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3785

FISH RESCUE WORK IN THE NORTH COAST DISTRICT IN 1941. 1/

By Leo Shapovalov

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California Division of Fish and Game

In 1941 fish rescue work in the north coast district was conducted on approximately the same basis and scope as in 1940. Fish rescue operations were carried on in Del Norte, Humboldt, Mendocino, and Lake counties. As in 1940, three crews were used, as follows: The Prairie Creek Hatchery Crew covered the streams from the California-Oregon line to the Eel River; the Lower Eel River Crew covered the Eel River system in Humboldt County and portions of Mendocino County; the Upper Eel River Crew covered the Eel River system streams in Round Valley and below Lake Pillsbury (Soda Creek) and also rescued 23,512 steelhead from Cold Creek of the Russian River system. As in 1939 and 1940, aerating equipment was used by all of the crews. Because of favorable water conditions, the Prairie Creek and Lower Eel River crews started their work several weeks later than in 1940. The Upper Eel River Crew, however, was actively engaged about a week earlier than in 1940. It is now apparent that in the streams in which most of the work is done by this crew, namely, Short Creek and the other Round Valley stream and Soda Creek, rescue work is required about as early following a season of heavy rainfall as following one of normal or sub-normal precipitation. Start of operations should not be delayed beyond the third or fourth week in May.

1/ Submitted April 30, 1942

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The number of fish rescued was 463,468, in comparison with 546,420 in 1940, 715,820 in 1939, and 203,902 in 1938. The increase in 1939 may be attributed almost entirely to work done in areas which had not been covered by previous fish rescue crews. The decrease in the number of fish in 1940 may be traced largely to the smaller number of fish (164,376) taken by the Upper El River Crew in 1940, as compared with 491,029 fish in 1939. The reasons for the smaller numbers of fish in 1940 are not entirely apparent, although many fewer fish were reported to be present in Short Creek that year than in 1939. The 1941 decrease is due principally to the smaller number of fish (81,339) taken by the Prairie Creek Hatchery crew, compared with 326,609 in 1940. Every stream in which operations were conducted in both years by this crew yielded far fewer fish in 1941 than in 1940. In 1941 the Lower El River Crew was transferred to fish rescue in the Central Valleys on July 7, so that no work was done in their area following this date. Because of flood flows in the streams this crew did not do any rescue work between June 13 and the time of their transfer, but had carried on stream improvement work. Later in the summer some of the streams in the area went dry in portions of their courses and an undetermined number of fish was lost. The Lower El River Crew rescued only 119 fish in 1941, compared with 53,435 in 1940. The Upper El River Crew, after dropping to 134,873 fish in 1940 from 491,029 in 1939, jumped again in 1941 to 377,620. Soda Creek "produced" 180,224 steelhead, compared with 2513 in 1940 and 225,575 in 1939; Short Creek, 98,304, compared with 7,107 in 1940 and with 77,593 in 1939. In 1939 this crew took 147,035 fish in Tomki Creek, but none in 1940 nor in 1941.

The results obtained must be considered gratifying and well worth

effort to obtain them, but I feel that the opportunities for fish rescue work in this area have not yet been fully exploited. The area in which fish rescue work can be carried out is not fully covered, the work is at times interrupted by the transferral of men to other duties, and personnel not trained in rescue work or unacquainted with the area is still used to some extent. The deficiencies of the program have been pointed out in my reports on 1938 and 1939 operations.

The 1941 rescue operations are fully covered by the tables at the end of this report. These tables list the daily operations of each crew in detail and also summarize the rescue work by crews, by counties, and by river systems.

It is again possible to make some sort of evaluation of the results, especially since for the first time the record of the size of the rescued fish was complete for all crews.

