

STATION: BIG SULPHUR CREEK,

LOCATION: LOWER STATION, ABOVE SUMMER CROSSING. STATION NO. 3

DATE: 8-26-57

METHOD: INSTALLED BLOCK NETS, SEINED, MARKED & RELEASED 25 FISH. MADE 3 SOIL HAULS, PLACED FISH IN LIVE CAGE (2 MARKED). CLEANED UP REMAINDER OF FISH WITH ELECTRO-SAMPLING. COUNTED & SORTED FISH BY SPECIES & SIZE GROUPS. USE OF 3RD BLOCK SOILS IN 100' SECTION INDICATED EFFECTIVENESS OF ELECTRO-TECHNIQUE

RESULTS:

SIZE	NO. BY SPECIES						* MARKED RECOVERIES	
	RT-SH	ROACH	SUCKER	HARDHD	GREEN SUN FISH	SQUAWFISH	PERCH	UNK
0-3"	0	175 +10*	9	0	0	18 +2*	0	0
3-6"	2	34	128	6	1	19	2	0
6-12"	0	0	86	7	0	10	0	2
Over 12"	0	0	25	0	0	1	0	0
TOTAL	2	219	248	13	7	50	2	2

NOTES:

A.T. 59°F, W.T. 66°F, 10:30 A. FLOW at 4-5 cfs. CRAYFISH PRESENT, AMMONIA COMMON

VISUAL OBS:

	ROACH	SUCKERS	SQUAWFISH
1/8 mi u/s	150	400	15
1/8 mi d/s	200	150	5
	350	550	20

West Branch Russian River, Mendocino County
 Aug. 16, 1957 Savi Gravel Works

		Species				
		RT. SH	SMB	Roach	Suckers	Squid
Indiv. B 1/4 mi. Upstream	3			1,000 50,000 100	500	
	6	1,6			70	
	12	1			40,100	
	over 12					
	Total	8	0	54,100	410	0
Indiv. B 1/4 mi. Downstr.	3			10,000 10,000 10,000 10,000 10,000 50	500	
	6				50	
	12					
	over 12					
	Total	0	0	40,000	550	
Indiv. B - Station	3			200 200 25	20	
	6				7,12, 15, 15	
	12			0	3, 1, 7	
	over 12			0		
	Total			525	51	

West Br, Russian River, Mendocino Co.
Silt Gravel Works.

Aug. 16, 1957

	Fish Species			
	RT-SH	ROACH	SUCKERS	STIMBLEBACKS
Indiv. A 1/4 mi. Upstream	2	23,000	700	0
Indiv. B 1/4 mi. Upstream	8	54,100	410	0
Indiv. A 1/4 mi. Downstream	1	15,300	700	0
Indiv. B 1/4 mi. Downstream	0	40,000	550	0
Indiv. A. Station area only	2	82,500	1,800	0
Indiv. B. Station area only	0	525	81	0
Electro-sampling - unmarked	0	40	78	0
" " marked	0	1	14	0
" " total	0	41	92	0
Obtained by sifting and marked + returned	1	11	37	30 (not marked)
No. marked fish recaptured	0	1	14	
% marked fish recaptured	0	9.1	37.8	

Mancama Creek, Sonoma County
 Aug. 15, 1952 Station above Campfire built camp.

	(110) RT-S.H.	(169) Roach	Sucker	Sculpin	Trout *
0" - 2"					
3" - 6"	"				Abundant
6" - 12"					All emarginata
12" + over					
Total	112	173	1	4	

Straight electro-sampling

Crayfish abundant

Flow est 8 cfs.

1 Frog

Air temp. 76 °F

1 Turtle

A₂O temp. 76 °F

6:30 P.M.

