CALIFORNIA DEPARTMENT OF FISH AND GAME
STREAM INVENTORY REPORT
Little Briggs Creek
Report Revised April 14, 2006
Report Completed 2000
Assessment Completed 1996

INTRODUCTION

A stream inventory was conducted during the summer of 1996 on Little Briggs 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 Little Briggs 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.

WATERSHED OVERVIEW

Little Briggs Creek is a tributary to Briggs Creek which flows into Maacama Creek, a tributary of the Russian River, located in Sonoma County, California (see Little Briggs Creek map, page 2). The legal description at the confluence with Briggs Creek is T10N, R8W, S26. Its location is 38°40'43" N. latitude and 122°43'33" W. longitude. Seasonal vehicle access exists only by permission from private locked roads via Highway 128, near Calistoga.

Little Briggs Creek and its tributaries drain a basin of approximately 1.6 square miles. Little Briggs Creek is a first order stream and has approximately 2.6 miles of blue line stream, according to the USGS Mt. St. Helena 7.5 minute quadrangle. Elevations range from about 360 feet at the mouth of the creek to -2,820 feet in the headwaters. The headwaters of the stream is a U-shaped canyon dominated by conifers, but empties into a broad alluvial plain dominated by oak-woodland and grasslands. The watershed is entirely privately owned.

METHODS

The habitat inventory conducted in Little Briggs Creek follows the methodology presented in the California Salmonid Stream Habitat Restoration Manual (Flosi and Reynolds, 1994). 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 Little Briggs 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 (1996). 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. Temperatures are also recorded using remote Temperature recorders which log temperature every two hours, 24 hours/day.

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".

Little Briggs 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 Little Briggs 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). Additionally, a rating of "not suitable" (NS) 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 Little Briggs 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 Little Briggs 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 Little Briggs 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 by Tim Curtis, Inland Fisheries Division, California Department of Fish and Game. 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 Little Briggs 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

HABITAT INVENTORY RESULTS

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

The habitat inventory of June 5-12, 1996 was conducted by Elaine Hards (Intern), Eddie Sanchez, and Sarah Nossaman (AmeriCorps), and data analyzed by Ken Bunzel (DFG). The survey began at the confluence with Briggs Creek and extended up Little Briggs Creek for almost 1 mile. A bedrock cascade was located approximately 600 feet downstream of the end of the survey. The total length of the stream surveyed was 5,262 feet, with an additional 209 feet of side channel. On June 10, 1996 flows were estimated to be 1.2 cfs at 0.25 miles upstream from the mouth, using a Marsh-McBirney Model 2000 flowmeter.

This section of Little Briggs Creek has two channel types: from the mouth to 2,911 feet an F4 and the upper 2,351 feet an F2.

F4 channel types are entrenched meandering riffle/pool channels on low gradients (<2%) with a high width/depth ratio and a predominantly gravel substrate. F2 channel types are similar, with a predominantly boulder substrate.

Water temperatures measured by surveyors ranged from 59-80°F and air temperatures ranged from 68-88°F.

Table 1 summarizes the Level II riffle, flatwater, and pool habitat types. Based on frequency of **occurrence** there were 38% flatwater units, 36% riffle units, and 27% pool units. Based on total **length** there were 43% riffle units, 43% flatwater units, and 14% pool units (Graph 1).

Ninety habitat units were measured and 36% were completely sampled. Fifteen Level IV habitat types were identified. The data is summarized in Table 2. The most frequent habitat types by percent **occurrence** were low gradient riffles at 27%, runs 16%, and step runs 11% (Graph 2). By percent total **length**, low gradient riffles made up 38%, step runs 18%, and runs 16%.

Twenty-four pools were identified (Table 3). Scour pools were most often encountered at 63%, and comprised 60% of the total length of pools (Graph 3). Table 4 is a summary of maximum pool depths by pool habitat types. Pool quality for salmonids increases with depth. Sixteen of the 24 pools (67%) had a depth of two feet or greater (Graph 4). These deeper pools comprised 9% of the total length of stream habitat.

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. Pool types had the highest shelter rating at 14. Flatwater had the lowest rating with 5 and riffles rated 9 (Table 1). Of the pool types, the main channel pools had the highest mean shelter rating at 16, and scour pools rated 14 (Table 3). Table 5 summarizes fish shelter by habitat type. By percent area, the dominant pool shelter types were boulders at 47%, and root masses at 23%. Graph 5 describes the pool shelter in Little Briggs Creek.

Table 6 summarizes the dominant substrate by habitat type. Gravel or small cobble were dominant substrates observed in 3 of the 4 (75%) low gradient riffles measured. (Graph 6). The depth of cobble embeddedness was estimated at pool tail-outs. Of the 24 pool tail-outs measured, seven had a value of 1 (29%); twelve had a value of 2 (50%); four had a value of 3 (17%); and one had a value of 4 (4%). On this scale, a value of one is best for fisheries.

The mean percent canopy density for the stream reach surveyed was 61%. The mean percentages of deciduous and evergreen trees were 44% and 49%, respectively. Graph 8 describes the canopy for the entire survey.

For the entire stream reach surveyed, the mean percent right bank vegetated was 64% and the mean percent left bank vegetated was 70%. For the habitat units measured, the dominant vegetation types for the stream banks were: 39% evergreen trees, 29% grass, 29% deciduous trees, 2% brush and 2% bare soil. The dominant substrate for the stream banks were: 33% silt/clay/sand, 30% bedrock, 26% cobble/gravel and 11% boulder (Graph 10).

BIOLOGICAL INVENTORY

JUVENILE SURVEYS:

On June 12, 1996 a biological inventory was conducted in three sites of Little Briggs Creek to document fish species composition and distribution. Each site was single pass electrofished using one Smith Root Model 12 electrofisher. Fish from each site were counted by species, and returned to the stream. The air temperature was 77-81°F and the water temperature ranged from 66-74°F. The observers were Sanchez (AmeriCorps), Nossaman (AmeriCorps), and Coey (DFG).

The inventory of Reach 1 was started at the mouth. No salmonids were observed between the mouth and the floating cattle fence for the first 650 feet of stream. Numerous Sacramento squawfish were visually observed. This portion is characterized by open grassland, no shade canopy, and little bank structure. The inventory was continued in the well shaded portion in habitat units 11-15 with an approximate length 272 feet. In pool and riffle habitat types 42 0+ and seven 1+ steelhead were observed along with 30 California Roach, 9 sculpin (Cottus Sp.), 1 frog and 21 polliwogs.

The inventory of Reach 1 was continued in habitat units 30-37 with an approximate length of 452 feet. In pool and riffle habitat types 26 0+, seven 1+ steelhead were observed along with 7 sculpin, 25 California Roach, 1 unidentified frog and 1 Yellow-legged Frog.

The inventory of Reach 2 was conducted in habitat units 40-46 with an approximate length of 508 feet. In pool and riffle habitat types 42 0+, 17 1+ steelhead were observed along with 4 sculpin, 4 Yellow-legged Frogs.

A summary of historical and recent data collected appears in the table below.

Species Observed in DFG's 1996 Survey	
SPECIES	**Native/Introduced**
Steelhead Trout	N
California Roach	N
Sculpin (Cottus Sp.)	N

Species Observed in DFG's 1996 Survey	
SPECIES	**Native/Introduced**
Yellow-legged Frog	N

No introduced species were observed and historical records reflect no hatchery stocking, transfers, or known rescues have occurred in Little Briggs Creek.

DISCUSSION

Little Briggs Creek has two channel types: F4 and F2. There are 2,911 feet of F4 channel type in Reach 1.

According to the DFG Salmonid Stream Habitat Restoration Manual, fishery enhancement opportunities within F4 channel types are good for bank-placed boulders and fair for low-stage weirs, single and opposing wing-deflectors, channel constrictors and log cover. There are 2,351 feet of F2 channel type in Reach 2. F2 channel types are fair for low-stage weirs, single and opposing wing-deflectors and log cover.

