

State of California

The Resources Agency

# Memorandum

To : Files

DATE: October 15, 1984

FROM: Department of Fish and Game – Bill Cox

SUBJECT: Russian River Fish Population Survey

## INTRODUCTION

During July, August, and September 1984 fish populations were sampled at several locations in the Russian River between the mouth at Jenner and Hopland. The purpose of the survey was to determine the species composition and geographic distribution, size distribution, and relative abundance. No effort was made to determine population sizes. This survey was similar to surveys conducted in 1954 and 1955 from Mirabel to Jenner by William Johnson and a survey in 1968 between Cloverdale and Squaw Rock in southern Mendocino County by Gerald Holman.

## METHODS

Fish were sampled with a variety of methods. From Del Rio Woods downstream to Jenner a 100 x 10-foot beach seine was used; the net being set from a 12-foot aluminum skiff. Above Del Rio Woods and at the mouth of Dry Creek a 50 x 6-foot beach seine was set while wading or swimming. Also above Del Rio Woods a Smith-Root type XI backpack electrofisher was used to sample fish on riffles. Beach seined sites were typically pools or runs with a sand or gravel beach on at least one side of the river onto which the net could be pulled. The survey methods yield results that are biased toward fish more commonly found in the pools and runs rather than the riffles although where possible the tails of riffles were sampled even though the seine could not be set to fish efficiently. The results are also biased in that the largest and smallest fish may not have been collected; the small fish due to escape through the 3/8-inch mesh of the net and the large fish due to inability to capture fish in areas of heavy cover. Fish captured were identified to species, counted, and measured to the nearest millimeter fork length. When large numbers of a species were captured in a net set only a representative sample was measured, the rest were counted and released.

## RESULTS

During the survey a total of 24 species of fish were captured in 15 sampling reaches. One reach, Wohler to Kaiser South, was sampled twice to evaluate the repeatability of the sampling results and to varyify the low numbers of American shad in the reach; this reach was the first and last one sampled. The following tables show the total catch and length

frequency distribution for each of the sampling reaches. Species abbreviations used on the length frequencies are shown on the first table.

#### DISCUSSION

The distribution of fishes in the Russian River found on this survey was very similar to that found by William Johnson in 1954 and 1955. Steelhead were found only above Cloverdale. Smallmouth bass were found throughout the area below Cloverdale except in the estuary; the largest concentration of smallmouth was found between Kaiser South and Vacation Beach. Largemouth bass were found only from Korbel to Duncans Mills and only in very small numbers.