FY 1982-83

SEINING

	SH	ROACH	
1-3"			
3-6"			$\begin{array}{r} 110 \\ 5 \\ \hline 880 \\ 123 \\ \hline 673 \end{array}$
6-12"			
TOTAL	581	13	
1-3"			
3-6"		60	
6-12"			
TOTAL	131	67	

ELECTRO

Majority taken by seining

Clean-up by electro-sampling

SPECIES AND NUMBERS OF FISH COLLECTED

STREAM	Rainbow Trout - Steelhead			Western Sucker	Horseshoe	Sacramento Squawfish	Western Road	Smallmouth Blunt Bass	Bluntnose	Green Sunfish	Tule Perch	Cottid	Stickleback	Total
	Under 3"	Over 3"	Total											
Big Sulphur Creek	?	?	35	9			351							396
Station No. 1 1953	?	?	31 1.6" - 4.0"	4 1.4" - 3.5"			544 0.9" - 4.2"							585
1954	9	4	13 1.75" - 4.0"	12 1.0" - 5.25"			751 0.75" - 4.25"							776
Station No. 2 1952	0	0	0	134		97								231
1953	?	?	3393	23										3416
1954	(Area obliterated by road building. Observed about 30 RT-SH and a few suckers.)													
Little Sulphur Creek Station No. 1 - 1954	70	15	85 2.0" - 6.5"	30 1.0" - 8.5"										115
Dry Creek Station No. 1 1953	0	0	0	44 3.4" - 6.0"	2 11.0" - 12.7"	36 2" - 15.5"	7 up to 4.0"							89
1954	10	12	22 2.25" - 7.5"	17 1.5" - 6.75"			5 1.25" - 4.0"							44
Station No. 2 1953	?	?	387 2.7" - 8.6"	260 up to 11.1"	15 2" - 3"	119 1.7" - 8.0"	985 up to 4.7"					3	123	1892
1954	25	31	56 2.5" - 7.0"	120 4.5" - 9.0"		6 3.75"	18 2.25" - 3.25"					1	10	211
Station No. 3 1954	50	52	102 2.25" - 9.5"	68 1.5" - 9.0"		15 5.25" - 12.0"	27 1.5" - 4.5"	(plus about 400 small RT-SH + Suckers not taken)						612
Mazama Creek Station No. 1 1953	?	?	21 2.0" - 3.7"	8 1.5" - 7.0"		6 1.1" - 4.3"	147 0.8" - 3.6"							182
1954	62	19	81 up to 4"				38 4.0" - 7.0"						2	121
Station No. 2 1953	?	?	12 2.5" - 7.3"	18 6.7" - 14.4"	13 1.9" - 6.9"	38 1.3" - 12.7"				3	1	1		86

**ELECTRO-SAMPLING RESULTS ON RUSSIAN RIVER AND TRIBUTARIES
ONE YEAR AFTER THE CHEMICAL CONTROL PROJECT (1955)**

	RT-SH	Suchov	Secto. Spawfish	Rosch	Mosquito-fish	Green Sunfish	Silver Salmon	Cottid	Stickleback	Total
Sulphur Cr. I	38	5	-	148	-	-	-	-	-	191
II	363	121	-	-	-	-	-	-	-	484
III	421	2	-	22	-	-	-	-	-	445
	811	128	-	170	-	-	-	-	-	1120
Deep Cr. I	51	19	8	126	-	-	-	-	-	204
II	97	151	65	19	-	-	-	-	-	272
III	10	9	2	-	-	-	-	7	3	31
	158	179	75	145	-	-	-	7	3	507
Grass Cr. I	192	9	27	202	-	2	-	-	-	434
II	445	1	-	130	-	1	-	3	1	581
III	352	1	-	67	-	-	-	2	2	423
	1190	11	27	399	-	3	-	5	3	1443
W. Cr. I	63	2	62	-	-	2	-	-	1	142
II	161	-	22	-	-	2	-	1	10	197
	224	2	84	-	-	4	-	1	11	324
Newman Cr.	14	-	4	-	-	-	-	-	-	18
Fossil Cr.	325	-	16	-	-	-	-	-	1	342
Robinson Cr.	269	-	-	-	-	-	-	-	1	270
Felix Cr.	986	-	-	-	-	-	-	-	-	986
Peta Cr.	319	-	-	-	-	-	-	-	-	319
Commish Cr.	83	1	-	13	-	-	-	-	-	97
Newport Cr.	24	-	-	-	18	14	-	-	7	63
E. Austin Cr. I	139	-	2	54	-	-	-	1	-	196
II	278	-	-	14	-	-	33	8	-	333
	417	-	2	68	-	-	33	9	-	524
Man River Cr. I	10	-	25	-	-	-	-	-	-	35
II	4	1	11	-	-	-	-	-	1	17
	14	1	36	-	-	-	-	-	1	52
	745	2	57	81	-	14	33	9	10	2676
Total	4595	322	250	795	18	21	33	22	27	6085

