CALIFORNIA DEPARTMENT OF FISH AND GAME
STREAM INVENTORY REPORT

Schoolhouse Creek

Report Revised April 14, 2006
Report Completed 2000
Assessment Completed 1998

INTRODUCTION

A stream inventory was conducted during the summer of 1998 on Schoolhouse Creek. The inventory was conducted in two parts: habitat inventory and biological inventory. The objective of the habitat inventory was to document the amount and condition of available habitat to fish, and other aquatic species with an emphasis on anadromous salmonids in Schoolhouse Creek. The objective of the biological inventory was to document the salmonid and other aquatic species present and their distribution.

The objective of this report is to document the current habitat conditions, and recommend options for the potential enhancement of habitat for Chinook salmon, coho salmon and steelhead trout. Recommendations for habitat improvement activities are based upon target habitat values suitable for salmonids in California's north coast streams.

WATERSHED OVERVIEW

Schoolhouse Creek is a tributary to Dry Creek which flows into the Russian River, located in Sonoma County, California (see Schoolhouse Creek map, page 2). The legal description at the confluence with the Dry Creek is T10N, R10W, S17. Its location is 38°43'8" N. latitude and 122°59'32" W. longitude. Year round vehicle access exists from Highway 101 near Healdsburg, via Dry Creek Road.

Schoolhouse Creek and its tributaries drain a basin of approximately 0.5 square miles. Schoolhouse Creek is a first order stream and has approximately 1.6 miles of blue line stream, according to the USGS Geyserville and Skaggs Springs 7.5 minute quadrangles. Elevations range from about 175 feet at the mouth of the creek to 1000 feet in the headwaters. The watershed is privately owned and has an agricultural component. No sensitive plants or animals were listed in the DFG's Natural Diversity Database for occurring within Schoolhouse Creek watershed.

METHODS

The habitat inventory conducted in Schoolhouse Creek follows the methodology presented in the California Salmonid Stream Habitat Restoration Manual (Flosi et al. 1998). The Americorps Volunteers that conducted the inventory were trained in standardized habitat inventory methods by the California Department of Fish and Game (DFG). This inventory was conducted by a two person team and was supervised by Bob Coey, Russian River Basin Planner (DFG).

HABITAT INVENTORY COMPONENTS

A standardized habitat inventory form has been developed for use in California stream surveys and can be found in the California Salmonid Stream Habitat Restoration Manual. This form was used in Schoolhouse Creek to record measurements and observations. There are nine components to the inventory form: flow, channel type, temperatures, habitat type, embeddedness, shelter rating, substrate composition, canopy, and bank composition.

1. Flow:

Flow is measured in cubic feet per second (cfs) at the bottom of the stream survey reach using standard flow measuring equipment, if available. In some cases flows are estimated. Flows were also measured or estimated at major tributary confluences.

2. Channel Type:

Channel typing is conducted according to the classification system developed and revised by David Rosgen (1985 rev. 1994). This methodology is described in the California Salmonid Stream Habitat Restoration Manual. Channel typing is conducted simultaneously with habitat typing and follows a standard form to record measurements and observations. There are five measured parameters used to determine channel type: 1) water slope gradient, 2) entrenchment, 3) width/depth ratio, 4) substrate composition, and 5) sinuosity.

3. Temperatures:

Water and air temperatures, and time, are measured by crew members with hand held thermometers and recorded at each tenth unit typed. Temperatures are measured in Fahrenheit at the middle of the habitat unit and within one foot of the water surface.

4. Habitat Type:

Habitat typing uses the 24 habitat classification types defined by McCain and others (1988). Habitat units are numbered sequentially and assigned a type identification number selected from a standard list of 24 habitat types. Dewatered units are labeled "DRY". Schoolhouse Creek habitat typing used standard basin level measurement criteria. These parameters require that the minimum length of a described habitat unit must be equal to or greater than the stream's mean wetted width. All unit lengths were measured, additionally, the first occurrence of each unit type and a randomly selected 10% subset of all units were completely sampled (length, mean width, mean depth, maximum depth and pool tail crest depth). All measurements were in feet to the nearest tenth.

