STREAM INVENTORY REPORT

Coyote Creek

INTRODUCTION

A stream inventory was conducted during the summer of 2001 on Coyote Creek and an unnamed tributary to Coyote Creek. The Coyote Creek survey began at the confluence with Redwood Creek and extended upstream 2.1 miles.

The Coyote Creek inventory was conducted in two parts: habitat inventory and biological inventory. The objective of the habitat inventory was to document the habitat available to anadromous salmonids in Coyote Creek. The objective of the biological inventory was to document the presence and distribution of juvenile salmonid species.

The objective of this report is to document the current habitat conditions and recommend options for the potential enhancement of habitat for 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

Coyote Creek is a tributary to the Redwood Creek, which drains to the Pacific Ocean. It is located in Humboldt County, California (Map 1). Coyote Creek's legal description at the confluence with Redwood Creek is T8N R2E S2. Its location is 41.1164 degrees north latitude and 123.9163 degrees west longitude. Coyote Creek is a third order stream and has approximately 3.3 miles of blue line stream according to the USGS Panther Creek 7.5 minute quadrangle. Coyote Creek drains a watershed of approximately 7.9 square miles. Elevations range from about 400 feet at the mouth of the creek to 3,000 feet in the headwater areas. Redwood forest, Douglas fir forest and mixed hardwood forest dominate the watershed. The watershed is entirely privately owned and is managed for timber production. Vehicle access is available through private land, via the Old K&K Road.

METHODS

The habitat inventory conducted in Coyote Creek follows the methodology presented in the *California Salmonid Stream Habitat Restoration Manual* (Flosi et al, 1998). The Watershed Stewards Project/AmeriCorps (WSP/AmeriCorps) 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.

SAMPLING STRATEGY

The inventory uses a method that samples approximately 10% of the habitat units within the survey reach. All habitat units included in the survey are classified according to habitat type and their lengths are measured. All pool units are measured for maximum depth, depth of pool tail crest (measured in the thalweg), dominant substrate composing the pool tail crest, and embeddedness. Habitat unit types encountered for the first time are measured for all the parameters and characteristics on the field form. Additionally, from the ten habitat units on each field form page, one is randomly selected for complete measurement.

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 Coyote Creek to record measurements and observations. There are nine components to the inventory form.

1. Flow:

Flow is measured in cubic feet per second (cfs) at the bottom of the stream survey reach using a Marsh-McBirney Model 2000 flow meter.

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. Channel characteristics are measured using a hand level, hip chain, tape measure, and a stadia rod.

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". Coyote 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 measurements are in feet to the nearest tenth. Habitat characteristics are measured using a hip chain, and stadia rod.

5. Embeddedness:

The depth of embeddedness of the cobbles in pool tail-out areas is measured by the percent of the cobble that is surrounded or buried by fine sediment. In Coyote 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 not suitable for spawning due to inappropriate substrate particle size, bedrock, 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. 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 Coyote 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 fully-described 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. In addition, the dominant substrate composing the pool tail-outs is recorded for each pool.

8. Canopy:

Stream canopy density was estimated using modified handheld spherical densiometers as described in the *California Salmonid Stream Habitat Restoration Manual*. Canopy density relates to the amount of stream shaded from the sun. In Coyote 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 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 Coyote Creek, the dominant composition type and the dominant

vegetation type of both the right and left banks for each fully-described unit were selected from the habitat inventory form. Additionally, the percent of each bank covered by vegetation (including downed trees, logs, and rootwads) was estimated and recorded.

BIOLOGICAL INVENTORY

Biological sampling during the stream inventory is used to determine fish species and their distribution in the stream. Fish presence was observed from the stream banks in Coyote Creek. In addition 25 sites were electrofished using a Smith-Root Model 12 electrofisher. 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 4.2 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 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 Coyote 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
- Mean percent canopy
- Bank composition by composition type
- Bank vegetation by vegetation type

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HABITAT INVENTORY RESULTS

The habitat inventory of June 2001, was conducted by Justin Martin and Devin Best (WSP/AmeriCorps). The total length of the stream surveyed was 11,282 feet with an additional 1,481 feet of side channel.

Stream flow was measured at the bottom of the survey reach with a Marsh-McBirney Model 2000 flowmeter at 1.0 cfs on June 14, 2001.

