Attachment 3.10A Habitat Mapping Report

Attachment 3.10A To Study 3.10 Instream Flow Upstream of USACE's Englebright Reservoir Study

Habitat Mapping Report

Summary

The Yuba County Water Agency (YCWA or Licensee) mapped habitat types and channel features along a total distance of 25.55 miles for the combined reaches of: 1) the North Yuba River downstream of New Bullards Bar Dam; 2) Middle Yuba River downstream of Our House Diversion Dam; 4) Oregon Creek, a tributary to the Middle Yuba River, downstream of Log Cabin Diversion Dam; and 4) the Yuba River from the North and Middle Yuba river confluence to the United States Army Corps of Engineer's (USACE) Englebright Reservoir (collectively referred to as the reaches).

Except for Oregon Creek, accessibility by foot to most sections of the reaches is limited. Therefore, except for Oregon Creek, the reaches were mapped using a low-altitude aerial video of the reaches, with ground-based ground-truth mapping conducted at five accessible locations. Oregon Creek was mapped entirely by ground-based mapping because it was accessible by foot and was not visible using the aerial video due to overhanging vegetation.

With the exception of Oregon Creek, the reaches are generally confined by bedrock and boulder slopes, with bedrock and boulders limiting vertical and lateral movement. There are few alluvial reaches (e.g., reaches that are composed of mobile and deformable substrate). Pocketwater and mid-channel pools are the dominant habitats, both in length and frequency. Freemans Crossing and Emory Island on the Middle Yuba River are notable exceptions and likely represent long-term sediment depositional sections. Large woody debris and spawning-sized gravel are uncommon, bank erosion is low, channel lateral and vertical stability is high, and there are numerous barriers to foot access. The lower mid-section of Oregon Creek is dominated by bedrock falls and steeper habitat types, but low gradient riffles and mid-channel pools within a more deformable substrate are common in the middle to upper section of Oregon Creek.

1.0 <u>Introduction</u>

YCWA intends to apply to the Federal Energy Regulatory Commission (FERC or Commission) for a new license for the Yuba River Development Project (Project) by April 30, 2014. At the current time, YCWA intends to relicense the Project using FERC's Integrated Licensing Process (ILP), which requires YCWA file with FERC a Pre-Application Document (PAD), which would include existing, relevant and reasonably available information regarding resources that could potentially be affected by continued operation of the Project. YCWA will file the PAD with its Notice of Intent (NOI) to File an Application for a New License between five and five and one-half years before the existing license expires on April 30, 2016.

The purpose of this habitat mapping effort was to develop specific, comprehensive, and detailed information on aquatic habitat and channel morphology characteristics of all stream reaches affected by the Project upstream of the normal maximum water surface elevation of USACE's Englebright Reservoir. The report includes a brief description of habitat mapping and channel characterization objectives, the study area, methods, and results. Prior to this effort, there has been no previous coordinated approach to habitat map the reaches, though some habitat mapping occurred in sections of some reaches. Therefore, there are significant gaps in existing data for the purposes of assessing habitat quantity, quality, and distribution in the Project-affected reaches. An initial "desktop" channel characterization effort was done using gradient, confinement, geology and the aerial video, with no ground-truth effort. The initial classification results are presented in YCWA's Preliminary Information Package (YCWA 2009a).

Habitat mapping and channel characterization was conducted prior to filing the NOI and PAD because development of aquatic study plans depends on a common understanding among federal, state and local agencies, tribes, non-governmental organizations, interested businesses, unaffiliated members of the public (collectively referred to as Relicensing Participants) and Licensee of the general physical and biological character of the streams affected by the Project.

1.1 Existing Information

Licensee found sources of existing information related to habitat mapping and fish passage barriers.

Two sources of habitat mapping information were found, each of which were incorporated into the Licensee's habitat mapping described in this document. The first source was mapping in the Middle and North Yuba River conducted in 2003 as part of the Upper Yuba River Studies Program (SWS 2006). Both ground-truth data collection and video mapping were done. Licensee reviewed these 2003 data during the development of the habitat mapping results described in this document. However, in general, License considered the 2009 data collection more reliable because 7 years had passed since the 2003 data were collected and some changes may have occurred. For instance, the Middle Yuba River area was ground-truthed below Oregon Creek within Freemans Crossing. This section of stream is within a depositional area where gravel and cobble bars are common and heavy recreation and mining use occurs. So, the potential for change over 7 years is high. However, based on the comparison of the 2009 aerial video to the 2003 ground data, the results of the two mapping efforts are very similar. North Yuba was video mapped but the quality of the video was insufficient for accurate habitat assessment and the 2009 video and 2009 ground-truth data were used exclusively.

The second source of mapping information was in the area of Our House Diversion Dam. YCWA plans to consult with agencies to gain approval to pass gravel, cobble, and sediment through Our House Diversion Dam. If approved, the sediment pass-through (SPT) events would occur during storm events anticipated to produce sufficient flows to transport material through Our House Diversion Dam impoundment and distribute the material downstream of the dam, thereby eliminating the need for dredging, decreasing potential negative environmental effects, and reducing operation costs. To prepare for agency consultation regarding SPT and select potential assessment sites, an evaluation of habitat conditions downstream of Our House Diversion Dam was done in November 2009. These data were collected using a very similar protocol to the habitat mapping done in summer 2009. Data collected during the November 2009 SPT habitat mapping were incorporated into the overall habitat mapping effort described in this document.

With regards to fish passage barriers in the main stems of the Yuba River and Middle Yuba River from USACE's Englebright Reservoir to Our House Diversion Dam, two sources of information occur. Both sources focused on barriers to upstream passage by Chinook salmon and steelhead, neither of which occur upstream of USACE's Englebright Dam. The first source is Vogel (2006) and titled *Assessment of Adult Anadromous Salmonid Migration Barriers and Holding Habitats in the Upper Yuba River – Appendix C*. In general, Vogel applied the physical parameters of Powers and Orsborn (1985) to determine how each potential barrier may affect upstream steelhead and salmon passage for spawning in spring (Vogel 2006.). In 2002, Vogel surveyed from a helicopter the mainstems of the Yuba River and Middle Yuba River above USACE's Englebright Reservoir to identify potential natural barriers to upstream steelhead and salmon passage for spawning in spring.¹ In August 2003 and 2005, he conducted field assessments of the potential barriers identified from the helicopter. Vogel identified high and low flow barriers and considered break the between the two to be flows of about 100 to 200 cfs.

The second source is Gast et al. (2005) and titled *Middle and South Yuba Rainbow Trout* (*Oncorhynchus mykiss*) *Distribution and Abundance Dive Counts August 2004 – Appendix.* The authors conducted mainstem fish distribution surveys in 2004 on the Middle Yuba River. All barriers encountered were photographed and qualitatively described, with estimated vertical heights and GPS positions recorded for each barrier.

Based on these studies¹ two potential natural barriers in the mainstem of the Middle Yuba River below Our House Diversion Dam were identified. No barriers were identified within the section of the Yuba River between USACE's Englebright Reservoir and the Middle Yuba River. The potential barriers identified by Vogel and Gast et al. are described in Table 1.1-1.

Table 1.1-1. Potential barriers to upstream passage by salmon and steelhead in the mainstem of the Middle Yuba River below Our House Diversion Dam as identified by Vogel (2006) and Gast et al. (2005).

Location (River Mile)	Feature	Comments
0.2	Low-Flow Barrier	Site visit, estimated 5 feet high, would only be low-flow barrier to upstream migration of small fish.
0.4	Low-Flow Barrier	site visit, 2 falls in series, lower falls 9 feet, upper falls 6 feet, shallow (<3 feet) plunge

¹ While Vogel and Gast, et al. focused on potential barriers to the upstream migration of larger salmon and steelhead, the barriers identified by Vogel and Gast, et al. would likely also impede or prevent upstream passage of resident fish, including hardhead and trout.

2.0 <u>Methods</u>

Habitat mapping generally followed standard methods similar to those applied in other recent relicensings in California, including the Yuba-Bear/Drum-Spaulding Project on the Middle and South Yuba rivers. Habitat was mapped using a combination of ground-based surveys and a low-altitude helicopter aerial video (YCWA 2009b). The video provided a cost effective means of habitat mapping the largely inaccessible reaches of the reaches. A portion of all Project-affected reaches mapped via the aerial video were also ground-truthed with ground-based mapping data to assure overall accuracy of the habitat mapping results.

Channel characterization of the reaches was performed as an initial effort, using available topographic,² geologic,³ and ESRI/NAIP one-meter pixel color aerial imagery ortho-photos from 2005.⁴ The effort approximated a Level 1 Rosgen classification (Rosgen 1996), but was not considered as such because there was no field checking because the initial effort used only remote-sensing data. Resulting data were provided in the Section 7.1 of the Preliminary Information Package (YCWA 2009a).

To prepare for the ground-based habitat mapping, Licensee reviewed the initial classification, longitudinal profile and geologic types of the reaches. Stream longitudinal profiles were measured using maps available from Terrain Navigator Pro© (V. 7) software. Distance between contour lines was measured and a longitudinal profile was created. Map-based gradient, while an estimate, is often a good indicator of stream energy and process. Geology was determined using the geologic map of the United States Geological Survey (USGS) Chico quadrangle. Geologic parent material is often important in sediment supply, substrate type, and channel form control.

Field data were collected under summer/fall 2009 low-flow conditions to maximize access and safety during fieldwork and evaluate habitat composition during the seasonal period of greatest habitat heterogeneity. The protocol was to assess habitat at the flow at which the survey occurred. Otherwise, anticipating habitat based on differences in discharge is too subjective.

2.1 Study Area

Habitat mapping occurred in the following reaches:

- Middle Yuba River Oregon Creek and Our House Diversion Dam Reaches: 12.0 miles from the confluence with the North Yuba River to Our House Diversion Dam
- Oregon Creek Reach Log Cabin Diversion Dam Reach: 4.1 miles from the confluence with the Middle Yuba River to the Log Cabin Diversion Dam

 $^{^2}$ Derived from Terrain Navigator Pro V.7 available from Maptech, Inc. $^{\odot}$

³ Geologic Map of the Chico Quadrangle. 1992. California Department of Conservation, Division of Mines and Geology. Compiled by G.J. Saucedo and D.L. Wagner.

⁴ <u>http://casil.ucdavis.edu/casil/imageryBaseMapsLandCover/imagery/naip_2005/county_mosaics/</u>

- North Yuba River New Bullards Bar Dam Reach: 2.3 miles from the confluence with the Middle Yuba River to the New Bullards Bar Dam
- Yuba River New Colgate Powerhouse and Middle/North Yuba River Reaches: 7.5 miles. Normal maximum water surface elevation of USACE's Englebright Reservoir (RM 32.2) to Middle Yuba/North Yuba river confluence at RM 39.7

2.2. Meso-Habitat and Channel Classification

A three-tiered habitat mapping classification system developed by Hawkins et al. (1993) was used to assist in the identification of individual habitat units in the field. Level III categories are generally modified/adopted from McCain et al. (1990). Figure 2.2-1 shows the relationship among the three levels. At the broadest level, Level I categorizes habitats as "fast water" and "slow water." In Level II, fast water is subdivided into two categories: turbulent and non-turbulent; slow water is also subdivided into two categories: scour pool and dammed pool.



Figure 2.2-1. Key to habitat types used in Yuba County Water Agency Project streams.

Habitat mapping used methods developed by Hawkins et al. (1993), McCain et al. (1990) and Flosi and Reynolds (1994). Each distinct habitat unit was numbered consecutively in an upstream direction, beginning at the downstream end of a designated reach. Habitat type descriptions are listed in Table 2.2-1. Channel and habitat characteristics shown in Figure 2.2-1 and Table 2.2-1 were assessed in all ground surveys, and the aerial video was used to assess channel and habitat types when streams were clearly visible in the aerial video. Dammed pools were infrequent to non-existent and pools that were dammed by large woody debris or other strong downstream control were so noted with an asterisk and a description was added in the comments (e.g., there was not another pool type for dammed mid-channel pools in the data summary).

Table 2.2-1.	Habitat types to	be used in	mapping for	the Yuba	County V	Water Ager	cy Project
(Adapted from	m McCain et al	. 1990, Arm	antrout 1998,	Payne 19	992, McM	ahon et al.	1996, and
Hawkins et al	. 1993).						

I.	I. Fast Water: Riffles, rapid, shallow stream sections with steep water surface gradient.										
	A. T	urbulent:	Channel units having swift current, high channel roughness (large substrate), steep gradient, and non- laminar flow and characterized by surface turbulence.								
		1. Fall:	Steep vertical drop in water surface elevation. Generally not modelable.								
		2. Cascade:	Series of alternating small falls and shallow pools; substrate usually bedrock and boulders. Gradient high (more than 4%). Generally not modelable.								
		3. Chute:	Narrow, confined channel with rapid, relatively unobstructed flow and bedrock substrate.								
		4. Rapid:	Deeper stream section with considerable surface agitation and swift current; large boulder and standing waves often present. Generally not modelable.								
		 5. Riffles: Shallow, lower-gradient channel units with moderate current velocity and some partially exposed substrate (usually cobble). Low gradient — Shallow with swift flowing, turbulent water. Partially exposed substrate dom by cobble. Gradient moderate (less than 4%). High gradient — moderately deep with swift flowing, turbulent water. Partially exposed substrate dominated by boulder. Gradient steep (greater than 4%). Generally not modelable. 									
	B. N	on-turbulent:	Channel units having low channel roughness, moderate gradient, laminar flow, and lack of surface turbulence.								
		1. Sheet: Shallow water flowing over smooth bedrock.									
		2. Run / Glide:	Shallow (glide) to deep (run) water flowing over a variety of different substrates.								
		3. Step Run	A sequence of runs separated by short riffle steps. Substrates are usually cobble and boulder dominated.								
		Swift flowing water with large boulder or bedrock obstructions creating eddies, small backwater, or scour holes. Gradient low to moderate.									
П.	II. Slow Water:		Pools; slow, deep stream sections with nearly flat water surface gradient.								
	A. 8	Scour Pool:	Formed by scouring action of current.								
		1. Trench:	Formed by scouring of bedrock.								
		2. Mid-channel:	Formed by channel constriction or downstream hydraulic control.								
		3. Convergence	Formed where two stream channels meet.								
		4. Lateral:	Formed where flow is deflected by a partial channel obstruction (streambank, rootwad, log, or boulder).								
		5. Plunge:	Formed by water dropping vertically over channel obstruction.								
	B. I	Dammed Pool:	Water impounded by channel blockage.								
		1. Debris:	Formed by rootwads and logs.								
	2. Beaver: Formed by beaver dam.										
	3. Landslide: Formed by large boulders.										
		4. Backwater:	Formed by obstructions along banks (Recorded as a comment or note to mapping).								
	5. Abandoned Channel: Formed along main channel, usually associated with gravel bars (Not part of the main active channel Recorded as a comment or note to mapping).										

2.3 Ground-Based Habitat Mapping

The extent of the ground-based habitat mapping surveys was determined based on the visibility of the stream from the aerial video, the length of the sub-reach within which the ground survey was to be done, and whether the reach was accessible. Ground-based mapping was conducted in those stream segments where habitat characteristics were not adequately discernible in the aerial video. Poor visibility in the video was usually due to thick overhead vegetation, steep topographic relief, or small channel size. Ground-based mapping was also conducted in stream segments that were conducive to mapping using aerial video. Ground-based mapping in streams visible in the video was used to "calibrate the eye" by physically measuring and typing specific habitat units observed in the video, thereby "ground truthing." Meso-habitat units assessed on the ground were then "typed" in the remainder of the stream sub-reach using the video. The physical parameters (e.g., bankfull width, pool depth, substrate) measured for each meso-habitat unit during ground-based mapping are expected to be similar for those same meso-habitat units throughout the remainder of the sub-reach.

Except for Oregon Creek, the reaches were mapped using a combination of ground-based mapping and aerial video. Field measurements were necessarily limited because safe foot access was very limited (Table 2.3-1). There were only limited locations where the larger channels could be accessed, but Oregon Creek was fully accessible along the entire length.

Project Reach	Access / Difficulty	Description					
		Five access locations:					
		 Access to lower section of reach from junction with North Yuba River down YCWA access road. Follow Middle Yuba River upstream for about 0.3 mile through boulders and falls until vertical cliffs limit further access at higher flows. 					
Middle Yuke Diver	Fair/Moderately Easy	 Access to reach downstream of Hwy 49 via stream-adjacent road (Moonshine Road), but must cross or be adjacent to private property. Good access, low difficulty. 					
(Our House Diversion Dam to Confluence with North Yuba River)		 Access to reach upstream of Hwy 49/Oregon Creek through slightly difficult walk along Middle Yuba River Trail for a short distance. No limit to upstream access within at least the first 1-2 mi upstream of Oregon Creek. 					
		 Access to reach via private road. Unknown difficulty. We were not able to gain permission to cross this private land. 					
		 Access to reach downstream of Our House Diversion Dam. Moderate difficulty walking downstream/numerous crossings of boulder- dominated runs or cobble-dominated pool tails. Vertical cliffs limit further downstream access from this location within about 1 mile of dam. 					
Oregon Creek (Log Cabin Diversion Dam to Confluence with Middle Yuba River)	Good/Easy/Moderately Difficult	Most of the creek is accessible though blackberry vines, private property and some vertical walls limit access to certain locations (which can be avoided by going upstream or downstream). Most difficult is between the upper end of Celestial Valley, which is near the middle of the reach, and Log Cabin Diversion Dam – private property, no stream-adjacent road like in the remainder of creek, must walk downstream from Log House Dam or upstream via end of old log yard. Next difficult section is upstream of junction with Middle Yuba to gage site where creek is steepest and falls must be traversed (moderately difficult but nothing to stop one from walking entire stream).					

Table 2.3-1. Access for YCWA's Project Reaches upstream of Englebright Reservoir.

Table 2.3-1. (continued)

Project Reach	Access / Difficulty	Description
North Yuba River New Bullards Bar Dam to Middle Yuba River) (continued)	Poor/Difficult/Limited Distances Accessible (continued)	 Two access locations: Access to lower reach at junction with Middle Yuba River only down YCWA access road, cross North Yuba River below junction and walk upstream through house-sized boulders and past deep pools. Access beyond 1-mi upstream from junction long and difficult walk Access to upper reach below New Bullards Bar Dam from road below dam. Must have boat to cross pool at base of dam as vertical walls limit access. Once across pool, stream is crossable, moderate difficulty for about .75 mi where vertical cliffs limit further access downstream.
Yuba River (Confluence of Middle and north Yuba Rivers to USACE's Englebright Reservoir)	Good/Moderately Easy Though Limited Distance	 Access is at Colgate PH and Rices Crossing: Access upstream of New Colgate Powerhouse – relatively easy walking along stream for about 1 mile but further access limited by vertical cliffs. Access downstream of New Colgate Powerhouse – relatively easy walking along stream; difficult to cross at time of survey. If flows drop, crossing at riffles and pool tailouts possible. Rices Crossing – did not visit this section but video suggests possible access though this location is coincident with backwater effects from USACE's Englebright Reservoir and may not be dominated by riverine processes nor passable when flows high. Limited access from Middle and North Yuba river confluence. Good access below junction for about 500 ft (high gradient riffle, cascades, and some step runs) then vertical cliffs.

For ground-based mapping in support of the video mapping, a minimum of 30 channel widths were assessed in each mapping segment, and generally at least four replicates of the major mesohabitat types were assessed. The aerial video was of excellent quality and provided the necessary coverage between ground-mapped sections for the reaches except for Oregon Creek, which was entirely ground-mapped.

Ground habitat mapping was conducted on foot by teams of two individuals. Habitat units were designated using the habitat types described in Table 2.2-1. Habitat units were separately identified where the unit length was at least equal to the active channel width (McCain et al. 1990, Flosi and Reynolds 1994), or if the unit is otherwise distinctive. Figure 2.3-1 is a copy of the field form used during ground-based habitat mapping. Teams recorded the length and width of each habitat type unit using a laser range finder. Mapping was contiguous (i.e., each habitat unit abuts the next unit, except for split channels, which had the length measured but individual habitat units within each split were not mapped). The beginning and ending of the mapped section, and every fifth mapped unit, and every tenth characterized habitat unit, had a Global Positioning System (GPS) reading recorded in UTM NAD83 datum.

STREAM HABITAT	TYPINO	G SURV	VEY D	ATA (YCWA	- Yuba	River	Devel	opment	Project	t)									
										, .		Data Sl	neet #							
Stream/Reach/Subreach:												Page		of		_				
												Dette				-				
1eam:												Date								
UTM:				NAD	83 (Habit	at unit N	o)			PM						Map Gra	dient:		_
Habitat Unit #																				
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
	MCD	POW	TDD	DUD	MCD	POW	TDD	DUD	MCD	POW	TDD	DUD	MCD	POW	TDD	DUD	MCD	POW	TDD	DUD
*note if dammed pool	MCF	LAF	TRP	FLF	MCF	LAF	IRF	FLF	MCF	LAF	IRF	FLF	MCF	LAF	IRF	FLF	MCF	LAF	IRF	FLF
Length (II)																				
Est. Avg. Width (ft)																				
Est. Avg. Pool Depth (ft)																				
Max. Pool Depth (ft)																				
Pooltail Embedded %																				
Significant Cover? ²	INS IGN VEG	IF	BLDR		INS IGN VEG	IF	BLDR)	INSIGN VEG	IF	BLDR)	INS IGN.	IF.	BLDR)	INS IGN VEG	IF .	BLDR	
SUBSTRATE COMPOSITIO	ON							-	1203				120							
Dominant	BED	BLD		сов	BED	BLD		сов	BED	BLD		сов	BED	BLD		сов	BED	BLD		сов
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	•	SLT	GRV	SND		SLT	GRV	SND		SLT
Subdominant	BED	BLD		СОВ	BED	BLD		сов	BED	BLD		СОВ	BED	BLD		сов	BED	BLD		сов
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
	RED	DID	_	COP	RED	DID		COP	RED	DID		COP	BED	DID	_	COP	RED	BID	_	COP
Dominant Bank Substrate	GPV	SND		SIT	GPV	SND		SIT	GPV	SND		SIT	GPV	SND		SIT	GPV	SND		SIT
	GRU	5112		511	UK!	5112	1	511	ORT	5112		511	GRI	5112		511	OK7	5112		511
Length of LB and RB Exposed Banks (feet)																				
Confinement ⁴																				
Unit Flagged/ Labeled?																				
(Y/N)																				
Tributary Inflow in cfs																				
Landmarks or photos																				
		Diameter	r	Length		Diameter	r	Length		Diamete	r	Length		Diameter	r	Length		Diameter		Length
	#	class		class	#	class		class	#	class		class	#	class		class	#	class		class
Large Woody Debris ⁵																				
within bankful width																				
No. of LWD Pieces			-				1								,					
within wetted width																				
Fish Migration Barrier ⁶																				
Spawnable Gravel Area																				
(sqft) Est. ⁷																				
(1/4" - 2.5")																				
Maximum Spawning Gravel Patch Size (sq-ft) Est.																				
Comments /																				
Observations:																				
Backwater or side chan.																				
amphib habitat? Riparian?																				
Lanumarks, Photo #S, Etc.																				
¹ FALL = Falls, CAS = Cascade	e, CHU = C	hute, RAP	= Rapid	GLI = G	lide, RUN =	Run, STE	P = Ste	p Run, HC	R = High (Gradient R	iffle (>4	%), LGR	Low Gra	l dient Riffle	e, POW :	= Pocket	Nater, SH	= Sheetf	low ;	
Pools: COP = Convergence	e, MCP = n	nid-channe	el pool, L	AP = Lat	eral, TRP	Trench,	PLP = P	lunge												
² Note if cover is a significant	ள snould nt or domi	De 1 x ac nant feat	uve cha ure of th	nnel wid le unit:	ath, unles	s there is	some	ming no	able or u	inique ab	out it.									
(e.g., logs in stream, lots	of boulde	rs, >25%	surfac	e area h	as instre	am or lov	v overh	anging v	egetatior	n, etc.)					Q/C in	itials:				
⁴ Channel Confinement: 1=0	Confined	Shallow;	2=Conf	ined De	ep; 3=Mo	derate C	onfined	l (<2x we	etted char	nnel widt	h); 4 =U	nconfine	d (>= 2 w	etted cha	annel w	idths)				
Size classes: 6-12", 12-2	24", 24-36	6",or 36"	+ x 3-10	D' , 10-25	5', 25 -50' ,	50 -75' ,7	75 '+ (ie	. 6 25 =	6-12", 25	5-50')										
⁶ Waterfalls, high velocity ch	utes or ca	scades	at appro	xbankf	ul flows. N	NOTE VE	RTICAL	DROP	and IF CO	ONDITIO	NAL or F	PERMAN	IENT							
Spawning Sized gravel su	omersed	in an are	a of ade	equate o	epth and	verocity	within d	me unit												
Notes regarding access	ľ	l				l			1				l	l		l				
points (road condition,																				
etc.)																				

Figure 2.3-1. Field form used for ground-based habitat mapping.

Stream/Reach	Note on every data sheet
Team	Note initials
T/R/S and UTM	Get UTM every 5th unit (NAD 83) - note if at top or bottom or unit
PM & Map Gradient	Note parent material in assessed reach from geologic map; measure gradient from Terrain Nav Pro (office, before or after).
Habitat Unit #	Numbered sequentially, usually from downstream to upstream. Note if this is not the case
Habitat Type	Circle one of the choices, or write something else in if necessary (e.g., "marsh")
Length (ft)	Measured in feet, with hip chain. Clean up your string periodically
Estimated Average Width (ft)	Average width of entire unit, estimated by eye, periodically checking your estimates with a stadia rod or tape
Estimated Average Pool Depth (ft)	Where practical, take some measurements across the channel to help develop your estimate. Particularly interested in whether most of the pool is greater than 3 ft deep or not.
Estimated Maximum Pool Depth (ft)	Measure where practical. Estimate otherwise
Pooltail Embedded	Degree to which gravel or larger substrates are vertically embedded in sand or smaller substrates.
Significant Cover?	Is cover a dominant feature of the unit? Or is it just a bit of veg overhang on the edges, and some boulder substrate?
Dominant Substrate	Dominant particle size, by area. Silt, Sand (<2mm or 1/8"), Gravel (2-64mm or 1/8-2.5"), Cobble (64-256mm or 2.5-10"), Boulder (>10"), Bedrock
Subdominant Substrate	Next most dominant particle size, by area
Dominant Bank Substrate	Dominant particle size, by area. Silt, Sand (<2mm or 1/8"), Gravel (2-64mm or 1/8-2.5"), Cobble (64-256mm or 2.5-10"), Boulder (>10"), Bedrock - for the bank.
Bank Erosion (ft)	If stream banks are exposed and actively eroding and provided sediment to the active stream channel, quantify the total length on both the right and left banks (cumulative distance) as you are walking along and total in this column.
Confinement	Channel Confinement: 1=Confined Shallow (<4'); 2=Confined Deep (>4'); 3=Moderate Confined (<2x wetted channel width); 4=Unconfined (≥2 wetted channel widths)
Tributary Inflow in cfs	Estimate trib inflow, and get water temperature of the trib and mainstem upstream of it. GPS the location.
Unit Flagged/Labeled (Y/N)	Flag units frequently, near a unit boundary, indicating up and downstream unit numbers. Label with metal tags a little less frequently. Frequency depends on length of units. Think about a year from now, how far would you like to hike up and downstream with a group of stakeholders, looking for positive identification of which habitat unit you were in? Generally marking every 5 units is a good idea, but it really depends on how long the units are.
Landmarks	Note if landmarks are near unit, to help relocate it. e.g., trib confluences, roads, bridges, trails, unique rock formations or bedrock outcrops, large trees of an atypical species, man-made structures or quasi permanent debris, campgrounds, waterfalls, old car bodies, etc. "Big rock" or "tall tree" are not very helpful. GPS whenever possible and convenient, particularly if it has been awhile since you were at a good landmark. River Left or River Right is looking downstream.
Large Woody Debris (in bankfull)	Note all of it along the way, by habitat unit number. "All pieces of wood lying within the bankfull width of the channel that measure 1/2 bankfull width or longer. Wood must be both downed, and with a portion lying within the bankfull channel, and dead or dying to be considered LWD. Divide into average size classes, and tally the total number of LWD pieces in each size class." Size classes we will use are maximum diameters of 6-12 inches, 12-24, 24-36, or >36 inches. Lengths are <3 feet, 3-10, 10-25, 25-75, >75 feet. These are total lengths, not just length in the channel. Note: LWD has to measure 1/2 bankfull width or longer or longer to be counted, so which length classes you might use are dependent on stream width (e.g., a 30ft wide stream would only use classes from 10-25ft on up, because the log would have to be at least 15ft to be counted).
Large Woody Debris (in wetted width)	Separate category: the number of pieces found within the wetted width
Fish Migration Barrier?	Note significant waterfalls or high velocity chutes, or any weirs or other man-made obstacles. Note any feature with a vertical drop exceeding 2.5 ft. Be sure to GPS it.
Spawnable Gravel Area (sq. ft.)	Estimate area of spawnable gravel (1/4 inch to 2.5 inch) patches within the wetted channel. Note any significant deposits along stream margins or on floodplain. One purpose is to determine if spawnable gravel sites could be a possible limiting factor for trout populations.
Comments/Observations	
Fish? Wildlife? Amphibians? Backwater or side channel amphibian habitat? Riparian? Etc.	Did you see some adult or juvenile fish? Idea of species? Any wildlife, such as deer, otters, amphibians, etc. that the wildlife biologists would be interested in? Are there wet backwater or side channel areas, especially with nearby or overhanging cover, that provide good habitat for amphibians, that the amphibian biologists might want to consider for TES species surveys? If you find good amphibian habitat, GPS it. Is the riparian vegetation notably lush, or wide, or are you in a marsh area?
QA/QC	Non-notetaker check all columns and boxes after sheet is full to make sure everything is filled out.

Table 2.3.-1. Description of data collected during ground-based habitat mapping.

The habitat attributes defined in Table 2.3-1 were quantified and recorded for each unit mapped. Two levels of ground-based mapping occurred:

- "Fully mapped" units which included quantified variables such as bankfull width, pool depth, substrate, large woody debris (LWD), substrate and bank material, etc. (Figure 2.3-1, Table 2.3-1)
- "Characterized" units which only noted the meso-habitat type, length, maximum pool depth, and some with photographs and/or comments of notable details such as the existence of frogs, access and mining activity.

Where field access allowed, crews identified potential barriers to upstream fish movement using professional judgment and used handheld GPS units to record the locations. Significant tributary junctions and potential fish passage barriers were noted within the habitat unit in which they occurred.⁵

Photographs were taken of each fully mapped and at many characterized habitat units, generally from the bank looking upstream. Occasionally, photos were taken from the banks or from the top of the unit looking downstream, but these differences were noted. Photographs were labeled by the original habitat unit number, and placed in folders by mapped section and/or sub-reach.

Photographs and summaries of the field data have been organized electronically within separate folders: Middle Yuba Data, North Yuba Data, Mainstem Yuba Data, and Oregon Creek Data. Due to the file size of the photographs, this information is available on DVD from YCWA upon request.

2.3.1 Aerial Video Mapping

Video mapping was used to quantify the frequency of meso habitats within entire reaches where visible. In combination, video mapping and ground mapping covers 100 percent of the reach length. The mapping data may be used to develop a habitat unit frequency analysis for potential instream flow (PHABSIM) studies. This cumulative frequency sampling approach is an extremely efficient way to inventory meso habitats over long distances (Bovee 1997).

The video was not used to measure channel dimensions. Habitat for an entire reach was assessed at a set interval of 3 seconds. The video was stopped at every interval and the habitat type that was directly across the channel at the middle of the computer screen was defined and documented. A line drawn across the video screen determined the dominant habitat at that "point." Ground-truth data from the habitat mapping data were used to "calibrate the eye" so that features seen in the video had a ground-based reference. Some reaches used both video and ground-based habitat mapping data to calculate meso-habitat frequency for the entire reach. Charts and tables were created exhibiting habitat distribution and frequency.

⁵ Identification of potential natural upstream fish passage barriers was very general; criteria were vertical height exceeding 2.5', waterfalls, or high-velocity chutes. There may be additional barriers upstream and downstream of the mapped section, but the number of barriers within the mapped section is used as an indicator of the relative restrictions to upstream movement. The analysis was performed for resident rainbow trout.

Habitat frequency in reaches that use video mapping was based on the number of units that occur in a reach and was calculated as a percentage of the total number of units counted. Because canopy, topography, and size of stream can interfere with visibility, the sections that were not visible were analyzed the same as actual habitat and labeled "out of view." Both fully-mapped and characterization data were used to established habitat frequency. Streams segments that were split by vegetated islands or had distinctly different habitats separated by a medial bar were noted as "split channel." The habitat on each side of the stream was not classified separately, with the exception of Emory Island in the Middle Yuba River. The main channel along the left bank ascending was classified but it was a long and complex split channel.

Habitat frequency in Oregon Creek was developed using 100 percent ground-based mapping and is based on the total length of each habitat type as a percentage of the entire length mapped.

3.0 <u>Results and Discussion</u>

The type and location of mapping was determined largely by accessibility. Except for Oregon Creek, the reaches have very few locations where ground crews can access the channel. Access was limited to the following locations: above and below the New Colgate Powerhouse for the Yuba River; at the confluence of the Middle and North Yuba rivers, above and below Highway 49, and below Our House Diversion Dam for the Middle Yuba River; and at the confluence of the Middle and North Yuba rivers and below New Bullards Bar Dam for the North Yuba River. Oregon Creek was accessible along its entire length, and the reach was completely invisible from the aerial video, so this reach was 100 percent ground-mapped. Figure 3.0-1 shows a map of the reaches and river miles.

Yuba County Water Agency Yuba River Development Project FERC Project No. 2246



Figure 3.0-1. Map of reaches and river miles.

3.1 Middle Yuba River – Oregon Creek and Our Diversion Dam Reaches

The 12.0 mile Middle Yuba River Reach flows through a variety of parent materials, most notably resistant granitic rocks, and is bisected by the Big Bend-Wolf Creek fault within 1 mile of the junction with the North Yuba River. The overall gradient is 1.2 percent, with one break at the Big Bend/Wolf Fault (2.5% below the fault, and 1.1% above). There are numerous lower gradient sections, many of which are upstream of sharp bends that form "knickpoints." A knickpoint is a term used to describe a location in a river or channel where there is a sharp change, resulting from differential rates of erosion above and below the knickpoint. However, in any of these lower gradient sections where it appears that there is floodplain and side-channel development, sinuosity never exceeds 1.1 (i.e., valley length and channel length through the valley are approximately equal). There is a hydrologic break at Oregon Creek, separating the reach into Our House Diversion Dam Reach (Middle Yuba River upstream of Oregon Creek).

This is a confined channel, with extensive sections of bedrock forming the channel; specifically, RM 9-10.2, and RM 11.4-11.7 where the channel is almost exclusively bedrock. Trench pools (Figure 3.1-1) are indicative of the bedrock-dominated sections, though shallow, mid-channel pools also form in the bedrock sections. Cobble or boulder bars and resistant bedrock and boulder banks resist lateral and vertical movement of the channel.

Freemans Crossing is within a valley that has an overall gradient of about 1 percent (Figure 3.1-1). Heavy recreation, rural housing, and mining have modified the channel and riparian zone in this area. Through this low gradient section, the channel is very wide and shallow, and has substantial amounts of finer material (e.g., gravel in the channel and sand on the banks). A multi-thread channel splits around an area known as "Emory Island" (~RM 6.5), though sinuosity is still fairly low at 1.1, and map-based gradient is about 1 percent. The habitat was mapped within the main channel, but it is a split channel and at high flow, about 30 percent of the flow will divert to the right channel (ascending). This area has a road to the Middle Yuba Reach, but it is privately owned and access for ground-based mapping was not granted.

Ground-based habitat mapping was performed at four locations within the Middle Yuba Reach: at the junction with the North Yuba (RM 0); above and below the Oregon Creek (RM 4.5); and below Our House Diversion Dam (RM 12.2). Table 3.1-1 summarizes the habitat frequency for the reach and Table 3.1-2 provides data on various habitat parameters. The habitat frequency is based on the total number of "hits" on a habitat using the aerial video method, with the groundbased data (16% of the reach) used to interpret the habitat. Habitat is dominated by mid-channel pools, low gradient riffles, and runs (Table 3.1-1 and 3.1-2); additional habitat types that exceed 5 percent include high gradient riffles, lateral pools and trench pools. Instream cover (Table 3.1-3) is limited to boulders. Table 3.1-4 also summarizes the data for physical parameters measured in the field. There is over 2,000 square feet (sq ft) of trout spawning-sized gravel accumulations within the mapped sections. There was very limited large woody debris identified during ground-based assessments. Two potential natural barriers to upstream movement of resident trout were mapped on the ground and Vogel (2006) also identified 2 low-flow barriers in this reach. The ground-based data collected in the Middle Yuba River Reach indicate there are spawning-sized gravel accumulations. Upstream trout migration may by limited by permanent falls or other barriers, and that large woody debris is an uncommon element, and does not modify channel form or fish habitat in the active channel.



Figure 3.1-1. Longitudinal profile and habitat units (based on video-mapped data) of the Middle Yuba River – Oregon Creek and Our House Diversion Dam Reaches (between the junction with North Yuba River to Our House Diversion Dam).

Table 3.1-1. Meso-habitat frequency data based on aerial video analysis for the Middle Yuba River	
- Oregon Creek and Our House Diversion Dam Reaches (between the junction with North Yuba	
River to Our House Diversion Dam).	

Meso-Habitat Type	Number	Percent Frequency
Falls	0	0%
Cascades	17	3%
Chutes	0	0%
Rapids	18	3%
High Gradient Riffles	34	6%
Low Gradient Riffles	67	12%
Glides	17	3%
Runs	71	13%
Step-Runs/Step-Pools	23	4%

Meso-Habitat Type	Number	Percent Frequency
Pocket Water	15	3%
Sheetflow	2	0%
Convergence Pool	0	0%
Mid-Channel Pool	135	25%
Lateral Pool	44	8%
Trench Pool	25	5%
Plunge Pool	3	1%
Out of View	28	5%
Split Channel	48	9%
Total	547	100%

Table 3.1-1. (continued)

Table 3.1-2. Length, frequency, width and depth of ground-mapped habitat units in the Middle Yuba River – Oregon Creek and Our House Diversion Dam Reaches (between the junction with North Yuba River to Our House Diversion Dam). The shaded cells are characteristics of pools that do not apply to non-pool habitat types.

Unit Type	Total Length (ft)	Length Rel Frequency	Number	Number of Units (frequency)	Average width (ft)	Average pool depth (ft)	Average maximum pool depth (ft)	Average pooltail embeddedness (%)
Fall								
Cascade	421	2.7%	7	6.4%	63.4			
Chute	47	0.3%	1	0.9%	22.3			
Rapid	70	0.5%	1	0.9%	26.5			
High Gradient Riffle	1014	6.5%	9	8.2%	53.1			
Low Gradient Riffle	1997.5	12.9%	17	15.5%	62.0			
Glide	531	3.4%	2	1.8%	53.8			
Run	2269	14.6%	23	20.9%	52.9			
Step Run	1225	7.9%	8	7.3%	69.2			
Pocket Water	654	4.2%	5	4.5%	55.5			
Sheet								
Convergence Pool								
Mid-Channel Pool	6182.5	39.8%	30	27.3%	56.8	3.7	6.9	7.9
Lateral Scour Pool	469	3.0%	2	1.8%	101.9	1.8	3.5	25.0
Trench Pool	216	1.4%	1	0.9%	75.3	4.0	8.0	
Plunge Pool	446	2.9%	4	3.6%	53.3	5.8	7.0	5.0
TOTAL	15542	100.0%	110	100.0%	58.9	3.8	6.3	12.6

Table 3.1-3. Instream cover identified during ground-mapping in the Middle Yuba River – Oregon
Creek and Our House Diversion Dam Reaches (between the confluence with North Yuba River to
Our House Diversion Dam).

Dominant Cover Type	Number	Relative Frequency
Insignificant	6	7%
Boulder	77	93%
Vegetation	0	
Wood	0	
Total	55	100%

Table 3.1-4. Reach summary of ground mapped data for the Middle Yuba River – Oregon Creek and Our House Diversion Dam Reaches (between the junction with North Yuba River to Our House Diversion Dam).

Total Reach Length:	12.2 mi.	
Total Ground Mapped Length:	2.94 mi. (16.0%)	
Average Bankfull Width:	58.9 ft.	
Average Bankfull Depth:	2.5 ft.	
Average Width:Depth:	24	
Total Spawnable Gravel:	2,311 ft ² - trout	
Average Largest Patch Size:	44 ft ² - trout	
LWD Density:	5/ mile (within bankfull width)	
Wetted LWD Density:	4/ mile (within wetted width)	
Parent Material:	Volcanic, granite/granodiorite, metasedimentary	
Bank Erosion % of Reach:	0.0%	
Total No. Passage Barriers:	2	

3.2 Oregon Creek – Log Cabin Diversion Dam Reach

There are three gradient breaks within the 4.2 mile Oregon Creek Reach, between which fluvial processes vary (Figure 3.2-1). Oregon Creek flows mostly through resistant plutonic granitic material, though there is a short, steep section near the upstream end that is composed of competent metasedimentary material. There is a short 4.6 percent gradient section just above the confluence with the Middle Yuba River, and a 3.7 percent gradient section upstream of Celestial Valley. Celestial Valley appears to be a long-term depositional area and has an overall gradient of 1.6 percent. It is highly modified by human settlement, and channel location has been modified by roads, grazing, berms, and sub-urban development. It is also heavily vegetated with blackberry vines.

Initial classification of this stream characterized two types: the steeper 3-8 percent confined channel type near the downstream end and below Log Cabin Dam, and the lower gradient, 1-3 percent confined section through Celestial Valley. There is also a short 1-3 percent gradient confined section between the confluence with the Middle Yuba River and the steeper 3-8 percent gradient section. Following habitat mapping, these characterizations are revealed as good approximations. The stream is confined throughout between either terraces or steep valley walls. The steeper sections are dominated by cascades, falls, and plunge pools, whereas the Celestial Valley section is dominated by long planar runs and low gradient riffles, with little three-dimensional heterogeneity. Table 3.2-1 shows the occurrence of all the habitat types as a percentage of the total length. Habitat is dominated by low gradient riffles, pocketwater, and mid-channel pools (Table 3.2-1). Instream cover is dominated by boulders (Table 3.2-2). There is little trout spawning-size accumulations of gravel, and only sparse quantities of large woody debris (Table 3.2-3). Table 3.2-4 summarizes the number of large woody debris pieces within each size and diameter class of the nine pieces that were found in the reach within the bankfull channel. Seven of these nine pieces were located within the wetted channel.



Figure 3.2-1. Longitudinal profile and habitat types (based on ground-mapped data) of Oregon Creek - Log Cabin Diversion Dam Reach.

Table 3.2-1.	Total length of habitat types identified in the Oregon Creek – Log Cabin Diversion
Dam Reach,	and as a percentage of total reach length.

Meso-Habitat Type	Total Length (ft)	Percent of Total Reach Length
Falls	133	1%
Cascades	867	4%
Chutes	158	1%
Rapids	0	0%
High Gradient Riffles	673	3%
Low Gradient Riffles	4,170	19%
Glides	946	4%
Runs	1,245	6%
Step-Runs	808	4%
Pocket Water	2,661	12%
Sheetflow	92	0%
Convergence Pool	25	0%
Mid-Channel Pool	8,507	38%
Lateral Pool	207	1%
Trench Pool	0	0%
Plunge Pool	503	2%

Table 3.2-1. (continued)

Meso-Habitat Type	Total Length (ft)	Percent of Total Reach Length	
Out-of-View	0	0%	
Split Channel	1,342	6%	
Total	22,336	100%	

Table 3.2-2.	Instream	cover	identified	during	ground-mapping	in Oregon	Creek -	Log	Cabin
Diversion Dar	n Reach.								

Dominant Cover Type	Number	Relative Frequency
Insignificant	16	14%
Boulder	93	82%
Vegetation	5	4%
Wood	0	
Total	114	100%

Table 3.2-3.	Summary o	f ground	mapped	data	for	Oregon	Creek	– Log	Cabin	Diversion	Dam
Reach.											

Total Reach Length:	4.2 mi.	
Total Ground-Mapped Length:	4 mi. (95.0%)	
Average Bankfull Width:	29.4 ft.	
Average Bankfull Depth:	1.7 ft.	
Average Width:Depth:	17	
Total Spawnable Gravel:	255 ft ² - trout	
Avg Largest Patch Size:	12 ft ² - trout	
LWD Density:	2 / mile (within bankfull width)	
Wetted LWD Density:	2 / mile (within wetted width)	
Parent Material:	Granite pluton, metasedimentary	
Bank Erosion % of Reach:	0.0%	
Total No. Passage Barriers:	8	

Table 3.2-4.	Summary of large woody	debris data for (Oregon Creek – I	Log Cabin Diversion Dam
Reach.				

Number	Diameter Class (inches)	Length Class (feet)
1	6-12	3-10
3	6-12	10-25
3	12-24	10-25
1	6-12	25-50
1	12-24	25.50

3.3 North Yuba River – New Bullards Bar Dam Reach

While the channel of the North Yuba River - New Bullards Bar Dam Reach is dominated by gradients below 3 percent (average gradient of 2%), there is one short section where the gradient

is greater than 3 percent and one short section that is above 5 percent (Figure 3.3-1). Just above the 5 percent section, the gradient flattens to less than 1 percent. The geology is composed of Mesozoic volcanic rocks of the Smartville Complex. Most of the reach is composed of bedrock and car and house-sized boulders that separate large mid-channel pools. There are very short and infrequent areas of cobble-size deposits, but most of the substrate is large and immobile. There is no apparent floodplain or terrace development.

