STREAM INVENTORY REPORT
Middle Fork of North Fork Noyo River

INTRODUCTION

A stream inventory was conducted during the summer of 1999 on the Middle Fork of the North Fork Noyo River. The survey began at the confluence with the North Fork Noyo River and extended upstream 20,474 feet.

The Middle Fork of theNorth Fork Noyo River 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 the Middle Fork of the North Fork Noyo River. 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

The Middle Fork of the North Fork Noyo River is a tributary to the North Fork Noyo River, a tributary to the Noyo River, located in Mendocino County, California (Map 1). The Middle Fork of the North Fork Noyo River's legal description at the confluence with the North Fork Noyo River is T19N R15W S29. Its location is 39°28′13″ north latitude and 123°32′35″ west longitude. The Middle Fork of the North Fork Noyo River is a first order stream and has approximately 3.1 miles of blue line stream according to the USGS Northspur and Sherwood Peak 7.5 minute quadrangles. The Middle Fork of the North Fork Noyo River drains a watershed of approximately 3.4 square miles. Elevations range from about 520 feet at the mouth of the creek to 3,207 feet in the headwater areas. Mixed conifer forest dominates the watershed. The watershed is entirely privately owned and is managed for timber production. Vehicle access exists via Highway 20 to Irmulco Road. The Irmulco Road is located approximately 6 miles west of Willits and leads to Mendocino Redwoods Company land.

METHODS

The habitat inventory conducted in the Middle Fork of the North Fork Noyo River follows the methodology presented in the *California Salmonid Stream Habitat Restoration Manual* (Flosi et al, 1998). The (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 the Middle Fork of the North Fork Noyo River 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 clinometer, 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". The Middle Fork of the North Fork Noyo River 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 clinometer, 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 the Middle Fork of the North Fork Noyo River 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, 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. 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 the Middle Fork of the North Fork Noyo River, 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 boulder 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 the Middle Fork of the North Fork Noyo River, 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 the Middle Fork of the North Fork Noyo River, 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 root wads) 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 the Middle Fork of the North Fork Noyo River. In addition, fifteen 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 Middle Fork of North Fork Noyo River 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

HABITAT INVENTORY RESULTS

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

The habitat inventory of June 23, 24, and 29, 1999 was conducted by Ethan Jankowski and Toni Beaumont (WSP/AmeriCorps). The total length of the stream surveyed was 20,474 feet.

Stream flow was measured at the bottom of the survey reach with a Marsh-McBirney Model 2000 flowmeter at 0.77cfs on June 23, 1999.

The Middle Fork of the North Fork Noyo River is a B4 channel type for the entire 20,474 feet of the stream surveyed. B4 channels have moderate gradients and entrenchment. These channels are riffle dominated with infrequently spaced pools, very stable plan and profile, stable banks, and gravel-dominant substrates.

Water temperatures taken during the survey period ranged from 56 to 63 degrees Fahrenheit. Air temperatures ranged from 59 to 84 degrees Fahrenheit.

Table 1 summarizes the Level II riffle, flatwater, and pool habitat types. Based on frequency of occurrence there were 27% riffle units, 24% flatwater units, and 48% pool units (Graph 1). Based on total length of Level II habitat types there were 47% riffle units, 38% flatwater units, and 15% pool units (Graph 2).

Twelve Level IV habitat types were identified (Table 2). The most frequent habitat types by percent occurrence were mid-channel pool, 20%; low gradient riffle, 17%; and run and step run, each 12% (Graph 3). Based on percent total length, low gradient riffle made up 26%, run 20%, and step run 18%.

A total of 105 pools were identified (Table 3). Scour pools were the most frequently encountered, at 54% , and comprised 53% 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. Fifty-two of the 105 pools (50%) had a depth of two feet or greater (Graph 5).

The depth of cobble embeddedness was estimated at pool tail-outs. Of the 102 pool tail-outs measured, 1 had a value of 1 (1.0%); 43 had a value of 2 (42.2%); 53 had a value of 3 (52.0%); and 5 had a value of 4 (5.0%)(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 6, flatwater habitat types had a mean shelter rating of 29, and pool habitats had a mean shelter rating of 26 (Table 1). Of the pool types, the backwater pools had the highest mean

shelter rating at 100. Scour pools had a mean shelter rating of 25 (Table 3).

Table 5 summarizes mean percent cover by habitat type. Undercut banks are the dominant cover type in the Middle Fork of the North Fork Noyo River. Graph 7 describes the pool cover in the Middle Fork of the North Fork Noyo River. Undercut banks are the dominant pool cover type followed by large woody debris.

Table 6 summarizes the dominant substrate by habitat type. Graph 8 depicts the dominant substrate observed in pool tail-outs. Small cobble was the dominant substrate observed in 42% of pool tail-outs while gravel was the next most frequently observed substrate type, at 25%.

The mean percent canopy density for the surveyed length of the Middle Fork of the North Fork Noyo River was 92%. The mean percentages of deciduous and coniferous trees were 41% and 59%, respectively. Graph 9 describes the mean percent canopy in the Middle Fork of the North Fork Noyo River.