Coyote Creek is a B2 channel type for 1,567 feet of the stream surveyed (Reach 1), an F3 channel type for 1,691 feet of the stream surveyed (Reach 2), an A2 channel type for 5,035 feet of the stream surveyed (Reach 3), a B4 channel type for 897 feet of the stream surveyed (Reach 4), and a B3 channel type for 1,557 feet of the stream surveyed (Reach 5). B2 channels are moderately entrenched, riffle/pool channels on medium gradients with moderate width/depth ratios and boulder-dominant substrates. F3 channels are entrenched, meandering, riffle/pool channels on low gradients with high width/depth ratios on cobble-dominant substrates. A2 channels are entrenched, with little meandering, riffle/pool channels on high gradients with low width/depth ratios and boulder-dominant substrates. B4 channels are moderately entrenched, riffle/pool channels on medium gradients with moderate width/depth ratios and gravel-dominant substrates. B3 channels are moderately entrenched, riffle/pool channels on medium gradients with moderate width/depth ratios and cobble-dominant substrates.

Water temperatures taken during the survey period ranged from 54 to 64 degrees Fahrenheit. Air temperatures ranged from 50 to 77 degrees Fahrenheit.

Table 1 summarizes the Level II riffle, flatwater, and pool habitat types. Based on frequency of occurrence there were 37% pool units, 33% riffle units, and 28% flatwater units (Graph 1). Based on total length of Level II habitat types there were 37% flatwater units, 33% riffle units, and 26% pool units (Graph 2).

Sixteen Level IV habitat types were identified (Table 2). The most frequent habitat types by percent occurrence were step run units, 17%; low gradient riffle units, 17%; and main channel pool units, 14% (Graph 3). Based on percent total length, step run units made up 27%, low gradient riffle units 18%, and main channel pool units 10%.

A total of 85 pools were identified (Table 3). Main channel pools were the most frequently encountered at 48%, and comprised 59% 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. Twenty of the 85 pools (23.5%) had a depth of three feet or greater (Graph 5).

The depth of cobble embeddedness was estimated at pool tail-outs. Of the 85 pool tail-outs measured, 59 had a value of 1 (69.4%); 18 had a value of 2 (21.2%); eight had a value of 3 (9.4%); (Graph 6). On this scale, a value of 1 indicates the highest quality of spawning substrate.

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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 35, flatwater habitat types had a mean shelter rating of 23, and pool habitats had a mean shelter rating of 14 (Table 1). Of the pool types, the scour pools had the highest mean shelter rating at 19. Backwater pools had a mean shelter rating of 15 and main channel pools had a mean shelter rating of 10 (Table 3).

Table 5 summarizes mean percent cover by habitat type. Boulders are the dominant cover type in Coyote Creek. Graph 7 describes the pool cover in Coyote Creek. Boulders are the dominant pool cover type followed by terrestrial vegetation.

Table 6 summarizes the dominant substrate by habitat type. Graph 8 depicts the dominant substrate observed in pool tail-outs. Gravel was the dominant substrate observed in 34% of pool tail-outs while small cobble was the next most frequently observed substrate type, at 24%.

The mean percent canopy density for the surveyed length of Coyote Creek was 77%. The mean percentages of deciduous and coniferous trees were 84% and 16%, respectively. Graph 9 describes the mean percent canopy in Coyote Creek.

For the stream reach surveyed, the mean percent right bank vegetated was 58%. The mean percent left bank vegetated was 62%. The dominant elements composing the structure of the stream banks consisted of 55% boulder, 34% cobble/gravel, and 5% sand/silt/clay (Graph 10). Deciduous trees were the dominant vegetation type observed in 62% of the units surveyed. Additionally, 31% of the units surveyed had coniferous trees as the dominant vegetation type, and 5% had brush as the dominant vegetation (Graph 11).

BIOLOGICAL INVENTORY RESULTS

25 sites were electrofished for species composition and distribution in Coyote Creek on September 18 and 19, 2001. Water temperatures taken during the electrofishing period ranged from 58 to 64 degrees Fahrenheit. Air temperatures ranged from 58 to 75 degrees Fahrenheit. The sites were sampled by Paul Divine and Trevor Tollefson (DFG), and Devin Best, Terry Hollingsworth, Justin Martin and Daniel Resnick (WSP/AmeriCorps).