5. Embeddedness:

The depth of embeddedness of the cobbles in pool tail-out reaches is measured by the percent of

the cobble that is surrounded or buried by fine sediment. In Schoolhouse Creek, embeddedness was visually estimated. The values were recorded using the following ranges: 0 - 25% (value 1), 26 - 50% (value 2), 51 - 75% (value 3), 76 - 100% (value 4) or "not suitable" (value 5) was assigned to tail-outs deemed unsuited for spawning due to inappropriate substrate particle size, having a bedrock tail-out, or other considerations.

6. Shelter Rating:

Instream shelter is composed of those elements within a stream channel that provide salmonids protection from predation, reduce water velocities so fish can rest and conserve energy, and allow separation of territorial units to reduce density related competition. Using an overhead view, a quantitative estimate of the percentage of the habitat unit covered is made. All shelter is then classified according to a list of nine shelter types. In Schoolhouse Creek, a standard qualitative shelter value of 0 (none), 1 (low), 2 (medium), or 3 (high) was assigned according to the complexity of the shelter. The shelter rating is calculated for each habitat unit by multiplying shelter value and percent covered. Thus, shelter ratings can range from 0-300, and are expressed as mean values by habitat types within a stream.

7. Substrate Composition:

Substrate composition ranges from silt/clay sized particles to boulders and bedrock elements. In all fully measured habitat units, dominant and sub-dominant substrate elements were visually estimated using a list of seven size classes.

8. Canopy:

Stream canopy density was estimated using modified handheld spherical densiometers as described in the California Salmonid Stream Habitat Restoration Manual, 1998. Canopy density relates to the amount of stream shaded from the sun. In Schoolhouse Creek, an estimate of the percentage of the habitat unit covered by canopy was made from the center of approximately every third unit in addition to every fully-described unit, giving an approximate 30% sub-sample. In addition, the area of canopy was estimated visually into percentages of evergreen or deciduous trees.

9. Bank Composition:

Bank composition elements range from bedrock to bare soil. However, the stream banks are usually covered with grass, brush, or trees. These factors influence the ability of stream banks to withstand winter flows. In Schoolhouse Creek, the dominant composition type and the dominant vegetation type of both the right and left banks for each fully measured unit were selected from the habitat inventory form. Additionally, the percent of each bank covered by vegetation was estimated and recorded.

BIOLOGICAL INVENTORY

Biological sampling during stream inventory is used to determine fish species and their distribution in the stream. Biological inventory is conducted using one or more of three basic methods: 1) stream bank observation, 2) underwater observation, 3) electrofishing. These sampling techniques are discussed in the California Salmonid Stream Habitat Restoration Manual.

DATA ANALYSIS

Data from the habitat inventory form are entered into Habitat, a dBASE IV data entry program developed CDFG. This program processes and summarizes the data, and produces the following tables and appendices:

- Riffle, flatwater, and pool habitat types
- Habitat types and measured parameters
- Pool types
- Maximum pool depths by habitat types
- Shelter by habitat types
- Dominant substrates by habitat types
- Vegetative cover and dominant bank composition
- Fish habitat elements by stream reach

Graphics are produced from the tables using Lotus 1,2,3. Graphics developed for Schoolhouse Creek include:

- Level II Habitat Types by % Occurrence and % Total Length
- Level IV Habitat Types by % Occurrence
- Pool Habitat Types by % Occurrence
- Maximum Depth in Pools
- Pool Shelter Types by % Area
- Substrate Composition in Low Gradient Riffles
- Percent Cobble Embeddedness by Reach
- Mean Percent Canopy
- Mean Percent Canopy by Reach
- Percent Bank Composition and Bank Vegetation

HISTORICAL STREAM SURVEYS:

No historical surveys exist for Schoolhouse Creek.

HABITAT INVENTORY RESULTS

* ALL TABLES AND GRAPHS ARE LOCATED AT THE END OF THE REPORT *

The habitat inventory of August 6, 1998 was conducted by Jennifer Jenkins and Janet Lester (AmeriCorps) with supervision and analysis by CDFG. The survey began at the confluence with Dry Creek and extended up Schoolhouse Creek to a log jam. The total length of the stream surveyed was 2201 feet, with no additional feet of side channel.