This 2.3-mile reach is largely inaccessible. Two areas were ground-mapped: North Yuba upstream of the Middle Yuba River junction and just dowstream of New Bullards Bar Dam; the remainder was mapped using the aerial video. This is a very rugged stream with large boulders that often cover the channel, and large, deep pools bounded by bedrock. The middle steeper section cannot be safely accessed by foot from upstream due to a deep bedrock gorge with vertical cliff walls blocking the way. The lower section is a rugged path through very large boulders that cover pocket water and separate deep pools.

Pocketwater and mid-channel pool habitat types dominate (Table 3.3-1). Both video mapping and ground-based mapping were combined for the habitat mapping results. The video of the upper section near New Bullards Bar Dam missed most of the habitat that was ground-mapped, so the ground-mapped data (49% of the reach) was used in lieu of the video. Table 3.3-2 shows the characteristics for various habitat parameters measured during ground-based mapping. Habitat is dominated by pocketwater and mid-channel pools (Table 3.3-1 and 3.3-2). Identified cover is exclusively boulders (Table 3.3-3), but the depth of pools can also provide cover to resident trout (Table 3.3-2). Trout spawning-sized gravel accumulations were rare (511 sq ft), as was large woody debris (one log in the diameter class 12-24 inches, length class 25-50 ft, within the wetted channel), and potential natural barriers to resident trout upstream movement likely are very common in the confined, steep channel. Bank erosion was rare, given the bedrock/boulder channel margins (Table 3.3-4).



Figure 3.3-1. Longitudinal profile and habitat types (based on video and ground-mapped data) of the North Yuba River – New Bullards Bar Dam Reach (between the Middle Yuba River and New Bullards Bar Dam).

Meso-Habitat Type	Number	Percent Frequency
Falls	3	4%
Cascades	1	1%
Chutes	0	0%
Rapids	2	3%
High Gradient Riffles	5	7%
Low Gradient Riffles	7	10%
Glides	0	0%
Runs	1	1%
Step-Runs/Step-Pools	3	4%
Pocket Water	19	26%
Sheetflow	0	0%
Convergence Pool	0	0%
Mid-Channel Pool	30	42%
Lateral Pool	0	0%
Trench Pool	1	1%
Plunge Pool	0	0%

Table 3.3-1.	Meso-habitat freque	ency using groun	d and aerial vid	leo data for the	North Yuba Riv	er
- New Bulla	rds Bar Dam Reach (between the Mid	dle Yuba River	and New Bullar	ds Bar Dam).	

Table 3.3-1. (continued)

Meso-Habitat Type	Number	Percent Frequency	
Out of View	0	0%	
Split Channel	0	0%	
Total	72	100%	

Table 3.3-2. Length, frequency, width and depth of ground-mapped habitat units for the North Yuba River – New Bullard Bar Reach (between the junction with the Middle Yuba River and New Bullards Bar Dam). The shaded cells are characteristics of pools that do not apply to non-pool habitat types.

Unit Type	Total Length (ft)	Length (frequency)	Number	Number of Units (frequency)	Average width (ft)	Average pool depth (ft)	Average maximum pool depth (ft)	Average pooltail embeddedness (%)
Fall	63	1.1%	3	8.8%	66.0			
Cascade	22	0.4%	1	2.9%	55.0			
Chute								
Rapid	778	13.1%	2	5.9%	81.5			
High Gradient Riffle	455	7.7%	3	8.8%	66.2			
Low Gradient Riffle	399	6.7%	3	8.8%	59.8			
Glide								
Run								
Step Run	639	10.8%	3	8.8%	76.1			
Pocket Water	687	11.6%	5	14.7%	49.3			
Sheet								
Convergence Pool								
Mid-Channel Pool	2894	48.7%	14	41.2%	72.7	3.8	7.3	
Lateral Scour Pool								
Trench Pool								
Plunge Pool								
Total	5937	100.0%	34	100.0%	70.0	3.8	7.3	

Table 3.3-3.	Instream cover ide	entified during	ground-mapping in	n the North	n Yuba Rive	r – New
Bullard Bar I	Reach (between the	junction with th	e Middle Yuba Riv	er and New	y Bullards Ba	r Dam).

Dominant Cover Type	Number	Relative Frequency	
Insignificant	0		
Boulder	34	100%	
Vegetation	0		
Wood	0		
Total	34	100%	

Total Reach Length:	2.3 mi.
Total Ground Mapped Length:	1.12 mi. (49.0%)
Average Bankfull Width:	70 ft.
Average Bankfull Depth:	3.5 ft.
Average Width:Depth:	20
Total Spawnable Gravel:	511 ft ² - trout
Avg Largest Patch Size:	31 ft ² - trout
LWD Density:	1 / mile (bankfull)
Wetted LWD Density:	1 / mile (wetted width)
Parent Material:	Mesozoic rocks of the Smartville Complex
Bank Erosion % of Reach:	0.0%
Total No. Passage Barriers:	4

 Table 3.3-4.
 Summary of ground mapped data for the North Yuba River – New Bullard Bar Reach

 (between the junction with the Middle Yuba River and New Bullards Bar Dam).

3.4 Mainstem Yuba River - Middle/North Yuba River Reach

The 7.1 mile channel of the Yuba River – Middle/North Yuba River and New Colgate Powerhouse Reaches - is dominantly bedrock-controlled, with only very short boulder/cobble sections. The channel is laterally and vertically stable due to dominant bedrock control. Sinuosity is very low as there are no plan and profile sections strongly influenced by alluvial deposition. Pools are large and deep, and separated by long sections of pocketwater that runs through and under very large boulders. Finer sediment (cobble and finer) accumulations are not common.

This confined bedrock-dominated reach is very inaccessible. Though not very steep, according to the mapped gradient of 1.8 percent, high gradient riffles dominate the gradient "steps." The river flows through bedrock canyons, and the vertical walls inhibit ground access. The only location that was ground-mapped was the area just above and below New Colgate Powerhouse (25% of the reach). Habitat is dominated by mid-channel pools and pocket water formed between large boulders (Table 3.4-1 and 3.4-2). Boulders are the only instream cover identified (Table 3.4-3); though deep pools likely also provide cover. Large woody debris was not found and trout spawning-sized gravel accumulations were uncommon (Table 3.4-4). While there were no natural barriers to upstream resident trout movement noted during ground-based habitat mapping, in this steep, confined, bedrock-controlled reach, barriers are likely to occur. However, Vogel (2006) did not identify any barriers in this reach during aerial review of barriers.



Figure 3.4-1. Longitudinal profile and habitat types (based on video-mapped data) of the Mainstem Yuba River – New Colgate Powerhouse and Middle/North Yuba River Reaches (between the New Colgate Powerhouse and the Middle/North Yuba junction).

Table 3.4-1. Meso-habitat frequency using ground and aerial video data for the Mainstem Yuba
River - New Colgate Powerhouse and Middle/North Yuba River Reaches (between the New Colgate
Powerhouse and the Middle/North Yuba junction) between RM 33.55 (approximate upstream end
of backwater effect from Englebright Reservoir) and Middle Yuba/North Yuba junction (RM 39.6).

Meso-Habitat Type	Number	Frequency
Falls	0	0%
Cascades	6	3%
Chutes	0	0%
Rapids	9	5%
High Gradient Riffles	18	9%
Low Gradient Riffles	11	6%
Glides	4	2%
Runs	10	5%
Step-Runs/Step-Pools	2	1%
Pocket Water	42	21%
Sheetflow	0	0%
Convergence Pool	1	1%
Mid-Channel Pool	61	31%

Table 3.4-1. (continued)

Meso-Habitat Type	Number	Frequency
Lateral Pool	6	3%
Trench Pool	7	4%
Plunge Pool	0	0%
Out of View	13	7%
Split Channel	6	3%
Total	196	100%

Table 3.4-2. Length, frequency, width and depth of ground-mapped habitat units for the Mainstem Yuba River – New Colgate Powerhouse and Middle/North Yuba River Reaches (between the New Colgate Powerhouse and the Middle/North Yuba junction). The shaded cells are characteristics of pools that do not apply to non-pool habitat types.

Unit Type	Total Length (ft)	Length (frequency)	Number	Number of Units (frequency)	Average width (ft)	Average pool depth (ft)	Average maximum pool depth (ft)	Average pooltail embeddedness (%)
Fall								
Cascade								
Chute								
Rapid	989	10.1%	4	12.1%	117.5			
High Gradient Riffle	791	8.1%	5	15.2%	73.3			
Low Gradient Riffle	845	8.6%	6	18.2%	92.4			
Glide	235	2.4%	1	3.0%	176.5			
Run	1148	11.7%	5	15.2%	121.3			
Step Run								
Pocket Water	812	8.3%	3	9.1%	89.5			
Sheet								
Convergence Pool								
Mid-Channel Pool	4978	50.8%	9	27.3%	104.7	6.6	11.1	Too deep
Lateral Scour Pool								
Trench Pool								
Plunge Pool								
Total	9798	100.0%	33	100.0%	104.8	6.6	11.1	Likely not

Table 3.4-3. Instream cover identified during ground-mapping in the Mainstem Yuba River – New
Colgate Powerhouse and Middle/North Yuba River Reaches (between the New Colgate Powerhouse
and the Middle/North Yuba junction).

Dominant Cover Type	Number	Relative Frequency
Insignificant	2	6%
Boulder	31	94%
Vegetation	0	
Wood	0	
Total	33	100%

Table 3.4-4. Summary of ground mapped data for the Mainstem Yuba River – New Colgate Powerhouse and Middle/North Yuba River Reaches (between the New Colgate Powerhouse and the Middle/North Yuba junction).

Total Reach Length:	7.5 mi.
Total Ground-Mapped Length:	1.86 mi. (24.7%)
Average Bankfull Width:	104.8 ft.
Average Bankfull Depth:	6.5 ft.
Average Width:Depth:	16
Total Spawnable Gravel:	1,405 ft ² - trout
Average Largest Patch Size:	93 ft ² - trout
LWD Density:	0 / mile (bankfull)
Wetted LWD Density:	0 / mile (wetted width)
Parent Material:	Volcanic (Smartville Complex), gabbro (Pleasant Valley Pluton), quartz diorite
Bank Erosion % of Reach:	0.0%
Total No. Passage Barriers:	0

4.0 <u>Attachments</u>

There is one attachment of the habitat mapping data that includes photographs, raw data, and charts and graphs summarizing the raw data ("... Habitat Mapping Data"). Data are organized as follows:

YCWA HM Data - [1 Adobe PDF file: 29 MB; 151 pages formatted to 8-1/2" x 11"

- Mainstem Yuba HM Data
 - Mainstem Yuba below Colgate HM Photos
 - Mainstem Yuba HM Raw Data
 - Mainstem Yuba Habitat Mapping Data
- Middle Yuba HM Data
 - o 1 MY above North Yuba Junction HM Photos
 - 2 MY below HWY 49 HM Photos
 - 3 MY above Oregon Ck HM Photos
 - 4 MY below Our House Dam HM Photos
 - MY HM Raw Data
 - o Middle Yuba Habitat Mapping Data
- North Yuba HM Data
 - o 1 N Yuba above M Yuba Junction HM Photos
 - o 2 N Yuba below New Bullards Bar HM Photos
 - North Yuba HM Raw Data
 - North Yuba Habitat Mapping Data
- Oregon Creek HM Data
 - o Oregon Creek HM Photos
 - Oregon Ck HM Raw Data
 - o Oregon Creek Habitat Mapping Data

5.0 <u>References Cited</u>

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Habitat Mapping Report

Attachments

Mainstem Yuba River below New Colgate Powerhouse Habitat Mapping Photographs

Yuba River Development Project FERC No. 2246

Mainstem Yuba River below New Colgate Powerhouse Habitat Mapping Photographs



Habitat Mapping Unit 1 – Run



Habitat Mapping Unit 3 – Mid-Channel Pool



Habitat Mapping Unit 5and 6 – Low Gradient Riffle



Habitat Mapping Unit 8 – Rapid



Habitat Mapping Unit 2 – Glide



Habitat Mapping Unit 4 – Run



Habitat Mapping Unit 7 – Rapid



Habitat Mapping Unit 9 - Run

Mainstem Yuba River below New Colgate Powerhouse Habitat Mapping Photographs



Habitat Mapping Unit 1 – Rapid



Habitat Mapping Unit 11 – Mid-Channel Pool



Habitat Mapping Units 12 and 13 – Rapid and Run
Mainstem Yuba River below New Colgate Powerhouse Habitat Mapping Raw Data

STREAM HABITAT TYPING SURVEY DATA (NID Yuba-Bear, PG&E Drum Spaulding)

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PALL = Palls. CAS = Cascade, CHU = Chule, RAP = Rapid, GLI = Glide, RUN =: Run, STEP = Step Run, HGR = High Gradient Allie (>4%), LGR = Low Gradient Allie, POW = Pocket Waler, SHT =: Sheetilew, ice, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

The minimum unit length should be 1x active channel width, unless there is something notable or unique about it.

2 Note if cover is a significant or dominant feature of the unit:

(e.g., logs in stream, lots of boulders, >25% surface area has instream or low overhanging vegetation, etc.)

O/C initials: 4 Channel Confinement: 1=Contined Shallow; 2=Contined Deep; 3=Moderate Contined (<2x wetted channel width); 4=Uncontined (>= 2 wetted channel widths)

⁶Criteria for LWD is:env downed wood within bankfull width of channel wor> than 1/2 bankfull width.

Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 | 25 = 6-12', 25-59')

Waterfails, high velocity chutes or cascades at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access points (road condition, bridge crossings, traits, etc.)

Start 15 units below damn; walking LBA no more access due to "Vocky cliff-outs & heavy veg "Flags@ base mislabled as "bottom" of HMUI #3-pool long! Looks like maybe slight control in middle (2 rook?) but too deep to détermine ... and pool STREAM HABITAT TYPING SURVEY DATA (NID Yuba-Bear, PG&E Drum Spaulding)

1

below Colocte

Stream/Reach/Subreach: N.YUBA Team: Paty Havdesty UTM: 0655314.435437

Data Sheet # Ja

NAD 83 (Ilabitas unit No. 0 0059 PM Map Gradient EPLI T Q Habitat Halt d FALL CAS CHU RAP FALL CAS CHU RAP) FALL CAS CHU RAP FALL CAS CHU RAP FALL CAS cm RAP Habitat Type 1 HGR LGR GLI RUN HCR LGR GLI RIN HGR LGR GLI RUN HGR LGR GLI BIN HGR LGR GLI RUN STEP POW SIT POW COP STEP POW COP COP STEP SHT STEP POW SHT COP SHT STEP POW SHT COP MCP LAP TRP PLP MCP LAP TRP PLP MCP LAP TRP PLP MCP LÁP TRF PLP MCP LAP PLP TRP oos if demmed poo 436 40 310-120=4 30 Leagth (ft) 104 790 2 9 10 142 13 Est. Avg. Width (ft) G. Est. Avg. Pool Depth (ft) 26ft BEDRSS BFDW7 BFDRIG Max. Pool Depth (A) Pooltail Embedded % BLDR WOOD INSIGNIE BLDR NSIGNI BLDR INSIGNI INSIGNIE (BLDR Significant Cover? WOOD VEG' VEG VEG WOOD VEG VEG WOOD SUBSTRATE COMPOSITI BED (BLD) COB (BED BLD COB BED 81.0 COB BED ŚLD') COB BED BLD COB Dominani Substrate GRY SND SLT ĞRV SND SLT GRV SND SLT GRY SND SLT GRY SND SLT BED 81.0 COB BED BLD COB BRD BLD COB BED BLD (COB) BED BLD COB Subdeminant Substrate SND GRV SND SLT GRV SND SLT GRV SLT GRV SND SLT GRV SND SLT BLD BLD BED BLD. BEŐ BLD (BLD) BED COB COB COB BED COB BED COB Dominant Bank Substrate GRV SND SLT GRV SND SLT GRV SND SLT GRV SND SLT GRY SND SLT Length of LB and RB Ð Expesed Banks (feet) Cualineisent Unit Flagged/ Labeled? (Y/N) ves-base no nD NU NO Tributary Inflow in cfs no no amintarks or phoins 55-2205 2205 200 2200 206 22-04 Diam Length Leagth Length Diam Die Dismater Least Length class Large Woody Debris⁵ within bankful width No. of LWD Pieces (Ď D Ð . .. within wetted width Fish Migration Barrier no n 0. $\Omega \partial$ N 3 (y/a)? 1X3 Spawmable Gravel Area (sqft) maybe 4×6 none Est.7 R.b.A. too deedethin. Ø (1/4" - 2.5") Maximum Spawning Gravel NIA 43 N N/A Patch Size (10-ft) Est. alide-live in Run-Like in Comparats / REA-run Observations: Some aveds middle, but Fish? Wildlife? Amphibs? 1_BA-VAPId Backwater or side chan. amphib but deays thist still standing abitat? Riparian? I andmarks, Photo #s, Etc. WAVES

¹ FALL = Pails, CAS = Cascade, CHU = Chule, RAP = Rapid, GLI = Glide, RUN = Run, STEP = Step Run, HGR = High Gradient Riffle (>4%), LGR = Low Gradient Riffle, POW = Pocket Water, SHT = Sheettiew, Pools: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Punge

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7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access points (road condition, bridge crossings, traits, etc.)

Several Willowsp., Robin ia, Alder, big leaf maple, brickellia, through boulder banks - upland community change a brubte change into steep 40-60%. slopes; sandy deposition at boulder base, welt edge, Riparia community fairly well established, especially where the prosect of boundars are a bsent.

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END. UTM: 0656505 page. 12-5144

4355144

Pockel Waler, SHT = Sheetlion

PALL = Palls, CAS = Cascade, CHU = Chute, RAP = Rapid, QLI = Glide, RUN =: Run, STEP = Step Run, HGR = High Gradient Riffle (>4%), LGR = Low Gradient Riffle, POW = Pools: COP - Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

The minimum unit length should be 1x active channel width, unless there is something notable or unique about it.

²Note if cover is a significant or dominant feature of the unit:

(e.g., logs in stream, lots of boulders, >25% surface area has instream or low overhanging vegetation, etc.) Q/C initials: Channel Continement: 1=Contined Shallow; 2=Contined Deep; 3=Moderate Contined (<2x wetted channel width); 4=Uncontined (>= 2 wetted channel widths)

Criteria for LWD is:any downed wood within bankfull width of channel =or> than 1/2 bankfull width.
 Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6] 25 = 6-12", 25-50')
 Waterialts, high velocity chutes or cascades at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

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Notes regarding access points (road concition, bridge crossings, traits, atc.)

Photo #s, Etc.

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Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 | 25 = 6-12', 25-50') *Waterialis, high velocity chutes or cascades at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes reparding access points (road conclition, bridge crossings, traits, etc.)

No good indicators of HW. Line, Water deep 30 no

BFD measurmements. END. UTM: 0656536 page 4355528

STREAM HABITAT	TYPING SU	KVETL	JATA (NID XUD	ia-dear, r	G&LDIU	m spau	ung)	r	Data Sh	ieci #	C						
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FALL = Falls, CAS = Cascade, CHU = Chule, RAP = Rapid, GLI = Gilde, RUN = Run, STEP = Step Run, HOR = High Gradient Hillie (>4%), LGR = Low Gradient Riffle, POW = Pockel Waler, SHT = Sheetlow, Pools: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

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7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access points (road concition, bridge crossings, traits, etc.)

END PAGE UTM : 0656670 4355787

Q/C initials:

STREAM HABITAT TYPING SURVEY DATA (NID Yuba-Bear, PG&E Drum Spaulding)

"olgate P.H. NVUBA above Stream/Reach/Subre UTM. 0656670/435578

Data Sheet

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FALL = Falls, CAS = Cascade, CHU = Chule, RAP = Rapid, GLI = Gilde, RUN = Run, STEP = Step Run, HGR = High Gradient Ailfie (>4%), LGR = Low Gradient Ailfie, POW Pockel Walsr. SHT = Sheetilow Pools: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

The minimum unit length should be 1x active channel width, unless there is something notable or unique about it.

²Note if cover is a significant or dominant feature of the unit:

(e.g., logs in stream, lots of boulders, >25% surface area has instream or low overhanging vegetation, etc.) Q/C initials: *Channel Conlinement: 1=Conlined Shallow; 2=Conlined Dsep; 3=Moderate Conlined (<2x wetted channel width); 4=Unconlined (>= 2 wetted channel widths)

⁶ Criteria for LWD is: any downed wood within bankfull width of channel wor> than 1/2 bankfull width. Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 | 25 = 6-12", 25-59)

*Watertalls, high velocity chutes or clascades at approx banklul flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access UTM 0656850 points (road condition, bridge crossings, trais, etc.) 4355960 NEXT UNIT'S AS SEEN FROM CLIFF-OUT? "HAR & N'9% \$100KS like gradient continues to the increase from here & up.

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STREAM HABITAT	TYPING SU	IRVEV DA	TA (NI	D Vub	o Doow	DCRED	0						61 (d)	1 . Alp	
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UTM: 0660581,	43597	336 N	AD 83 (Hab	oltat unit N	il b'	ise		PM	Date	<u> </u>	4 - 1		Мар Gra	dient:	
Habitat Unit #	1			7			2	2086		4			2		
Habitat Type 1	FALL C	AS CHU	RAP	FALL	(CAS)	CHU RAF	FALL	CAS CH	II BAP	FALL	CAS (HII BAP	FALL	CAS) CH	1 040
3	HGR LO	GR GLI	RUN	HGR	LGR	GLI RUN	HGR	LGR GL	I RUN	HGR	LGR	GLI RUN	HGR	LGR GL	I RUN
¢."	STEP PC	OW SHT	COP	STEP	POW	SHT COP	STER	POP SH	т сор	STEP	POW S	SHT COP	STEP	POW SH	r cop
*note if dammed pool	MCP) L	AP TRP	PLP	MCP	LAP	TRP PLP	MCP	LAP TR	P PLP	MCP	LAP 1	TRP PLP	MCP	LAP TR	P PLP
Length (R)	46	3 ~0		184	111-	~	73	10		90			20	35	
Est. Avg. Width (ft)	106,5	5-1,50		60,	69,7	> .	-73,	13,79	173	75,	55, 3	58	80)	
Est. Avg. Pool Depth (ft)	107	-		-						-			-	7	
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organizenni evver i	VEG	WOOD	1	EG		HOOD	VEG	WOO	R	INSIGNI	f CBI	OOD	INSIGNI	F BLD	B
SUBSTRATE COMPOSITION	N npp1 /		din al			in too	Anne anne anne anne anne anne anne anne	10			0				
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Length of LB and RB Exposed Banks (feet)	ø			dig	¢	SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	SLT
Length of LB and RB Exposed Banks (feet) Confinement ⁴	ø			CRV 1	¢	SLT	Ø	SND	SLT	GRV	SND	SLT	GRV	SND	SLT
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Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N) Tributary Inflow in cfs Landmarks or photos TA Large Woody Debris ⁵ within bankful width vio. of LWD Pieces within wetted width vich Migration Barrier ⁶ y/n)? pawnable Gravel Area (sqft) st ⁷ 1/4" - 2.5") faximum Spawning Gravel atch Size (sq-ft) Est. 'omments / bærvations: ish? Wildlife? Amphiba? ackwater or side cham. ampbib	p yes, p ising class no b N/A trene	bas 10 10 10 10 10 10 10 10 10 10	e n Length class	A LOB 34	SND SND SAME	Length class 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	GRV GRV DO DO DO DO DO DO DO DO DO DO	SND 370 Diameter class 1 1 5 2+5 0 rg frow which even	Length class	BRV B 1 0 13 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SND Diarreter class X X G X G X G X C X C C A Separ C A Separ C A Separ	Length class 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	GRV 9 13 13 13 13 13 15 15 15 15 15 15 15 15 15 15	SND FUC Paimeter class I I I I I I I I I I I I I	Longi
Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N) Tributary Inflow in cfs Landmarks or photos TA Large Woody Debris ⁵ within bankful width Vo. of LWD Pieces within wetted width Yah Migration Barrier ⁶ y/n)? ipawnable Gravel Area (sqft) St ⁷ 1/4 ⁴ - 2.5 ⁴) faximum Spawning Gravel atch Size (sq-ft) Est. Tomments / beervations: ish? Wildlife? Amphibs? ackwater or side chan, amphib bitat? Riparian? Landmarks, joto #5, Etc.	p yes, p no no N/A trene but sc	bas 10 10 10 10 10 10 10 10 10 10	e I Length class	A LOB 34 - LOB A CINAN	SND SND SND SND SND SND SND SND	Length class 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	GRV GRV DO DO DO DO DO DO DO DO DO DO	SND 370 Diameter class 1 1 5 2+5 0 Yrthour will deval	Length class Length class	BRV B 1 0 13 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SND Diameter class X X b X b X z cascad grad	Length class 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	GRV 9 13 13 13 13 13 15 15 15 15 15 15 15 15 15 15	SND FUC Paimeter class I I I Grad	

The minimum unit length should be 1x active channel width, unless there is something notable or unique about it. ² Note if cover is a significant or dominant feature of the unit:

(e.g., logs in stream, lots of boulders, >25% surface area has instream or low overhanging vegetation, etc.)

*Channel Conlinement: 1=Confined Shallow; 2=Confined Deep; 3=Moderate Confined (<2x wetted channel width); 4=Unconfined (>= 2 wetted channel widths) ⁵Criteria for LWD is:any downed wood within bankfull width of channel =or> than 1/2 bankfull width.

Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (le. 6 | 25 = 6-12", 25-50')

⁶ Waterfalls, high velocity chutes or cascades at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access points (read condition, bridge crossings, trails, etc.)

#1-pool at helicopter landing #3 produce a slightly diverg channel around big rocks Apat short rappid forms a control between 2 sections of pocket water

45K

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Q/C initials:

#5

UTM: 06010, 4	1359	471	NAD 83 (I	Habitat unit N	io				PM	1	1.00				Map Grad	ient:	
Habitat Unit #	6			7				8	2		9				10	010	
Habitat Type ¹	FALL	CAS	CHU RAP	FALL	CAS	CHU	RAP	FALL	CAS CH	IU RAP	FALL	LGR	GLI	RAP	FALL	LGR	GLI R
	STEP	POW	SHT COP	STEP	POW	SHT	COP	STEP	POW SH	TT COP	STEP	POW	SHT	COP	STEP	POW	SHT C
note if dammed pool	MCP	LAP	TRP) PLP	мср	LAP	TRP (PLP	MCP	LAP TF	ep plp	MCP	LAP	TRP	PLP	MCP	LAP	TRP P
Length (ft)	210	0	<u> </u>	19	21	5	0	28	/		105				125	a	1 5
Est. Avg. Width (ft)	98,	60	68	5	2;7	-5,7	3	45			-+>	160	0		10	17	5
Est. Avg. Pool Depth (ft)	8,	5 3	, <u>0</u>	9	5,3	3,0	~		·					4	10,	6,4	,0
Max. Pool Depth (ft)	8	22		197	17	9 4	1	R					-		10+	- 1011	- 10
Pooltail Embedded % Significant Cover? ²	INSIGNI	F	BLDR	INSIGNI	F	BLDR		INSIGNIE	BLI	P	INSIGNE	- 6	SLDR		INSIGNIE	(BLDR
SUBSTRATE COMPOSITIO	VEG		WOOD	VEG		WOOD	2	VEG	WO	OD	VEG	1	NOOD		VEG	ñ	WOOD
Dominant	BED) BLD	COB	BED	BLD)	СОВ	BED	BLD	СОВ	BED	BLD		COB	BEB	BLD	c
Substrate	GRV	SND	SLT	GRV	SND)	SLT	GRV	SND	SLT	GRV	SND	-	SLT	GRV	SND	5
Subdominant	BED	BLD	, сов	BED !	BLE	シ	COB	BED	BLD	COB	BED	BLD	C	COB	BED	BLD	2 °
Substrate	GRV	SND	SLT	GRV	SND)	SLT	GRV	SND	SLT	GRV	SND		SLT	GRV	SND	8
Dominant	BED	BLD	COB	(BED)	BLD	>	СОВ	BED	BLD	COB	BED	BLD		COB (BED	BLD	C C
Bally Subdrate	GRV	SND	SLT	GRV	SND	,	SLT	GRV	SND	SUI	GRY	SND		361	GRY	5.10	
Length of LB and RB	-1			d				A			1				K		
Exposed Banks (feet)	Ø			14				4		<u></u>	\mathcal{D}				P	_	
Confinement ⁴	1							l l			1				1		
Unit Flagged/ Labeled? (Y/N)	na	2		M	D			no			no				Hes	. 13	2pm
Tributary Inflow in cfs	n	5		n	2			holefri	MLBA	Ino	no		ns	->	LBA		
Landmarks or photos	13	73		137	44			137	5,137	CLUP	137	8 L	35 61	oml	BA	13	577
		Diameter	Lengt	h	Diameter		Length		Diameter	Length		Diameter		Length		Diameter	19
Large Woody Debrie ³		class	1		1433	-	01033	· ·		Ciass		1	1			1	
within bankful width		r	1	1							/		-		/		
No. of I WD Pieces	1	~	-~~					1			1		. d		1		
within wetted width	13	7	0	-e	r.,	5 W 2 D		P	6/11	1210	0				P P		
Fish Migration Barrier * (y/n)?	NO)		n	0	and to		Yes	413	59581	no				1 Y	10	
Spawnable Gravel Area (sqft)	9X1	Par	water	1 m	i.			1			A				R	^	1
(1/4" - 2.5")	000	nn	nargiv	P				Ŷ			φ	Ξφ.		-	14)	5 L
Maximum Spawning Gravel	0	×6	Ŭ	NI	A			ALA	5ft	perw	MA				N/	4	
Paten Size (sq-it) Est.	0	d. L	ante	1 [• (1)			14FT	ber	yer	10.			_	need	atio	Acres
Observations:	02	4	NECOli	N				Som	SMO	JUELY					Est.	del	the Ar
Fish? Wildlife? Amphibs? Backwater or side chan. amphib	6		1,0	1				man	(Rote	tral					ale	sre	ν
habitat? Riparian? Landmarks, Photo #s. Etc.	(Ch	VV VI	indu					aree	SERAD	tim					End	UTA	1 Odd
	2,	ŝ	>					60+	Here 15	1. grad					A.		43
¹ FALL = Falls, CAS = Cascade, C Pools: COP = Convergence, N	CHU = Chut ICP = mid-c	e, RAP = i hannel po	Rapid, GLI = Glide ol, LAP = Lateral,	, RUN = Run TRP = Trenk	n, STEP = ch, PLP =	Step Run, Plunge	HOR = 1	High Gradie	nt Riffle (+4%)	LGR = Low	Gradient Ril	fle, POW =	Pocket W	ater, Sh	U DU	KP	note
The minimum unit length	should be	1x active	channel width,	unless then	e is som	ething not	able or	unique abo	ut it. YOF	m dul	10 ARA	IS DO	a 91	approx 1			0
(e.g., logs in stream, lots of	boulders,	>25% su	rlace area has i	nstream or	low over	manging v	ogetatic	on, etc.)	A	mulm	a hald	21	Q/C initi	als:		_1<	<u>r</u>
*Channel Confinement: 1=Con ⁵ Criteria for LWD is:any down	nfined Sha ed wood w	llow; 2=0 rithin ban	confined Deep; dull width of cha	3=Moderate annel =or> 1	Confine than 1/2	bankfull w	vidth.	annel width	i); 4=Unconti	ned (>= 2 w	vetted char	nnel widths	9) 	Г	. [and	
Size classes: 6-12*, 12-24	', 24 -36",c	or 36" + x	3-10', 10-25', 2	5-50', 50-7	5', 75'+ (VEBTIC	(ie. 6 25 : CAL DROP	= 6-12", P and IF	25-50') CONDITI	ONAL or PE				lool	LM	Star	ur vj	
⁷ Spawning Sized gravel subr	ersed in a	n area of	adequate dept	h and veloc	ity within	one unit	2.1.2 /1						2	20	omi	NG.	In
Notes regarding access													45			2	VIV
points (road condition, bridge crossings, trails, etc.)				~					1.	1 -	Him				ant	al	L.J
1 1 1270	t	NVI S	tion	be	twe	en	HI	IB I	9 a	nd.	10	-+	$\bigcirc \eth$	rc	_CVV!!!	-'J	Jul
phin 13	0	L				10								,		had	1 101-
	man	Th V	205		02			14			,		A .	. h.	001	Dea	1CIC.

middle yuba TN yuba metr KPIGB Stopped & HMU 10 - too steep & dingerous to entrue 0660691/4359615 (On LOA ciff) rough mecane from ciff 60 hong 40' wide 15% grad. CAS # 11 "Ing 75'mile # 12 STEP 95 #13 50' 75' CAS # 1/4 POL and cirke 1380 Shins entire sequence phisto Ħ FILL Ned where stopped a ceff above #10 laseled "My thy Houro" (My 7 My) below my/Ny Inchin 665 pow last, stern deep went. walls/blogs se bldrs. TRP not study site material. no 25555 DTAI 1406 -> LOSE TLE 7 across Sr. CAS 1407 415 SLAND (AS-) shalf me tolls intro a 1408 605 1401 ->CAS Bldr. dom son petches of ge gravel inter bldes where shools Thes het a whet lots pocket pools, where the Stille bed

DIRAC

DARLING CORP TACOMA, WA 984 www.BrteintheRain.com

9/14/09 Middle N. Yuba June. PHOfy (below inch - rip. Zme) UB limited Riparian veg. community due to sheer rock slopes of river canyonno soils/transitional zone for established) community. Plenty of riparian/mesic OBL plants, such as Salix Meida, S. exigua, Alder incanus, Populus transami, at bars and base of canyon walls where wider Typical riparian barbs: 2 asters (to be keyed later) brickellia, and occos. Carer nudata scattered throughout bailders at water's edge. carey good indicator of turbulent flows & establish scd deposits (see Sedges of Pac. NW. book as reference) Upland species generally ~ 37-20-12 above boulder bar to includes canyon live bak as dominant. some grey pire, ponderusa back Dale Some greas GN On S-Factory & MP grass (too far to is) and Archtostaphyla patua as under smid story. Hyp per (Hamoth weed), Satter broom dominate @ base starcess read tomain road. Also spreading for short dist at River Junction.

Mainstem Yuba River below New Colgate Powerhouse Habitat Mapping Data

Yuba Mainstem above and below Colgate Powerhouse – Ground-based Habitat Mapping Data

Norm Norm <th< th=""><th>O1</th><th>Vula Di</th><th>huan</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>Deter</th><th>0.00</th><th></th><th></th><th></th><th></th><th>voicanic</th><th>(Smartville C</th><th>ompiex),</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></th<>	O 1	Vula Di	huan									Deter	0.00					voicanic	(Smartville C	ompiex),														
	Stream	: Tuba Ri	ver	-		Inches DU						Date:	000-0	9			arent wateria			;y														
	Reach		ainstema	above an	Id below Col	Igate PH										M	ip Gradient (%	o): I.C	070	•				-		-								
Normal Control Normal Contro Normal Control Normal C	Date	Sectio Numb	on C ber	Ordered Unit #	Original Unit #	Unit Habitat Type	Length (ft)	Cum. Length (ft)	River Mile	Est avg BFW (ft)	BFD (ft)	Est avg pool depth (ft)	Max. pool depth (ft)	Pooltail embed- dedness (%)	s Cover	Dominar substrate	Sub- nt dominant e substrate	Dominan bank substrate	nt e Erosion (ft) FPW	Confine- ment	Flag/ Label	Flag Description	Trib cfs	Land- marks or Photos	Total LWD (bankful)	Total LWD wetted width	Fish Migration Barrier?	Total Spawnable gravel area (sq. ft.)	Max spawning gravel patch (sq ft)	Northing	Easting	Post-Field Changes	Comments
Johnson Landow Johnson																																		too deep to be glide, especially RBA, uniform cobble substrate only
MACOUNT Column Colum<	10/5/2009	Yuba < C	olgate		1 R	RUN	352	352	32.90	180	no clear BFD)		5	INSIGNIE	COB	BLD	COB			1 y	a a	t top		DTA2 2198 LDS			n			655061	4353986	6	occasional boulders
Norm Norm <th< td=""><td>10/5/2009</td><td>9 Yuba < C</td><td>olgate</td><td></td><td>2 G</td><td><u>3LI</u></td><td>235</td><td>587</td><td>33.01</td><td>176.5</td><td></td><td></td><td></td><td></td><td>INSIGNIE</td><td>COB</td><td>BLD</td><td>COB</td><td></td><td></td><td>1 r</td><td>1</td><td></td><td></td><td>DTA2 2199</td><td></td><td></td><td>n</td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	10/5/2009	9 Yuba < C	olgate		2 G	<u>3LI</u>	235	587	33.01	176.5					INSIGNIE	COB	BLD	COB			1 r	1			DTA2 2199			n						
Operation 2000 Control 1000 Control 10000 Contro 100000 Contro 100000	10/5/2000	Vuha . C	`olooto		21	MCD	1090	1007	22.22	100.75		10				DI D	COR	BLD			2 -				DTA2 2200, 2201									weak control at base, pool tail into glide. Looks to be 20 ft deep but
Subscription - Cape 6.4.4 10 100	10/5/2009	Yuba < C	'olgate		3 10	RUN	110	1777	33.22	120.75	1	13	1	0	BLDR	BLD	COB	BLD			21	1			DTA 2 2203			n						cant gauge well. Onable to see tail for embeddedness
Normal Part	10/5/2005	Yuba < C	olgate		51	IGR	163	1940	33.27	127.5	5	5			BLDR	BLD	COB	BLD			1 v	, / a	t top		DTA2 2203			n			655314	4354371	1	1% gradient
Non-Colum Open Open Open Open <	10/5/2009) Yuba < C	Colgate		6 F	RUN	436	2376	33.35	116.5	j 5.	5			BLDR	BLD	BED	BLD			. , 1 y	/ a	t base		DTA2 2204			n	24	24	655314	4354371		spawning gravel maybe too deep because it was estimated. Unit glide like in some areas, but deep, fast, variable substrate not sheet pool min.
Universe Compare Diff Hu Diff Hu Diff	10/5/2009	9 Yuba < C	olgate		7 R	RAP	171	2547	33.38	115.5	1 0	6			BLDR	BLD	BED	BLD			1 n	1 I			DTA2 2205 LDS			n						
Biology Max - Cage: B 30 Control Max - Cage: B 30 Control Max - Cage: B 30 Control Max - Cage: Contreleft Control Max - Cage: Contreleft Control Max	10/5/2009	Yuba < C	olgate	;	SPLIT		140	2687	33.41																DTA2 2206									RBA - run, LBA - rapid
Normal Name Cooper Normal	10/5/2009	Yuba < C	olgate		8 R	RAP	430	3117	33.49	117.33	7	7			BLDR	BLD	COB	BLD			1 n	1			DTA2 2207, 2208			n	3	3				run-like in middle, but still standing waves
United Column UPUT Invite Outcome	10/5/2009	Yuba < C	olgate		9 R	RUN	212	3117	33.49	83.5	,	9			BLDR	BLD	COB	BLD			1 v	1	4.400		DTA2 2209			n		-	CEEE02	425 4020	2	nun like in midelle hut etill stending upung
No. Control Org Org <th< td=""><td>10/5/2009</td><td>Yuba < C</td><td>'olgate</td><td></td><td>SPLIT</td><td>(AP</td><td>101</td><td>3531</td><td>33.55</td><td>74.07</td><td>1</td><td>0</td><td></td><td></td><td>BLUK</td><td>BLU</td><td>СОВ</td><td>BLD</td><td></td><td></td><td>1 9</td><td>/ a</td><td>t base</td><td></td><td>DTA2 2210</td><td></td><td></td><td>n</td><td>5</td><td>2</td><td>655503</td><td>4354636</td><td>D</td><td>at corner length and width measurements oblique</td></th<>	10/5/2009	Yuba < C	'olgate		SPLIT	(AP	101	3531	33.55	74.07	1	0			BLUK	BLU	СОВ	BLD			1 9	/ a	t base		DTA2 2210			n	5	2	655503	4354636	D	at corner length and width measurements oblique
1002000 Yale - Colgae 11 HOP 600 433 336 10 NB ND ND ND ND Part	10/3/2000		Jigate	`			101	5551	33.51		•					_				_	,	a	1 0030		DTA2 2212 2213									at corner length and width measurements oblique
192009 Yue - Cdare 12 RM 20 430 30.7 90.8 RL RL RL <thrl< th=""> RL</thrl<>	10/5/2009	Yuba < C	olgate		11 N	мср	600	4131	33.68	140	ر				BLDR	BLD	SND	BLD			2 r	1			LDS from road									non-modelable due to corner!
No. 2002/00 13 RAP 75 4488 33.00 162.0 BDR BD< 10 A No. 2004/00 A <td>10/5/2009</td> <td>9 Yuba < C</td> <td>olgate</td> <td></td> <td>12 F</td> <td>RUN</td> <td>250</td> <td>4381</td> <td>33.73</td> <td>106.67</td> <td></td> <td></td> <td></td> <td></td> <td>BLDR</td> <td>BLD</td> <td>SND</td> <td>BLD</td> <td></td> <td></td> <td>1 n</td> <td>1</td> <td></td> <td></td> <td>DTA2 2214 LUS from road bottom RUN/RAP</td> <td></td> <td></td> <td>n</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	10/5/2009	9 Yuba < C	olgate		12 F	RUN	250	4381	33.73	106.67					BLDR	BLD	SND	BLD			1 n	1			DTA2 2214 LUS from road bottom RUN/RAP			n						
1010/2000 Yulas - Colgate 11MCP 5.52 4488 34.00 166 100 codes BLD COB BLD 3 y at top not changed n 101 669333 435022 PCOL false of PH 101/02/000 Yulas - Colgate 3 MC 3 H0 70 BLR BLD 0.00 BLD 3 y at tase n 10 20 MCP with tase of PH 101/02/000 Yulas - Colgate 3 MC 3 H0 70 BLR BLD 0.00 ShD 3 n n 10	10/5/2009) Yuba < Ci	Colgate		13 F	RAP	75	4456	33.90	162.5	5				BLDR	BLD	SND	BLD			1 r				DTA2 2214 LUS from road bottom RUN/RAP			n						Power house at pool next unit above rapid. Several willow sp., Robinia, Alder, big leaf mapple, Brickellia, through boulder banks. Upland community change aburpt at change into steep 40-60% sloeps; sandy deposition at boulder base, wetted edge. Riparian community fairly well-establahsed, especially where the largest boulders are absent.
101/2007 Wales - Colgine 2 LGR 42 540 34.09 112.2 BLR CR A	10/16/2009	Yuba > C	olgate		1 N	MCP	532	4988	34.00	98	3	6	1	0 too deep	BLDR	BLD	COB	BLD			3 v	, a	t top		not charged			n			655938	4355021	1	POOL @ base of PH
10/16/2009 (vba > Colgate 3.MCP 3.841 4.16 3.0 7.0 7.0 COB SND 3.0 0.0 0.0 0.0 0.	10/16/2009	Yuba > C	olgate		2 L/	LGR	452	5440	34.09	116.25	1				BLDR	BLD	COB	BLD			З у	/ a	t base		-			n	13	4				2.5% gradient
101/2009 Vuba > Colgate 3 MCP 3 10 70 RUR BLD COB SND 3 n n 3 1 spawning grave du of water size from which A spawning grave d											1																							MCP with POW characteristics at pool tailout. 2x6 & 1x4 patches of
1016/2009 Vuba > Colgate 4 HGR 318 6148 312 1016 001	10/16/2009	Yuba > C	olgate		3 M	MCP	391	5831	34.16	140.33	<u></u>	3	1	0 7	'0 BLDR	BLD	COB	SND			3 r	1 I						n	3	1				spawning gravel out of water RBA
1016/2009 Yuba > Colgate 5 MCP 1038 34.42 102.5 6 1010 loco deep BLD BLD BLD SND 2 y at top n 4.22 300 666503 4355144 scours ND/P 1016/2009 Yuba > Colgate 61.GR 91 778 34.43 53.67 BLDR BLDR BLD BED SND 1 y at base 0 0 666505 4355144 2000/P Socurs ND/P 1016/2009 Yuba > Colgate 61.GR 91 777 34.43 63.67 BLDR BLDR BLD BED SDD 1 y at base 0 n 66650 4355144 2000/P 1016/2009 Yuba > Colgate 81 PO FDD DD 1 n n<	10/16/2009	Yuba > C	olgate		4 H	IGR	318	6149	34.22	135					BLDR	BLD	COB	SND			1 r	1 I						n	8	2				4% gradient (water temp monitor LBA)
In Tracket Trace Colgate 5 MCP 10.06 7185 94.42 10.25 6 10.10 colgate 5 MC 2 / 9 dt colgate n 4 / 2 de colgate 4.35 (44) 2.50% roth/de 3.50% roth/de 3.50	40/40/0000					MOD	4000	7405	04.40	400 5						DI D	050	CNID											400	000	050505	40554.44		pool tailout has POW characteristic but deep water not moving, no
In House Logane O LOK S1 LOK S2 S4-5 S0-7 S1-7 S1-7 <ths1-7< th=""> S1-7</ths1-7<>	10/16/2009	Yuba > C	`olgate		NI C	ICP	1036	7185	34.42	102.5	,	6	1	U too deep	BLDR	BLD	BED	SND			2 y	a a	t top					n	422	300	656505	4355144	•	2.5% andiont
10/16/2009 Vuba > Colgate 9 POW 117 757 34.46 66 BLDR BLD BED COB 1 n </td <td>10/16/2009</td> <td>Yuba > C</td> <td>olgate</td> <td></td> <td>7 6</td> <td>HGR</td> <td>67</td> <td>7343</td> <td>34.45</td> <td>33.07</td> <td></td> <td></td> <td></td> <td></td> <td>BLDR</td> <td>BLD</td> <td>BED</td> <td>BLD</td> <td></td> <td></td> <td>1 n</td> <td></td> <td>il base</td> <td></td> <td></td> <td></td> <td></td> <td>n</td> <td></td> <td></td> <td>030303</td> <td>4355144</td> <td>*</td> <td>11% gradient</td>	10/16/2009	Yuba > C	olgate		7 6	HGR	67	7343	34.45	33.07					BLDR	BLD	BED	BLD			1 n		il base					n			030303	4355144	*	11% gradient
101/16/2009 Yuba > Colgate 0 HGR 857 34.49 62.67 94.49 62.67 94.69 62.6653 43.5528 94.64 96.6653 96.67 96.6653 96.67	10/16/2009	Yuba > C	Jolgate		8 L	LGR	52	7395	34.46	68	\$				BLDR	BLD	BED	COB			1 r	1						n	16	16				1% gradient
101/46/2009 Yuba > Colgate 10 HGR 85 767 34.51 51.33 9% gradient 8LDR 8LD 8ED 8LD 1 y at top< n	10/16/2009	Yuba > C	olgate		9 P	POW	177	7572	34.49	62.67	A				BLDR	BLD	BED	COB			1 n	n i						n	80	80				
111 MCP 257 714 34.55 84.67 6 9LD 8LD 8LD 9LD 11 at base n n 665633 4355528 64 degg degt LA 101/6/2009 Yuba > Colgate 13 POW 223 8170 34.60 89.33 6 BLD BLD <td>10/16/2009</td> <td>Yuba > C</td> <td>olgate</td> <td></td> <td>10 H</td> <td>нGR</td> <td>85</td> <td>7657</td> <td>34.51</td> <td>51.33</td> <td>1</td> <td></td> <td></td> <td></td> <td>BLDR</td> <td>BLD</td> <td>BED</td> <td>BLD</td> <td></td> <td></td> <td>1 y</td> <td>/ a</td> <td>t top</td> <td></td> <td></td> <td></td> <td></td> <td>n</td> <td></td> <td></td> <td>656536</td> <td>4355528</td> <td>3</td> <td>9% gradient</td>	10/16/2009	Yuba > C	olgate		10 H	нGR	85	7657	34.51	51.33	1				BLDR	BLD	BED	BLD			1 y	/ a	t top					n			656536	4355528	3	9% gradient
1016/2009 Yuba > Colgate 12 LGR 33 7947 34.66 56 6 BLDR BLDR BLDR BLD BLD BLD 2n 2n n	10/16/2009	Yuba > C	olgate		11 M	MCP	257	7914	34.55	84.67	1	6	1	0 too deep	BLDR	BLD	BED	BLD			1 y	/ a	t base					n			656536	4355528	3	6+ deep @ edge LBA
1016/2009 Yuba > Colgate 13 POW 223 8170 32.40 89.33 BLDR BLDR BLDR BLD C	10/16/2009	Yuba > C	olgate		12 L/	_GR	33	7947	34.56	56	<u></u>				BLDR	BLD	BED	BLD			2 r	1 I						n						1.5% gradient
111 (2209 Yuba > Colgate 14 LeK 54 8224 34.01 13.3 I I I I I I I I I I I I I I I I I I I	10/16/2009) Yuba > C	olgate		13 P	YOW	223	8170	34.60	89.33	4				BLDR	BLD	BED	BLD			2 r	1		-				n						
In the constant 15 MLP 592 6010 594.7 61.5 6 10 to deep BLD BLD BLD C C 65667 4355787 depth is over 6 fill at dege LBA 10/16/2009 Yuba > Colgate 16 HGR 105 934.73 94.73 96.75 47.55<	10/16/2009	iruba > C	olgate		14 L(_GK	54	8224	34.61	133		2		a secondaria	BLDR	BLD	BED	BLD			2 r	1		05-4				n			050070	4055303		2% gradient
In the constraint of const	10/16/2009	Yuba > C	olgate		15 M		592	8816	34.73	87.25		6	1	u too deep	BLDR	BED	BLD	BLD			2 y	a a	t top	U.5 CIS				n	20		656670	4355787	7	depth is over to it! at edge LBA
10/16/2009 Yuba > Colgate 18 IGC 00/16 0.00 <td>10/16/2008</td> <td>Yuha > C</td> <td>olgate</td> <td></td> <td>17 1</td> <td>MCP</td> <td>100</td> <td>9031</td> <td>34.75</td> <td>67.14 64</td> <td><u> </u></td> <td>6</td> <td>1</td> <td>0 too deep</td> <td>BLDR</td> <td>BLD</td> <td>BED</td> <td>COB</td> <td></td> <td></td> <td>2 y 2 r</td> <td>a a</td> <td>L Dase</td> <td></td> <td></td> <td></td> <td></td> <td>n</td> <td>20</td> <td>4</td> <td>656670</td> <td>4000/0/</td> <td></td> <td>characteristics of POW but no divergent flow and deep</td>	10/16/2008	Yuha > C	olgate		17 1	MCP	100	9031	34.75	67.14 64	<u> </u>	6	1	0 too deep	BLDR	BLD	BED	COB			2 y 2 r	a a	L Dase					n	20	4	656670	4000/0/		characteristics of POW but no divergent flow and deep
10/16/2009 Yuba > Colgate 19 POW 412 9659 34.89 116.5 BLDR BED BLD BED 2 n 20 MCP 380 10039 34.96 80 6 10 no access BLDR BED BLD BED 2 n no moved away from river to climb banks	10/16/2009) Yuba > C	olgate		18 1	HGR	216	9247	34.81	84.67	/	0		5 .00 deep	BLDR	BLD	COB	BED			2 r	1						n	211	80				4% gradient
20 MCP 380 10039 34.96 80 6 10 no access BLDR BED BLD BED 2 y at base n 6 656850 4355960 estimated length and width from above - cliffed out both sides	10/16/2009	Yuba > C	olgate		19 P	POW	412	9659	34.89	116.5	<u>د</u>				BLDR	BED	BLD	BED			2 r	1						n	600	600				moved away from river to climb banks
					20 N	MCP	380	10039	34.96	80	1	6	1	0 no access	BLDR	BED	BLD	BED			2 y	/ a	t base					n			656850	4355960)	estimated length and width from above - cliffed out both sides

