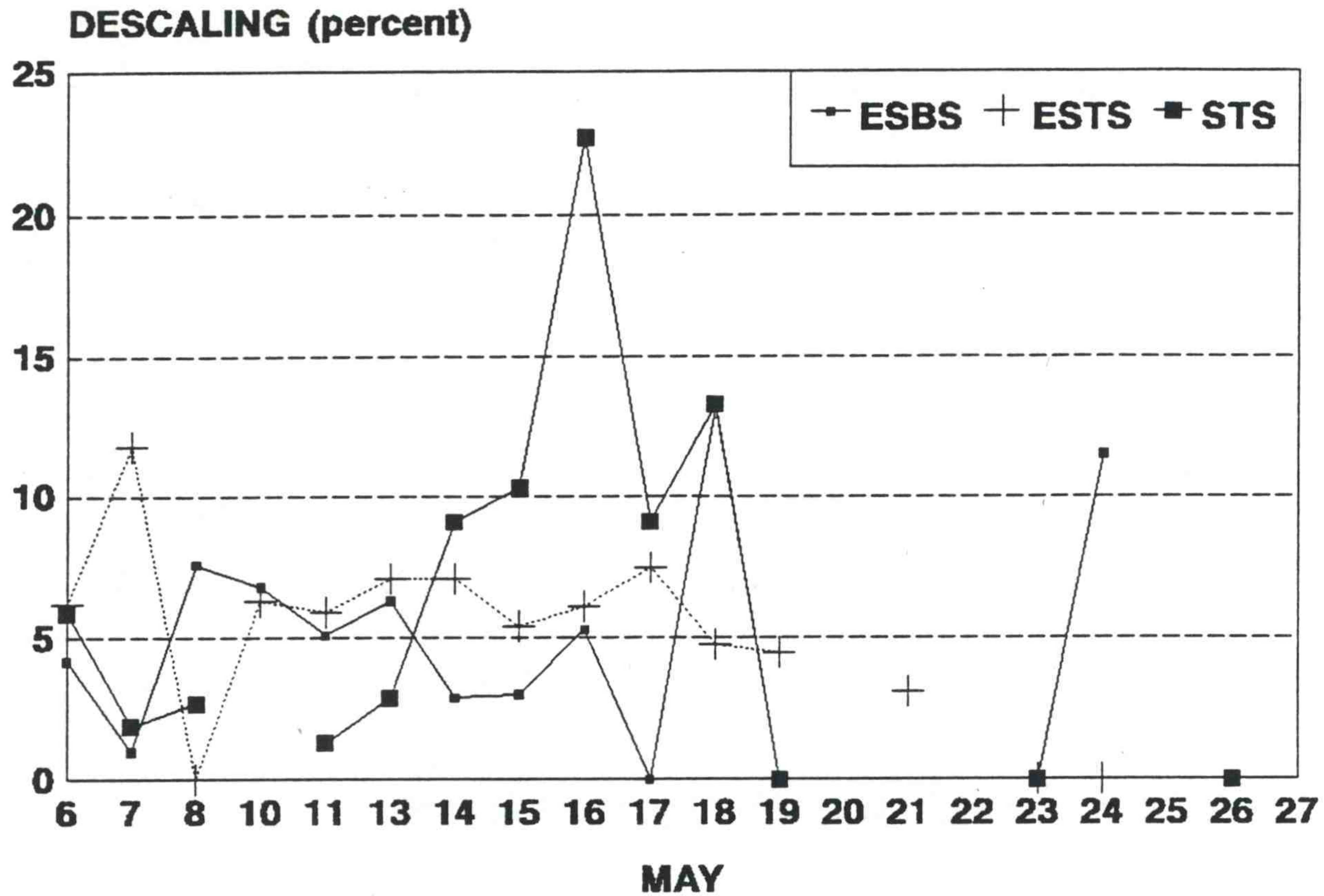


Figure 7.--Daily descaling for yearling chinook salmon at The Dalles Dam, 1993 (ESBS = extended-length submersible bar screen, ESTS = extended-length submersible traveling screen, STS = standard-length submersible traveling screen). Data points for test days with less than 30 fish are not included.

salmon 19.7, 16.9, and 18.6% for the extended-length bar screen, extended-length traveling screen, and STS, respectively.

During the spring FGE tests, descaling data were also collected on the extended-length bar screen with a 55% perforated plate porosity (Test Series 3, Table 1). Four replicates had sample sizes larger than 30 fish and descaling averaged 5.2%.

Descaling results from all tests at The Dalles Dam, 1993, are summarized in Appendix Table 2.

Subyearling Fish

Mean descaling was significantly higher for the extended-length bar screen (6.9%) than for the extended-length traveling screen (4.5%) and both had significantly higher descaling than the STS (0.9%) ($F = 34.7$, $P < 0.0001$; $FPLSD = 1.5\%$). Daily fluctuations in subyearling chinook salmon descaling are shown in Figure 8.