Flow was estimated to be 0.1 cfs during the survey period.

This section of Schoolhouse Creek has one channel type, a B4 from the mouth to 2201 feet. B4 channel types are moderately entrenched, moderate gradient (2-4%), riffle dominated channels, with infrequently spaced pools, a very stable plan and profile, stable banks and have a predominantly gravel substrate.

Water temperatures ranged from 68°F to 69°F. Air temperature was 80°F.

Table 1 summarizes the Level II riffle, flatwater, and pool habitat types. Based on frequency of **occurrence** there were 54% flatwater units, 23% pool units, and 15% dry streambed units. Based on total **length** there were 72% flatwater units, 22% dry streambed units, and 2% pool units (Graph 1).

Thirteen habitat units were measured and 38% were completely sampled. 5 Level IV habitat types were identified. The data is summarized in Table 2. The most frequent habitat types by percent **occurrence** were runs at 31%, mid-channel pools 23%, step runs 15% and dry streambed 15% (Graph 2). By percent total **length**, runs made up 55%, dry streambed 22%, step runs 16%, and mid-channel pools 2%.

Three pools were identified, all of which were main channel pools

Table 4 is a summary of maximum pool depths by pool habitat types. Pool quality for salmonids increases with depth. None of the 3 pools had a depth of two feet or greater (Graph 4).

A shelter rating was calculated for each habitat unit and expressed as a mean value for each habitat type within the survey using a scale of 0-300. Flatwater types had the highest shelter rating at 43. Pools had the lowest rating at 5 (Table 1). Main channel pools were the only pool types observed, and had a mean shelter rating at 5 (Table 3).

Table 5 summarizes fish shelter by habitat type. By percent area, the dominant pool shelter types were boulders at 70%, undercut banks 10%, root masses 10%, and terrestrial vegetation 10%. Graph 5 describes the pool shelter in Schoolhouse Creek.

Table 6 summarizes the dominant substrate by habitat type (Graph 6).

No mechanical gravel sampling was conducted in 1998 surveys.

The depth of cobble embeddedness was estimated at pool tail-outs. Of the three pool tail-outs

measured, one had a value of 1 (33%), and two had a value of 4 (67%). No riffles rated a 5 (unsuitable substrate type for spawning). On this scale, a value of one is best for fisheries. Gravel was the dominant substrate observed at pool tail-outs.

The mean percent canopy density for the stream reach surveyed was 96%. The mean percentages of deciduous and evergreen trees were 92% and 8%, respectively. Graph 8 describes the canopy for the entire survey.

For the entire stream reach surveyed, the mean percent right bank vegetated was 86% and the mean percent left bank vegetated was 59%. For the habitat units measured, the dominant vegetation types for the stream banks were: 80% deciduous trees, 10% evergreen trees, and 10% bare soil. The dominant substrate for the stream banks were 90% silt/clay/sand and 10% boulder (Graph 10).

BIOLOGICAL INVENTORY

JUVENILE SURVEYS:

No electrofishing surveys were conducted in 1998 surveys.

During the habitat inventory, no salmonids were observed upstream of 2373 feet above the confluence with Dry Creek, or where a log and debris accumulation appears to impede further passage. During the survey resident rainbow trout were not observed above this site.

Historical records reflect that no hatchery stocking, transfers, or rescues have occurred in the Schoolhouse Creek watershed.

ADULT SURVEYS:

A spawning/carcass survey was conducted in Schoolhouse Creek on February 3, 1999. The air temperature was 68°F and the water temperature was 50°F. The observers were Sean Higgins, Michael Lucas, Dez Mikkelsen (AmeriCorps), and Bob Coey (DFG).

The survey started at the mouth of Schoolhouse Creek and continued for approximately 1,925 feet upstream. No fish or redds were observed. It was noted that the culvert under Dry Creek Road was impassable to fish at the time of the survey and was likely a barrier, except possibly at high flows.

DISCUSSION

Schoolhouse Creek has one channel type, a B4 (2201 ft.).