Stream:Yuba RiverReach:Yuba Mainstem above and below Colgate PH

Table 1a. Summary Statistics - Mapped Units

							Average		
				Number of		Average	maximum	Average pooltail	
	Total	Length Rel		Units	Average	pool depth	pool depth	embeddedness	
Unit Type	Length (ft)	Frequency	Number	(frequency)	width (ft)	(ft)	(ft)	(%)	
Fall									
Cascade									
Chute									
Rapid	989	10.1%	4	12.1%	117.5				
High Gradient Riffle	791	8.1%	5	15.2%	73.3				
Low Gradient Riffle	845	8.6%	6	18.2%	92.4				
Glide	235	2.4%	1	3.0%	176.5				
Run	1148	11.7%	5	15.2%	121.3				
Step Run									
Pocket Water	812	8.3%	3	9.1%	89.5				
Sheet									
Convergance Pool									1
Mid-Channel Pool	4978	50.8%	9	27.3%	104.7	6.6	11.1	#VALUE!	
Lateral Scour Pool									
Trench Pool									
Plunge Pool									
TOTAL	9798	100.0%	33	100.0%	104.8	6.6	11.1	#VALUE!	
QC			0		Weighted Average By Length (ft)			-

Table 2. Stream Cover

Dominant Cover Type	Number	Relative Frequency	
Insignificant	2	6%	
Boulder	31	94%	
Vegetation	0		
Wood	0		
SUM	33	100%	
QC	OK		•
Table 3. Rea	ach Summary	/	
Total I	Reach Length:	7.5	mi.
Total M	apped Length:	1.86	mi.

Total Reach Length:	7.5 mi.	
Total Mapped Length:	1.86 mi.	24.7% ma
Average Bankfull Width:	104.8 ft.	0.00 mi.
Bankfull Depth:	6.5 ft.	24.74% Tota
Width:Depth:	16	
Flood Prone Width:	0 ft.	
Entrenchment Ratio:	0.0	
Total Spawnable Gravel:	1,405 ft ² - trout	
Avg Largest Patch Size:	93 ft ² - trout	
LWD Density:	0 / mile (ban	kful)
Wetted LWD Density:	0 / mile (wet	ted width)
Parent Material:	volcanic (Smartville Co	mplex), gabbro
Bank Erosion % of Reach:	0.0%	
Tot No. Passage Barriers:	0	

Table 4. Reach Summary - Substrate and Bank Characteristics

	Dominan	Dominant Substrate		ant Substrate	Bank Su	ubstrate	Bank Substrate Erosion			
	Total	Length Rel	Total	Length Rel	Total Length	Length Rel	Total Length	Length Rel		
	Length (ft)	Frequency	Length (ft)	Frequency	(ft)	Frequency	(ft)	Frequency		
Bedrock	1384	14.1%	2897	29.6%	1008	10.3%	0			
Boulder	7827	79.9%	1971	20.1%	6028	61.5%	0			
Cobble	587	6.0%	4005	40.9%	926	9.5%	0			
Gravel	0		0		0		0			
Sand	0		925	9.4%	1836	18.7%	0			
Silt	0		0		0		0			
SUM	9798	100.0%	9798	100.0%	9798	100.0%	0	0.0%		









Mainstem Yuba River – Habitat Mapping Data Page 3 Mainstem Yuba River – Habitat Mapping Data – Video based – From high water influence of Englebright Reservoir to North Yuba/Middle Yuba Junction

Time	RM	Habitat	Habitat	HM Unit
0:28:34	32.55	13	LAP LAP	
0:28:40	32.59	13	LAP	
0:28:43	32.62	17	000	
0:28:46	32.64	17	OOV	
0:28:52	32.68	13	LAP	
0:28:55	32.70	9	RUN	
0:28:58	32.73	4	RAP	
0:29:04	32.73	13	LAP	
0:29:07	32.79	4	RAP	French Bar
0:29:10	32.81	7	LGR	
0:29:13	32.86	4	RAP	
0:29:19	32.88	8	GLI	split
0:29:22	32.90	9	RUN	1
0:29:25	32.95	8	GLI	2
0:29:31	33.06	8	GLI	2
0:29:34	33.11	12	MCP	3
0:29:37	33.16	12	MCP	3
0:29:43	33.27	12	MCP	3
0:29:46	33.32	9	RUN	4
0:29:49	33.37	7		5
0:29:55	33.48	4	RAP	7
0:29:58	33.53	7	LGR	split at low flow
0:30:01	33.58	4		8
0:30:04	33.69	9	RAP	9
0:30:10	33.74	4	RAP	10
0:30:13	33.79	12		11
0:30:16	33.85	9 #N/A	KUN	Colgate PH
0:30:22	33.93	#N/A		Penstock
0:30:25	33.96	#N/A		Colgate PH
0:30:28	33.99	#N/A #N/A		Colgate PH Tailrace
0:30:34	34.04	#N/A		Tailrace
0:30:37	34.07	#N/A		Tailrace
0:30:40	34.10	#N/A		Tailrace
0:30:43	34.13	12	MCP	1
0:30:49	34.19	7	LGR	2
0:30:52	34.21	7	LGR	2
0:30:55	34.24	17	OOV	2
0:31:01	34.30	17	VOO	
0:31:04	34.33	17	00V	
0:31:07	34.36	12	MCP	3
0:31:13	34.41	12	MCP	5
0:31:16	34.44	12	MCP	5
0:31:19	34.47 34.50	12	MCP TRP	5
0:31:25	34.53	14	TRP	
0:31:28	34.56	14	TRP	
0:31:31	34.59	14	TRP HGR	7
0:31:37	34.64	11	POW	9
0:31:40	34.67	7	LGR	12
0:31:43	34.70	11	POW	13
0:31:40	34.73	12	MCP	15
0:31:52	34.79	6	HGR	16
0:31:55	34.81	12	MCP	17
0:31:58	34.84 34.87	6 12	MCP	18
0:32:04	34.90	12	MCP	20
0:32:07	34.93	14	TRP	
0:32:10	34.97 35.00	6 14	TRP	
0:32:16	35.03	12	MCP	
0:32:19	35.07	11	POW	
0:32:22	35.10	11	HOW	
0:32:28	35.13	3	CHU	
0:32:31	35.20	12	MCP	
0:32:34	35.23	6	HGR	
0:32:37	35.30	12	MCP	
0:32:43	35.33	12	MCP	
0:32:46	35.37	18	SPLIT	
0:32:49	35.40 35.43	12 6	HGR	
0:32:55	35.47	6	HGR	
0:32:58	35.50	7	LGR	
0:33:01	35.53	7 12	LGR MCP	
0:33:07	35.60	17	000	
0:33:10	35.63	17	00V	
0:33:13	35.67	18	SPLIT	
0.00.40	35.70	18		
0:33:16	35.73	12	MCP	
0:33:16 0:33:19 0:33:22	35.73 35.77	12 14	MCP TRP	
0:33:16 0:33:19 0:33:22 0:33:25	35.73 35.77 35.80	12 14 11	MCP TRP POW	
0:33:16 0:33:19 0:33:22 0:33:25 0:33:28 0:33:31	35.73 35.77 35.80 35.83 35.83	12 14 11 11	MCP TRP POW POW HGR	
0:33:16 0:33:19 0:33:22 0:33:25 0:33:28 0:33:31 0:33:34	35.73 35.77 35.80 35.83 35.83 35.87 35.90	12 14 11 11 6 2	MCP TRP POW POW HGR CAS	

0:33:40	35.97	12	MCP	
0:33:43	36.00	2 12	MCP	
0:33:49	36.07	12	MCP	
0:33:52	36.10 36.13	12	MCP MCP	
0:33:58	36.17	12	MCP	
0:34:01	36.20	11	POW	
0:34:04	36.23	11	POW	
0:34:10	36.30	6	HGR	
0:34:13	36.33	6	HGR	
0:34:19	36.40	12	MCP	
0:34:22	36.43	9	RUN	
0:34:25	36.47 36.50	12	MCP POW	
0:34:31	36.53	6	HGR	
0:34:34	36.57	17	000	
0:34:37	36.63	17	POW	
0:34:43	36.67	18	SPLIT	
0:34:46	36.70 36.73	11	POW	
0:34:52	36.77	11	POW	
0:34:55	36.80	6	HGR POW	
0:35:01	36.87	11	POW	
0:35:04	36.90	12	MCP	
0:35:07 0:35:10	36.93 36.97	11	POW	
0:35:13	37.00	11	POW	
0:35:16	37.03	11	POW POW	
0:35:22	37.07	11	MCP	
0:35:25	37.13	6	HGR	
0:35:28	37.17 37.20	18 11	SPLIF POW	
0:35:34	37.23	11	POW	
0:35:37	37.27	12	MCP	
0:35:40	37.30	12	MCP	
0:35:46	37.37	12	MCP	
0:35:49 0:35:52	37.40 37.43	6 7	hgr Lgr	
0:35:55	37.47	6	HGR	
0:35:58	37.50	12	MCP	
0:36:04	37.57	12	MCP	
0:36:07	37.60	12	MCP	
0:36:10	37.64 37.68	12 12	MCP	
0:36:16	37.71	11	POW	
0:36:19	37.75	12	MCP	
0:36:25	37.83	11	POW	
0:36:28	37.86	12	MCP	
0:36:31	37.90	12	MCP	
0:36:37	37.98	11	POW	
0:36:40	38.02	12	POW	
0:36:46	38.09	2	CAS	
0:36:49	38.13	11	POW	
0:36:55	38.20	17	OOV	
0:36:58	38.24	17	OOV DOW	
0:37:01	38.32	6	HGR	
0:37:07	38.35	12	MCP	
0:37:10 0:37:13	38.39 38.43	11	POW	
0:37:16	38.47	12	MCP	
0:37:19	38.51	11	POW MCP	
0:37:25	38.58	12	MCP	
0:37:28	38.62	17	OOV	
0:37:31	38.66 38.69	2 11	POW	
0:37:37	38.73	11	POW	
0:37:40	38.77 38.81	10 12	STEP MCP	
0:37:46	38.85	9	RUN	
0:37:49	38.88	12	MCP POW	
0:37:52	38.96	11	POW	
0:37:58	39.00	11	POW	
0:38:01	39.03 39.07	12 9	MCP RUN	
0:38:07	39.11	12	MCP	
0:38:10	39.15	11	POW POW	
0:38:16	39.18	11	POW	
0:38:19	39.26	10	STEP	
0:38:22	39.30 39.34	12 9	MCP RUN	
0:38:28	39.37	4	RAP	
0:38:31	39.41	12	MCP	
0:38:34	39.45 39.49	17	CAS	
0:38:40	39.52	18	SPLIT	
0:38:43	39.56	11	POW	North Yuba/Middle
0:38:46	39.60	16	COP	Yuba Junction

Mainstem Yuba River – Habitat Mapping Data Page 4



Mainstem Yuba River - Habitat Mapping Units using video-mapped data and longitudinal profile.

Middle Yuba above North Yuba Junction Habitat Mapping Photographs

Middle Yuba above North Yuba Junction Habitat Mapping Photographs



Habitat Mapping Unit 1 – Mid Channel Pool



Habitat Mapping Unit 3 – Pocket Water



Habitat Mapping Unit 5 – Cascade



Habitat Mapping Unit 7 and 8 – Plunge Pool and Cascade



Habitat Mapping Unit 2 – Cascade



Habitat Mapping Unit 4 – Step-Run



Habitat Mapping Unit 6 – Trench Pool



Habitat Mapping Unit 9 – Pocket Water



Habitat Mapping Unit 10 – Plunge Pool

Middle Yuba below Highway 49 Habitat Mapping Photographs

Middle Yuba River below Highway 49 Habitat Mapping Photographs



Habitat Mapping Unit 1 – Run



Habitat Mapping Unit 3 –Lateral Pool



Habitat Mapping Unit 5 – Run



Habitat Mapping Unit 7 – Run



Habitat Mapping Unit 2 – Low Gradient Riffle



Habitat Mapping Unit 4 – Low Gradient Riffle



Habitat Mapping Unit 6 - Low Gradient Riffle

Middle Yuba above Oregon Creek Habitat Mapping Photographs



Habitat Mapping Unit 1 – Step-Run



Habitat Mapping Unit 3 -Low Gradient Riffle



Habitat Mapping Unit 4 – High Gradient Riffle



Habitat Mapping Unit 6 – High Gradient Riffle



Habitat Mapping Unit 2 – Mid-Channel Pool



Habitat Mapping Unit 3 – Mid-Channel Pool



Habitat Mapping Unit 5 – Low Gradient Riffle



Habitat Mapping Unit 7 –Mid-Channel Pool



Habitat Mapping Unit 8 – Run



Habitat Mapping Unit 10 – Step-Run



Habitat Mapping Unit 12 – Low Gradient Riffle



Habitat Mapping Unit 14 –Low Gradient Riffle



Habitat Mapping Unit 9 – Glide



Habitat Mapping Unit 11 – Mid-Channel Pool



Habitat Mapping Unit 13 – Glide



Habitat Mapping Unit 15 – Run

Middle Yuba above Oregon Creek Habitat Mapping Photographs



Habitat Mapping Unit 16 - Low Gradient Riffle



Habitat Mapping Unit 18 – Mid-Channel Pool



Habitat Mapping Unit 20 – Mid-Channel Pool



Habitat Mapping Unit 25 - Chute



Habitat Mapping Unit 17 – Mid-Channel Pool



Habitat Mapping Unit 19 – Step-Run



Habitat Mapping Unit 24 – Rapid



Habitat Mapping Unit 27 -High Gradient Riffle



Habitat Mapping Unit 28 – Mid-Channel Pool

Middle Yuba below Our House Dam Habitat Mapping Photographs

Yuba County Water Agency Hydroelectric Project FERC 2246



Habitat Mapping Unit 1 – Mid-Channel Pool



Habitat Mapping Unit 3 – Run



Habitat Mapping Unit 5 – Run



Habitat Mapping Unit 7 -Low Gradient Riffle



Habitat Mapping Unit 2 - Cascade



Habitat Mapping Unit 4 – Mid-Channel Pool



Habitat Mapping Unit 6 – Lateral Pool



Habitat Mapping Unit 8 – High Gradient Riffle



Habitat Mapping Unit 9 – Mid-Channel Pool



Habitat Mapping Unit 11 –Mid-Channel Pool



Habitat Mapping Unit 13 – Mid-Channel Pool



Habitat Mapping Unit 14 -Low Gradient Riffle



Habitat Mapping Unit 10 – Run



Habitat Mapping Unit 12 – Run



Habitat Mapping Unit 14 – Cascade



Habitat Mapping Unit 15 –Mid-Channel Pool

Middle Yuba above North Yuba Junction Habitat Mapping Raw Data

STREAM HABITAT	TYPING SU	RVEVDA	TA (NI	D Vub	o Deer	DCRED	0						a de		
Contraction of the second seco	Ma dia	- TÀ.,			a-dear,	N. I	m Spaul	aing)	Data St	cct #	A		*** S.		2
Stream/Reach/Subreach:_ Team: Kathi F	reacoch	LG	aea	B	aile	<u>1</u> 462	1 300	rici/ by	Page_	914	of X	7		 105# 	
UTM: 0660581,	43592	36 N	AD 83 (Hat	bitat unit N	<u>il 56</u>	ise		PM	Date	<u>-1</u>	1 - 1		Map Gra	dient:	
Habitat Unit #	1 Y			7			2			4			2-		-
Habitat Type I	FALL CA	AS CHU	RAP	FALL	(CAS)	CHU RAP	FALL	CAS CH	II RAP	FALL	CAS C	HII BAP	FALL	CAS) CH	1 040
3	HGR LO	GR GLI	RUN	HGR	LGR	GLI RUN	HGR	LGR GL	I RUN	HGR	LGR (LI RUN	HGR	LGR GL	RUN
e."	STEP PC	W SHT	COP	STEP	POW	SHT COP	STER	POP SH	г сор	STEP	POW S	нт сор	STEP	POW SH	COP
*note if dammed pool	MCP) L	AP TRP	PLP	MCP	LAP	TRP PLP	MCP	LAP TR	P PLP	MCP	LAP 1	RP PLP	MCP	LAP TR	PLP
Length (R)	150 5	ano	-	184	111-	~	73	10	20	90			20	35	
Est. Avg. Width (R)	106,3	1,20	-	60,	69,7	5.	-73,	13,79	+2	75,	55, 3	8	80)	
Est. Avg. Pool Depth (ft)	107									-			-	7	
Max. Pool Depth (ft)	10,6,	30			•					(
Pooltail Embedded %	INSIGNIE	RIDD	5	NEICHI			-	-	>	-		3			2
onguine currer r	VEG	WOOD		VEG	C,	HOOD	VEG	WOO	R	INSIGNIE	(BL	DOD	INSIGNI	F (BLD) WOO	
SUBSTRATE COMPOSITIO	N NED 1		COP.			100000	Anne anne anne anne anne anne anne anne	20			0				
Dominant Substrate	CRV C		COB	BED (BLD	COB	BED	BLD	COB	BED	(BLD)	COB	BED	BLD'	COB
	GRY S	du D	SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	SLT
Subdominant .	BED B	LD (COB	BED (BLD	COB	BED	BLD	COB	BED	BLD	COB	BED	(BLD)	COB
50050 auc	GRV S	ND	SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	SLT
Dominant	BED) B	LD	сов	BED	BLD	СОВ	BED	BLD	COB	(BED)	BLD	COB	BED	BLD	COB
			361	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	SLT
Length of LB and RB Exposed Banks (feet)	ø		51/1	GRV	¢	SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	SLT
Length of LB and RB Exposed Banks (feet) Confinement ⁴	ø		511	GRV 1	¢	SLT	Ø	SND	SLT	GRV	SND	SLT	GRV Ø	SND	SLT
Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N)	ø Yes,	basu	e	da 1 ho	¢	SLT	GRV Ø No	SND	SLT	GRV	SND	SLT	GRV Ø Yes	snd tup	SLT
Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N) Tributary Inflow in cfs	ø yes,	basi	e	ho b	¢	SLT	GRV D NO Ø	SND	SLT	GRV D I NO	SND	SLT	GRV GRV Yes	sno top	SLT
Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N) Tributary Inflow in cfs Landmarks or photos JTA	¢ 1 1 1 1 31	6951 -8	e	ho 136	ф Я	SLT	GRV Ø No Ø 13	SND 370	SLT	GRV	SND 	SLT	GRV Jes J3	tup 72	SLT
Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N) Tributary Inflow in cfs Landmarks or photos DTA	yes, yes, 131 Diamet	6951	e Length class	ho 13k	SND	Lingth	GRV Ø No Ø IE	SND 370 Diameter class	SLT Length	GRV 0 1 1 1 1 1 1 1 1 1 1 1 1 1	SND Diameter class	Length	GRV Yes J 3	snd tup 72 Diameter class	Lengt
Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N) Tributary Inflow in cfs Landmarks or photos DTA Large Woody Debris ³	Ves, Ves, Diamet	6ası -8	e length class	ho 134	SND	SLT Léngth class	6 0 13 13	SND 370 Diameter class	SLT Length class	GRV 1 100 137	SND Ulameter class	Length class	GRV Yes J3	SND FUC Diameter class	SLT Longi class
Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N) Tributary Inflow in cfs Landmarks or photos STA Large Woody Debris ⁵ within bankful width	yes, yes, Diamet class	6as	e Length class	ho 134	SND	SLT Leigth class	GRV Ø NO Ø 13	SND 370 Dianxter class 1	SLT Length class	GRV 1 10 13 13 13 13 13 13 13 13 13 13	SND Dlameter class	Length class	GRV VUS 13	SND FUC Diameter class	SLT Lengt class
Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N) Tributary Inflow in cfs Landmarks or photos DTA) Large Woody Debris ⁴ within bankful width	P Yes, 131 Diamet class	6951 **	e Length class	ho 13k	SND	SLT Length class	GRV Ø NO Ø I I I	SND C-700 Diameter class / 	SLT Length class	GRV 0 1 1 1 1 3 7 - - - - - - - - - - - - -	SND M Dlameter class	Length Class	GRV JUS J3 ·	SND FUC F2C Diameter class	SLT Lengt Class
Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N) Tributary Inflow in cfs Landmarks or photos DTA Large Woody Debris ⁴ within bankful width	P Yes, 131 Diamet	6ası **	e Length class	1000 3k	SND 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1	SLT Length class	GRV DO DO DO DO DO DO DO DO DO DO DO DO DO	SND 3700 Diameter class 1 1	Length	GRV Ø 1 137 Ø	SND Diameter class	Length class 	GRV Hes 13	SND TOP 72 Diameter class	SLT Lengu Class
Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N) Tributary Inflow in cfs Landmarks or photos TA Large Woody Debris ² within bankful width No. of LWD Pieces within wetted width Fish Migration Barrier ⁶ ym)?	p yes, n Diamet class	6as	Length class	ho 13k	SND 9 9 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1	Length class 1 1	GRV DO DO DO DO DO DO DO DO DO DO DO DO DO	SND 370 Diameter class 1 1	SLT Length class	GRV	SND Diameter class	SLT Length class 1 1	GRV 9 13 13 13	SND TOP P2 Diameter class	Longs
Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N) Fributary Inflow in cfs Landmarks or photos TA Large Woody Debris ³ within bankful width to. of LWD Pieces within wetted width Sh Migration Barrier ⁶ w/n)? pawnable Gravel Area (sqft) st ²	p yes, n bienet class n o n o		e i Length class	100 34 · / 0	SND 9 9 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1	Length class 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	GRV DO DO DO DO DO DO DO DO DO DO DO DO DO	SND 370 Dianeter class 1 	SLT Length class		SND Diameter class	SLT Length class 	GRV Dyes B 13 · Van b	SND FDC Diameter class	Longi
Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N) Fributary Inflow in cfs Landmarks or photos TA .arge Woody Debris ³ within bankful width to. of LWD Pieces within wetted width Tsh Migration Barrier ⁶ //h)? pawnable Gravel Area (sqft) /st ² //4 [*] - 2.5 [*]) faximum Spawning Gravel atch Size (sq-ft) Est.	p yes, p indiana class no No N/A	e a su - 8 - - - - - - - - - - - - -	e l Length class	A DOBIE	SND SND Snameter Class Y 44 Barry Ddo	Length class 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	GRV D D D D D D D D D D D D D	SND 370 Diameter class 1 1 1 5 2+5	Length	GRV Ø 1 0 0 1 3 7 0 0 1 3 7 0 0 0 0 0 0 0 0 0 0 0 0 0	SND Diameter class X X 6 X Z 6 X Z	SLT Length class	GRV Jes Jes Jes Jes NA	SND TOP P2 Diameter class	Longu
Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N) Tributary Inflow in cfs Landmarks or photos DTA Large Woody Debris ³ within bankful width No. of LWD Pieces within wetted width Tsh Migration Barrier ⁶ y/n)? pawnable Gravel Area (sqft) St ⁷ 1/4 ⁺ - 2.5 ⁺) faximum Spawning Gravel atch Size (sq-ft) Est.	p yes, p ising class no No N/A Coved I	e a su -8 -8 -8 -8 -8 -8 -8 -8 -8 -8	e l Length class	CRV DA DOBIE	SND SND SND SND SND SND SND SND	Length class 1 553.49 197.34 1	GRV Ø 13 13 13 13 13 13 13 13 13 13	SND 370 Diameter class 1 1 5 2+5 ormitrout	Length	0 1 0 1377 . Q C 4 2 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	SND Diameter class X X G X Z G X Z C X M	Length class I	GRV () () () () () () () () () ()	SND TOP 72 Diameter class	
Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N) Tributary Inflow in cfs Landmarks or photos TA Large Woody Debris ³ within bankful width No. of LWD Pieces within wetted width Set Alignation Barrier ⁶ y/n)? Ipawnable Gravel Area (sqft) St ² 1/4* - 2.5") Aaximum Spawning Gravel atch Size (sq-ft) Est. Comments / Deervations: ish? Wildlife? Amphibs?	p yes, p ising class no p N/A trenc	eas Base Hereit	e i Length class	A LOGIC ING	SND SND SnD Snameter Class Y U Barn Dala Cass	Leight class 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	GRV GRV DO DO DO DO DO DO DO DO DO DO	SND 370 Dianeter class 1 1 5 2+5 0 rn trout whichered	Length class	GRV Ø 1 0 0 13 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SND Diameter class X X G X G X G X C X C X C X C X C X C X	Length class 1 1 1	GRV yes 13 13 13 13 15 15 15 15 15 15 15 15 15 15	SND F2 Diameter class I I I I I I I I I I I I I	Longs
Length of LB and RB Exposed Banks (feet) Confinement ⁴ Unit Flagged/ Labeled? (Y/N) Tributary Inflow in cfs Landmarks or photos TA Large Woody Debris ⁵ within bankful width Vo. of LWD Pieces within wetted width Ysh Migration Barrier ⁶ y/n)? ipawnable Gravel Area (sqft) St ² 1/4* - 2.5 ⁻) faximum Spawning Gravel atch Size (sq-ft) Est. comments / biservations: ish? Wildlife? Amphibs? ackwater or side chan, amphib abitat? Riparian? Landmarks, boto #s, Etc.	p yes, p no no N/A trence	eas Burger	e i Length class	A LOBAL . NO CINUS	SND SND SnD Snameter Class Y 41 Barn Data Cass	Leight class 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	GRV GRV DO DO DO DO DO DO DO DO DO DO	SND 370 Dianeter class 1 1 5 275 0 restrout wildered neteragen	Length class Line paols, stdiv stdiv	BRV B 1 0 13 7 1 0 0 13 7 D 15 7 D 1	SND Diameter class x x b x b x z cascadi gradi	Length class 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	GRV yes 13 13 13 13 15 15 15 15 15 15 15 15 15 15	SND F2 Diameter class I I I Grad.	Longs

The minimum unit length should be 1x active channel width, unless there is something notable or unique about it. ² Note if cover is a significant or dominant feature of the unit:

(e.g., logs in stream, lots of boulders, >25% surface area has instream or low overhanging vegetation, etc.) *Channel Conlinement: 1=Confined Shallow; 2=Confined Deep; 3=Moderate Confined (<2x wetted channel width); 4=Unconfined (>= 2 wetted channel widths)

Q/C initials:

45K

 (\hat{n})

⁵Criteria for LWD is:any downed wood within bankfull width of channel =or> than 1/2 bankfull width.

Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (le. 6 | 25 = 6-12", 25-50')

⁶ Waterfalls, high velocity chutes or cascades at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access points (read condition, bridge crossings, trails, etc.)

#1-pool at helicopter landing #3 produce a slightly diverg channel around big rocks Apat short rappid forms a control between 2 sections of pocket water #5

UTM: 06010, 1	1359	471	NAD 83 (I	Habitat unit N	io				PM	1000	1.00				Map Grad	ient:	
Habitat Unit #	6			7				8	2		9				10	010	
Habitat Type ¹	FALL	CAS	CHU RAP	FALL	CAS	CHU	RAP	FALL	CAS CH	IU RAP	FALL	LGR	GLI	RAP	FALL	LGR	GLI R
	STEP	POW	SHT COP	STEP	POW	SHT	COP	STEP	POW SH	TT COP	STEP	POW	SHT	COP	STEP	POW	SHT C
note if dammed pool	MCP	LAP	TRP) PLP	мср	LAP	TRP (PLP	MCP	LAP TF	ep plp	MCP	LAP	TRP	PLP	MCP	LAP	TRP P
Length (ft)	210	0	<u> </u>	19	21	5		28	/		105				125	a	1 5
Est. Avg. Width (ft)	98	60	68	5	2;7	-5,7	3	19	l		75	160)			17	5
Est. Avg. Pool Depth (ft)	8,	53	<u> </u>	9	5,3	3,0		-							10,	6,4	,0
Max. Pool Depth (ft)	8			-		9 4	1	R		_	-			-	101	- 1011	-ho
Pooltail Embedded % Significant Cover? ¹	INSIGNI	F	BLDR	INSIGNI	F	BLDR		INSIGNIE	BLI	R.	INSIGNE	FC	BLDR		INSIGNI	101	BLDR
CURPTRATE COMPOSITIO	VEG		WOOD	VEG		WOOD	<i>a</i> .	VEG	WO	OD	VEG		WOOD		VEG	î	WOOD
Dominant	BED) BLD	COB	BED	BLD)	СОВ	BED	BLD	COB	BED	BLD	,	COB	BEB	BLD	c
Substrate	GRV	SND	SLT	GRV	SND)	SLT	GRV	SND	SLT	GRV	SND		SLT	GRV	SND	S
Subdominant	BED	BLD	Сов	BED !	BLD	う	COB	BED	BLD	COB	BED	BLD	1	COB	BED	BLD) (
Substrate	GRV	SND	SLT	GRV	SND	5	SLT	GRV	SND	SLT	GRV	SND		SLT	GRV	SND	\$
Dominant	BED	BLD	COB	BED	BLD)	СОВ	BED	BLD	COB	BED	BLD		COB	BED	BLD	c
Bank Substrate	GRV	SND	SLT	GRV	SND)	SLT	GRV	SND	SLT	GRV	SND		SLT	GRV	SND	5
Length of LB and RB	- 20			A				-1			1				4		
Exposed Banks (feet)	Ø			14				φ		<u>6</u>	Ø				Ø		
Confinement ⁴	1			11				1			1				1		
Unit Flagged/ Labeled? (Y/N)	n	2		N	D			no			no				Nes	, ta	20m
Tributary Inflow in cft	1 M			10	<u> </u>			1. 1. 6.	MIRA	Ino	1.0			- 5	184		-
Tribuary move area	10	17		123	, V			137	5.127	- INP	no	c I	ach		60	12	177
Landmarks or photos	15	7 2 Diameter	Lengt	1.57	Diameter		Length		Diameter	Length	134	Diameter	050	Length	DTI	Diameter	<u>, </u>
		class	class		class	/	class		class	class		class		class		class	
Large Woody Debris ⁵		<u>} </u>		-		-			/				_				
within bankin, widen	\neq							1			1				1		i
No. of LWD Pieces	13	70	5 B	F	7			Ø			8	ŝ.			0		
Fish Migration Barrier	No	~ /		n	0	62.51		Vios	0666	5710	no	6			17,	20	201
(y/n)? Spawnable Gravel Area (sqft)	axi	0.	1.	1	U , 3	1.1 41	_	100	-12	12-17-1	1					~	1.1
Est.7	ou	Fol	water	φ	0			ø			Ø				D		
(1/4 - 2.5) Maximum Seauning Gravel	0	111	ragin	1 MI	^			1	- 0						11/	1	
Patch Size (sq-ft) Est.	0	16		N	M			N/A	5tt	Servi	NA	N			N/I	4	
Comments /	San	dy b	ante .					Som	Am.	Justy					Deep	prin	access
Fish? Wildlife? Amphibs?	RE	A	NPODI	X .				depri	- chate	1 Sol					Est.	dep	The Bri
Backwater or side chan, amphib habitat? Riparian? Landmarks,	Br	om	nigh	1				arte	- Por	Ash					al	UTA	1 bbb
Photo #s, Etc.	121	in	s V					topa	SEMO	teng					Ena	VCII	43
¹ FALL = Falls, CAS = Cascade.	CHU = Chut	e, RAP =	Rapid, GLI = Glide	, RUN = Rur	n, STEP =	Step Run.	HOR =	High Gradier	11 Rifle 1+4%)	LOR = LOW	Gradient Rif	file, POW =	Pocket	Water, S	HT = Sheet	low;	
Pools: COP = Convergence, I	ACP = mid-o	hannel po	ol, LAP = Lateral,	TRP = Tren	ch, PLP =	Plunge	abla or		in wit	most	1 101	14	. 6	How	ou	RP	wte
² Note if cover is a significant	or dominar	it feature	of the unit:	0111033 111011	0 13 3011	earing nou		unique auc	nem	ing chill	es pro	inf	p · · c			K	P
(e.g., logs in stream, lots of ⁴ Channel Confinement: 1=Co	boulders, nfined Sha	>25% su llow; 2=0	face area has i confined Deep; :	nstream or 3=Moderate	low over Confine	manging v ad (<2x we	egetatio	on, etc.) annel width); 4=Unconfi	ned (>= 2 v	vetted char	nnel width	s)	10415;			<u></u>
⁵ Criteria for LWD is:any down	ed wood w	ithin ban	kfull width of cha	annel =or> 1 5-50' 50-7	than 1/2	bankfull w	ridth.	25-50')					la	dela	atar	ard	
⁵ Waterfalls, high velocity chut	es or casc	ades at a	pprox bankful II	ows, NOTE	VERTIC	CAL DROP	P and IF	CONDITI	ONAL or PE	RMANENT					J'-'		
⁷ Spawning Sized gravel subn	hersed in a	in area of	adequate depti	n and veloc	ity within	i one unit							4	-0	om	ng	bro
Notes regarding access																1	v
crossings, trails, etc.)				3	1	2	1.10	10 +	la.	1:	#10	ير المور	pm.*	r	conth	No.	hut
1.h 127	1 tr	ans	; tion	be	twe	en	HI	IB +	1 0	ma	\mathcal{O}	P	فسا لرب			J	Jun
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	110	141	23					1 Ht.			la	0.10	A	sh	eer	100	I CIC

middle yuba TN yuba metr KPIGB Stopped & HMU 10 - too steep & dingerous to entrue 0660691/4359615 (On LOA ciff) rough mecane from ciff 60 hong 40' wide 15% grad. CAS # 11 "Ing 75'mile # 12 STEP 95 #13 50' 75' CAS # 1/4 POL and cirke 1380 Shins entire sequence phisto Ħ FILL Ned where stopped a ceff above #10 laseled "My thy Houro" (My 7 My) below my/Ny Inchin 665 pow last, stern deep went. walls/blogs se bldrs. TRP not study site material. no 25555 DTAI 1406 -> LOSE TLE 7 across Sr. CAS 1407 415 SLAND (AS-) shalf me tolls intro a 1408 605 1401 ->CAS Bldr. dom son petches of ge gravel inter bldes where shools Thes het a whet lots pocket pools, where the Stille bed

DIRAC

DARLING CORP TACOMA, WA 984 www.BiteintheRain.com

9/14/09 Middle N. Yuba June. PHOfy (below inch - rip. Zme) UB limited Riparian veg. community due to sheer rock slopes of river canyonno soils/transitional zone for established) community. Plenty of riparian/mesic OBL plants, such as Salix Meida, S. exigua, Alder incanus, Populus transami, at bars and base of canyon walls where wider Typical riparian barbs: 2 asters (to be keyed later) brickellia, and occos. Carer nudata scattered throughout bailders at water's edge. carey good indicator of turbulent flows & establish scd deposits (see Sedges of Pac. NW. book as reference) Upland species generally ~ 37-20-12 above boulder bar to includes canyon live bak as dominant. some grey pire, ponderusa back Dale Some greas GN On S-Factory & MP grass (too far to is) and Archtostaphyla patua as under smid story. Hyp per (Hamoth weed), Satter broom dominate @ base starcess read tomain road. Also spreading for short dist at River Junction.
		JURI				a-DCai	,1001	5 DI U	in opaulo	ing)		Data CL	eet #						
Stream Baach Subreach	m	1 0	in	144	19 (Fren	Um)	(ind)			Data Su	1	. 7	~				
	1B ·	/		. / 1		1000	120)			Page		of	g .				
Icam:	1.1.121	1711	u		5.0	040	i.					Date	9-1	60	1				
UTM: 0004871	0/450	0110		NAD 83 (H	labitat unit ?	vo_)	5 b	se	٠		PM						Map Grad	ient:	
Habitat Unit #		1				2			3	PL	IT *	r i		3				4	
labitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS CI	HU RAP
	HGR	LGR	GLI	RUN	HGR	LGB	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	(LGR) G	LI RUN
note if dammed pool	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP T	RP PLP
Length (ft)		74	1			63			4	47	0			382	_		7	223	
Est. Avg. Width (ft)	49	31	3	7	38	38	48						136	143	14	5 138	115	107 11	9
Est. Avg. Pool Depth (ft)		/				-							35.	3,1	0 1	0.5		-	
Max. Pool Depth (ft)	BRD=	216				-		_						3.5				1	
Pooltail Embedded %	INSIGNIE	-	BIDP	<u> </u>	INSIGNT	-	PLDD		DICIONIE		-	~	-	50	20		KICICAI		
ingianication context	VEG		WOOD		VEG	2	WOOD		VEG	8	WOOD	ر ا	VEG		WOOD		VEG		DOD
UBSTRATE COMPOSITIO	BED	6LD	2	COB	BED	RID		COR	BED	pr.		COR	BED	PID	8	COP	BED	BID	600
ubstrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SNI	, ,	SLT	GRV	SND		SLT	GRV	SND	SLT
Subdominant	BED	BLD		(COB)	BED	(BLD)		COB	BED	BLI)	COB	BED	BLD	0	COD	BED	(BLD)	COB
lubstrate	GRY	SND		SLT	GRV	SND		SLT	GRV	SNI)	SLT	GRV	SND		SLT	GRV	SND	SLT
Dominant	BED	(BLD))	СОВ	BED	ELD)	СОВ	BED	GLI)	COB	BED	GLD)	СОВ	BED	(LD)	COB
Bank Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SNI	5	SLT	GRV	SND		SLT	GRV	SND	SLT
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andmarks or photos (21A)	14514	Holo U	514	61	# 146	BWS	>	Length	#1460	14	05	7 vit	#14-	10 L	US	Locath	14-	ti we	5
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arge Woody Debris ⁵			1				\checkmark				1			/	<u></u>			/	ĩ
Anni Olizziar Widen		\leftarrow	+			/				_			-7	<u> </u>					
o. of LWD Pieces		Ð				Ð		-		9				P	-		1	Ð	
sh Migration Barrier *		N				.1	(NT				~ 1	8				
(n)? pawnable Gravel Area (soft)		~			151	N		1	64216	kho	2026	ALL	L.e.	1		-	12 43	12×10	1.47
st. ⁷ /4" - 2.5")		Ð			121				18×12	N	7WS.	જ્લ	too	tide)	eres a	E.	6×3	6 x2	33
aximum Spawning Gravel itch Size (sq-ft) Est.			-	9	(x)		27 - 1 A		14431	ZXer	121,12	1×1,1		-			12×	6	
omments /	Madi	red +	mil		701				41-7	IL	64->	6217	6116	stail	buts	56 11	Arti	icial n	vole
oservations: sh? Wildlife? Amphibs?	FAIT	hi	21 dz	em	210				GUZ	IL	627	617	Ser	ron i	67 :	0	miniv	15 1	
ckwater or side chan, amphib		2							4627	1	Lh		hot o	cano	Kd. C	pes	diddi	Ty gr. d	lace.
oto #s, Etc.									Frazi	+	,		grices	y	split a	150	spli+	wten	1.1.11.1
	11 Of 1		-14 - M-1						P.	r. 121	see.		cetto	uls 1	60		chere	chedn	n ~
The minimum unit length sh ote if cover is a significant or (e.g., logs in stream, lots of b hannel Confinement: 1=Confi	CP = mid-cha nould be 1x dominant fo noulders, >2 ined Shallow	hap = hap nel pool, active ch eature of 5% surfa w; 2=Cor	pid, GLI = LAP = L nannel w the unit ace area nfined D	= Gilde, F _ateral, TF width, un t: a has ins Deep; 3= 1	1UN = Run, 1P = Trenci less lhere tream or lo Moderate (STEP = S n, PLP = P is someth ow overha	itep Run, H Plunge hing notal anging ve (<2x wet	HGR = H ble or u ogetation ted cha	nique abour nique abour n, etc.) nnel width);	Aiffie (: t it. 4=Und	onfined (l = Low G	radient Riff	ie, POW = nel width	Q/C init	/ater, SH ials:	IT = Sheetli	J.	K
riteria for LWD is:any downed Size classes: 6-12", 12-24", /aterfalls, high velocity chutes spawning Sized gravel subme	d wood with 24-36",or 3 or cascade rsed in an a	in banktu 36"+ x 3- es at app area of ac	ull width 10', 10- prox ban dequate	of chan 25', 25- kful flow depth a	nel =or> th 50', 50-75' s. NOTE \ nd velocity	ian 1/2 ba , 75'+ (ie /ERT/CA / within o	ankfull wid 6 25 = L DROP ne unit	dth. 6-12", : and IF	25-50') CONDITIO	NAL or	PERMA	NENT			-				

* sput looks like was Contr. Sp. Ch. m LBD.

