CALIFORNIA DEPARTMENT OF FISH AND GAME STREAM INVENTORY REPORT Corral Creek Report Revised April 14, 2006 Report Completed 2005 Assessment Completed 2001

INTRODUCTION

A stream inventory was conducted beginning September 21 and ending September 26, 2001 on Corral Creek. The survey began at the confluence with the Russian River and extended upstream 10,913 feet.

The Corral 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 Corral 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 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

Corral Creek is a tributary to the Russian River, a tributary to the Pacific Ocean, located in Mendocino County, California (Map 1). Corral Creek's legal description at the confluence with the Russian River is T17N R12W S8. Its location is 39.3350562256986° north latitude and 123.22084638634° west longitude. Corral Creek is an ephemeral stream according to the USGS Redwood Valley 7.5 minute quadrangle. Corral Creek drains a watershed of approximately 3.43 square miles. Elevations range from about 856 feet at the mouth of the creek to 2,484 feet in the headwater areas. Hardwood forest dominates the watershed. The watershed is entirely privately owned. Vehicle access exists via Highway 101, 1.8 miles north of the Highway 20 junction, at School Way. Follow School Way 0.5 miles to West Road, and West Road 5 miles to an unnamed road. Follow the unnamed road to the mouth of Corral Creek.

METHODS

The habitat inventory conducted in Corral Creek follows the methodology presented in the *California Salmonid Stream Habitat Restoration Manual* (Flosi et al., 1998). The California Department of Fish and Game field crew 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 Corral 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 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". Corral 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 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 Corral 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) 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, 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 Corral 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 visually 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 Corral 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% subsample. In addition, the area of canopy was estimated visually into percentages of evergreen 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 Corral 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 Corral Creek. 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 8.4, 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 tables:

• Summary of riffle, flatwater, and pool habitat types

- Summary of habitat types and measured parameters
- Summary of pool types
- Summary of maximum pool depths by pool habitat types
- Summary of mean % cover by habitat type
- Summary of dominant substrates by habitat type
- Summary of fish habitat elements by stream reach

Graphics are produced from the tables using Microsoft Excel. Graphics developed for Corral Creek include:

- Level II habitat types by % occurrence
- Level II habitat types by % total length
- Level IV habitat types by % occurrence
- Level I pool habitat types by % occurrence
- Maximum depth in pools
- Percent embeddedness estimated in pool tail-outs
- Mean percent cover types in pools
- Substrate composition in pool tail-outs
- Mean percent canopy
- Dominant bank composition in survey reach
- Dominant bank vegetation in survey reach

HABITAT INVENTORY RESULTS

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

The habitat inventory of September 21 to 26, 2001, was conducted by Justin Smith and Mike. Shugars (DFG). The total length of the stream surveyed was 10,913 feet.

Stream flow was not measured on Corral Creek.

Corral Creek is an F1 channel type for the entire 10,913 feet of the stream surveyed. F1 channels are entrenched, meandering, riffle/pool channels on low gradients with high width/depth ratios and bedrock-dominant substrates.

Water temperatures taken during the survey period ranged from 59 to 64 degrees Fahrenheit. Air temperatures ranged from 72 to 80 degrees Fahrenheit.

Table 1 summarizes the Level II riffle, flatwater, and pool habitat types. Based on frequency of *occurrence* there were 7% flatwater units, 36% pool units, and 57% dry units (Graph 1). Based on total *length* of Level II habitat types there were 1% pool units, and 99% dry units (Graph 2).

Three Level IV habitat types were identified (Table 2). The most frequent habitat types by percent *occurrence* were dry, 57%; mid-channel pool, 36%; and run, 7% (Graph 3). Based on percent total *length*, dry made up 99% and run 1%.

A total of five pools were identified (Table 3). Main-channel pools were the only pool type encountered (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 five measured pools (60%) had a depth of two feet or greater

(Graph 5).

The depth of cobble embeddedness was estimated at pool tail-outs. Of the five pool tail-outs measured, zero had a value of 1; zero had a value of 2; three had a value of 3 (60%); two had a value of 4 (40%); and zero had a value of 5 (Graph 6). On this scale, a value of 1 indicates the highest quality of spawning substrate. Additionally, a value of 5 was assigned to tail-outs deemed unsuited for spawning due to inappropriate substrate like bedrock, log sills, boulders.

A shelter rating was calculated for each habitat unit and expressed as a mean value for each habitat type within the survey using a scale of 0-300. Flatwater habitat types had a mean shelter rating of 0 and pool habitat types had a mean shelter rating of 8 (Table 1). Main-channel pools had a mean shelter rating of 8 (Table 3).

Table 5 summarizes mean percent cover by habitat type. Bedrock ledges are the dominant cover types in Corral Creek. Graph 7 describes the pool cover in Corral Creek. Bedrock ledges are the dominant pool cover types followed by undercut banks.

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 40% of pool tail-outs while gravel, boulders, and bedrock were the next most frequently observed substrate types, each at 20%.

The mean percent canopy density for the surveyed length of Corral Creek was 52%. The mean percentages of evergreen and deciduous trees were 16% and 36%, respectively. Forty eight percent of the canopy was open. Graph 9 describes the mean percent canopy in Corral Creek.

For the stream reach surveyed, the mean percent right bank vegetated was 38%. The mean percent left bank vegetated was 38%. The dominant elements composing the structure of the stream banks consisted of 100% bedrock (Graph 10). Deciduous trees were the dominant vegetation type observed in 50% of the units surveyed. Additionally, 33% of the units surveyed had evergreen trees as the dominant vegetation type, and 17% had grass as the dominant vegetation (Graph 11).

BIOLOGICAL INVENTORY RESULTS

Due to inadequate staffing levels, no biological inventory surveys were conducted in Corral Creek in 2001.

There is no record of hatchery stocking or fish rescue/transfer operations in Corral Creek.

DISCUSSION

Corral Creek is an F1 channel type for the entire 10,913 feet of stream surveyed. The suitability of F1 channel types for fish habitat improvement structures is as follows: F1 channel types are good for bank-placed boulders; fair for single wing-deflectors and log cover; poor for plunge weirs, boulder clusters, and opposing wing-deflectors

The water temperatures recorded on the survey days September 21 to 26, 2001, were above the suitable 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.

Dry habitat types comprised 99% of the total length of this survey and pools 1%. The pools are relatively deep, with three of the five (60%) measured pools having a maximum depth greater than two 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, or where their installation will not conflict with the modification of the numerous log debris accumulations (LDA's) in the stream.