There are 2201 feet of B4 channel type in Reach 1. According to the DFG Salmonid Stream Habitat Restoration Manual, B4 channel types are excellent for low-stage plunge weirs, boulder clusters, bank placed boulders, single and opposing wing-deflectors and log cover. They are also

good for medium-stage plunge weirs.

These channel types have suitable gradients and the stable stream banks that are necessary for the installation of instream structures designed to increase pool habitat, trap spawning gravels, and provide protective shelter for fish.

The water temperatures recorded on the survey day August 6, 1998 ranged from 68°F to 69°F. Air temperature was 80°F. These higher temperatures, if sustained, are above the threshold stress level (65°F) for salmonids.

It is unknown if this thermal regime is typical. To make any further conclusions, temperatures need to be monitored for a longer period of time through the critical summer months, and\or more extensive biological sampling conducted.

Pools comprised 2% of the total **length** of this survey. In first and second order streams a primary pool is defined to have a maximum depth of at least two feet, occupy at least half the width of the low flow channel, and be as long as the low flow channel width. In Schoolhouse Creek, the pools are relatively shallow with none having a maximum depth of at least 2 feet. However, in coastal coho and steelhead streams, it is generally desirable to have primary pools comprise approximately 50% of total habitat length.

The mean shelter rating for pools was 5. However, a pool shelter rating of approximately 80 is desirable. The relatively small amount of pool shelter that now exists is being provided primarily by boulders (70%), undercut banks (10%), root masses (10%), and terrestrial vegetation (10%). Log and root wad cover in the pool and flatwater habitats would improve both summer and winter salmonid habitat. Log cover provides rearing fry with protection from predation, rest from water velocity, and also divides territorial units to reduce density related competition.

No low gradient riffles were observed during the survey of Schoolhouse Creek, which typically provide the gravel or small cobble substrate that is necessary for spawning salmonids.

Sixty-seven percent of the pool tail-outs measured had embeddedness ratings of either 3 or 4. Only 33% had a rating of 1; and the remaining pool tail-outs had a rating of 4. Cobble embeddedness measured to be 25% or less, a rating of 1, is considered best for the needs of salmon and steelhead.

The higher the percent of fine sediment, the lower the probability that eggs will survive to hatch. This is due to the reduced quantity of oxygenated water able to percolate through the gravel, or because of fine sediment capping the redd and preventing fry emergence. In Schoolhouse Creek Reach 1, sediment sources should be mapped and rated according to their potential sediment yields, and control measures taken.

The mean percent canopy for the survey was 96%. This is very good, since 80 percent is generally considered desirable. However, this reach had numerous bank erosion problems. Reach 1 as well

as other areas with bank erosion could benefit from bio-technical re-vegetation techniques using native species.

GENERAL MANAGEMENT RECOMMENDATIONS

Schoolhouse Creek should be managed as an anadromous, natural production stream.

Recent winter storms brought down many large trees and other woody debris into the stream, which increased the number and quality of pools since the drought years. This woody debris, if left undisturbed, will provide fish shelter and rearing habitat, and offset channel incision. Landowners should be sensitive about the natural and positive role woody debris plays in the system, and encouraged not to remove woody debris from the stream, except under extreme buildup and only under guidance by a fishery professional.

PRIORITY FISHERY ENHANCEMENT OPPORTUNITIES

1a) Access for migrating salmonids is an ongoing potential problem in Reach 1, therefore, fish passage should be improved. . The road culvert on Dry Creek Road is undermining and is a fish barrier. Eventually this culvert will have to be replaced. Future design should include improved passage of gravel as a second priority and fish passage first. Until this culvert is replaced, no other habitat work should be done.

1b) There are several log debris accumulations present on Schoolhouse Creek that have the potential for causing bank erosion. The modification of these debris accumulations is recommended at this time, and they should be monitored. **If modification becomes necessary, it must be done carefully to preserve existing habitat provided by the woody debris.**

2) Map sources of upslope and in-channel erosion, and prioritize them according to present and potential sediment yield. Identified sites should then be treated to reduce the amount of fine sediments entering the stream. Near-stream riparian planting along any portion of the stream should be encouraged to provide bank stability and a buffering against agricultural, grazing and urban runoff.