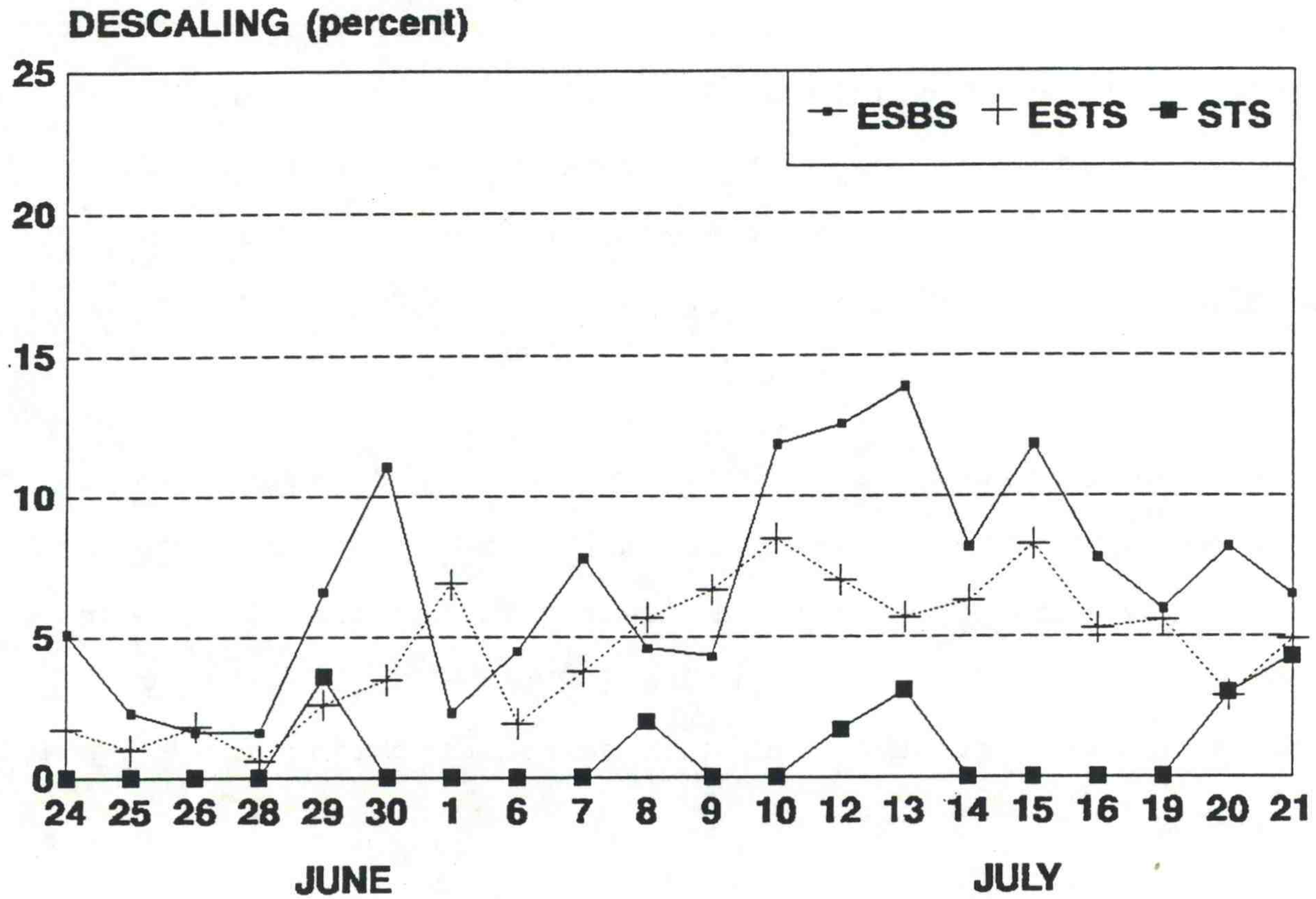


Figure 8.--Daily descaling for subyearling chinook salmon at The Dalles Dam, 1993 (ESBS = extended-length submersible bar screen, ESTS = extended-length submersible traveling screen, STS = standard-length submersible traveling screen).

CONCLUSIONS

- 1) The extended-length bar screen produced significantly higher FGE than either the extended-length traveling screen or the STS for yearling chinook salmon and steelhead.
- 2) The extended-length traveling screen produced significantly higher FGE than the STS for yearling chinook salmon.
- 3) The extended-length screens and the STS had similar descaling rates for yearling chinook salmon and steelhead.
- 4) The extended-length bar screen had significantly higher FGE and descaling than the extended-length traveling screen and the STS for subyearling chinook salmon.
- 5) The extended-length traveling screen had significantly higher FGE and descaling than the STS for subyearling chinook salmon.

ACKNOWLEDGMENTS

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Appendix Table 1.--Numbers of fish caught, by species, and fyke-net catch distributions for individual replicates of FGE tests at The Dalles Dam, 1993 (STS = standard-length submersible traveling screen, ESBS = extended-length submersible bar screen, ESTS = extended-length submersible traveling screen).

Date (test slot, screen type)

6 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot ¹	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1					14			42	2			6	1			3				
Level 2					9			27	3			9								
Level 3					11			33	7			21								
Level 4		1		3	20			60	10			30								
Level 5					8			24	3			9					1			3
Level 6					7			21												
Level 7					2			6	1			3								
Net total		1		3	71			213	26			78	1			3			1	3
Gatewell																				63
Total				4				415				170				66				3
FGE (%)				25				49				54				95				

6 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1					4			4												
Level 2	1		2	3	2	4	1	7		1		1	1			1				
Level 3	1			1			2	2	3		1	4								
Level 4			2	2	3	3	4	10	2		2	4								
Level 5					7	6	8	21	2	1	2	5								
Level 6	1			1	8	12	13	33	2	4	2	8			3	3	1			1
Level 7					2	2		4		1		1	1			1				
Net total	3		4	7	26	27	28	81	9	7	7	23	2		3	5	1			1
Gatewell								191				103				44				1
Total				7				272				126				49				2
FGE (%)								70				82				90				50

6 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1																				
Level 2		5	2	7	4	2	1	7												
Level 3			1	1						1		1								
Level 4	1			1		2		2	2	2		4								
Level 5		1		1	3	1	1	5	3		3	6								
Level 6		1	1	2	3	2	5	10	2		4	6								
Level 7						2		2												
Net total	1	7	4	12	10	9	7	26	7	3	7	17								
Gatewell								81				39				12				
Total				12				107				56				12				
FGE (%)								76				70				100				

¹ L = left, C = center, and R = right fyke-net column;
Tot = total catch for net level.

Appendix Table 1.--Continued.

7 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1		1		3		5		15		2		6		4		12				
Level 2						1		3		2		6		2		6				
Level 3		1		3		3		9		1		3		2		6				
Level 4						7		21		5		15		4		12				
Level 5		1		3		3		9		5		15								
Level 6						3		9		1		3								
Level 7		1		3		2		6		1		3								
Net total		4		12		24		72		17		51		12		36				
Gatewell								54				56								40
Total				12				126				107				76				
FGE (%)								43				52				53				

7 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1									1			1	1		1	2				
Level 2	2	2	1	5	3	1	1	5		3	1	4								
Level 3	1			1	1		2	3			2	2								
Level 4	3	2	2	7	2	1	6	9	1			1								
Level 5					5	4	1	10	1		3	4								
Level 6	2	1		3	6	2	3	11			2	2								
Level 7										1	1	2								
Net total	8	5	3	16	17	8	13	38	3	4	9	16	1		1	2				
Gatewell								97				47				26				
Total				16				135				63				28				
FGE (%)								72				75				93				

7 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1							1	1												
Level 2			2	2		2	1	3												
Level 3					1			1	1			1								
Level 4					1	2		3												
Level 5	2			2	3	1	1	5	2	1		3								
Level 6		4		4	1	2		3		4		4								
Level 7			4	4			1	1		1		1								
Net total	2	4	6	12	6	7	4	17	3	6		9								
Gatewell								51				20				10				1
Total				12				68				29				10				1
FGE (%)								75				69				100				100

Appendix Table 1.--Continued.