None of the five pool tail-outs measured had embeddedness ratings of 1 or 2. Five 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 Corral Creek should be mapped and rated according to their potential sediment yields, and control measures should be taken.

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

The mean shelter for flatwater was 0. The mean shelter rating for pools was 8. A pool shelter rating of approximately 100 is desirable. The amount of cover that now exists is being provided primarily by bedrock ledges in all habitat types. Additionally, boulders contribute 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 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 52%. 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 38% and 38%, respectively. In areas of stream bank erosion or where bank vegetation is not at acceptable levels, planting endemic trees species, in conjunction with bank stabilization, is recommended.

GENERAL MANAGEMENT RECOMMENDATIONS

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

Winter storms often bring down large trees and other woody debris into the stream, which increases the number and quality of pools. This woody debris, if left undisturbed, will provide fish shelter and rearing habitat, and offset channel incision. Landowners should be sensitive about the natural and positive role woody debris plays in the system, and encouraged <u>not to remove woody debris</u> from the stream, except under extreme buildup and only under guidance by a fishery professional.

RECOMMENDATIONS

1) Increase the canopy on Corral Creek by planting willow, alder, redwood, and Douglas fir along the stream where shade canopy is not at acceptable levels. The reaches above this survey section should be inventoried and treated as well, since the water flowing here is affected from upstream. In many cases, planting will need to be coordinated to follow

bank stabilization or upslope erosion control projects.

- 2) 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.
- 3) Increase woody cover in the pools and flatwater habitat units. Most of the existing cover is from bedrock ledges. Adding high quality complexity with log and root wad cover is desirable.
- 4) Corral Creek would benefit from the utilizing bio-technical vegetative techniques to reestablish floodplain benches and a defined low flow channel. This would discourage lateral migration of the base flow channel and decrease bank erosion.
- 5) 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.
- 6) Fish passage should be monitored and improved where possible.
- 7) The limited water temperature data available suggest that maximum temperatures are above 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 three to five years.

COMMENTS AND LANDMARKS

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

- 0' Begin Survey. Dry Tributary (F6); Bridge #1-See Form
- 2149' About 100 roach fish
- 2688' Crayfish 4"; 3, 0+ SH
- 3704' Roach; Poss. Channel change
- 3729' Dry Trib @ 95' on LB; Dry Trib RB @480'
- 4587' Excessive Bedrock amounts
- 4613' Wet road xing-1100' into unit
- 6613' LB Trib at 1200'; LB Trib at 1400'; LB Trib at 3100'; LB Trib at 3200'; At 3300' channel type change to A; LB Trib at 4040'; LB Dry Trib at 4100'; @ 4150' Ch. Channel becoming high gradient. Confluence, not sure if this is confluence of tributary with mainstem.
- 10,913' 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.