3) Where feasible, design and engineer pool enhancement structures to increase the number of pools in the upper reaches. This must be done where the banks are stable or in conjunction with stream bank armor to prevent erosion.

4) Where feasible, increase woody cover in the pool and flatwater habitat units along the entire stream. Most of the existing >shelter is from boulders. Adding high quality complexity with larger woody cover is desirable. Combination cover/scour structures constructed with boulders and woody debris would be effective in many flatwater and pool locations in the upper reaches. This must be done where the banks are stable or in conjunction with stream bank armor to prevent erosion. In some areas the material is at

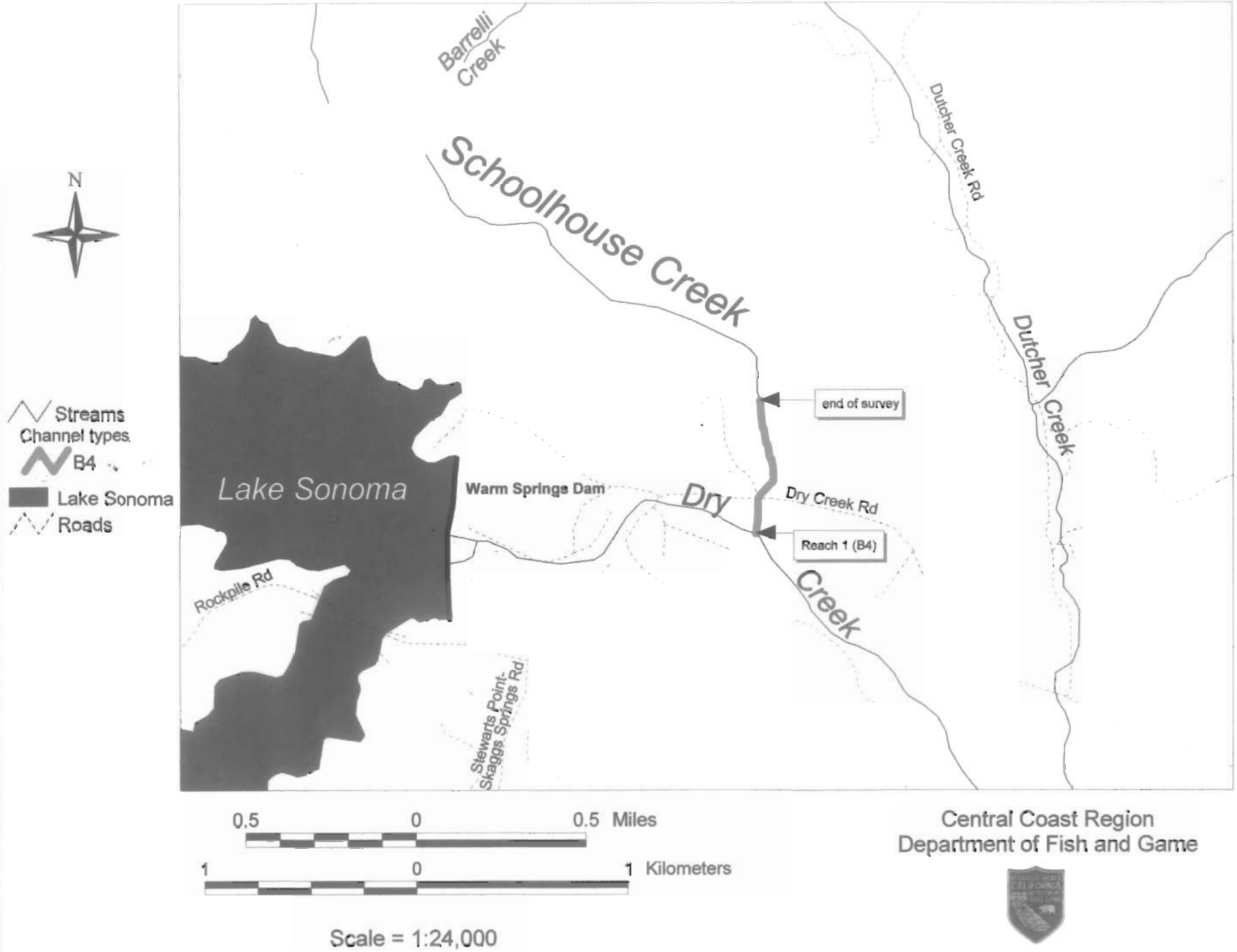
hand.