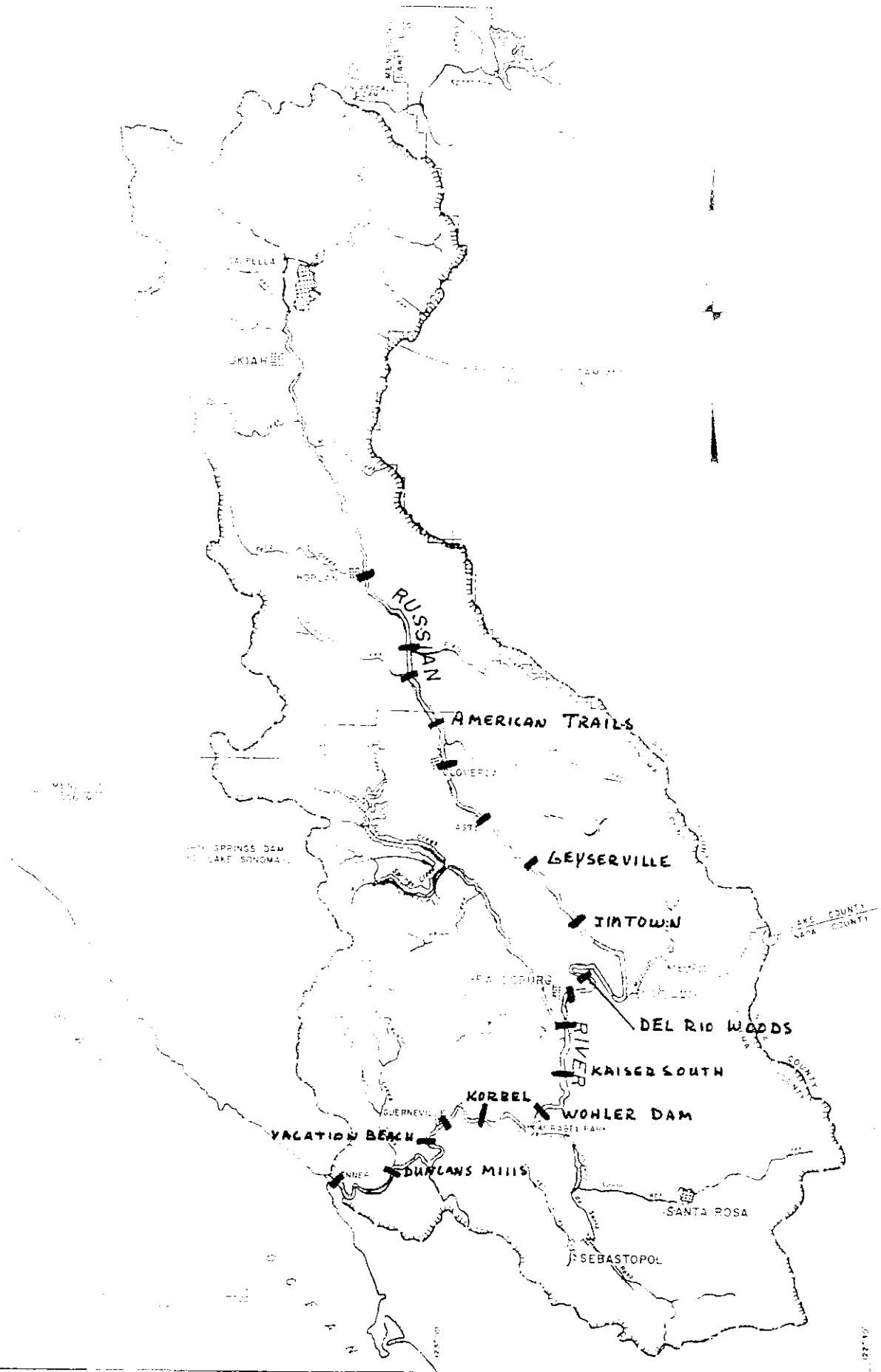
American shad were found from Kaiser South to Duncans Mills; large numbers were found from Korbel to Duncans Mills, very few were found upstream of Wohler Dam. The small number of shad found above Wohler Dam may be due to the early installation of the dam (May 7 to 10), the inability of the shad to use the denil fishways on the dam, and/or the 2-mile long impoundment above the dam.

Large carp were captured or observed in most of the reaches sampled, but juvenile carp were captured only at American Trails upstream of Cloverdale. Johnson observed the same lack of juvenile carp in 1954. Where do they spawn?

No striped bass were captured although there had been many reliable reports of adult stripers in the Vacation Beach to Guerneville area in the spring. This lends support to the theory that the stripers do not spawn in the Russian River, but only come in to feed. If they do spawn, it appears that conditions are such that the spawning is not successful. No juvenile sturgeon were captured, probably for the same reason as for the stripers.



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FISH SAMPLING AREAS, RUSSIAN RIVER

FISHES FOUND ON THIS SURVEY  
AND CODES USED ON LENGTH/FREQUENCY DISTRIBUTIONS

CODE	COMMON NAME
PH	Pacific herring
SH	Steelhead trout
HCH	Hitch
RCH	Roach
HD	Hardhead
SQ	Squawfish
CP	Carp
SKR	Western sucker
CCF	Channel catfish
GAM	Mosquito fish
TSMT	Topsmelt
BPF	Bay pipefish
BG	Bluegill
GSF	Green sunfish
LMB	Largemouth bass
SMB	Smallmouth bass
TP	Tule perch
SSP	Shiner surfperch
SCPP	Prickly sculpin
SCPR	Riffle sculpin
STF	Starry flounder
RC	Rock sole