L:\mondo3\data\stream-maps\CorralCreek2001.mxd

Prepared by: Celeste Dodge and Colin Brooks, March 3, 2005

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Conflue HABITAT UNITS 1 5 8 TOTAL UNITS 14 :orral Cr 'able 3 -	I UNITS FULLY MEASURED 1 5 0 TOTAL UNITS 6 reek - SUMMARY (OR: QUAD: HABITAT TYPE RUN MCP DRY DRY	Redwood Va I HABITAT OCCURRENCE I * 7 36 57 *	EGAL DESC MEAN TR ENGTH LE ft. 29 20 1348 10 (1 (1)	RIPTION: OTAL TT NGTH LEP ft. 29 100 00784 NGTH ft.) 00913	14NR12W	ANN ME TH DEF t. f 1 0 8 1 0 0 0 Drai	ATITUDE: EAN MAXIM TH DE t	39°19'37" MUM MEAL PTH ARE ft. sq.ft 1.0 1: 6.0 17. 0.0 0 0.0 0	LONGITUDE N TOTAL ST. . sq.ft. c 5 15 4 868 0 0 0 AREA (sq.ft) 883 87 1 to 09/20	123°13'14 MEAN T TOLUME VO au.ft. cu 6 306 0 TOTAL V (cu. 2	OTAL LUME RES EST. POO .ft. c 6 1530 0 70L. .ft) 1536	MEAN IDUAL L VOL L VOL 0 0	N MEAN , SHELTER , RATING 0 8 0	KE CANO
Confluence HABITAT UNITS # 1 5 8 TOTAL UNITS 14 Corral Cr table 3 -	MEASURED	OR: QUAD: HABITAT TYPE RUN MCP DRY DRY	Redwood Va I HABITAT OCCURRENCE I 1 7 36 57 2 7 8 8 7 8 8 7 8 8 7 8 8 7 8 8 7 8 8 7 8 8 7 8 8 8 7 8	EGAL DESC MEAN TO ENOTH LE 29 20 1348 10 LEP (1 10 SAL DESCRI	RIPTION: 10 07AL TC NGTH LE ft. 29 100 0784 ft.) 0913 PTION: 1.	14NR12W3	EXAN ME EXAN ME TH DEF Ct. 1 1 0 8 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	TTUDE: 23	39°19'37" MUM MEAN PTH ARE ft. sq.ft 1.0 1: 6.0 17' 0.0 0 0.0 0	LONGITUDE N TOTAL A AREA V EST. 5 15 4 868 0 0 0 AREA (sq.ft) 883 97 1 to 09/26	123°13'14 MEAN T TOLUME VO a.ft. cu 6 306 TOTAL 1 (cu) /01 3°13'14	0TAL LUME RES EST. POO .ft. c 6 1530 0 70L. .ft) 1536	MEAN IDUAL L VOL L VOL 0 0	R MEAN SHELTER RATING 0 8 0	MB C2NO
Confluence HABITAT UNITS 1 5 8 TOTAL UNITS 14 Corral Cr table 3 - Confluence	Ince Location	OR: QUAD: HABITAT TYPE RUN MCP DRY DRY DF POOL TYI	Redwood Va I HABITAT OCCURRENCE I * 7 36 57 * 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BGAL DESC MEAN TO ENGTH LE ft. 29 20 1348 10 1348 10 10 10 10 10 10 10 10 10 10 10 10 10 1	RIPTION: OTAL T NGTH LEP 100 0784 NGTH Et.) 0913 PTION: 1- TOTAL	14NR12WS	I LATI	ATITUDE: EAN MAXIM TH DE t	39°19'37" MUM MEAN PTH ARE ft. sq.ft 1.0 1: 6.0 17. 0.0 0 0.0 0 0.0 0.0 0.0 0.0 0.0	LONGITUDE N TOTAL A AREA V EST. 5 15 5 15 5 15 6 868 0 0 0 AREA (sq.ft) 883 87 1 to 09/26 NGITUDE:12	123°13'14 MEAN T YOLUME VO au.ft. cu 6 306 0 TOTAL V (cu. 2 /01 3°13'14 MEAN	OTAL LUME RES EST. POO .ft. c 6 1530 0 70L. .ft) 1536	MEAN IDUAL L VOL u.ft. 0 0	MEAN SHELTER RATING 0 8 0	MBAN MEAN
Confluence HABITAT UNITS 1 5 8 TOTAL UNITS 14 Corral Cr Cable 3 - Confluence Confluence	I UNITS FULLY MEASURED 1 5 0 TOTAL UNITS 6 reek - SUMMARY (ce Location UNITS FULLY	OR: QUAD: HABITAT TYPE RUN MCP DRY DRY DF FOOL TYI a: QUAD: E: HABITAT TYPE	Redwood Va I HABITAT OCCURRENCE I * 7 36 57 * 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BGAL DESC MEAN TO ENOTH LES ft. 29 20 1348 10 1348 10 (1 10 10 10 10 10 10 10 10 10 10 10 10 10	RIPTION: TAL T NGTH LEP 100 0784 NGTH ft.) 0913 PTION: 1- PTION: 1- TOTAL LENGTH	14NR12WS TAL MI NOTH WI 1 0 1 99 4NR12WS8 PERCENT TOTAL	ANN MEAN MIDTH DEF t. f 1 0 8 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ATITUDE: RAN MAXIM TH DE t	39°19'37" MUM MEAN PTH ARE ft. sq.ft 1.0 1: 6.0 17. 0.0 0 0.0 0 0.0 0.0 0.0 0.0 0.0	LONGITUDE N TOTAL A AREA V EST. 5 15 5 15 5 15 6 688 0 0 0 AREA (sq.ft) 883 87 1 to 09/26 NGITUDE:12 TOTAL	123°13'14 MEAN T YOLUME VO a.ft. cu 6 306 0 TOTAL V (cu. 2 /01 3°13'14 MEAN VOLUME	OTAL LUME RES EST. POO .ft. c 6 1530 0 70L. .ft) 1536 TOTAL VOLUM	MEAN IDUAL L VOL u.ft. 0 0 0	MEAN SHELTER RATING 0 8 0 0 8 0 9 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 10 10 10 10 10 10 10 10 10 10 10 10 10	MBAN CANO A MEAN MEAN
