

CDFG, 1995

STREAM INVENTORY REPORT

Sweathouse Creek

INTRODUCTION

A stream inventory was conducted during the summer of 1995 on Sweathouse Creek. The objective of the habitat inventory was to document the habitat available to anadromous salmonids in Sweathouse Creek.

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

Sweathouse Creek is tributary to Redwood Creek, tributary to the Pacific Ocean, located in Humboldt County, California (Map 1). Sweathouse Creek's legal description at the confluence with Redwood Creek is T06N R03E S03. Its location is 40°55'57" north latitude and 123°49'27" west longitude. Sweathouse Creek is a first order stream and has approximately 1.6 miles of blue line stream according to the USGS Lord Ellis Summit 7.5 minute quadrangle. Sweathouse Creek drains a watershed of approximately 1.6 square miles. Elevations range from about 780 feet at the mouth of the creek to 2,400 feet in the headwater areas. Redwood/Douglas fir conifer forest dominates the watershed. The watershed is privately owned and is managed for timber production.

METHODS

The habitat inventory conducted in Sweathouse Creek follows the methodology presented in the *California Salmonid Stream Habitat Restoration Manual* (Flosi and Reynolds, 1991 rev. 1994). The Northwest Emergency Assistance Program (NEAP) Members 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.

HABITAT INVENTORY COMPONENTS

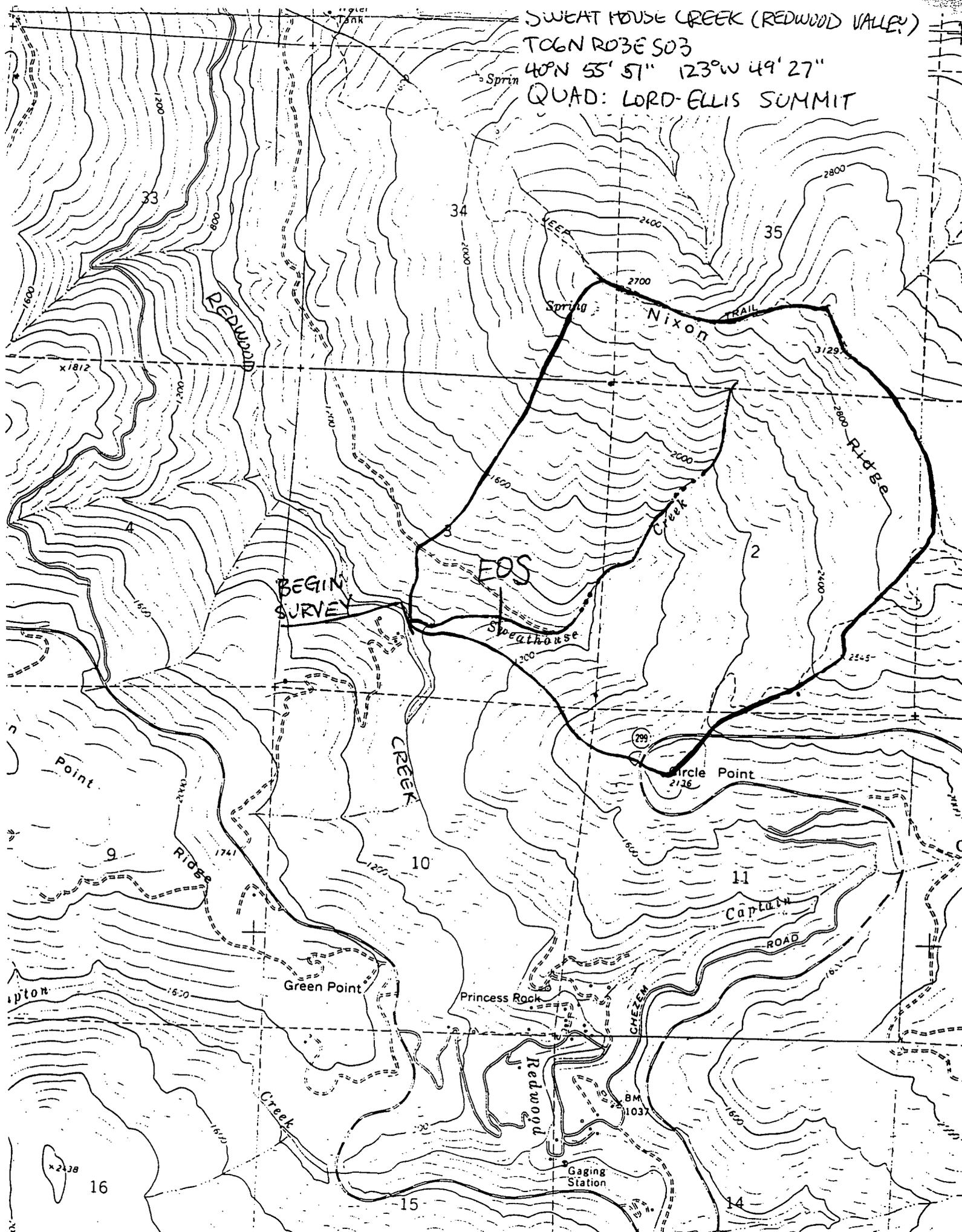
A standardized habitat inventory form has been developed for use in California stream surveys and can be found in the *California Salmonid Stream Habitat Restoration Manual*. This form was used in Sweathouse Creek to record measurements and observations. There are nine components to the inventory form.

SWEAT HOUSE CREEK (REDWOOD VALLEY)

TC6N R03E S03

40°N 55' 51" 123°W 49' 27"

QUAD: LORD-ELLIS SUMMIT



Sweathouse Creek

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.

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:

Both water and air temperatures are measured and recorded at every tenth habitat unit. The time of the measurement is also recorded. Both temperatures are taken in degrees 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". Sweathouse 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. Channel dimensions were measured using hip chains, range finders, tape measures, and stadia rods. Pool tail crest depth at each pool unit was measured in the thalweg. 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 Sweathouse Creek, embeddedness was ocularly estimated. The values were recorded using the following ranges: 0 - 25% (value 1), 26 - 50% (value 2), 51 - 75% (value 3) and 76 - 100% (value 4). Additionally, a value of 5 was assigned to tail-outs deemed unsuited for spawning due to inappropriate substrate particle size, having a bedrock tail-out, or other considerations.

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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. The shelter rating is calculated for each fully-described habitat unit by multiplying shelter value and percent cover. Using an overhead view, a quantitative estimate of the percentage of the habitat unit covered is made. All cover is then classified according to a list of nine cover types. In Sweathouse Creek, a standard qualitative shelter value of 0 (none), 1 (low), 2 (medium), or 3 (high) was assigned according to the complexity of the cover. 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 habitat units, dominant and sub-dominant substrate elements were ocularly estimated using a list of seven size classes and recorded as a one and two respectively.