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

The water temperatures recorded on the survey days June 5-12, 1996 ranged from 59-80°F, and air temperatures ranged from 68-88°F. The warmer water temperatures were recorded in the lowest portion of Reach 1 (this section has since been fenced and re-vegetated with native trees in cooperation with the landowner).

Cooler water temperatures are desirable in Little Briggs Creek. The mean percent canopy for the survey was only 61%. This is low, since 80 percent is generally considered desirable. However, the low canopy levels are primarily in Reach 1, where the mean percent canopy is only 34%. In the first 600 feet of stream canopy is 0, where the stream becomes dry in late summer. Elevated water temperatures could be reduced by increasing stream canopy. The large trees required for adequate stream canopy will also eventually provide a long term source of large woody debris needed for instream habitat and bank stability.

Pools comprised 14% 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 Little Briggs Creek, the few existing pools are relatively deep with 67% having a maximum depth of at least 2 feet. However, these pools comprised only 9% of the total length of stream habitat.

The mean shelter rating for pools was 14, provided primarily by boulders and root masses. 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 divide territorial units to reduce density related competition.

Seventy-five percent of the low gradient riffles measured (75%) had either gravel or small cobble as the dominant substrate. This is generally considered good for spawning salmonids. Seventy-nine percent of the pool tail-outs measured had embeddedness ratings of either 1 or 2. This is good since cobble embeddedness measured to be 25% or less, a rating of 1, is considered best for the needs of salmon and steelhead. Embeddedness levels were better in Reach 2 than in Reach 1, where bank erosion is prevalent.

SUMMARY

Biological surveys were conducted to document fish distribution and are not necessarily representative of population information. Both 0+ and 1+ steelhead were found in fair numbers in the upper reaches. In general, fish numbers increased in an upstream direction. Reach 2 has good spawning habitat with adequate gravel and low levels of silt.

However, stream temperatures are high and shade canopy levels are low to non-existent in Reach 1. Shelter ratings are very low throughout and few deep pools exist for juvenile salmonid rearing habitat, especially in Reach 1. Shelter ratings, bank stability, riparian and spawning gravel should improve as riparian within the fenced enclosure expands.

GENERAL RECOMMENDATIONS

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

Woody debris, if left undisturbed, will provide fish shelter and rearing habitat. Landowners are encouraged not to remove woody debris from the stream, except under

extreme buildup and only under guidance by a fishery professional.

SPECIFIC FISHERY ENHANCEMENT RECOMMENDATIONS

1) Due to its excellent habitat qualities, Reach 2 of Little Briggs Creek should be monitored for fish and macroinvertebrate populations. Data collected will aid in restoring other similar Russian River tributaries.

RESTORATION IMPLEMENTED

1) Continue to maintain the fenced exclosure for the goal of improving the canopy on Little Briggs Creek.

2) Armor, stabilize and revegetate blow-outs, gullies, and eroding banks (units 22, 24, 67, 76, 81, and 84) in Reach 1.

3) After re-vegetation has taken hold within the exclosure, (approximately year 2001), in Reach 1, design and engineer pool enhancement structures to increase the number and length of pools. Low stage weirs and opposing wing deflectors would be very effective in creating pools and decreasing stream bank erosion. This could be done only where the banks are stable or in conjunction with stream bank armor to prevent erosion.

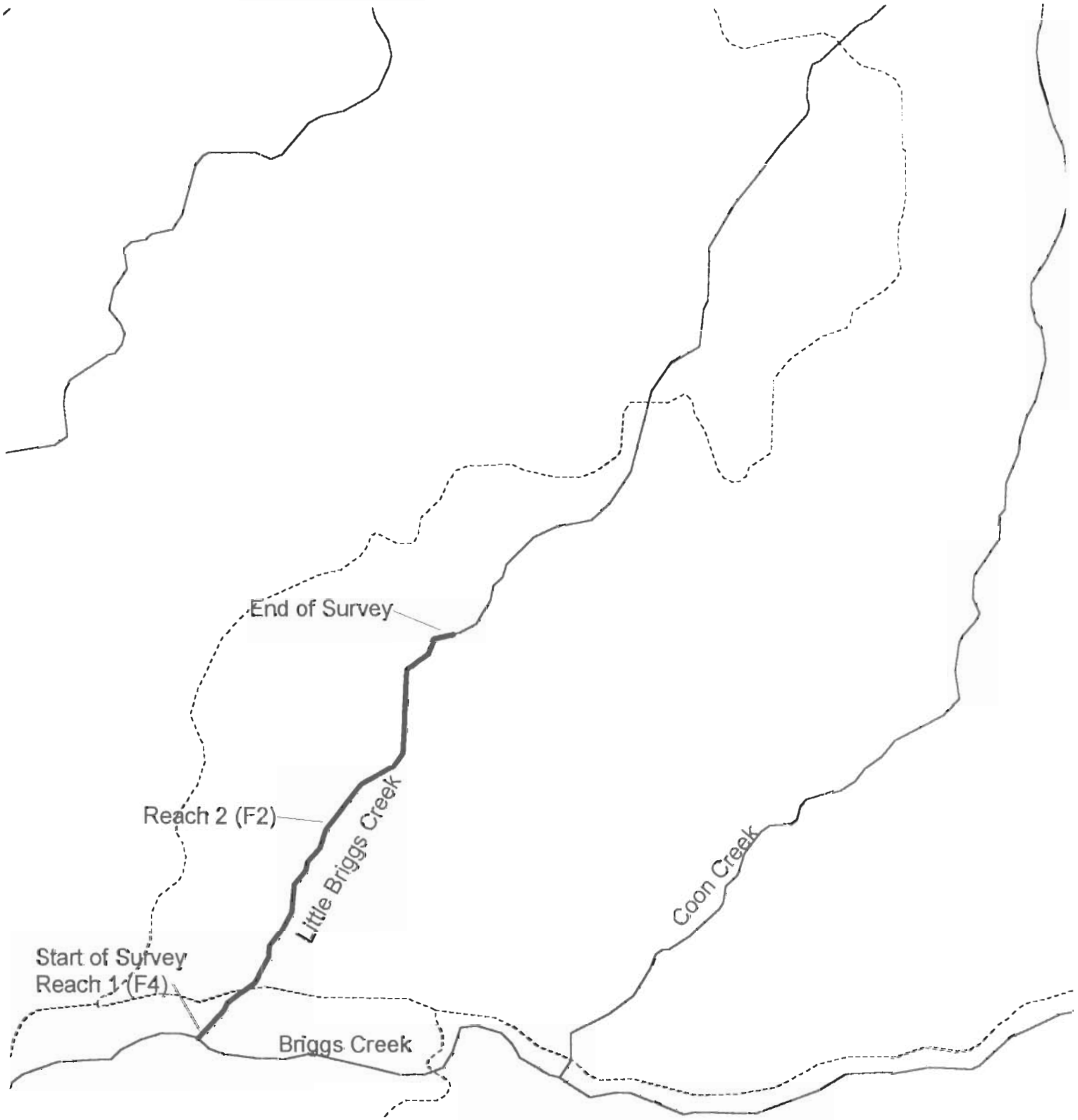
PROBLEM SITES AND LANDMARKS - LITTLE BRIGGS CREEK SURVEY COMMENTS

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 LEN (FT.)	COMMENTS
1.00	46	WATER TEMP AT CONFLUENCE W/ BRIGGS CREEK 64°F
2.00	69	FLOATING CATTLE FENCE
5.00	344	SUMMER CROSSING
6.00	388	FENCE RUNS FROM UNITS 5-9 SQUAWFISH SEEN
9.00	610	SPRING TEMP 63°F, RIGHT BANK FLOATING CATTLE FENCE, CULVERT
11.00	686	2+ STEELHEAD SEEN, GOOD EF SPOT
13.00	815	4 CULVERTS
14.00	902	FENCE RUNS ALONG RIGHT BANK, SLIGHTLY ERODING THE BANK