FISH LENGTH FREQUENCY DISTRIBUTION  
AND TOTAL NUMBER CAPTURED

Reach: Guerneville to Vacation Beach  
Date: August 28, 1984

Size (mm)	Species									
	AS	HD	SQ	CP	SKR	CCF	GAM	BG	LMB	SMB
10-19										
20-29							1			
30-39								10		
40-49								8		
50-59								1		
60-69					3			10		
70-79	3				4				1	3
80-89	79								1	10
90-99	33									12
100-109	3							1		6
110-119	1									1
120-129								2		1
130-139								1		1
140-149		1						2		1
150-159		1			1					
160-169		1	1							
170-179					1					2
180-189					1					1
190-199										
200-209					1	1				
210-219										
220-229										1
230-239					1					
240-249										
250-259										
260-269										
270-279										
280-289										
290-299										
300-309										
310-319										
320-329										
330-339										
340-349										
350-359										
360-369										
370-379										
380-389										
390-399										
400-409				3						
410-419										
420-429										
430-439										
440-449										
450-459										
460-469										
470-479										
480-489										
490-499										
500+										
# measured	119	3	1	3	12	1	1	35	2	38
# unmeasured	0	0	0	0	0	0	0	0	0	0
Total Captured	119	3	1	3	12	1	1	35	2	38

FISH LENGTH FREQUENCY DISTRIBUTION  
AND TOTAL NUMBER CAPTURED

Reach: Monte Rio to Duncans Mills  
Date: August 29, 1984

Size (mm)	Species										
	AS	HD	SQ	CP	SKR	CCF	BG	GSF	LMB	SMB	TP
10-19											
20-29											
30-39											
40-49					2		11	3			
50-59					5		3	1			
60-69	2				4		3		2		
70-79	157								2		4
80-89	74									1	15
90-99	5						1			1	1
100-109	1								1		
110-119											1
120-129											
130-139										1	
140-149											
150-159											
160-169			1								
170-179			1								
180-189					2						
190-199					2	1				1	
200-209			1		2						
210-219					1						
220-229					2						
230-239											
240-249					2						
250-259		1			1						
260-269											
270-279					2						
280-289					6						
290-299					2						
300-309					5						
310-319					1						
320-329											
330-339					1						
340-349											
350-359					1						
360-369											
370-379					1						
380-389											
390-399			1		1						
400-409			1								
410-419											
420-429			2								
430-439											
440-449				2							
450-459			1	1							
460-469			1								
470-479											
480-489				1							
490-499											
500+			1	3							
# measured	239	1	10	7	43	1	18	4	5	4	21
# unmeasured	243	0	0	0	0	0	0	0	0	0	0
Total Captured	482	1	10	7	43	1	18	4	5	4	21

FISH LENGTH FREQUENCY DISTRIBUTION

AND TOTAL NUMBER CAPTURED

Reach: Estuary

Date: September 20, 1984

Size (mm)	Species							
	PH	SH	TSMT	BPF	SSP	SCPP	STF	RS
10-19								
20-29								
30-39								
40-49	17		9					
50-59	35		2			2		
60-69	1		5		7	1		
70-79			5		40	2		
80-89			2		32			
90-99			1		4			
100-109	1		1		8		1	2
110-119	3				1			
120-129								
130-139					1			
140-149				2				
150-159				1				
160-169								
170-179								
180-189				1				
190-199								
200-209								
210-219								
220-229								
230-239								
240-249								
250-259								
260-269								
270-279								
280-289								
290-299								
300-309								
310-319								
320-329		1						
330-339								
340-349								
350-359								
360-369								
370-379								
380-389								
390-399								
400-409								
410-419								
420-429								
430-439								
440-449								
450-459								
460-469								
470-479								
480-489		1						
490-499								
500+								
# measured	57	2	25	4	93	5	1	2
# unmeasured	535	0	0	0	62	1	0	0
Total Captured	592	2	25	4	155	6	1	2