8. Canopy:

Stream canopy density was estimated using modified handheld spherical densimeters as described in the *California Salmonid Stream Habitat Restoration Manual*. Canopy density relates to the amount of stream shaded from the sun. In Sweathouse Creek, an estimate of the percentage of the habitat unit covered by canopy was made from the center of every unit. In addition, the area of canopy was estimated ocularly into percentages of coniferous or deciduous trees.

9. Bank Composition and Vegetation:

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 Sweathouse Creek, the dominant composition type and the dominant vegetation type of both the right and left banks for each unit were selected from the habitat inventory form. Additionally, the percent of each bank covered by vegetation was estimated and recorded.

DATA ANALYSIS

Data from the habitat inventory form are entered into Habitat, a dBASE 4.2 data entry program developed by Tim Curtis, Inland Fisheries Division, California Department of Fish

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and Game. This program processes and summarizes the data, and produces the following six tables:

- Riffle, flatwater, and pool habitat types
- Habitat types and measured parameters
- Pool types
- Maximum pool depths by habitat types
- Dominant substrates by habitat types
- Mean percent shelter by habitat types

Graphics are produced from the tables using Quattro Pro. Graphics developed for Sweathouse Creek include:

- Riffle, flatwater, pool habitats by percent occurrence
- Riffle, flatwater, pool habitats by total length
- Total habitat types by percent occurrence
- Pool types by percent occurrence
- Total pools by maximum depths
- Embeddedness
- Pool cover by cover type
- Dominant substrate in low gradient riffles
- Percent canopy
- Bank composition by composition type
- Bank vegetation by vegetation type

HABITAT INVENTORY RESULTS

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

The habitat inventory of August 7, 1995, was conducted by Nancy Pearson and Phil Reig (NEAP) and Mike Develin (PCFWWRA). The total length of the stream surveyed was 1,611 feet.

Flows were not measured on Sweathouse Creek.

Sweathouse Creek is an A4 channel type for the entire 1,611 feet of stream reach surveyed. A4 channels are steep, narrow, cascading, step-pool streams with high energy/debris transport associated with depositional soils and are gravel dominant.

Water temperatures taken during the survey period ranged from 60 to 66 degrees Fahrenheit. Air temperatures ranged from 70 to 72 degrees Fahrenheit.

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Table 1 summarizes the Level II riffle, flatwater, and pool habitat types. Based on frequency of **occurrence** there were 25% riffle units, 30% flatwater units, and 40% pool units (Graph 1). Based on total **length** of Level II habitat types there were 8% riffle units, 56% flatwater units, and 14% pool units (Graph 2).

Eight Level IV habitat types were identified (Table 2). The most frequent habitat types by percent **occurrence** were step runs, 20%; step pools, 20%; and low gradient riffles, 15% (Graph 3). Based on percent total **length**, pocket water made up 46%, step runs 11%, and step pools 10%.

A total of 8 pools were identified (Table 3). Main channel pools and scour pools were equally encountered at 50% and comprised 74% and 26%, respectively, of the total length of all pools (Graph 4).

Table 4 is a summary of maximum pool depths by pool habitat types. Pool quality for salmonids increases with depth. Three of the 8 pools (38%) had a depth of two feet or greater (Graph 5).

The depth of cobble embeddedness was estimated at pool tail-outs. Of the 8 pool tail-outs measured, none had a value of 1; 4 had a value of 2 (50%); 1 had a value of 3 (12.5%); none had a value of 4; and 3 had a value of 5 (37.5%) (Graph 6). On this scale, a value of 1 indicates the highest quality of spawning substrate.

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. Riffle habitat types had a mean shelter rating of 5, flatwater habitat types had a mean shelter rating of 7, and pool habitats had a mean shelter rating of 9 (Table 1). Of the pool types, the main channel pools had the highest mean shelter rating at 10. Scour pools had a mean shelter rating of 8 (Table 3).

Table 5 summarizes mean percent cover by habitat type. Boulders are the dominant cover type in Sweathouse Creek. Large woody debris are lacking in nearly all habitat types. Graph 7 describes the pool cover in Sweathouse Creek.

Table 6 summarizes the dominant substrate by habitat type. Gravel was the dominant substrate observed in 2 of the 3 low gradient riffles measured (67%). Large cobble was the next most frequently observed dominant substrate type and occurred in 33% of the low gradient riffles (Graph 8).

The mean percent canopy density for the stream reach surveyed was 93%. The mean percentages of deciduous and coniferous trees were 91% and 9%, respectively. Graph 9 describes the canopy in Sweathouse Creek.

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For the stream reach surveyed, the mean percent right bank vegetated was 45.3%. The mean percent left bank vegetated was 58.3%. The dominant elements composing the structure of the stream banks consisted of 42.5% boulder and 52.5% sand/silt/clay (Graph 10). Deciduous trees were the dominant vegetation type observed in 32.5% of the units surveyed. Additionally, 2.5% had coniferous trees as the dominant vegetation, including down trees, logs, and root wads (Graph 11).

DISCUSSION

Sweathouse Creek is a A4 channel type for the entire 1,611 feet of stream surveyed. The suitability of A4 channel types for fish habitat improvement structures is as follows: A4 channel types are good for bank placed boulders; fair for low stage weirs, opposing wing deflectors, and log cover; and poor for medium-stage weirs, boulder clusters, single wing deflectors, and log cover.

The water temperatures recorded on the survey day August 7, 1996, ranged from 60 to 66 degrees Fahrenheit. Air temperatures ranged from 70 to 72 degrees Fahrenheit. This is a marginal water temperature range for salmonids. To make any further conclusions, temperatures would need to be monitored throughout the warm summer months, and more extensive biological sampling would need to be conducted.

Flatwater habitat types comprised 56% of the total **length** of this survey, riffles 8%, and pools 14%. The pools are relatively shallow, with only 3 of the 8 (38%) pools having a maximum depth greater than 2 feet. In general, pool enhancement projects are considered when primary pools comprise less than 40% of the length of total stream habitat. 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. Installing structures that will increase or deepen pool habitat is recommended for locations where their installation will not be threatened by high stream energy.

Four of the 8 pool tail-outs measured had embeddedness ratings of 3, 4 or 5. None had a 1 rating. Cobble embeddedness measured to be 25% or less, a rating of 1, is considered to indicate good quality spawning substrate for salmon and steelhead. In Sweathouse Creek, sediment sources should be mapped and rated according to their potential sediment yields, and control measures should be taken.

The mean shelter rating for pools was low with a rating of 9. The shelter rating in the flatwater habitats was slightly lower at 7. A pool shelter rating of approximately 100 is desirable. The relatively large amount of cover that now exists is being provided primarily by boulders in all habitat types. Additionally, small woody debris contribute a small amount. Log and root wad cover structures in the pool and flatwater habitats are needed to improve

Sweathouse Creek

both summer and winter salmonid habitat. Log cover structure provides rearing fry with protection from predation, rest from water velocity, and also divides territorial units to reduce density related competition.