8 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1		1		3		9		27		6		18		4		12		1		3
Level 2						4		12		2		6		1		3				
Level 3						5		15		1		3								
Level 4		2		6		8		24		14		42		3		9		2		6
Level 5						10		30		4		12		3		9				
Level 6		1		3		1		3												
Level 7						1		3												
Net total		4		12		38		114		27		81		11		33		3		9
Gatewell								150				119				85				1
Total				12				264				200				118				10
FGE (%)								57				60				72				10

8 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye				
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	
Level 1						3		3		2		2									
Level 2			1	1		1		1		2		2			1	1					
Level 3	1			1		1		1					1			1					
Level 4	1			1		2		2		6		6					1		1	2	
Level 5	1		2	3		7	5	8	20		2	2	4								
Level 6		1	1	2		3	7	5	15		1	4	5					1			1
Level 7						2		2			1		1								
Net total	3	1	4	8	16	15	13	44	20	10	4	6	20	1		1	2	2		1	3
Gatewell								132				100				58				7	
Total				8				176				120				60				10	
FGE (%)								75				83				97				70	

8 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye				
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	
Level 1		1		1		1		1													
Level 2	2	3		5		1	2	3		3	1	4									
Level 3						2		2			2	4					1			1	
Level 4						3	1	4			1	1									
Level 5	1			1		3	2	1	6		1	2	3					1			1
Level 6	2	4	1	7		6		2	8												
Level 7								1	1		1		1								
Net total	5	8	1	14	16	5	4	25	13	5	6	2	13					2			2
Gatewell								38				17				13				1	
Total				14				63				30				13				3	
FGE (%)								60				57				100				33	

Appendix Table 1.--Continued.

10 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1			1	1			1	1												
Level 2		1		1	2	1		3	1			1			2	2			1	1
Level 3	2		2	4	1		1	2	1	1		2	1		1	2	1			1
Level 4	1	1	1	3	1	1	1	3	7	2	1	10	1		1	2				
Level 5		1		1	1	2	1	4	4	8		12	5	2	1	8				
Level 6	1	2	2	5	9	3	3	15	1	5	2	8			2	2	1			1
Level 7					3			3	2			2								
Net total	4	5	6	15	17	8	6	31	16	16	3	35	7	2	7	16	2	1		3
Gatewell				1				117				186				152				14
Total				16				148				221				168				17
FGE (%)				6				79				84				90				82

10 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1							1	1												
Level 2	3		2	5	4	3		7		1		1	1			1	1			1
Level 3		1		1	1			1			1	1	2			2				
Level 4					2		1	3	1	2	1	4					1	1		2
Level 5	3	4	2	9	4	6	1	11	5	8	1	14	1	2		3	1			1
Level 6			1	1	1	3	4	8	2	3	3	8								
Level 7	1			1	1		1	2	2			2								
Net total	7	5	5	17	13	13	7	33	10	14	6	30	4	2		6	3	1		4
Gatewell				1				48				83				86				7
Total				18				81				113				92				11
FGE (%)				6				59				73				93				64

Appendix Table 1.--Continued.

11 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1		2		6	6			18	7			21	4			12	6			18
Level 2					4			12	1			3					1			3
Level 3		1		3	3			9					2			6	1			3
Level 4					10			30	8			24	4			12	8			24
Level 5		2		6	6			18	1			3	2			6	11			33
Level 6					1			3									1			3
Level 7					2			6									1			3
Net total		5		15	32			96	17			51	12			36	29			87
Gatewell								79				108				171				19
Total				15				175				159				207				106
FGE (%)								45				68				83				18

11 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1					1			1												
Level 2		1	1	2	3			3	3	1		4		1		1	1	1		2
Level 3		3	2	5			1	1	1	1		2					1			1
Level 4	1	2	2	5	2	1		3			2	2					2	2		4
Level 5	1			1	3	2	3	8	3	1		4	1	2		3	3		3	6
Level 6	4	2	1	7	4	2	7	13	1	1	2	4	2	1		3	1	2		3
Level 7					3			3						1		1				
Net total	6	8	6	20	16	5	11	32	8	2	6	16	3	5		8	4	4	8	16
Gatewell								99				92				154				26
Total				20				131				108				162				42
FGE (%)								76				85				95				62

11 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1			2	2	1			1												
Level 2	3	7		10	4	1	1	6												
Level 3			1	1	1			1	1			1	1			1	1	1		2
Level 4	1			1		1		1	2	1		3	1			1				
Level 5	3			3	3	1	2	6		2	1	3						2		2
Level 6	1	3	1	5	2	1	1	4	1		1	2					1			1
Level 7	1		2	3														1		1
Net total	9	10	6	25	11	4	4	19	4	3	2	9	2			2	2	4		6
Gatewell				4				51				34				58				10
Total				29				70				43				60				16
FGE (%)				14				73				79				97				63

Appendix Table 1.--Continued.