Conflues HABITAT UNITS 4 1 5 8 TOTAL UNITS 14 Corral Cr Cable 3 - Confluence Confluence Confluence	ILC LOCATI UNITS FULLY MEASURED 1 5 0 1 1 5 0 1 1 5 0 0 1 1 5 0 0 1 1 5 0 0 1 1 5 0 0 1 1 5 0 0 1 1 5 0 0 1 1 5 0 0 1 1 1 5 0 1 1 1 1	OR: QUAD: HABITAT TYPE RUN MCP DRY DRY DF FOOL TYN a: QUAD: E: HABITAT TYPE	Redwood Va I HABITAT OCCURRENCE I * 7 36 57 * 7 8 8 8 8 9 8 9 9 9 9 9 9 9 9 9 9 9 9 9	BGAL DESC MEAN TO ENOTH LES ft. 29 20 1348 10 1348 10 (4 10 10 10 10 10 10 10 10 10 10 10 10 10	RIPTION: I NGTH LEP 100 0784 NGTH ft.) 0913 PTION: 1 TOTAL LENGTH	14NR12WS ANR12WS ANR12WS PERCENT TOTAL LENGTH	ERAN MEAN MIDTH	ATITUDE: RAN MAXIM TH DE t	39°19'37" MUM MEAN PTH ARE ft. sq.ft 1.0 1: 6.0 17. 0.0 0 0.0 0 0.0 0.0 0.0 0.0 0.0	LONGITUDE N TOTAL A AREA V EST. 5 15 5 15 5 15 5 15 6 0 0 0 0 AREA (sq.ft) 883 87 1 to 09/26 NGITUDE:12 TOTAL	123°13'14 MEAN T YOLUME VO a.ft. cu 6 306 0 TOTAL V (cu. 2 /01 3°13'14 MEAN VOLUME	OTAL LUME RES EST. POO .ft. c 6 1530 0 70L. .ft) 1536 TOTAL VOLUM EST	MEAN IDUAL L VOL 0 0 0	MEAN SHELTER RATING 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 8 1 1 8 1 1 1 8 1 1 1 1	MBAN CANO CANO MEAN MEAN MEAN RATIN
Confluen HABITAT UNITS 4 1 5 8 TOTAL UNITS 14 Corral Cr Cable 3 - Confluence Confluence	ILY MEASURED	OR: QUAD: HABITAT TYPE RUN MCP DRY DRY DRY DRY A: QUAD: E: HABITAT TYPE	Redwood Va I HABITAT OCCURRENCE I * 7 36 57 * * 7 36 57 * * * * * * * * * * * * * * * * * *	BGAL DESC MEAN TO ENOTH LES ft. 29 20 1348 10 1348 10 (1 10 10 14 10 10 14 10 10 14 10 10 14 10 10 14 10 10 14 10 10 14 10 10 10 10 10 10 10 10 10 10 10 10 10	RIPTION: I NGTH LEP 100 0784 NGTH ft.) 0913 PTION: 1 TOTAL LENGTH (ft.)	14NR12WS TAL MI NOTH WI 1 0 1 99 4NR12WS8 PERCENT TOTAL LENGTH	ANN ME ANN ME ATH DEF tt. ff 1 0 8 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ATITUDE: RAN MAXIM TH DE t	39°19'37" MUM MEAN PTH ARE ft. sq.ft 1.0 1: 6.0 17. 0.0 (1.0 0: 1.0 0	LONGITUDE N TOTAL A AREA V EST. 5 15 5 15 5 15 6 688 0 0 0 AREA (sq.ft) 883 87 1 to 09/26 NGITUDE:12 TOTAL AREA (sq.ft.) (sq.ft.)	123°13'14 MEAN T YOLUME VO a.ft. cu 6 306 0 TOTAL V (cu. 2 /01 3°13'14 MEAN VOLUME (cu.ft.)	TOTAL LUME RES EST. POO .ft. c 6 1530 0 70L. .ft) 1536 TOTAL VOLUM EST (cu.ft	MEAN IDUAL L VOL 0 0 0 0	MEAN SHELTER RATING 0 8 0 0 8 0 0 8 0 0 8 0 0 9 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MEAN MEAN MEAN RATIN
Confluen HABITAT UNITS 4 1 5 8 TOTAL UNITS 14 Corral Cr table 3 - Confluence Confluence	Ince Locati FULLY MEASURED 1 5 0 1 1 5 0 1 1 5 0 0 1 1 5 0 0 1 1 5 0 0 1 1 5 0 0 1 1 5 0 0 1 1 5 0 0 1 1 5 0 0 1 1 5 0 0 1 1 5 0 0 1 1 1 5 0 1 1 1 1	OR: QUAD: HABITAT TYPE RUN MCP DRY DRY DRY DRY A: QUAD: E. HABITAT TYPE MAIN	Redwood Va I HABITAT OCCURRENCE I * 7 36 57 * * * * * * * * * * * * * * * * * *	EGAL DESC MEAN TO ENGTH LE ft. 29 20 1348 10 LE (4 10 LE (4 10 LE MEAN LENGTH (ft.) 20	RIPTION: 10 07AL TC NGTH LE 29 100 0784 MGTH ft.) 0913 PTION: 10 TOTAL LENGTH (ft.) 100	14NR12WS ANR12WS ANR12WS PERCENT TOTAL LENGTH 100	ERN ME TH DEF tt. f 1 0 6 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ATITUDE: EAN MAXIM TH DE t	39°19'37" MUM MEAN PTH ARE ft. sq.ft 1.0 1: 6.0 17' 0.0 (0.0 (LONGITUDE N TOTAL A AREA V EST. 5 15 4 868 0 0 AREA (sq.ft) 883 97 1 to 09/24 NGITUDE:12 TOTAL ARE2 (sq.ft.) 883 864	123°13'14 MEAN T YOLUME VO a.ft. cu 6 306 7 TOTAL V (cu. 3°13'14 VOLUME (cu.ft.) 306	OTAL LUME RES EST. POO .ft. c 6 1530 0 70L. .ft) 1536 TOTAL VOLUME EST (cu.ft 1534	MEAN IDDAL L VOL 0 0 0	MEAN SHELTER RATING 0 8 0 0 8 0 0 8 0 0 8 0 0 0 0 0 0 0 0	MEAN MEAN MEAN MEATIN
Confluence HABITAT UNITS 1 TOTAL UNITS 14 Corral Cr Table 3 - Confluence Confluence S TOTAL	INTS PULLY MEASURED 1 5 0 TOTAL UNITS 6 Ce Location UNITS FULLY MEASURED 5 TOTAL	OR: QUAD: HABITAT TYPE RUN MCP DRY DRY DP FOOL TYI A: QUAD: E: HABITAT TYPE MAIN	Redwood Va I HABITAT OCCURRENCE I * 7 36 57 * * ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?	EGAL DESC MEAN TH ENTH LE ft. 29 20 1348 10 LEP (1 10 LEP (1 10 LEP (1 10 LEP (1 10 10 LEP (1 10 10 20 20 20 20 20 20 20 20 20 20 20 20 20	RIPTION: TOTAL TY NGTH LEP ft. 29 100 0794 NGTH ft.) 0913 PTION: 1- TOTAL LENGTH (ft.) 100 LENGTH	14NR12WS TAL MI NGTH WII 1 0 1 99 4NR12WS8 PERCENT TOTAL LENGTH 100	8 11 EAN ME FTH DEF 1 00 8 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ATITUDE: EAN MAXIM TH DE t	39°19'37" MUM MEA PTH ARE ft. sq.ft 1.0 1: 6.0 17. 0.0 0 0.0 0 0.0 0.0 0.0 0.0 0.0	LONGITUDE N TOTAL A AREA V EST. . eq.ft. c 5 15 4 868 0 0 0 AREA (sq.ft) 883 er 1 to 09/26 NGITUDE:12 TOTAL AREJ 866 TOTAL AREJ	123°13'14 MEAN T YOLUME VO au.ft. cu 6 306 0 TOTAL V (cu.ft.) 306 (cu.ft.) 306	OTAL LUME RES EST. POO .ft. c 6 1530 0 70L. .ft) 1536 TOTAL VOLUM EST (cu.ft 1530	MEAN IDUAL L VOL U.ft. 0 0 0 0	MEAN SHELTER RATING 0 8 0 0 8 0 0 8 0 0 8 0 0 8 0 0 1 1 1 1	MEAN MEAN HIELTER RATIN