Two of the 3 low gradient riffles measured had gravel as the dominant substrate. This is generally considered good for spawning salmonids.

The mean percent canopy density for the stream was 93%. This is a relatively high percentage of canopy. In general, revegetation projects are considered when canopy density is less than 80%.

The percentage of right and left bank covered with vegetation was low at 45.3% and 58.3%, respectively. In areas of stream bank erosion or where bank vegetation is not at acceptable levels, planting endemic species of coniferous and deciduous trees, in conjunction with bank stabilization, is recommended.

RECOMMENDATIONS

- 1) Sweathouse Creek should be managed as an anadromous, natural production stream.
- 2) The limited water temperature data available suggest that maximum temperatures are within the acceptable range for juvenile salmonids. To establish more complete and meaningful temperature regime information, 24-hour monitoring during the July and August temperature extreme period should be performed for 3 to 5 years.
- 3) Where feasible, design and engineer pool enhancement structures to increase the number of pools. This must be done where the banks are stable or in conjunction with stream bank armor to prevent erosion.
- 4) Increase woody cover in the pools and flatwater habitat units. Most of the existing cover is from boulders. Adding high quality complexity with woody cover is desirable.
- 5) Active and potential sediment sources related to the road system need to be identified, mapped, and treated according to their potential for sediment yield to the stream and its tributaries.

Sweathouse Creek

COMMENTS AND LANDMARKS

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

- 0' Begin survey at confluence with Redwood Creek. Channel type is A4.
- 350' Four inch water line into a reservoir on the right bank.
- 1,114' Slide area on left bank caused by a spring.
- 1,611' End of survey. 7' cascade at top with no pool or fish.

REFERENCES

Flosi, G., and F. Reynolds. 1994. California salmonid stream habitat restoration manual, 2nd edition. California Department of Fish and Game, Sacramento, California.

LEVEL III and LEVEL IV HABITAT TYPE KEY

HABITAT TYPE	LETTER	NUMBER
RIFFLE		
Low Gradient Riffle	[LGR]	1.1
High Gradient Riffle	[HGR]	1.2
CASCADE		
Cascade	[CAS]	2.1
Bedrock Sheet	[BRS]	2.2
FLATWATER		
Pocket Water	[POW]	3.1
Glide	[GLD]	3.2
Run	[RUN]	3.3
Step Run	[SRN]	3.4
Edgewater	[EDW]	3.5
MAIN CHANNEL POOLS		
Trench Pool	[TRP]	4.1
Mid-Channel Pool	[MCP]	4.2
Channel Confluence Pool	[CCP]	4.3
Step Pool	[STP]	4.4
SCOUR POOLS		
Corner Pool	[CRP]	5.1
Lateral Scour Pool - Log Enhanced	[LSL]	5.2
Lateral Scour Pool - Root Wad Enhanced	[LSR]	5.3
Lateral Scour Pool - Bedrock Formed	[LSBk]	5.4
Lateral Scour Pool - Boulder Formed	[LSBo]	5.5
Plunge Pool	[PLP]	5.6
BACKWATER POOLS		
Secondary Channel Pool	[SCP]	6.1
Backwater Pool - Boulder Formed	[BPB]	6.2
Backwater Pool - Root Wad Formed	[BPR]	6.3
Backwater Pool - Log Formed	[BPL]	6.4
Dammed Pool	[DPL]	6.5

SWEATHOUSE CREEK

Drainage: REDWOOD CREEK

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

Survey Dates: 08/07/95

Confluence Location: QUAD: Lord-Ellis LEGAL DESCRIPTION: T06NR03ES03 LATITUDE: 40°55'51" LONGITUDE: 123°49'27"

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 ESTIMATED VOLUME (cu.ft.)	ESTIMATED TOTAL VOLUME (cu.ft.)	MEAN RESIDUAL POOL VOL (cu.ft.)	MEAN SHELTER RATING
5	5	RIFFLE	25	26	132	8	9.0	0.3	133	664	37	185	0	5
6	6	FLATWATER	30	152	909	56	8.3	0.3	496	2979	125	751	0	7
8	8	POOL	40	28	220	14	11.1	0.8	230	1838	200	1596	167	9
1	1	DRY	5	350	350	22	15.0	0.0	5250	5250	0	0	0	0
TOTAL UNITS	TOTAL UNITS				TOTAL LENGTH (ft.)				TOTAL AREA (sq. ft.)			TOTAL VOL. (cu. ft.)		
20	20				1611				10731			2533		

SWEATHOUSE CREEK

Drainage: REDWOOD CREEK

Table 2 - SUMMARY OF HABITAT TYPES AND MEASURED PARAMETERS

Survey Dates: 08/07/95

Confluence Location: QUAD: Lord-Ellis LEGAL DESCRIPTION: T06NR03ES03 LATITUDE: 40°55'51" LONGITUDE: 123°49'27"

HABITAT UNITS	UNITS FULLY MEASURED	HABITAT TYPE	HABITAT OCCURRENCE %	MEAN LENGTH ft.	TOTAL LENGTH ft.	TOTAL LENGTH %	MEAN WIDTH ft.	MEAN DEPTH ft.	MEAN MAXIMUM DEPTH ft.	MEAN AREA sq.ft.	TOTAL AREA sq.ft.	MEAN VOLUME cu.ft.	TOTAL VOLUME cu.ft.	MEAN RESIDUAL EST. POOL cu.ft.	MEAN SHELTER VOL RATING	MEAN CANOPY %
3	3	LGR	15	26	79	5	6	0.3	0.9	116	349	32	95	0	5	92
2	2	HGR	10	27	53	3	13	0.3	0.7	158	316	45	91	0	5	95
2	2	POW	10	370	739	46	7	0.4	1.1	1000	2000	219	439	0	5	95
4	4	SRN	20	43	170	11	9	0.3	1.2	245	978	78	313	0	8	94
4	4	STP	20	41	162	10	11	0.9	2.3	317	1267	289	1158	252	10	93
1	1	LSBo	5	12	12	1	6	0.3	0.6	68	68	21	21	14	10	95
3	3	PLP	15	15	46	3	13	0.8	2.3	168	503	139	418	106	7	92
1	1	DRY	5	350	350	22	15	0.0	0.0	5250	5250	0	0	0	0	0
TOTAL UNITS	TOTAL UNITS				LENGTH (ft.)					AREA (sq.ft)			TOTAL VOL. (cu.ft)			
20	20				1611					10731			2533			

SWEATHOUSE CREEK

Drainage: REDWOOD CREEK

Table 3 - SUMMARY OF POOL TYPES

Survey Dates: 08/07/95

Confluence Location: QUAD: Lord-Ellis LEGAL DESCRIPTION: T06NR03ES03 LATITUDE: 40°55'51" LONGITUDE: 123°49'27"