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THE 1955 ELECTRO-SAMPLING RESULTS ON THE RUSSIAN RIVER
TRIBUTARIES (ONE YEAR AFTER CHEMICAL CONTROL PROJECT)

	RT	SS	Bv. Trout	Sucker	Spoonfish	Roach	Mosquitofish	SMB	G. Sunfish	V. Perch	Sculpin	Stickleback		
Big Sulphur Cr. I	38			5		148								
II	363			121										
III	421			2		22								
Dry Creek I	51			19	8	126								
II	37			151	65	19								
III	10			9	2						7	8		
Mascamoc Cr. I	445			1		130			1		3	1		
II	192			9	27	202			2	2				
III	356			1		67					2	2		
W. Av. Russian R. I	69				22				2		1	10		
II	162			2	62				2			1		
Mendocino Cr.	14				4									
Foxcreek Cr.	325				16							1		
Robinson Cr.	269											1		
Eliza Cr.	986													
Pieta Cr.	319													
Community Cr.	83			1		13								
Mark West Cr.	24						18		14			7		
E. Austin Cr. I	139				2	54					1			
II	278	33				14					8			
Main Russian R. I	10				25									
II	4			1	11							1		

count of the dead fish along a given stretch of stream which had been blocked by seines (Figure 11).

Two types of electric shockers were used for sampling. One was a 110-volt A.C. shocker and the other was a 230-volt D.C. shocker. The latter was especially helpful, since fish were attracted to the positive electrode. A 100-foot section was blocked with seines and the area shocked until no more fish appeared. This method frequently revealed a much larger and more varied population of fishes than was observed by a visual check.

Tributary Stream Fish Population Sampling

Big Sulphur Creek

Preliminary sampling on this creek showed that rough fish in the form of suckers, squawfish, and roach composed 95 percent of the fish population. The remaining 5 percent were juvenile steelhead.

Post-treatment sampling in 1953, although limited, indicated that young steelhead made up almost 100 percent of the fish population. Suckers made up the remainder and squawfish and roach were absent. Table 5 compares pretreatment and post-treatment sampling at various stations.

The information on population change indicated by sampling was supplemented by creel checks made during the first few weeks of the trout season in 1953, 1954, and 1955. Prior to 1953, according to wardens' reports, the fishery was poor and sporadic. Only the expert angler was able to make a good catch, usually either just after the opening or just before the closing of the season. On the first two days of the season in 1953, wardens reported that only two of 47 anglers failed to have their limits of 15 juvenile steelhead.

A brief survey of this same stream on May 1, 1954, while not reflecting the same degree of success, did reveal a catch of 252 juvenile steelhead by 30 anglers for a catch per angler day of 8.4 fish. Whether or not the increase in numbers of steelhead was the direct result of the treatment is still questionable. The source of these fish is also unknown, since they were in their second year in the stream and could have come either from the tidewater area near the mouth of the river or from the untreated headwater areas. The latter source is the most likely, but too little is known of fish movement within the drainage system to be certain.

During the winter of 1953-54, further movement of the slide in the area of the falls barrier resulted in a complete block to upstream movement of steelhead, so that some of the value of rough fish control was not fully realized upstream. A separate project has since altered the falls, so that it again acts only as a rough fish barrier.

In 1955 further post-treatment electrosampling was performed on Big Sulphur Creek, as part of the long-term evaluation of the chemical treatment project. The three stations sampled produced 822 juvenile steelhead, 128 suckers, and 170 roach. At one of the stations (Station No. 2) it was found that the suckers were back to about the pretreatment level of abundance, but the steelhead continued to predominate by about 3 to 1. Creel censuses also showed excellent fishing again, as was observed in 1953 and 1954. The over-all picture was quite favorable three years after treatment.

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND GAME
FIELD CORRESPONDENCE

FROM: Herbert E. Pintler
TO: J. Bruce Kimsey
SUBJECT: Sulphur Creek, Sonoma County - Observations and chemical treatment.