The first length sampled included Habitat Units #011-024, approximately 517 feet from the confluence with Redwood Creek. The sites yielded 68 young-of-the-year (YOY) steelhead, 12 age 1+ steelhead, and three age 2+ steelhead.

The second length sampled included Habitat Units #030-052, located approximately 1,624 feet above the creek mouth. The site yielded 23 YOY steelhead, 10 age 1+ steelhead, one age 2+ steelhead, and one age 3+ steelhead.

The third length sampled included Habitat Units #057-070, located approximately 3,578 feet above the creek mouth. The site yielded 56 YOY steelhead, eight age 1+ steelhead, and one age 3+ steelhead.

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The fourth length sampled included Habitat Units #077-095, located approximately 4,695 feet above the creek mouth. The site yielded 137 YOY steelhead, 28 age 1+ steelhead, and one age 2+ steelhead.

The fifth length sampled included Habitat Units #111-137, located approximately 6,352 feet above the creek mouth. The site yielded 60 YOY steelhead, 10 age 1+ steelhead, three age 2+ steelhead, and five age 3+ steelhead.

The sixth length sampled included Habitat Units #146-163, located approximately 7,906 feet above the creek mouth. The site yielded nine YOY steelhead, nine age 1+ steelhead and two age 2+ steelhead.

The following chart displays the information yielded from these sites:

Date	Site #	Approx. Dist. from mouth (ft.)	Hab. Unit #	Hab. Type	Reach #	Channel type	Steelhead 0+	1+	2+	3+
9/18/01	1	517	11	PLP	1	B2	5	1	2	0
9/18/01	2	704	14	PLP	1	B2	16	3	0	0
9/18/01	3	966	17	MCP	1	B2	4	2	0	0
9/18/01	4	1,241	21	MCP	1	B2	12	5	1	0
9/18/01	5	1,399	24	MCP	1	B2	31	1	0	0
9/18/01	6	1,624	30	MCP	2	F3	4	2	0	3
9/18/01	7	1,740	32	STP	2	F3	1	3	0	0
9/18/01	8	2,906	49	STP	2	F3	7	1	1	0
9/18/01	9	3,160	53	LSB	2	F3	11	4	0	0
9/18/01	10	3,568	57	LSB	3	A2	26	3	0	0
9/18/01	11	3,725	59	MCP	3	A2	12	1	0	1
9/18/01	12	3,858	63	MCP	3	A2	7	4	0	0
9/18/01	13	4,297	70	MCP	3	A2	11	0	0	0
9/18/01	14	4,695	77	LSL	4	B4	9	4	0	0
9/18/01	15	5,021	85	LSB	4	B4	25	4	0	0

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Date	Site #	Approx. Dist. from mouth (ft.)	Hab. Unit #	Hab. Type	Reach #	Channel type	Steelhead 0+	1+	2+	3+
9/18/01	16	5,152	89	PLP	4	B4	42	9	1	0
9/19/01	17	5,537	95	MCP	5	A2	25	5	0	0
9/19/01	18	6,352	111	MCP	5	A2	9	3	0	0
9/19/01	19	6,604	116	MCP	5	A2	15	1	1	0
9/19/01	20	6,784	121	MCP	5	A2	30	3	2	2
9/19/01	21	7,023	126	PLP	5	A2	3	2	0	1
9/19/01	22	7,493	137	STP	5	A2	3	1	0	2
9/19/01	23	7,906	146	LSB	6	B3	0	3	1	0
9/19/01	24	8,400	155	MCP	6	B3	5	4	1	0
9/19/01	25	8,991	163	MCP	6	B3	4	2	0	0

DISCUSSION

Coyote Creek is a B2 channel type for 1,567 feet of stream surveyed, an F3 channel type for 1,691 feet of stream surveyed, an A2 channel type for 5,035 feet of stream surveyed, a B4 channel type for 1,432 feet of stream surveyed, and a B3 channel type for 1,557 feet of stream surveyed. The suitability of B2 channel types for fish habitat improvement structures is as follows: excellent for log cover. F3 channel types are good for bank placed boulders and single and opposing wing deflectors; fair for plunge weirs, boulder clusters, channel constrictors and log cover. A2 channel types are high energy streams with stable stream banks, and poor gravel retention capabilities and therefore are generally not suitable for fish habitat improvement structures. B4 channel types are excellent for low-stage plunge weirs, boulder clusters, bank placed boulders and single and opposing wing deflectors. B3 channel types are excellent for plunge weirs, boulder clusters, bank placed boulder, single and opposing wing deflectors and log cover.