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Table 4	- SUM	ary of I	GAXIMUN	i pool dei	PTHS B	BY POOL HA	BITAT TYP	85 S	urvey Date	as: 09/	21/01	to 09/26/	/01			
Conflue	nce Loo	ation: (QUAD: R	ledwood Va	a LEGN	AL DESCRIP	TION: 14N	R12WS8 L	ATITUDE:39	9*19'37	- LONG	ITUDE:123	3°13'14			
unit: Grasurei	s hae d typ	SITAT PB OC	HABITA PERCEN CURRENC	AT <1 FO FT MAXIN TE DEI	NOT MUM PTH OC	<1 FOOT PERCENT CCURRENCE	1-<2 FT. MAXIMUM DEPTH	1-<2 FOOT PERCENT OCCURRENCE	2-<3 FT. MAXIMUM DEPTH	2-<3 PER OCCURR	FOOT CENT LENCE	3-<4 FT. MAXIMUM DEPTH	3-<4 F PERC OCCURRE	700t : Tent Ence	>=4 FEBT MAXIMUM DEPTH	>=4 FEE PERCEN OCCURRENC
	5 MC	2	10	00	0	0	2	40	1		20	1		20	1	. 2
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Corral	Creel	c							Dra	ainage	: Rus	sian Rive	er			
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Table	5 - ST	MMARY C	of MRA	N PERCEN	r cov	ER BY HAI	BITAT TYP	B	Su	rvey D	ates:	09/21/0	1 to 09	9/26/0	1	
Conflu	ience l	Locatio	.: QUAL	D: Redwo	odiVa	LEGAL D	SCRIPTIC	N: 14NR12	ISS LA	TITUDB	:39°1	9'37" LO	NGITUDE	S:123°	13'14	
Conflu	ience l	Locatio	1: QUA	D: Redwo	od Va	LEGAL DI	SCRIPTIO	ON: 14NR12	(S8 LA	TITUDE	:39°1	9'37" LO	NGITUDE	8:123°	13'14	MRAN &
Conflu	ience l	Locatica	HABI	D: Redwo TAT M	od Va EAN \$	LEGAL DI	ESCRIPTIO	N: 14NR12	NS8 LA MEAN	11TUDB	::39°1 MEA	9'37" LOI	MGITUDE	8:123° MB	13'14	MEAN &
Conflu UNI MEASUE	ience i ITS RED	Location UNITS FULLY	A: QUA HABI TYPE	D: Redwo TAT M UND	od Va EAN % ERCUI	LEGAL DI MEAN ' SW	RSCRIPTIO	MEAN &	IS8 LA MEAN TER	R.	MEA AQUA	9'37" LO	MEAN 4 WHITE	S: 123 ° ME BOUL	13 14 IAN ‡ DERS	MBAN & BEDROCK LEDGES
Conflu UNI MRASUF	ience i LTS NE	Location UNITS FULLY RASURED	HABI	D: Redwo TAT M UND	od Va EAN % ERCUI BANKS	IEGAL DI MEAN ' SWI	ESCRIPTIO	N: 14NR12V MEAN \$ D ROOT MASS	(S8 LA MEAN TER VEGETATIO	TITUDE 1 R. ON VE	MEA MEA AQUA	9'37" LO N % I FIC ION	NGITUDE MEAN % WHITE WATER	S: 123 ° ME BOUL	13'14 AN * DERS	MRAN & BEDROCK LEDGES
Conflu UNI MEASUE	ience i ITS RED Me	UNITS FULLY RASURED	HABI TYPE	D: Redwo TAT M UND	od Va EAN % ERCUI BANKS	A LEGAL Di MEAN : SWI	SCRIPTIO	N: 14NR12V MEAN & D ROOT MASS	NSE LA MEAN TER VEGETATI	R. NV R.	MEA MEA AQUA GETAT	9'37" LO N ¥ I FIC ION	NGITUDE MEAN % WHITE WATER	S: 123 ° ME BOUL	13'14 AN * DERS	MEAN & BEDROCK LEDGES
Conflu UNI MEASUR	Ience) ITS NED NE	UNITS FULLY RASURED	HABI TYPE	D: Redwo TAT M UND	od Va EAN ¥ ERCUI BANKS	HEGAL DI	ESCRIPTIO	N: 14NR121 MEAN & D ROOT MASS	(58 LA) MEAN TER VEGETATIO	R. ON VE	:: 39°1 MEA AQUA KIETAT	9'37" LOI N % I FIC ION	NGITUDE MEAN % WHITE WATER	KE NE BOUL	13 14	MRAN & BEDROCK LEDGES
Conflu UNI MRASUR	Iance I ITS RED M	UNITS FULLY RASURED	A: QUA HABI TYPE RUN	D: Redwo TAT M UND	cd Va EAN % ERCUI BANKS	ILEGAL DI	RSCRIPTIO	N: 14NR121	(S8 LA) MEAN TER VEGETATI	R. ON VE	MEAL MEAL AQUA	9'37" LOI N % I FIC ION 0 0	NGITUDE MEAN % WHITE WATER 0 0	NE BOUL	13 14 IAN 1 DERS 0 25	MEAN & BEDROCK LEDGES 0 53
Conflu UNI MRASUR	Innce I ITS EED M 1 5	UNITS FULLY RASURED	HABI HABI TYPE RUN MCP	D: Redwo TAT M UND	ed Va EAN % ERCUI BANKS	MEAL DI	RSCRIPTIO	N: 14NR121 HEAN % BOOT MASS MASS 0 0 0 0 0 0 0 0	(58 LA MEAN TER VEGETATI	R. ON VE	MEA MEA AQUA	9'37" LOI N % I FIC ION 0 0 0	NGITUDE MEAN % WHITE WATER 0 0	S: 123 ° MB BOUL	13'14 200 \$ DERS 0 25 0	MEAN & BEDROCK LEDGES 0 53 0
Conflu UNI MRASUR	Ience I ITS EED M 1 5 8	UNITS FULLY RASURED 0 4 0	A: QUAI HABI' TYPE RUN MCP DRY	D: Redwo TAT M UND	ed Va EAN % ERCUT BANKS 0 23 0	MEAL Di MEAN : SW0	SCRIPTIO	MEAN \$ D EOOT MASS D 0 D 0 D 0 D 0	(S8 LA MEAN TER VEGETATI	R. ON VE	MEA MEA AQUA KJETAT	9'37" LOI N % I FIC ION 0 0 0	MEAN WHITE WATER 0 0 0	S: 123 °	0 25 0	MEAN & BEDROCK LEDGES 0 53 0
Conflu UNI MEASUE	Lience I LTS NE 1 5 8	UNITS FULLY RASURED 0 4 0	HABI HABI TYPE RUN MCP DRY	D: Redwo	od Va EAN % ERCUI BANKS 0 23 0	A LEGAL DI MEAN SWO	ESCRIPTIO	MEAN \$ MEAN \$ D EOOT MASS D 0 0 0 0 0 0 0 0	(S8 LA) MEAN TER VEGETATI	R. ON VE	MEA MEA AQUA GETAT	9'37" LOI N % FIC ION 0 0	MEAN ¥ WHITE WATER 0 0	S: 123 °	13'14 IAN * DERS 0 25 0	MEAN & BEDROCK LEDGES 0 53 0
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Conflu UNI MRASUR	Internet I ITS I I S 8	UNITS FULLY RASURED 0 4 0	HABI TYPE RUN MCP DRY	D: Redwo	ean * EAN * ERCUI EANKS	A LEGAL DI MEAN 1 S SW0 3	ESCRIPTIO	MEAN \$ D EOOT MASS D 0 D 0	NS8 LA MEAN TER VEGETATI	TITUDE R. ON VE	NEA MEA AQUA KIETAT	9'37" LO	NGITUDE MEAN % WHITE WATER 0 0 0	S: 123 °	13'14 TAN 1 DERS 0 25 0	MEAN & BEDROCK LEDGES 0 53 0
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Conflu UNI MEASUE	Innce I ITS ED I 5 8 eek	UNITS FULLY RASURED 0 4 0	A: QUA HABI TYPE RUN MCP DRY	D: Redwo	ed Va EAN % ERCUI EANKS 0 23 0	A LEGAL DI MEAN 1 S SW0	ESCRIPTIO	DN: 14NR121	198 LA MEAN TER VEGETATI	R. ON VE	HEA MEA AQUA KIETAT	9'37" LOI N % I	MEAN WHITE WATER 0 0	S: 123 °	13'14 SAN ‡ DERS 0 25 0	MEAN & BEDROCK LEDGES 0 53 0
Conflu UNI MEASUR	Innce I ITS RED I 5 8 eek supeak	UNITS FULLY RASURED 0 4 0	A: QUAI HABI' TYPE RUN MCP DRY	D: Redwo	ed Va EAN % ERCUI BANKS C 23 C	A LEGAL DI MEAN : SWD	SCRIPTIC	MEAN 4 DEAN 4 DEAN 4 DEAT 4 DE	198 LA MEAN TER VEGETATI (e: Russian Dates: 09/	Image: state	:: 39°1 MEA AQUA XIETAT	9'37" LOI N % I	MEAN % WHITE WATER 0 0	S: 123 °	0 0 25 0	MEAN 1 BEDROCK LEDGES 0 53 0