13 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1																	9			27
Level 2																	1			3
Level 3		1		3									1			3	8			24
Level 4		1		3		6		18		6		18	1			3	15			45
Level 5		2		6		1		3		2		6	2			6	3			9
Level 6		1		3													1			3
Level 7										2		6					2			6
Net total		5		15		7		21		10		30		4		12	39			117
Gatewell				6				34				61				29				35
Total				21				55				91				41				152
FGE (%)				29				62				67				71				23

13 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1							1	1							1	1	2			2
Level 2	1	1	1	3	1			1	2	1	1	4					2	1	3	6
Level 3		2	1	3			1	1									1		2	3
Level 4	1			1	1		1	2	1			1					2	2		4
Level 5	1			1		3	1	4			1	1						3	2	5
Level 6	2	1		3	6	1	2	9	1		1	2		1	1		3	4	4	11
Level 7					1			1									1			1
Net total	5	4	2	11	9	4	6	19	4	1	3	8		2	2		11	10	11	32
Gatewell				4				32				66				23				119
Total				15				51				74				25				151
FGE (%)				27				63				89				92				79

13 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1											1	1			1	1				
Level 2	2	2	4	8	1			1	1	1		2					1	1		2
Level 3		1		1						3		3	1	1		2		2		2
Level 4	1			1	2			2	1		1	2					3			3
Level 5					2	1	1	4	2	1	1	4		1	1			2	2	4
Level 6	3	4		7	2	1	4	7	3		1	4					2	2		4
Level 7	1	3		4		1		1	1			1							1	1
Net total	7	10	4	21	7	3	5	15	7	6	4	17	1	1	2	4	5	7	4	16
Gatewell				3				28				19				7				43
Total				24				43				36				11				59
FGE (%)				13				65				53				64				73

Appendix Table 1.--Continued.

14 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1		1		3	1			3											1	3
Level 2					1			3									3			9
Level 3					2			6									1			3
Level 4		1		3	3			9									3			9
Level 5																				
Level 6					1			3												
Level 7																				
Net total		2		6	8			24									8			24
Gatewell				4				11			7				4					2
Total				10				35			7				4					26
FGE (%)				40				31			100				100					8

14 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1																				
Level 2	1	1		2	2	1		3											1	1
Level 3	1		1	2	1			1												
Level 4	1		1	2	2			2		1	1						1	1		2
Level 5		1	1	2	1		2	3	1		1								1	1
Level 6			1	1	2	2	6	10						1	1				1	1
Level 7		1	1	2		1		1												
Net total	3	3	5	11	8	4	8	20	1	1	2			1	1		1	1	3	5
Gatewell				1				34			4				5					6
Total				12				54			6				6					11
FGE (%)				8				63			67				83					55

14 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1	1		2	3							1	1			1	1				
Level 2	3	2	3	8	3	1	1	5												
Level 3					1			1												
Level 4	2			2													1		1	2
Level 5	1			1	2	4		6	1		1		1		1		1			1
Level 6	2	1	1	4	3	5	3	11										2		2
Level 7	2		1	3																
Net total	11	3	7	21	9	10	4	23	1	1	2		1	1	2		2	2	1	5
Gatewell				5				56			3				4					5
Total				26				79			5				6					10
FGE (%)				19				71			60				67					50

Appendix Table 1.--Continued.

15 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1		1		3	2			6												
Level 2					2			6									1			3
Level 3		2		6	1			3												
Level 4		2		6	8			24	1			3					1			3
Level 5					3			9												
Level 6		1		3	1			3												
Level 7																				
Net total		6		18	17			51	1			3					2			6
Gatewell				3				29				5				9				3
Total				21				80				8				9				9
FGE (%)				14				36				63				100				33

15 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1					1	1		2												
Level 2							1	1					1			1				
Level 3			1	1	1			1											1	1
Level 4	1	1		2	1			1									1	1		2
Level 5	2	2		4	3		1	4									3	1	1	5
Level 6					2	3	4	9	1			1	1			1	2	1	1	4
Level 7					1			1					1			1				
Net total	3	3	1	7	7	5	7	19	1			1	3			3	6	3	3	12
Gatewell				4				66				6				16				5
Total				11				85				7				19				17
FGE (%)				36				78				86				84				29

15 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1					1			1												
Level 2			2	2			2	2												
Level 3					3	1	1	5											1	1
Level 4	1	1		2	3	4	2	9	1			1					1	1		2
Level 5	3	2		5	6	11	6	23		1	1	2	1		2	3	2	3		5
Level 6	3			3	9	16	10	35	1			1					1	1		2
Level 7							3	3												
Net total	7	3	2	12	21	33	24	78	1	2	1	4	1		2	3	2	5	3	10
Gatewell				2				74				7				6				6
Total				14				152				11				9				16
FGE (%)				14				49				64				67				38

Appendix Table 1.--Continued.

16 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1																				
Level 2																		1		3
Level 3						2		6												
Level 4		1		3		3		9		1		3								
Level 5						3		9												
Level 6										1		3								
Level 7																				
Net total		1		3		8		24		2		6						1		3
Gatewell				1				22				5				2				2
Total				4				46				11				2				5
FGE (%)				25				48				45				100				40

16 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye						
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot			
Level 1																							
Level 2			1	1							1	1							1	1			
Level 3																		1	1	2			
Level 4			1	1		1		2		1		1											
Level 5						2	1	5	8		1		1							1	1		
Level 6		1		1		2	1	4	7			1	1						2		2		
Level 7						2	1	1	4			1	1							1	1		
Net total		1		2	3		7	4	10	21		2	2	1	5					2	4	1	7
Gatewell									38					3					2				3
Total					3				59				8				2				10		
FGE (%)									64				38				100				30		

16 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye							
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot				
Level 1						1		1																
Level 2			1	1		3	1	4																
Level 3		1		1		1		1	2										1		1			
Level 4			1	1		1	1	5	7		1		1						1	1	2			
Level 5		1	2	3		3	2	9	14			2	2						2	1	3			
Level 6		1		1		5	4	10	19			1	1						3	3	4	10		
Level 7							1	1	2										1		1	2		
Net total		3	2	2	7		14	9	26	49		1	3	4					3		8	4	6	18
Gatewell					2				49				12				3					28		
Total					9				98				16				3					28		
FGE (%)					22				50				75				100					36		

Appendix Table 1.--Continued.