15.00	921	TRIBUTARY DRY, POOL TEMP 73°F, GOOD RESTORATION SITE
17.00	1174	SIDE CHANNEL PRESENT
19.00	1362	SIDE CHANNEL FROM UNITS 17-19
20.00	1460	CHANNELIZED SECTION FROM ROAD WORK, LEFT BANK
22.00	1655	RESTORATION SITE
23.00	1917	TRIBUTARY TEMP 70°F, LEFT BANK HIGHLY ERODIBLE, APPROX. AREA 10' x 200'
24.00	2142	GULLY LEFT BANK, UNIT 24 W/ UNDER SIZE CULVERT, DRY
25.00	2233	DEAD CRAYFISH UNIT 24, DRY TRIB LEFT BANK W/ SMALL CULVERT (UNIT 23)
31.00	2576	1 + STEELHEAD FOUND DEAD, SQUAWFISH SEEN IN POOL
36.00	2836	FLOATING CATTLE FENCE
37.00	2912	BARBED WIRE FENCE ACROSS CREEK
38.00	2950	DEAD JUVENILE SCULPIN
42.00	3356	DRY TRIBUTARY LEFT BANK
47.00	3770	TRIBUTARY ON RIGHT BANK-82°F, CONFLUENCE-67°F
48.00	3827	TEMP MENTOR LOCATION
49.00	3855	GOOD EF SPOT
52.00	4003	RED-LEGGED FROG
54.00	4111	CATTLE FENCE CROSSES UNIT #054, CHANNEL TYPED
59.00	4353	SKUNK NEST
61.00	4455	DRY TRIBUTARY LEFT BANK
63.00	4546	DRY TRIBUTARY LEFT BANK
67.00	4679	RIGHT BANK EROSION,SCARP 150'L X 60'W X 75'H, POSS. CHANNEL CHANGE
74.00	4854	BEDROCK CASCADE.
76.00	4946	LANDSLIDE 1/4 MILE UPSTREAM OF UNIT #076, ON LEFT BANK 100'H X 300'L SEDIMENTATION FROM ROAD CROSSING, COULD BE A PROBLEM, SEE MAP FOR LOCATION.
81.00	5095	RIGHT BANK HEALED OVER UPSLOPE EROSION 80'H X 150'L X 70'W
84.00	5180	RIGHT BANK UPSLOPE BLOWOUT.
86.00	5267	END OF HABITAT TYPING

Little Briggs Creek



Little Briggs Creek

Drainage: Briggs Creek, Maacama Creek, Russian River

Table 1 - SUMMARY OF RIFFLE, FLATWATER, AND POOL HABITAT TYPES

Survey Dates: 06/05/96 to 06/12/96

Confluence Location: QUAD: MOUNT ST H LEGAL DESCRIPTION: T10NR8WS26 LATITUDE: 38°40'43" LONGITUDE: 122°43'33"

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
32	7	RIFFLE	36	74	2373	43	9.4	0.8	268	8582	206	6587	0	9
34	13	FLATWATER	38	69	2356	43	9.7	0.6	401	13624	260	8840	0	5
24	12	POOL	27	31	743	14	10.2	1.2	284	6814	356	8550	254	14

TOTAL UNITS	TOTAL UNITS	TOTAL LENGTH (ft.)	TOTAL AREA (sq. ft.)	TOTAL VOL. (cu. ft.)
90	32	5471	29020	23977

Little Briggs Creek

Drainage: Briggs Creek, Maacama Creek, Russian River

Table 2 - SUMMARY OF HABITAT TYPES AND MEASURED PARAMETERS

Survey Dates: 06/05/96 to 06/12/96

Confluence Location: QUAD: MOUNT ST H LEGAL DESCRIPTION: T10NR8WS26 LATITUDE: 38°40'43" LONGITUDE: 122°43'33"

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 %
24	4	LGR	27	86	2059	38	11	0.4	1.1	306	7348	137	3295	0	1	40
5	2	HGR	6	44	218	4	9	0.4	0.9	291	1455	141	707	0	5	63
3	1	CAS	3	32	96	2	8	1.7	3.0	202	607	340	1021	0	30	85
4	2	POW	4	42	169	3	11	0.7	1.1	188	753	120	482	0	8	90
6	3	GLD	7	54	323	6	11	0.6	1.4	457	2741	238	1430	0	2	66
14	4	RUN	16	64	891	16	8	0.6	1.8	351	4914	231	3227	0	1	59
10	4	SRN	11	97	973	18	10	0.7	1.8	477	4767	337	3371	0	8	66
4	2	MCP	4	25	101	2	11	1.3	3.3	255	1019	325	1300	221	4	79
4	2	STP	4	44	176	3	11	1.1	2.5	308	1234	350	1400	244	29	73
2	1	CRP	2	35	69	1	8	1.1	2.1	279	559	308	616	206	0	50
1	1	LSR	1	27	27	0	9	0.8	2.5	219	219	175	175	109	120	90
6	3	LSBk	7	34	207	4	12	1.2	3.0	424	2543	569	3416	427	3	62
3	2	LSBo	3	33	99	2	12	1.4	3.5	329	986	492	1475	378	5	41
3	1	PLP	3	15	46	1	7	1.1	2.3	88	263	96	288	61	17	90
1	0	BPB	1	19	19	0	7	0.7	1.2	133	133	93	93	13	0	0

TOTAL UNITS	TOTAL UNITS	LENGTH (ft.)	AREA (sq.ft)	TOTAL VOL. (cu.ft)
90	32	5471	29537	22295

Little Briggs Creek Tables Graphs Map
Assessment Completed 1996

Little Briggs Creek

Drainage: Briggs Creek, Maacama Creek, Russian River

Table 3 - SUMMARY OF POOL TYPES

Survey Dates: 06/05/96 to 06/12/96

Confluence Location: QUAD: MOUNT ST H LEGAL DESCRIPTION: T10NR8WS26 LATITUDE: 38°40'43" LONGITUDE: 122°43'33"

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
8	4	MAIN	33	35	277	37	10.7	1.2	282	2253	338	2700	232	16
15	8	SCOUR	63	30	447	60	10.2	1.2	296	4441	386	5786	284	14
1	0	BACKWATER	4	19	19	3	7.0	0.7	133	133	93	93	13	0

TOTAL UNITS	TOTAL UNITS	TOTAL LENGTH (ft.)	TOTAL AREA (sq.ft.)	TOTAL VOL. (cu.ft.)
24	12	743	6826	8580

Little Briggs Creek

Drainage: Briggs Creek, Maacama Creek, Russian River

Table 4 - SUMMARY OF MAXIMUM POOL DEPTHS BY POOL HABITAT TYPES

Survey Dates: 06/05/96 to 06/12/96

Confluence Location: QUAD: MOUNT ST H LEGAL DESCRIPTION: T10NR8WS26 LATITUDE: 38°40'43" LONGITUDE: 122°43'33"

UNITS 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
4	MCP	17	0	0	1	25	2	50	1	25	0	0
4	STP	17	0	0	2	50	2	50	0	0	0	0
2	CRP	8	0	0	1	50	1	50	0	0	0	0
1	LSR	4	0	0	0	0	1	100	0	0	0	0
6	LSBk	25	1	17	1	17	2	33	2	33	0	0
3	LSBo	13	0	0	1	33	1	33	1	33	0	0
3	PLP	13	0	0	0	0	3	100	0	0	0	0
1	BPB	4	0	0	1	100	0	0	0	0	0	0

TOTAL UNITS 24

Little Briggs Creek | Drainage: Briggs Creek, Maacama Creek, Russian River

Table 5 - Summary of Shelter by Habitat Type | Survey Dates: 06/05/96 to 06/12/96