FISH LENGTH FREQUENCY DISTRIBUTION  
AND TOTAL NUMBER CAPTURED

Reach: Pieta Creek  
Date: August 2, 1984

Size (mm)	Species			
	SH	RCH	SQ	SKR
10-19				
20-29				
30-39			8	1
40-49			6	3
50-59		2	6	3
60-69	1	9		1
70-79	1	3		1
80-89	1	2		
90-99	1			
100-109				
110-119				
120-129				
130-139				
140-149				
150-159				
160-169				
170-179				
180-189				
190-199				
200-209				
210-219				
220-229				
230-239				
240-249				
250-259				
260-269				
270-279				
280-289				
290-299				
300-309				
310-319				
320-329				
330-339				
340-349				
350-359				
360-369				
370-379				
380-389				
390-399				
400-409				
410-419				
420-429				
430-439				
440-449				
450-459				
460-469				
470-479				
480-489				
490-499				
500+				
# measured	4	16	20	9
# unmeasured	0	0	0	0
Total Captured	4	16	20	9



FISH LENGTH FREQUENCY DISTRIBUTION

AND TOTAL NUMBER CAPTURED

Reach: Cummiskey Station  
 Date: August 2, 1984

Size (mm)	Species		
	SH	SQ	SKR
10-19			
20-29			
30-39			3
40-49		1	3
50-59	1		9
60-69	3		4
70-79	6		
80-89	4		
90-99	1		
100-109	2		
110-119	1		
120-129			
130-139			
140-149			
150-159			
160-169			
170-179			
180-189			
190-199			
200-209			
210-219			
220-229			
230-239			
240-249			
250-259			
260-269			
270-279			
280-289			
290-299			
300-309			
310-319			
320-329			
330-339			
340-349			
350-359			
360-369			
370-379			
380-389			
390-399			
400-409			
410-419			
420-429			
430-439			
440-449			
450-459			
460-469			
470-479			
480-489			
490-499			
500+			
# measured	18	1	19
# unmeasured	0	0	0
Total Captured	18	1	19

FISH LENGTH FREQUENCY DISTRIBUTION

AND TOTAL NUMBER CAPTURED

Reach: American Trails  
Date: August 9, 1984

Size (mm)	Species						
	SH	HD	SQ	CP	SKR	SMB	SCPR
10-19							
20-29							
30-39			4				
40-49		3	13	1	11		
50-59	1	6	12	2	18		3
60-69	2	3	3	2	11		
70-79	2		1		1		2
80-89	3					1	
90-99		1					
100-109							
110-119		2					
120-129							
130-139			1		2		
140-149							
150-159							
160-169							
170-179							
180-189			1				
190-199							
200-209							
210-219							
220-229							
230-239							
240-249							
250-259							
260-269							
270-279							
280-289							
290-299							
300-309							
310-319							
320-329							
330-339							
340-349							
350-359							
360-369							
370-379							
380-389							
390-399							
400-409							
410-419							
420-429							
430-439							
440-449							
450-459							
460-469							
470-479							
480-489							
490-499							
500+							
# measured	8	15	35	5	43	1	5
# unmeasured	0	0	0	0	33	0	0
Total captured	8	15	35	5	76	1	5

FISH LENGTH FREQUENCY DISTRIBUTION

AND TOTAL NUMBER CAPTURED

Reach: Cloverdale to Asti  
Date: August 1, 1984

Size (mm)	Species						
	HCH	RCH	HD	SQ	SKR	SMB	TP
10-19							
20-29							
30-39							
40-49					1		
50-59				2	1		1
60-69				3	4		1
70-79				1			4
80-89					2		
90-99	1		1			1	
100-109		2	2				
110-119			1			1	1
120-129			4	1		1	
130-139			2	3	1		
140-149			5	3			
150-159			1	5			
160-169			1	2			
170-179			1	2			
180-189				3			
190-199							
200-209							
210-219							
220-229					1		
230-239				1			
240-249				1	1		
250-259			1				
260-269							
270-279							
280-289					1		
290-299							
300-309							
310-319			1				
320-329			1				
330-339							
340-349							
350-359				1			
360-369							
370-379							
380-389							
390-399							
400-409							
410-419							
420-429							
430-439							
440-449							
450-459							
460-469							
470-479							
480-489							
490-499							
500+							
# measured	1	2	21	28	12	3	7
# unmeasured	0	0	0	0	0	0	0
Total captured	1	2	21	28	12	3	7