	WIDDA	CIDV		T. ())	TD V	. Daan	DCIRI	20	Guarda	13			3							
STREAM HABITAT	Mill	Idle	GC GC	11A (N	<u>46</u>	w /	the p	9 Y	'9 1	iing)		Data Sh Page Date	cet # 7-1	of 7	9	-	41		18	ж.
UTM: 0664906/	430	1120	N	AD 83 (Ha	abitat unit	No. 5	5 6	ρ			РМ						Map Grad	lient:		
Habitat Unit#	1	5			<u> </u>	6				4				E	3					
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
Prote if dammed pool	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP
Length (ft)		8	3			129	-			140				85	5					
Est. Avg. Width (ft)	120	117			1	05 1	27	115	103	67	BI		79	69	101		201	-un	de	/
Est. Avg. Pool Depth (ft)		1				-	<			in	L.W	1200	125	/	- 66	0-2	1-	bria	ge	
Max. Pool Depth (ft)	*	/				~	3			/	-		2	/				wy	Sy	9
Pooltail Embedded %	-	1			DIGIGLE	~	~~~~			<	0		DISTORY				INCIONI			/
Significant Cover?*	VEG	シ	WOOD		VEG	ur (WOOD		VEG		WOOD		VEG	F (WOOD	2	VEG	·	WOOD	
SUBSTRATE COMPOSITION	N			0		(11)				(-		ni n		(OR)	BED	BID		COR
Dominant Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	,	SLT	GRV	SND		SLT	GRV	SND		SLT
	BED	ALD		COB	BED	BLD	d.	COB	BED	BLD	-	(co)	BED	(BLD	5	сов	BED	BLD		COB
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Dominant Bank Substrate	BED GRV	BLD	\rangle	COB SLT	BED GRV	BLD	>	COB SLT	BED GRV	BLD	>	COB SLT	BED GRV	(BLD SND)	COB SLT	BED GRV	BLD		COB SLT
Length of LB and RB Exposed Banks (feet)		Æ	€			Ē	>			Đ	>			Æ	Э					
Confinement ⁴		1				I				l										
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Tributary Inflow in cfs		-	- 1			-	*			_	r			Æ	€					
Landmarks or photos	#14	1721	-05		#14	73 L	115		# 14	74	W	5	#147	5					_	
		Diameter class		Length class		Diameter class	_	Length class		Diameter class	_	Length Class		Diameter class	_	Class		Diameter class	8	Length class
Large Woody Debris ⁵		/	4			/	4			/	4				4				-	
WITHIN CHIRACE WITHIN	-		+			-				~		_	-		+			-		
No. of LWD Pieces		Ð	ç.		9	Ð	>			Ð				0	\$					
Fish Migration Barrier*	1	N				5	1			J				Ч						
Spawnable Gravel Area (sqft)	1876	2×	3 17	3	3×1	60	25	~	3×	161	(6		1.5	×12	226	101				
(1/4" - 2.5")	1×	2			1.57	ib lix	6						24	3 IX	2 1					
Maximum Spawning Gravel Patch Size (sq-ft) Est.		IBX	ط			bx	1			loxy			1.5;	×12						
Comments / Observations: Fish? Wildlife? Amphibs? Backwater or side chan. amphib habitat? Riparian? Landmarks, Photo #s, Etc.	oug, split from	hod bAu lun	sfied, versi VN	1	hun but 19 Spirt	onersi onersi onersi onersi onersi	544 1926 JM -	60 Vecal	Split Some HF (necri riff uh. rb	ier ~	BA	bld Min	5% rstur re.rm	n LB Niku	A -				

TALL = Falls, CAS = Cascade, CHU = Chute, RAP = Rapid, GLI = Glide, RUN = Run, STEP = Step Run, HGR = High Gradient Riffle (>4%), LGR = Low Gradient Riffle, POW = Pocket Water, SHT = Sheetlow

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(e.g., logs in stream, lots of boulders, >25% surface area has instream or low overhanging vegetation, etc.)

* Channel Confinement: 1=Confined Shallow; 2=Confined Deep; 3=Moderate Confined (<2x wetted channel width); 4=Unconfined (>= 2 wetted channel widths)

⁵ Criteria for LWD is: any downed wood within bankfull width of channel =or> than 1/2 bankfull width.

Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 | 25 = 6-12", 25-50')

⁶Waterfalls, high velocity chutes or cascades at approx bankful flows, NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

⁷ Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access

points (road condition, bridge crossings, trails, etc.)

best gravels due to mining digging aut a separating - good size + surfing appropriation of the open lots mining moulfication. Very few modelstee hubit ats due to multiple wse, splits, artificial pools, artificial d/s annols. Not regressitative of hobitat but of mining.

O/C initials:

STRE	AM HABIT	TAT TYPING	SURVEY	DATA (NID Yu	ba-Bear	r, PG&E Dri	um Spaulding)
Stream	/Reach/Subrea	Ich: Mid	dellu	ba abi	ve	Orean	ncrude
Team:	Kathi	Piacek	Pathy	Hardest	1,6	ara B.	ancy
UTM:	0665	105, 43	62264	NAD 83 (Habitat unit	No 1	(bace)	1

Data S	Sheet #	
Page	Ĩ.	of
Date	9/1	3/09

	y 10	WLLU	<u>/</u> N/	AD 83 (Ha	abitat unit l	No	boas	se)			PM						Map Grad	lient:	_	-
Habitat Unit #	IT				2	0.1	P	5	3			_	3	_			4			_
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR .	EGR) GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP
*note if dammed pool	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCPS	LAP	TRP	PLP	MCP	LAP	TRP	PLP
Length (ft)		38	8	~	- 25	6	_		40	1			167		-		10	2		
Est. Avg. Width (ft)	534	5,57	42,5	9	10,6	2,66			60	,63	1		44	03,6	5		43	,41		
Est. Avg. Pool Depth (ft)	-		-11/2-	2	6,3	,2.	5,0)		1			7.	5,3	3.2	O	'			
Max. Pool Depth (ft)			-		6	1	1						7			/				
Pooltail Embedded %	1 2 3		2		15%		-		1	-			0-1	20 W	odif	et				
Significant Cover?"	INSIGNI	F (BLDR	2	INSIGNE	F C	BLDR	(INSIGNI	シ	BLDR		INSIGNI	\sim	BLDR	>	INSIGNE	(BLDR)
SUBSTRATE COMPOSITIO	NN N		WOOD		YEG		WOOD		VEG		WOOD		VEG		WOOD		VEG		WOOD	
Dominant	BED	BLD)	COB	BED	BLD	>	COB	BED	(BLD)	COB	BED	BLD	5	COB	BED	BLD	8	COB
Substrate	GRV	SND		SLT	GRV	SND	ler -	SLT	GRV	SND		SLT	GRV	SND	_	SLT	GRV	SND		SLT
Subdominant	BED	BLD	8	COB	BED	BLD)	COB	BED	BLD	- 	COB	BED	BLD		COB	BED	BLD	2	COR
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	N	SLT	GRY	SND		SLT	GRV	SND	1	SLT
Dominant	BED	BLD)	COB	BED	(BLD	5	СОВ	BED	BLD		COB	BED	BLD		СОВ	BED	BLD		COB
Bank Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	TIND	j	SLT
Length of LB and RB Exposed Banks (feet) E ros iの	ø				ø	c			Ø	n			в				Con	BA BA	SLD BEI	D
Confinement ⁴	1					1			Ì				1				1			
Unit Flagged/ Labeled? (Y/N)	yes.	base			no				no	>			50)		ĺ	115	-+-	00	
Tributary Inflow in cfs																				
Landmarks or photos (XA)	133	33			133	4			132	5			13:	510	-		125	57		
Large Woody Debris ⁵ within bankful width		Diameter class	\downarrow	Length class	*	Diameter class	4	Length class	•	Diameter class	7	Length class		Diameter class	4	Length class		Diameter class	<u> </u>	Length class
No. of LWD Pieces within wetted width		/	~			/	2			/			4		$\overline{}$	_	/	1	1	
Fish Migration Barrier ⁴ y/n)?		/			/	\sim				/		-	/	/			/	<u> </u>	-	
Spawnable Gravel Area (sqft) Est. ⁷ 1/4" - 2.5")	3115	2×1, 4,12×1 of Mat	273,1	1×1,	ø				Ø				42×12	,				,		
Maximum Spawning Gravel Patch Size (sq-ft) Est.	12×10 Daradi	ent 4	.5%	00	Ø				Ø				424	12			/			
Comments / Diservations: Tish? Wildlife? Amphibs? Jackwater or side chan. amphib abitat? Riparian? Landmarks, hoto #s, Etc.	step rn step cl on 1/2 c channy Diff. to to oblig	n w/ naract or les of pu o mod	nifile s of n chia	is the way	vtifis sx em ulnoh vater	ial de bended bended /2 th yz th gr	is staff	cam dum gage of- bitat; -baxes	spawin inth but for s	nishi requi	abito estru boxr	15	tail very but grav	noo lots rel.	pou lified Spau), NG	Madela 7% c	ible s grac	ection dien	5. }

FALL = Falls, CAS = Cascade, CHU = Chute, RAP = Rapid, GLI = Gilde, RUN = Run, STEP = Step Run, HGR = High Gradient Riffle (>4%), LGR = Low Gradient Riffle, POW = Pocket Water, SHT = Sheetllow, Boolst COP = Convictance, LICB

Poola: COP = Convergence, MCP = mld-channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

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7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access

points (road condition, bridge crossings, trails, etc.)

upstream of conjunction @ end of first puol-ruan comparamets

Q/C initials:

	11.1	No M			abor	en		. (~			Data She	eet #	1	-					
tream/Reach/Subreach:	Mia	yle y	ar	201	etto		rege	suc	х,			Page	2	of	2_					
eam: KP PH, G	B,											Date	9/13/	09						
TM: 0665372	431	217		AD 83 (H	ibitat unit N	56	ase				РМ		<u>.</u>	_	_		Map Gra	lient:		
labitat Unit #	5				6				7*	-		1	8				9			
labitat Type 1	FALL	CAS	СНU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
	HGR	LGR	GLI	RUN	HGB	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI (RUN	HGR	LGR	(GLI)) RUN
	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	TPP	PLP	MCP	LAP	TRP	PLP
note if dammed pool	III	5	TRP	FLF	LD	LAP	IRP	FLF	28	S	IKF	FLF	124	bat	110		210	>		
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ignificant Cover?2	INSIGNI	B	LDR		INSIGNI	F (BLDR		INSIGNE	FC	BLDB)	INSIGNI	C	BLDR	1	INSIGN	FC	BLDR	•
URSTRATE COMPOSITIO	VEG	4	400b		VEG		WOOD		VEG		WOOD	i	VEG		WOOD	9.	VEG		WOOD	
cominant	BED	BLD)	COB	BED	(BLD	>	COB	BED	BLD)	СОВ	BED	BLD		COB	BED	BLI	シ	COB
ubstrate	GRV	SND		SLT	GRV	SND	Ŭ.	SLT	GRV	SND	9 1	SLT	GRV	SND		SLT	GRV	SNI)	SLT
bobdominant	BED	BLD		COB	BED	BLD	D	COB	BED	(BLD	>	COB	BED	BLD		COB	BED	BLI		COB
ubstrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SNI	2	SLT
Dominant	BED	BLD)	COB	BED	BLD	D	COB	BED	(BLD)	COB	BED	BLD		COB	BED	(BL)	2	COB
ank Substrate	GRV	SND	6.V	SLT	GRV	SND		SLT	GRV	SND	a K	SLT	GRV	SND		SLT	GRV	SNI	D . 1	SLT
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ength of LB and RB	4				~	1			A				1				17	and	60	
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faximum Spawning Gravel						<							1×1				1×4			
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ackwater or side chan. amphib	Carern	udata-	great	411:1	. 81	, gr	adies	nt	Creativ	s-ang	atte	feed	8				4 m	e er	VSIDY	due
ioto #s, Etc.	sedin	high f	urb	avea	5	0	6		back	heck	anis	m					tor	nodif	ricoti	onj
	both b	inks 7	01.0	cove	nge	3			3						-		rur	like	arr	UP, P
FALL = Fails, CAS = Cascade, C Pools: COP = Convergence, M	HU = Chute CP = mid-ch	RAP = Rap annel pool,	LAP = L	= Glide, Lateral, T	RUN = Run RP = Trenc	, STEP = h, PLP =	Step Run, Plunge	HGR =	High Gradie	int Rittle (>	4%), LG	R = Low (Gradient Rif	fle, POW :	= Pocket	Water, S	HT = Shee	WOW	scol	oble
The minimum unit length s lote if cover is a significant of	hould be 1	x active ch feature of	the unit	width, ui t:	nless there	e is some	athing not	able or	unique abo	out it.							-9	-	Th	vale
(e.g., logs in stream, lots of	boulders, >	25% surfa	ce area	a has in	stream or l	ow over	hanging v	egetatio	on, etc.)						Q/C in	itials:			HP.	_
Channel Confinement: 1=Cor Criteria for I WD is any downe	fined Shall	ow; 2≃Con hin bankhu	lined D	eep; 3= of cher	Moderate	Confine han 1/2	d (<2x we bankfull w	itted ch idth.	annel widt	h); 4=Uno	confined	(>= 2 w	etted chai	nnel widtl	ns)				25	
Size classes: 6-12", 12-24"	, 24 -36 ",o	36"+ x 3-	10', 10	-25', 25	-50', 50-75	5', 75'+ (le. 6 25	= 6-12"	, 25-50')											
Naterfalls, high velocity chute Spawning Sized gravet subm	is or casca arsed in an	des at app area of ar	rox ban	nkful flor a denth	ws. NOTE	VERTIC ty within	AL DRO	and IF	CONDIT	IONAL of	PERM	ANENT								
Sherwining Orzen Aravei 2001		area or di	-odnsre	- copui		cy 1011111	une utilit													
otes regarding access		2.2																240		
Ints (read condition, bridge																				

- High-blow side channel on LBA - 31% gradient

Hg-Run, out because of damns & dug out banks, creating pools at banks, and step pool for length of run Highly mulified; afterhigh flows remove dams, will prob be a run!

																		-		
STREAM HABITAT	FYPING	SURVE	EY DA	ATA (N	ID Yuba	a-Bear, ∕	, PG&	E Drur	n Spaule	ling)		Data Ch		7_						
A	1-11	. V.	1.4	14	ANC		. 1					Data Sh	201 #							
tream/Reach/Subreach: <u>//</u>	MAAI	<u>e 1</u> u	194	1420		<u>veg</u>	<u>vi</u>	nep				Page	2	of	<u> </u>					
eam: KP, PH,	GB											Date	7/13	200	2					
TM: 0605552	, 436	223	4_1	AD 83 (H	abitat unit N	101	anse	2		i	PM		<i>.t</i>				Map Gra	dient:		_
abitat Unit #	10				11				12				13				14			
abitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	(LGR)	GLI	RUN	HGR	LGR	Ð	RUN	HGR	LGR) GLI	RUN
	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP '	POW	SHT	COP
ote if dammed pool	MCP	LAP	TRP	PLP	(MCP)	LAP	TRP	PLP	МСР	LAP	TRP	PLP	МСР	LAP	TRP	PLP	MCP	LAP	TRP	PLP
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L Avg. Width (ft)	47.0	54,3	3,		102	,52	.19	, lala	57	1,55			58	15.5	<i>w</i>		72,	65,0	8	
t Ave. Pool Depth (ft)	-		/		410	5.2	2	0						-						
T. Peol Denth (ft)	1-				11 =	15	14-1	-						7.	5					
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mificant Cover?"	INSIGNE	1	BLDR	<	INSIGNI	5	BLDR		INSIGNE	r G	LDR)	INSIGNI	0	BLDD		INSIGNI	F	BLDR	>
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BSTRATE COMPOSITIO	RED	RID	n	CO3	BFD	PID			BED	(pro	7	COP	BED	AT P	D	CON	RFD	-	7	COF
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bdominant	BED	BLD		COB	BED	BLD		COB	BED	BLD	(COB	BED	BLD		COB	BED	BLD	9	COB
strate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
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nk Substrate	GRV	SND		SLT	GRV	SND)	SLT	GRV	SND		SLT	GRV	SND	.c	SLT	GRV	SNE		SLT
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ngth of LB and RB	Ø				6	1	126	8	\mathcal{D}			0	~		-17					
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ndmarks or photos	134	7			12	48		-	124	19			135	TO .		+	135	51		
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ximum Spawning Gravel	IVI				ZV	1			EYZ	0			ax	2		- 54	4	F 15	125	
ch Size (sq-ft) Est.	~ >				- X	1			~~~				0.11	-			-		14	
numents /	Step-1	Run	wis	hort	1011	boni	wate	ovil,	21/-	andi	ent	-	Bind	6	3 4	linda	Som	e in	dist	het
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h? Wildlife? Amphibs?	Steps	- Lot	561	(atuh-	est and	00	No1	10	10m	e sa	lay	~	600	04 L.	A_0	whifing	ofsi	which	Lagi	tufic
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7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access points (road condition, bridge crossings, trails, etc.)

#19- Spawn grav ount: 2×1.5, 1×1, 1×1, 2×1, 1×1, 2×20hannel margin, banke. Fulldepth 1,75 [2×16 above bankful (next page)

STREAM HABITAT Stream/Reach/Subreach:_ Team: _KP,PH_/ UTM:	TYPING SURVEY Middle Yu GB 1,4362162	DATA (P (64)	VID Yub Cub Gub abitat unit N	a-Bear, PG	180 Drui (190 Se	n Spauld	ing) W	- PM	Data She Page <u>4</u> Date	1/13	of	` `		Map Grad	ient:		
Vableat Light #	15		14			I C	1		-	18	-			19			
Habitat Tene ¹	FALL CAS CH	U RAP	FALL	CAS CI	U RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
tabliat type	HGR LGR GI	I RUN	HGR	ACR) G	LI RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
	STEP POW SH	T COP	STEP	POW SI	TT COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	TEP	POW	SHT	COP
sole if dammed pool	MCP LAP TR	P PLP	MCP	LAP TH	IP PLP	(MCP)	LAP	TRP	PLP	MCP)	LAP	TRP	PLP	MCP	LAP	TRP	PLP
length (ft)	\$0		119			22	6			2	-4			112	/		
Est. Avg. Width (ft)	107 101 48	8	45.1	17,65		58	,46	,67	-	43	.51.	34		38.	40,2	2	
	10-10-10		-	<u> </u>		91	-0	0		25	227	e're	5	_	, /		
Est. Avg. Pool Depth (ft)						0,5	12,	2		25	1 4.1	2112	2				
Max. Pool Depth (ft)						8	-	-		2,3	-4 50-90 - 15 -		-				
Pooltail Embedded %	INCIONTE	2	INCICION	1	1	307	<u> </u>	2	b	0-5	cour	(IN)		INSIGNI		RT PR	5
significant Covert	VEG WO	DD	VEG	Call	OD	VEG		WOOD	e.c	VEG	Υ Q	WOOD		VEG		WOOD	·
UBSTRATE COMPOSITIO	N		400	1		i.	S	-									
Dominant	BED BLD	COB	BED	BLD	COB	BED	BLD	ソ	COB	BED	(BLD)		COB (BED	BLD		COB
Substrate	GRV SND	SLT	GRV	SND	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
Subdeminant	BED BLD	COB	BED	BLD	COB	BED	BLD		COB	BED	BLD		сов	BED	BLD	2	COB
obstrate	GRV SND	SLT	GRV	SND	UT.	CPV	500	0	SLT	GRU	SND		SLT	GRV	SND	SS - 1	SLT
	ORT SHO	501	OAV	2 11	361	GAT	(and	2	361	ON T	SIL		001			10	0.01
Dominant	BED BLD	COB	BED	BLD	COB	BED	BLD		COB	BED	CBLD)	сов	BED	BLD		COB
ength of LB and RB Exposed Banks (feet)	в		ø	l fait an an an Antonio an An		ø				ø				Ø		el.	
confinement ⁴	I - FPW	120	1			1				í							
nit Flagged/ Labeled? (Y/N)	Yes-ba	se	no			no				NO				yes	-		
ributary Inflow in cfs	no		n	2		no				no				no			
andmarks or photos	1352		13	53		135	4			135	5			13	56		
	Diameter	Leagth		Diameter	Length	122	Diameter		Length	1.4.5	Diameter		Length		Diameter		Lengt
	# class	class		class	class	,	class		class		class	25	class		class	1.1	class
arge Woody Debris											-			1	r	_	
ithin bankful width								_				_		\vdash	-		
a of I WD Places		-	1				/		-	/	-		-	1-	L		-
ithin wetted width	/					/				/	n 		_	/			
ish Migration Barrier * /n)?	no		/	hb		r	0			no)			no			
pawnable Gravel Area (sqft) st. ⁷ /4" - 2.5")	see note pr	ev	242	above han,m	bF argin(12×6	cha good	nma dflo	い	>	1×2	8		6x 1X1	Zab ,)rl	ove	34
aximum Spawning Gravel atch Size (sq-ft) Est.	1216		6×4	1500		1241	e			307	(6			1×	6×	3	
omments / bservations: sh? Wildlife? Amphibs? ackwater or side chan. amphib abitat? Riparian? Landmarks, hoto #s, Etc.	Almost pock but too mu surface asi	et Vale ets techion	sed 31.	ne bla nons- topinot grad	esp modelal ient	500 200	wid- char isc	hol the inel	e (12×12) hann	Pinima	th-p king	oint ds		Low upp step lots	er 21: er 1/3 veg 1 veg 1	3 wild nerr Only	and s

¹ FALL = Falls, CAS = Cascade, CHU = Chute, RAP = Rapid, GLI = Glide, RUN = Run, STEP = Step Run, HGR = High Gradient Riffle (>4%), LGR = Low Gradient Riffle, POW = Pocket Water, SHT = Sheetflow, Poole: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

Q/C initials:

The minimum unit length should be 1x active channel width, unless there is something notable or unique about it.

² Note if cover is a significant or dominant feature of the unit:

(e.g., logs in stream, lots of boulders, >25% surface area has instream or low overhanging vegetation, etc.)

⁴ Channel Confinement: 1=Confined Shallow; 2=Confined Deep; 3=Moderate Confined (<2x wetted channel width); 4=Unconfined (>= 2 wetted channel widths)
⁵ Criteria for LWD is:any downed wood within bankfull width of channel =or> than 1/2 bankfull width.

Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 | 25 = 6-12", 25-50')

⁶ Waterfalls, high velocity chutes or cascades at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

⁷ Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access points (road condition, bridge crossings, trails, etc.)

19 - Sm. rapid (2 waved at top of 1ST step, rapid separates steps End Survey, begin characterization ob666029, 4362161

ted.	middle beton ore above,	Juba		P Sofi	128,	9)13/09 04,GB
DUR/	unit#	HAB	lengh	width	(poolso 1)	photott
	20	MCH	105	50,47	5	1357
	Big hdelp	oole base	a sit de	ep; max de	pth main	3', where a bottom
	211/082	1 GR	54	1/3 410 47		
	37. 0	redent	31	10,70,12	2	
	27	RUN	133	51.53		
1	XLIXI	, 2 KI al	DOVE BE	6×3. 18×	6	
BH222-1D	deep bor	nder run	n w/som	e scouris	light cor	tol events
T COTT	23	MCP	92	29,43	7	- pos
theRait	bedru	cle side	LBA			
coler v Ritein	24	RAP	70	31,22		1358
HUNG I	25	CHIN	47	27,18,22	-	1350 -
I.L DA		SPLIT	245			
	RBA_	HDR, L	BA = RIF	RUN, R	BA = RIE	Runy
	26	POW	298	83,68		
-	6x4 span	vngrav.	2×2, 1/1	,31×1,5	XIU, GX4	d
	1:27	HGR	325	58,96,74		#1360
	4º/0 8 Blow	radj non ines	modable	multiplev	valer surfe	ces and
	38	MCP	918	97, 119,1049	8	1364 LDS :
	6×1 4	spawno	gran.			1365 LUP
	long tau	W/some	surface	2 05		
10.612	lateral 1	wo and	1362	prob ab	Y FYE-	1563
	THE REFERENCE OF	אטרי זי	TO NUCP	infino con	E	17

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÷.

Madle giba roregn ce 9/13/09 Plogb anit this pool becomes unwallcable, too deep w Few to no places to get out; very deep wide, bedrock walls w/ full viparian veg. community where suils allow PUN 90 65 29 trench/MCP 433 15 10't dyth 30 CAS END @ bese 30 The preserved L. of 0666588/4361973 1009 -----Froz signing - + 1367 + 1366 0665734/ 4362260 But low boly for This wall

STREAM HABITAT	TYPING SURVEY I	DATA (N	ID Yub	a-Bear, P	G&E Dru	n Spaulo	ding)			1						
	veine .	1 .		1	. 1		F	Data	Sheet #	1						
Stream/Reach/Subreach:	Middle '	lub	oa t	2e10	W O	JV H	CUS	C Page		of	<u> </u>					
ream: Kathi	Peacoc	·k	, Go	reat	Saiky J	Dai	m	Date	9/11	00	1_					
UTM: 0671924	1/4363951	NAD 83 (H	abitat unit N	1+0	ρ'		1	PM			-	_	Map Grad	lient:		-
Habitat Unit #			2	~		3			199 - C	50	LIT		. "4	3 		
Habitat Type ¹	FALL CAS CHI	U RAP	FALL	(CAS)	CHU RAP	FALL	CAS	CHU RA	P FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
	HGR LGR GL	I RUN	HGR	LGR	GLI RUN	HGR	LGR	GLI RU	N) HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
	MCP LAP TPI	P PT P	STEP	POW	TPP PLP	STEP	POW	TPP PI	P STEP	TAP	TPP	PLP	MCP	LAP	TRP	PLP
note if dammed pool	130	r rtr	77	LAP	INF FLF	MCP Incl	LAP	IRP PL	7	0	110	101	T)	114	1.61
Eet Arra Width (ft)	50 701	0	- 46	ed 1	.2	54	410	ND	10	107	117	0,	50	-7	ð	21
Con strike interest (in)	10	-	-	170,9		1,2,	14			100	1- 6	-	H	2 -	2. 1	
Est. Avg. Pool Depth (ft)	10,6,4,	-					250	0	_				4		-1	<i>, , ,</i>
Max. Pool Depth (ft)	No GI CARE			2		-	1212	-2	-				Ø			
Significant Cover?2	INSIGNIF (BLDI	5	INSIGNI		LDR	INSIGNE	1	BLDR	INSIGN	IF C	BLDR		INSIGNI	FC	BLDR	5
CINCED ATE COMPOSITIO	VEG WOO	Ð	VEG	W	/OOD	VEG	5	WOOD	VEĞ		WOOD)	VEG		WOOD	K
Dominant	BED BLD	COB	BED	BLD	COB	BED	BLD	0	B BED	BLT	2	COB	BED	BLD	>	COB
Substrate .	GRV SND	SLT	GRV	SND	SLT	GRV	SND	SL	T GRV	SNI	5	SLT	GRV	SND	-	SLT
Subdeminant	BED BLD	COB	BED	BLD	COB	BED	BLD	60	B BED	BLI)	COB	BED	BLD		COB
Substrate	GRV SND	SLT	GRV	SND	SLT	GRV	SND	SL	T GRV	SNI) - ⁽	SLT	GRY	SND	D	SLT
Dominant	BED BLD	COB	BED	BLD	COB	BED	BLD	D C0	B BED	BLI)	COB	BED	BLD	2	COB
Bank Substrate	GRV SND	SLT	GRV	SND	SLT	GRV	SND	SL	TGRV	SNI	0	SLT	GRV	SND	6	SLT
				the second second									1	Concerner,		
Length of LB and RB Exposed Banks (feet)	1		\sim			M.			A				d			
	φ		φ			Ψ.			φ				P			_
Confinement ⁴	2		1			1,FB	W = (20-	1				4	2	-	
Unit Fiagged/ Labeled? (Y/N)	yes-top	>	no	2		no	2		n	0	20		10	D. '	P	>
Fributary Inflow in cfs	no		no	(n	2		n)			100	0		2.0
andmarks or photos	f - ululo	1.05	1444	1		LILI	5		111	41			14	171	UK I	LIVEN
	Diameter Byor	Length	1111	Diameter	Length	177	Diameter	Ler	igth 1	Diameter		Length	19	Diameter		Length
	· class TZR	tclass		class	class	- C R C	class	cla	55 #	class		class		class	11	class
Large Woody Debris				1	1					-				1-	<u> </u>	-
vitain banknii width	$\vdash A \rightarrow \downarrow$					A				1			+			
to. of LWD Pleces			A			A				,			N			
within wetted width	P		φ			φ			ϕ		÷		4	-		
y/n)?	no		no	2		No)		no	>			n	0		
pawnable Gravel Area (sqft)	A		44 1	d	2	442	2,10	X23	12 2	X3 6	green	6 West	1.0	43	124	3.
st. 1/4" - 2.5")	14,		1-174	P			· · ·	, ,	JX-	2 01	YZ	-	12.15	10	w1.	
faximum Spawning Gravel	ā la		11	ен. К		lov.	7_		0%	-)			0	2		
atch Size (so-ft) Est.	na		NI	5		e k			3	13			ay	2		
	difficult a	ccess	119	600	dient	la b	pulde	son	5%	gys	dier	x	C.	nall	flo	was
Comments /	william on		1111	- UXY1	nyperi	wa a	6 ha	20122000	1/2	clas	nne	lis	1 2	pul	der	SV2
Comments / Diservations:	to botton	1		V		11/////	1 1 1 1 1			· · · · · · · · · · · · · · · · · · ·				V VV		
Comments / Diservations: ish? Wildlife? Amphibs? ackwater or side chan. amphib	to botton			V		mour	gin		14	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	NIN	hal	15	Cont	lo	10
Comments / bbservations: ish? Wildlife? Amphibs? ackwater or side chan. amphib ubitat? Riparian? Landmarks, boto #5. Etc.	to botton			U		TV COLV	gin		ste	Par	in,	haf	121	ade	ion r2	12p

O/C initials:

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Notes regarding access points (road condition, bridge crossings, trails, etc.) #1-arms taken at top of pool - between #1 and #2--14143 LOS Brown near for of whit the #11 - 1449 photo of step at top of #4 from LBA LDS

UTM:		119	NAD 83 (H	abitat unit l	No LUY	0.0	1	PM					Map Gra	dient:		
Habitat Unit #	5.			6			7	-		SF	NIT		8			
Habitat Type ¹	FALL	CAS	CHU RAP	FALL	CAS C	HU RAP	FALL	CAS CHU	RAP	FALL	CAS CH	IU RAP	FALL	CAS	CHU	1
	HGR	POW	SHT COP	HGR	LGR G	LI RUN	HGR	LGR GLI	RUN	HGR	LGR GI	I RUN	HGR) LGR	GLI	1
note if dammed pool	MCP	LAP	TRP PLP	MCP	(LAP) T	RP PLP	MCP	LAP TRP	PLP	MCP	LAP TH	P PLP	MCP	LAP	TRP	- 1
Length (ft)	11	10	lei -		97		38	: 109		35			90	-		
Est. Avg. Width (ft)	61,	51,5	55	54	,61,1	68	530	60,58		-			7	5 3	7,:	3
Est. Avg. Pool Depth (ft)	-	-		3.	5,		-							and the second se		
Max. Pool Depth (ft)		BFT	0-3	3	5,3,1	75	BFT	フニろ		-			BF.	D=-	2	
Pooltail Embedded %	INSIGNI	· 6	IDP	DNS ICNI	E PI	- fac	DISTONI	-	~	DIGIGNIN	- 6	5	DISTON	- /	0	
Significant Cover:	VEG		YOOD	VEG		DOD	VEG	WOOL	<u>,</u>	VEG	WO	OD	VEG	r Q	WOOD	
SUBSTRATE COMPOSITIO	BED	BLD	COB	BED	(III)	COB	RED	RID	COR	850	(RID)	COR	RED	RID	5	-
Substrate	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND		
Subdominant	BED	BLD	COB	BED	BLD	COB	BED	BLD	COB	BED	BLD	COR	BED	BLD		1
Substrate	GRV	SND	SLT	GRV	SND	SLT	GRY	SND	SLT	GRY	SND	SLT	GRV	SND	((
Dominant	BED	(BLD)	СОВ	BED	BLD)	COR	BED	BLD	СОВ	BED	BLD	COB	BED	BLD	>	
Bank Substrate	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND		
ength of LB and BB	1				6					ie.						
Exposed Banks (feet)	U			th			Ch			d			Ø			
Confinement ⁴	1			4			1			41		_	7			
Juit Flagged/ Labeled? (Y/N)	Vo	5-1	00	1100	SMC	l	00			10			00	5		-
Nibuton Inflore in af	1º	1-1	<u>-</u> Y	yes	- war	Ľ	110			<u> </u>	<u> </u>		100	<u>.</u>		-
montary minow in cis	no	5		n	0		NO	-		n	0		n	0		
andmarks or photos	145	Diameter	Land.	14	5 1 Diameter	Lorent	1L	52	1	14	531.	ome	ЪА	145	41	Ŋ
		class	class		class	class		class	class		class	class		class	_	
arge Woody Debris		/			$\langle -$						/				1	_
TIME CONTRACT WITH	\square		1	\neq			/			HA	_	_	1		+	-
io. of LWD Pieces	0			ON	1		$\langle \mathcal{O} \rangle$			P)		0	-		
ish Migration Barrier	1			100	1		N.						100	о		-
nawnable Gravel Area (coft)	NO			P1C	r		110	. P.		VI	0		no	(_
st ⁷ (/4" - 2.5")	ŻY	2,6	×1.5	ø		£	2	3×2	1	Ø			ø			
faximum Spawning Gravel atch Size (sq-ft) Est.	6%	1.5		N/	a		31	(2		n/	a		NIF	١	2	
omments / vbservations: ish? Wildlife? Amphibs? ackwater or side chan. amphib abita? Riparian? Landmarks, hoto #s, Etc.	Sand LBA hole	y dep , Sci reguin	assition ts min inements	160 1000 1007 1007	contra se low nscour 2025/ 2025/	O MARKEN	35) Mo	delab	ent.	1/2 0	han n; 1/2	pow	5%	,		
FALL = Fails, CAS = Cascade, C Pools: COP = Convergence, M The minimum unit length s Note if cover is a significant or (e.g., logs in stream, lots of it Channel Conlinement: 1=Con Criteria for LWD is:any downe Size classes: 6-12", 12-24",	HU = Chute, CP = mid-chi hould be 1> r dominant boulders, >/ lined Shallo d wood witl , 24-36°,or s or cascao	RAP = Rap annel pool, I k active chi feature of I 25% surfac xw; 2=Conti hin bankful 36"+ x 3-1 des at appr	Nd, GLI = Glide, I LAP = Lateral, T annel width, ur the unit: ce area has ins lined Deep; 3= Il width of chan 10', 10-25', 25- rox bankful flow	RUN = Run RP = Tranc less there tream or I Moderate nel =or> ti 50', 50-75 xs. NOTE	, STEP = Step h, PLP = Plung ow overhangi Confined (<2 han 1/2 bankl i', 75'+ (ie. 6 VERTICAL D WERTICAL D	Run, HGR = H po notable or u ing vegetatio x wetted cha lull width. 25 = 6-12*, ROP and IF unit	ligh Gradlen Inique abo In, etc.) Innel width 25-50') CONDITIO	it Riffle (>4%), LGi ut it,); 4=Unconfined DNAL or PERM/	R = Low G (>= 2 we ANENT	radient Riffi	e, POW = Pock Q/C nel widths)	et Water, SH initials:	T = Sheet	K	P	

.

STREAM HABITAT T	YPING Lide	survey fle Yu	bata (NID Yut	NOU	PG&ED	rum Spau USC (lding) LA M		Data She Page	#_2	€ of4		5 3	(#	э т		
ream: Kathi Pec	4362	<u>E</u> \$C 1111	NAD 83	L Bas	Dey No Daj	se k	2		PM	Date	9/1	00	9		Map Gra	lient:		
	01	· ·	**************************************	10				,			1	2			12			_
Jabitat Umt #	FALL	CAS CI	IU RAI	FALL	CAS	CHU RA	P FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
	HGR	LGR G	LI RUN	HGR	LGR	GLI (K	N) HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
	STEP	POW SI	IT COI	STEP	POW	SHT CO	P STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP
note if dammed pool	(MCP)	LAP TH	RP PLF	MCP	LAP	TRP PL	P MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP
ength (ft)	1-	104	~ 1	63	3			160	5		4	P			-	125	-	_
st. Avg. Width (R)	100,	59 5	7,51	9 60	1	_	56	61,61	1.0		5	>		_	45	184	2, 80	5
st. Avg. Pool Depth (ft)	3,1	5,75	1,75,0	-	er. \		5.	5							6,5	, 3,	Ś, C	2
fax. Pool Depth (ft)	3.7	5		-	_		5.	2,2	75	2.25,	01	BDS	=27)	6			
ooltail Embedded %	H/	11.	20	INCICAL	-	in n	10	1.	6.60	~			0		40	X	him	,
ignificant Cover:	VEG	WO	OD	VEG		VOOD	VEG	B .	WOOD		VEG	<i>v</i> .	WOOD		VEG	·	WOOD	
UBSTRATE COMPOSITION	1				(/				1	2			1-100		
ominant ubstrate	BED	BLD	COE	BED	BLD		B BED	BLD	_	COB	BED	BLD	_	COB	BED	BLD)'	COB
	GRY	SND	SLI	GRV	240	SL	I GRV	SND		SLT	GRV	SND		SLI	GRV	SND	-	SUL
ubdominant ubstrate	BED	BLD	COB	BED	BLD	co	B BED	BLD	P	COB	BED	BLD	(COH	BED	000	3	СОВ
	GRY	SND	SLT	GRV	SND	SL	T GRV	CSND		SLT	GRV	SND	den -	SLT	GRY	SND		SLT
ominant ank Substrate	BED	BLD	, COB	BED	BLD	co	B BED	BLD	2	COR	BED	BLD		COB	BED	BLD)	COB
ength of LB and RB xposed Banks (feet)	Ø			¢		1	¢			361	Ø	JIL		5.07	t	5		304
onfinement ⁴	2			1			2								2			
nit Flagged/ Labeled? (Y/N)	ye	s to	8	Ne	s k	ouse	5	0			in	5			ne	د		
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omnens / bservations: sh? Wildlife? Amphibs? ackwater or side chan. amphib abitat? Riparian? Landmarks, noto #s, Etc.				som agit but tob	e su tatio tou e vif	Leip	ruino	- uil	ee, bi true	150 vt	agi- ver	Fati y di	er er	but	out but weak	still BAD	pou dec trolj tr u	es Tor
ALL = Falls, CAS = Cascade, Ci Pools: COP = Convergence, M/ The minimum unit length si Jote if cover is a significant or (e.g., logs in stream, lots of t Channel Confinement: 1=Coni Driteria for LWD is:any downe Size classes: 6-12*, 12-24*, Vaterfalls, high velocity chutes Spawning Sized gravel subme	HU = Chute CP = mld-ch hould be 1 dominant boulders, > ined Shall d wood with 24-36",or s or casca brsed in an	, RAP = Rapid, lannel pool, LA x active chan feature of the 25% surface ow; 2=Confin thin bankfull w 36"+ x 3-10" des at approx area of adeq	GLI = Gilde P = Lateral, nel width, 1 a unit: area has i ed Deep; 3 vidth of cha , 10-25', 2 bankful flu uate depth	b, RUN = Rur TRP = Tranc unless there astream or =Moderate annel =or> t 5-50°, 50-75 bws, NOTE a and veloci	n, STEP = Si ch, PLP = Pi e is someth low overha confined (chan 1/2 ba 5', 75'+ (ie. VERTICAI	ep Run, HGR unge nging notable nging vegeta (<2x wetted nkfull width. 6 25 = 6-1 L DROP and the unit	= High Gradi or unique at ation, etc.) channel wid 2°, 25-50') I IF CONDIT	ent Riffle (> out it. th); 4 =Unc	4%), LGR onfined (PERMA)	} = Low G (>= 2 we NENT	radient Riffl	e, POW =	Q/C Ind s)	Valer, SH tials:	IT = Sheetf	_K	ſ	
ntes regarding access Ints (road condition, bridge cessings, trails, etc.) M A H HC W N AYYDW NLS, BHC, R MG HWM 2	da the ip.v	mi car 105 cu 20 f	2000 yon t t:	l ric sts o	pavi Jeep 6 Al	the bowd	comi slov chan er ba	mu.v ves - nsifo v a	ut. Lin Mar	1 ex of 1 Si	stab nu aU i	his h ich chu	ed are cid	20. 0- 12.	nsid to	coll. alix	ect ex	igu