17 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1		2		6		1		3												
Level 2						1		3												
Level 3		1		3		1		3												
Level 4		1		3		5		15										2		6
Level 5						1		3	1			3						1		3
Level 6																				
Level 7						1		3												
Net total		4		12		10		30	1			3						3		9
Gatewell				1				11				4								5
Total				13				41				7								14
FGE (%)				8				27				57								36

17 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1						1		1												
Level 2					1			1										1		1
Level 3						1		1												
Level 4																				
Level 5	1			1	2	1	2	5											2	2
Level 6					2		1	3									1	1		2
Level 7						1		1												
Net total	1			1	5	4	3	12									1	4		5
Gatewell				2				24				4								1
Total				3				36				4								6
FGE (%)				67				67				100								17

17 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1			1	1			1	1												
Level 2			1	1			2	2												
Level 3	1			1									1			1				
Level 4	1			1	2	1		3									1	1		2
Level 5			1	1		3	2	5									2	3	1	6
Level 6					1	3	5	9									2	2	3	7
Level 7						1	1	2												
Net total	2		3	5	3	8	11	22					1			1	5	6	4	15
Gatewell				1				40				3				1				9
Total				6				62				3				2				24
FGE (%)				17				65				100				50				38

Appendix Table 1.--Continued.

18 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1					2			6	2			6					1			3
Level 2	1			3													1			3
Level 3					1			3									1			3
Level 4					3			9									2			6
Level 5																	3			9
Level 6																				
Level 7																				
Net total	1			3	6			18	2			6					8			24
Gatewell								15				9			1					2
Total				3				33				15			1					26
FGE (%)								45				60			100					8

18 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1					1			1												
Level 2	3			3		2	1	3		1	1						2			2
Level 3	3	1		4													1		1	2
Level 4			1	1													4			4
Level 5		4		4	2	1	2	5									4		2	6
Level 6		1		1		3		3		1	1								3	3
Level 7																	1			1
Net total	6	6	1	13	3	6	3	12		2	2						12		6	18
Gatewell				2				38				8			3					7
Total				15				50				10			3					25
FGE (%)				13				76				80			100					28

18 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1			1	1																
Level 2			1	1																
Level 3	1			1	2		1	3									1			1
Level 4	2			2	7			7									1			1
Level 5	1			1	5	2	4	11	1		1						4	1	4	9
Level 6					2	6	6	14									1	1		2
Level 7					1	1	3	5												
Net total	4		2	6	17	9	14	40	1		1						6	2	5	13
Gatewell				5				42				9			3					9
Total				11				82				10			3					22
FGE (%)				45				51				90			100					41

Appendix Table 1.--Continued.

19 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1		2		6	1			3	1			3							2	6
Level 2																				
Level 3					1			3												
Level 4					3			9	1			3	1			3	3			9
Level 5					1			3									4			12
Level 6					2			6	1			3					1			3
Level 7																				
Net total		2		6	8			24	3			9	1			3	10			30
Gatewell				1				11				13								5
Total				7				35				22				3				35
FGE (%)				14				31				59								14

19 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1																	1			1
Level 2	1			1	1			1											1	1
Level 3											1	1								
Level 4							1	1			1	1								
Level 5					2			2									1		2	3
Level 6			1	1			1	1									1	1	1	3
Level 7					1			1												
Net total	1		1	2	2	2	2	6			2	2					3	1	4	8
Gatewell				3				26				19				6				16
Total				5				32				21				6				24
FGE (%)				60				81				90				100				67

19 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1	1			1													1			2
Level 2																				
Level 3											1	1								
Level 4									1	2		3								314
Level 5					2	3	2	7									5	3	1	9
Level 6	1	1		2	1	1	7	9	1			1					2	2	1	5
Level 7					1	2		3	1			1							1	1
Net total	2	1		3	4	6	9	19	3	3		6					11	6	4	21
Gatewell				1				22				14				2				9
Total				4				41				20				2				30
FGE (%)				25				54				70				100				30

Appendix Table 1.--Continued.

20 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1					3			9												
Level 2					1			3												
Level 3					1			3									3			9
Level 4					1			3	1			3								
Level 5																				
Level 6																				
Level 7																				
Net total					6			18	1			3					3			9
Gatewell								8				10				1				1
Total								26				13				1				10
FGE (%)								31				77				100				10

20 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1			1	1																
Level 2					1			1									1	1	1	3
Level 3																				
Level 4						1		1									1		1	2
Level 5					1		1	2	1			1							1	1
Level 6			1	1		1		1					1		1			1		1
Level 7																			1	1
Net total			2	2	2	2	1	5	1	2		1	1		1		2	2	4	8
Gatewell				2				16				16								14
Total				4				21				17			1					22
FGE (%)				50				76				94								64

20 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1											1	1								
Level 2		2		2						1		1								
Level 3																	1			1
Level 4	1			1	2			2									2	2		4
Level 5		1	1	2	2		1	3	1			1					3	2	2	7
Level 6			2	2		2	3	5												
Level 7			1	1			1	1											1	1
Net total	1	3	4	8	4	2	5	11	1	1	1	3					6	4	3	13
Gatewell				4				4				3								1
Total				12				15				6								14
FGE (%)				33				27				50								7

Appendix Table 1.--Continued.

21 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1					2			6												
Level 2																				
Level 3					3			9												
Level 4					1			3	1			3					1			3
Level 5					1			3									1			3
Level 6																				
Level 7																				
Net total					7			21	1			3					2			6
Gatewell				3				5				10				1				4
Total				3				26				13				1				10
FGE (%)				100				19				77				100				40

21 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1	1			1	1			1												
Level 2		1		1															1	1
Level 3																				
Level 4					1			1									1	3		4
Level 5	1			1		3		3			1	1					3			3
Level 6		1		1														1		1
Level 7																				
Net total	2	2		4	2	3		5			1	1					4	4	1	9
Gatewell				3				17				13								7
Total				7				22				14								16
FGE (%)				43				77				93								44

21 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1																				
Level 2																				
Level 3											1	1							1	1
Level 4					2			2									4	1	1	6
Level 5	2		1	3	1	3	1	5										1	3	4
Level 6		1		1	2	4	3	9	1	1		2					3	1	4	8
Level 7					1	2		3										1		1
Net total	2	1	1	4	6	9	4	19	1	2		3					7	4	9	20
Gatewell				2				32				8								11
Total				6				51				11								31
FGE (%)				33				63				73								35

Appendix Table 1.--Continued.