Confluence Location: QUAD: MOUNT ST H LEGAL DESCRIPTION: T10NR8WS26 LATITUDE: 38°40'43" LONGITUDE: 122°43'33"

	UNITS MEASURED	UNITS SHELTER MEASURED	HABITAT TYPE	SQ. FT. UNDERCUT BANKS	SQ. FT. SWD	SQ. FT. LWD	SQ. FT. ROOT MASS	SQ. FT. TERR. VEGETATION	SQ. FT. AQUATIC VEGETATION	SQ. FT. WHITE WATER	SQ. FT. BOULDERS	SQ. FT. BEDROCK LEDGES
	24	4	LGR	0	0	0	26	0	0	0	0	0
	5	2	HGR	0	0	0	0	0	0	0	90	0
	3	2	CAS	0	0	0	0	0	0	10	82	0
	4	2	POW	0	0	0	0	0	0	0	53	0
	6	3	GLD	0	0	0	0	0	0	0	15	0
	14	4	RUN	0	0	0	14	0	0	0	14	0
	10	6	SRN	0	65	62	0	22	0	0	162	78
	4	4	MCP	0	0	0	0	0	0	0	43	0
	4	4	STP	0	0	25	33	0	0	48	168	32
	2	2	CRP	0	0	0	0	0	0	0	0	0
	1	1	LSR	15	15	15	102	0	0	0	0	0
	6	6	LSBk	0	0	0	0	0	0	0	44	15
	3	3	LSBo	0	0	0	15	0	0	0	36	0
	3	3	PLP	17	0	0	0	0	0	17	18	0
	1	1	BPB	0	0	0	0	0	0	0	0	0
TOTAL	90	47		32	80	102	190	22	0	75	725	125
				2%	6%	8%	14%	2%	0%	6%	54%	9%
TOTAL FOR POOLS	24	24		32	15	40	150	0	0	65	309	47
				5%	2%	6%	23%	0%	0%	10%	47%	7%

Little Briggs Creek — Drainage: Briggs Creek, Maacama Creek, Russian River

Table 6 - SUMMARY OF DOMINANT SUBSTRATES BY HABITAT TYPE — Survey Dates: 06/05/96 to 06/12/96

Confluence Location: QUAD: MOUNT ST H LEGAL DESCRIPTION: T10NR8WS26 LATITUDE: 38°40'43" LONGITUDE: 122°43'33"

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
4	4	LGR	0	25	25	50	0	0	0
2	2	HGR	0	0	50	50	0	0	0
1	1	CAS	0	0	0	0	0	0	100
2	2	POW	0	0	50	50	0	0	0
3	3	GLD	0	0	67	33	0	0	0
4	4	RUN	0	25	50	0	25	0	0
4	4	SRN	0	25	25	50	0	0	0
2	2	MCP	0	50	50	0	0	0	0
2	2	STP	0	0	50	0	0	50	0
1	1	CRP	0	0	100	0	0	0	0
1	1	LSR	0	0	100	0	0	0	0
3	3	LSBk	33	67	0	0	0	0	0
3	3	LSBo	0	67	33	0	0	0	0
1	1	PLP	0	0	0	0	0	100	0
1	1	BPB	100	0	0	0	0	0	0

Little Briggs Creek

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

Mean Percent Canopy	Mean Percent Evergreen	Mean Percent Decidous	Mean Right bank % Cover	Mean Left Bank % Cover
61.19	48.87	43.58	64.24	70.00

APPENDIX B.

Mean Percentage of Dominant Substrate

Dominant Class of Substrate	Number Units Right Bank	Number Units Left Bank	Total Mean Percent
Bedrock	13	7	30.30
Boulder	2	5	10.61
Cobble/Gravel	7	10	25.76
Silt/clay	11	11	33.33

Mean Percentage of Dominant Vegetation

Dominant Class of Vegetation	Number Units Right Bank	Number Units Left Bank	Total Mean Percent
Grass	12	7	28.79
Brush	1	0	1.52
Deciduous Trees	9	10	28.79
Evergreen Trees	11	15	39.39
No Vegetation	0	1	1.52

APPENDIX C. FISH HABITAT INVENTORY DATA SUMMARY

STREAM NAME: Little Briggs Creek
SAMPLE DATES: 06/05/96 to 06/12/96
STREAM LENGTH: 5262 ft.
LOCATION OF STREAM MOUTH:
USGS Quad Map: MOUNT ST H — Latitude: 38°40'43"
Legal Description: T10NR8WS26 — Longitude: 122°43'33"

SUMMARY OF FISH HABITAT ELEMENTS BY STREAM REACH

STREAM REACH 01

Channel Type: F4	Canopy Density: 34%
Channel Length: 2911 ft.	Evergreen Component: 39%
Riffle/Flatwater Mean Width: 9 ft.	Deciduous Component: 43%
Total Pool Mean Depth: 1.3 ft.	Pools by Stream Length: 9%
Base Flow: 0.0 cfs	Pools >=3 ft. deep: 38%
Water: 66 - 80 °F Air: 69 - 88 °F	Mean Pool Shelter Rtn: 3
Dom. Bank Veg.: Evergreen Trees	Dom. Shelter: Boulders
Vegetative Cover: 75%	Occurrence of LOD: 45%
Dom. Bank Substrate: Silt/Clay/Sand	Dry Channel: 0 ft.