PROBLEM SITES AND LANDMARKS - SCHOOLHOUSE CREEK SURVEY COMMENTS

The following landmarks and possible problem sites were noted. All distances are approximate and taken from the beginning of the survey reach.

Habitat Unit #	Stream Length(ft)	Comments
1.00	455	Begin survey at confluence w/ Dry Creek +404'- LB house; tires used for bank stabilization
2.00	794	+110' fence hanging 3.5' above creek
3.00	801	Culvert pool- concrete lip
4.00	901	Culvert 4'Hx4'Wx100'L- no baffles, shallow water culvert backing up w/sediment-upstream = 1'H; dry above
5.00	921	+137- 6' fence over creek, 3' above water
8.00	1707	+99- fence & debris accumulation; 2'H sediment
11.00	1827	LB slide through entire unit 30'Hx24'L
12.00	1922	+40- Log debris accumulation/slide 5'Hx20'Wx55'L
13.00	2201	+172- LB massive active slide 100'Hx80'L; Log debris accumulation 4'Hx15'Lx12'W- water running through, but not over 4'H sediment buildup; +279- Major Log debris accumulation completely blocking channel; walked up +200'- RB & LB failures, debris, & sediment block off water completely; No fish or water observed above blocked channel
		END OF SURVEY

Schoolhouse Creek



February 22, 2001
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Schoolhouse Creek Tables Graphs Map
Assessment Completed 1998
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Schoolhouse Creek | Drainage: Dry Creek, Russian River

Table 1 - SUMMARY OF RIFFLE, FLATWATER, AND POOL HABITAT TYPES | Survey Dates: 08/06/98

Confluence Location: QUAD: Geyserville,Skag LEGAL DESCRIPTION: T10NR10WS17 LATITUDE: 38°43'8" LONGITUDE: 122°59'32"

HABITAT UNITS	UNITS FULLY MEASURED	HABITAT TYPE	HABITAT PERCENT OCCURRENCE	MEAN LENGTH (ft.)	TOTAL LENGTH (ft.)	PERCENT TOTAL LENGTH	MEAN WIDTH (ft.)	MEAN DEPTH (ft.)	MEAN AREA (sq.ft.)	ESTIMATED TOTAL AREA (sq.ft.)	MEAN VOLUME (cu.ft.)	ESTIMATED TOTAL VOLUME (cu.ft.)	MEAN RESIDUAL POOL VOL (cu.ft.)	MEAN SHELTER RATING
7	4	FLATWATER	54	227	1592	72	3.0	0.4	328	2296	85	594	0	43
3	1	POOL	23	11	34	2	7.7	0.8	76	228	62	186	47	5
2	0	DRY	15	238	475	22	0.0	0.0	0	0	0	0	0	0
1	0	CULVERT	8	100	100	5	0.0	0.0	0	0	0	0	0	0

TOTAL UNITS	TOTAL UNITS	TOTAL LENGTH (ft.)	TOTAL AREA (sq. ft.)	TOTAL VOL. (cu. ft.)
13	5	2201	2524	780

Schoolhouse Creek | Drainage: Dry Creek, Russian River

Table 2 - SUMMARY OF HABITAT TYPES AND MEASURED PARAMETERS | Survey Dates: 08/06/98

Confluence Location: QUAD: Geyserville,Skag LEGAL DESCRIPTION: T10NR10WS17 LATITUDE: 38°43'8" LONGITUDE: 122°59'32"