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CAS CH LGR GL POW SH LAP TR 2 58 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	HU RAP LI RUN TT COP RP PLP OD COB SLT COB SLT COB SLT COB SLT	FALL HGR STEP MCP JUO INSIGNIF VEG BED GRV BED GRV BED GRV BED GRV	CAS LGR POW LAP BLD SND BLD SND BLD SND BLD SND	CHU F GLI F SHT C TRP F	AP FA AP FA UN HC OP ST LP M INSI VEG OB BI LT GI OB BI LT GI OB BI LT GI OB BI LT GI		AS CHU GR GLI DW SHT AP TRP V C BLDR WOOD BLD SND BLD SND BLD SND	RAP RUN COP PLP 0 V COB SLT COB SLT COB SLT	FALL HGR STEP MCP AC INSIGNI VEG BED GRV BED GRV BED GRV	CAS LGR POW LAP	CHU GLI SHT TRP BLDR WOOD	RAP RUN COP PLP PLP COB SLT COB SLT COB SLT	FALL HGR STEP MCP INSIGNI VEG BED GRV BED GRV BED GRV	CAS LGR POW LAP F BLD SND BLD SND BLD SND BLD SND	CHU GLI SHT TRP BLDR WOOD	RAA RU CO PLI
CAS CH LGR GL POW SH LAP TR SND BLD SND BLD SND BLD SND BLD SND BLD SND C Diameter class	HU RAP LI RUN HT COP RP PLP COB SLT COB SLT COB SLT COB SLT	FALL HGR STEP MCP J40 INSIGNIF VEG BED GRV BED GRV BED GRV BED GRV	CAS LGR POW LAP BLD SND BLD SND BLD SND BLD SND BLD SND Compare the second seco	CHU F GLI F SHT C TRP F	AP FA UN HU OP ST LP MU ILP MU	LL C FR Ld EP PO CP L CP L CO CO CO CO CO CO CO CO CO CO	AS CHU GR GLI OW SHT AP TRP VC VFC BLDR WOOD BLD SND BLD SND BLD SND	RAP RUN COP PLP ON COB SLT COB SLT COB SLT	FALL HGR STEP MCP AC INSIGNII VEG BED GRV BED GRV BED GRV	CAS LGR POW LAP CANA BLD SND BLD SND BLD SND	CHU GLI SHT TRP BLDR WOOD	RAP RUN COP PLP PLP COB SLT COB SLT COB SLT	FALL HGR STEP MCP INSIGNI VEG BED GRV BED GRV BED GRV	CAS LGR POW LAP F BLD SND BLD SND BLD SND BLD SND	CHU GLI SHT TRP BLDR WOOD	RAI RUN COO PLI PLI CO SL CO SL
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, RAP = Rapid, annel pool, LAI a active chann feature of the 25% surface ow; 2=Confine	, GLI = Glide, AP = Lateral, 1 nnel width, u e unit: e area has in ned Deep; 3:	RUN = Run, TRP = Trench Inless there Instream or Ic =Moderate (STEP = S h, PLP = P is someth ow overha	tep Run, Ho lunge hing notab anging veg (<2x wette	R = High G or uniqu atation, etc d channel	iradient Ri e about if c.) width); 4	liffie (>4%), Li t. I=Unconfine	GR = Low (ad (>= 2 w	Gradient Rif	ffle, POW	Q/C in ths)	t Water, S mitials:	BHT = Shee	itflow;	l	
thin bankfull w r 36"+ x 3-10' des at approx n area of adeq	width of char y, 10-25', 25 x bankful flo quate depth	nnel =or> th -50', 50-75' ws. NOTE ' and velocity	han 1/2 be ', 75'+ (ie VERTICA y within o	ankfull widt 6 25 = 6 L DROP a ne unit	n. -12", 25-5 nd IF COM	0) NOITION	AL or PERM	MANENT	£ - •	2	1-2					
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	RAP = Rapid annel pool, L/ k active char feature of th 25% surface w; 2=Confir hin bankfull bankfull das at appro area of ade	RAP = Rapid, GLI = Gilde, annel pool, LAP = Lateral, ' k active channel width, u feature of the unit: 25% surface area has in w; 2=-Confined Deep; 3 hin bankfull width of cha 36"+ x 3-10', 10-25', 25 des at approx bankful lio area of adequate depth	RAP = Rapid, GLI = Gilde, RUN = Run, annel pool, LAP = Lateral, TRP = Trencl k active channel width, unless there feature of the unit: 25% surface area has instream or lo w; 2=Confined Deep; 3=Moderate hin bankfull width of channel =or> th 36"+ x 3-10', 10-25', 25-50', 50-75 des at approx bankful flows. 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NOTE VERTICAL DROP ar area of adequate depth and velocity within one unit	RAP = Rapid, GLI = Gilde, RUN = Run, STEP = Step Run, HGR = High G annel pool, LAP = Lateral, TRP = Trench, PLP = Plunge & active channel width, unless there is something notable or unique feature of the unit: 25% surface area has instream or low overhanging vegetation, etc w; 2–Confined Deep; 3=Moderate Confined (<2x wetted channel hin bankfull width of channel =0r> than 1/2 bankfull width. 36"+ x 3-10", 10-25", 25-50", 50-75", 75"+ (ie, 6 25 = 6-12", 25-51 des at approx bankful flows. 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NOTE VERTICAL DROP and IF CONDITION area of adequate depth and velocity within one unit	RAP = Rapid, GLI = Gilde, RUN = Run, STEP = Step Run, HGR = High Gradient Rilfie (>4%), L annel pool, LAP = Lateral, TRP = Trench, PLP = Plunge k active channel width, unless there is something notable or unique about it. feature of the unit: 25% surface area has instream or low overhanging vegetation, etc.) w; 2–Confined Deep; 3=Moderate Confined (<2x wetted channel width); 4=Unconfine hin bankfull width of channel =or> than 1/2 bankfull width. 36"+ x 3-10", 10-25", 25-50", 50-75", 75'+ (ie. 6 25 = 6-12", 25-50") des at approx bankful llows. NOTE VERTICAL DROP and IF CONDITIONAL or PERM area of adequate depth and velocity within one unit	RAP = Rapid, GLI = Glide, RUN = Run, STEP = Stap Run, HGR = High Gradient Rilfle (>4%), LGR = Low d annel pool, LAP = Lateral, TRP = Trench, PLP = Plunge k active channel width, unless there is something notable or unique about it. feature of the unit: 25% surface area has instream or low overhanging vegetation, etc.) bw; 2=Confined Deep; 3=Moderate Confined (<2x wetted channel width); 4=Unconfined (>= 2 w hin bankfull width of channel =or> than 1/2 bankfull width. 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 25 = 6-12', 25-50') des at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT area of adequate depth and velocity within one unit MAMMARK # HAB L W M4X L, 50' L, 5	RAP = Rapid, GLI = Gilde, RUN = Run, STEP = Step Run, HQR = High Gradient Rilfle (>4%), LQR = Low Gradient Rilfle annel pool, LAP = Lateral, TRP = Trench, PLP = Plunge k active channel width, unless there is something notable or unique about it. feature of the unit: 25% surface area has instream or low overhanging vegetation, etc.) xw; 2=Confined Deep; 3=Moderate Confined (<2x wetted channel width); 4=Unconfined (>= 2 wetted channel in bankfull width. 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 25 = 6-12'', 25-50') des at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT area of adequate depth and velocity within one unit MMMMMMER # HMB W M&X stept MMMMMMER # HMB W M&X stept MAC 1b2 50 L, 5	RAP = Rapid, GLI = Gilde, RUN = Run, STEP = Step Run, HQR = High Gradient Riffle (>4%), LQR = Low Gradient Riffle, POW annel pool, LAP = Lateral, TRP = Trench, PLP = Plunge k active channel width, unless there is something notable or unique about it. feature of the unit: 25% surface area has instream or low overhanging vegetation, etc.) w; 2=-Confined Deep; 3=Moderate Confined (<2x wetted channel width); 4=Unconfined (>= 2 wetted channel width) hin bankfull width of channel =or> than 1/2 bankfull width. 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 25 = 6-12'', 25-50') des at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT area of adequate depth and velocity within one unit MMATTRE HMB MAX MEPTIN MATTRE Image: Max Meptine MATTRE Image: Max Meptine MATTRE Image: Max Meptine MATTRE Image: Max Meptine	RAP = Rapid, GLI = Glide, RUN = Run, STEP = Step Run, HGR = High Gradient Riffie (>4%), LGR = Low Gradient Riffie, POW = Pocker annel pool, LAP = Lateral, TRP = Trench, PLP = Plunge k active channel width, unless there is something notable or unique about it. feature of the unit: 25% surface area has instream or low overhanging vegetation, etc.) Q/C is w; 2=Confined Deep; 3=Moderate Confined (<2x wetted channel width); 4=Unconfined (>= 2 wetted channel widths) hin bankfull width of channel =or> than 1/2 bankfull width. 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 25 = 6-12'', 25-50') des at approx bankful lows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT area of adequate depth and velocity within one unit MATCH 250 L, 57 L, 57 PM MATCH 250 L, 57 F, 75' Within one unit	RAP = Rapid, GLI = Gilde, RUN = Run, STEP = Step Run, HGR = High Gradient Riffle (>4%), LGR = Low Gradient Riffle, POW = Pocket Water, S annel pool, LAP = Lateral, TRP = Trench, PLP = Plunge k active channel width, unless there is something notable or unique about it. feature of the unit: 25% surface area has instream or low overhanging vegetation, etc.) Q/C initials: w; 2=Confined Deep; 3=Moderate Confined (<2x wetted channel width); 4=Unconfined (>= 2 wetted channel widths) hin bankfull width of channel =or> than 1/2 bankfull width. 36" + x 3-10", 10-25", 25-50", 50-75", 75" + (ie. 6] 25 = 6-12", 25-50") des at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT area of adequate depth and velocity within one unit MATCH 2C # HAB L W MAX Stept Notes I A WAR 162 50" L, 5 7 - 5" dam phoot	RAP = Rapid, GLI = Glide, RUN = Run, STEP = Step Run, HGR = High Gradient Rilfle (>4%), LGR = Low Gradient Rilfle, POW = Pocket Water, SHT = Shee annel pool, LAP = Lateral, TRP = Trench, PLP = Plunge k active channel width, unless there is something notable or unique about it. feature of the unit: 25% surface area has instream or low overhanging vegetation, etc.) Q/C initials: w; 2-Confined Deep; 3=Moderate Confined (<2x wetted channel width); 4=Unconfined (>= 2 wetted channel widths)hin bankfull width of channel = or> than 1/2 bankfull width. $36" + x 3-10", 10-25", 25-50", 50-75", 75'+ (ie. 6] 25 = 6-12", 25-50")des at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENTarea of adequate depth and velocity within one unitMMMMTRC$ # HAB & W M&X Lept NDYcs MMTMTRC # HAB & W M&X Lept NDYcs MTMTTRCC # HAB & W M&X Lept NDYcs MTMTTCCC # HAB & W M&X Lept NDYcs MTMTTCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	RAP = Rapid, GLI = Gilde, RUN = Run, STEP = Step Run, HGR = High Gradient Riffle (>4%), LGR = Low Gradient Riffle, POW = Pocket Water, SHT = Sheetflow, annel pool, LAP = Lateral, TRP = Trench, PLP = Plunge k active channel width, unless there is something notable or unique about it. feature of the unit: 25% surface area has instream or low overhanging vegetation, etc.) w; 2=Confined Deep; 3=Moderate Confined (<2x wetted channel width); 4=Unconfined (>= 2 wetted channel widths) hin bankfull width of channel = orb than 1/2 bankfull width. 36" + x 3-10; 10-25', 25-50', 50-75', 75'+ (ie. 6] 25 = 6+12', 25-50') des at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT area of adequate depth and velocity within one unit MMMMMR # HAB & W MAX dept NDto WAR 50, 84 & 50', 84 & 00', 75', 75'', 50''', 50''', 50''', 50''', 50''', 50''', 50''', 50'''', 50'''', 50'''', 50'''', 50''''', 50''''', 50''''', 50''''', 50''''', 50''''', 50'''''', 50'''''''', 50''''''''''	RAP = Rapid, GLI = Glide, RUN = Run, STEP = Step Run, HGR = High Gradient Riffle (>4%), LGR = Low Gradient Riffle, POW = Pocket Water, SHT = Sheetflow, annel pool, LAP = Lateral, TRP = Trench, PLP = Plunge k active channel width, unless there is something notable or unique about it. feature of the unit: 25% surface area has instream or low overhanging vegetation, etc.) w; 2=Confined Deep; 3=Moderate Confined (<2x wetted channel width); 4=Unconfined (>= 2 wetted channel widths) hin bankfull width of channel = or> than 1/2 bankfull width. 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 25 = 6-12', 25-50') des at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT area of adequate depth and velocity within one unit MMMMMRC # HMB L W MAX Stept NDFos I L, 5 7, 5'', Successful MMM 16/2, 50'', L, 5 7, 5'', Successful Auto Schupt Conditions (Step 14) MMMMRC # HMB L W MAX Stept NDFos I January Step 16/2, 50'', L, 5 7, 5'', Successful Auto Schupt Conditions (Step 14) Auto Schupt Conditions (

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dark stopedownback photo 1461 Separated by step Go Lover 2001 Stat gage reads 17.10 on 1

Middle Yuba River Habitat Mapping Data

Yuba River Development Project FERC No. 2246

Middle Yuba – Ground-based Habitat Mapping Data

						11 0							Volcanic, g	ranite/granod	liorite,													
Stream: N	liddle Yuba Rive	r						Date:	9/1/2009			Parent Materia	al: metasedim	entary					_									
Reach:	ntire	-					· · ·				N.	ap Gradient (7	/a): 1.27	0					-									
										Pooltail												Total		Total Max				
			Unit				Est avg	Est avg		embed-		Sub-	Dominant							Land-	Total	LWD	Fish	Spawnable spawni	ng			
Data	Section Number	Ordered	Original Habitat	Length	Cum.	Biver Mile	BFW	pool depth M	Max. pool	dedness	Domina	nt dominant	t bank	Erocion (#)	EDW	Confine- Fl	lag/	Flag	Trib	marks or Photos	LWD (bankful)	wetted	Migration Parrier2	gravel area gravel pa	Itch	Easting	Bort Field Changes	Commonto
Date 0/14/2000 M	Section Number	Unit #	Unit # Type	(11)	Length (ft)		(π)	BFD (π) (π) 0	αeptn (π)	(%) Cover	substrat	cop		Erosion (ft)	FPW	ment La	abei	Description	CTS	OT Photos	(banktul)	width	Barrier?	(sq. π.) (sq π,	Northing	Easting 425023	Post-Field Changes	LI1 pool at belicopter landing. Could be trenchrool, but slow, so MCP
9/14/2009 W	IT > INT JICCI		I MCP	403	403	0.00	01.07	4.75	10	15 BLDK	BLD	COB	BED			1 1	Di	Jase	N .	DIAT 1308			IN		00000	435933	30	Barrier 4-8' + permanent (Barrier UTM: 0660693/ 4359389) True
9/14/2009 N	IY > NY jnctn		2 CAS	125	588	0.11	66.33			BLDR	BLD	BLD	BED			1 N			N	DTA1 1369			Y		66069	435938	89	cascade, huge boulders 12% gradient.
																												U3 slightly divergent channel around big rocks! Short rapid forms a
																												control between 2 sections of pocket water. 12" brown trout! Still boulder and scour boles, betaragenous substrate, more pool-like at
9/14/2009 N	IY > NY jnctn		3 POW	110	698	0.13	74.5			BLDR	BLD	SND	BED			1 N			N	DTA1 1370			N	10	10			bottom, run in middle.
9/14/2009 N	IY > NY jnctn		4 STEP	90	788	0.15	62.67			BLDR	BLD	BLD	BED			1 N			N	DTA1 1371			N	26	18			step-run: distinct steps separated by short cascades, 4% gradient.
9/14/2009 N	IY > NY jnctn		5 CAS	35	823	0.16	80		0	BLDR	BLD	BLD	BLD			1 Y	to	ор	N	DTA1 1372			N	10	12 6607	42504	70	15% gradient.
9/14/2009 N	IY > NY jncth		7 PLP	10	1039	0.20	50	4.25	9	20 BLDR	BLD	BLD	BLD			1 N			N	DTA1 1373			N	12	12 0007	43354	12	sandy bank, KBA with pooling iron nigh lows
																				DTA1 1375 hole fro	m							
9/14/2009 N	IY > NY jnctn		8 CAS	28	1077	0.20	75			BLDR	BED	BLD	BED			1 N			N	LBA, 1376 LUS			Y		66071	435958	81	5' permanent barrier (barrier UTM: 0660710/ 4359581), 15% gradient
9/14/2009 N	IY > NY inctn		9 POW	105	1182	0.22	67.5			BLDR	BLD	COB	BED			1 N			N	I BA	,		N					
																												Deep and inaccessable - estimated depth from above. Photo DTA1
																												1379 of transition between HAB #9 and #10 - poor control but different
																												sheer bedrock walls. #10 flagged on RBA cliff lip above pool (only area
9/14/2009 N	IY > NY jnctn		10 PLP	125	1307	0.25	66	10	5	BLDR	BED	BLD	BED			1 Y	m	nid	N	DTA1 1377 LUS			N		66069	435961	15	accessable) also UTM's see above.
																												stopped at HMU #10 - too steep and dangerous to continue, 15%
9/14/2009 N	IY > NY jnctn		11 CAS 12 STEP	60	1367	0.26	40												_									gradient.
9/14/2009 N	IY > NY jncth		13 CAS	50	1402	0.28	75																					
	,																			DTA1 1380 shows								
9/14/2009 N	IY > NY jnctn		14 MCP		1512	0.29														entire sequence								flag red where stopped on cliff above #10 labelled "MY +NY HMU 10"
9/16/2009 ~	Huay 40		1 PLIN	74	74	4 20	41.67	2.25		BLDP	BLD	COB	BLD			4 N		nivete land	N	DTA1 1466, 1467			N	0	0 66487	436173	34	modified tail from artificial dam
9/16/2009 <	Hwy 49 Hwy 49		2 LGR	63	137	4.20	41.33	2.20		INSIGNIE	F COB	BLD	BLD			4 N	p	invate ianu	N	DTA1 1468			N	1	1	430173	34	3%
	,																							1046 LBA, 480 LBA,	120			LBA = LGR > GLI > LGR, RBA = LGR > GLI > LGR > GLI > LGR frog,
9/16/2009 <	Hwy 49		SPLIT	470	607	4.30				BLDR	COB	GRV	BLD			1 N			N	DTA1 1469			N	149 RBA RBA				green algae
9/16/2009 ~	Huay 40		3140	382	080	4 37	141.5	15	3.5	50 INSIGNIE	GRV	COB	BLD			1 N			N	DTA1 1470			N	too embeded				GLI @ tail but still scour on LBD so not separated. Goes quickly into
3/10/2003 <	riwy 49		3 LAF	302	909	4.37	141.5	1.5	3.5	30 111313141	GRV	COB	BLD			1 15			IN I	DIAT 1470			IN	too embeded				Artificial pool from mining: didymo and green algae: split but from
9/16/2009 <	Hwy 49		4 LGR	223	1212	4.42	113.67			INSIGNIE	- COB	BLD	BLD			1 N			N	DTA1 1471			N	165	72			minning; LGR 2%, character dom.
9/16/2009 <	Hwy 49		5 RUN	88	1300	4.43	118.5			INSIGNIF	F COB	BLD	BLD			1 Y	at	at top	N	DTA1 1472			N	119	108 66490	436212	24	dug out, modified split, but overall form run (not modelable)
0/16/2000 -	Huar 40		6 L C P	120	1420	1 46	115.67			PI DP	PI D	COR	RLD			1 V		t basa	N	DTA 1 1472			N	26.5	6			run on LBD, surface agitation but generally LGR, 1% NM - SPLITS,
9/16/2009 <	Hwy 49 Hwy 49		7 RUN	129	1429	4.48	90.33			BLDR	BLD	COB	BLD			1 N	a	a Dase	N	DTA1 1473			N	39	36			Split near top with some riffle LBA. HF Ch. RBA
																												1.5%, boulders on LBA - more run-like, next unit pool under bridge
9/16/2009 <	Hwy 49		8 LGR	85	1654	4.50	89.67	2		BLDR	COB	BLD	BLD			1 N			N	DTA1 1475			N	42	18			HWY 49
																												gradient 4.5%, step-run with riffle - step characteristics on half or less of
9/13/2009 >	Oregon Creek		1 STEP	388	2042	4.50	51.2	1.75		BLDR	BLD	BLD	BLD			1 Y	at	at base	N	DTA1 1333	0	0	N	163.5	72 66510	436226	64	water surfaces
																												artificial downstream control - boulder dam, 15% embedded; staff gauge
																												with no housing - out of water half thru habitat; top at pool greatly
9/13/2009 >	Oregon Creek		2 MCP	258	2300	4.55	66	2.875	6	15 BLDR	BLD	BLD	BLD			1 N			N	DTA1 1334	0	0	N	0	0		colocted boulder on book	modified for slough-boxes not characteristic of entire pool
																											substrate since the field was le	ft spawning gravels in this habitat but frequent modification for slough -
9/13/2009 >	Oregon Creek		3 LGR	49	2349	4.56	61.5			INSIGNIF	BLD	COB	BLD			1 N			N	DTA1 1335	0	0	N	0	0		blank on original data sheet	boxes, so unmeasurable, 2% gradient
9/13/2009 >	Oregon Creek		3 MCP	167	2516	4.59	57.33	3.4	7	na BLDR	BLD	GRV	BED			1 N			N	DTA1 1336	0	0	D N	504	504			tail of pool very modified, but lots of spawning gravel
9/13/2009 >	Oregon Creek		4 HGR	102	2618	4.61	42			BLDR	BLD	BED	BED			1 Y	a	at top	N	DIA1 1337	0	0	N	0	0			Modelable sections, 7% gradient High-flow side channel, 4% gradient: excellent modelability: Carex
																												nudata - great bank stabilizer, establishes sediment in high turbidity
																												areas both banks 70% coverage. Elevated flood plain LBA (same size
																												as wetted channel). Some tree-root exposure due to long-term
9/13/2009 >	Oregon Creek		5 I GR	170.5	2788.5	4.64	39.67			BLDR	BLD	SND	BLD			3 Y	at	at base	N	DTA1 1338	0	0	N	0	0 66537	436217	71	channel on LBA. 3% gradient.
																						-				-		Highly modified riffle-crest - damned above pool with boulders and
9/13/2009 >	Oregon Creek		6 HGR	40	2828.5	4.65	42.33			BLDR	BLD	BLD	BLD			3 N			N	DTA1 1339	0	0	N	0	0			cobble, 8% gradient
							1													DTA1 1341 =								
																				pool. 1343. 1344 =								Damned pool *DO NOT MODEL*, destabilized banks - dug-out banks
9/13/2009 >	Oregon Creek		7 MCP	88.5	2917	4.67	53	2.6875	5	BLDR	BLD	BLD	BLD			3 N			N	bank	0	0	N	0	0			creating positive feed-back mechanism
																											filled in Dom, Subdom, and	Run, but because of damns & dug out banks, creating pools at banks,
0/12/2000 -	Orogon Crook		9 DI INI	104	20.44	4.60	57.99			PI DP	PI D	PLD	RLD			2 N			N	DTA 1 1245	0		N	1	4		Bank Substrates as BLD since	and step-pool for length of run. Highly modified; after high-flows remove
3/13/2009 >	Gregori Greek		o KUN	124	3041	4.09	57.33			BLUK	BLU	BLU	DLU			NI C			IN	DIA 1 1340	0	0					andy were relit Dialfik	danis, wii pituatiy be a iun:
																												Subdominant bank substrate is SND. Deeper section in middle of glide
0/40/0005	Ormana Carat		0.011		0054	4.70	50			01.05	DIC	000	DI D							DT44 4040	_							obviously modified; some erosion due to modification; run like at top,
9/13/2009 >	Oregon Creek		9 GLI 10 STEP	210	3251	4.73	50 44 67			BLDR	BLD	COB	BLD	10		1 Y 1 Y	at	n iop at base	N	DTA1 1346	0	0	D N	6	4	2 43622	34	pour-like in middle, narrow coople par LBA elevated flood plain step-run with short HGR separating steps - lots of catwater
9/13/2009 >	Oregon Creek		11 MCP	280	3641	4.80	62.25	2.4375	4.75	40 INSIGNIE	F COB	BLD	BED			2 N	a		N	DTA1 1348	0	0	D N	8	3			10" brown trout, head of pool 28' run - ambiguous start
9/13/2009 >	Oregon Creek		12 LGR	117	3758	4.83	56			BLDR	BLD	COB	BLD			1 n			n	DTA1 1349	0	0	N	29	15			3% gradient, some sandy deposits alnog shoreline
0/12/2000	Orogon Carali		12 011		4070	6.00	E7 07			DLDD	PLD	000	PI D							DTA1 1250								3 inch fish, three 4' fish, 2 scour holes 3.5' deep LBA artificially scoured,
9/13/2009 >	отедот стеек		13 GLI	321	4079	4.89	57.67		3.5	BLDR	BLU	COB	BLU			1 n			n	DTAT 1350	0	0	711	21	4			some indistinct stepping, but lots of surface acitation so calling it a nin-
9/13/2009 >	Oregon Creek		14 LGR	223	4302	4.93	65	1.75		BLDR	BLD	BLD	BLD			1 y	at	at top	n	DTA1 1351	0	0) n	116	72			slight scour pool RBA
9/13/2009 >	Oregon Creek		15 RUN	80	4382	4.94	57			BLDR	BLD	BLD	BLD		120	0 1 y	at	at base	n	DTA1 1352	0	0) n	0	0 66584	436216	62	almost pocket water but too much surface agitation
9/13/2009 >	Oregon Creek		16 LGR	119	4501	4.97	52.33			BLDR 30 PLDP	BLD	COB	BLD			1 n			n	DTA1 1353	0	0	Jn	43	36			some flat sections - esp at top (not modelable), 3% gradient
9/13/2009 >	Oregon Creek		18 MCP	226	4727	5.02	42.67	1.94	3.5	0 BLDR	BLD	GRV	BED			1 N			N	DTA1 1355	0	0) n	182	180			pinch-point making ds control
												-																Lower 2/3 wider and slower upper 1/3 narrow and fast step-run. Lots
9/13/2009 >	Oregon Creek		19 STEP	112	4913	5.04	150.33			BLDR	BED	COB	SND			1 y			n	DTA1 1356	0	0) n	20	18			veg on banks - riparian community
0/13/2000	Oregon Creck		20 MCP	105	5019	5.06	10 E		-											DTA1 1357				15	12			Bin hole (nool) at hase ~5' deep, may denth 2' w/scour hole at hattan
9/13/2009 >	Oregon Creek		21 LGR	54	5072	5.08	40.5		5											DIA 1307				15	12			3% gradient
9/13/2009 >	Oregon Creek		22 RUN	133	5205	5.10	52																	130	108			deep boulder run w/some scour, slight control creates pool
9/13/2009 >	Oregon Creek		23 MCP	92	5297	5.12	36		7											DTA 4 45								bedrock side LBA
9/13/2009 >	Oregon Creek		24 RAP 25 CHU	70	5367	5.13	26.5												_	DTA1 1358								
9/13/2009 >	Oregon Creek		SPLIT	245	5659	5.14	22.33													2161 1303								LBA = RIF/RUN, RBA = RIF/RUN
9/13/2009 >	Oregon Creek		26 POW	298	5957	5.24	75.5																	118	50			
9/13/2009 >	Oregon Creek		27 HGR	325	6282	5.30	76													DTA1 1360								4% grad, non-modelable multiple water surfaces and flow lines
																												iong tail with some surface agitation, PHOTOS: DTA1 1362 dead
																												control. This pool becomes unwalkable, too deep w/ few to no places to
																				DTA1 1364 LDS,								get out, very deep, wide, bedrock walls w/ full riparian veg community
9/13/2009 >	Oregon Creek		28 MCP	918	7200	5.48	104.25		8										_	1365 LUS				6	6			where soils allow.
9/13/2009 >	Oregon Creek		29 RUN 30 MCP	00 // 20	7290	5.49	65		10																RREE	13610	73	END at base of unit 31 EROG SIGHTINGS: DTA1 1367 & 1366
0.1012000	2.5901 0100K		00 100		.125	5.50	00		10	· · · · ·		1	-												00030			

Middle Yuba – Ground-based Habitat Mapping Data (cont.)

		Ordered	Unit Original Habitat	Length	Cum.		Est avg BFW		Est avg pool dep	rg pth Max.	Poo emb pool dedi	Itail bed- ness	Domina	Sub- ant dominar	Domina nt bank	nt		Confine-	Flag/	Flag	Trib	Land- marks	Total LWD	Total LWD wetted	Fish Migration	Total Spawnable gravel area	Max spawning gravel patch			
Date	Section Number	Unit #	Unit # Type	(ft)	Length (ft	River Mile	e (ft)	BFD (ff	ft) (ft)	dept	n (ft) (%	6) Cov	er substra	te substrate	e substrat	e Erosion	(ft) FPW	ment	Label	Description	cfs	or Photos	(bankful)	width	Barrier?	(sq. ft.)	(sq ft)	Northing	Easting	Post-Field Changes Comments
11/18/2009	MY < OH Dam (SWS)		41 HGR 40 RUN	30	30	10.85		17				BED	SND	BED					N N N N	_		/30-/31	0	0	N	(1	J 670932	4363668	Cal newt obs on bank
11/18/2009	MY < OH Dam (SWS)		39 I GR	106	255	10.89	3	30				BLDR	COB	BED					N			729	0	0	N	(0	2		
11/18/2009	MY < OH Dam (SWS)		38 RUN	92	347	10.91	3	31				COB	BLDR	BED					N				0	0	N	(0	5		
11/18/2009	MY < OH Dam (SWS)		37 MCP	74	421	10.92	3	34		3	5.5	COB	BLDR	BED					N				0	0	N	(0	0		
11/18/2009	MY < OH Dam (SWS)		36 MCP	154	575	10.95	4	15		4	7	BLDR	COB	BLDR					Bottom F F	RL			0	0	N	(0	0 671088	4363676	
11/18/2009	MY < OH Dam (SWS)		35 RUN	57	632	10.96	4	40			-	BLDR	BED	BED					N				0	0	N	(0	0		
11/18/2009	MY < OH Dam (SWS)		34 MCP 33 MCP	98	73U 011	10.98		37		4	10	BLDR	COB	BED					N O) cfc (RR)			0	0	N	()	J		Boulder Bar River Left
11/18/2009	MY < OH Dam (SWS)		32 HGR	164	1075	11.02	3	35		0	10	BLDR	COB	BED					N			727	1	0	N	(0	0		Boulder Bar River Left
11/18/2009	MY < OH Dam (SWS)		31 RUN	46	1121	11.06	4	15				BLDR	COB	BLDR					Top F RR				3	2	N	(0	671274	4363623	Boulder Bar River Left
11/18/2009	MY < OH Dam (SWS)		30 LGR	75	1196	11.07	8	30				COB	BLDR	BLDR					Bottom F F	RR		726	0	0	N	(0	0		Complex "splits"
11/18/2009	MY < OH Dam (SWS)		29 STEP	89	1285	11.09	7	70				BLDR	COB	BLDR					N			725	0	0	N	(0	0		Split level step RUN (Complex)
11/18/2009	MY < OH Dam (SWS)		28 RUN	144	1429	11.11	4	40				COB	BLDR	BLDR					N			723-724	0	0	N	(0	0		Frog obs. Photos 723-724
11/18/2009	MY < OH Dam (SWS)		27 STEP	144	1573	11.14	4	10				COB	BLDR	BLDR					N			122	0	0	N)		Step RUN Minere compland cabble bar on PR. Cable crossing mid pool. GPS at
11/18/2009	MY < OH Dam (SWS)		26 MCP	424	1997	11.22	7	70		5	10	SND	BLDR	BED					N			720-721	1	1	N			671546	4363556	Top of unit
11/18/2009	MY < OH Dam (SWS)		25 STEP	197	2194	11.26	6	50				BLDR	COB	BED					Bottom F F	RL		719	0	0	N	15	5 1	5		Step RUN
11/18/2009	MY < OH Dam (SWS)		24 MCP	230	2424	11.30	6	60		4	7	BLDR	SND	BED				1	N				0	0	N	100	2	5		Fish observation. Max spawning gravel patch is from dredger tailings.
11/18/2009	MY < OH Dam (SWS)		23 RUN	67	2491	11.32	3	35				BLDR	COB	BED				1	N				0	0	N	25	5 2	5		
11/18/2009	MY < OH Dam (SWS)		22 LGR	121	2612	11.34	3	35				BLDR	COB	BED					N	_		718	0	0	N	(0	0		HGR at top, runny at bottom - complex. Cattails on RR.
11/18/2009	MY < OH Dam (SWS)		21 MCP	304	2916	11.40	5	52		6	9	SND	BLDR	BED					Top F/T RF	R		716-717	1	1	N	(0 671754	4363761	GPS taken at top of unit.
11/18/2009	MY < OH Dam (SWS)		20 RUN 19 PLP	143	3146	11.41	3	32		5	8	BLDR	GRV	BED					N			715	0	0	N) 1	ן ר		
11/18/2009	MY < OH Dam (SWS)		18 HGR	139	3285	11.47	3	37		3	0	BLDR	COB	BED					N			711 - 714	0	0	N	(0	0		Miners dredging supplies on RR photos 712 and 713. CAS at base.
11/18/2009	MY < OH Dam (SWS)		17 RUN	197	3482	11.50	4	10				COB	BLDR	BED					F Top RR			710	0	0	N	(0	5		Potential miners trail RR (ladder). Step at 113 ft.
11/18/2009	MY < OH Dam (SWS)		16 MCP	363	3845	11.57	5	50		6	10	SND	GRV	BED					N				1	1	N	25	5 2	5 671939	4363954	Narrow bedrock canyon. Large gravel deposit at tail. GPS at top of un
11/18/2009	MY < OH Dam (SWS)		15 HGR	71	3916	11.59	5	50				BLDR	COB	BED					N			709	1	1	N	(0	0		Difficult access beyond this point downstream.
11/18/2009	MY < OH Dam (SWS)		14 RUN	78	3994	11.60	4	10				BLDR	COB	BED					N				0	0	N	(2		LICD at an at tan keeluustar neel
11/18/2009	MY < OH Dam (SWS)		13 LGR 12 MCP	55	4049	11.61	0	13		2	4	BLDR	GRV	BLDR					N T/E RI			706-708	0	0	N	(1))		Potential fish site
11/18/2009	MY < OH Dam (SWS)		11 RUN	166	4278	11.65	5	55		2	-	BLDR	COB	BED					N			704-705	2	2	N	(0	672024	4364037	Potential fish site.
11/18/2009	MY < OH Dam (SWS)		10 LGR	216	4494	11.70	5	53				BLDR	COB	BED				1	N			703	1	1	N	(0	0		Complex with POW, RUN, and HGR, steps.
11/18/2009	MY < OH Dam (SWS)		9 RUN	90	4584	11.71	3	38				BLDR	COB	BED				1	N				0	0	N	(C	D		Good fish unit. Max depth = 3.5 ft
11/18/2009	MY < OH Dam (SWS)		8 POW	40	4624	11.72	3	30				BLDR	COB	BED					Top F RR				0	0	N	(0	0		Good fish unit. Max depth = 2 ft
11/18/2009	MY < OH Dam (SWS)		7 RUN	115	4739	11.74	6	50				SND	GRV	BLDR					Bottom F F	RR		702	0	0	N	(0	0	1001150	run/pool unit good fish unit
11/18/2009	MY < OH Dam (SWS)		6 POW	101	4840	11.76	3	30		2.5	3	BLDR	COB	BLDR								701	0	0	N	(0 672196	4364153	Good fish unit. Avg. Depth = 2.5 ft Max Depth = 3.0 ft
11/18/2009	MY < OH Dam (SWS)		4 HGR	120	5008	11.70	6	30		4	0	BLDR	COB	BED					N N N	_		700	0	0	N	() 1	J 1		Difficult but possible e-fish unit. Consider reduced discharge.
11/18/2009	MY < OH Dam (SWS)		3 LGR	83	5000	11.81	7	70				BLDR	COB	BED					N			000	0	0	N	(0	0		
11/18/2009	MY < OH Dam (SWS)		2 MCP	153	5244	11.84	5	50		4	6	BLDR	SND	BED					N			698	0	0	N	8	3	3		
11/18/2009	MY < OH Dam (SWS)		1 PLP	168	5412	11.87	6	65		4	6	SND	BLDR	BED				1	N			697	0	0	N	(C	672312	4364274	HGR and USGS pool at top
																														difficult access to bottom - lot, UTM's taken at top of pool - between U1
9/16/2009	MY < OH Dam		1 MCP	130	5542	11.87	6	50		5	10 na	BLDR	BLD	SND	BED			2	Y a	at top	N	DTA1 1442 LDS	0	0	N	(0	0 671924	4363951	and U2, PHOTO DTA1 1443 LDS from near top of U1
9/16/2009	MY < OH Dam		2 CAS	73	5615	11.89	55.6	10	2			BLDR	BLD	BED	BED		0	2 1	N		N	DTA1 1444	0	0	N	(J		1% gradient
9/16/2009	MY < OH Dam		SPLIT	58	5753	11.91	57.6	+0 57	3			BLDR	BLD	COB	BED		9	2 1	N		N	DTA1 1445	0	0	N	20	5	6		5% gradient, half channel is step run, half is HGR
0/10/2000	and a off ball		OF ER		0,00	11.02	01.0					DEDIN	010	005	020							Birti Tho	0	Ŭ						small flow around boulders RBA, 2 foots long boulder step top of pool,
9/16/2009	MY < OH Dam		4 MCP	50	5803	11.93	62.	.5	2.	2.15	4	BLDR	BLD	SND	BLD			2	N		N	DTA1 1447, 1448 LDS	0	0	N	14	4	6		PHOTO DTA1 1449 photo of step at top of U4 from LBA LDS
9/16/2009	MY < OH Dam		5 RUN	111	5914	11.94	5	58	3			BLDR	BLD	COB	BLD			1	Y a	at top	N	DTA1 1450	0	0	N	1:	3	9 672025	4364028	
011010777																						D.T. 4 4 4 4		-					10015	sandy deposition LBA, scour hole meets min pool requirements, contro
9/16/2009	MY < OH Dam		6 LAP	87	6001	11.97	62.3	33	2.06	625	3.5	BLDR	BLD	SND	BLD			1	Y a	at base	N	DTA1 1451	0	0	N	(0 672025	4364028	at base low and maybe inconsequential at high flow
9/16/2009	MY < OH Dam		/ LGK SPLIT	109	6145	12.00	5	59	3			BLDR	BLD	COB	BLD			1	N		N	DTA1 1452	0	0	N	12	2	5 1		3.5% gradient, modelable balf of chappel is run balf is POW
9/16/2009	MY < OH Dam		8 HGR	95	6240	12.00	75.6	57	2			BLDR	BLD	COB	BLD			1	N		N	DTA1 1454 LDS	0	0	N	0	2	5		5% grade
9/16/2009	MY < OH Dam		9 MCP	104	6344	12.03	57.7	75	_	2	3.75	40 BLDR	BLD	SND	BLD			2	Y a	at top	N	DTA1 1455	0	0	N	(0	- D		
9/16/2009	MY < OH Dam		10 RUN	63	6407	12.05	6	68				BLDR	BLD	SND	BLD			1	Y a	at base	N	DTA1 1456			N	ŧ	5	4 672124	4364111	some surface agitation, but too deep to be riffle
9/16/2009	MY < OH Dam		11 MCP	165	6572	12.06	60.3	33	2.6	.625	5.5	40 BLDR	BLD	SND	BLD			2	N		N	DTA1 1457			N					Top of pool is run-like, but no control, so included in pool
9/16/2009	MY < OH Dam		12 RUN	40	6612	12.09	5	55	3			BLDR	BLD	COB	BED			1	N		N	DTA1 1458			N					some surface agitation, but very deep
0/40/00000	MV . OH D		12 1100	40-	6707	10.10		22			6	40 01 00	B 1 D	OND	DI D				N		N	DTA 1 1450			N					Run - with constriction at mid-pool but still deep and weak control; Top
9/16/2009	MY < OH Dam		13 MCP	125	6787	12.10	51	5	3.	ა.პპ	0	40 BLDR	BLD	BED	BED			2	N		N	DTA1 1459			N	144	+ 10	D		or LBA bar within BF, three 6" fish
9/16/2009	MY < OH Dam		SPLIT	140	6927	12.12	51.					BLOR	BLD	DED	DLD				Y a	at top	IN .	DIAT 1400				3	1 2	4		step-run on one side, solit on other
9/16/2009	MY < OH Dam		15 MCP	140	7089	12.16	5	50			6.5								. u							3				seven 5" suckers, dark stripe down back photo DTA1 1461
								•																						photo of dam LUS DTA1 1464, photo of wier 1463, staff gauge reads
9/16/2009	MY < OH Dam		16 MCP	178	7267	12.19	68.	.5			8																			17.10 on

Stream:	Middle	Yuba Ri	ver											
Reach:	Entire													
Table 1a. Summary	Statistics -	Mapped Uni	ts						Table 2. S	tream Cover				
							Average							
				Number of		Average	maximum	Average pooltail						
	Total	Length Rel		Units	Average	pool depth	pool depth	embeddedness	Dominan	t	Relative			
Unit Type	Length (ft)	Frequency	Number	(frequency)	width (ft)	(ft)	(ft)	(%)	Cover Typ	e Number	Frequency			
Fall									Insignificar	t 6	7%			
Cascade	421	2.7%	7	6.4%	63.4				Boulder	77	93%			
Chute	47	0.3%	1	0.9%	22.3				Vegetation	0				
Rapid	70	0.5%	1	0.9%	26.5				Wood	0				
High Gradient Riffle	1014	6.5%	9	8.2%	53.1				SUM	83	100%			
Low Gradient Riffle	1997.5	12.9%	17	15.5%	62.0				QC	Error				
Glide	531	3.4%	2	1.8%	53.8									
Run	2269	14.6%	23	20.9%	52.9				Table 3.	Reach Summar	y			
Step Run	1225	7.9%	8	7.3%	69.2				Tot	al Reach Length:	12.2	mi.		
Pocket Water	654	4.2%	5	4.5%	55.5				Tota	Mapped Length:	2.94	mi.	24.1%	mapped
Sheet									Averag	e Bankfull Width:	58.9	ft.	0.00	mi. charac
Convergance Pool										Bankfull Depth:	2.5	ft.	24.13%	Total m & c
Mid-Channel Pool	6182.5	39.8%	30	27.3%	56.8	3.7	6.9	7.9		Width:Depth:	24			
Lateral Scour Pool	469	3.0%	2	1.8%	101.9	1.8	3.5	25.0	Fl	od Prone Width:	0	ft.		
Trench Pool	216	1.4%	1	0.9%	75.3	4.0	8.0		Ent	enchment Ratio:	0.0			
Plunge Pool	446	2.9%	4	3.6%	53.3	5.8	7.0	5.0	Total S	pawnable Gravel:	2,311	ft ² - trout		
TOTAL	15542	100.0%	110	100.0%	58.9	3.8	6.3	12.6	Avg La	gest Patch Size:	44	ft ² - trout		
QC			0		Weighted					LWD Density:	5	/ mile (ban	kful)	
					Average				Wett	ed LWD Density:	4	/ mile (wet	ted width)	
					By Length (ft)				Parent Material:	Volcanic, g	ranite/grand	odiorite, met	tasedimentar
									Bank Ero	sion % of Reach:	0.0%			
									Tot No. F	assage Barriers:	2			

Table 4. Reach Summary - Substrate and Bank Characteristics

	Dominan	t Substrate	Subdomina	ant Substrate	Bank Su	ubstrate	Bank Subs	strate Erosion
	Total	Length Rel	Total	Length Rel	Total Length	Length Rel	Total Length	Length Rel
	Length (ft)	Frequency	Length (ft)	Frequency	(ft)	Frequency	(ft)	Frequency
Bedrock	723	6.4%	4651	38.7%	2583	34.0%	0	
Boulder	5523	48.6%	2569.5	21.4%	4900	64.5%	10	100.0%
Cobble	3421	30.1%	2859	23.8%	0		0	
Gravel	1186	10.4%	711	5.9%	0		0	
Sand	502	4.4%	1230.5	10.2%	112	1.5%	0	
Silt	0		0		0		0	
SUM	11355	100.0%	12021	100.0%	7595	100.0%	10	100.0%



Excel Data - Attachment to Attachment 3.10A Habitat Mapping Report Page 4 $\,$

Middle Yuba River – Habitat Mapping – Video based – From North Yuba/Middle Yuba Junction to Our House Dam

Time	RM	Habitat	Habitat	HM Unit
1:42:50	0.00	18	SPLIT	
1:42:53	0.04	12	MCP	1
1:42:56	0.08	12	MCP	1
1.42.09	0.11	12	MCP	1
1:43:02	0.13	11	POW	3
1:43:08	0.19	10	STEP	4
1:43:11	0.21	2	CAS	5
1:43:14	0.23	14	TRP	6
1:43:17	0.25	15	PLP	7
1:43:20	0.27	11	POW	9
1:43:23	0.29	15	PLP	10
1:43:26	0.31	10	STEP	11
1:43:29	0.33	2	CAS	13
1.43.32	0.33	2	CAS	
1:43:38	0.39	2	CAS	
1:43:41	0.41	12	MCP	
1:43:44	0.43	9	RUN	
1:43:47	0.44	12	MCP	
1:43:50	0.46	15	PLP	
1:43:53	0.48	2	CAS	
1:43:56	0.50	11	POW	
1:43:59	0.52	11	POW	
1:44:02	0.54	4	KAP MCP	
1.44:05 1.44:09	0.56	12	TRP	
1:44.11	0.60	17	00V	
1:44:14	0.62	7	LGR	S.C. drv o
1:44:17	0.64	7	LGR	S.C. dry o
1:44:20	0.66	12	MCP	
1:44:23	0.68	12	MCP	
1:44:26	0.70	13	LAP	
1:44:29	0.73	13	LAP	
1:44:32	0.75	12	MCP	
1:44:35	0.78	2	UAS HCP	
1.44:38	0.81	0 11	POW/	
1:44:44	0.04	11	POW	
1:44:47	0.89	7	LGR	
1:44:50	0.92	13	LAP	
1:44:53	0.94	13	LAP	
1:44:56	0.97	9	RUN	
1:44:59	1.00	17	00V	
1:45:02	1.03	9	RUN	
1:45:05	1.05	12	MCP	
1.45.00	1.00	12		
1:45:14	1.11	12	MCP	
1:45:17	1.16	7	LGR	
1:45:20	1.19	. 7	LGR	
1:45:23	1.21	12	MCP	
1:45:26	1.24	12	MCP	
1:45:29	1.27	12	MCP	
1:45:32	1.30	12	MCP	
1:45:35	1.32	18	SPLIT	
1:45:38	1.35	18	SPLIT	
1:45:41	1.37	8	GLI	
1:45:44	1.39	0 12		
1:45:50	1 4 3	12	MCP	
1:45:53	1.45	.2	RUN	
1:45:56	1.47	13	LAP	
1:45:59	1.49	13	LAP	
1:46:02	1.51	13	LAP	
1:46:05	1.53	12	MCP	
1:46:08	1.55	9	RUN	
1:46:11	1.57	12	MCP	
1:46:14	1.59	7	LGR	
1:46:17	1.61	18	SPLIT	
1:46:20	1.63	18	SPLII	
1.46:23	1.65	18	SPLII I A P	
1.40.20	1.00	13	POW	
1:46:32	1.72	17	. 00V	
1:46:35	1.74	12	MCP	
1:46:38	1.76	12	MCP	
1:46:41	1.78	6	HGR	
1:46:44	1.80	9	RUN	
1:46:47	1.82	13	LAP	
1:46:50	1.84	11	POW	
1:46:53	1.86	17	000	
1:46:56	1.88	7	LGR	
1:46:59	1.90	6	HGR	
1.47:02	1.92	12	RAP	
1.47:05	1.94	4		
1:47.11	1 90	7 18	SPLIT	
1:47:14	2.00	17	00V	SHADE
1:47:17	2.02	17	000	SHADE
1:47:20	2.04	17	OOV	SHADE
4 47 00	2.07	13	LAP	· ·
1:47:23	2.09	13	LAP	
1:47:23		18	SPLIT	
1:47:23 1:47:26 1:47:29	2.11		GLI	
1:47:23 1:47:26 1:47:29 1:47:32	2.11 2.13	8		
1:47:23 1:47:26 1:47:29 1:47:32 1:47:35	2.11 2.13 2.15	8 12	MCP	
1:47:23 1:47:26 1:47:29 1:47:32 1:47:35 1:47:38	2.11 2.13 2.15 2.17	8 12 12	MCP MCP	
1:47:23 1:47:26 1:47:29 1:47:32 1:47:35 1:47:38 1:47:41	2.11 2.13 2.15 2.17 2.20	8 12 12 12	MCP MCP MCP	
1:47:23 1:47:26 1:47:29 1:47:32 1:47:35 1:47:38 1:47:41 1:47:44	2.11 2.13 2.15 2.17 2.20 2.22	8 12 12 12 12	MCP MCP MCP MCP	
1:47:23 1:47:26 1:47:29 1:47:35 1:47:35 1:47:38 1:47:41 1:47:44 1:47:47	2.11 2.13 2.15 2.17 2.20 2.22 2.24	8 12 12 12 12 12 10	MCP MCP MCP MCP STEP	
1:47:23 1:47:26 1:47:29 1:47:32 1:47:35 1:47:38 1:47:41 1:47:44 1:47:47 1:47:50 1:47:52	2.11 2.13 2.15 2.17 2.20 2.22 2.24 2.24 2.26 2.29	8 12 12 12 12 12 10 10	MCP MCP MCP STEP STEP	
1:47:23 1:47:26 1:47:29 1:47:32 1:47:35 1:47:38 1:47:38 1:47:41 1:47:44 1:47:47 1:47:50 1:47:53 1:47:56	2.11 2.13 2.15 2.17 2.20 2.22 2.24 2.26 2.28 2.28 2.28	8 12 12 12 12 10 10 7 7 7	MCP MCP MCP STEP STEP LGR LGR	
1:47:23 1:47:26 1:47:29 1:47:32 1:47:35 1:47:38 1:47:38 1:47:41 1:47:44 1:47:47 1:47:50 1:47:53 1:47:56 1:47:59	2.11 2.13 2.15 2.17 2.20 2.22 2.24 2.26 2.28 2.30 2.33	8 12 12 12 12 10 10 7 7 7 18	MCP MCP MCP STEP STEP LGR LGR SPLIT	
1:47:23 1:47:26 1:47:29 1:47:32 1:47:35 1:47:38 1:47:38 1:47:41 1:47:47 1:47:50 1:47:53 1:47:56 1:47:59 1:47:59 1:48:02	2.11 2.13 2.15 2.17 2.20 2.22 2.24 2.26 2.28 2.30 2.33 2.35	8 12 12 12 12 10 10 7 7 7 18 18	MCP MCP MCP STEP STEP LGR LGR SPLIT SPLIT	