FISH LENGTH FREQUENCY DISTRIBUTION  
AND TOTAL NUMBER CAPTURED

Reach: Geyserville  
Date: August 1, 1984

Size (mm)	Species					
	HCH	HD	SQ	SKR	SMB	TP
10-19						
20-29						
30-39		1	1	1		
40-49			1	3		
50-59			1	6		
60-69			2	4		9
70-79				3		9
80-89			2			
90-99		1	1			
100-109		2		1	1	
110-119		1			2	
120-129	1	5			1	
130-139		1	4			
140-149	1	5	1			
150-159	1	2	3	1		
160-169		2	2			
170-179	1	4	2			
180-189			1			
190-199			2			
200-209						
210-219			1			
220-229			3			
230-239			1			
240-249						
250-259						
260-269						
270-279						
280-289						
290-299						
300-309						
310-319						
320-329						
330-339						
340-349						
350-359						
360-369						
370-379						
380-389						
390-399						
400-409						
410-419						
420-429						
430-439						
440-449						
450-459						
460-469						
470-479						
480-489						
490-499						
500+						
# measured	4	24	28	19	4	18
# unmeasured	0	0	0	0	0	0
Total captured	4	24	28	19	4	18

FISH LENGTH FREQUENCY DISTRIBUTION

AND TOTAL NUMBER CAPTURED

Reach: Jimtown to Del Rio Woods

Date: July 30, 1984

Size (mm)	Species				
	RCH	HD	SQ	SKR	SMB
10-19	3				
20-29	6	2			
30-39	2	4	3	7	
40-49	1		8	29	
50-59		29	25	44	
60-69	8	33	14	18	1
70-79	15	4	5	9	1
80-89	3	1		7	1
90-99					
100-109					
110-119		1			
120-129		1			
130-139		2			
140-149					
150-159					
160-169					
170-179					
180-189					
190-199					
200-209					
210-219					
220-229					
230-239					
240-249					
250-259					
260-269					
270-279					
280-289					
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300-309					
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320-329					
330-339					
340-349					
350-359					
360-369					
370-379					
380-389					
390-399					
400-409					
410-419					
420-429					
430-439					
440-449					
450-459					
460-469					
470-479					
480-489					
490-499					
500+					
# measured	38	77	55	114	3
# unmeasured	0	74	0	10	0
Total captured	38	151	55	124	3

FISH LENGTH FREQUENCY DISTRIBUTION

AND TOTAL NUMBER CAPTURED

Reach: Del Rio Woods to Healdsburg  
 Date: July 30, 1984

Size (mm)	Species				
	RCH	HD	SQ	SKR	SMB
10-19	3				
20-29	5				
30-39	2		4	4	
40-49			7	11	
50-59	1		13	13	
60-69	17	1	3	19	
70-79	11	4	5	11	
80-89	4	1	5	2	8
90-99			1	1	7
100-109					7
110-119					3
120-129		2	1		
130-139		5			
140-149		8			
150-159		9	2		
160-169		1	1		
170-179			1		
180-189					
190-199					
200-209					
210-219					
220-229					
230-239		1			1
240-249					
250-259					
260-269					
270-279					
280-289					
290-299					
300-309					
310-319					
320-329					
330-339					
340-349					
350-359					
360-369					
370-379					
380-389					
390-399					
400-409					
410-419					
420-429					
430-439					
440-449					
450-459					
460-469					
470-479					
480-489					
490-499					
500+					
# measured	43	32	43	61	26
# unmeasured	31	0	0	0	0
Total Captured	74	32	43	61	26