22 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1		3		9		1		3												
Level 2																				
Level 3																		1		3
Level 4						2		6										1		3
Level 5						1		3												
Level 6																				
Level 7																				
Net total		3		9		4		12										2		6
Gatewell				5				1				2								
Total				14				13				2								6
FGE (%)				36				8				100								

22 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1						1		1										2		2
Level 2					1	1	1	3												
Level 3			1	1														2		2
Level 4			1	1													2	1		3
Level 5		1		1	1	1		2									1	2		3
Level 6			2	2	2	1	2	5									2	1		3
Level 7					1			1										1		1
Net total		1	4	5	5	4	3	12									5	9		14
Gatewell				2				11				2								9
Total				7				23				2								23
FGE (%)				29				48				100								39

22 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1						1		1	1			1								
Level 2	1		1	2	1			1										1		1
Level 3	1			1	1	1		2												
Level 4		1	1	2	1			1									2	4	1	7
Level 5	1			1	1	2	1	4									5	2		7
Level 6					3	2		5									3	4	2	9
Level 7																	1			1
Net total	3	1	2	6	7	6	1	14	1			1					11	11	3	25
Gatewell				3				12				1								11
Total				9				26				2								36
FGE (%)				33				46				50								31

Appendix Table 1.--Continued.

23 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1																	4			12
Level 2																	3			9
Level 3					2			6	1			3								
Level 4					2			6									13			39
Level 5																	6			18
Level 6					1			3									3			9
Level 7																	1			3
Net total					5			15	1			3					30			90
Gatewell				1				15				3								14
Total				1				30				6								104
FGE (%)				100				50				50								13

23 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1																	1			1
Level 2	1			1	1			1									3	3	1	7
Level 3	1	1		2													5	1	1	7
Level 4					1			1									9	7	2	18
Level 5			1	1	1	1	1	3									8	12	9	29
Level 6		1		1	2			2									8	13	8	29
Level 7					1			1									4	3	1	8
Net total	2	2	1	5	6	1	1	8									38	39	22	99
Gatewell				4				36				7				1				46
Total				9				44				7				1				145
FGE (%)				44				82				100				100				32

23 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye				
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	
Level 1		1	2	3																1	1
Level 2		1	1	2		1	1	2		1		1					1			1	2
Level 3					1			1									2	2		4	
Level 4	2			2	2	1	2	5					1			1	8	5	13	26	
Level 5			1	1	5	3	5	13	1	1		2					13	13	15	41	
Level 6	2		2	4	2	11	6	19									9	22	18	49	
Level 7					2	1	1	4									4	5	2	11	
Net total	4	2	6	12	12	17	15	44	1	2		3	1			1	37	47	50	134	
Gatewell				3				40				4				2				44	
Total				15				84				7				3				178	
FGE (%)				20				48				57				67				25	

Appendix Table 1.--Continued.

24 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1		1		3	1			3									2			6
Level 2																	5			15
Level 3																	2			6
Level 4					2			6	1			3					7			21
Level 5																	8			24
Level 6																	1			3
Level 7	2			6													1			3
Net total	3			9	3			9	1			3					26			78
Gatewell								16				4								28
Total				9				25				7								106
FGE (%)								64				57								26

24 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1					1			1									5			5
Level 2			1	1						1		1					3		2	5
Level 3									1			1					2	1	1	4
Level 4																	1		4	5
Level 5		1		1	2	1		3	2	1		3					2	8	5	15
Level 6	1	1		2		2		2									6	8	9	23
Level 7							1	1			1	1							1	1
Net total	1	2	1	4	3	3	1	7	3	2	1	6					19	17	22	58
Gatewell				2				26				8				1				43
Total				6				33				14				1				101
FGE (%)				33				79				57				100				43

24 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1			1	1													2			2
Level 2																	1		1	2
Level 3					1	1	1	3									2		1	3
Level 4					1	2	1	4									4	7	5	16
Level 5		2		2	2	5	4	11		1		1	1			1	7	4	11	22
Level 6						2	6	8	2			2					11	9	19	39
Level 7					1	1		2									1	3	3	7
Net total	2	1		3	5	11	12	28	2	1		3	1			1	28	23	40	91
Gatewell				3				22				2				1				46
Total				6				50				5				2				137
FGE (%)				50				44				40				50				34

Appendix Table 1.--Continued.

25 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1																	1			3
Level 2																				
Level 3																	3			9
Level 4		1		3					3			9					8			24
Level 5																	1			3
Level 6																				
Level 7		1		3																
Net total		2		6					3			9					13			39
Gatewell				4				14				8								5
Total				10				14				17								44
FGE (%)				40				100				47								11

25 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1					1			1	1			1					2			2
Level 2			1	1													1	1		2
Level 3							1	1												
Level 4					1			1	1	1		2					1	2	2	5
Level 5			1	1							1	1					7	3	3	13
Level 6	1			1	1	1		2	1			1					2	2	3	7
Level 7																	1	1	2	4
Net total	1		2	3	1	2	2	5	3	2		5					13	9	11	33
Gatewell				6				18				13								31
Total				9				23				18								64
FGE (%)				67				78				72								48

25 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1																	1			1
Level 2		1	1	2	1			1									2			2
Level 3																			2	2
Level 4			1	1					1			1					3	4		7
Level 5										1		1					11	5	8	24
Level 6		1	2	3	1			1									4	6	5	15
Level 7	1			1						1		1					3	3	1	7
Net total	1	2	4	7	1	1		2	1	2		3					24	18	16	58
Gatewell				1				14				8				1				24
Total				8				16				11				1				82
FGE (%)				13				88				73				100				29

Appendix Table 1.--Continued.

26 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1		1		3															2	6
Level 2									1			3								
Level 3		2		6	2			6	1			3					2			6
Level 4					2			6	1			3					5			15
Level 5					1			3									1			3
Level 6	1			3					1			3								
Level 7																				
Net total		4		12	5			15	4			12					10			30
Gatewell				1				15				31				2				3
Total				13				30				43				2				33
FGE (%)				8				50				72				100				9

26 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1					1			1									2			2
Level 2																	1			1
Level 3						1		1		1		1						1		1
Level 4			1	1					1			1					1		2	3
Level 5	1	1	1	3													1			1
Level 6					1			1									3	2		5
Level 7			1	1							1	1								
Net total	1	1	3	5	2	1		3	1	1	1	3					8	3	2	13
Gatewell				2				13				16								16
Total				7				16				19								29
FGE (%)				29				81				84								55

26 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1																				
Level 2	1			1					1		1	2								
Level 3																			1	1
Level 4							1	1									3			3
Level 5			2	2		2	1	3										1		1
Level 6		1	1	2	1	1		2	2	1		3					3	2	3	8
Level 7							1	1												
Net total	1	1	3	5	1	3	3	7	3	1	1	5					6	3	4	13
Gatewell				7				5				13								6
Total				12				12				18								19
FGE (%)				58				42				72								32

Appendix Table 1.--Continued.