Embeddness Value: 1. 25% 2. 38% 3. 25% 4. 13%

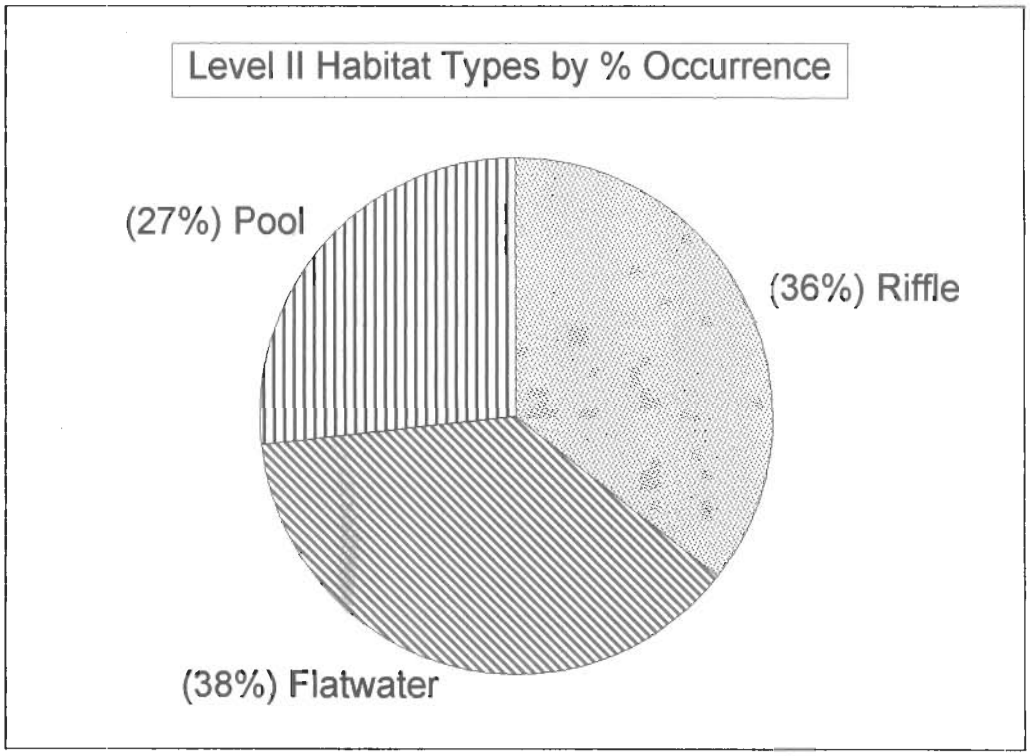
STREAM REACH 02

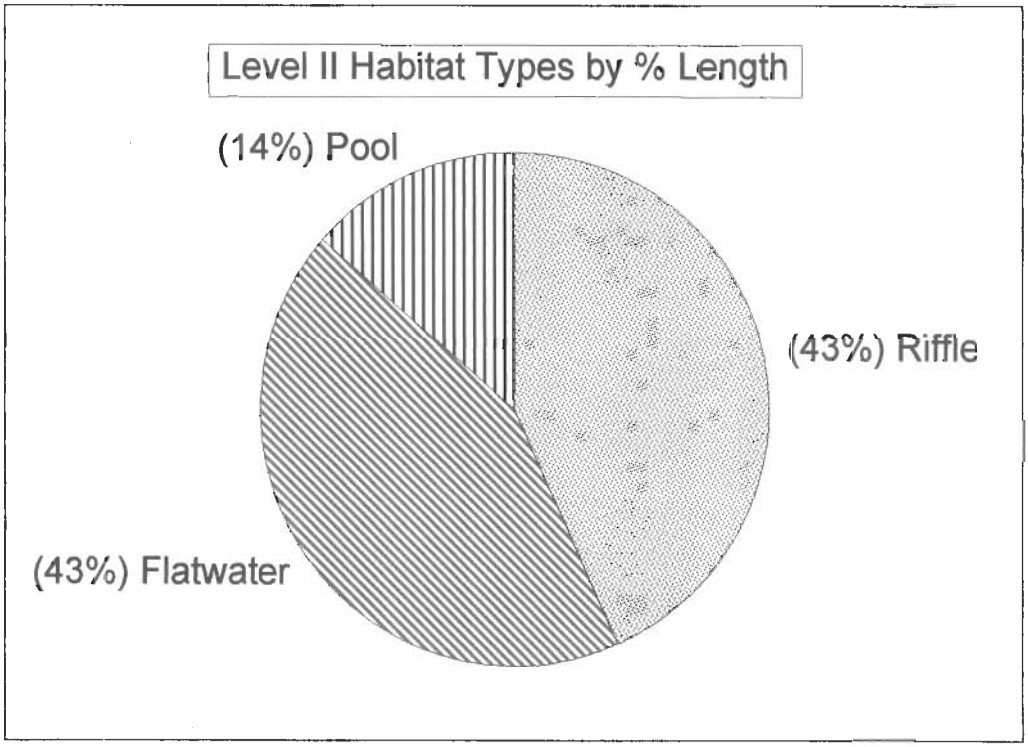
Channel Type: F2	Canopy Density: 80%
Channel Length: 2351 ft.	Evergreen Component: 56%
Riffle/Flatwater Mean Width: 10 ft.	Deciduous Component: 44%
Total Pool Mean Depth: 1.1 ft.	Pools by Stream Length: 20%
Base Flow: 0.0 cfs	Pools >=3 ft. deep: 6%
Water: 59 - 66 °F Air: 68 - 87 °F	Mean Pool Shelter Rtn: 20
Dom. Bank Veg.: Evergreen Trees	Dom. Shelter: Boulders
Vegetative Cover: 63%	Occurrence of LOD: 15%
Dom. Bank Substrate: Silt/Clay/Sand	Dry Channel: 0 ft.