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
4	4	MAIN	50	41	162	74	11.0	0.9	317	1267	289	1158	252	10
4	4	SCOUR	50	15	58	26	11.3	0.7	143	571	110	439	83	8
TOTAL UNITS	TOTAL UNITS				TOTAL LENGTH (ft.)				TOTAL AREA (sq.ft.)			TOTAL VOL. (cu.ft.)		
8	8				220				1838			1596		

SWEATHOUSE CREEK

Drainage: REDWOOD CREEK

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

Survey Dates: 08/07/95

Confluence Location: QUAD: Lord-Ellis LEGAL DESCRIPTION: T06NR03ES03 LATITUDE: 40°55'51" LONGITUDE: 123°49'27"

UNITS MEASURED	HABITAT TYPE	HABITAT PERCENT OCCURRENCE	<1 FOOT		1-<2 FT.		1-<2 FOOT		2-<3 FT.		2-<3 FOOT		3-<4 FT.		3-<4 FOOT		>=4 FEET		>=4 FEET	
			MAXIMUM DEPTH	PERCENT OCCURRENCE																
4	STP	50	0	0	2	50	2	50	0	0	0	0	0	0	0	0	0	0	0	
1	LSBo	13	1	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	PLP	38	0	0	2	67	1	33	0	0	0	0	0	0	0	0	0	0	0	

TOTAL

UNITS

8

SWEATHOUSE CREEK

Drainage: REDWOOD CREEK

Table 6 - SUMMARY OF DOMINANT SUBSTRATES BY HABITAT TYPE

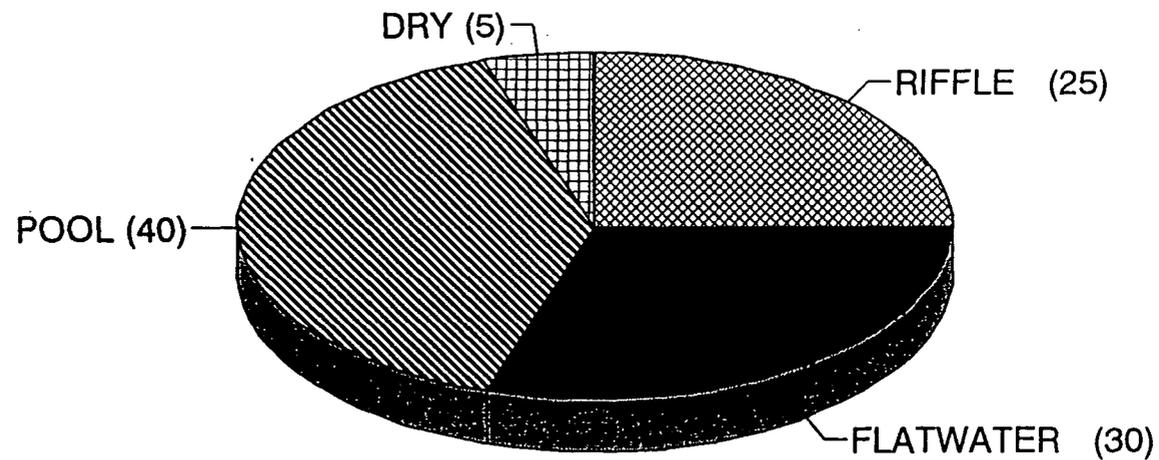
Survey Dates: 08/07/95

Confluence Location: QUAD: Lord-Ellis LEGAL DESCRIPTION: T06NR03ES03 LATITUDE: 40°55'51" LONGITUDE: 123°49'27"

TOTAL HABITAT UNITS	UNITS FULLY 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
3	3	LGR	0	0	67	0	33	0	0
2	2	HGR	0	0	50	0	0	50	0
2	2	POW	0	0	50	50	0	0	0
4	4	SRN	0	25	0	25	25	0	25
4	4	STP	0	75	25	0	0	0	0
1	1	LSBo	0	100	0	0	0	0	0
3	3	PLP	0	33	67	0	0	0	0
1	0	DRY	0	0	0	0	0	0	0