For the stream reach surveyed, the mean percent right bank vegetated was 74%. The mean percent left bank vegetated was 78%. The dominant elements composing the structure of the stream banks consisted of 2.9% bedrock, 5.9% boulder, 57.4% cobble/gravel, and 33.8% sand/silt/clay (Graph 10). Coniferous trees were the dominant vegetation type observed in 46% of the units surveyed. Additionally, 30.9% of the units surveyed had deciduous trees as the dominant vegetation type, and 13.2% had brush as the dominant vegetation (Graph 11).

BIOLOGICAL INVENTORY RESULTS

Fifteen sites were electrofished for species composition and distribution in the Middle Fork of the North Fork Noyo River on September 1 and 2, 1999. Water temperatures taken during the electrofishing period of 2:00 to 2:30 pm on September 1st and 9:00 to 10:30 am on September 2nd ranged from 52 to 55 degrees Fahrenheit. Air temperatures ranged from 52 to 65 degrees Fahrenheit. The sites were sampled by Michelle Gilroy (DFG), Randy Turner (CCC), and Ethan Jankowski (WSP/AmeriCorps).

The first site sampled included habitat unit 11, a mid-channel pool, with root wad cover, located approximately 633 feet from the confluence with the North Fork of the Noyo River. The site yielded 5 young-of-the-year and 2 one-plus age class steelhead.

The second site included habitat unit 14, a corner pool, with root wad cover, located approximately 868 feet above the creek mouth. The site yielded no fish.

The third site sampled included habitat unit 15, a mid-channel pool, with root wad cover, located approximately 916 feet above the creek mouth. The site yielded no fish.

The fourth site sampled included habitat unit 16, a plunge pool, located approximately 974 feet above the creek mouth. The site yielded 1 one-plus age class steelhead.

The fifth site sampled included habitat unit 18, a corner pool, with root wad and undercut bank cover, located approximately 1,112 feet above the creek mouth. The site yielded 2 young-of-the-year age class steelhead.

The sixth site sampled included habitat unit 20, a mid-channel pool located approximately -1,232 feet above the creek mouth. The site yielded 1 one-plus and 1 two-plus age class steelhead.
The seventh site sampled included habitat unit 21, a corner pool, with root wad cover, located approximately 1,277 feet above the creek mouth. The site yielded 1 young-of-the-year steelhead.

The eighth site sampled included habitat unit 24, a corner pool, with root wad cover, located approximately 1,469 feet above the creek mouth. The site yielded 1 one-plus age class steelhead.

The ninth site sampled included habitat unit 25, a low gradient riffle located approximately 1,481 feet above the creek mouth. The site yielded no fish.

The tenth site sampled included habitat unit 28, a corner pool, with root wad cover, located approximately 1,596 feet above the creek mouth. The site yielded 1 young-of-the-year and 1 two-plus age class steelhead.

The eleventh site sampled included habitat unit 31, a mid-channel pool, with root wad cover, located approximately 1,910 feet above the creek mouth. The site yielded no fish.

The twelfth site sampled included a mid-channel pool located 50 feet above the end of survey. The site yielded 1 salamander.

The thirteenth site sampled included a lateral scour -boulder formed pool located 100 feet above the end of survey. The site yielded no fish.

The fourteenth site sampled included a mid-channel pool located 150 feet above the end of survey. The site yielded no fish.

The fifteenth site sampled included a mid-channel pool located 250 feet above the end of survey. The site yielded no fish.

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 YOY	1+	2+
09/02/1999	1	633	11	MCP	1	B4	5	2	0

Date	Site #	Approx. Dist. from mouth (ft.)	Hab. Unit #	Hab. Type	Reach #	Channel type	Steelhead YOY	1+	2+
09/02/1999	2	868	14	CRP	1	B4	0	0	0
09/02/1999	3	916	15	MCP	1	B4	0	0	0
09/02/1999	4	974	16	PLP	1	B4	0	1	0
09/02/1999	5	1,112	18	CRP	1	B4	2	0	0
09/02/1999	6	1,232	20	MCP	1	B4	0	1	1
09/02/1999	7	1,277	21	CRP	1	B4	1	0	0
09/02/1999	8	1,469	24	CRP	1	B4	0	1	0
09/02/1999	9	1,481	25	LGR	1	B4	0	0	0
09/02/1999	10	1,596	28	CRP	1	B4	1	0	1
09/02/1999	11	1,910	31	MCP	1	B4	0	0	0
09/01/1999	12	Samples Taken Above End Of Survey		MCP	Samples Taken Above End of Survey		0	0	0
09/01/1999	13			LSBo			0	0	0
09/01/1999	14			MCP			0	0	0
09/01/1999	15			MCP			0	0	0

DISCUSSION

The Middle Fork of the North Fork Noyo River is a B4 channel type for the entire 20,474 feet of stream surveyed. The suitability of B4 channel types for fish habitat improvement structures is as follows: excellent for low-stage weirs; boulder clusters; bank placed boulders; single and opposing wing-deflectors; and log cover.