Time	RM	Habitat	Habitat	HM Unit
1:48:05	2.37	18	SPLIT	
1:48:11	2.39	12	MCP	
1:48:14	2.43	13	LAP	
1:48:17	2.46	13	LAP	
1:48:20	2.48	6	HGR	
1:48:23	2.50	7	LGR	
1:48:29	2.52	12	MCP	
1:48:32	2.57	12	MCP	
1:48:35	2.59	12	MCP	
1:48:38	2.61	12	MCP	
1:48:41	2.63	13		
1:48:44	2.00	12		
1:48:50	2.07	14	TRP	
1:48:53	2.72	4	RAP	
1:48:56	2.74	9	RUN	
1:48:59	2.76	14	TRP	
1:49:02	2.78	12	CAS	
1:49:08	2.83	9	RUN	
1:49:11	2.85	12	MCP	
1:49:14	2.87	18	SPLIT	
1:49:17	2.89	18	SPLIT	
1:49:20	2.91	18	SPLIT	
1:49:23	2.93	18	SPLII	
1:49:20	2.90	10 8	GLI	
1:49:32	3.00	14	TRP	
1:49:35	3.03	12	MCP	
1:49:38	3.05	11	POW	
1:49:41	3.08	11	POW	
1:49:44	3.10	11	POW POW	
1:49:47	3.15	18	SPLIT	
1:49:53	3.18	12	MCP	
1:49:56	3.20	12	MCP	
1:49:59	3.23	8	GLI	
1:50:02	3.25	12	MCP	
1:50:05	3.28	12		
1:50:00	3.33	18	SPLIT	
1:50:14	3.35	9	RUN	
1:50:17	3.38	9	RUN	
1:50:20	3.40	13	LAP	
1:50:23	3.42	9	RUN	SW/S1
1:50:20	3.44	17		SWS2
1:50:32	3.49	6	HGR	SWS3
1:50:35	3.51	18	SPLIT	SWS3.1
1:50:38	3.53	18	SPLIT	SWS3-9.1
1:50:41	3.55	18	SPLIT	SWS3-9.1
1:50:44	3.57	18	SPLII	SWS3-9.1
1:50:50	3.62	18	SPLIT	SWS3-9.1
1:50:53	3.64	18	SPLIT	SWS3-9.1
1:50:56	3.66	18	SPLIT	SWS3-9.1
1:50:59	3.68	18	SPLIT	SWS3-9.1
1.51.02	3.70	10	GLI	SWS10
1:51:08	3.75	7	LGR	SWS10
1:51:11	3.77	17	000	SWS10
1:51:14	3.79	17	00V	SWS10
1:51:17	3.81	9	RUN	SWS10
1:51:20	3.83	9	RUN	SWS10
1.51:23	3.85 3.87	12	LAP	SWS11
1:51:29	3.90	7	LGR	SWS12 &1
1:51:32	3.92	9	RUN	SWS 13
1:51:35	3.94	13	LAP	SWS 13
1:51:38	3.96	18	SPLIT	SWS 13.10
1:51:41	3.98	18 0	RUN	SWS15 SWS15
1:51:47	4.03	13	LAP	SWS15
1:51:50	4.05	9	RUN	SWS15
1:51:53	4.07	9	RUN	SWS15
1:51:56	4.09	9	KUN LGP	SWS15
1:51:59	4.11 4.12	/ 0	RUN	300316
1:52:02	4.15	7	LGR	2
1:52:08	4.18	18	SPLIT	_
1:52:11	4.20	18	SPLIT	
1:52:14	4.22	18	SPLIT	
1:52:17	4.24	18	SPLII I A D	2
1.52:20	4.26 4 28	13		<u>ડ</u>
1:52:26	4.31	13	LAP	3
1:52:29	4.33	12	MOD	Scoured
1:52:32	4.35	7	LGR	4
1:52:35	4.37	7	LGR	4
1:52:38	4.39	7 Q	RUN	
1:52:44	4.44	9	RUN	7
1:52:47	4.46	7	LGR	8
1:52:50	4.48	13	LAP	1.0.0.1
1:52:53	4.50	12	MCP	HVV Y 49
1:52:56	4.52 4.57	13		
1:53:02	4.56	13	LAP	
1:53:05	4.58	13	LAP	
1:53:08	4.60	9	RUN	
1:53:11	4.62	10	STEP	1
1:53:14	4.64	10	SIEP	1
1:53:17	4.66	10	SIEP	1

_				
1:53:20	RM 4 68	Habitat	Habitat STEP	HM Unit
1:53:23	4.70	10	STEP	1
1:53:26	4.73	10	STEP	1
1:53:29	4.75	12	MCP	2
1:53:32	4.77	12	I GR	2
1:53:38	4.81	. 12	MCP	3
1:53:41	4.83	6	HGR	4
1:53:44	4.85	7	LGR	5
1:53:47	4.87	9	RUN	5 8
1:53:53	4.91	8	GLI	9
1:53:56	4.93	9	RUN	9
1:53:59	4.95	10	STEP	10
1:54:02	4.97	12	MCP	11
1:54:08	5.01	7	LGR	12
1:54:11	5.03	8	GLI	13
1:54:14	5.05	8	GLI LGR	13
1:54:20	5.09	7	LGR	14
1:54:23	5.11	9	RUN	15
1:54:26	5.13	12	MCP	16
1:54:29	5.15	12	MCP	10
1:54:35	5.20	12	MCP	18
1:54:38	5.22	10	STEP	19
1:54:41	5.24	12	MCP	20
1:54:44	5.26 5.28	9 12	MCP	22
1:54:50	5.30	4	RAP	24
1:54:53	5.32	18	SPLIT	
1:54:56	5.34	18	SPLIT POW	26
1:55:02	5.38	11	POW	26
1:55:05	5.40	6	HGR	27
1:55:08	5.43	6	HGR	27
1:55:11	5.45 5.48	6 12	пок МСР	27
1:55:17	5.51	12	MCP	28
1:55:20	5.53	12	MCP	28
1:55:23	5.56	12	MCP	28
1:55:29	5.61	9	RUN	20
1:55:32	5.64	12	MCP	30
1:55:35	5.67	12	MCP	30
1:55:38	5.69	14	CAS	30
1:55:44	5.75	2	CAS	
1:55:47	5.78	9	RUN	
1:55:50	5.80	12	MCP	
1:55:56	5.86	4	RAP	
1:55:59	5.88	6	HGR	
1:56:02	5.91	12	MCP	
1:56:05	5.94	6 10	HGR	
1:56:00	5.99	6	HGR	
1:56:14	6.02	9	RUN	
1:56:17	6.04	13	LAP	
1:56:20	6.10	13	TRP	
1:56:26	6.12	14	TRP	
1:56:29	6.15	9	RUN	
1:56:32	6.17	12	MCP	
1:56:38	6.21	6	HGR	
1:56:41	6.22	12	MCP	
1:56:44	6.24	12	MCP	
1:56:47	6.26	9 17	KUN 00\/	
1:56:53	6.30	17	OOV	
1:56:56	6.32	18	SPLIT	
1:56:59	6.33	18	SPLIT	
1:57:02	6.35 6.37	אר א	GLI	
1:57:08	6.39	7	LGR	
1:57:11	6.41	7	LGR	
1:57:14	6.43	8	GLI I GR	
1:57:20	6.46	8	GLI	
1:57:23	6.48	17	00V	SPLIT
1:57:26	6.50	17	00V	SPLIT
1:57:29	6.52 6.54	7 12	MCP	SPLIT
1:57:35	6.56	10	STEP	SPLIT
1:57:38	6.57	17	00V	SPLIT
1:57:41	6.59 6.61	2 12	UAS MCP	SPLII SPI IT
1:57:47	6.63	9	RUN	SPLIT
1:57:50	6.65	17	00V	SPLIT
1:57:53	6.67	17	OOV GU	SPLIT
1:57:50	6.70	8 12	MCP	SPLIT
1:58:02	6.72	9	RUN	SPLIT
1:58:05	6.74	9	RUN	SPLIT
1:58:08	6.76	7 12	LGR	SPLII SPLIT
1:58:14	6.78	12	MCP	SPLIT
1:58:17	6.81	7	LGR	SPLIT
1:58:20	6.83	17	OOV RUN	SPLIT
1:58:26	6.87	9 13	LAP	SPLIT
1:58:29	6.89	13	LAP	SPLIT
1:58:32	6.91	9	RUN	SPLIT

Excel Data - Attachment to Attachment 3.10A Habitat Mapping Report Page 5

Middle Yuba River – Habitat Mapping – Video based – From North Yuba/Middle Yuba Junction to Our House Dam (cont)

													Distance
Time	RM	Habitat Habitat	HM Unit	Time	RM	Habitat	Habitat	HM Unit	Time	RM	Habitat	Habitat	HM Unit
1:58:35	6.92	12 MCP	SPLIT	2:03:50	9.22	2 12	2 MCP		2:09:	05 11.3	8 9	9 RUN	SWS24
1:58:38	6.94	6 HGR	SPLIT	2:03:53	9.24	4 12	2 MCP		2:09:	08 11.4	0 12	2 MCP	SWS24
1:58:41	6.96	9 RUN		2:03:56	6 9.20	5 (5 1)	5 SHT		2:09:	11 11.4 14 11.4	3 t 5 1/		SWS22 SWS21
1:58:44	6.98 7.00	6 HGR		2:03:59	9.20	5 14 1 14			2:09:	17 11.4	8 14	1 TRP	SWS21
1:58:50	7.00	6 HGR		2:04:02	. 9.3	2 14	4 TRP		2:09:	20 11.5	0 14	1 TRP	SWS20
1:58:53	7.03	10 STEP		2:04:08	9.34	4 4	4 RAP		2:09:	23 11.5	3 14	1 TRP	SWS19
1:58:56	7.05	7 LGR		2:04:11	9.30	6 12	2 MCP		2:09:	26 11.5	5 2	2 CAS	SWS18
1:58:59	7.07	7 LGR		2:04:14	9.38	8 9	9 RUN		2:09:	29 11.5	8 9		SWS17
1:59:02	7.09	13 LAP		2:04:17	9.40	0 12	2 MCP		2:09.	32 11.6 35 11.6	3 17		SWS16
1:59:05	7.11	13 LAP		2:04:20	9.42	2 12			2:09:	38 11.6	5 12	2 MCP	1/SWS16
1:59:11	7.13	17 OOV		2:04:20	9.4	+ · 5 14	4 TRP		2:09:	41 11.6	8 2	2 CAS	2/SWS15
1:59:14	7.16	18 SPLIT		2:04:29	9.48	3 14	4 TRP		2:09:	44 11.7	0 9	RUN	3/SWS14
1:59:17	7.18	12 MCP		2:04:32	9.50) 9	9 RUN		2:09:	47 11.7	3 18		SWS13 (lgr/hgr/bw)
1:59:20	7.20	12 MCP		2:04:35	9.52	2 14	4 TRP		2:09:	50 11.7 53 11.7	5 5 8 1:		5/SWS11 6/SWS11
1:59:23	7.23	6 HGR		2:04:38	9.54	4 14	4 TRP		2:09:	56 11.8	0 7	/ LGR	7/SWS10
1.59.20	7.25	10 STEP		2:04:41	9.5	2 4			2:09:	59 11.8	3 6	6 HGR	8/SWS10
1:59:32	7.30	9 RUN		2:04:47	· 9.60	, . , .	9 RUN		2:10:	02 11.8	5 12	2 MCP	9/SWS9
1:59:35	7.33	9 RUN		2:04:50	9.62	2 14	4 TRP		2:10:	05 11.8	8 9	RUN	12/SWS7
1:59:38	7.35	12 MCP		2:04:53	9.64	4 9	9 RUN		2:10:	08 11.9 11 11 0	0 12 3 4		13/SWS5
1:59:41	7.38	6 HGR		2:04:56	9.66	6 1 ⁴	4 TRP		2:10:	14 11.9	5 12	2 MCP	16/SWS2
1:59:44	7.40	18 SPLII		2:04:59	9.68	3 14	4 TRP		2:10:	17 11.9	8		POOL BELOW OUR I
1:59:50	7.43	7 LGR		2:05:02	9.70) (2 1,			2:10:	20 12.0	0		OUR House DAM
1:59:53	7.48	7 LGR		2:05:08	9.7	1 1							
1:59:56	7.50	8 GLI		2:05:11	9.70	6	2 CAS						
1:59:59	7.53	13 LAP		2:05:14	9.78	3 12	2 MCP						
2:00:02	7.55	4 RAP		2:05:17	9.80	0 0	6 HGR						
2:00:05	7.58	17 OOV	SPLIT	2:05:20	9.82	2 4	4 RAP						
2:00:08	7.60	13 LAP	SPLIT	2:05:23	9.84 0.84	4 10 S 11							
2:00:11	7.65	17 00V	SPLIT	2:05:26	, 9.80 9.81	3 12 3 6	6 HGR						
2:00:17	7.68	6 HGR	SPLIT	2:05:32	2 9.90	-) (9 RUN						
2:00:20	7.70	7 LGR	SPLIT	2:05:35	9.92	2 12	2 MCP						
2:00:23	7.73	17 OOV	SPLIT	2:05:38	9.94	4 (6 HGR						
2:00:26	7.75	7 LGR	SPLIT	2:05:41	9.96	6 (6 HGR						
2:00:29	7.70	9 RUN	SPLIT	2:05:44	9.98								
2:00:35	7.83	7 LGR	SPLIT	2:05:50	10.00	2 1	2 MCP						
2:00:38	7.85	10 STEP	SPLIT	2:05:53	10.04 s	4 12	2 MCP						
2:00:41	7.88	18 SPLIT		2:05:56	10.00	6 12	2 MCP						
2:00:44	7.90	13 LAP		2:05:59	10.08	3 4	4 RAP						
2:00:47	7.93	13 LAP		2:06:02	2 10.10) (6 HGR						
2:00:53	7.95	10 STEP		2:06:05	10.12	2 1							
2:00:56	8.00	7 LGR		2:06:00	10.14	+ 14 5 14	4 TRP						
2:00:59	8.03	8 GLI		2:06:14	10.10	3 1- 3 14	4 TRP						
2:01:02	8.05	12 MCP		2:06:17	10.20	0 12	2 MCP						
2:01:05	8.08	12 MCP		2:06:20	10.22	2 12	2 MCP						
2:01:08	8.10	10 STEP		2:06:23	10.24	4 12	2 MCP						
2:01:11	0.12 8.14	7 L GR		2:06:26	5 10.20	5 2 5 1							
2:01:17	8.16	7 LGR		2:06:32	2 10.20	1	2 MCP						
2:01:20	8.18	12 MCP		2:06:35	i 10.3	2 12	2 MCP						
2:01:23	8.21	9 RUN		2:06:38	10.34	4 12	2 MCP						
2:01:26	8.23	7 LGR		2:06:41	10.30	6 12	2 MCP						
2:01:29	8.25			2:06:44	10.3	3 (6 HGR						
2:01:32	8.29	12 MCP		2:06:47	10.40								
2:01:38	8.31	9 RUN		2:06:53	10.44	2 : 1 11							
2:01:41	8.33	12 MCP		2:06:56	10.4	6	7 LGR						
2:01:44	8.35	4 RAP		2:06:59	10.48	3	7 LGR						
2:01:47	8.37	9 RUN		2:07:02	2 10.50) (9 RUN						
2:01:53	8 42	18 SPLIT		2:07:05	5 10.52	2	7 LGR						
2:01:56	8.44	7 LGR		2:07:08	10.54	4 S 9							
2:01:59	8.46	7 LGR		2:07:14	10.5	3 1:	2 MCP						
2:02:02	8.48	12 MCP		2:07:17	10.60	D (6 HGR						
2:02:05	8.50	12 MCP		2:07:20	10.62	2 1 [.]	1 POW						
2:02:08	8.52	6 HGR		2:07:23	10.64	4	7 LGR						
2:02:11	0.54 8.56			2:07:26		о 							
2:02:17	8.58	9 RUN		2:07:29	2 10.00))							
2:02:20	8.61	7 LGR		2:07:32	5 10.72	2	7 LGR						
2:02:23	8.63	12 MCP		2:07:38	10.74	4 12	2 MCP						
2:02:26	8.65	7 LGR		2:07:41	10.76	6	7 LGR						
2:02:29	0.67 8.60			2:07:44	10.78	3 12	2 MCP	DOOL					
2:02:32	8.71	7 LGR		2:07:47	10.80	J 12		POOL					
2:02:38	8.73	9 RUN		2:07:50	, 10.82 3 10.82	- 12 4 ·							
2:02:41	8.75	12 MCP		2:07:56	5 10.8	, ' 7 1'	3 LAP						
2:02:44	8.77	4 RAP		2:07:59	10.89	9 1:	3 LAP						
2:02:47	8.79	2 CAS		2:08:02	2 10.9	1 (6 HGR	SWS41					
2:02:50	8.82			2:08:05	5 10.93	3 18	B SPLIT	SWS40					
2:02:55	8.86	12 MCP		2:08:08	10.9	5 (5 SHT	SWS40					
2:02:59	8.88	9 RUN		2:08:11	10.9	י 17 ריי		SW/S39					
2:03:02	8.90	17 OOV		2:08:17	/ 11.00	2 11	2 MCP	SWS36					
2:03:05	8.92	13 LAP		2:08:20	11.04	4 12	2 MCP	SWS36					
2:03:08	8.94	13 LAP		2:08:23	11.00	6 12	2 MCP	SWS36					
2:03:11	8.96			2:08:26	5 11.08	8 9	9 RUN	SWS35					
2:03:14	9.00	12 MCP		2:08:29	11.10	D 12		SWS33					
2:03:20	9.02	12 MCP		2:08:32	11.1	5 4		SIN/600					
2:03:23	9.04	12 MCP		2:08:35	, 11.18 ; 11.1	, (7 ⁻		SWS30					
2:03:26	9.06	12 MCP		2:08:41	11.19	9 18	B SPLIT	SWS29					
2:03:29	9.08	9 RUN		2:08:44	11.2	1 9	9 RUN	SWS28					
2:03:32	9.10	12 MCP		2:08:47	11.2	3	7 LGR	SWS27					
2.03:35 2.03:35	9.12	14 IKP 17 00V		2:08:50	11.20	6 12	2 MCP	SWS26					
2:03:41	9.14	17 OOV		2:08:53		5 11 D		SWS26					
2:03:44	9.18	12 MCP		2:08:56	11.30 11.30	J 1:		SWS26					
2:03:47	9.20	12 MCP		2:09:02	11.3	5 5	7 LGR	SWS25					
					. 1.00	1							

Excel Data - Attachment to Attachment 3.10A Habitat Mapping Report Page $\mathbf{6}$



Middle Yuba River - Habitat Mapping Units using video-mapped data.

North Yuba River above Middle Yuba River Junction Habitat Mapping Photographs

Yuba River Development Project FERC No. 2246

North Yuba River above Middle Yuba River Junction Habitat Mapping Photographs



Habitat Mapping Unit 1 – Pocket Water



Habitat Mapping Unit 4 – Pocket Water



Habitat Mapping Unit 6 – Mid-Channel Pool



Habitat Mapping Unit 8 – Mid-Channel Pool



Habitat Mapping Unit 3 – Mid-Channel Pool



Habitat Mapping Unit 5 – Falls



Habitat Mapping Unit 7 – Pocket Water



Habitat Mapping Unit 9 – Pocket Water

North Yuba River above Middle Yuba River Junction Habitat Mapping Photographs



Habitat Mapping Unit 10 – Falls



Habitat Mapping Unit 12 –High Gradient Riffle



Habitat Mapping Unit 14 – Step-Run



Habitat Mapping Unit 17 – Falls



Habitat Mapping Unit 11 – Mid-Channel Pool



Habitat Mapping Unit 13 – Mid-Channel Pool



Habitat Mapping Unit 15 – Mid-Channel Pool



Habitat Mapping Unit 18 – Mid-Channel Pool

North Yuba River above Middle Yuba River Junction Habitat Mapping Photographs



Habitat Mapping Unit 19 – Pocket Water



Habitat Mapping Unit 20 – Mid-Channel Pool

North Yuba River below New Bullard's Bar Dam Habitat Mapping Photographs

Yuba River Development Project FERC No. 2246

North Yuba River below New Bullard's Bar Dam Habitat Mapping Photographs



Habitat Mapping Unit 1 – Pocket Water



Habitat Mapping Unit 3 – Mid-Channel Pool



Habitat Mapping Unit 5 - Step-Run



Habitat Mapping Unit 7 – Mid-Channel Pool



Habitat Mapping Unit 2 – High Gradient Riffle



Habitat Mapping Unit 4 - Rapids



Habitat Mapping Unit 6 – High Gradient Riffle



Habitat Mapping Unit 8 – Low Gradient Riffle

North Yuba River below New Bullards Bar Dam Habitat Mapping Photographs



Habitat Mapping Unit 9 – Step-Runs



Habitat Mapping Unit 11 –Mid-Channel Pool



Habitat Mapping Unit 13 – Rapid



Habitat Mapping Unit 10 – Cascade



Habitat Mapping Unit 12 – Mid-Channel Pool

North Yuba River Habitat Mapping Raw Data

Yuba River Development Project FERC No. 2246

STREAM HABITAT TYPING SURVEY DATA (NID Yuba-Bear, PG&E Drum Spaulding) Stream/Reach/Subreach: N. Juba above Middle Juba Junction Team: Kathi Peacock & Gaea Bailey UTM: 06-0393, \$359384 = 57.4

Data Sheet # L Page Date

UTM: 0000572	14.9.	92	0/1	AD 83 (H	abitat unit	No	2				PM						Map Grac	lient:		
Habitat Unit #	1				2				3				4				5			
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
1	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
	STEP	POW) SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP
*note if dammed pool	МСР	LAP	TRP	PLP	MCP	LAP	TRP	PLP	(MCP)) LAP	TRP	PLP	МСР	LAP	TRP	PLP	МСР	LAP	TRP	PLP
Length (ft)	13	2			34				108				7	2			7			
Est. Avg. Width (ft)	80	1,54	1		22	2			55,	82,	31		35	,47			50	2		
Est. Avg. Pool Depth (ft)	-				-				63	21,0	>		-					~		
Max. Pool Depth (ft)	-					1. 			6		_	8		·			-	7	_	
Pooltail Embedded %		-	-			-			Ø		-		-	-	_		-		-	
Significant Cover? ¹	INSIGNI	F (BLDR	2	INSIGN	F (BLDR		INSIGNE		BLDR	~	INSIGNI	FC	BLDR	l	INSIGNIE	\subset	BLDR	5
SUBSTRATE COMPOSITION	N		WOOD	allere t	VEG	THE REAL	WOOD	DATE:	VEG	Sec. Alla	WOOD	-	VEG		WOOD		VEG	10.1.2.1	WOOD	210
Dominant	BED	BLE	3)	COB	BED	BLD	5	СОВ	BED	BLD	(COB	BED	BLD	>	COB	BED (BLD	1	COB
Substrate	GRV	SNE	6	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
Subdominant	BED	BLI)	СОВ	BED	BLD		COB	BED	BLD	>	COB	BED	BLD	1	COB	BED	BLD	1	COB
Substrate	GRV) SNE)	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
Deminant	BED	(BLI	S)	COB	BED	BLD)	COB	BED	BLD		COB	BED	BLD	>	COB	BED	BLD	1	COB
Bank Substrate	GRV	SNE	5	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	1.4	SLT
Length of LB and RB Exposed Banks (feet)	np	0			Wo	i			No	<u> </u>			nfa	2/		1	nja			
Commement	10-	-mar	Aver	etu	1	-	-		4 1	-			-11	~	-		1	1		
Unit Flagged/ Labeled? (Y/N)	yes	-bot	on.	tie!	no	6			ho				ho		_	11	Yes-	- +	pp	1
Tributary Inflow in cfs	no				no				NO				no			124	no	. all		
Landmarks or photos ()TA	-1381 Beeb	e Bas	5138	21DS ckn	6-4	inder	1273	re	138	5			1386				138	7		
		Diameter class		Length class	,	Diameter class		Length class		Diameter class		Length class		Diameter class		Length class		Diameter class		Length
Large Woody Debris ⁵		1	1			/	1				1			1	- E		L K C	1	in the	
within bankful width								_	/		1		/		1.5		1	-	1	
	/		1		/		1		/		1		1		1	1	/		1	
No. of LWD Pieces	/				/				. /				1				/		N.	-
Fish Migration Barrier ⁶	NO								ho	,			NO				6.0	1	1	
Spawnable Gravel Area (sqft) Est. ⁷ (1/4" - 2.5")	816,5	5×3, 4×4	374,1	ax5,	4X4	1,67	×,3	*3	2-48)			272	124	8		0	×	1	
Maximum Spawning Gravel Patch Size (sq-ft) Est.	4×6				6xc4				214	6			470	8	242	2	Na		1	S.
Comments / Observations: Fish? Wildlife? Amphibs? Backwater or side chan, amphib habitat? Riparian? Landmarks, Photo #s, Etc.	in b Huge providence	red ru med de lo r ore	ele icu Ised 1 13 of w No	whyor bould	Di hal hal	ficu see v fear	It to ve,	, as	lots g most	fraire ly to	o dee	ut p	Ambin Nuino (LBA) Flow Flow	very l deport	ehan ehan who not	o nel ogen. avd	6ft 0660	701,	4350	arv 943

¹ FALL = Falls, CAS = Cascade, CHU = Chute, RAP = Rapid, GLI = Glido, RUN = Run, STEP = Step Run, HGR = High Gradient Riffle (>4%), LGR = Low Gradient Riffle, POW = Pocket Water, SHT = Sheetllow; Pools: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

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Notes regarding access points (road condition, bridge crossings, trails, etc.)

#1:1382-bade waterpool where middle Yuba meets N. Yuba LDS from hab#1 1383-bame photo W/gaea (for scale) 1384 - ART!

it in a second sec	A 40		12. 	CRIME N	CTARKS .
STREAM HABITAT	TYPING SURVEY DA	TA (NID Yuba-Bear, PG&E Dru	im Spaulding)	Sheet #	and the second s
Λ	1. Yuba about	Middle V. balv	nution	2 4	
Stream/Reach/Subreach:	(Proper or movi	CIVILLA (March)	Page _	alting	4041
Team: <u>R</u> <u><u><u></u><u></u><u></u><u><u></u><u></u><u><u></u><u></u><u></u><u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u></u></u></u></u>		(#/	Date _	111/09	See .
UTM: 060294,	4359449 NA	AD 83 (Habitat unit No)	PM		Map Gradient:
Habitat Unit #	6	7	8	9	10
Habitat Type ¹	FALL CAS CHU	RAP FALL CAS CHU RAI	FALL CAS CHU RAP	FALL CAS CHU RAP	FALL CAS CHU RAM
	HGR LGR GLI	RUN HGR LGR GLI RUN	HGR LGR GLI RUN	HGR LGR GLI RUN	HGR LGR GLI RUN
	STEP POW SHT	COP STEP POW) SHT COI	STEP POW SHT COP	STEP POW SHT COP	STEP POW SHT COP
note if dammed pool	MCP/LAP TRP	PLP MCP LAP TRP PLF	MCP LAP TRP PLP	MCP LAP TRP PLP	ZO LAP TRP PLP
Eet Ave Width (ft)	12 44 22	110 22 20	49 101 55	8245 32	Tr
Est. Avg. widdi (it)	06,00,73	99121,21	10 2 1 50	07,0,00	
Est. Avg. Pool Depth (ft)	10,5,1,17	10 -	6, 5, 9, 2, 5,0		<u> </u>
Max. Pool Depth (ft)	8		i m	-	-
Significant Cover? ²	INSIGNIF BLDR	INSIGNIF BLDR	INSIGNIF BLDR	INSIGNIF (BLDR)	INSIGNIF BLDR
CURCED LTE COMBOSITIO	VEG WOOD	VEG WOOD	VEG WOOD	VEG WOOD	VEG WOOD
Deminent	BED (BLD)	COB BED BLD COP	BED (BLD) COB	BED BLD COP	BED (BLD) COB
Substrate	GRV SND	SLT GRV SND SLT	GRV SND SLT	GRV SND SLT	GRV SND SLT
Subdemland	BED BLD	COR BED BLD COR	BED BLD (COB	BED BLD COP	BED BLD COB
Substrate	GRV SND	SLT GRV SND SLT	GRV SND SLT	GRV SND SLT	GRV SND SLT
Dominant (BED BLD	COB BED BLD COE	BED BLD COB	BED BLD COE	BED BLB COB
Bank Substrate	GRV SND	SLT GRV SND SLT	GRV SND SLT	GRV SND SLT	GRV /2. YZ SND SLT
Length of LB and RB	d	d	d	1	C
Exposed Banks (feet)	4	P	φ	P	Ø
Confinement ⁴	\$ X	1	* 2	1	1
Unit Flagged/ Labeled? (Y/N)	sayes-base	2 100	no	no	yes-top
Fributary Inflow in cfs	no	no	no	no	no
Landmarks or photos DTA 1	1388	1389	1390	1391	1392
a la ser a	Diameter # class	Length Diameter Length	h Diemeter Lengt	h Diameter Leng	h Diameter Length
area Woody Dahrie					
within bankful width	1				
No. of LWD Pieces within wetted width	D	A	Ø	1	/
Fish Migration Barrier ⁶	no	no	ne	ho	yes
Spawnable Gravel Area (sqft)	3×2,1×1,1×1	181 281	123 12.16	247 1423	A
Est. ⁷ 1/4" - 2.5")		1017201	11211070	3x3 jet aufi	4
Aaximum Spawning Gravel atch Size (sq-ft) Est.	342	.281	1246	343	\$ N/A
Comments /	Buch healed 1	Punchiald	Podet mater	-	Sphit channel
Observations:	manonano (y lou chart	at trul had		left perm barri
Backwater or side chan, amphib	aver actor	SENS	is and head	1,6.0	ALLOUS
abitat? Riparian? Landmarks, boto #s. Etc.	- Bound	JUP)	12 podeer		41250512
neve any same			Maler		101010
EALL - Falls CAS - Cascado C	HIL- Chute RAR - Ranid GLL	- Glide BUN - Bun STEP - Step Bun HOD -	High Gradient Bittle (~4%) LOB - Low	Gradient Billie BOW - Bocket Water S	HT - Sheetflow

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STREAM HABITAT T	YPING	SURV	EYDA	TA (N	ID Yub	a-Bear.	PG&F	C Drui	n Spaulo	ling)	1			-						
	V I	÷.,			1 1.3	141	11	. 1	Ĺ	0,	E	Data She	eet #	6				2.735-7-1		
Stream/Reach/Subreach:	Jup	aak	20Ve	unc	ton 1 N	HM	aan	e yu	60-		P	Page	3	of <u>4</u>						
Team: Kathi PP	acos	cK,	Ga	lat	Soule	h					E	Date	9/11	10	9					
UTM: 0660113, 0	1350	1512	2N	AD 83 (H	abitat unit N	all	,ba	sl	-	1	PM						Map Gra	dient:		-
Habitat Unit #	11				12				13				14				15			
Habitat Type ¹	FALL	CAS	СНU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FÀLL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP
*note if dammed pool	MCF	C M	1 KP	FLF	MCF	- 7	T	TLI (MCF	0	IN	FLF	100	LAI	IM	1.04	9	I	IKI	TLF
Eet Ave Width (ft)	38	5 51	2		20	etto	-1		40	404	2		3:	1.12	3.3	%	41	35	34	
Est. Avg. Pool Denth (9)	15	15	2	0		11				5.	5.3.2	0	-	<u> </u>	12		47	52	17	5.0
Max Bool Depth (ft)	41	E.	1		-					5	5	-	-				-11-	75	111/	10
Pooltail Embedded %	O	/			-		_				0		~				Ø		-	1
Significant Cover? ²	INSIGNI	F	BLDR		INSIGNI	F	BLDR		INSIGNI	(1	BLDR		INSIGNI	7 (BLDR	>	INSIGNE	FC	BLDR	,
SUBSTRATE COMPOSITION	IVEG N	-	WOOD	HINGS BE	VEG	1010	WOOD	OTTAL	VEG	Contraction of	WOOD	SIM SI	VEG	-	WOOD		VEG	in the l	WOOD	(inite)
Dominant	BED	BLD	>	СОВ	BED	BLD	>	СОВ	BED	BLD	,	СОВ	BED	BLD	\mathcal{D}	COB	BED	BLD	>	СОВ
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
Subdominant	BED	BLD)	(COB)	BED	BLD	>	СОВ	BED	BLD	(COB) BED	BLD		COB	BED	BLD	(COB
Substrate	GRV	SND	0	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	_	SLT	GRV	SND	-	SLT
Dominant	BED	BLD)	COB	BED	BLD	5	СОВ	BED	(BLD)	,	сов	BED	BLD	/	COB	BED	BLD	2	COB
Bank Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
				1						1										
Exposed Banks (feet)	ø)	B				rh		S		de				N			
Confinement ⁴	1				1				4		6		4				à			-
Unit Flagged/ Labeled? (Y/N)	105	-6	ase	,	hp				no				no				viel	, to	D	
Tributary Inflow in cfs	NO				20				no				00				Ro	11-	F	
Landmarks or photos	139	3			130	14			139	5			139	6			130	17		
		Diameter		Length		Diameter		Length		Diameter		Length		Diameter		Length		Diameter		Length
Larga Woody Dahris ⁵		1	Î			1	1	U.L.U			1			/	1			/	Ĩ	
within bankful width	1		1		/	·	1		/		1		/		. 1		/		1	
	/		1		1		1		/		1		/		1		/		1	
No. of LWD Pieces within wetted width	/				/				/				1				/			
Fish Migration Barrier ⁶	no		=		NO				no				nD				no		-	
Spawnable Gravel Area (sqft)	d				4	AY	1		1				1				DA	Sal	in	44
Est. ⁷	φ				aqu,	0.1	<u>c</u>		φ				6					- May	57	26
Maximum Spawning Gravel Patch Size (sq-ft) Est.	ØP	A			Pstef	By E	241		n/	R			n/0	L.			675	ĸ		
Comments / Observations: Fish? Wildlife? Amphibs? Backwater or side chan. amphib habitat? Riparian? Landmarks, Photo #s, Etc.	Sub: Flow LBI	sund J sid	lace	o.N	81, 1 nor Those	N-M	odel	la ble	Ri-All		e @ Agp	Ruv	ster sas 4%	o-n le.l gro	see(e nt	dead	bis S=1	398	×7"

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STREAM HABITAT	TYPING	SURVI	EY DA	TA (N	ID Yuba	-Bear	, PG&	E Dru	n Spaule	ling)												
	Val	. a . a	Love	, A	1.14	oV.		id	neba	0		Data Sh	eet #	2	1	1			-			
eam: <u>KP, GB</u>	1700	-	90 M		119161	C 10	Near	90	11010			Page Date	9/14	109	<u> </u>							
TM: 0060340/	4359	537	N	AD 83 (Ha	ibitat unit No	16	, ba	sc			PM						Map Gra	dient:		-		
fabitat Unit #	The.	-16			17				18				10	1			20					
Habitat Type ¹	FALL	CAS	CHU	RAP	(FALL)	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP		
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN		
	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP		
ote if dammed pool	MCh	-Z-D	TRP	PLP	QU	LAP	TRP	PLP	MCP	LAP 22	TRP	PLP	MCP	TAP 1	TRP	PLP	Tist	LAP	TRP	PLP		
engin (it)	28	24	31	2	1	2			77	- 25	5	RU	Fr	2 100	5		10	7 1 15	- 0	2		
a. Avg. widui (it)	20	FEI	1	1	-	1			1	- 7	0,1	07	27	; 100			100	100	17-	2		
st. Avg. Pool Depth (ft)	274	20	5,1.7	5,0,	1.5	_			4	_			_				2	3.	2, 1.7	15,0		
lax. Pool Depth (ft)	3,43	>/	_		-	-			6				-				S.	_		_		
ooltail Embedded %	INSIGNU	FC	BLDR		INSIGNIE	-	BLDR	5	INSIGNI	0	RLDP	<u> </u>	INSIGNI	F	BLDR	>	INSIGN	F 7	BLDP	-		
Summer of the t	VEG		WOOD		VEG		WOOD		VEG		WOOD	·	VEG		WOOD		VEG		WOOD	·		
UBSTRATE COMPOSITION	N	0		COR	BED	C DI D	0	COR	DED	(mth)		COD	DED	010	0	COR	DED	RID		COR		
ominant ubstrate	CDV	SNIP	, ,	COB	CRV	BLD		COB	BED	BLD))	COB	BED	BLD		COB	GDV	BLD	2	COB		
	GRV	SND		SLI	GKV	SND	-	SLT	GRV	SND		SLT	GRV	SND	-	SLT	GRV	SND	Constant of	SLT		
ibdominant	BED	BLD		СОВ	BED	BLD		COB	BED	BLD		COB	BED	BLD	(COR	BED	BLD		COB		
iosuate	GRW	SND		SLT	GRV	SND	15 million	SLT	GRV	SND		SLT	GRV	SND	-	SLT	GRV	SND	-	SLT		
minant yestole	BED	(BLD))	COB	BED	BLD		COB	BED	BLD	>	COB	BED	BLD		COB	BED	BLD	y.	СОВ		
ank Substrate	GRV	SND	a the state of the	SLT	GRV	SND		SLT	GRV	SND	_	SLT	GRV	SND		SLT	GRV	SND		SLT		
ungth of I B and PB					0								1				-					
sposed Banks (feet)	d				6	ch			d				D				in					
	y				- R	P		-	Y			-	V				4			-		
onfinement"	1				1				2			_	1				Z					
nit Flagged/ Labeled? (Y/N)	Yes	-61	ase	5	no)			no				no				Y	01	ge			
ributary Inflow in cfs	ni	2			\wedge	2		N.	No				ho					ba	14			
andmarks or photos COCAA	1200	}			1400	12			110	r			iller	2 1	TE		1/101	1 14	510	Javar		
Parties of Parties of Part	121	Diameter		Length	110	Diameter		Length	140	Diameter		Length	1-10	Diameter	100	Length	140.	Diameter	apl	Length		
		class	-	class	#	class		class		class		class	#	class		class	#	class		class		
arge Woody Debris ⁵		1	1		-		1			1	1			24	:	50			1			
thin bankful width		_	+-		/	1.000		-	-/-								/		-			
o. of LWD Pieces	~		-		01		,		1				1		<u>, 1</u>		~		-			
thin wetted width	D				0				0				1				-0	_	-			
sh Migration Barrier * /n)?	no				ye	5			nu				no				no					
awnable Gravel Area (sqft)	225	1%(41		',				1				d				Loy.	3				
t ⁷ 4" - 2 5")					Ø				Ø				Ø				91					
	7.1	/			P	-			-		-		-11			11	1	10	100	-		
aximum Spawning Gravel tch Size (sq-ft) Est.	UN	2			NA				N	r			NI	r			07	5	14	/		
omments /	o m	1000		1	101	10	4 1	-	1		7				-		eto	0.1	19	ton		
bservations:	KAH	le cr	est	L	Spli	(6)	ellest	r -	lade	en w	al	gae					010	500	20			
sh? Wildlife? Amphibs?	res.	aep	C LO	aut .	304	inne	ls)					0					00	77				
bitat? Riparian? Landmarks,	4517	red	- 00	P	11 00	in	1 611	Arip									43	598	184			
pto #s, Etc.	mee	ts v	eng.		Tille	11.	1 10	tit	A.C			- 1										
					WILDO	470	6 3	SIL	Bib													

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7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access points (road condition, bridge

-#19\$#20 start same pattern as seen #1=#10 dawastream Post 20 - goes bure + Dow + J

STREAM HABITAT	TYPIN	G SURV	EY DA'	ra (1	NID Yu	iba-Bei	ar, PG&	E Dru	ım Spau	ilding)	Da	a Sheei #	1					-	
Stream/Reach/Subrench:	Noi	th 1	12b	al	peli	OW	Neu) BU	larc	is be	W Pag	«	or 4	10	7				
UTM: 0659861	1436	187	18 MA	េសូ៣	labitat uni	t No,		1	2417	1	PM			1		Map Gr	adient:		-
Habitat Falt #			IA-	F	1		2			3		-	4	1224-11			F		
Habitat Type 1	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU R	AP FAL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI R	UN NGI	CLOR	GLI	RUN	HGR	LGR	GLI	RUN
	STEP	POW	SHT	COP	STEP	POW	/ Sht	· COP	STEP	POW	SHT C	OF STE	P POW	SHT	COP	STEP	> POW	SHT	COP
teor banned post	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	S LAP	TRP PI	P MC	P LAP	TRP	PLP	MCP	LAP	TRP	PLP
Length (ft)	-	683	3	<u> </u>		30	4		-	500	2	-	5	56	,		15	1	_
Est. Avg. Width (ft)		139			4	55,	50	18	7	9,2	32-12	01 91,	91,129	,104	73	-0	133,	116	,111
Est. Avg. Pool Depth (ft)		6+			-					6+	F	10		-			-		
Max. Peol Depth (ft)		6+								6+		1 2	BFD	124	.25				
Pooltail Embedded %	T	DO De	ep				_		T	OD DE	SEP						4	-	
Significant Cover? ¹	INSIGNE	9	LDR		INSIGN	IF	BLDR		INSIGN	F da	LDR	INSIG	NIF	BLDR	>	INSIGN	IF <	BLDR	
SUBSTRATE COMPOSITIO	N		TOOD		12.0		wood		1120		000	1120		incos		120		noob	-
Dominant	BED	BLD	0	OB	BED	BL		COB	BED) BLD	co	B BED	BLD	\mathbf{D}	COB	BED	BLD	5	COB
Substrate	GRY	SND	5	ilt	GRV	SNI	D	SLT	GRV	SND	SL	T GRV	SND		SLT	GRV	SND		SLT
Subdeminant	BED	BLD) (OB	BED) BLI	D	COB	BED	BLD) CO	B BED	BLD		COB	BED) BLD		COB
Substrate	GRV	SND	s	LT	GRV	SND)	SLT	GRV	SND	SL	T GRV	SND		SLT	GRV	SND		SLT
There is a second second second second	BED	BLD	C	OB	BED	BLE)	COB	BED	BLD	CO	B BED	BLD	5	COB	BED	BLD	5	COB
Bank Sobstrate	GRY	SND	s	LT	GRV	SND	5	SLT	GRV	SND	SL	T GRV	SND		SLT	GRV	SND		SLT
Length of LB and RB Exposed Banks (feet)					/	/	/			/				/		/	/	/	
Cealintiaent ⁴	/	2				7			1	2			2				2		
Unit Flagged/ Labeled? (Y/N)	Ye	por	Hon	2		N		_		N			Ň			Ye	1. 60	40	m
Tributary Inflow in cfs	·	-			as	Falls	353	BLUS		NA			NA				NO		
Landmarks or pho:>s	LVS	. 35	列,5,	6	us a	351	352	4VS	33 6	721	us		335	5 LU	15		337	LL	15
		class	cla	855		class	a. Contra di	chass		class	olas	s 4	class		class		class		olass
Large Woody Debris ⁵			1.				1				1	_		1/				X	
within bankful width		/	1	_						_/	1			4			/	1	_
			1	-		/	1				1		1	1			<u> </u>	1	
within wetted width	/ .				/				_			/				/			
Fish Migration Barrier	NO	WIR	V-			0				N			N				N		1
(y/R)? Seawmable Gravel Area (soft)	17			+		14		-									14		
Est. ⁷ (1/4" - 2.5")	·										:	-			-			_	
Maximum Spowning Gravel Patch Size (sq-ft) Est.	-	• • •	_									-			-				
Comments / Observations:	Phol	belo	W	d'	ra v	vate	w.f.a	11	Prop	5215	-fy	2.5	4. 3	%		ast	eps	wit	h
Fish? Wildlife? Amphibs?	Dan	nen	ds	1.	in	HE	7R		do							dai	Here	int	
Backwater or side chan. miphio habitat? Riparian? I andmarks,	10 0	WERE	rlas	11	Gra	die	nt.	-54	, au	PU		1				Wal	er la	evel	S
Photo #s, Etc.	that	in	Kel	X	land	cic	116	Val	3										- 1
This Colle Connada Ch	11 104	VIIC	101-0	PI	DP I.	S Y U	// (()	100-10	ab Gradian	Cilling 1- 4944	100-100	Cristiani Bil	DOW -	Poetral W	Ner CUT	- Chastle			
Pools: COP = Convergence, MC	P = mid-char	nnel pool, L	AP = Later	al, TRF	= Trench	, PLP = P	Plunge		Pri chischish			CHEVIOLA PIN		C Volument and	6131, GITT	- Writening			
The minimum unit length sh Note if cover is a significant or (e.g. toos in stream, lots of b	dominant (e ouklars, >2)	active cha lature of th 5% surface	nnel width he unit: e area hes	a, unle a instra	ss there	is somet	hing notal ancino ve	ble or un	ique abou	A N.				O/C initi	als:		H	B	
Channel Conlinement: 1=Confi	ned Shallov	v; 2=Conti	ned Deep	: 3=M	oderate (Conlined	(<2x wet)	led chan	inel width)	; 4=Unconli	ned (>= 2 v	vetted char	nel widths)			0	-	
Criteria for LWD is:any downed Size classes: 6-12", 12-24", 1	24-35".or 3	n bankiuii 6"+ x 3-11	width of c 0', 10-25',	25-50	H = 01> 171 1', 50-75',	, 75'+ tie	anklull wid . 6 25 = 1	n. 6-12", 2	5-501				1	10.5	ATE	111	TES	下	24.
Waterfalls, high velocity chutes	or cascade	is at applo	x banklul	tiows.	NOTE	ERTICA	L DROP	and IF C	CONDITIC	NAL or PE	RMANENT		10	100	117	DAR C		1	
Spawning Sized graval submer	rsed in an a	rea of ade	quate dep	th and	d velocity	/ within o	ne unit						N	10	01	ANT S	2		
lotes regarding access oints (road condition, bridge														1					
prossings, traits, etc.)	hal	05	1. Ch	01	IL	T	DON	' M	ate	1 ver	nd	from	a N	100	ISVI	1/2	Roa	d	
HCCESS TU	WILL	1 6	1111	cu	a	10	UUN	9	nin	~ 10	und	ion	1 11	ung	JVII	<u> </u>	1	-	
toward day	n bi	otton	1 04	F	da	M	\$	Un	pav	ed	road	d t	DU	Jar	ter	s e	dge	2.	
Blackberric	25 11-	mic	K"	0	ind	k	010	00	01	blo	KS	aci	2 SS	ħ) .	ds	Yea	rch	19
needad a	ha	T	=110	01	1.1	mat	-0-	5	avo	55	poo	1.							
not the	1000	100	.11	ÇM	U	0.00	1	U											

#SEE BACK

2		i	

This unit followed unit 1A

, i jakara -

1B LGR 1% grad 50 wide BLD BED BLD 175 Long

Mapped going ds. due to difficult access and uncertainty about time.