SWEATHORSE CREEEK

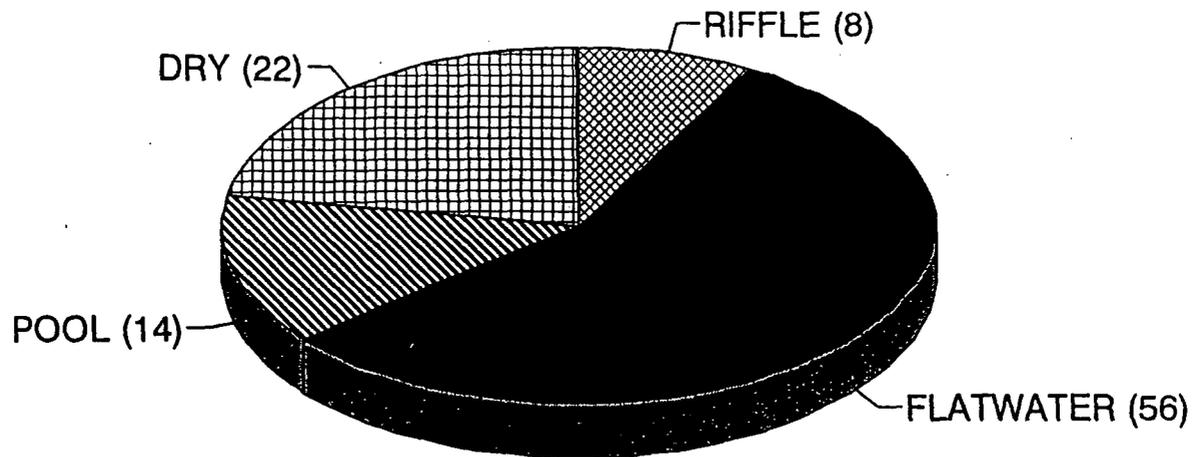
HABITAT TYPES BY PERCENT OCCURRENCE



GRAPH 1

SWEATHORSE CREEK

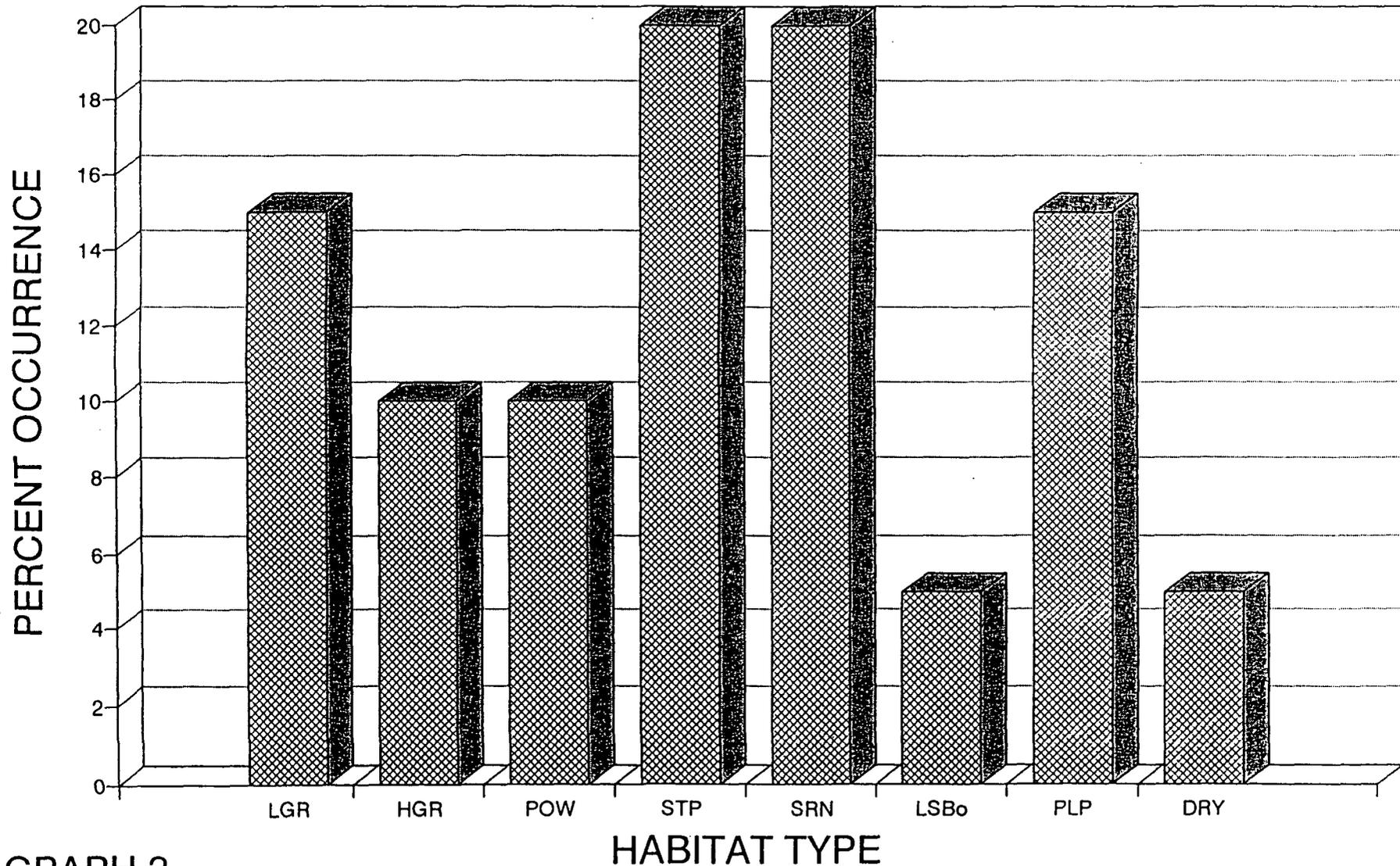
HABITAT TYPES BY PERCENT TOTAL LENGTH



GRAPH 2