The water temperatures recorded on the survey days of June 23, 24, and 29, 1999, ranged from 56 to 63 degrees Fahrenheit. This is a good water temperature range for salmonids. Air temperatures ranged from 59 to 84 degrees Fahrenheit. 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 38% of the total length of this survey, riffles 47%, and pools 15%. Fifty percent of the pools had 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.

Sixty-eight of the 102 pool tail-outs measured had gravel or small cobble as the dominant substrate. This is generally considered good for spawning salmonids.

Forty-four of the 102 pool tail-outs measured had embeddedness ratings of 1 or 2. Fifty-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 unsuitable 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. Sediment sources in the Middle Fork of the North Fork Noyo River should be mapped and rated according to their potential sediment yields and control measures should be taken.

The mean shelter rating for pools was 26. The shelter rating in the flatwater and riffle habitats was 29 and 6, respectively. A pool shelter rating of approximately 100 is desirable. The cover that now exists is being provided primarily by undercut banks in all habitat types. In pools, large woody debris is the second most dominant cover type. Log and root wad cover structure in the pool and flatwater habitats would enhance 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.

The mean percent canopy density for the stream was 92%. In general, revegetation projects are considered when canopy density is less than 80%.

The percentage of right and left bank covered with vegetation was 74% and 78%, 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) The Middle Fork of the North Fork Noyo River 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 undercut bank. Adding high quality complexity with woody cover is desirable.

4) 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.

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 the North Fork Noyo River. Channel type is B4.
633'	Electrofishing site #1.
707'	Bridge, 12' long x 40' wide x 10' high.
868'	Electrofishing site #2.
916'	Electrofishing site #3.
974'	Electrofishing site #4.
1,112'	Electrofishing site #5.
1,232'	Electrofishing site #6.
1,277'	Electrofishing site #7.
1,469'	Electrofishing site #8.
1,481'	Electrofishing site #9.
1,596'	Electrofishing site #10.
1,910'	Electrofishing site #11.
2,120'	Bank failure, 14' long x 4' wide x 5' high.
7,486'	Tributary enters from left bank, 61° F water temperature.
7,539'	Log debris accumulation, 15' long x 25' wide x 6' high, retaining sediment and gravel.
8,142'	Log debris accumulation, 15' long x 30' wide x 5' high. No gravel retention.
8,311'	Old bridge supports.

8,721'	Debris accumulation.
10,129'	Large woody debris not retaining gravel.
10,299'	Right bank failure being undercut.
10,327'	Log debris accumulation, 20' long x 20' wide x 7' high, not accumulating gravel.
10,575'	Log debris accumulation, 15' long x 20' wide x 8' high, retaining gravel.
10,623'	Small woody debris accumulating.
10,809'	Exposed pipe instream.
11,006'	Log debris accumulation, 30' long x 20' wide x 6' high, retaining sediment and debris. Left bank failure, 20' high.
11,450'	"Special Treatment Zone" flag.
13,170'	Left bank failure.
13,791'	Three foot plunge.
13,858'	Plunge formed by large wood.
13,878'	Unnamed tributary, high gradient, 56° F water temperature, enters on left bank.
14,704'	Log debris accumulation, made mostly of large woody debris, not retaining gravel.
15,377'	Debris accumulation not retaining gravel. Last young of the year steelhead observed.
15,678'	Log debris accumulation, 10' long x 12' wide x 6' high, retaining gravel.
15,770'	Log debris accumulation, 35' long x 25' wide x 12' high, retaining gravel.
15,923'	Water goes subsurface at pool tail-out.
15,935'	Log debris accumulation, 20' long x 15' wide x 5' high, retaining gravel.
16,319'	Debris accumulation retaining gravel. Unnamed tributary enters from right bank, 60° F water temperature. High gradient.

16,749' Log debris accumulation, 10' long x 5' wide x 5' high, retaining gravel and forming a plunge.

16,867' Large root wad holding gravel and forming plunge.

16,970' Log debris accumulation, 20' long x 20' wide x 7' high, retaining gravel, water flowing around.

17,068' Log debris accumulation, 25' wide x 7' tall, retaining gravel, causing unit to be dry.

17,973' Large root wad retaining gravel.

18,243' Log debris accumulation, mostly large woody debris, 15' long x 15' wide x 5' high, retaining gravel.

18,728' Log debris accumulation, 10' long x 10' wide x 8' high, retaining gravel.

18,782' Unnamed tributary, 60° F water temperature.

18,962' Root wad in channel obstructing stream flow and retaining gravel and large woody debris.

19,132' Channel splits for 25' around debris accumulation.

19,483' Log debris accumulation, 10' long x 10' wide x 10' high, retaining gravel.

19,721' Large woody debris accumulating.

19,745' Cable in channel.

19,825' Log debris accumulation, retaining gravel.

20,090' Unnamed tributary, 58° F water temperature.

20,228' Stream channel gradient, approximately 28%.

20,474' Cable in channel. End of Survey.

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]