27 May (4B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1																	1			3
Level 2																				
Level 3																	1			3
Level 4		1		3													1			3
Level 5		2		6													1			3
Level 6																	1			3
Level 7																				
Net total		3		9													5			15
Gatewell				2				2				5								2
Total				11				2				5								17
FGE (%)				18				100				100								12

27 May (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1			1	1																
Level 2		1		1															1	1
Level 3	1			1													1			1
Level 4							1	1										1		1
Level 5			2	2			1	1												
Level 6		1		1															1	1
Level 7					1			1									1			1
Net total	1	2	3	6	1		2	3									2	1	2	5
Gatewell				2				2				8				1				8
Total				8				5				8				1				13
FGE (%)				25				40				100				100				62

27 May (6B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1			1	1																
Level 2																				
Level 3			1	1															1	1
Level 4	2	1		3	2			2										2	2	4
Level 5	1	1	2	4	1			1	1			1					1	3	1	5
Level 6					2			2			1	1							1	1
Level 7																	1	3		4
Net total	3	2	4	9	5			5	2			2					1	6	8	15
Gatewell				2				5				6				1				3
Total				11				10				8				1				18
FGE (%)				18				50				75				100				17

Appendix Table 1.--Continued.

1 July (4B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1			1	1																
Level 2	3	4	5	12																
Level 3		3		3																
Level 4	10	9	4	23																
Level 5	19	26	13	58																
Level 6	12	18	10	40																
Level 7	1	1		2																
Net total	45	62	32	139																
Gatewell				145																
Total				284																
FGE (%)				51																

1 July (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1																				
Level 2																				
Level 3	2	1	1	4																
Level 4	7	7	4	18																
Level 5	12	9	8	29																
Level 6	10	10	8	28																
Level 7	1	1	4	6																
Net total	32	28	25	85																
Gatewell				132				1												
Total				217				1												
FGE (%)				61				100												

1 July (6B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1																				
Level 2		5		15																
Level 3		2		6																
Level 4		20		60																
Level 5		28		84																
Level 6		9		27																
Level 7		6		18																
Net total		70		210																
Gatewell				46																
Total				256																
FGE (%)				18																

Appendix Table 1.--Continued.

9 July (4B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1			1	1																
Level 2	1	1	1	3																
Level 3	1	1	2	4																
Level 4	2	2		4																
Level 5	8	2	6	16																
Level 6	3	11	4	18																
Level 7	1			1																
Net total	16	18	13	47																
Gatewell				75																1
Total				122																1
FGE (%)				61																100

9 July (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1																				
Level 2	3		1	4																
Level 3		1	2	3																
Level 4	2		3	5																
Level 5	6	9	2	17																
Level 6	4	8	6	18																
Level 7			1	1																
Net total	15	18	15	48																
Gatewell				93																
Total				141																
FGE (%)				66																

9 July (6B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1		2		6																
Level 2																				
Level 3		2		6																
Level 4		12		36																
Level 5		2		6																
Level 6		4		12																
Level 7																				
Net total		22		66																
Gatewell				23																
Total				89																
FGE (%)				26																

Appendix Table 1.--Continued.

21 July (4B, ESTS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1			1	1																
Level 2																				
Level 3	1	1		2																
Level 4	2	4	1	7	1			1												
Level 5	8	8	4	20																
Level 6	2	3	8	13																
Level 7		1		1																
Net total	13	17	14	44	1			1												
Gatewell				61																
Total				105				1												
FGE (%)				58																

21 July (5B, ESBS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1	1		1	2																
Level 2	3			3																
Level 3	1			1																
Level 4		3	1	4																
Level 5	4	5	3	12																
Level 6		1	2	3																
Level 7			1	1																
Net total	9	9	8	26																
Gatewell				62																
Total				88																
FGE (%)				70																

21 July (6B, STS)

Location	Subyearling chinook				Yearling chinook				Steelhead				Coho				Sockeye			
	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot	L	C	R	Tot
Level 1		4		12																
Level 2		2		6																
Level 3		4		12																
Level 4		7		21																
Level 5		2		6																
Level 6																				
Level 7																				
Net total		19		57																
Gatewell				23																
Total				80																
FGE (%)				29																

Appendix Table 2.--Descaling data from fish guidance efficiency and descaling tests at The Dalles Dam, 1993 (STS = standard-length submersible traveling screen, ESTS = extended-length submersible traveling screen, ESBS = extended-length submersible bar screen).

Unit 4, Slot B: STS (48% porosity)

Test date	Subyearling chinook		Yearling chinook		Steelhead		Coho		Sockeye		
	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	
26 April			5	102	4.9	19	0.0			3	0.0
28 April			3	73	4.1	21	4.8				
30 April			5	112	4.5	1	2.2		1	2	50.0
6 May	1	0.0	12	202	5.9	9	9.8	1	63	1.6	
7 May			1	54	1.9	2	3.6	3	40	7.5	
8 May			4	150	2.7	4	3.4	1	85	1.2	
11 May			1	79	1.3	4	3.7	5	171	2.9	1
13 May		0.0	1	34	2.9	1	1.6	29	0.0	14	19
14 May	4	0.0	1	11	9.1	7	0.0	4	0.0	2	5.3
15 May	3	0.0	3	29	10.3	5	0.0	9	0.0	3	0.0
16 May	1	0.0	5	22	22.7	5	0.0	2	0.0	2	0.0
17 May	1	0.0	1	11	9.1	4	0.0			5	0.0
18 May			2	15	13.3	1	11.1	1	0.0	1	2
19 May	1	0.0	11	11	0.0	2	15.4			2	50.0
20 May			1	8	12.5	1	10.0	1	0.0	5	40.0
21 May	3	0.0	5	5	0.0	3	30.0	1	0.0	1	0.0
22 May	5	0.0	1	1	0.0	2	0.0	1	0.0	4	0.0
23 May	1	0.0	15	15	0.0	3	0.0				
24 May			3	16	18.8	4	0.0			3	14
25 May	4	0.0	1	14	7.1	1	12.5			1	28
26 May	1	0.0	15	15	0.0	3	9.7	2	0.0	1	5
27 May	2	0.0	2	2	0.0	5	0.0			1	20.0
										1	3
										2	0.0
										1	50.0

Appendix Table 2.--Continued.