The water temperatures recorded on the survey days ranged from 54 to 64 degrees Fahrenheit. Air temperatures ranged from 50 to 77 degrees Fahrenheit.

Flatwater habitat types comprised 28% of the total length of this survey, riffles 33%, and pools 37%. The pools are relatively shallow, with 20 of the 85 (23.5%) pools having a maximum depth greater than three feet. In general, pool enhancement projects are considered when primary

pools comprise less than 40% of the length of total stream habitat. In third and fourth order streams, a primary pool is defined to have a maximum depth of at least third feet, occupy at least half the width of the low flow channel, and be as long as the low flow channel width.

Seventy-seven of the 85 pool tail-outs measured had embeddedness ratings of 1 or 2. Eight of the pool tail-outs had embeddedness ratings of 3 or 4. None of the pool tail-outs had a rating of 5, which is considered not suitable for spawning. Cobble embeddedness measured to be 25% or less, a rating of 1, is considered to indicate good quality spawning substrate for salmon and steelhead.

Forty-nine of the 85 pool tail-outs measured had gravel or small cobble as the dominant substrate. This is generally considered suitable for spawning salmonids.

The mean shelter rating for pools was 14. The shelter rating in the flatwater habitats was 23. A pool shelter rating of approximately 100 is desirable. The amount of cover that now exists is being provided primarily by boulders in all habitat types. Additionally, terrestrial vegetation contributes a small amount. Log and root wad cover structures in the pool and flatwater habitats would enhance both summer and winter salmonid habitat. Log cover structures provide rearing fry with protection from predation, rest from water velocity, and also divide territorial units to reduce density related competition.

The mean percent canopy density for the stream was 77%. Reach 1 had a canopy density of 87%, Reaches 2 had a canopy density of 69%, Reach 3 had a canopy density of 67%, Reaches 4 had a canopy density of 83%, and Reach 5 had a canopy density of 68%. In general, revegetation projects are considered when canopy density is less than 80% or the canopy composition is dominated by deciduous trees.

The percentage of right and left bank covered with vegetation was 58% and 62%, respectively. In areas of stream bank erosion or where bank vegetation is at an unacceptable level, planting endemic species of coniferous and deciduous trees, in conjunction with bank stabilization, is recommended.

RECOMMENDATIONS

1) Coyote 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) 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.

4) In the B3, B4 and F3 channel types design and engineer pool enhancement structures to increase the number of pools or deepen the existing pools. This must be done where the banks are stable or in conjunction with stream bank armor to prevent erosion.

5) Increase the coniferous component of the canopy on Coyote Creek by planting willow, alder, redwood, and Douglas fir along the stream where shade canopy is not at acceptable levels. The reaches above this surveyed section should be inventoried and treated as well, since the water flowing here is effected from upstream.

6) Inventory and map sources of stream bank 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.

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.

Position (ft):	Comments:
0'	Start of survey at the confluence with Redwood Creek. The channel type is a B2.
153'	Concrete bridge abutments from bridge for K&K road bridge that no longer exists.
517'	Electrofishing site #1.
564'	Slide on right bank measures approximately 30’ long x 50’ high.
704'	Electrofishing site #2.
966'	Electrofishing site #3.
1,241'	Electrofishing site #4.
1,273'	Old stream gauge on right bank.
1,399'	Electrofishing site #5.
1,495'	Erosion site on right bank measures approximately 60’ long x 25’ high with old road bed present above erosion.
1,567'	Channel type changes from B2 to F3.

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1,624' Electrofishing site #6.

1,740' Electrofishing site #7.

1,981' Eighteen inch corrugated metal pipe protruding from left bank.

2,182' Erosion site on right bank measures approximately 100’ long x 25’ high with old road bed present above erosion.

2,218' Slide on left bank measures approximately 250’ long x 200’ high and is contributing sediment to the channel.

2,398' Tributary enters from left bank (see sub-section report).

2,794' Old road crossing bridge site.

2,906' Electrofishing site #8.