Embeddness Value: 1. 31% 2. 56% 3. 13% 4. 0%

Little Briggs Creek

Level II Habitat Types

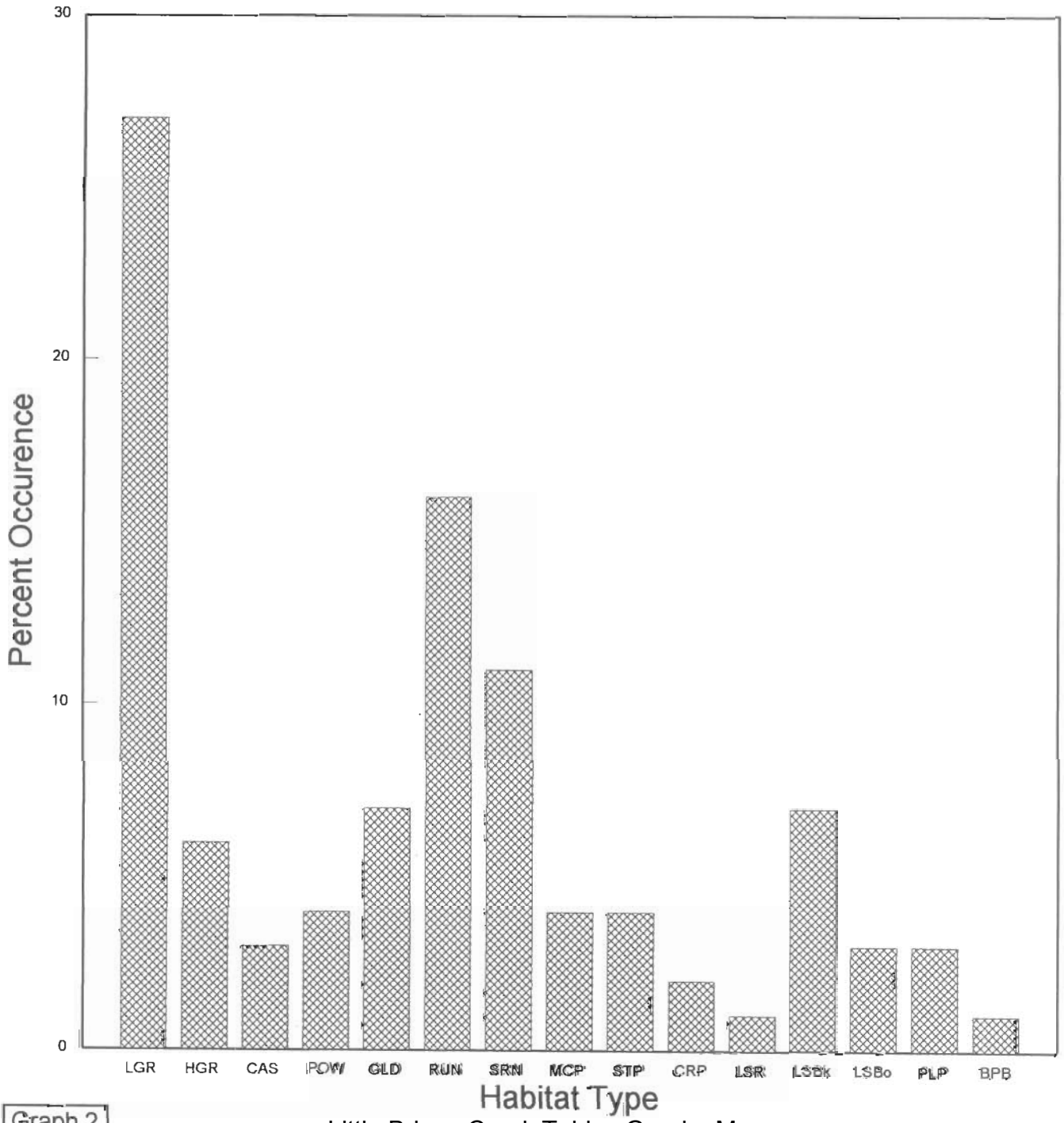




Graph 1

Little Briggs Creek

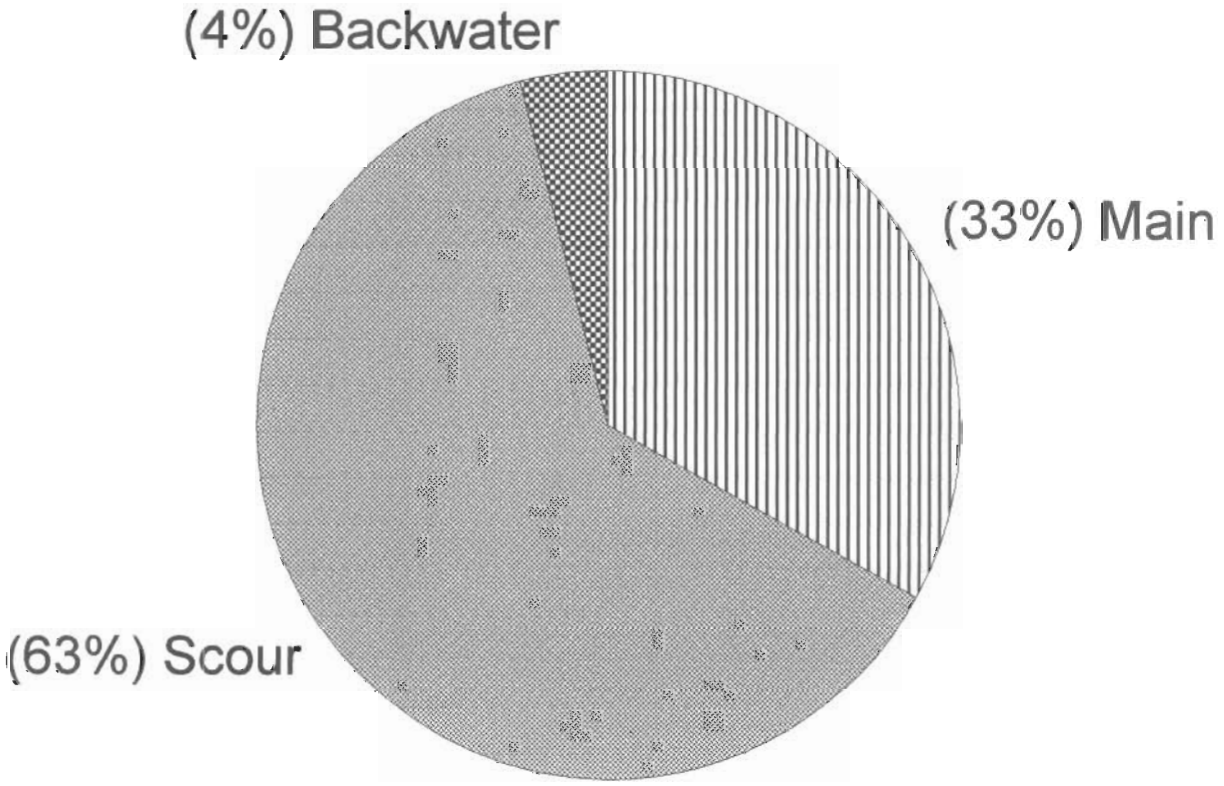
Level IV Habitat Types by % Occurrence



Graph 2

Little Briggs Creek

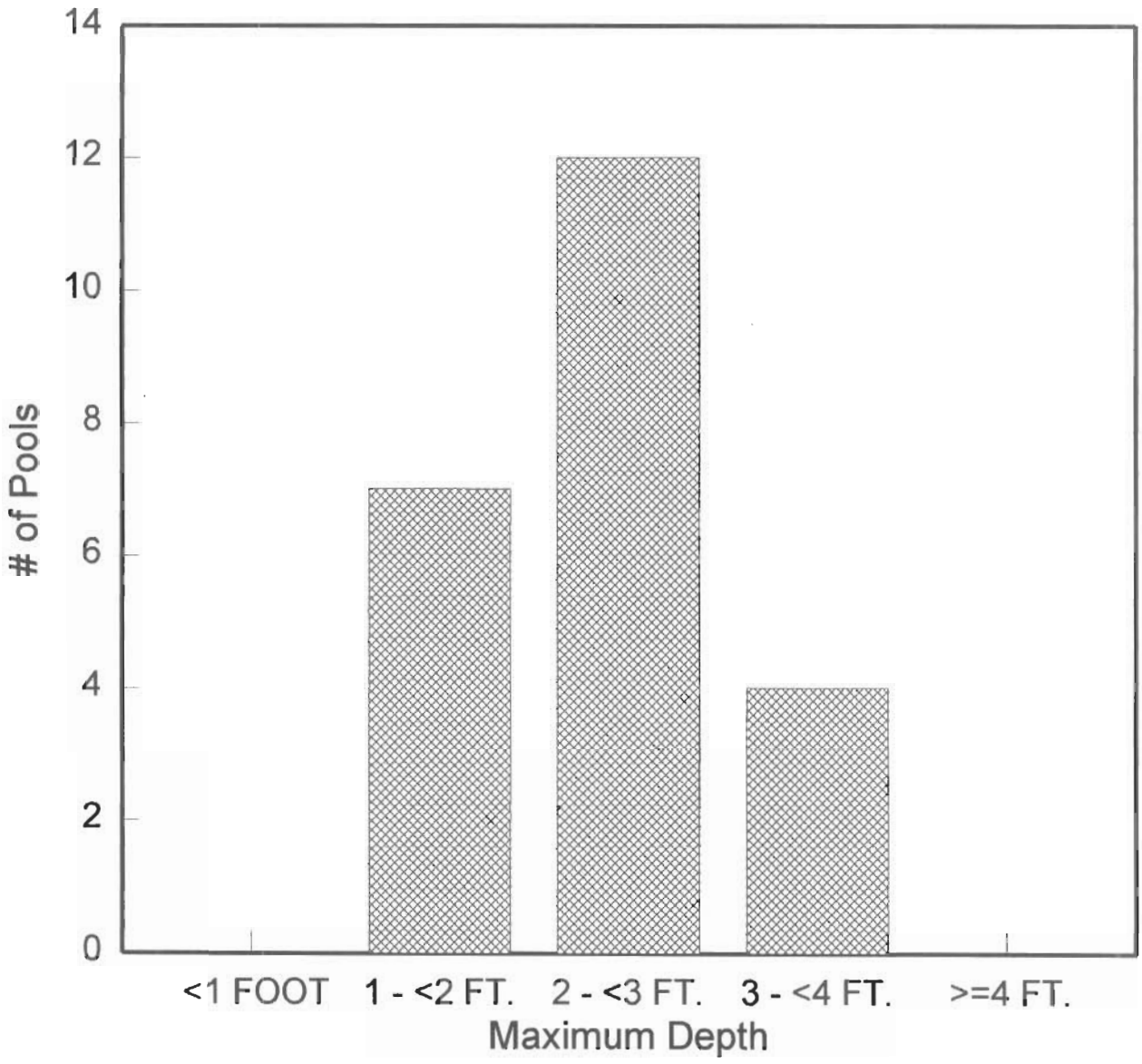