Turning to the work of the Prairie Creek Hatchery Crew, we see that the 21,359 rescued fish weighed a total of 13,634 oz. or 852.1 pounds. The average weight of the rescued fish was therefore 6.0 fish per oz. and the average length approximately 2.75 inches. This is a considerable increase in average size over 1940, when the fish averaged 12.0 fish per oz. and 2.25 inches in length. Only 21 days were spent in rescuing these fish.

The 4,519 fish rescued by the Lower Bel River Crew weighed 158.0 oz. or 9.8 pounds. The average weight of the fish was therefore 32.7 fish per oz., and the average length approximately 1.6 inches. Seven days were spent in rescuing these fish.

The 377,630 fish rescued by the Upper Bel River Crew weighed 13,462 oz. or 841.4 pounds. The average weight of the fish was therefore 28.1

and the average length approximately 1.7 inches. Forty-one men were spent in rescuing these fish.

All of the fish rescued in the north coast district in 1941 (463,468) averaged 17.0 fish per oz. or approximately 2.0 inches in length, and weighed 27,234 oz. or 1,702 pounds. Under average hatchery conditions, approximately 5 pounds of food are required to produce one pound of trout. Therefore on this basis, it would have required approximately 8,510 pounds of food. Cost of food may be figured roughly at 10 cents per pound. On this basis, the cost of food alone for the rescued fish would have been \$851. Approximately 379,000 eyed eggs would have been required to produce an equivalent number of such fish in a hatchery. Cost of eyed eggs may be figured at \$1.50 per thousand, so another \$868.50 should be added to the cost of producing these fish, making a total of \$1,719.50 for eggs and food alone. To this cost must be added the cost of maintaining the hatchery building and ponds. Costs of labor per day and of operation of trucks may be figured as being equal, but only 60 days were spent in rescuing and planting the above fish, whereas it would have required the services of men about a year to produce an equivalent number of fish at a hatchery. As has been pointed out in the past reports, it is to be expected that rescued fish of a given size will survive better than hatchery fish, and the rescued fish are usually placed into better water than that from which they were taken, while the reverse is more often true with hatchery fish.

It should be noted that the Lower Eel River Crew also did a considerable amount of stream improvement work by uniting channels of small streams near their entrance into the larger streams, opening channels where

Improvements were effected at the mouth or in the lower courses of the following streams: Bear Gulch, Hartsock Creek, Dean Cr., Redwood Cr., Jordan Cr., Spruce Cr., Squaw Cr., Bear Cr., Fish Cr. Un-named stream tributary to S. Fork of H. opposite Riverview Ranch, Standley Cr., Chuan Cr., Price Cr., Norman Cr., Rocky Glen Cr., Elk Cr., two small un-named streams tributary to Kal River, near McGinn, Decker Cr., and Piercy Cr. Improvements were effected in a number of these streams on more than one

Most of this improvement is of the "annual" type, that is, needing to be repeated each year, but some of it will last through the high water of the following spring season and perhaps for several seasons. In any case, it is very valuable work, and a number of fish were saved by the removal of obstructions and the draining of isolated pools and side channels. These fish do not appear on the fish rescue record.

In general, the fish rescue program in the north coast district has improved during the past few years, but still contains some deficiencies. Upper Kal River Crew is the only one that maintains a general plan of work, covering a large number of streams in Mendocino, Lake, and Colusa Counties. In a number of instances these streams are at considerable distances from the places of rescue, so that the rescue work truly takes place on a large scale in that area. The other two crews, however, plant their fish in the nearest live water. The next important step in the north coast fish rescue program, therefore, is to lay out a definite stocking program that will be based on need for stocking, rather than on simply responsibility of the water to be stocked. This stocking program should be integrated with the stocking program of the hatcheries covering the

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... made in this direction this year. ... stocking recommendations for the coast district. I included a list of waters to be stocked with fish rescued by Upper El River crew and the numbers of fish to be stocked. Next year I hope to compose similar lists for the Prairie Creek and Lower El River crews. In the past some waters adequately stocked during a particular season from hatchery have in addition been stocked with rescued fish, and vice versa.