Unit 4, Slot B: ESTS (54% porosity)

Test date	Subyearling		Yearling		Steelhead		Coho		Sockeye	
	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %
24 June	2	118	1.7							
25 June	1	100	1.0	1	0.0	2		0.0		
26 June	6	327	1.8	4	0.0					
28 June	1	176	0.6	1	33.3					
29 June	7	269	2.6	1	50.0					
30 June	2	57	3.5							
1 July	10	145	6.9							
6 July	3	158	1.9	1	100.0					
7 July	9	240	3.8	1	0.0					
8 July	8	140	5.7							
9 July	5	75	6.7						1	0.0
10 July	17	200	8.5							
12 July	14	201	7.0							
13 July	8	141	5.7							
14 July	10	158	6.3							
15 July	12	144	8.3	1	100.0					
16 July	6	114	5.3							
19 July	8	144	5.6							
20 July	2	69	2.9							
21 July	3	61	4.9							

Unit 5, Slot A: ESBS (50% porosity)

Test date	Subyearling		Yearling		Steelhead		Coho		Sockeye	
	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %
26 April			11	163	6.7	18	0.0			
28 April			3	132	2.3	13	0.0			
30 April			9	164	5.5	4	44	9.1		

Unit 5, Slot B: ESBS (45% porosity)

Test date	Subyearling		Yearling		Steelhead		Coho		Sockeye	
	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %
26 April			6	76	7.9	4	12	33.3		
28 April			2	91	2.2	1	4	25.0		
30 April			1	0.0		8	63	12.7	5	23

Appendix Table 2.--Continued.

Unit 5, Slot C: ESTS (49% porosity)

Test date	Subyearling		Yearling		Steelhead		Coho		Sockeye	
	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %
26 April			22	0.0	5	0.0				
28 April	2	12.5	2	0.0						
30 April	1	6.3	1	50.0					1	0.0

Unit 5, Slot C: ESBS (55% porosity)

Test date	Subyearling		Yearling		Steelhead		Coho		Sockeye	
	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %
10 May			4	74	9	124	7	96	4	8
11 May	1	0.0	5	41	4	44		57	1	14
13 May			1	23	1	31		25	3	63
14 May	3	0.0	2	16	1	7		4	1	4
15 May				34	1	4		8		5
16 May	1	0.0	1	29	3	3		3	1	3
17 May				11	2	2		1		2
18 May	1	0.0	1	33	1	9	1	1	2	10
19 May	3	0.0	3	13	4	12		1	2	10
20 May	1	0.0	2	10	1	5		1	5	0.0
21 May	3	0.0	14	0.0	2	2			3	0.0
22 May	2	0.0	7	0.0					2	6
23 May	1	0.0	22	0.0	3	3			5	29
24 May	1	0.0	17	0.0	3	3			9	55
25 May	3	0.0	5	0.0	4	4			2	26
26 May			1	12	6	6			9	0.0
27 May	2	0.0	4	0.0					9	0.0

Unit 6, Slot A: ESTS (54% porosity)

Test date	Subyearling		Yearling		Steelhead		Coho		Sockeye	
	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %
26 April			1	34	3	3				
28 April			2	42	1	3				
30 April			2	28	2	2				

Appendix Table 2.--Continued.

Unit 6, Slot B: ESBS (55% porosity)

Test date	Subyearling chinook		Yearling chinook		Steelhead		Coho		Sockeye	
	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %
26 April	4	31	12.9	44.4	4	9	44.4			
28 April	4	34	11.8	14.3	1	7	14.3			
30 April		12	0.0	0.0	6	6	0.0		1	0.0

Unit 6, Slot B: ESTS (54% porosity)

Test date	Subyearling chinook		Yearling chinook		Steelhead		Coho		Sockeye		
	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	Desc.	Catch %	
6 May			5	81	6.2	39	0.0	12	0.0	1	100.0
7 May			6	51	11.8	20	0.0	10	0.0	1	100.0
8 May				38	0.0	17	5.9	13	0.0		
10 May	1	0.0	3	48	6.3	83	2.4	86	1.2	2	28.6
11 May	4	0.0	3	51	5.9	34	8.8	58	3.4	2	20.0
13 May	3	0.0	2	28	7.1	19	0.0	7	0.0	2	4.7
14 May	5	0.0	4	56	7.1	3	0.0	4	0.0	5	0.0
15 May	2	0.0	4	74	5.4	7	0.0	6	0.0	6	0.0
16 May	2	0.0	3	49	6.1	12	8.3	3	0.0	10	0.0
17 May	1	0.0	3	40	7.5	3	0.0	1	0.0	9	0.0
18 May	5	0.0	2	42	4.8	9	22.2	3	0.0	9	0.0
19 May	1	0.0	1	22	4.5	14	0.0	2	0.0	2	22.2
20 May	4	0.0	1	4	25.0	3	0.0	2	0.0	1	100.0
21 May	2	0.0	1	32	3.1	8	0.0	3	0.0	3	27.3
22 May	3	0.0	2	12	16.7	1	0.0	2	0.0	2	18.2
23 May	3	0.0	4	40	0.0	4	50.0	2	0.0	6	44
24 May	3	0.0	2	22	0.0	2	0.0	1	0.0	9	46
25 May	1	0.0	2	14	14.3	8	0.0	1	0.0	3	24
26 May	7	0.0	2	5	40.0	13	23.1	3	0.0	6	0.0
27 May	2	0.0	5	5	0.0	6	0.0	1	0.0	3	0.0