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Conflu UNI MEASUR	Itence 1 ITS RED M 1 5 8 8 eeek sureas eeek sureas e Locat	UNITS FULLY RASURED 0 4 0 4 0	HABI' TYPE RUN MCP DRY	D: Redwo TAT M UND S UNSTRATES	od Va EAN \$ ERCUI BANKS 0 23 0 0 BY HA 3AL DE	A LEGAL DI MEAN : SWI ABITAT TYPE ABITAT TYPE ESCRIPTION:	SCRIPTIO	N: 14NR123 MEAN 4 D EOOT MA35 D 0 0 D 0 Draines Survey 8 LATITE	KS8 LA MEAN TER VEGETATI (e: Russian Dates: 09/)2:39:19'37	R. ON VE	MEA MEA AQUA KIETAT	9'37" LOI N % I	MEAN % WHITE WATER 0 0	S: 123 *	0 25 0	MEAN 1 BEDROCK LEDGES 0 53 0
Conflu UNI MEASUR	Itence 1 ITS RED M 1 5 8 8 eeek sureas eeek	UNITS FULLY RASURED 0 4 0 4 0	HABI' TYPE RUN MCP DRY	D: Redwo TAT M UND	od Va EAN \$ ERCUI 23 C DY HA 3AL DE	A LEGAL DI MEAN : C SWI ABITAT TYPE ABITAT TYPE ASCRIPTION:	SCRIPTIO	N: 14NR123 MEAN 4 D EOOT MA35 D 0 0 Draines Survey 8 LATITE	KS8 LA MEAN TER VEGETATI (e: Russian Dates: 09/)2:39*19*37 & TO	1 1 1 1 2 0 0 <td>HEA MEA AQUA KIETAT</td> <td>9'37" LOI N % I I FIC ION 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>MEAN % WHITE WATER 0 0 0</td> <td>MB BOUL</td> <td>13'14 IAN ‡ DERS 0 25 0</td> <td>MEAN & BEDROCK LEDGES 0 53 0</td>	HEA MEA AQUA KIETAT	9'37" LOI N % I I FIC ION 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MEAN % WHITE WATER 0 0 0	MB BOUL	13'14 IAN ‡ DERS 0 25 0	MEAN & BEDROCK LEDGES 0 53 0
Conflu UNI MEASUF	Internet 1 Internet 1 Salar Substance Electric UNIT	Location UNITS FULLY RASURED 0 4 0 4 0 0 4 0 0 1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	HABI' TYPE RUN MCP DRY INANT S	D: Redwo TAT M UND UND UND VDSTRATES tood Va LB toTAL	od Va EAN \$ ERCUI 23 C DY HA SAL DE	A LEGAL DI MEAN : r SWI) ABITAT TYPE SSCRIPTION: * TOTAL SAMP	ESCRIPTIO	N: 14NR123 MEAN & DEOOT MA33 DO 0 Drainag Survey 8 LATITUE # TOTAL GRAVEL	KS8 LA MEAN TER VEGETATI (e: Russian Dates: 05/)E:39:15'37 \$ TO SH COB	TITUDB	100 (100 (100 (100 (100 (100 (100 (100	9'37" LOI N % I I FIC ION 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MEAN % WHITE WATER 0 0 0	MB BOUL	0 25 0	MEAN & BEDROCK LEDGES 0 53 0
Conflu UNI MEASUE rral Cr ble 6 - nfluence TOTAL ABITAT UNITS	Inner 1 ITS 22D M 1 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	UNITS FULLY RASURED 0 4 0 4 0 4 0 1 1 1 1 1 1 1 1 1 1 1 1 1	HABI' TYPE RUN MCP DRY INANT S D: Redu	D: Redwo TAT M UND UND UND STRATES wood Va LB TOTAL SILT/CLAT DOMINANT	od Va EAN % ERCUI EANKS C 23 C C BY HA 3AL DE	A LEGAL DI MEAN : SWI ABITAT TYPE ESCRIPTION: ADITAL SAND DONTRANT	ESCRIPTIO	N: 14NR121 MEAN & DEOOT MA35 DO 0 Draines Survey 8 LATITUE # TOTAL GRAVEL DOMINANT	NS8 LA MEAN TER VEGETATI (e: Russian Dates: 09/ ME:39*19'37 È TO AM COB DOMIN	TITUDE R. CON VE 0 0 0 0 0 0 0 0 0 0 0 0 0	MEA MEA AQUA AQUA XSETAT	9'37" LOI N % I I FIC ION 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MEAN % WHITE WATER 0 0 0 0 0	MB BOUL	0 25 0	MEAN & BEDROCK LEDGES 0 53 0 4 53 0
Conflu UNI MEASUE rral Cr ble 6 - nfluence TOTAL ABITAT UNITS	Inner 1 UTS 22D M 1 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Location UNITS FULLY RASURED 0 4 0 4 0 0 4 0 0 4 0 0 4 0 0 1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	A: QUAJ HABI' TYPE RUN MCP DRY INANT S D: Redu	D: Redwo TAT M UND UND UDSTRATES wood Va LB totaL SILT/CLAY DOMINANT	od Va EAN % ERCUI BANKS C 23 C C BY HA 3AL DE	A LEGAL DI MEAN : SWI ABITAT TYPE ABITAT TYPE SSCIPTION: TOTAL SAND DOMINANT	SCRIPTIO	N: 14NR123 MEAN & DEOOT MA35 D 0 0 Draines Survey 8 LATITE \$ TOTAL GRAVEL DOMINANT	NS8 LA MEAN TER VEGETATI (e: Russian Dates: 09/)2:39*19*37 \$ TO AM COB DOMIN	TITUDE R. ON VE 0 0 0 0 0 0 1 River 221/01 te tal	(1992) (1992)	9'37" LOI N 1 1 I FIC ION 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MEAN & WHITE WATER 0 0 0 0	MB BOUL	0 25 0	MEAN & BEDROCK LEDGES 0 53 0 4 53 0
Conflu UNI MEASUE rral Cr ble 6 - nfluence TOTAL ABITAT UNITS	Inner 1 ITS 22D M 1 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Location UNITS FULLY RASURED 0 4 0 4 0 4 0 0 4 0 0 4 0 0 4 0 0 1 8 7 8 7 8 1 8 8 1 8 8 1 8 1 8 1 8 1 1 8 1	A: QUAJ HABI' TYPE RUN MCP DRY INANT S D: Redw ABITAT TPS	D: Redwo TAT M UND UND UND UND UND UND UND UND UND UND	od Va EAN % ERCUI BANKS C 23 C C BY HA 3AL DE	A LEGAL DI MEAN : SWI ABITAT TYPE SSCRIPTION: TOTAL SAM DOMINANT 0	ESCRIPTIO	N: 14NR123 MEAN 4 D EOOT MA39 D 0 0 Draines Survey 8 LATITUE 4 TOTAL GRAVEL DOMINANT	NSS LA MEAN TER VEGETATIO (e: Russian Dates: 09/ XE:39*19'37 È TO SM COB DOMIN	TITUDE R. CON VE 0 0 0 0 0 0 0 0 0 0 0 0 0	(1992) (1992)	9'37" LOI N % I I FIC ION 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MEAN % WHITE WATER 0 0 0 0	MB BOUL	0 25 0	MEAN & BEDROCK LEDGES 0 53 0 53 0 4 53 0 53 0 53 0 53 0 53 0
Conflu UNI MEASUE	Internet 1 ITS RED M I S S R S UNCAR S UNCAR S UNCAR S UNCAR S UNCAR S UNCAR S UNCAR S UNCAR S UNCAR S I S S S S S S S S S S S S S S S S S	UNITS FULLY RASURED 0 4 0 4 0 4 0 0 1 1 8 1 1 8 2 1 1 8 2 2 1 1 8 2 2 1	A: QUAJ HABI' TYPE RUN MCP DRY DRY DRY DRY CR ABITAT TPE CR	D: Redwo TAT M UND UND UND UND UND UND UND UND UND UND	od Va EAN 3 ERCUT BANKS C 23 C 23 C	A LEGAL DI MEAN : SWI ABITAT TYPE SSCRIPTION : * TOTAL SAND DOMINIANT 0 0 0	23CRIPTIO	N: 14NR123 MEAN & DEOOT MA3S DO 0 Drainag Survey 8 LATITUE GRAVEL DOMINANT 0 0	KS8 LA MEAN TER VEGETATI (e: Russian Dates: 05/)2:39:19'37 \$ TO SM COB DOMIN	TITUDB * R. ON VE 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	:: 39° 1 MEA AQUA XJETAT XJETAT TTUDE : 1 I LG DC	9'37" LOI N % I I FIC ION 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MEAN % WHITE WATER 0 0 0 0	MB BOUL F TOTAI SOULDES MINANT	13 14 IAN + DERS 0 25 0 0 25 0	MEAN & BEDROCK LEDGES 0 53 0 53 0 53 0 53 0 53 0 53 0 7 54 5 7 54 5 7 5 7 5 7 5 7 5 7 5 7 5 7