3,160' Electrofishing site #9.

3,258' Channel type changes from F3 to A2.

3,568' Electrofishing site #10.

3,725' Electrofishing site #11.

3,735' Slide on right bank measures approximately 60’ long x 50’ high.

3,844' Slide on left bank measures approximately 40’ long x 60’ high.

3,858' Electrofishing site #12.

4,297' Electrofishing site #13.

4,499' Channel type changes from A2 to B4.

4,530' Old road crossing bridge site.

4,695' Electrofishing site #14.

5,021' Electrofishing site #15.

5,152' Electrofishing site #16.

5,537' Electrofishing site #17.

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5,634'	Yellow metal tank in stream approximately 1.5’ high x 2’ wide x 6’ long; possibly old fuel tank from heavy equipment.
6,002'	Channel type changes from B4 to A2.
6,352'	Electrofishing site #18.
6,604'	Electrofishing site #19.
6,665'	Slide on left bank measures approximately 230’ long x 120’ high and is contributing sediment to channel.
6,784'	Electrofishing site #20.
7,023'	Electrofishing site #21.
7,493'	Electrofishing site #22.
7,712'	Channel type changes from A2 to B3.
7,805'	Right bank erosion site measures approximately 40’ long x 20’ wide.
7,906'	Electrofishing site #23.
8,040'	Left bank erosion site measures approximately 30’ long x 10’ high.
8,400	Electrofishing site #24.
8,484'	Tributary enters on right bank.
8,991'	Electrofishing site #25.
9,359'	Channel type changes from B3 to A2.
9,874'	High gradient tributary enters on left bank.
10,790'	Slide on right bank measures approximately 65’ long x 75’ high.
10,857'	Five foot high plunge.
11,270’	End of survey. Bedrock, nearly vertical 14’-15’ high cascade, with a 5’ deep plunge pool below it. No fish were observed above the cascade.

REFERENCES

Flosi, G., Downie, S., Hopelain, J., Bird, M., Coey, R., and Collins, B. 1998. *California Salmonid Stream Habitat Restoration Manual*, 3rd edition. California Department of Fish and Game, Sacramento, California.

LEVEL III and LEVEL IV HABITAT TYPES

RIFFLE			
Low Gradient Riffle	(LGR)	[1.1]	{ 1}
High Gradient Riffle	(HGR)	[1.2]	{ 2}
CASCADE			
Cascade	(CAS)	[2.1]	{ 3}
Bedrock Sheet	(BRS)	[2.2]	{24}
FLATWATER			
Pocket Water	(POW)	[3.1]	{21}
Glide	(GLD)	[3.2]	{14}
Run	(RUN)	[3.3]	{15}
Step Run	(SRN)	[3.4]	{16}
Edgewater	(EDW)	[3.5]	{18}
MAIN CHANNEL POOLS			
Trench Pool	(TRP)	[4.1]	{ 8}
Mid-Channel Pool	(MCP)	[4.2]	{17}
Channel Confluence Pool	(CCP)	[4.3]	{19}
Step Pool	(STP)	[4.4]	{23}
SCOUR POOLS			
Corner Pool	(CRP)	[5.1]	{22}
Lateral Scour Pool - Log Enhanced	(LSL)	[5.2]	{10}
Lateral Scour Pool - Root Wad Enhanced	(LSR)	[5.3]	{11}
Lateral Scour Pool - Bedrock Formed	(LSBk)	[5.4]	{12}
Lateral Scour Pool - Boulder Formed	(LSBo)	[5.5]	{20}
Plunge Pool	(PLP)	[5.6]	{ 9}
BACKWATER POOLS			
Secondary Channel Pool	(SCP)	[6.1]	{ 4}
Backwater Pool - Boulder Formed	(BPB)	[6.2]	{ 5}
Backwater Pool - Root Wad Formed	(BPR)	[6.3]	{ 6}
Backwater Pool - Log Formed	(BPL)	[6.4]	{ 7}
Dammed Pool	(DPL)	[6.5]	{13}
ADDITIONAL UNIT DESIGNATIONS			
Dry	(DRY)	[7.0]	
Culvert	(CUL)	[8.0]	
Not Surveyed	(NS)	[9.0]	
Not Surveyed due to a marsh	(MAR)	[9.1]	