I suggest that improvements in the north coast fish rescue program be made along the following lines:

- (a) Plan a regular stocking program for each rescue crew; this program will be based on need for stocking and will be integrated with stocking from hatcheries.
- (b) See that the fish rescue planting receipts are made out thoroughly and correctly. In the past, three types of errors have been fairly common: (1) the planting locality has been left blank or some local name, such as "Smith Place" or "Sawmill", which does not appear on maps and is not generally known, has been used; (2) instead of the name of the stream to which the planted stream is immediately tributary being given, the name of the larger stream or river system has been used, e. g., "Klamath River" or "El River"; (3) the figures on the size and number of fish rescued have not always checked with each other; the hatchery foreman or man in charge of the rescue crew should check the receipts for such errors before they are turned in.

(c) An improvement could be made in the planting receipts by listing the county from which the fish were rescued, as well as the county in which they were planted. This would greatly facilitate analysis of the fish rescue data.

(2) Arrange the program so that at least one man with each crew will have had fish rescue experience in that area during a previous year. This is highly important for both the fish rescue and the stream improvement.

(3) Secure more complete coverage of the north coast district. Streams or stream systems that require fish rescue work nearly every year and which have been overlooked in one or more of the past three years are the following: Mad River system, Van Duzen River tributaries, Mattole River system, Usal Creek, and streams tributary to the North Fork of Eel River.

FISH RESCUE - PRAIRIE CREEK HATCHERY CREW

1941

Date	From	To	Steel-head Trout	Cutthroat Trout	Silver Salmon	King Salmon	Miscellaneous	Size of Fish	Total in Ounces
5-28	Side channel Klamath R.	Klamath R.						38 per oz.	
6-11	Turwar Cr.	Klamath R.			890	504		23 " "	
			22		800		1*	5 " "	
6-14	Turwar Cr.	Klamath R.	1		700			14 " "	160
7-1	Rowdy Cr.	Smith R.						1.5 oz.	50
7-13	Rowdy Cr.	Smith R.			30		1**	8.5 oz.	38
						2,030		6 per oz.	
						4,480		14 " "	145
						1,580		14 " "	320
						270		14 " "	120
					99			9 " "	30
								9 " "	11
7-14	Wilson Cr.	Klamath R.	4		840	560		2 oz.	2
								8 per oz.	
			1,250					8 " "	70
			2,136			2,090		2 " "	50
			1					11 " "	2
	Turwar Cr.	Klamath R.	2					5 " "	190
								6 " "	250
			416					4 oz.	356
			28		90			5 oz.	4
								3 per oz.	6
								4 " "	30
								2.5 oz.	104
									73

* Catfish
** Bluegill

Date	From	To	Head Profit	Truck	Salmon	Salmon	Salmon	Salmon
7-15	Wilson Cr.	Klamath R.	3,578				6 per oz.	
			3				2.6 oz.	
				1			4 " oz.	
7-17	Rowdy Creek	Smith R.			1,238		8 per oz.	161
7-23	Wilson Cr.	Klamath R.			475		2.5 " "	190
			1				2 oz.	
			5,994				6 per oz.	
7-24	Rowdy Cr.	Smith R.		12		1,953	" " "	217
				2		732	" " "	172
8-1	Wilson Cr.	Klamath R.			144		3 " "	48
			666				6 " "	144
				9			3 " "	
				1			10 oz.	10
				9			5 " "	45
				11			3 " "	33
8-2	Wilson Cr.	Klamath R.	2,784				6 per oz.	444
					156		3 " "	52
				8			4 oz.	32
				3			6 " "	18
				10			3 " "	30
				1			10 " "	10
							8.2 per oz.	311
8-4	Hunter Cr.	Klamath R.	2,550				7 per oz.	239
	Rowdy Cr.	Smith R.			1,673		8 " "	958
			7,664				3 oz.	9
			3				7 " "	14
8-7	Rowdy Cr.	Smith R.		2			4 " "	16
				4			7 per oz.	256
					1,792		6 " "	378
						2,268	8 " "	1,024
			8,192				6 oz.	124
			4				2 " "	32
			16					

