

Seining on the other hand was less reliable than either visual checks or electro-sampling except at Station #2 (lower) on Maacama Creek where sticklebacks not observed by other means were found.

In regard to species composition there were wide diversions due in part to qualitative differences already mentioned. Although there was excellent agreement at Station #1 (middle) on Big Sulphur Creek, except for species of minor importance, differences ran as high as 56.7 percent (78.3 minus 21.6), as can be seen by the table:

TABLE I

A Comparison of Three Methods of Fish Population Sampling At Four Stations on Two Streams Tributary to the Russian. River, 1956

Stations	Percentage Composition by Species				
	<u>RT - SH</u>	<u>Sucker</u>	<u>Squawfish</u>	<u>Roach</u>	<u>Stickleback</u>
Big Sulphur Creek					
Station No. 1					
Electro-sampling (Aug.)	94.2	5.8	0	0	0
Seining (Oct.)	99.3	0.7	0	0	0
Visual Observation (Oct.)	95.0	4.1	0.7	0.2	0
Station No. 2					
Electro-sampling (Aug.)	4.6	31.3	17.5	46.6	0
Seining (Oct.)	1.7	4.3	76.1	17.9	0
Visual Observation (Oct.)	0.7	7.2	59.5	32.6	0
Maacama Creek					
Station Ho. 1					
Electro-sampling (Aug.)	78.3	0	0	20.9	0
Seining (Oct.)	0	0	0	(No.=1) 100.0	0
Visual Observation (Oct.)	21.6	17.2	0	61.2	0
Station No. 2					
Electro-sampling (Aug.)	15.8	0	3.2	75.9	[(Gr. Sunfish -] [(T. Perch -] [(Sculpin -]
Seining (Oct.)	20.2	5.0	0	51.6	23.2
Visual Observation (Oct.)	34.1	4.7	0	61.2	0

It was felt that differences among observers performing the visual checks also had some bearing on this subject. Table 2 shows differences both as to the numbers of fish of the various species observed and the resulting percentages. Discounting the probable differences in the upstream and downstream areas of each station, the two observers disagreed in their findings as much as 91.2%. The lack of agreement existed even though the observers alternated between upstream and downstream sections from station to station in order to overcome this possible source of difference. Qualitatively, however there was excellent agreement except in the case of roach.

TABLE II

Results of Fish Population Sampling by Visual Observation at Four Stations on Two Streams Tributary to the Russian River, Oct. 16, 1956

Stations	<u>Species</u>								<u>Total</u>	
	<u>RT-SH</u>		<u>Sucker</u>		<u>Squawfish</u>		<u>Roach</u>			
	No.	%	No.	%	No.	%	No.	%		
Big Sulphur Creek										
Station No. 1										
Individual A (¼ mi. upstream)	37	45.7	34	42.0	7	8.6	3	3.7	81	
Individual B (¼ mi. downstream)	1582	97.4	37	2.3	5	0.3	0	0	1624	
Total	1619	95.0	71	4.1	12	0.7	3	0.2	1705	
Station No. 2										
Individual A (¼ mi. downstream)	0	0	24	3.4	38	5.4	640	91.2	702	
Individual B (¼ mi. upstream)	15	1.2	117	9.3	1130	89.5	0	0	1262	
Total	15	0.7	141	7.2	1168	59.5	640	32.6	1964	
Maacama Creek										
Station No. 1										
Individual A (¼ mi. upstream)	50	29.9	7	4.2	0	0	110	65.9	167	
Individual B (¼ mi. downstream)	8	7.9	39	38.6	0	0	54	53.5	101	
Total	58	21.6	46	17.2	0	0	164	61.2	268	
Station No. 2										
Individual A (¼ mi. downstream)	6	4.5	3	2.3	0	0	124	93.2	133	
Individual B (¼ mi. upstream)	180	43.6	23	5.6	0	0	210	50.8	413	
Total	186	34.1	26	4.7	0	0	334	61.2	546	