Pool Habitat Types by % Occurrence



Graph 3

Little Briggs Creek

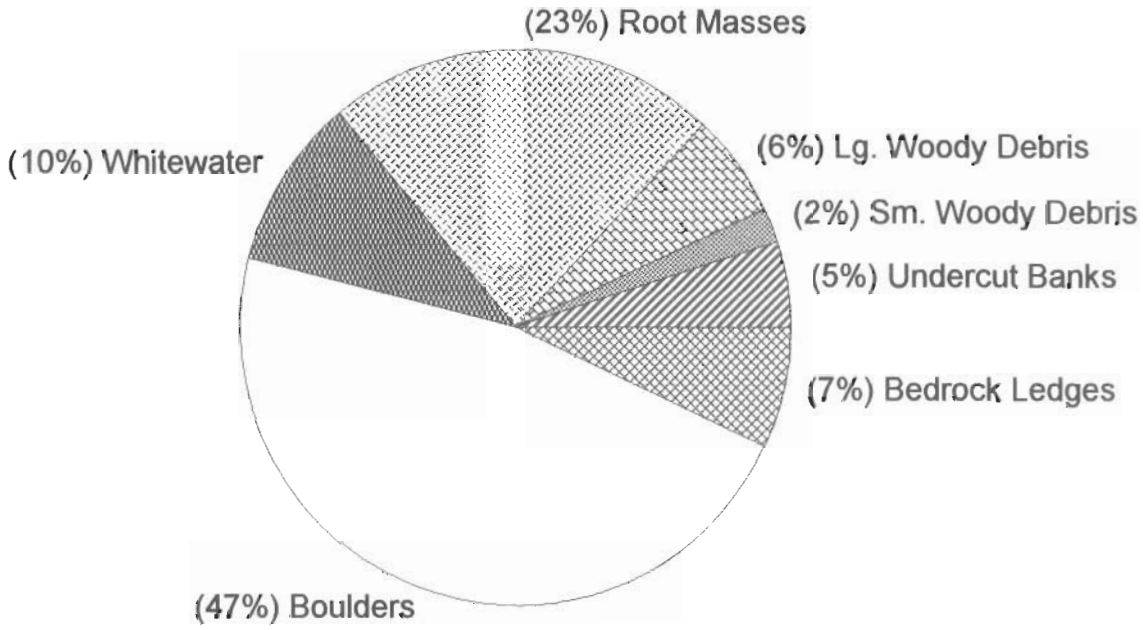
Maximum Depth in Pools



Graph 4

Little Briggs Creek

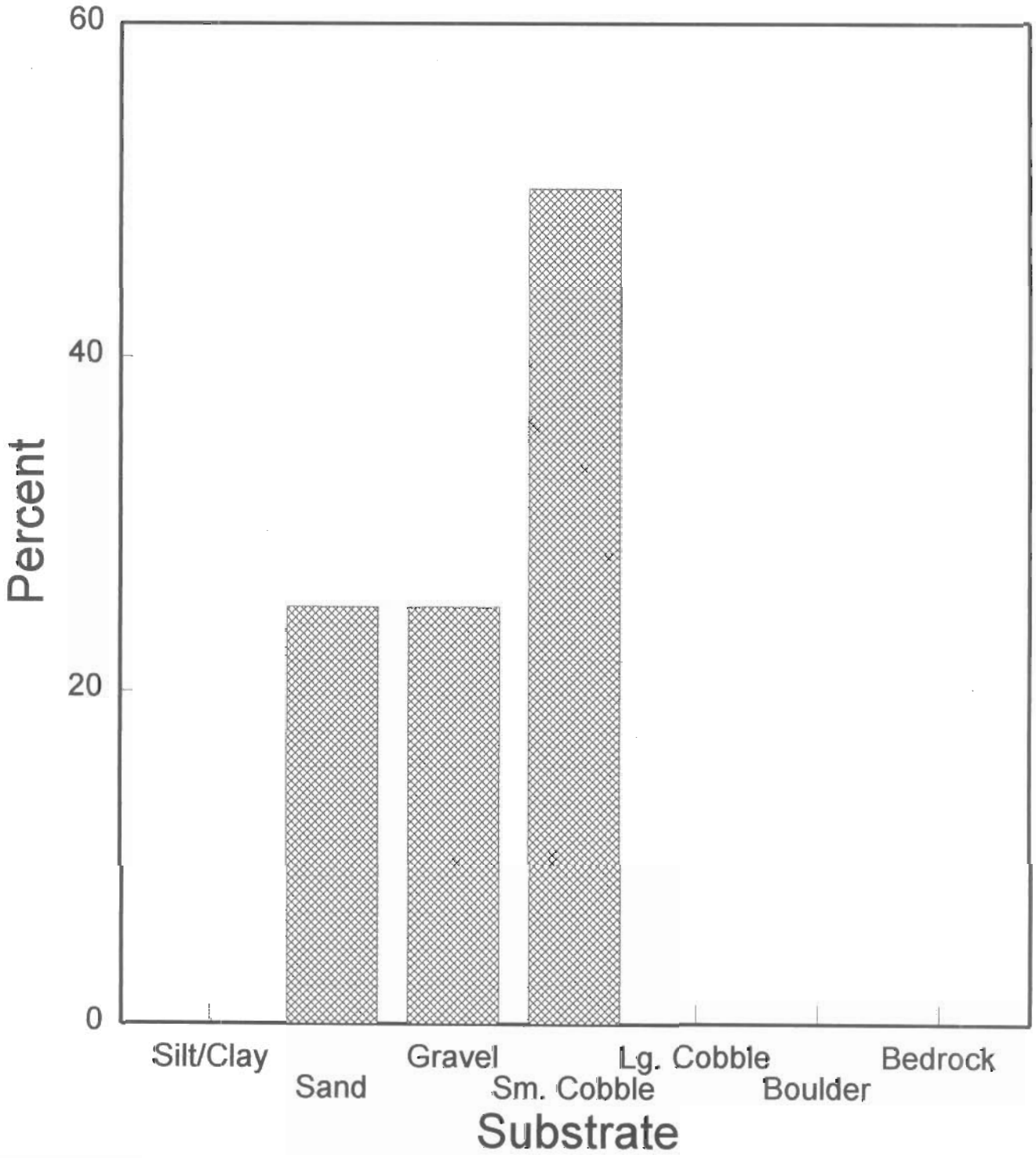
Pool Shelter Types by % Area



Graph 5

Little Briggs Creek

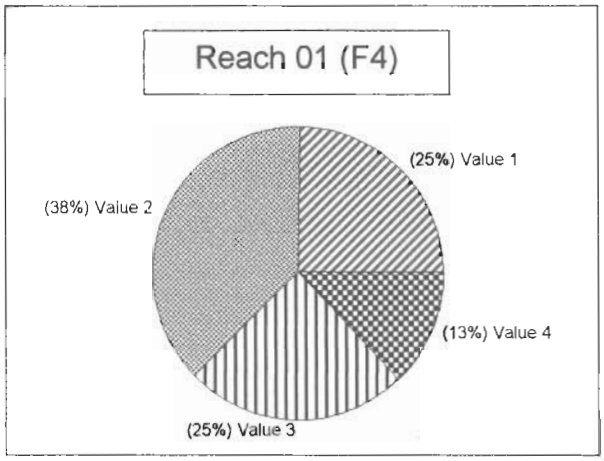
Substrate Composition in Low Gradient Riffles