Date	From	To	head Trout	Trout	Salmon	Salmon	Langous	Fish
8-8	Rowdy Cr.	Smith R.	1	1				58 oz.
			1					155 "
			1					97 "
			1					49 "
			1					62 "
			1					2 "
			57					7 "
			5					8 per oz.
8-10	Rowdy Cr.	Smith R.	7,224					4 oz.
				12				8 "
				2				6 per oz.
					1,548			5 "
						1,632		4 "
					152			8 "
	Hunter Cr.	Klamath R.	1,456		828			3 "
8-18	Turwar Cr.	Klamath R.	2,576					4 "
			206					1.75 oz.
			1					82 oz.
					302			2.5 per oz.
8-16	Wilson Cr.	Klamath R.	2,425					5 per oz.
						312		3 "
8-19	Turwar Cr.	Klamath R.			518			3 "
			26					2 oz.
			1,240					4 per oz.
				1				9 oz.
8-21	Rowdy Cr.	Lost Man Cr.		4				3.5 oz.
			11					1.3 "
			189					9 per oz.
					5			5 "
						260		10 "
								1.3 oz.
8-29	Turwar Cr.	Lost Man Cr.	73					4 per oz.
			544		279			3 "
						329		3.5 "
TOTALS			51,351	79	11,609	18,300	2	15,634

FISH RESOURCES LOWER DEL. RIVER CATCH

1941

Date	From	To	Steel-head Trout	Silver Salmon	King Salmon	Size of Fish	Total Weight in Ounces
5-22	Deer Creek	S. Fk. Del R.	644			56 per cr.	11.5
	Drying side channel					46 " "	12
5-29	Woods Cr.	S. Fk. Del R.	552	234		13 " "	18
	(Pothole)				95	10 " "	9.5
						66 " "	3.01
6-2	Elk Cr.	S. Fk. Del R.	196				
	Drying side channel					98 " "	16
6-9	Standley Cr.	S. Fk. Del R.	1,568				
	Drying side channel					42 " "	3
6-10	S. Fk. Del R.	S. Fk. Del R.	126	22		11 " "	2
	Pothole near				8	8 oz.	1
	Riverview Ranch					36 per cr.	4.5
6-11	S. Fk. Del R.	S. Fk. Del R.	162		76	8 " "	9.5
	Pothole near						
	Brinkland Bridge					51 " "	19
6-12	Van Duzen R.	Van Duzen R.	589	121		11 " "	11
	Pothole 4 mi. above mouth				126	7 " "	18
Total			3,837	377	306		138.0