SWEATHORSE CREEK

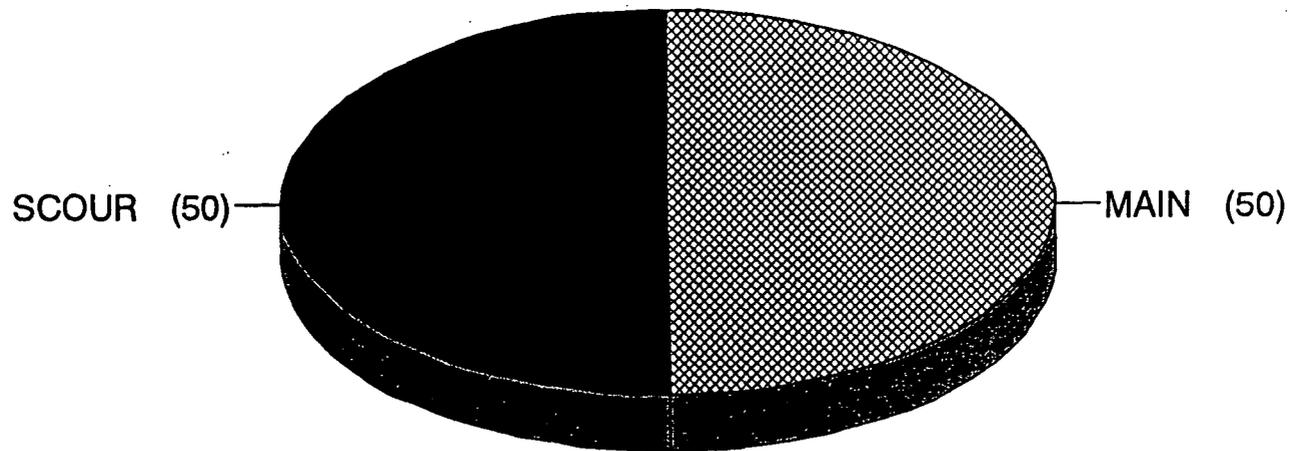
HABITAT TYPES BY PERCENT OCCURRENCE



GRAPH 3

SWEATHORSE CREEK

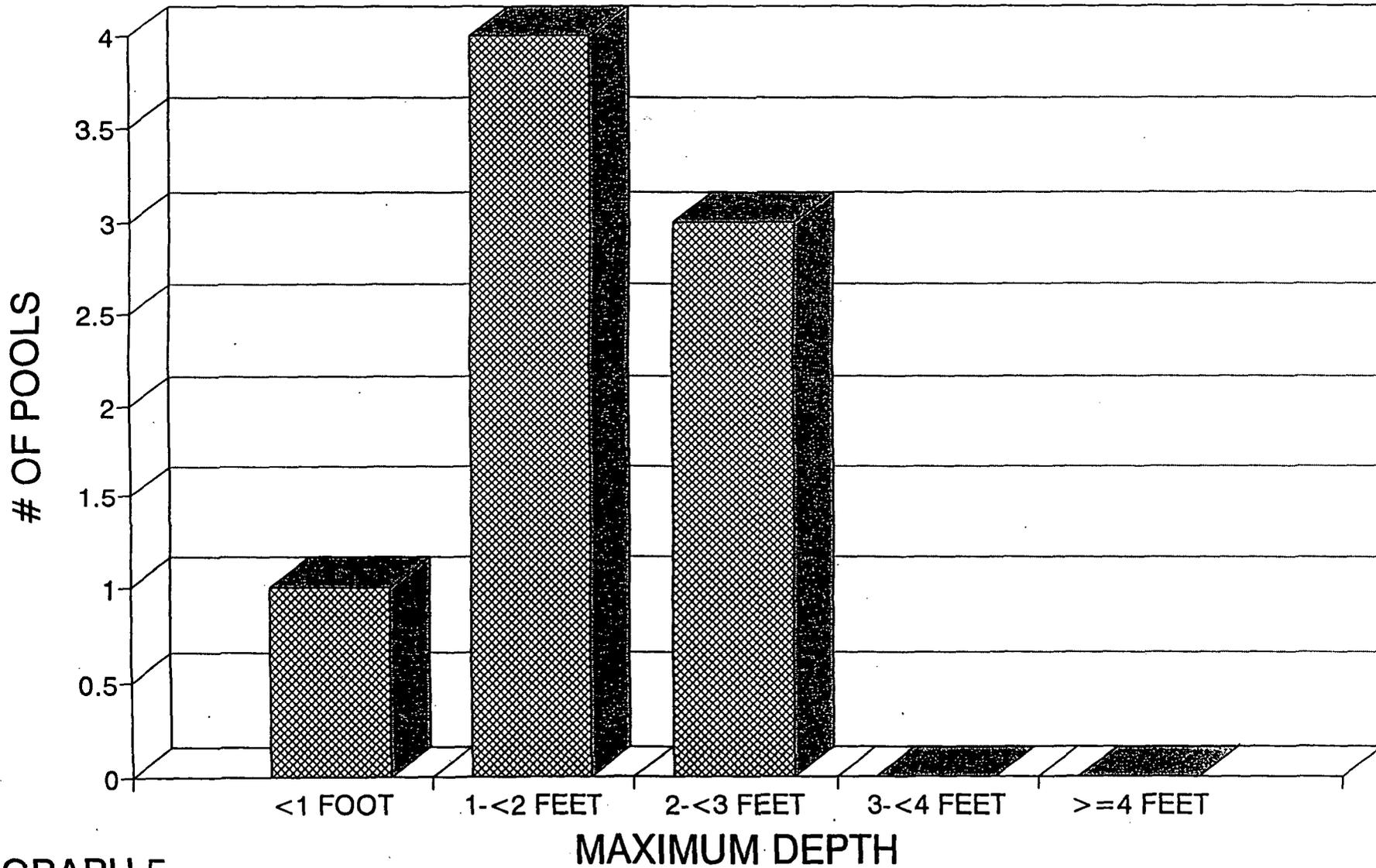
POOL HABITAT TYPES BY PERCENT OCCURRENCE