FISH LENGTH FREQUENCY DISTRIBUTION

AND TOTAL NUMBER CAPTURED

Reach: Mouth of Dry Creek  
 Date: August 22, 1984

Size (mm)	Species			
	RCH	SQ	SKR	SMB
10-19				
20-29				
30-39				
40-49				
50-59		1		
60-69	1			
70-79	5	2	2	
80-89	3	4	1	
90-99	1		2	2
100-109				
110-119				
120-129		1		
130-139				
140-149				
150-159				
160-169				
170-179				
180-189				
190-199				
200-209				
210-219				
220-229				
230-239				
240-249				
250-259				
260-269				
270-279				
280-289				
290-299				
300-309				
310-319				
320-329				
330-339				
340-349				
350-359				
360-369				
370-379				
380-389				
390-399				
400-409				
410-419				
420-429				
430-439				
440-449				
450-459				
460-469				
470-479				
480-489				
490-499				
500+				
# measured	10	8	5	2
# unmeasured	0	0	0	0
Total Captured	10	8	5	2

FISH LENGTH FREQUENCY DISTRIBUTION

AND TOTAL NUMBER CAPTURED

Reach: Kaiser South to Wohler  
Date: July 18, 1984

Size (mm)	Species				
	AS	HD	SQ	CP	SMB
10-19					
20-29					
30-39					
40-49			1		
50-59			1		
60-69					3
70-79	1				14
80-89					2
90-99					
100-109					
110-119			1		
120-129		1	1		
130-139			1		
140-149			1		
150-159					
160-169					
170-179					1
180-189					
190-199					
200-209					
210-219			1		
220-229					
230-239					
240-249					
250-259					
260-269					
270-279					
280-289					
290-299					
300-309					
310-319					
320-329					
330-339					
340-349					
350-359					
360-369					
370-379					
380-389					
390-399					
400-409					
410-419					
420-429					
430-439					
440-449					
450-459					
460-469					
470-479					
480-489					
490-499					
500+				2	
# measured	1	1	7	2	20
# unmeasured	0	0	0	0	0
Total captured	1	1	7	2	20



FISH LENGTH FREQUENCY DISTRIBUTION

AND TOTAL NUMBER CAPTURED

Reach: Wohler to Kaiser South  
Date: September 21, 1984

Size (mm)	Species					
	AS	RCH	SQ	CP	SKR	SMB
10-19						
20-29						
30-39						
40-49			2			
50-59					2	
60-69			2		6	1
70-79			4		2	
80-89		1	1			7
90-99						4
100-109						
110-119	3					2
120-129						
130-139						
140-149						1
150-159						
160-169			1			
170-179						
180-189						
190-199						
200-209						
210-219						
220-229						
230-239						
240-249						
250-259						
260-269						
270-279						
280-289						
290-299						
300-309						
310-319						
320-329						1
330-339						
340-349						
350-359						
360-369						
370-379						
380-389						
390-399						
400-409						
410-419						
420-429				2		
430-439				1		
440-449						
450-459				1		
460-469				1		
470-479						
480-489						
490-499						
500+						
# measured	3	1	10	5	10	16
# unmeasured	0	0	0	0	0	0
Total Captured	3	1	10	5	10	16

FISH LENGTH FREQUENCY DISTRIBUTION

AND TOTAL NUMBER CAPTURED

Reach: Mirabel  
Date: August 31, 1984

Size (mm)	Species						
	AS	RCH	HD	SQ	SKR	BG	SMB
10-19							
20-29							
30-39							
40-49							
50-59							
60-69							
70-79		5					5
80-89	5	5					11
90-99	2						3
100-109						1	3
110-119							
120-129			1			1	1
130-139				3			
140-149				4	1		
150-159			3	3	2		
160-169				2			
170-179				3			
180-189			1				
190-199					1		1
200-209					1		
210-219					1		
220-229							
230-239					1		
240-249					1		
250-259					2		
260-269					2		
270-279							
280-289							
290-299							
300-309							
310-319					1		
320-329					1		
330-339					1		
340-349					1		
350-359							
360-369							
370-379							
380-389							
390-399							
400-409							
410-419							
420-429							
430-439							
440-449							
450-459							
460-469							
470-479							
480-489							
490-499							
500+							
# measured	7	10	5	15	16	2	24
# unmeasured	0	5	0	0	0	0	0
Total Captured	7	15	5	15	16	2	24