FISH RESCUE - UPPER EEL RIVER CATCH

1941

Date	From	To	Steel-head Trout	Size of Fish	Total Weight in Ounces
6-22	Short Cr.	Williams Cr.	3,993	33 per oz.	121
6-24	Short Cr.	Williams Cr.	6,963	33 " "	211
	Short Cr.	Summit Valley Cr.	6,468	33 " "	196
	Short Cr.	Outlet Cr.	5,909	33 " "	179
6-27	Cold Cr.	Santa Rosa Cr.	5,460	42 " "	130
	Cold Cr.	Sonoma Cr.	5,922	42 " "	141
6-4	Ten Mile Cr. (tributaries)	Ten Mile Cr.	4,958	37 " "	134
6-5	Cold Cr.	Talmage Cr.	3,189	28 " "	386
6-6	Soda Cr.	Trout Cr.	3,976	54 " "	71
	Soda Cr.	Dashiell Cr.	1,890	15 " "	86
6-7	Ten Mile Cr. (tributaries)	Jameson Cr.	7,072	32 " "	221
6-8	Short Cr.	Williams Cr.	11,222	31 " "	362
6-10	Short Cr.	Outlet Cr.	5,945	29 " "	205
	Short Cr.	Mill Cr.	5,597	29 " "	193
6-12	Short Cr.	Jumpoff Cr.	7,868	28 " "	231
	Short Cr.	El R., Middle Fk.	5,544	28 " "	199
6-13	Short Cr.	Hulls Cr.	8,428	28 " "	301
6-17	Soda Cr.	Dashiell Cr.	2,296	56 " "	41
6-18	Soda Cr.	Kelsey Cr.	9,672	52 " "	186
6-21	Mill Cr.	Sulphur Cr., Big	8,640	36 " "	240
6-21	Mill Cr.	Williams Cr.	13,702	17 " "	806
	Short Cr.	El R., Middle Fk.	8,840	24 " "	135
	Mill Cr.	El R., Middle Fk.	9,051	21 " "	431
	Mill Cr.	Hulls Jr.	10,941	21 " "	521
6-24	Soda Cr.	Bear Cr.	15,120	42 " "	360
6-25	Soda Cr.	Rice Cr.	11,400	38 " "	300
6-26	Soda Cr.	Austin Cr.	5,796	36 " "	161
	Soda Cr.	Sulphur Cr., Little	7,308	36 " "	203
6-29	Town Cr.	Williams Cr.	3,082	23 " "	134
6-10	Grist Cr.	Asbill Cr.	7,696	26 " "	296
6-11	Short Cr.	El R., Middle Fk.	8,211	21 " "	391
6-11	Short Cr.	El R., Middle Fk.	9,060	20 " "	453
6-11	Soda Cr.	Kelsey Cr.	3,870	43 " "	90
	Soda Cr.	Alder Cr.	4,945	43 " "	115
	Soda Cr.	Mill Cr.	4,750	43 " "	110
6-14	Soda Cr.	Deer Cr.	4,128	43 " "	96
	Soda Cr.	Skeleton Cr.	8,170	43 " "	190
6-15	Cold Cr.	Reeves Canyon Cr.	4,050	15 " "	270
6-19	Soda Cr.	Salmon Cr.	9,933	43 " "	231
6-20	Soda Cr.	Copper Butte Cr.	6,480	40 " "	162
	Soda Cr.	Thistle Glade Cr.	5,720	40 " "	145
6-22	Short Cr.	Jumpoff Cr.	4,250	10 " "	425

FISH RESCUE - LOWER KEL RIVER CREEK - SUMMARY

1941

<u>County</u>	<u>Steelhead Trout</u>	<u>Silver Salmon</u>	<u>King Salmon</u>	<u>Total</u>
HUMBOLDT COUNTY				
Deer Cr. (side channel)	644			644
Kel River, S. Fk. (pothole)	162		76	238
Elk Cr. (side channel)	196			196
Van Duzen R. (pothole)	589	121	126	836
Woods Cr. (pothole)	552	234	95	881
MENDOCINO COUNTY				
Kel River, S. Fk. (pothole)	126	22	8	156
Standby Cr. (side channel)	1,568			1,568
TOTAL	3,837	377	305	4,519

WISCONSIN PRATIE CREEK HATCHERY CRET SUMMA

1941

County	Steelhead Trout	Cutthroat Trout	Silver Salmon	King Salmon	Total
DEL NORTE COUNTY					
Hunter Cr. ✓	4,006				
Klamath River (side channel)			152		4,158
Bowdy Cr. ✓	23,374		690	304	994
Turwar Cr. ✓	5,133	26	6,645	17,355	47,400
Wilson Cr. 0	18,838	53	3,045	641	8,819
			1,077		19,968
TOTAL	51,351	79	11,609	18,300	81,339