PLACE Box 415, Lakeport
DATE October 8, 1952

On Saturday, October 4, 1952, when we were checking the subject creek and continuing a brief chemical treatment, I took a few notes which you may want for the survey file. They are reproduced below.

Locality: Vicinity of "The Gaysara" Resort.

Pool we shocked earlier (Aug. 16, 1952) -

Many Hesperoleucus, but no other species as far as could be recognized. All fish 6" or less.

A few small, 2"-4", trout in riffles above.

Deep pool between old and new foot bridges below resort -

Water temperature, 2:40 p.m., flowing, shade, was 80°F.; air temp. 89°F. Chemical treatment applied at 2:50 p.m. Small fish showed distress by 3:00 p.m. Larger fish appeared by 3:30 p.m.

Only Hesperoleucus and suckers were observed. There were no Mylopharodon, Ptychocheilus or trout.

Dam mentioned by Shanovskoy ("Report on a Survey of the Streams in the Vicinity of Cloverdale, Calif." Administrative Report to Bureau, March 1932, p. 10) has washed away, and only concrete abutments remain.

Material in parenthesis above was added here for the sake of completeness.

cc: Dir. Fish Conserv.

Herbert E. Pintler
Assistant Fisheries Biologist

TABLE 2

Results of Fish Population Sampling by Visual Observation of $\frac{1}{2}$ Mile Stream Sections and Electro-Shocking of 100-ft. Stream Sections, August, 1957

Stations	RT-SH		Sucker		Squawfish		Roach		Total
	No.	%	No.	%	No.	%	No.	%	
<u>Dry Creek</u>									
Station No.1									
Visual Obs.	150	4.3	190	11.3	9	0.3	2900	84.1	3449
Electro-sampling	Not Done								
Station No.2									
Visual Obs.	0	0	1000	11.0	550	6.1	7500	82.8	9050
Electro-sampling	0	0	35	17.5	3	1.5	161	80.5	200
								Stickleback 1 = 0.5%	
<u>Pieta Creek</u>									
Visual Obs.	350	36.4	10	1.1	0	0	600	62.5	960
Electro-sampling	89	47.8	5	2.6	0	0	92	49.6	186
<u>Macona Creek</u>									
Station No.1									
Visual Obs.	57	11.1	6	1.1	0	0	450	87.7	513
Electro-sampling	112	38.6	1	0.5	0	0	173	59.6	290
								Sculpin 4 = 1.3%	
Station No.2									
Visual Obs.	20	2.1	260	26.5	0	0	700	71.4	980
Electro-sampling	15	10.9	30	21.8	3	2.2	64	46.7	137
								ESF-17 Sculpin-2 P. Perch-6 } 18.4%	
Station No.3									
Visual Obs.	40	3.2	15	1.2	1	0.1	1200	95.5	1256
Electro-sampling	Not Done								
<u>Vest Branch</u>									
<u>Russian River</u>									
Visual Obs.	Not Done								
Electro-sampling	0	0	92	69.1	0	0	41	30.9	133
<u>Big Sulphur Creek</u>									
Station No.2									
Visual Obs.	Not Done								
Electro-sampling	272	77.4	79	22.6	0	0	0	0	351

Big Sulphur Creek

Stations	RT - SH		Sucker		Squawfish		Roach		Total
	No.	%	No.	%	No.	%	No.	%	
Station No. 3									
Visual Obs.	0	0	550	59.7	20	2.2	350	38.0	920
Electro-sampling	2	0.3	248	46.3	50	9.3	219	40.9	535
							GSF-1	} 3.2%	
							T. Perch-2		
							H ¹ HD-13		
<u>Robinson Creek</u>								Sculpin 19=2.5%	
Visual Obs.	Not	Done					70	8.9	781
Electro-sampling	692	88.6	0	0	0	0			
<u>Feliz Creek</u>									
Visual Obs.	Not	Done							
Electro-sampling	710	89.8	0	0	0	0	80	10.2	790

¹ Figures from $\frac{1}{4}$ mile sections are from visual observations made by same person for $\frac{1}{8}$ mile above and $\frac{1}{8}$ mile below shocking stations.

why not visual observations on more stations?