TABLE 8. FISH HABITAT INVENTORY DATA SUMMARY

STREAM NAME: Corral Creek SAMPLE DATES: 09/21/01 to 09/26/01 STREAM LENGTH: 10913 ft. LOCATION OF STREAM MOUTH: USGS Quad Map: Redwood Va Legal Description: 14NR12WS8

Latitude: 39°19'37" Longitude: 123°13'14"

SUMMARY OF FISH HABITAT ELEMENTS BY STREAM REACH

STREAM REACH 1 Canopy Density: 52% Channel Type: F1 Coniferous Component: 30% Channel Length: 10913 ft. Deciduous Component: 70% Riffle/flatwater Mean Width: 1 ft. Pools by Stream Length: 1% Total Pool Mean Depth: 1.8 ft. Pools >=3 ft.deep: 40% Base Flow: 0.0 cfs Mean Pool Shelter Rtn: 10 Water: 59 - 64 °F Air: 72 -80 °F Dom. Shelter: Bedrock Ledges Dom. Bank Veg.: Deciduous Trees Occurrence of LOD: 0% Vegetative Cover: 38% Dry Channel: 10784 ft. Dom. Bank Substrate: Bedrock Embeddness Value: 1. 0% 2.0% 3. 60% 4. 40% 5. 0%