GRAPH 4

SWEATHORSE CREEK

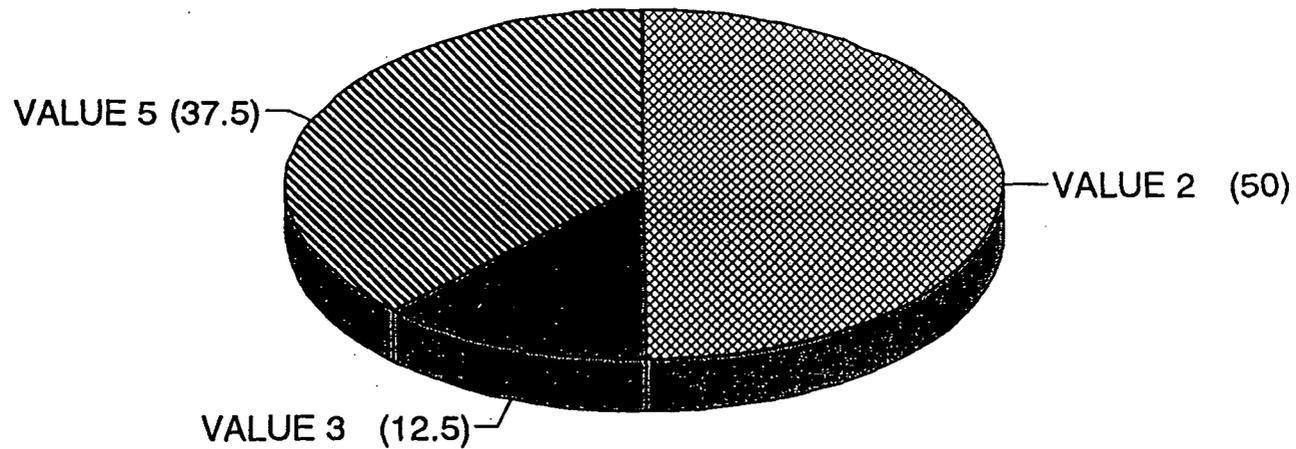
MAXIMUM POOL DEPTHS



GRAPH 5

SWEATHORSE CREEK

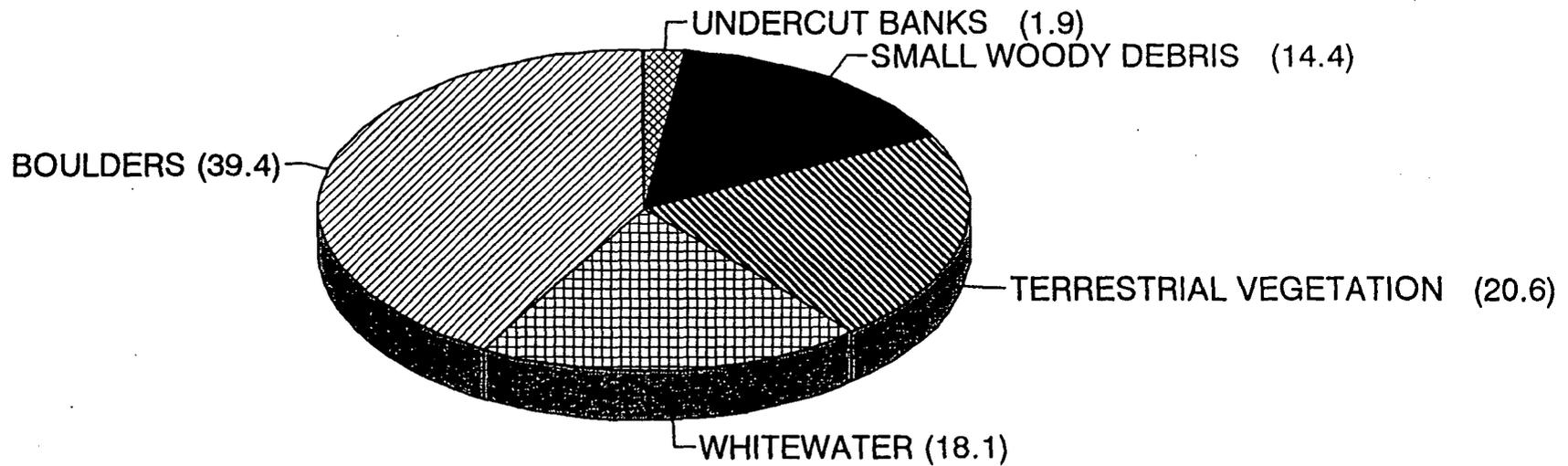
PERCENT EMBEDDEDNESS



GRAPH 6

SWEATHORSE CREEK

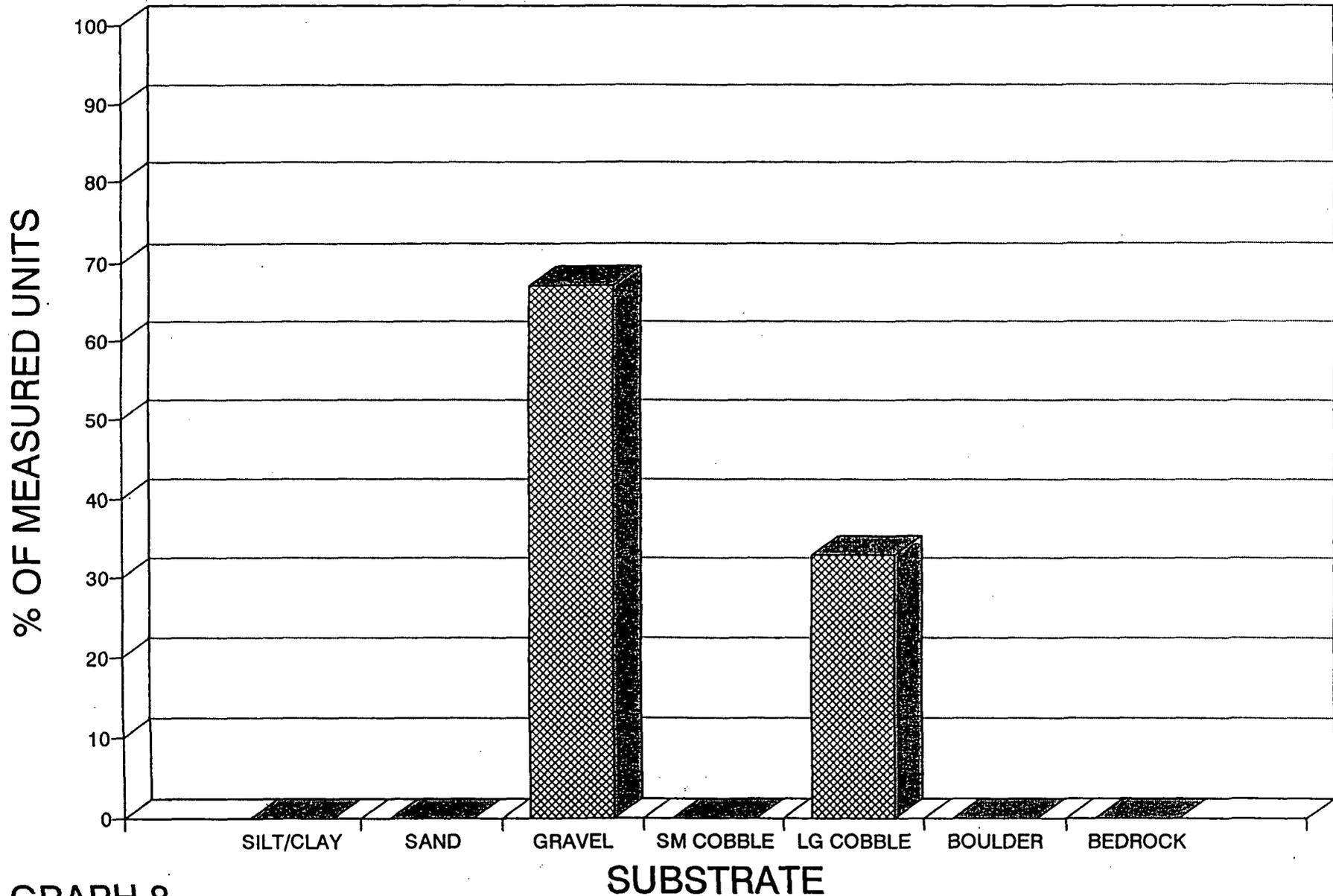
MEAN PERCENT COVER TYPES IN POOLS



GRAPH 7

SWEATHORSE CREEK

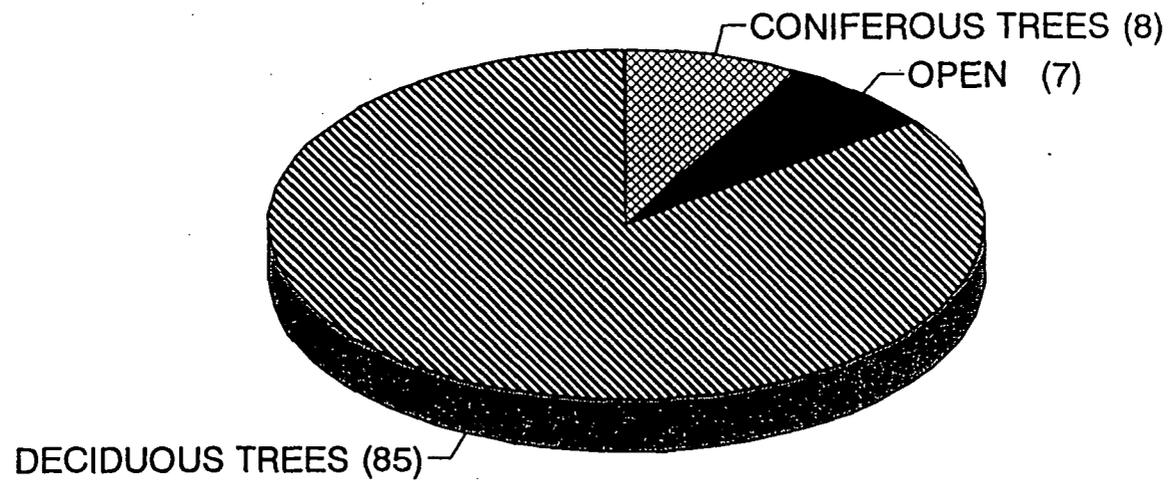
SUBSTRATE COMPOSITION IN LOW GRADIENT RIFFLES