FISH LENGTH FREQUENCY DISTRIBUTION

AND TOTAL NUMBER CAPTURED

Reach: Korbelt to Guerneville  
 Date: August 14, 1984

Size (mm)	Species					
	AS	SQ	CP	LMB	SMB	TP
10-19						
20-29						
30-39						
40-49						
50-59					1	
60-69				2	11	
70-79	2			13	27	
80-89	21			4	17	
90-99	15			1	9	
100-109				1	1	
110-119						
120-129						1
130-139		2				
140-149		1				
150-159						
160-169						
170-179						
180-189					1	
190-199						
200-209						
210-219						
220-229						
230-239						
240-249						
250-259						
260-269						
270-279						
280-289						
290-299						
300-309						
310-319						
320-329						
330-339						
340-349						
350-359						
360-369						
370-379						
380-389						
390-399						
400-409						
410-419						
420-429						
430-439						
440-449						
450-459						
460-469						
470-479						
480-489						
490-499			1			
500+						
# measured	38	3	1	21	67	1
# unmeasured	31	0	0	0	0	0
Total Captured	69	3	1	21	67	1

FISH LENGTH FREQUENCY DISTRIBUTION

AND TOTAL NUMBER CAPTURED

Reach: Hopland  
Date: August 2, 1984

	Species	
Size (mm)	SQ	SKR
10-19		
20-29		
30-39		
40-49	4	10
50-59	1	3
60-69		
70-79		
80-89		
90-99		
100-109		
110-119		
120-129		
130-139		
140-149		
150-159		
160-169		
170-179		
180-189		
190-199		
200-209		
210-219		
220-229		
230-239		
240-249		
250-259		
260-269		
270-279		
280-289		
290-299		
300-309		
310-319		
320-329		
330-339		
340-349		
350-359		
360-369		
370-379		
380-389		
390-399		
400-409		
410-419		
420-429		
430-439		
440-449		
450-459		
460-469		
470-479		
480-489		
490-499		
500+		
# measured	5	13
# unmeasured	0	0
Total Captured	5	13

TOTAL CAPTURE BY REACH

reach	species																						
	AS	PH	SH	HCH	RCH	HD	SQ	CP	SKR	CCF	GAM	TSMT	BPF	BG	GSF	LMB	SMB	TP	SSP	SCPP	SCPR	STF	RC
Hopland							5		13														
Pieta Creek			4		16		20		9														
Cummiskey Station			18				1		19														
American Trails			8			15	35	5	76								1					5	
Cloverdale to Asti				1	2	21	28		12								3	7					
Geyserville				4		24	28		19								4	18					
Jimtown to Del Rio Woods					38	151	55		124								3						
Del Rio Woods to Healdsburg					74	32	43		61								26						
Mouth of Dry Creek					10		8		5								2						
Kaiser South to Wohler (July)	1					1	7	2									20						
Kaiser South to Wohler (Sept)	3				1		10	5	10								16						
Mirabel	7				15	5	15		16					2			24						
Korbel to Guerneville	69						3	1								21	67	1					
Guerneville to Vacation Beach	119					3	1	3	12	1	1			35		2	38						
Monte Rio to Duncans Mills	482					1	10	7	43	1				18	4	5	4	21					
Estuary		592	2									25	4						155	6		1	2
TOTAL CAPTURE EACH SPECIES		592		5		253		23		2		25		55		28		47		6		1	
	681		32		156		269		419		1		4		4		208		155		5		2