CORRAL CREEK LEVEL II HABITAT TYPES BY PERCENT OCCURRENCE



GRAPH 1

CORRAL CREEK LEVEL II HABITAT TYPES BY PERCENT TOTAL LENGTH



CORRAL CREEK LEVEL IV HABITAT TYPES BY PERCENT OCCURRENCE



CORRAL CREEK LEVEL I POOL HABITAT TYPES BY PERCENT OCCURRENCE





CORRAL CREEK PERCENT EMBEDDEDNESS



CORRAL CREEK MEAN PERCENT COVER TYPES IN POOLS







CORRAL CREEK MEAN PERCENT CANOPY



GRAPH 9





CORRAL CREEK DOMINANT BANK VEGETATION IN SURVEY REACH



	411	Со	rral Creek		
ydrologic Sub-Areas cover	ed by the watershed:	:		Tributa	ry to Russian River
Name:	LLId: (1:24k)	Cοι	unty:	Tributa	ry to
Corral Creek	1232208393350	Men	ndocino	Tributa	ry to
ocation: T: 17N	R: 12W	S: 8	Latitude	39.3350562256986	Longitude 123.22084638634
Hydrologic Boundary Delinea	tion: Watershed bou ArcMap 8.3 (Ar hydrologic routi	indaries were o cInfo version). ing.	delineated using A 1:24k strear	ı the Watershed Point too n network was "burned" i	ol in ArcHydro, running under nto the underlying DEM to enfo
Aerial Photos (Source):	For Mendocino projection. For NAD83 projecti	County waters Sonoma Coun on are also av	sheds, 1993 US ity watersheds, ailable.	GS DOQQs are available 2000 County-created orth	e in the Teale Albers, NAD27 nophotos in the State Plane,
Stream Order: 3	- Total Le	ength:	3.13 Mile	s Note: Length is for	r the
Note: Stream order is by St CDF-NCWAP "nchydro1" 1	rahler method, record :24k streams layer.	ed in	5.05 Km	USGS blue-line 1: stream.	24,000
Drainage Area:	889 Hectares		Elevati	ons: Mouth:	856 feet
	2198 Acres			Headwaters:	2484 feet
	3.43 sq. mi.			Note: Headwate elevation found i	rs elevation is the highest n the watershed.
Lakes in Watershed:	Number: 0	Surface	area: 0	sa mi	
Lakes in Watershed.	Note: Source for lake	es data is the l	USGS-DFG 1.1	00k lakes laver "lakes sh	n"
Fish Species (as indica	ted by historical created by Bob C	oey): None	Ģ		
saimonid streams layer					
Saimonia streams layer Ownership, for the wate	ershed, in acres (a	nd % of tota	I watershed)	1 1	
saimonia streams layer Ownership, for the wate Federal:	ershed, in acres (a	nd % of tota	il watershed) Pri	: vate:	
Saimonia streams layer Ownership, for the wate Federal: 0.0 acres	ershed, in acres (a State: 0.0	nd % of tota Local: 0.0	al watershed) Pri 21:	: vate: 97.5	
Saimonia streams layer Ownership, for the wate Federal: 0.0 acres 0.00 %	ershed, in acres (a State: 0.0 0.00 %	nd % of tota Local: 0.0 0.00	al watershed) Pri 21' % 10	: vate: 97.5 0.00 %	
Saimonia streams layer Ownership, for the wate Federal: 0.0 acres 0.00 % Note: Source for owneship	ershed, in acres (a State: 0.0 0.00 % data is 2002 DFG-CC	nd % of tota Local: 0.0 0.00 XR "ccr_public.	al watershed) Pri 21: % 10 _lands.shp" GIS	: vate: 97.5 0.00 % ; layer.	
Saimonia streams layer Ownership, for the wate Federal: 0.0 acres 0.00 % Note: Source for owneship Major Land Uses in the	ershed, in acres (a State: 0.0 0.00 % data is 2002 DFG-CC	nd % of tota Local: 0.0 0.00 XR "ccr_public. res (and % c	al watershed) Pri 21 % 10 _lands.shp" GIS >f total waters	: vate: 97.5 0.00 % ; layer. ; hed)	
Saimonia streams layer Ownership, for the wate Federal: 0.0 acres 0.00 % Note: Source for owneship Major Land Uses in the Mixed hardwood/conifer:	ershed, in acres (a State: 0.0 0.00 % data is 2002 DFG-CC Watershed, in ac Hardwood:	Ind % of tota Local: 0.0 0.00 XR "ccr_public res (and % c Con	al watershed) Pri 21 % 10 _lands.shp" GIS of total waters	: vate: 97.5 0.00 % ; layer. ; hed) Agriculture:	Urban:
Saimonia streams layer Ownership, for the wate Federal: 0.0 acres 0.00 % Note: Source for owneship Major Land Uses in the Mixed hardwood/conifer: 252.81 acres	ershed, in acres (a State: 0.0 0.00 % data is 2002 DFG-CC Watershed, in ac Hardwood: 1547.02	Ind % of tota Local: 0.0 0.00 Cres (and % c Con 2.93	al watershed) Pri 21 % 10 _lands.shp" GIS of total waters ifer: }	: vate: 97.5 0.00 % i layer. shed) Agriculture: 0.00	Urban: 0.00
Saimonid Streams layer Ownership, for the wate Federal: 0.0 % Note: Source for owneship Major Land Uses in the Mixed hardwood/conifer: 252.81 acres 11.5 %	ershed, in acres (a State: 0.0 0.00 % data is 2002 DFG-CC Watershed, in ac Hardwood: 1547.02 70.5 %	Ind % of tota Local: 0.0 0.00 CR "ccr_public res (and % c Con 2.93	al watershed) Pri 21 % 10 _lands.shp" GIS of total waters iffer: } 0.1 %	: vate: 97.5 0.00 % 3 layer. 3 shed) Agriculture: 0.00 0.0 %	Urban: 0.00 0.0 %
Saimonia streams layer Ownership, for the wate Federal: 0.0 acres 0.00 % Note: Source for owneship Major Land Uses in the Mixed hardwood/conifer: 252.81 acres 11.5 % Shrub:	ershed, in acres (a State: 0.0 0.00 % data is 2002 DFG-CC Watershed, in ac Hardwood: 1547.02 70.5 % Herbaceous:	Ind % of tota Local: 0.0 0.00 CR "ccr_public res (and % c Con 2.93 Barren/	al watershed) Pri 21 % 10 _lands.shp" GIS of total waters ifer: } 0.1 % 'rock:	: vate: 97.5 0.00 % 3 layer. 3 shed) Agriculture: 0.00 0.0 % Water:	Urban: 0.00 0.0 %
Saimonid Streams layer Ownership, for the wate Federal: 0.0 % Note: Source for owneship Major Land Uses in the Mixed hardwood/conifer: 252.81 acres 11.5 % Shrub: 202.78	ershed, in acres (a State: 0.0 0.00 % data is 2002 DFG-CC Watershed, in act Hardwood: 1547.02 70.5 % Herbaceous: 189.65	Ind % of tota Local: 0.0 CR "ccr_public res (and % c Con 2.93 Barren/ 0.00	al watershed) Pri 21 % 10 _lands.shp" GIS of total waters iffer: } 0.1 % /rock:	: vate: 97.5 0.00 % 3 layer. 3 hed) Agriculture: 0.00 0.0 % Water: 0.00	Urban: 0.00 0.0 %

Watershed Hydrold 411 Corral Creek

USGS 7.5' Topographic Quads completely or partially in the watershed:

Quad Name	USGS Code
REDWOOD VALLEY	39123C2

Endangered/Threatened/Sensitive Species: (California Natural Diversity Database, May 5, 2003 version)

Hydrologic Sub-Areas covered by the watershed

Hydrologic Sub-Area Name:	ID code (RBUAS)	Hydrologic Area Name	% of watershed in this HSA
Tomki Creek	111162	Upper Main Eel River	0.01
Forsythe Creek	111433	Upper Russian River	99.60
Coyote Valley	111432	Upper Russian River	0.39