GRAPH 8

SWEATHORSE CREEK

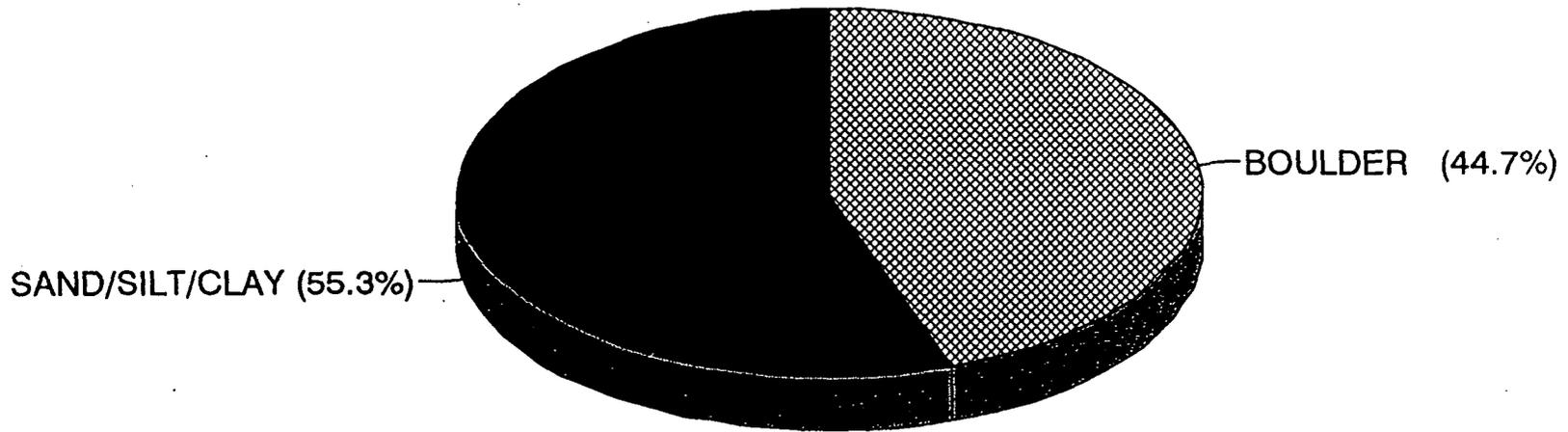
PERCENT CANOPY



GRAPH 9

SWEATHORSE CREEK

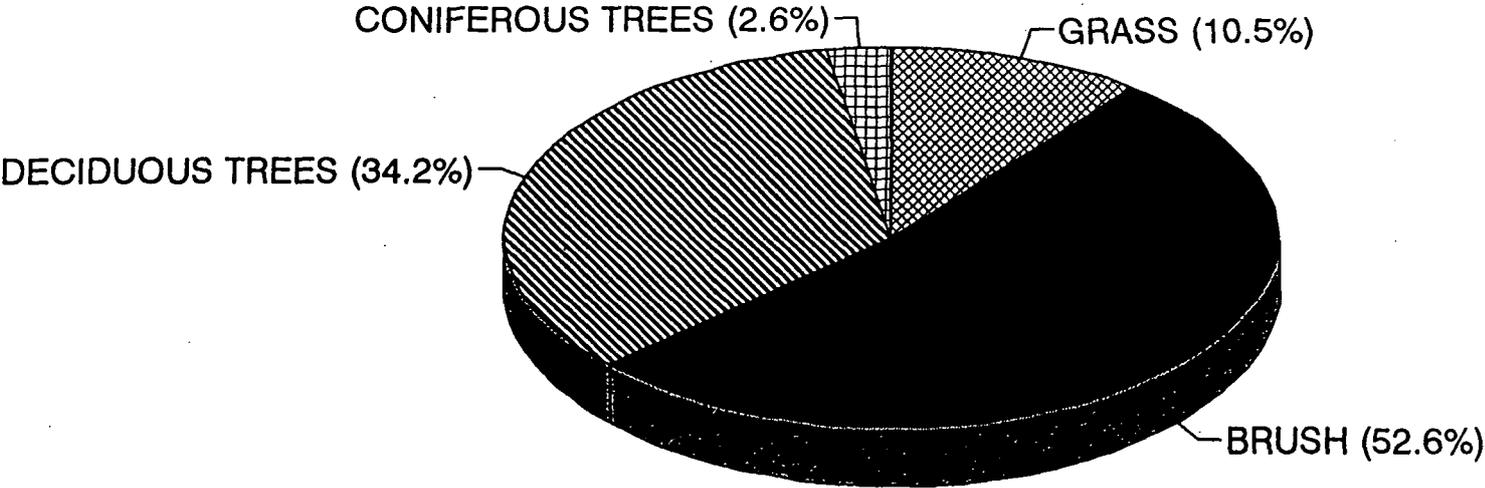
DOMINANT BANK COMPOSITION IN SURVEY REACH



GRAPH 10

SWEATHORSE CREEK

DOMINANT BANK VEGETATION IN SURVEY REACH



GRAPH 11

Summary of Mean Percent Vegetative Cover for Entire Stream

Mean Percent Canopy	Mean Percent Conifer	Mean Percent Deciduous	Mean Percent Open units	Mean Right bank % Cover	Mean Left Bank % Cover
93	9	91	0	45.3	58.3

Note: Mean percent conifer and deciduous for the entire reach are means of canopy components from units with canopy values greater than zero.

Open units represent habitat units with zero canopy cover.

TABLE 8. FISH HABITAT INVENTORY DATA SUMMARY

STREAM NAME: Sweathouse Creek

SAMPLE DATES:

STREAM LENGTH: 1611 ft.

LOCATION OF STREAM MOUTH:

USGS Quad Map: Lord-Ellis

Legal Description: T06NR03ES03

Latitude: 40°55'45"

Longitude: 123°49'17"

SUMMARY OF FISH HABITAT ELEMENTS BY STREAM REACH

STREAM REACH 01

Channel Type: A4

Channel Length: 1611 ft.

Riffle/flatwater Mean Width: 9 ft.

Total Pool Mean Depth: 0.8 ft.

Base Flow: 0.0 cfs

Water: 060- 066°F Air: 070- 072°F

Dom. Bank Veg.: Brush

Vegetative Cover: 54%

Dom. Bank Substrate: Silt/Clay/Sand

Canopy Density: 93%

Coniferous Component: 9%

Deciduous Component: 91%

Pools by Stream Length: 14%

Pools >=3 ft.deep: 0%

Mean Pool Shelter Rtn: 9

Dom. Shelter: Boulders

Occurrence of LOD: 1%

Dry Channel: 350 ft.

Embeddness Value: 1. 0% 2. 80% 3. 20% 4. 0%

Mean Percentage of Dominant Substrate

Dominant Class of Substrate	Number Units Right Bank	Number Units Left Bank	Total Mean Percent
Bedrock	0	0	0
Boulder	9	8	42.50
Cobble/Gravel	0	0	0
Silt/clay	10	11	52.50

Mean Percentage of Dominant Vegetation

Dominant Class of Vegetation	Number Units Right Bank	Number Units Left Bank	Total Mean Percent
Grass	0	4	10
Brush	11	9	50
Decid. Trees	7	6	32.50
Conif. Trees	1	0	2.50
No Vegetation	0	0	0