HABITAT UNITS #	UNITS FULLY MEASURED	HABITAT TYPE	HABITAT OCCURRENCE %	MEAN LENGTH ft.	TOTAL LENGTH ft.	TOTAL LENGTH %	MEAN WIDTH ft.	MEAN DEPTH ft.	MAXIMUM DEPTH ft.	MEAN AREA sq.ft.	TOTAL AREA EST. sq.ft.	MEAN VOLUME cu.ft.	TOTAL VOLUME EST. cu.ft.	MEAN RESIDUAL POOL VOL cu.ft.	MEAN SHELTER RATING	MEAN CANOPY %
1	1	GLD	8	24	24	1	4	0.6	1.0	91	91	55	55	0	0	98
4	2	RUN	31	301	1205	55	3	0.3	0.8	497	1988	108	434	0	45	100
2	1	SRN	15	182	363	16	3	0.3	0.9	227	454	68	136	0	40	99
3	1	MCP	23	11	34	2	8	0.8	1.7	76	228	62	186	47	5	98
2	0	DRY	15	238	475	22	0	0.0	0.0	0	0	0	0	0	0	99
1	0	CUL	8	100	100	5	0	0.0	0.0	0	0	0	0	0	0	75

TOTAL UNITS	TOTAL UNITS	LENGTH (ft.)	AREA (sq.ft)	TOTAL VOL. (cu.ft)
13	5	2201	2761	811

Schoolhouse Creek — Drainage: Dry Creek, Russian River

Table 3 - SUMMARY OF POOL TYPES — Survey Dates: 08/06/98

Confluence Location: QUAD: Geyserville,Skag LEGAL DESCRIPTION: T10NR10WS17 LATITUDE: 38°43'8" LONGITUDE: 122°59'32"

HABITAT UNITS	UNITS FULLY MEASURED	HABITAT TYPE	HABITAT PERCENT OCCURRENCE	MEAN LENGTH (ft.)	TOTAL LENGTH (ft.)	PERCENT TOTAL LENGTH	MEAN WIDTH (ft.)	MEAN DEPTH (ft.)	MEAN AREA (sq.ft.)	TOTAL AREA EST. (sq.ft.)	MEAN VOLUME (cu.ft.)	TOTAL VOLUME EST. (cu.ft.)	MEAN RESIDUAL POOL VOL. (cu.ft.)	MEAN SHELTER RATING
3	1	MAIN	100	11	34	100	7.7	0.8	76	228	62	186	47	5

TOTAL UNITS	TOTAL UNITS	TOTAL LENGTH (ft.)	TOTAL AREA (sq.ft.)	TOTAL VOL. (cu.ft.)
3	1	34	228	186

Schoolhouse Creek | Drainage: Dry Creek, Russian River

Table 4 - SUMMARY OF MAXIMUM POOL DEPTHS BY POOL HABITAT TYPES | Survey Dates: 08/06/98

Confluence Location: QUAD: Geyserville,Skag LEGAL DESCRIPTION: T10NR10WS17 LATITUDE: 38°43'8" LONGITUDE: 122°59'32"

UNITS MAX DPTH MEASURED	HABITAT TYPE	HABITAT PERCENT OCCURRENCE	<1 FOOT MAXIMUM DEPTH	<1 FOOT PERCENT OCCURRENCE	1-<2 FT. MAXIMUM DEPTH	1-<2 FOOT PERCENT OCCURRENCE	2-<3 FT. MAXIMUM DEPTH	2-<3 FOOT PERCENT OCCURRENCE	3-<4 FT. MAXIMUM DEPTH	3-<4 FOOT PERCENT OCCURRENCE	>=4 FEET MAXIMUM DEPTH	>=4 FEET PERCENT OCCURRENCE
3	MCP	100	0	0	3	100	0	0	0	0	0	0

TOTAL UNITS
3

Schoolhouse Creek Drainage: Dry Creek, Russian River

Table 5 - Summary of Shelter by Habitat Type Survey Dates: 08/06/98

Confluence Location: QUAD: Geyserville,Skag LEGAL DESCRIPTION: T10NR10WS17 LATITUDE: 38°43'8" LONGITUDE: 122°59'32"