<u>Date</u>	<u>From</u>	<u>To</u>	<u>Steel- head Trout</u>	<u>Size of Fish</u>	<u>Total Weight in Ounces</u>
7-23	Short Cr.	Kel R., Middle Fk.	1,764	9 per oz.	196
7-25	Soda Cr.	Big Canyon Cr.	8,436	37 " "	228
	Soda Cr.	Cold Cr.	2,701	37 " "	75
7-29	Soda Cr.	Deer Cr.	6,715	46 " "	168
	Soda Cr.	Kel R., Rice Fk.	8,348	46 " "	158
7-30	Soda Cr.	Deer Cr.	5,208	43 " "	121
	Soda Cr.	Rice Cr.	8,937	43 " "	209
7-31	Robinson Cr.	Talmage Cr.	3,429	9 " "	361
8-5	Soda Cr.	Smokehouse Cr.	8,730	30 " "	291
8-7	Mill Cr.	Asbill Cr.	1,420	20 " "	71
	Short Cr.	Asbill Cr.	904	4 " "	233
8-8	Soda Cr.	Smokehouse Cr.	7,860	30 " "	262
8-12	Soda Cr.	Middle Cr., W. Fk.	4,368	28 " "	156
8-14	Soda Cr.	Copper Butte Cr.	3,148	26 " "	121
	Soda Cr.	Skeleton Cr.	3,666	26 " "	141
	Soda Cr.	Thistle Glade Cr.	2,632	26 " "	102
8-19	Soda Cr.	Danhiell Cr.	2,129	23 " "	93
	Soda Cr.	Trout Cr.	4,508	23 " "	196
8-21	String Cr.	Outlet Cr.	3,909	19 " "	311
8-22	Cold Cr.	Reeves Canyon Cr.	952	8 " "	119
8-23	String Cr.	Foraythe Cr.	560	16 " "	35

Total

877,630

13,462

FISH RESOURCES - UPPER LAKES RIVER CREEK - SUMMARY

1941

County

Steelhead Trout

LAKE COUNTY

Soda Cr.

180,894

MINNEAPOLIS COUNTY

Cold Cr.

25,512

Grist Cr. ✓

7,696

Mill Cr. ✓

43,754

Robinson Cr.

3,429

Short Cr. ✓

95,364

String Cr. ✓

6,459

Ten Mile Cr. tributaries

12,030

Town Cr.

5,082

TOTAL

377,630

FISH RESCUE - NORTH COAST DISTRICT - 1941

By Drainage Basins

<u>River System</u>	<u>County</u>	<u>Steelhead Trout</u>	<u>Cutthroat Trout</u>	<u>Silver Salmon</u>	<u>King Salmon</u>	<u>Total</u>
Smith River System	Del Norte	23,374	28	6,645	17,355	47,400
Wilson Creek System	" "	18,838	53	1,077		19,968
Klamath River System	" "	9,139		3,887	945	13,971
Eel River System	Humboldt	2,143		355	297	2,795
Eel River System	Mendocino	173,518		22	8	173,548
Eel River System	Lake	180,294				180,294
Russian River System	Mendocino	25,512				25,512
TOTAL		432,818	79	11,936	18,605	463,438

FISH RESCUE - NORTH COAST DISTRICT - 1941

By Counties

<u>County</u>	<u>Steelhead Trout</u>	<u>Cutthroat Trout</u>	<u>Silver Salmon</u>	<u>King Salmon</u>	<u>Total</u>
Colusa	81,351	79	11,609	18,300	81,359
Humboldt	2,143		355	297	2,795
Mendocino	199,030		22	8	199,060
Yuba	180,294				180,294
TOTAL	432,818	79	11,986	18,605	463,488

In addition to the fish listed in this report, personnel from the Mt. Shasta Hatchery rescued 28,560 steelhead at 48 per oz. (595 oz.) from McAdam Creek, tributary to Moffett Creek (Scott River system), at W. H. Hayes Ranch, T 44 N, R 9 W, S 13 and planted them in Scott River below mouth of Shackelford Creek, R 10 W, T 44 N, S 26, on June 18, 1941.