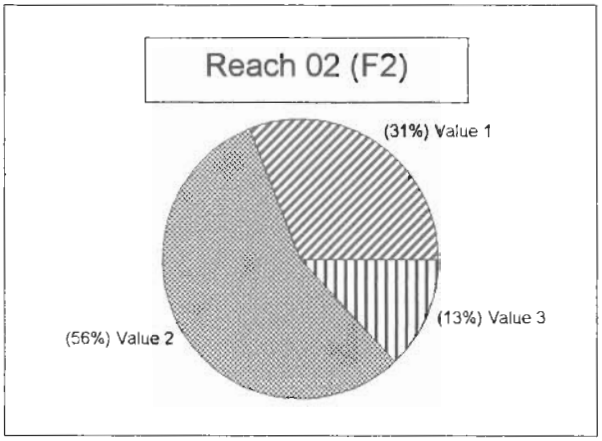


Graph 6

Little Briggs Creek

Percent Cobble Embeddedness by Reach



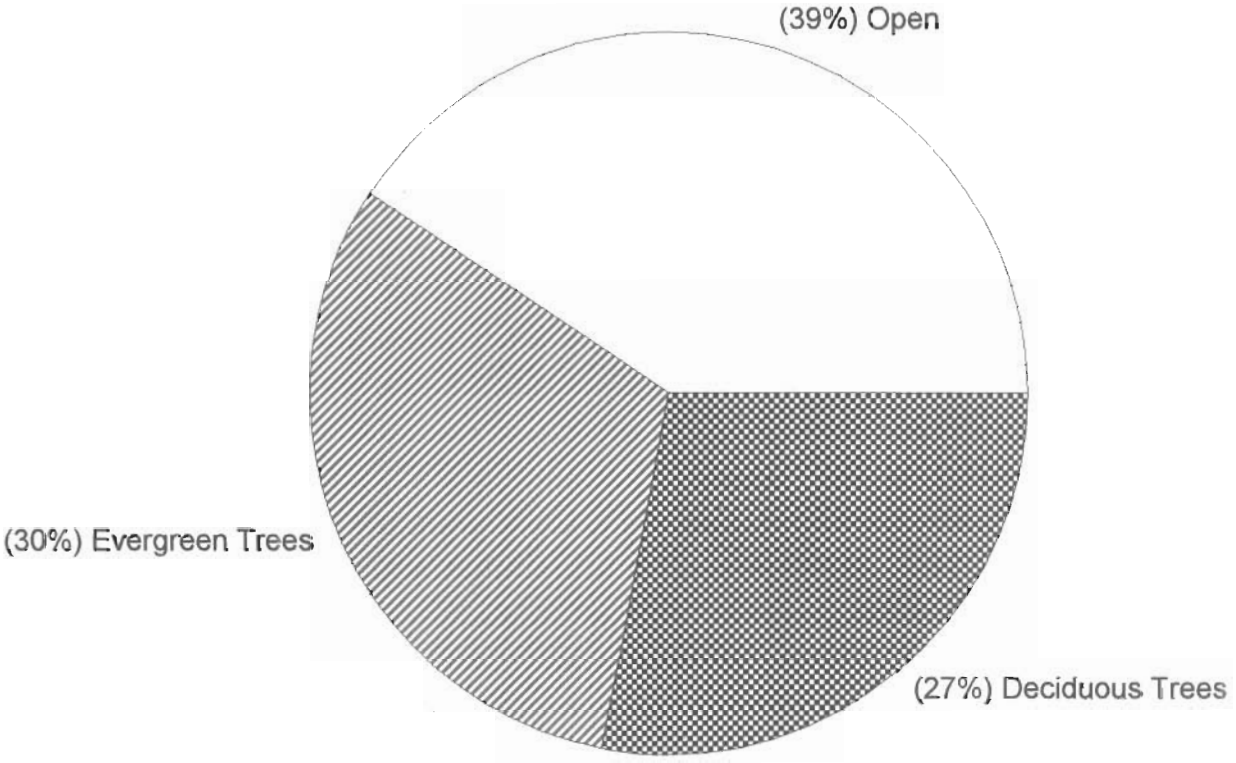


Value 1 = <25% Value 2 = 25-50% Value 3 = 51-75% Value 4 = >76%

Graph 7

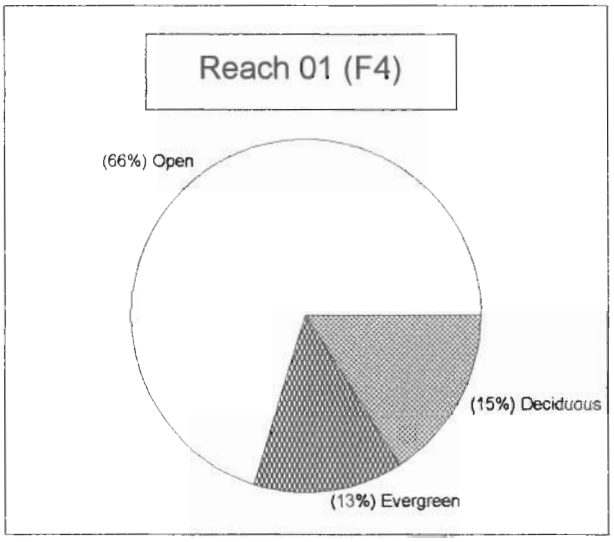
Little Briggs Creek

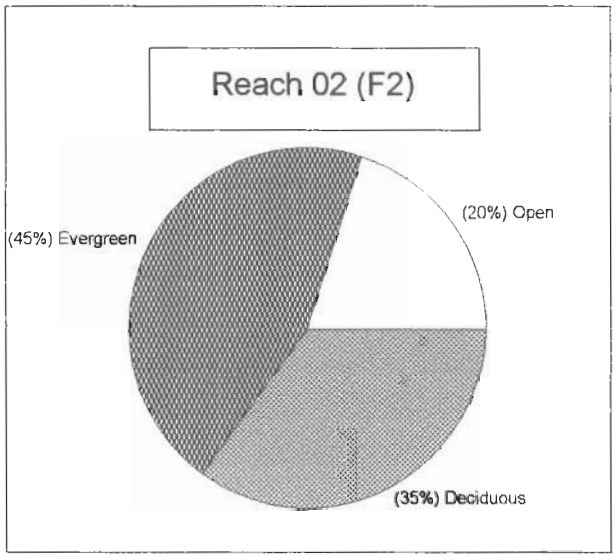
Mean Percent Canopy



Graph 8

Little Briggs Creek
Percent Canopy By Reach

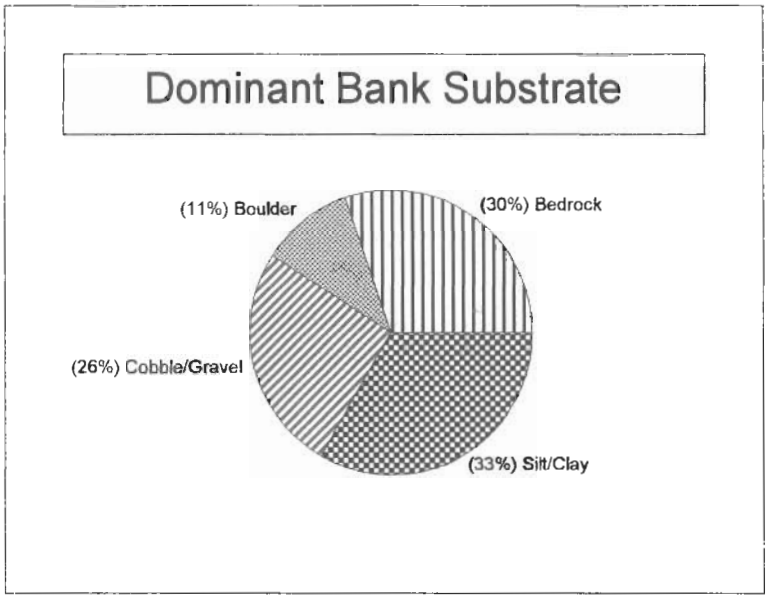


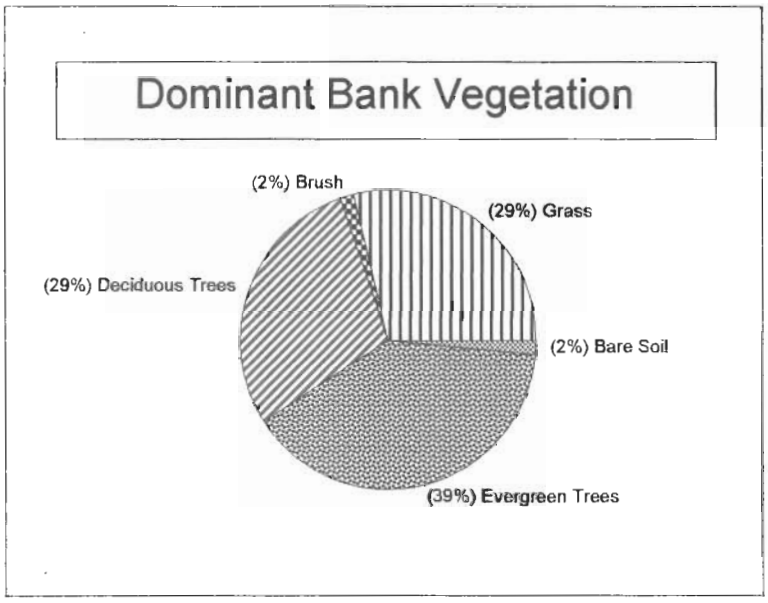


Graph 9

Little Briggs

Percent Bank Composition





Graph 10