UNITS MEASURED	UNITS SHELTER MEASURED	HABITAT TYPE	% TOTAL UNDERCUT BANKS	% TOTAL SWD	% TOTAL LWD	% TOTAL ROOT MASS	% TOTAL TERR. VEGETATION	% TOTAL AQUATIC VEGETATION	% TOTAL WHITE WATER	% TOTAL BOULDERS	% TOTAL BEDROCK LEDGES
1	0	GLD	0	0	0	0	0	0	0	0	0
4	2	RUN	2	42	12	10	34	0	0	0	0
2	1	SRN	5	30	30	30	5	0	0	0	0
3	1	MCP	10	0	0	10	10	0	0	70	0
2	0	DRY	0	0	0	0	0	0	0	0	0
1	0	CUL	0	0	0	0	0	0	0	0	0
ALL HABITAT TYPES 13	4		3	39	16	15	27	0	0	1	0
POOLS ONLY 3	1		10	0	0	10	10	0	0	70	0

Schoolhouse Creek

Drainage: Dry Creek, Russian River

Table 6 - SUMMARY OF DOMINANT SUBSTRATES BY HABITAT TYPE

Survey Dates: 08/06/98

Confluence Location: QUAD: Geyservill,Skag LEGAL DESCRIPTION: T10NR10WS17 LATITUDE: 38°43'8" LONGITUDE: 122°59'32"

TOTAL HABITAT UNITS	UNITS SUBSTRATE MEASURED	HABITAT TYPE	% TOTAL SILT/CLAY DOMINANT	% TOTAL SAND DOMINANT	% TOTAL GRAVEL DOMINANT	% TOTAL SM COBBLE DOMINANT	% TOTAL LG COBBLE DOMINANT	% TOTAL BOULDER DOMINANT	% TOTAL BEDROCK DOMINANT
1	1	GLD	0	0	100	0	0	0	0
4	2	RUN	0	0	100	0	0	0	0
2	1	SRN	0	0	100	0	0	0	0
3	1	MCP	0	0	100	0	0	0	0
2	0	DRY	0	0	0	0	0	0	0
1	0	CUL	0	0	0	0	0	0	0

Schoolhouse Creek

APPENDIX A. Summary of Mean Percent Vegetative Cover for Entire Stream

Mean Percent Canopy	Mean Percent Evergreen	Mean Percent Deciduous	Mean Right bank % Cover	Mean Left Bank % Cover
95.89	8.33	91.67	86.00	59.00

APPENDIX B.

Mean Percentage of Dominant Substrate

Dominant Class of Substrate	Number Units Right Bank	Number Units Left Bank	Percent Total Units
Bedrock	0	0	0
Boulder	0	1	10
Cobble/Gravel	0	0	0
Silt/clay	5	4	90

Mean Percentage of Dominant Vegetation

Dominant Class of Vegetation	Number Units Right Bank	Number Units Left Bank	Percent Total Units
Grass	0	0	0
Brush	0	0	0
Deciduous Trees	5	3	80
Evergreen Trees	0	1	10
No Vegetation	0	1	10

APPENDIX C. FISH HABITAT INVENTORY DATA SUMMARY

STREAM NAME: Schoolhouse Creek
SAMPLE DATES:
SURVEY LENGTH:
MAIN CHANNEL: 2201 ft. SIDE CHANNEL: 0 ft.
LOCATION OF STREAM MOUTH:
USGS Quad Map: Geyservill,Skag Latitude: 38°43'8"
Legal Description: T10NR10WS17 Longitude: 122°59'32"

SUMMARY OF FISH HABITAT ELEMENTS BY STREAM REACH

STREAM REACH 1 (Units 1-13)

Channel Type: B4	Mean Canopy Density: 96%
Main Channel Length: 2201 ft.	Evergreen Component: 8%
Side Channel Length: 0 ft.	Deciduous Component: 92%
Riffle/Flatwater Mean Width: 3.0 ft.	Pools by Stream Length: 2%
Pool Mean Depth: 0.8 ft.	Pools >=2 ft. Deep: 0%
Base Flow: 0.1 cfs	Pools >=3 ft. Deep: 0%
Water: 68-69°F Air: 80-80°F	Mean Pool Shelter Rtn: 5
Dom. Bank Veg.: Deciduous Trees	Dom. Shelter: Boulders
Bank Vegetative Cover: 73%	Occurrence of LOD: 30%
Dom. Bank Substrate: Silt/Clay/Sand	Dry Channel: 475 ft.

Embeddedness Value: 1. 33% 2. 0% 3. 0% 4. 67% 5. 0%