[2064]

NO SAT	FUT	THE				6				DM						Man Gr	dianes		
UTM: 110 Office	00		NAD 83 (Tabliat unit	No	2		-	1		-	-	-	-	-	map Ora	(3634)	-	
Habitat Unit #		-10-			7				- 8				4		-		10		-
Habitat Type	FALL	CAS C	HU RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CIIU	R
	HGR	>LCR (glj RUN	HGR	LGR	GLI	RUN	HGR	LGR) CLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	R
	STEP	POW S	HT COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	(STEP)	POW	SHT	COP	STEP	POW	SHT	C
*zote if descend peed	MCP	LAP T	RP PLP	MCP) LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TIOP	Pl
Length (ft)		124.		0.0	04	(10.01	188	1	01.	0.1	37	9	00		20		
Est. Avg. Width (ft)	2	30,6	F	80	112	11	5	108	+ 11	18.	96	94	, 100	105	5,65	ξ	5		_
Est. Ave. Paol Douth (ff)	1	1	÷		10-	+				_		8				1			
Max Paol Denth (1)	-		>	1	107	him						-				-			
Positali Embedded 46				T	DO D	EEF	2									-		6	1
Significant Cover?"	INSIGNE	r (BL	DR	INSIGNI	W C	BLDR		INSIGNI	C	BLDR) .	INSIGNI	<	BLDR	>	INSIGNI		LDR	2
SUBSTRATE COMPOSITION	VEG.	wo	GOD	VEG	1	WOOD	1000	VEG		WOOD		YEG	Sec.	NOOD		750		1005	
Deminant	BED	(BLD)	COB	BED	BLD)	COB	BED	BLD)	COB	BED	BLD	\mathbf{C}	COB	BED	BLD)	CO
Substrate	GRV	SND	SLT	GRV	SND		SLT	GRV	SND	-	SLT	GRV	SND	_	SLT	GRV	SND		SL
	RED	BLD.	C08	RED)	BLD	100	COB	BED	BLD		COB	BED	BLD	1	COB	BED	BLD	-	CO
Subdominant Substrate	CRV	SND	CU.P	GRV	SND		SUT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SL
	OAT	0.110		-	- Caller	1	0.00		2	-	000	-	7	5	-	TPD.	-	1	-
Dominant	BED	BLD	COB	BED	BLD		COB	BED	BLD)	COB	BED	BLD		cos	DED	BLD		cu
Sank Sobstrait	GRV	SND	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	al and the second second	SLT	GRY	SIND	Constant of the	SL
Length of LB and RB Expessed Banks (feet)	_		/			/			/	~		/	/	/			/		
Confinetisent ⁴		2			2				2				2				2		_
nit Fingged/ Labeled? (Y/H)	y C	3 10	P		N				Ň		4		N			YO	Bo	Ho	n
ributary Inflow in cfs			-		+		-	_	the second s	_				-		<u> </u>			-
andmachs or pho:36	.3	381	-DS	3	391	us	5	34	10 1	-4:	S	342	2051	343	LUS	3	44 1	VS	
	L	Manuakor	Length		Dierreter	1	Leagth		lineator		Leaguh		Disevetor		Leagts		Discustor		Log
9.50 D. 2004.01	-	class	Class	- 1	class	1	CIRSS	- 1	CIRSS	1	Crass	<u> </u>	cass	1/	01855	- 1	CIN22	7	6183
arge Woody Debris ³						4-				-				-				1	-
ILEN PREAM WAR		/							/	1			/	1			/	1	_
e. of LWD Pieces								/				/				7		-	-
ithin wetted width	/ .						-												-
sh Migration Barrier	-								-	-			-					-	
pawashle Gravel Area (sqft) sL ² /4" - 2.5")			•	-				27	3			<u>_</u>				_		-	
azimum Spawning Gravel rtch Sine (19-ft) Ext.	_			_				2.1	3						-				
anszenis / servations: hy Widiffe? Amphibs? ckwater or side chan, amphib itus? Riparian? I audenerics, bio He, Etc.	5%	gra	prad.					1%	gra	d,		POOL 6+ Huro	-s r dee Ngh	ARE P	overall.				

² Note if cover is a significant or dominant feature of the unit:

Para Walter Date

(e.g., logs in stream, lots of boulders, >25% surface area has instream or low overhanging vegetation, etc.) Q
*Channel Conlinement: 1=Contined Shallow; 2=Contined Deep; 3=Moderate Conlined (<2x wetled channel width); 4=Uncontined (>= 2 wetled channel width);
*Criteria for LWD is:eny downed wood within bankfull width of channel =or> than 1/2 bankfull width.

Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10", 10-25", 25-50', 50-75", 75'+ (ie. 6) 25 = 6-12", 25-50') *Waterfalle, high velocity chutes or cascades at approx bankha flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unk

PHOTO # 34/1 LUS & DAM VIEW

Notes regarding access points (road condition, bridge crossings, traits, etc.) ENO PAGE UTM: 0600041 4360972

Q/C initials:

STREAM HABITAT	TYPIN	G SURV	EYD	ATA (NID Yul	a-Bear	r, PG&	E Dru	m Spau	lding)		Data S	neei #	2						
Stream/Reach/Subreach: Team: <u>C) Pau</u>	NI.V Keize	lob K	a +	bel	ow de	St	W P	bulle	urds Da	m	ar	Page Date	3	01/2 17	3					
UTM: 066004	1/92	3607	+4	n CE CLAV	İəblist unit i	¥ø,	د				PM						Map Gr	adiem:		
Habitat Unit #		-11				12			-	1:	3			18						
Habitat Type '	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	СНЦ	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RA
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RU
Partie M descend a suit	MCP	POW	THP	PLP	STEP	LAP	TEP	PLP	MCP	LAP	TRP	PLP	MCP	POW	TEP	PLP	MCP	POW	SHT	CO
Length (ft)	1	26	4	1101	C	JID				222	1		11104	Ditt	114		- mica	PAT	114	11,1
Est. Avg. Width (ft)	100	88	56	7	1 -	1.	74		5	77	1	68								
Post Auro Bard Maria II (Ma		ht			1	la-t-	-					100								
ESL Avg. Fool Depth (8)		lat				0+			-											
Max. Foot Depth (11)	Toe	DE	0		T	20-	Des	10					-							-
Significant Cover?"	INSIGNE VEG'	Pod	BLDR	>	NSIGNII VEG	2	BLDR	50-	INSIGNI VEG	· <	BLDR	2	INSIGNI VEG	,	BLDR		INSIGNI VEG	F	BLDR	-
SUBSTRATE COMPOSITIO	N		_			-				-					COLUMN.					
Døminnet Substrate	OBV	CHID	2	COB	BED	BLD	\mathcal{I}	COB	BED	BLD)	COB	BED	BLD		COB	BED	BLD		COB
	GRY	SHU		SUT	GRV	SND		aur	GRV	SAU	Contra la	SUT	GRY	SND	11-11-11-11-11-11-11-11-11-11-11-11-11-	SLT	GRV	SND	A COLUMN	SLT
Subdominant	BED	BLD		COS	BED	BLD		COB	BED	BLD		СОВ	BED	BLD		COB	BED	BLD		COB
	GRY	SND	-	SUT	GRV	SND		SLT	GRV	SND	1	SLT	GRV	SND		SLT	GRV	SND	ALC: NOT	SLT
Dominant Bank Sabatanta	BED	BLD	>	COB	BED (BLD)	COB	BED	BLD	>	COB	BED	BLD		COB	BED	BLD		COB
	GRV	SND		SLT	GRV	SND	100 M	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
Length of LB and RB Exposed Banks (feet)			_			_			/	/	<u>`</u>									
Confineitent ⁴	~	2				2	er al arta			2							in the second			
Juit Flagged/ Labeled? (Y/N)	YC	S TO	bp		N	J			NO F	LA	GX	ŧ								
ributary Inflow in cfs	,			-	-				_			-								
animerius or photos	34	6L	DS		34	7L	NS		345	111	BA	4								
A CONTRACTOR OF THE OWNER.	D	Xemator		Length	D	inerreter .		Leagth	r	lisenster	-01	Langui	1	Dissector		Length	-	Diamater		Longit
	* *	class	~	elass		lass		c1233		class	~	class		class	-	class		class		class
arge Weedy Dehrin ³		4.	4.	-+		/	4				<u>x</u>		-		<u> </u>			-		
		/	1				-	-		-	1-							-		
o. of LWD Pieces	/				/			1	1										· ·	
sh Migration Barrier 6				Ť				ť				-								
awaable Gravel Area (sqft) 1. ⁷ 14" - 2.5")	20 x	5			2	οх	5													
anianna Spawning Gravel tch Sine (sq-fl) Est.	20	ĸS.	с¥		2	0 X	5													
enments / eerrations: hY Widdlife? Amphibs? tkwater or side chan. mnphib itse? Ripacian? I andenarks, no Hs, Etc.	PROB dee.p pool	> 10 Mil Con	d tro	1	Pro la	> leep	105	t s	2.5 stepp	and st	bu	t. dung								
0	11/10	851	ND	ap	0015				week.	00 (Tar	1CY S	na	Ko						

Poole: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Plungs

The minimum unit length should be 1x active channel width, unless there is something notable or unique about it.

²Note If cover is a significant or dominant feature of the unit:

(e.g., logs in stream, lots of boulders, >25% surface area has instream or low overhanging vagetation, etc.)

Q/C initials: Channel Conlinement: 1=Contined Shallow; 2=Contined Deep; 3=Moderate Contined (<2x wetted channel width); 4=Uncontined (>= 2 wetted channel widtha)

* Criteria for LWD is: any downed wood within bankfull width of channel wor> than 1/2 bankfull width.

Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-28', 25-50', 50-75', 75'+ (ie. 6) 25 = 6-12", 25-50') "Waterfalls, high velocity chutes or classades at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT 7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding sccess points (road condition, bridge crossings, traits, etc.)

PHOTO 349' is of drop-off, A in boolders & probably pocket water Impassable-dupwisheer diffs & probably * Bedrock + boulders; nothing to fleg. POW 100ks same as on N Juba at junction wildle Juba 065996
North Yuba River Habitat Mapping Data

Yuba River Development Project FERC No. 2246

NorthYuba River – Ground-based and Video-based Habitat Mapping Data

Stream	m. North Yuba									Date: 9	14 & 9			Parent	Material: S	lesozoic ro martville (ocks of the													
Reac	:h: > MY jntn a	ind < Bullard	ds Bar							Duto: 0	1400			Map Gra	dient (%): P	ercent														
Date	Section Number	Ordered Unit #	l Origin Unit	Unit al Habitat Type	Length (ft)	Cum. Length (ft)	River Mile	Est avg BFW (ft) B	po SFD (ft)	Est avg ool depth (ft)	Max. pool depth (ft)	Pooltail embed- dedness (%)	Dor Cover sub	ninant do strate su	Sub- ominant ubstrate	Dominant bank substrate	Erosion (ft)	Conf FPW me	fine- Flag/ ent Label	Flag Description	Trib cfs	Land- marks or Photos	Total LWD (bankful)	Total LWD wetted width	Fish Migration Barrier?	Total Spawnable gravel area (sq. ft.)	Max spawning gravel patch (sq ft)	Northing	Easting	Post-Field Changes Comments
9/14/20	09 NY above MY	(inction		1 POW	13'	2 132	0.20	71 5				BI		GR	V B	חו			2 N	nowhere to tie	N	DTA1 1381 bas	se,		N	105	. 48	660393	4359384	In bedrock canyon HUGE medsed boulders provide lots of cover over water, photo descriptions: DTA1 1382 - backwater pool where Middle Yuba meets N. Yuba LDS from hab 1, DTA1 1383 - same photos with Gaes (fir scale) DTA1 1384 - ARTI
9/14/20	09 NY above MY	/ inction		21GR	34	6 168	0.23	22				BI		COF	R B				1 N	nownere to tie	N	1002 200	_		N	40	24	000333	4333304	Difficult to see what hab feature, as large boulders cover most water surface
9/14/20	09 NY above MY	jnction		3 MCP	108	B 276	0.25	56		2.4	6	0 BI	LDR COB	BLD	D B	ED			2 N		N	DTA1 1385			N	16	16	5		Into of gravels but mostly too deep Ambiguous due to minor side channel (LBA), very heterogenous, flow denosition and low flow. NOT MODELABLE
9/14/20 9/14/20	09 NY above MY 09 NY above MY	jnction / inction		5 FALL 6 MCP	13	7 355	0.27	50		2.9	6	BI 0 BI	LDR BLD	COE	B B B B	LD			1 Y	top base	N	DTA1 1387			y N	8	. 6	660301 660294	4359431 4359449	6' permanent barrier UTM: 0660301/ 4359431
9/14/20 9/14/20	09 NY above MY 09 NY above MY	inction	_	7 POW 8 MCP	190	0 677 B 785	0.33	38.67 55		3.1	6	BI 0 BI	LDR BLD	COE	B B B B	ED ED			1 N 2 N		N	DTA1 1389 DTA1 1390			N	3	2	2		punctuated by short steps pocket water at tail, head is pocket water
9/14/20	09 NY above MY	inction		9 POW	143	3 928	0.38	38				BI	LDR BLD	COE	B B	ED			1 N		N	DTA1 1391	_		N	27	9)		split channel. 6' permanent barrier (Barrier UTM: 0660113/ 4359512).
9/14/20 9/14/20	09 NY above MY 09 NY above MY	jnction jnction		10 FALL 11 MCP	30	0 958 8 1026	0.38	75 45		2.25	4.5	BI 0 BI	LDR BLD	BLD	B B	ED LD			1 Y 1 Y	top base	N N	DTA1 1392 DTA1 1393			Y N			660113 660113	4359512 4359512	bank substrate half boulder half bedrock. subsurface flow side channel LBA 8% gradient, pop-modelable, though short step at base may get
9/14/20	09 NY above MY	jnction		12 HGR 13 MCP	2	7 1053	0.40	30 40.67		2.6	5.5	BI	LDR BLD	BLD	B B	LD			1 N		N	DTA1 1394			N	2	2 2	2		transect.
9/14/20	09 NY above MY	jnction		14 STEP	109	9 1242	0.44	39.33		2.0	4 75	BI	LDR BLD	COE	B B	LD			1 N	top	N	DTA1 1396			N					step-run, riffle-like @ base, 4% gradient
9/14/20		(inction			7	1 1333	0.47	27.22		1.0	3.25	0.81		GP					1 V	basa	N	DTA1 1200			N	10	10	660040	4250527	riffle crest and residual depth meet, size of pool meets minimum
9/14/20	09 NY above MY	(inction		17 FALL	26	6 1429	0.47	73		1.0	0.20	BI		BLD) B				1 N	base	N	DTA1 1400			v	12	. 10	000040	4000001	SPLIT into at least 3 channels, 4' permanent barrier within 100' of last
9/14/20	09 NY above MY	inction		18 MCP	233	3 1662	0.51	75.33		4	6	0 BI	LDR BLD	COE	B B	LD			2 N		N	DTA1 1400	1	1	N N					laden with algae
9/14/20	09 NY above MY	/ inction		20 MCP	10	1 1916	0.54	59.33		2.6	5	BI		COE					2 Y	top	N	DTA1 1404 14	05		N			650920	4359584	END, #19 & #20 start same pattern as seen #1 - #10, post 20 - goes
0:39:	25 video mapping	3		POW	10	1010	0.58	00.00		2.0	5					20			21	lop -		017(11404, 14						000020	4000004	
0:39:	31 video mapping	3		MCP			0.62																							
0:39:	37 video mapping	3		MCP			0.66																							
0:39:	43 video mapping 46 video mapping	3		MCP			0.70																							
0:39:	49 video mapping	3		POW			0.74																							
0:39:	55 video mapping	3		POW			0.78																							
0:40:	01 video mapping 04 video mapping	3		HGR			0.82																							
0:40:	07 video mapping	3		MCP			0.86																							
0:40:	13 video mapping	3		TRP			0.87																							
0:40:	19 video mapping	3		POW			0.93																							
0:40:	25 video mapping	J		MCP			0.95																							
0:40:	31 video mapping	J		LGR			1.01																							
0:40:	37 video mapping	J		MCP			1.05																							
0:40:	43 video mapping	3		POW			1.07																_							
0:40:	49 video mapping	3		LGR			1.13																							
0:40:	55 video mapping	3		MCP			1.15																							
0:40:	13 video mapping	J		POW			1.19																							
0:41:	28 video mapping 28 video mapping	3		MCP			1.23																							
0:41:	34 video mapping 34 video mapping	3		MCP			1.20																							
0:41:	09 NY below Bull	lards Bar		13 RAP	222	2 222	1.30	65.33		0	40	BI	LDR BLD	BED	D B	LD			2 n	nothing to flag		GB 348			n	400	400	659961	4360489	2.5 gradient, stepped but with standing waves, garter snake.
10/17/20 10/17/20 10/17/20	09 NY below Bull 09 NY below Bull 09 NY below Bull	lards Bar lards Bar lards Bar		12 MCP 11 MCP 10 CAS	212 264 22	4 698 2 720	1.34 1.39 1.39	72.5 73.67 55		6 6	10 10	BI	LDR BLD LDR BLD LDR BLD	BED	D B	LD LD LD			2 n 2 y 2 y	at top at base		GB 347 LDS GB 346 LDS GB 344			n n	100	100 100	660041 660041	4360972 4360972	probably greater than 10 deep. probably greater than 10 deep. Mid pool control divides into 2 pools. -4' deep overall
10/17/20 10/17/20	09 NY below Bull 09 NY below Bull	lards Bar Ilards Bar		9 STEP 8 LGR	379	9 1099 8 1287	1.47 1.50	75.5 107.33				BI	LDR BLD	BED	D B	LD			2 n 2 n			GB 342 LDS, 3 GB 340	343		n	6	6	6		pools are 6' deep throughout step run (step - pools) 1% gradient
10/17/20	09 NY below Bull 09 NY below Bull	ards Bar lards Bar		7 MCP 6 HGR	24 ⁻ 124	1 1528 4 1652	1.55 1.57	102.33 73.5		6	10	BI	LDR BLD	BED	D B	LD			2 n 2 y	at top		GB 339 GB 338			n n			no satellite	no satellite	5% gradient
10/17/20	09 NY below Bull 09 NY below Bull	ards Bar lards Bar		5 STEP 4 RAP	15 ⁻ 556	1 1803 6 2359	1.60 1.70	113.5 97.6	4.25			BI	LDR BLD	BED	D B	LD			2 y 2 n			GB 337 GB 335			n n					2 steps with 2 different water levels 3% gradient
10/17/20	09 NY below Bull	ards Bar		3 MCP	500	0 2859	1.80	170.67		6	15	BI	LDR BED	BLD	D B	LD			2 n			GB 334 GB 351, 352			n					probably greater than 15' deep
10/17/20 10/17/20	09 NY below Bull 09 NY below Bull	lards Bar	_	2 HGR 1B LGR	304	4 3163 5 3338	1.86 1.89	95 50				BI	LDR BLD	BED	D B	LD LD			2 n			LUS, 353 falls			n					Gradient 5%, top is run-like. 1% gradient >> deen 20 pool below dam onds in a woir /8% that makes a waterfall in
10/17/20	09 NY below Bull	lards Bar		1A MCP	683	3 4021	2.02	139		6	10	BI	LDR BED	BLD	р В	ED			2 y	at base		GB 354, 355, 3	356		у			659861	4361878	HGR.

Stream:North YubaReach:> MY jntn and < Bullards Bar</td>

QC			0		Weighted			
TOTAL	5937	100.0%	34	100.0%	70.0	3.8	7.3	#DIV/0!
Plunge Pool								
Trench Pool								
Lateral Scour Pool								
Mid-Channel Pool	2894	48.7%	14	41.2%	72.7	3.8	7.3	
Convergance Pool								
Sheet								
Pocket Water	687	11.6%	5	14.7%	49.3			
Step Run	639	10.8%	3	8.8%	76.1			
Run								
Glide								
Low Gradient Riffle	399	6.7%	3	8.8%	59.8			
High Gradient Riffle	455	7.7%	3	8.8%	66.2			
Rapid	778	13.1%	2	5.9%	81.5			
Chute								
Cascade	22	0.4%	1	2.9%	55.0			
Fall	63	1.1%	3	8.8%	66.0			
Unit Type	Length (ft)	Frequency	Number	(frequency)	width (ft)	(ft)	(ft)	(%)
	Total	Length Rel		Units	Average	pool depth	pool depth	embeddedness
				Number of		Average	maximum	Average pooltail
							Average	

By Length (ft)

Table	2.	Stream	Cover
Table	~ .	oucam	00101

Dominant Cover Type	Number	Relative Frequency
Insignificant	0	
Boulder	34	100%
Vegetation	0	
Wood	0	
SUM	34	100%
QC	OK	

Table 3. Reach Summary

Total Reach Length:	2 13 mi	
	2.15 111.	
Total Mapped Length:	1.12 mi.	52.8% mapped
Average Bankfull Width:	70.0 ft.	0.00 mi. charac
Bankfull Depth:	3.5 ft.	52.79% Total m & c
Width:Depth:	20	
Flood Prone Width:	0 ft.	
Entrenchment Ratio:	0.0	
Total Spawnable Gravel:	511 ft ² - trout	
Avg Largest Patch Size:	31 ft ² - trout	
LWD Density:	1 / mile (ban	kful)
Wetted LWD Density:	1 / mile (wet	ted width)
Parent Material:	Mesozoic rocks of the	Smartville Complex
Bank Erosion % of Reach:	0.0%	
Tot No. Passage Barriers:	4	

	Dominan	t Substrate	Subdomina	ant Substrate	Bank Su	ubstrate	Bank Subs	strate Erosion
	Total	Length Rel	Total	Length Rel	Total Length	Length Rel	Total Length	Length Rel
	Length (ft)	Frequency	Length (ft)	Frequency	(ft)	Frequency	(ft)	Frequency
Bedrock	1183	19.9%	2838	47.8%	1394	23.5%	0	
Boulder	4646	78.3%	1374	23.1%	4543	76.5%	0	
Cobble	108	1.8%	1523	25.7%	0		0	
Gravel	0		202	3.4%	0		0	
Sand	0		0		0		0	
Silt	0		0		0		0	
SUM	5937	100.0%	5937	100.0%	5937	100.0%	0	0.0%

Table 4. Reach Summary - Substrate and Bank Characteristics









North Yuba River – Habitat Mapping Data Page 3



North Yuba River – Habitat Mapping Units using ground-based and video-mapped data and longitudinal profile.

Oregon Creek Habitat Mapping Photographs

Yuba River Development Project FERC No. 2246



Habitat Mapping Unit 1 – High Gradient Riffle



Habitat Mapping Unit 3 – Mid-Channel Pool



Habitat Mapping Unit 5 – Low Gradient Riffle



Habitat Mapping Unit 7 – Mid-Channel Pool



Habitat Mapping Unit 2 – Step-Run



Habitat Mapping Unit 4 – Step-Run



Habitat Mapping Unit 6 – Pocket Water



Habitat Mapping Unit 8 – Pocket Water



Habitat Mapping Unit 10 –Mid-Channel Pool



Habitat Mapping Unit 12 – Pocket Water



Habitat Mapping Unit 14 – Cascade



Habitat Mapping Unit 9 – Pocket Water



Habitat Mapping Unit 11 – Mid-Channel Pool



Habitat Mapping Unit 13 – Mid-Channel Pool



Habitat Mapping Unit 15 – Mid-Channel Pool



Habitat Mapping Unit 16 – High Gradient Riffle



Habitat Mapping Unit 18 – Pocket Water



Habitat Mapping Unit 20 – Mid-Channel Pool



Habitat Mapping Unit 23 – Low Gradient Riffle



Habitat Mapping Unit 17 – Mid-Channel Pool



Habitat Mapping Unit 19 – Pocket Water



Habitat Mapping Unit 21 - Cascade/eroding bank



Habitat Mapping Unit 24 - Glide



Habitat Mapping Unit 25 – Low Gradient Riffle



Habitat Mapping Unit 36 – Plunge Pool



Habitat Mapping Unit 38 – Sheetflow



Habitat Mapping Unit 40 – Pocket Water



Habitat Mapping Unit 26 – Mid-Channel Pool



Habitat Mapping Unit 37 – Mid-Channel Pool



Habitat Mapping Unit 39 – Falls



Habitat Mapping Unit 41 – Mid-Channel Pool



Habitat Mapping Unit 42 – Plunge Pool



Habitat Mapping Unit 44 – Plunge Pool



Habitat Mapping Unit 46 – Plunge Pool



Habitat Mapping Unit 48 – Mid-Channel Pool



Habitat Mapping Unit 43 – Falls



Habitat Mapping Unit 45 – Falls



Habitat Mapping Unit 47 – Falls



Habitat Mapping Unit 49 – Run



Habitat Mapping Unit 50 – Pocket Water



Habitat Mapping Unit 52 – Mid-Channel Pool



Habitat Mapping Unit 78 – Mid-Channel Pool



Habitat Mapping Unit 80 - Cascade



Habitat Mapping Unit 51 – Plunge Pool



Habitat Mapping Unit 77 – Chute



Habitat Mapping Unit 79 - Chute



Habitat Mapping Unit 81 – Mid-Channel Pool



Habitat Mapping Unit 82 – Chute



Habitat Mapping Unit 84 – Cascade



Habitat Mapping Unit 86 – Chute



Habitat Mapping Unit 88 - Falls



Habitat Mapping Unit 83 – Mid-Channel Pool



Habitat Mapping Unit 85 – Mid-Channel Pool



Habitat Mapping Unit 87 – Mid-Channel Pool



Habitat Mapping Unit 90 – Mid-Channel Pool



Habitat Mapping Unit 91 – Pocket Water



Habitat Mapping Unit 93 – Mid-Channel Pool



Habitat Mapping Unit 96 - Low Gradient Riffle



Habitat Mapping Unit 98 - Low Gradient Riffle



Habitat Mapping Unit 92 – Step-Run



Habitat Mapping Unit 95 – Lateral Pool



Habitat Mapping Unit 97 – Glide



Habitat Mapping Unit 99 – Glide



Habitat Mapping Unit 100 – Lateral Pool



Habitat Mapping Unit 102 – Glide



Habitat Mapping Unit 104 – Glide



Habitat Mapping Unit 106 – Mid-Channel Pool



Habitat Mapping Unit 101 – Low Gradient Riffle



Habitat Mapping Unit 103 - :Low Gradient Riffle



Habitat Mapping Unit 105 – Pocket Water



Habitat Mapping Unit 107 – Pocket Water



Habitat Mapping Unit 134 – Mid-Channel Pool



Habitat Mapping Unit 148 – Mid-Channel Pool



Habitat Mapping Unit 154 – High Gradient Riffle



Habitat Mapping Unit 159 – Pocket Water



Habitat Mapping Unit 146 – Step-Run



Habitat Mapping Unit 149 – Low Gradient Riffle



Habitat Mapping Unit 155 – Step-Run



Habitat Mapping Unit 166 – Mid-Channel Pool



Habitat Mapping Unit 167 – Step-Run



Habitat Mapping Unit 171 – Mid-Channel Pool



Habitat Mapping Unit 173 – Low Gradient Riffle



Habitat Mapping Unit 175 – Mid-Channel Pool



Habitat Mapping Unit 169 – Mid-Channel Pool



Habitat Mapping Unit 172 – Glide



Habitat Mapping Unit 174 – Glide



Habitat Mapping Unit 176 – Low Gradient Riffle



Habitat Mapping Unit 177 – Mid-Channel Pool



Habitat Mapping Unit 207 - Low Gradient Riffle



Habitat Mapping Unit 214 – High Gradient Riffle



Habitat Mapping Unit 222 – Mid-Channel Pool



Habitat Mapping Unit 204 – Mid-Channel Pool



Habitat Mapping Unit 208 – Run



Habitat Mapping Unit 217 – Pocket Water



Habitat Mapping Unit 223 – Mid-Channel Pool



Habitat Mapping Unit 225 – Pocket Water



Habitat Mapping Unit 227 – Run



Habitat Mapping Unit 229 – Mid-Channel Pool



Habitat Mapping Unit 231 – Low Gradient Riffle



Habitat Mapping Unit 226 - Low Gradient Riffle



Habitat Mapping Unit 228 – High Gradient Riffle



Habitat Mapping Unit 230 – Cascade



Habitat Mapping Unit 232 – Mid-Channel Pool



Habitat Mapping Unit 234 – Pocket Water



Habitat Mapping Unit 236 - Low Gradient Riffle



Habitat Mapping Unit 238 - Low Gradient Riffle



Habitat Mapping Unit 240 - Low Gradient Riffle



Habitat Mapping Unit 235 – Step-Run



Habitat Mapping Unit 237 – Pocket Water



Habitat Mapping Unit 239 - Run



Habitat Mapping Unit 241 - Run



Habitat Mapping Unit 242 – Mid-Channel Pool



Habitat Mapping Unit 244 - Low Gradient Riffle



Habitat Mapping Unit 246 - Low Gradient Riffle



Habitat Mapping Unit 253 – Low Gradient Riffle



Habitat Mapping Unit 243 – High Gradient Riffle



Habitat Mapping Unit 245 - Run



Habitat Mapping Unit 250 - Low Gradient Riffle



Habitat Mapping Unit 254 – Mid-Channel Pool



Habitat Mapping Unit 260 – Mid-Channel Pool



Habitat Mapping Unit 263 – Falls



Habitat Mapping Unit 266 – Falls



Habitat Mapping Unit 268 – Mid-Channel Pool



Habitat Mapping Unit 261 – Low Gradient Riffle



Habitat Mapping Unit 264 – Mid-Channel Pool



Habitat Mapping Unit 267 – Mid-Channel Pool



Habitat Mapping Unit 269 – High Gradient Riffle



Habitat Mapping Unit 270 – Pocket Water



Habitat Mapping Unit 272 – Mid-Channel Pool



Habitat Mapping Unit 274 – Run



Habitat Mapping Unit 276 – Step-Run



Habitat Mapping Unit 271 – Mid-Channel Pool



Habitat Mapping Unit 273 – High Grade Riffle



Habitat Mapping Unit 275 – Mid-Channel Pool



Habitat Mapping Unit 277 – Run



Habitat Mapping Unit 278 - Low Gradient Riffle



Habitat Mapping Unit 280 – Run



Habitat Mapping Unit 282 – Mid-Channel Pool (backwater from weir)



Habitat Mapping Unit 284 – Run



Habitat Mapping Unit 279 – Mid-Channel Pool



Habitat Mapping Unit 281 - Cascade



Habitat Mapping Unit 283 – Low Gradient Riffle



Habitat Mapping Unit 285 – Mid-Channel Pool



Habitat Mapping Unit 286 - Low Gradient Riffle



Habitat Mapping Unit 288 – Low Gradient Riffle



Habitat Mapping Unit 287 – Mid-Channel Pool



Habitat Mapping Unit 289 –Plunge Pool at base of Log Cabin Dam

Oregon Creek Habitat Mapping Raw Data

Yuba River Development Project FERC No. 2246

STREAM HABITAT	TYPING	SURV	EY DA	ATA (N	ID Yub	a-Bear	;, PG&	E Dru	m Spaul	ding)		Data Sh	eet#							
Stroom/Reach/Subreach	Yew	A-	me	in	Un-	0 m	inin	-for				Data Oh	1	4	12	/				
KP T	1.		(3		17790	91					rage	R-I	6-A	3					10
ream: priceout	21 201	20			-		6	>				Date		50	<i> </i>				2.0	
UTM: 0800019/4	56 25	10	N	AD 83 (H	abitat unit l	No	- (b>	se)			PM	gra	nfel	plutu	-		Map Gra	dient:	- 5	10
Habitat Unit #		1				2	-			33	÷			4				5		
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
	STEP	POW	GLI	COP	STEP	POW	GLI	COP	HGR	POW	GLI	RUN	HGR	LGR	GLI I	COP	HGR	(LGR)	GLI	RUN
*note if dammed pool	МСР	LAP	TRP	PLP	MCP	LAP	TRP	PLP	(MCP)	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP
Length (ft)		60	/			во				36				80				117		
Est. Avg. Width (ft)	27.	36	27		24	27	130		15	19			19	, 19, 7	21		34	33 :	31	
Est. Avg. Pool Depth (ft)		/				-	6			11	BFD	=2'	49	57			1.1.1	-		
Max. Pool Depth (ft)		-				/		· · · ·	3	1.75	Nº.	1	SI.	751				/		-
Pooltail Embedded %		<				/			m	- 00	ble			TTO	1. NO 2			-	_	
Significant Cover? ²	INSIGNI	Ð	BLDR WOOD		INSIGNI VEG	F	BLDR)	INSIGNI	F	BLDR		INSIGNI	F B V	BLDR	1.0	INSIGNI	F	LDR	,
SUBSTRATE COMPOSITIO	N				24.2		in a set		120		1002	mit 5	120		1000			S9 62	1005	
Dominant	BED	BLD		COB	BED	BLD)	COB	BED	BLD)	COB	BED	BLD		СОВ	BED	BLD		СОВ
Substrate	GRV	SND	-	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	Contraction in	SLT
Subdominant	BED	BLD)	COB	BED	BLD	'	COB	BED	BLD		COB	BED	BLD	0	COB	BED	BLD		COB
Substrate	GRV	SND	the will be the set	SLT	GRV	SND	-	SLT	GRV	SND	and the second	SLT	GRV	SND	-	SLT	GRV	SND	-	SLT
Dominant Bank Substrate	BED	BLD		COB	BED	BLD		СОВ	BED	BLD		COB	BED	BLD		СОВ	BED	BLD)	COB
bank Substrate	GRV	SND	An La Columburg	SLT	GRV	SND		SLT	GRV	SND	-	SLT	GRV	SND		SLT	GRV	SND		SLT
Length of LB and RB Exposed Banks (feet)	5'				20'	RRA				/				/				-		
Confinement ⁴		3				3				3	1			3				3		
Unit Flagged/ Labeled? (Y/N)	N	too	Noli	2		N				N				2			N	+00	soul	diz
Tributary Inflow in cfs	5.0	. en	d			sc.l	BA			N			5.6	becin	Dbp			0	1	19.11
Landmarks or photos DTA	#LDS	to 117	7 117	BWS	#11:	KLI	15		井1180	LUS			HIBI	WS			#11B	2		1.00
		Diameter class	/	Length class	#	Diameter		Length		Diameter		Length		Diameter	1	lass		Diameter	/	Length
Large Woody Debris ⁵			1				1		1	12	-1	10		/	1	1400		/	T	ciuss
within bankful width		/	1			/	1							/	1			/	1	
No. of I WD Pieces			1				1	-			1		/		1			[1	
within wetted width		/				-								-				-		
Fish Migration Barrier ⁶ (y/n)?		no				no				no				20				no		
Spawnable Gravel Area (sqft) Est. ⁷ (1/4" - 2.5")		/				no				no			1.5	ix1				no		
Maximum Spawning Gravel Patch Size (sq-ft) Est.	-	/				~				ho			54					_	100000000 1000000000000000000000000000	
Comments / Observations: Fish? Wildlife? Amphibs? Backwater or side chan. amphib habitar? Riparian? Landmarks, Photo #s, Etc.	SC. b. frm 1 Begin mgube	egins hah Oma 6 HbR	th w/	u[s ,vece	G.C. lots. mode	CB flat dæse	A poetu	ets	templ return K.L = gove au	250 ed to = 1.01	cost why unel Zm ects	~ B2	short hear ! hear ! hear stys	(ro'): >>> >>> bkik too ma ranse	sc.poo -berr my rose.	y	3.5 2" 1 5m.f	nout rout	.(0,:	3°)

Pools: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

The minimum unit length should be 1x active channel width, unless there is something notable or unique about it.

² Note if cover is a significant or dominant feature of the unit:

(e.g., logs in stream, lots of boulders, >25% surface area has instream or low overhanging vegetation, etc.)

⁴Channel Confinement: 1=Confined Shallow; 2=Confined Deep; 3=Moderate Confined (<2x wetted channel width); 4=Unconfined (>= 2 wetted channel widths)

⁵ Criteria for LWD is:any downed wood within bankfull width of channel =or> than 1/2 bankfull width.

Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 | 25 = 6-12", 25-50') ⁶Waterfalls, high velocity chutes or cascades at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

DTAT

voies regarding access points (road condition, bridge Megnick day vie erec & pick y M. yuba. High modified by rds, artificial dams & base.

Q/C initials:

	NA	10					,					Data Sh	neet #	14					
Stream/Reach/Subreach:	YUN	JH-	weg	n C	r	Inder	tv	->				Page	2	of	-10				
Team: KP JL					-							Date	8/15	109					
итм: <u>0665074</u>	/436	246	<u>M_</u> N	AD 83 (H	abitat unit l	No_6	, bas	se			PM	ph	not			Map Gra	dient:	-3%	2
Habitat Unit #		6)			7	-			B			SI	29			10		
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS C	CHU RAP	FALL	CAS	CHU	RAP
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR (GLI RUN	HGR	LGR	GLI	RUN
territe if demonstrated	MCP	LAP	TRP	PLP	MCP	LAP	TPP	DID	MCP	TAP	TPP	DID	MCP	(POW) S	TER DIR	STEP	POW	SHT	COP
Length (ft)		102		4	(MICI)	55 J	-24	The	MCF	EQ	IKr	TLF	MCF	IBO	IKF FLF	RICE	128	TRP	PLP
Est. Avg. Width (ft)	49 4	749	BPD	= 20	41	29	30	2	29	HO	41		51	59 67	5 55	343	128	RFI	D-Z'
	1	111				11		2			11			-	1	040	150	17.6	
Est. Avg. Pool Depth (ft)						75		_		-					2 - 1		1.5		
Max. Pool Depth (It)	L	00				12	01							-[]	45)		5.5'		
Significant Cover? ²	INSIGNI	F	BLDR	>	INSIGNI	F	BLDR)		INSIGNI	F	BLDR)	INSIGNI	F (BI	DR	INSIGNI	70-4	LDR	
CIDETBATE COMPOSITIO	VEG		WOOD		VEG		WOOD	A STREET	VEG	and the second second	WOOD		VEG	W	OOD	VEG	4	VOOD	
Deminent	BED	BLD		COB	BED	BLD		COB	BED	BLD		COB	BED	RID	COB	RED	RID	14625.3	COP
Substrate	GRV	SND		SLT	GRV	SND	·	SLT	GRV	SND		SLT	GRV	SND	SLT	GRV	SND		SLT
	RED	BID	an Aller a dear	COR	RED	RID	Pearl and	COP	BED	BID		COR	DED	BUD	COR	DED	(DLD)		SLI
Subdominant Substrate	CPV	SND		COB SI T	CPV	SND		COB	BED	BLD		COB	BED	BLD	COB	BED	BLD		COB
	ORV	SIND		361	GRY	3110	-	SLI	GRY	SND		SLI	GRV	SND	SLI	GRV	SND	and the second	SLT
Dominant Bank Substrate	BED	BLD)	COB	BED	(BLD)	СОВ	BED	BLD)	СОВ	BED	BLD	COB	BED	BLD		COB
	GRV	SND	Contraction of the	SLT	GRV	SND		SLT	GRV	SND	a mark on the set of	SLT	GRV	SND	SLT	GRV	SND	-	SLT
Length of LB and RB Exposed Banks (feet)	101	LBA				0	~			E)			Ð			0-		
Confinement ⁴		3				3				1				1			1		
Unit Flagged/ Labeled? (Y/N)	L	1				N				14				N		YO	tup		
Tributary Inflow in cfs		NA				2				11				0			N Q		
Landmarks or photos	12-110	21.11			H11 Qu	1106			Rus	T	/			G			100		
L'anumarks or photos	#110	Diameter	>	Length	1110	Diameter		Length	30.11.0	Diameter	D	Length	# 118	Diameter	Length	#1170	Diamater	>	Length
	#	class	/	class	#	class		class		class		class	#	class	 class 	#	class /	/	class
Large Woody Debris ⁵		/	_			6	<u>_</u> ^ '	25		6	12	5			L		_	_	
within bankful width														/	ļ		/	-	
No. of LWD Pieces											1				1			1	
within wetted width		gerindeliter -				Ð				1				Ð			0		
Fish Migration Barrier ° (y/n)?		no				no				no				no		n	0		
Spawnable Gravel Area (sqft)	5 2	1×2'											1×2	, 3×2,	7×B,				
Est. ⁷ (1/4" - 2.5")	13>	12		;		Ð				no			24	2		-	Θ^{-}		
Maximum Spawning Gravel Patch Size (sq-ft) Est.	39	(2			-	/				-				7× B					
Comments / Observations: ?ish? Wildlife? Amphibs? Backwater or side chan. amphib Iabitat? Riparian? Landmarks, Photo #s, Etc.	S.C. h black Comple trail	ides a 5 flad 10 3 d to ca	ramu t finu r park		V.C. = Green Separa by m	1' 72 m	m2 55'					594 10 576	IT. I	haserit steps. Imj flat bushoa	es of 1, classe	5me 5	had-n ~Sem	- 109. deep	
FALL = Falls, CAS = Cascade, A Pools: COP = Convergence, M The minimum unit length Note if cover is a significant of (e.g., logs in stream, lots of	CHU = Chute MCP = mid-cl should be 1 or dominant boulders, 2	e, RAP = R hannel poo 1x active o t feature o >25% surf	apid, GLI I, LAP = L channel v of the unit	= Glide, I .ateral, T width, un t: a has ins	RUN = Run RP = Trenc nless there	step = S h, PLP = P is someth	tep Run, lunge hing nota	HGR = H able or u	ligh Gradiel nique abc n, etc.)	nt Riffle (>4 ut it.	%), LGR	P d	adient Riffle	POW = Poc	ns ket Water, SH plif by f initials:	T = Sheetfloo	eo up	cr en e	}

ep; 3=Moderat e Contii ⁵ Criteria for LWD is:any downed wood within bankfull width of channel =or> than 1/2 bankfull width.

Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 | 25 = 6-12", 25-50')

⁶Waterfalls, high velocity chutes or cascades at approx bankfúl flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

RAN

² Spawning Sized gravel submersed in an area of adequate depth and velocity within one una ⁷ Spawning Sized gravel submersed in an area of adequate depth and velocity within one una Notes regarding access points (road condition, bridge SPLIT begins @ uncred bridge. Include split in length calcs. > #186d 1187 LUS @ m.dpaint crossings, trails, etc.) 1188 @Ke- Conversed bridge

STREAM HABITAT 7	FYPING	SURV	EY DA	TA (N	ID Yub	a-Bear	, PG&1	E Drur	n Spauld	ling)		Data Ch								
	MAN	A	C.C.A.C.	00 (1	LAI	1	~				Data Sh	2	1	Et I	2,				
Stream/Reach/Subreach:	YUW	<u> </u>	ney	MARC	R IN	FAC	TG	-				Page	5	of	1	ν				
Team: <u>KP,JC</u>			C	/								Date	0-1	5-0	3					
UTM: 0665175	/4362	262	2N	AD 83 (H:	abitat unit l	10 ll	5 60	se.			PM		oluto	0			Map Grad	ient: <u>3</u>	-8%	9
Habitat Unit #		1)				1-	2			13				4	14.6			15		
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	(CAS)	CHU	RAP	FALL	CAS	CHU	RAP
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
	STEP	POW	SHT	COP	STEP	(POW)	SHT	COP	STEP	POW	TPP	DIP	MCP	IAP	TPP	PLP	MCP)	LAP	TRP	PI P
*note if dammed pool	CMCP	LAP	TRP	PLP	MCP	Tala	TRP	PLP	LIMCH	105	IRP	FLF	WICF	4	1Kr	TLI	(MCI)	UB	IN	
Length (II)	2	1	21	and the original	20	12	28	1	27	34	170	60-16	21	Ha		1	36	20		
Est. Avg. width (It)		01	21		1	61	170	ener beschrieden	200	12	1010	11.20		1				- 20		
Est. Avg. Pool Depth (ft)	1 (ins				/				1.1.)							K		
Max. Pool Depth (ft)		3	46.6-	ALal		1	0.1			5.5				_				~	5	
Pooltail Embedded %	INSIGNI	- BU	BLDR	11/01	INSIGNI	F	BLDR)		INSIGNI	00%	BLDR)	INSIGNI	F	BLDR		INSIGNI		BLDR	>
Significant Cover .	VEG		WOOD		VEG		WOOD	-	VEG		WOOD		VEG		WOOD		VEG		WOOD	-
SUBSTRATE COMPOSITION	N DED	DID	E States	COR	BED	RUD		COR	DED	(NI D		COR	RED	(NI D)	COR	RED	RID		COR
Dominant	GDV	CBLD	2	CUB	CDV	END		CUB	CRV	(BLD)	COB	CPV	SND		SLT	CRV	SND		SIT
	GRV	SND	_	SLI	GRV	SND		SLI	GRY	SND	-	SLI	GRY	SILD		SUI	DED	DIAD	AND DEPENDENCE	GOD
Subdominant	BED	CBLD		COB	BED	BLD		COB	BED	BLD		COB	BED	BLD		COB	BED	BLD		COB
Substrate	GRV	SND		SLT	GRV	SND	Contraction of the	SLT	GRV	SND		SLT	GRV	SND		SLI	GRY	SND		SLI
Dominant	BED	BLD		COB	BED	BLD		COB	BED	BLD		COB	BED	> BLD		COB	BED	BLD		COB
Bank Substrate	GRV	SND	An address of the	SLT	GRV	SND	and the second second	SLT	GRV	SND	and the second	SLT	GRV	SND		SLT	GRV	SND		SLT
Length of LB and RB		~				0				~				2				D		
Exposed Banks (feet)		Ð	-			Ð				Ð				0				Ð		
Confinement ⁴		1				1				1				1				2		
Unit Flagged/ Labeled? (Y/N)	Y	8 ba	X		1	1				N			1	J			VO	top		
Tributary Inflow in cfs		No				0.0	(formi la	6	no				no				NO		
Landmarks or photos	1/10	1111	6		14110	27-1	1194	ACC	1107	114)	-	15-110	KIL	14		the	81	DS	
	- 11	Diameter		Length	N 11	Diameter		Length	PAL	Diameter		Length	4. (1	Diameter		Length	all	Diameter		Length
	#	class		class	#	class		class	#	class		class	#	class	<u> </u>	class		class		class
Large Woody Debris ⁵			4							67		05		-/				/		
within bankini width						/														
No. of LWD Pieces	I	Ð				9				Ð	r			Ð				0		
Fish Migration Barrier ⁶	1	00				0.0				0.0	,			no				10.0		
(y/n)?		110				110				110				110				NO		
Est. ⁷ (1/4" - 2.5")	2)	K-L				Ð	-			Ø				323			1	Ð		
Maximum Spawning Gravel Patch Size (sq-ft) Est.	1	1x2				/				/				3×3	5			-		
Comments /	hand	0		1		~			lon	Geod	. a la	ale	99	. rA	Sher	r.110-				
Observations:	alina	CIMA	in loss	1					10150	2na	WI Di	ever?	201	- Cri	2 300	in se				
Fish? Wildlife? Amphibs? Backwater or side chan. amphib	368	e m	LBA						149.6	Dh.f.			poche	1 book						
habitat? Riparian? Landmarks, Photo #s, Etc.	band	32	1~5	im																
	L								L				L							

¹ FALL = Falls, CAS = Cascade, CHU = Chute, RAP = Rapid, GLI = Glide, RUN = Run, STEP = Step Run, HGR = High Gradient Riffle (>4%), LGR = Low Gradient Riffle, POW = Pocket Water, SHT = Sh Pools: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

Adj. to they 49 but up cliffthru. poiser oak.

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(e.g., logs in stream, lots of boulders, >25% surface area has instream or low overhanging vegetation, etc.)

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Notes regarding access points (road condition, bridge crossings, trails, etc.) L

Q/C initials:

STDEAM HABITAT	EVPINC	SUDV	EVD	TAO	JID Vub	Poor	DC &	FD	- Cnoul	ding					4					
SIREAW HADIIAI	TTENG	SURV	EIDA	ATA (P		a-Dear,	, rGa	E Dru	m Spau	aing)		Data Sl	heet #	19	1.2					
Stream/Reach/Subreach:	YCW.	A -	over	ma	ile -	inct	n-7					Page _	H	of g	\$12	/	1			
Team: KP.JC.			0			3						Date	B-1	50	5			e j		4.1
UTM: 066 5223/	4362	687	N	AD 83 (H	abitat unit N	. lb	, (ba	, se			PM	plu	-m				Map Grad	lient:	3-8	6
Habitat Unit #		16				17				10		1		19				20		
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
	(HGR)	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
Inote if dammed nool	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	POW	SHT	COP
Length (ft)		70			-	26				36				54		1.21	(men	154	IN	TLF
Est. Avg. Width (ft)	24	2	6		24	- W	24		20	21	21		1	9	12	29	28	20	21	15
Est. Avg. Pool Depth (ft)		/			1	.5				/				/			1	75		
Max. Pool Depth (ft)		/			3	75				/				/				3.5		
Pooltail Embedded %		/	~			50°	6			/				/				502	0	
Significant Cover? ²	INSIGNIE	7 (BLDR		INSIGNIE		BLDR)		INSIGNI	F (BLDR		INSIGNI		BLDR	and -	INSIGNIE		BLDR)
SUBSTRATE COMPOSITION	N		Į.			Notified a					1100D		120	Al-	1002		VEG		WOOD	176.53
Dominant	BED	BLD		COB	BED	BLD)	COB	BED	BLD)	COB	BED	BLD)	COB	BED	BLD)	СОВ
Substrate	GRV	SND	and the second	SLT	GRV	SND		SLT	GRV	SND	and and there	SLT	GRV	SND		SLT	GRV	SND	1.000	SLT
Subdominant	BED	BLD		COB	BED	BLD		COB	BED	BLD		СОВ	BED	BLD		COB	BED	BLD		СОВ
Substrate	GRV	SND		SLT	GRV	SND	AN COLUMN AND AND AND AND AND AND AND AND AND AN	SLT	(GRY)	SND		SLT	GRV	SND		SLT	GRV	SND	ing and the same	SLT
Dominant Bark Salatata	BED	BLD		COB	BED	BLD		COB	BED	BLD		COB	BED	BLD		COB	BED	BLD		COB
Bank Substrate	GRV	SND	-	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
Length of LB and RB Exposed Banks (feet)		-0	1			Ð				Ð				Ð			Ť	Ð		
Confinement ⁴		1				1				1				1				2		
Unit Flagged/ Labeled? (Y/N)	46	628	e		N					J				N			Ve	Dt	30	
Tributary Inflow in cfs	1.0	Ma			1-	0				10.0			h	0				10		
Landmarks or photos	ING	1 11	K		11197	0%11	15		11190	9			# 120	010	5		12.01	IUS	1207	LOSA
	- BUI	Diameter		Length	24111	Diameter		Length	2111	Diameter		Length	2100	Diameter		Length	I	Diameter	1000	Length
	#	class	4	class	#	class	/	class	#	class	1	class	#	class	/	class	#	class	. 6	class
Large Woody Debris ³ within bankful width		/				-/				/							(14	15	0.0
					1				-/					<i></i>						
No. of LWD Pieces		Ð				A				Ð				Ð				1		
Fish Migration Barrier ⁶		no				ino				10				10.0				00		
(y/n)? Spawnable Gravel Area (soft)		1.0				110			0. >	10	110	hor		V				10		
Est. ⁷ (1/4" - 2.5")		no			2×	2			IXI		wla	10		No				0		1
Maximum Spawning Gravel Patch Size (sq-ft) Est.		0				2×2			1	1.42				-				_		
Comments / Observations: Fish? Wildlife? Amphibs? Backwater or side chan. amphib habitat? Riparian? Landmarks, Photo #s, Etc.	13%.	-ho p	ouhet	whr.	Short	but	5:5-						Short base	Steps + typ	B		2" 62	sh. mwn ish	(?)	

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Notes regarding access points (road condition, bridge crossings, trails, etc.)

1000 Finish mapping - 0665290/4362738; characterize mits 21 to 22 (1458')

Unitt	HAB	L	W	Mascilio	Notes
21	CAS	72'	24		12%
Nhoto #	1203 LUI	semit 21	base @ R	BA West. b	unk.
This col	Inial sonda	al one	by - mde	unie -star	live
2" f	54 00	ket pools			
22	MB	57	24	1.57	(
"Feder	at mining d	ani de	pr de #2	larleope	PITES
USA	CAMC # "	@ -40.			
23	> pres	neet - m	mine cla	in hes	
cue	to invo	val hab	ital . 4	ec she	1
27	HOR	43	25	-	
3	. C. Starts	- depà	cs U-2	в	
28	HOR	80	can't wee	sne	7%-11
29	POW	83		35,58	
	Lots india	rhubar	6.		_
30	NCP	40	44	2.5	0.75 V.L
5.	$L_1 = LB$	D	- ⁷ .		
31	LAS	49	36	-	8%/2.
,	POLKETY	. CAS	nm	-tooman	y splits
1	Aastred a	a top o	605457	1436282	29
32	POW	29	30	-	
33	MCP	150	28,35,38	4.0	
-hr	ns of 2"	fishi	6 4"	16*	
4	nel in me	min'	2' dec	300 x6	

*

*

-

YENA oregrade men > plof 12 8-15-01 Kg/JR Notes HAB Unit # MAX D L W 34 POW 27 26 35 28 23 25 NCP CAS 15B 24,20,22 5 99% NM/33" 25 frog - adult couldn't iden Kify - creem Throat black pots considered CAS because pochers of depth & flat. DEAR Photo 1207 LUS SPLIT begins Obase of contrives to top of U.35. Zaplit = 158+33+180 58 UGR 3' Fish 2"-> 4" Jule 122 36 - see H.M. Notes. A morph to br. control.

	NI	110	10	di	cl.		6	2				D	2	, 17	/			÷		
Stream/Reach/Subreach:	<u> </u>	MA	01	gu	- cnc	Inc	11-	7	雨道	15	03	Pege	T	of 10	-			and the	age of	4÷
Tean: KF/JC	4				<u></u>							Evate							1.1	
UTM:				NAD 83 (I	labitat unit	No	5			1.16	PM_					-	Map Gran	lient:		1
	**********	22		1707001		1.17		-	-	JE			Anton Catalog	71.7	IN.	161	an 2	Maria	news.	
Hab tat Unit #	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CINU	R
	HGR	(LGR)	GLI	RUN	HGR	LGR	CLI)	RUN	HGR	LGR)	GLI	FUN	IGR	LGR	GLI	RUN	HGR	LGR	GLI	RI
	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	PCW	SHT	C
note if dammed pool	MCP	LAP	TRP	PLP	МСР	LAP	TRP	PLP	MCP	LAP	TRP	PLP	(MCP)	LAP	TRP	PLP	MCP	LAP	TRP	Pl
Length (ft)		30		÷		1	1		ļ	20	20		1.	50						
Est. Avg. Width (ft)		27			- k	7	30		+	30	58			1-3	J					
Est. Avg. Pool Depth (ft)		-		2010-0010										3						
Max. Pool Depth (ft)		1				2.1	0: lactor	1		/				7'						
Pooltail Embedded %	-	-			(NOTON)				INCIONI				INCIONI		IDD 1		INCIONI		N DD	
Significant Cover?*	VEG	9	BLDR WOOD		VEG	F	WOOD		VEG		WOOD		VEG	W	TOOD		VEG	1	WOOD	
SUBSTRATE COMPOSITION								e				8		in the second						<u>.</u>
Dominant	BED	BLD		COB	BED	BLD		СОВ	BED	BLD	2	СОВ	BED	CBLD	,	COB	BED	BLD		CO
substrate	(GRV)	SND		SLT	(GRV)	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	8 -	SL
Subdominant	BED	BLD		COB	BED	BLD		СОВ	BED	BLD		COB	BED	BLD	1	COB	BED	BLD		CC
Substrate	GRV	SND		SLT	GRV	SND)	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	-	SL
Dominant	BED	BLD)	COB	BED	BLD		COB	BED	BLD)	СОВ	BED)	BLD		COB	BED	BLD		CC
Bank Substrate	GRV	SND		SLT	GRV	SND	-	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SL
Length of LB and RB						/	/			D				2			-			
Exposed Banks (feet)		Ð								-0				0			1			÷.
Canfinament ⁴		1				-				1	<u> </u>			1	2					
										(,)				1						
Unit Flagged/ Labeled? (Y/N)	N					4	1.000			N				N	-					
Fributary Inflow in cfs		_		1		-			2				· · · ·						<u> </u>	
Landmarks or photos	1204	WS			120	615	14-1	sp.	#120	FLUS	2		#120	BW	50	MAX				
		Diameter		Length		Diameter		Length		Diameter	1	Length		Diameter		Length		Diameter		Len
North Dahala ⁵	<u>"</u>	ciuss	1	Clubs			1	U.u.ob	1.1		1				1				1	
within bankful width		/	1	1.1		/	1			/	1			/	1				. 1	
-	/		I.				1		e		÷1,			/	1				1	
No. of LWD Pieces		Ð				Ð			1.00	Ð				Ð						
Fish Migration Barrier ⁶		00				in.	2			N				10						-
(y/n)?		110	a ula	4.1		4.00	1.0		1-		11									
Spawnable Gravel Area (sqft)	445	2.2	umper	act		1	Los	4.1	10	venb	enter	a	-7				1.1			
(1/4" - 2.5")		5 × 5				ę	mbell	all							_					
Maximum Spawning Gravel	4×	5								/			7 5	Tolal.	had	1			3	1
ran a Size (sq-it) Est.										A			63	parci	NOVI)				
Observations:	Mini	nsch	im	0 S. P	Gmal	Isc.	holea	and.	top f	Nmed	1 by		May	dep	E		0			
Fish? Wildlife? Amphibs?	trail		4.11	49	Mar	062	se		1.00	d mini	1	1.00	dias	ine : 1	115					
Backwater or side chan. amphib habitat? Riparian? Landmarks,	1100	1 101	imal	11	140	5			auso		ing .		~J))1	15					
Photo #s, Etc.		1 Hele 10	205 01	detis					045	75		 1 	Cont	NOT es	card	de.	1			
Eàil - Falle CAS - Cascada C	HII = Chute	PAP = F	anid GI	L= Glide	RUN = Ru	n STEP =	Sten Run	HGR	High Gradi	ant Riffle (>4%) 1 G	Ralow	Gradient R	ffle POW =	Pocket	Nater. S	SHT = Shee	tflow:		
Pools: COP = Convergence, N	ACP = mid-c	channel po	ool, LAP	= Lateral,	TRF = Tre	inch, PLP	= Plunge	1, NOK -	nigir Grau	on nine (-470), CC			(> 4	1		han d	inom,	1.	
The minimum unit length sh	ould be 1)	x active o	hannel v	vidth, un it:	less there	is somet	hing note	ble or u	nique abou	et 19.		<i>t</i>		10	geo	0	1000	iana	er.	e -
(e.g., logs in stream, lots of b	cuidars, >	25% surf	ace area	a has ins	tream or l	ow overh	anging w	agetatio	n, etc')					0	/C initia					
Channel Confinement: 1=Conf	fined Shall	iow; 2=Co	onfined I	Deep; 3	Moderate	ConTres	d (<2x we	olted cha	wheel widd	i): 4=Uno	onfined (>== 2. we	tiec chan:	el widths)				-		
Chiefia for LIVID IS:80y downe	24-36", כו	r 36"+ x 3	3- 10' , 10	-25', 25	-56', 50-78	5', 75'+ (i	9. 8 25 :	= 6-12",	25-50")									1.1.1.1		P
Size classes: 6-12", 12-24",		Series and the series of the s	2012/2018/05/67	alsf. of fler.	NOTE NOTE	VECTO	AL DOOD	Ju huo C	CONDUM	SNAL OF	AWSES	T: ALL							-	
Size classes: 6-12", 12-24", Waterfalls, high velocity chuter	s or casca	des at ap	prox ba	o dent'	and volasi	builde	ono unit	an	00110111		Co shu a									

- State 28.62

Charace. mits 27 to 36

STREAM HABITAT	TYPING	SURV	EY DA	TA (I	NID Yub	a-Bea	r, PG&	E Dru	ım Spaul	lding)		Data S	heet #	1						
C	UPIN	AL	ANL	M	CV.	hit	n	4.1	<			Data O	B	. 1	72					
Stream/Reach/Subreach:	7.	<u>vri</u>	Vic)	00	pier	11	101				Page _	0	or	A				$(-1)^{-1}$	
Team:	V						6	1				Date	8-	15-0	7					
UTM: 066471	9/436	2982	5N	AD 83 (Habitat unit l	No 36	2,100	isq.	in the second second		PM	-	1. (2. (2. (2. (2. (2. (2. (2. (2. (2. (2	and a second			Map Gra	dient:		-
Habitat Unit #	T	36		a an		. 37		1	-	38	3			39			- 4	5		
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	(FALL)	(CAS))CHU	RAP	FALL	CAS	CHU	RAP
1 1 1 1 4 H	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	(SHT)	COP	STEP	POW	SHT	COP	STEP	(POW)	SHT	COP
*note if dammed pool	мср	LAP 7	TRP (PLP	(MCP)	LAP	TRP	PLP	MCP	LAP Q	TRP	PLP	мср	LAP	TRP	PLP	мср	LAP	TRP	PLP
Length (II)	UN	-0-1	1.1	2	27	. 4.2			17	10	- 12	: 20		-17	Tile	-		42		
Est. Avg. Width (fr)	1.507	21	26	V					14	10	50	R		~	00	1	-	do		
Est. Avg. Pool Depth (ft)	4'					K		_			-				-					
Max. Pool Depth (fi)		10/				3,5				1				/	9					
Pooltail Embedded %	INCLOSU	60%			ANGLONUT	, O	(br)	1 CICNI	2	DI DD		INCLOSE				INCLOSE		_	_
Significant Cover?	VEG		WOOD		VEG	~	WOOD	1	VEG		WOOD		VEG		WOOD		VEG	r	WOOD	
SUBSTRATE COMPOSITIO	N		國際自然	315/8-	No. of Concerns	- New res	A MU		the second	AND THE				PARLENT,				1 and the first		id to site
Dominant	(BED)	BLD		COB	BED	BLD	Ŭ.	COB	(BED)	BLD		COB	BED	BLD		COB	BED	BLD)	COB
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
Subdominant	BED	BLD		COB	BED	BLD		COB	BED	BLD		COB	(BED)	BLD		COB	BED	BLD		COB
Substrate	GRV	SND)	SLT	GRV	SND	Contract on the local division of	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
Dominant	BED	BLD		COB	BED	BLD		COB	BED	BLD		COB	BED	BLD		СОВ	BED	BLD		COB
Bank Substrate	GRV	SND	-	SLT	GRV	SND	_	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
Length of I.B and RB Exposed Banks (feet)		ø	E Se			Ð				Ð				Ð			-	0		2
Confinement ⁴		2			1.000	1				1				1				(
Unit Flagged/ Labeled? (Y/N)	YE	りわる	c			N				N.				N			YE	ant a	1.1	
Tributary Inflow in cfs	1	n				N A			1	Ð				Ð				Ð		
Landmarks or photos	12101	15 17	ulus)	#1212	47	2		#121	3LV	5		#1214	RBA I	215 L	BA	#121	o WS		
and the second second second	I	Diameter class		Length	4	Diameter class	3.	Length		Diameter		Length		Diameter class	*	Length	H	Diameter		Length
Largo Woudy Dahris ⁵	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.		1		1		- 1				1				-1			Ciuos	1	01133
within bankful width		/	· .			/				/	1			/	1			/	1	
		100	1		/		1			/	U.		2		1		/		1	
No. of LWD Pieces within wetted width		Ð				Ð				-0	*			Ð				0		
Fish Migration Barrier ⁶		N	-		-	N			NUM	house	hod.	ote	-	N				J		
(y/n)? Spawnable Gravel Area (sqft)		5.				19			It g	1003	1000	112		14				••••••		
E+t.' (1/4" - 2.5")	(prod)) -	.0-			100	Ð			2	YV			11 m.	/	-			-		
Maximum Spawning Gravel Patch Size (sq-ft) Est.							7.6-			247	/	2.5	1.	~	1	2	-			
Comments / Observations:	4" to	fu		ſ	Falls	8 h	z.					3.	FALL	15 +l=	1/6+677	(ain)				
Fish? Wildlife? Amphibs? Backwater or side chen amphib habitat? Riparian? Landmarks, Photo #s, Etc.	Shind but 1	6n A hot c	D may	Kaly	hot	a la Som	ani	N.			-		26 1937	= 2' 1.5' M		min)				
EALL E.I. 010 0 1.4																10.00	1. Har			

Cascade, CHU = Chute, RAP = Rapid, GLI = Glide, RUN = Run, STEP = Step Run, HGR = High Gradient Riffle (>4%), LGR = Low Cradient Riffle, POW = Pocket Water, SHT = Sheetflow; Pools: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

The minimum unit length should be 1x active channel width, unless there is something notable or unique about it.

² Note if cover is a significant or dominant feature of the unit: (e.g., legs in sizerin, lots of boulders, >25% surface area has instreem or low eventranging vegetation, etc.) Q/C initials: "Channel Confinement 1-Confined Shallow; 2=Confined Deep; 3=Moderate Confined (<2x waited channel width); 4=Un confined (>= 2 waited channel widths) ⁹ Criteria for LIVD issay downed wood within bankfull width of channel =or> than #/2 bankfull width.

Size crusses: 5-12", 12-24", 24-38", or 36" + x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 | 25 = 6-12', 25-50')

"Waterfails, high velocity chultes or cascades at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

⁷ Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access points (road condition, bridge crossings, trails, etc.)

UTM: 0665452	43630	062		NAD 83 (1	Habitat unit	No 41	160	ese)		FM			1.14	N		Map Grad	lient:		_
Habitat Unit #		41	C. SAMESTING		TANK STANK	4	2	****	1	43	19 201 107 10 6 2	and the second	44	TANDITA	46				
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL)	CAS CHI	J RAP	FALL	CAS	CHU	RAP	(FALL)	CAS	CHU	RAP
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR GL	RUN	HGR	LGR	GLI	RUN	HCR	LGR	GLI	RUN
	MCP	POW	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP TRI	P PLP	MCP	LAP	TRP	(PLP)	MCP	LAP	TRP	PLP
Length (ft)		51				ħ		<u></u>		13			20	1	~		10		
Est. Avg. Width (ft)	24	1	38 25 10					-15			5		U	5		2.4			
Fet Avg Pool Depth (ft)		3'	1.1		4					-		1.	3'			-			
Max. Pool Depth (ft)	1	5	1		6'esti					/			4 lot						
Pooltail Embedded %		300	12		ha	-Bla	sr.			1		Nh	bldr,	-			1		
Significant Cover? ²	INSIGNI	F (BLDR		INSIGNI	F	BLDR	2	INSIGNIF VEG	BLDI	2 D	INSIGNIE	9	BLDR	2	INSIGNI	av inte	BLDR	2
SUBSTRATE COMPOSITIO	N										•					- in			1.3
Dominant	BED	BLD)	СОВ	BED	(BLD)	COB	BED	BLD	COB	BED	BLD)	COB	BED	BLD		COB
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	SLT	GRV	SND		SLT	GRV	SND	-	SLT
Subdominant Substrate	BED	BLD		COB	BED	BLD		COB	BED	BLD	COB	BED	BLD		COB	BED	BLD	1012 (103) (101	COB
Substrate	GRV	SND		SLI	GRV	SND		SLI	GRV	BUD	COR	GRY	BLD		COP	ORV	BLD		COP
Dominant Bank Substrate	BED	SND)	COB	GRY	SND		SLT	GRV	SND	SLT	GRV	SND		SLT	GRV	SND	in states and	SLT
	GRV	SIND		311	CINY :	SILD		5D1	GRT	BILD		-						4.4.4	
Length of LB and RB Exposed Banks (feet)		-0				Ð				0			0	+		-	9	di j	
Confinement ⁴		2				2				1	•		1		e le ren	1	Alteres	s que de la	and the
Unit Flagged/ Labeled? (Y/N)	YOUDE				N					N	N				. 4	06	de		
Tributary Inflow in cfs		N -	70			r			1.00	N			1			N			and a
Landmarks or photos	坊のに	W	2		#1218	3	2		井219	UBA ->1	2BA	#12	200	fap	ofv	454	ろう	444	+45
and the second second		Diameter		Length	#	Diameter		Length	Ш #	Diameter	Length	H	Diameter	141	Length	#	Diameter		Lengt
I arge Woody Debris ⁵		Class	1	giuss		Ciuos		Clubb		1			/				/	1	
within bankful width		/				/							/				/	1	a de
							1		<u> </u>	2		1		.1					
No. of LWD Pieces within wetted width		0				Ð		1. 1. ¹ . 1		D			0			9		1	
Fish Migration Barrier ⁶ (y/n)?	1.1	K]			N				N	sere les		N				1		
Spawnable Gravel Area (sqft) Est. ⁷ (1/4" - 2.5")		Ð				Ð				Ð		10 - 19 s	Ð	-		Y	>		8754 84,5 1754
Maximum Spawning Gravel Patch Size (sq-ft) Est.						-			· · · · · ·										ares Kat
Comments / Observations:				in a	Secul	del	mm		F			a de construir				066	5419	1	
Fish? Wildlife? Amphibs?					1.4	1348	sidr					1999 - A				1.46	1	11	ALC: V
Backwater or side chan. amphib habitat? Riparian? Landmarks,					Lont	nor										430	0318	29	HE REAL
Photo #s, Etc.					hand	- Ana-		19/									L	par	ier
Contract of the second s					1. 1. 1. K.	web	· 2000	10											

proto # 1221 < top U. 45 LDS

Spawning Sized gravel submargad in an area of adequate dooth and velocity within one unit

T.D. to base of T41 = 2947 (0.56m)

Nc.as regarding access points (road condition, bridge crossings, trails, etc.)

DAN 2

UTM: 066 54-18			meg	r (N	<u>></u>						Page Date	10 B-1	of 16 5-0	19	-				j.
	1436 2	3098	NAI	D 83 (H	abitat unit No	.46	ba	e	-6.9	1	PM		Aria.		<u> </u>		Map Gra	dient:	101	-
Habitat Unit #	T	46				47				48				4ª	P			50		
Habitat Type ¹	FALL	CAS (СНИ І	RAP	FALL)	CAS	CHU I	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL CAS CHU			
	HGR	LGR	GLI F	RUN	HGR	LGR	GLI I	UN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	R
	STEP	POW S	SHT C	COP	STEP	POW	SHT C	OP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	(POW)	SHT	C
note if dammed pool	MCP	US	TRP (PLP	MCP	10		LP ((MCP)	1K	TRP	FLF	MCP	34	IKP	PLP	MCP	511	TRP	P
Eengin (II)	20.7	15	14-1-12			25				31			12	11	1	100	1	10	3	
		2	2					1		16				1.				1		
Est. Avg. Pool Depth (ft)	4.5							-		2						1		T		
Max. Pool Depth (it)	101.	he					1	-	ha	- Jav	-									-
Significant Cover? ²	INSIGNIF) BI	I.DR	0	NSIGNIF) B	DR	1	NSIGNIF	C	BLDR	>	INSIGNI	F (BLDR)	INSIGNI	F (BLDR)
UBSTRATE COMPOSITIO	VEG	w	OOD		VEG	V	VOOD		VEG	ANNUE AN	WOOD		VEG		WOOD	100	VEG		WOOD	-the s
Dominant	BED	BLD	C	СОВ	BED	BLD	(ов	BED	BLD		СОВ	(BED)	BLD		СОВ	BED	BLD)	C
Substrate	GRV	SND	5	SLT	GRV	SND	5	LT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	1	SI
Subdominant	BED	BLD	(СОВ	(BED)	BLD	(ов	(Bjzb)	BLD)	СОВ	BED	BLD	>	СОВ	BED	BLD		CC
substrate	GRV	SND	5	SLT	GRV	SND	5	LT :	GRV	SND	1	SLT	GRV	SND		SLT	GRV	SND		SI
Dominant	BED	BL.D	C	OB	(BED)	BLD	(OB	(RED.)	BLD	in the second	COB	(BED)	BLD		СОВ	BED)	BLD		CC
Bank Substrate	GRV	SND	s	SLT	GRV	SND	5	LT	GRV	SND	13	SLT	GRV	SND		SLT	GRV	SND		SL
Length of LB and RB Exposed Banks (feet)		Ð			-t	Э				Ð		_		-0				-Ð		<
Confinement		2		-	1	-		-	•	1				1				1		
Init Flagged/ Labeled? (Y/N)	VO	Wae-			N)		3	1	5 .				2)			V	OL.	10	
ributary Inflow in cfs	14	5	-		1	_											1	-		
andmarks or photos ACM	412.22	1 17	125	uci ii		- >	1175	- 1	10-1		14		オリフア	7-1	1 114		4177	B		
WW1	D	Diameter	L	ength	D	iameter	L	cngth	1	Diameter	22	Length	AN LEE	Diameter	1	Length	-100	Diameter	/	Len
	1	24	1 12	ass	# c	aass	c	ass	<i>"</i>	class	1	class	#	ciass	<u> </u>	class	.#	class	1	cla
arge Woody Debris [*] vithin bankful width			L			/	1			/	1			/	1			/	1	
			1		1		1		1		1	an Inc			I		-		1	
lo. of LWD Pieces		1		T		Ð	4			ð				Ð				0		
ish Migration Barrier ⁶	1	N	1.1			V				N				N				N		
y/n)? pawnable Gravel Area (sqft) Sst. ⁷	.0	-44	mdt		-0					Ð				0			-0			Ţ
faximum Spawning Gravel fatch Size (sq-ft) Est.		-0	- VOV	Orty)				3		-					· · · · · · · · · · · · · · · · · · ·				
Comments / bbservations. ish? Wildlife? Amphibs? ackwater or side chan, amphib abitat? Riparian? Landmarks.					10'hi	sh-1										En	ul - e che 10tes	wa.	4	
hoto #s, Etc. FALL = Falls, CAS = Cascade, C	CHU = Chute,	, RAP = Rar	pid, GLI =	Glide, F	RUN = Run,	STEP = S	itep Run, H	GR = H	ligh Gradie	nt Riffle (>	-4%), LO	GR = Low	Gradient Ri	ffle, POW	= Pocke	t Water, S	086 SHT.= Shee	436 436	2448 3120	1

Comments of
小井井	HAB	L	W	MONT D	Notes
51	PUP	26	11	2,5'	+1229€ UN
52	MCP	51	2112	5'	#1230-2005
	3' Fallso) bach	1 1/2 Fall/	11/2 She	et
54	PLP	35	11	4'	
55	CAS	52	1B	/	under Wales
56	MCP	53	25	5	1.00 150
57	CAS	40	26,38	-	mail Blacers
50	NCP	B2 1	10,27,33	35	runo top
59	MCP	A	37	4	
BI	der/br. c	moral up	ustes 58	3-+59	
521	ots frigen	hings	trib pro	tes LBA~	0.0105
60.	Pow.	28	25	/	Selfwer Ner
U	066537	6/4363	198 (Flagel	28)
61	LAS	69	25	_0	12% 3,6
62	MCP	27	28,34	4'	'
63	MCP	18	25	3'	
P	pareted 4	-62 5	short	Z'SKP	
64	HBR	23/	14	1000	br.
65	PLP	32	27	3	
66	GAL	10	15	-	1.5'pam
67	MCP,	31	18	3.5	
68	POW	35	29	-	
69	PLP	22	39	3,5	
	and the second se	1 States	0		711.1

WMT#	HAB	L	W	MAKD	NOTES
71	MCP	29	20	3	
72	POW	37	50		WISIEAS
73	POW	34	38	-	No stra
o sace 5	C. Gen	SO This	mit -> in	del ond t	U69
74	PUP	60	40.38	15 es	F
75	CHUKY	1 20	20		4'skp
76	PUP	(11	18,27	10+1	1. Gage
_	0hoto #12	325 be	くみょう	76	79
hea	vy re.	use.	tre	e for	
T	ML B	DNI /SK	E TD	200	
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Oh	zto 17.	33×1	Bar U.7	6 405	-
pr	T.D	= Uni	11 = 0	Bai	
=		110-	- 67	Umi,	-
Will	ant is	at la	b. c.c.		
mar	you in	ia. fr	Ir, au	(1)	
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-	06622	7/45	67792		_
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UTM: 0605544/5	15033	127.		1) C8 CIAN	labitat unit l	Nott	621	SC]			PM	. 6. (Bene . 5)		-		Map Gra	idient:	-	-
Habitat Unit #		77				76	2			79				ØQ_		-	BI		
Habitat Type ¹	FALL	CAS	(CHU)	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU)	RAP	FALL	CAS -	CHU RAP	FALL	CAS	CHU	R
	STEP	POW	SHT	COP	STEP	POW	SAL	COP	STEP	POW	SHT	COP	STEP	POW	Ser COL	STEP	POW	SHT	
note if dammed pool	МСР	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	МСР	LAP	TRP PLP	MCP	LAP	TRP	P
Length (ft)	- 17-	27	-	12.1		57	}	-		315	S			BO			75_		
Est. Avg. Width (ft)	0.5	2,9,	.5.5		n		1.5 .	20.5	<u> </u>	95	45		15	9	29	21	2-2	13	<u>ř</u>
Est. Avg. Pool Depth (ft)	Constanting	-	and the second			4.5	2		-		_		12,	1.5	3.5	26	1.8	1,0	<u>.</u>
Max. Pool Depth (ft)		/			4	2,5	1,1)=8					20	P	oclictpool	5	2.6		
Pooltail Embedded %	INSIGNU	5	PIDD		INSIGNU	0	RIDR		INSIGNU		BLDR)		INSIGNIE	a	LDR	INSIGN	F	FLOR	5-
Significant Cover:	VEG		WOOD	-	VEG		WOOD		VEG		WOOD		VEG	W	OOD	VEG		wood	
SUBSTRATE COMPOSITION	RED	BLD		COB	RED	BLD		COB	BED	BLD)	COB	BED	BLD	CO	BED	BLD		C
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	SLT	GRV	SND		S
. I. download	BED) BLD	-	COB	BED	BLD		(COB)	BED	BLD		СОВ	BED	(BLD)	COL	BED	BLD		C
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND)	SLT	GRV	SND	SLT	GRV	SND		SI
Dominant	BED	BLD		СОВ	BED	BLD		COB	(BED)	BLD		сов	SED	BLD	COL	BED	BLD	wite-i	C
Bank Substrate	GRV	SND	1	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	3LT	GRV	SND	-	SI
Length of LB and RB Exposed Banks (feet)		-0		1		Ð	5			D	-		4	0		(Ð)	Salary
Confinement ⁴	1.0	1	11		PR .	2				1				/		1.1	1	14	
Unit Flagged/ Labeled? (Y/N)	VQ	isd	à		-	N				N				N		YG	Stop		
Fributary Inflow in cfs	10	A			1	A				PY			-	Ø	1.8.	1.40	0	1	
andmarks or photos DTA	10	AZ	1	115	17 /	al	L	X	17.00		1.114		1786	+ 17/	97118	HI	250	111	2
		Diameter	1	Length		Diameter	T 11	Leugth	100.	Diameter	001	Length		Diameter	Leng	th	Diameter	Leve	Le
	#	class	1	class	#	class	~	class	#	class	1	class		class	class		class		Cla
Large Woody Debris [*] within bankful width		/				/				/				/	1		1		
	/		Î	1			1				1		/		1	/	1	1	
No. of LWD Pieces within wetted width		D	ş :			E	7			9	14			0	Sec. 1	-1-34	0	The P.	
Fish Migration Barrier ⁶	22	-0				n	1		1.1	n				n		i edini	n	\$10 B	
Spawnable Gravel Area (sqft)	103	1.00 1	1.1												5.00	1.202	~		
Est. ⁷ (1/4" - 2 5")	-	8				D	+	1		Ð		- 3		Ð		104	0		
Maximum Spawning Gravel	all for a la															1000	- change	1	10
Patch Size (sq-ft) Est.	100		1	121		Ð	5			an f									_
Comments /	jus.t.	abur	14	ye	Sligh	+ sene	1 porte	et	lee.	1.301	8 bot	to	2/60	ger po	ols	vert	60.6	Allo	mi
Fish? Wildlife? Anaphibs?	poo	L)	0	· · .		1	1.1	0 M				11%	0 1		Some	lge 6	les	h
Backwater or side chan. amphib					5.9.			100	1.1				DOSSI	the ver	1-lecter	1 not	enough	4	cal
Photo #s, Etc.					3.34			11	1				-AD D	sto/A	oto.	Po	N	1.1	1.9
				La Olida	DUN		Circa D	. 110.00	Ulai Card	ant Diffic (- 404) 1 (21	Delaw	Credie at P		Dockal Wate	allel	Trsh	1500	cky
FALL = Falls, CFS = Cascade, C Pools: COP = Convergence,	MCP = mid-	e, RAP = r channel p	ool, LAP	= Lateral,	TRP = Tre	nch, PLP	⇒ Step Runge	n, HUK =	High Grad	ent Rime ((24%), LGI	R = LOW	Gradient Ri	1110, POW -	FOCKEL WAIE	, 341 - 316	Ph	2/01	H.
The minimum unit length s	hould be 1	x active o	hannelv	width, un	loss there	is como!	hing note	at's crus	niour abou	at R.			•			1	12	97	
(e.g., logs in stream, lots of)	boulde:s, >	25% aut	or me un 1000 8198	n: h ha s ina	iream or lo	No.et	anging Vi	ege tution	n, ata.)					0	C Initiahi	9/R		1	
Channel Confinement: 1=Con	fined Shell	llow; 2≖C	crifinod l	Dapp: 31	dvlode: ste	Contasi	d (<2x w	atted cha	ennel widt); 6= ¹ 300	o, thingd (?	ar: 3 5.0	tied oherin	al v.idina)		15	Junio		
Criteria for LWD is:any down: Size classes: 6-12", 12-24"	eri wood w 1. 24-38".o	ithin bank r 36"+ x i	duil widt 3-10', 10	n of char)-25', 25	1961 +0/> 1 -30', 50-73	hen 1/2 5 5', 75'+ ()	anifuli w a. 6 (25)	10"1. = 6-10",	25-503										
		10.00.000.0							CONTR										

STREAM HABITAT	TYPING	SURVI	EY DATA	(NID Yu	ba-Bea	r, PG&	E Dru	m Spau	lding)		- 4		111		FAI	MAL	2 10.0	MPD	inc
3	Drac	200	Cie	-V		- -					Data Sl	heet #	14		C/91	ev	TM	MPP	ince
Stream/Reach/Subreach:	ock	Son	Bai	len	P.	Ha	ide	sta	5		Page	9/12	of	9		0665	7.00	2	÷.,
UTM: 066559	9 43	633	76 NAD 8		Nº 92	-10	bas	e)	Ŭ	PM	Date	- que	-10	-		+36= Map Gra	idient:		
	T	81			4	2			*	21	-	-	86				86		
Habitat Type ¹	FALL	CAS	CHU RA	P FALL	CAS	CHU	RAP	FALL	CAS) CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
Provide and a second second	HGR	LGR	GLI RUI	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
	STEP	POW	SHT CO	P STEP	POW	SHT	СОР	STEP	POW	SHT	COP	STEP	POW	SHT	СОР	STEP	POW	SHT	COP
*note if dammed pool	. MCP	2 17	TRP PL	MCP). LAP	TRP	PLP	MCP	LAP	TRP	PLP	(MCP)	LAP	TRP	PLP	MCP	LAP	TRP	PLP
Length (ft)	Q	5 9	1.20	20	514	2-1	1. S.	22	100	12	- A-	17	17	1	2	10	12	0	· · · · · · · · · · · · · · · · · · ·
Est. Avg. width (it)	0.	1-	1,00	Mil	414	FI	d	2	11 5	11		11	1 a	10	n.	2	51	10	0.
Est. Avg. Pool Depth (ft)		6		0,4	2,2	1.5,1	.7,	2	4- 5	, 4		4,	11	r1+	Đ.	1. 121	211	21)	0
Max. Pool Depth (ft)					TIS			÷	11	2			4.	/			2.	-	
Significant Cover? ²	INSIGNIE		BLDR WOOD	INSIGNI VEG	F	BLDR)	INSIGNI VEG	F (BLDR)	INSIGNI VEG	F (BLDR	>	INSIGNI VEG	F	BLDR WOOD	
SUBSTRATE COMPOSITIO	RED	BÍ.D	CO	RED	BLD		COB	(BED)	BLD	the boat states	COB	RED	BLD		COB	RED) BUD		COR
Dominant Substrate	GRV	SND	SLT	GRV	SND	11.4	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
	BED	60	COL	BED	BLD		COB	BED	BLD	5	COB	BED	BLD	5	COB	BED	BLD		(COB)
Substrate	GRV	SND	SLT	GRV	SND		SLT	GRV	SND	-	SLT	GRV	SND		SLT	GRV	SND		SLT
Dominant	BED	BLD	COL	BED) BLD		COB	BED	BLD		COB	BED	BLD		СОВ	/BED	BLD	State of the	COR
Bank Substrate	GRV	SND	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	11	SLT
Length of LB and RB Exposed Banks (feet)	111	-0-			e	}			E	>		4.	e) -			£)	
Confinement ⁴	-	1			1				0		-		2	2			1		
Unit Flagged/ Labeled? (Y/N)	VC	2 53	e		n	5			n		n 4		n	3.0	š¥≃	VC	3 +	qq	
Tributary Inflow in cfs		es	-		-0	here		1.01 II.	-¢				F	10	1.11.4		R		
Landmarks or photos	1 D	291	LUS	12	92	LU.	S	1-	293	L	US	15	294	Li	15	12	99))	15
AND BENER THE	1	Diameter	Leng	h	Diameter		Length		Diameter	1	Length		Diameter	11.10	Length		Diameter		Length
		class	class		class	1	class	#.	class	1	class	#	class	1	class	#	class	-	class
within bankful width		-	×		1	1		1		1			~				1	1	· · · · ·
	A. 1. 2		1			Y	- Although An thuộc chiến c			1	1			1				T	1
No. of LWD Pieces within wetted width	19.7	n			N				r	7		1.11	r				5		Net e
Fish Migration Barrier ⁶	interest in	n			r	1	e. 3		n		$= - \gamma \gamma$		n	1	-15	. 11.2	n	11 2	
Spawnable Gravel Area (sqft) Est. ⁷		Ð		1	£	>		-	-0)	- 1		-0	ف	-	1.1.84	0	+	
Maximum Spawning Gravel		~		Z. The	~	/			~			4	/		23			~	
Comments /	CIAAA	11 -	no 10	M	- PA	01	-	alm	inst	a		In	ch	11/2	1.5	Sh	alla	1400	de
Observations:	base	P	the	con	trol	on	ch.	step	poo	1 6	it	TIER	cn-1	nar	ts.	Ch	ase.	isca 1	al
Fish? Wildlife? Amphibs? Backwater or side chan. amphib	Chut	e P	botto	m muil	1. 1	8	11	wate	er di	VETO	es.	111 31	crit	P	2.5154	Sm	alli	1000	5.
habitat? Riparian? Landmarks, Photo #s. Etc.				On	y I	SMO	211	arou id and	ten	in a la	101 >					Bh	gh fi	ow	IS
Thore way saw	1.1			SCOL	m	ax	æ	\$3 p	1080	ontro	015	18.				goind	g to	Vec.	
FALL = Falls, CAS = Cascade, C	CHU = Chute	, RAP = Ra	apid, GLI = Glic	e, RUN = Ru	n, STEP =	Step Run	n, HGR =	High Gradi	ent Riffle (>4%), LO	R = Low	Gradient R	ffle, POW	= Pocke	t Water, S	HT = Shee	tflow;	chi	te.
Pools: COP = Convergence The minimum unit length s Note if cover is a significant of	MCP = mid-c should be 1x ar dominant	cactive ch feature of	oi, LAP = Later nannel width, i Tthe unit;	al, TRP = Tre inless there	is some	= Flunge hing nota	ible or ur	nique abor	ut it.					1			1. De		
(e.g., logs in stream, jois of I Channel Confinement: 1=Cor	boulders, >2 oficied Shall	25% surfa ow: 2 =Co	ice area has i nfined Deep:	nstraam or k 3n:Moderate	ow overh Confined	anging ve d (<2x we	egetation etted cha	n, ota.) Innel widti): 4=Unc	onfined	(>≂ 2 we	tled chann	el widins	Q/C init	ials: 🥠	Y			
⁵ Criteria for I.WD is:any down	ed wood wit	thin bankfu	ull width of ch	annei =or> t	h in 1/2 b	ankfull w	idth.		, i dina							1. 14	1.5%	1682	See.
Size classes: 6-12", 12-24" Waterfalls, high velocity chute	", 24-36",or es or cascar	'36"+ x 3- des at apr	-19', 10-25', 2 prox bankful fi	5-50', 50-7: ows. NOTE	5', 75'+ (n VERTIC/	e. 6 25 = AL DROF	= 6-12", : P and IF.	25-50') CONDITI	ONAL or	PERMA	NENT						1.1	**	
7 Spawning Sized gravel subm	nersed in an	area of a	dequate dept	h and veinci	ity within a	one unit			0.000000000					25	1.4	17 - 2 <u>2</u>			
Notes regarding access				1	0.	_	1				_	1							
points (road condition, bridge crossings, trails, etc.)	5692-	HERE-	- pos	15. C	KH	t pr	t	oad	. 9	ovr	190	of y	ear	- 1	n p	001	san	ne	
Olle	1,330	27			not	11)ed	ea	rlie	r	in	Sur	1e M						
110	10				 1072 - 31 								- 1.7						

1295-7

UBb	h.	P1 of (P15)	7-12 Kf	2-09 /PH/6B
Units	77-6	36 map	red		
Unit	HAB	L	W	maxin	Notes
87	MCP	+08 58	17	3.5	P-1500
				4.5	(30)
two big 3 Plunc	pools sepa d fool w	rated by s itn mid	mall pool	10 + htrolias	plung
P001	\$ with	1 3 SM	an plum	g paris l	s TOP
BA	CRIER (0665718	143633	4.5	inal
88	FALL	35	6	4.5	1302
Falls plun	ginto deep si	Colle Gu	the the	barrier	
64:	2,2=1	Falls 701	25	_	130%
_89	POW	50	aJ	1.1	3
90	MCP	97	30	2.5	1303
			N. G.	· · · ·	Mr.
0/1	POW	52	25	-	1304
01	ST-P	99	20	-	1305
14	OFT	0.0	~		
93	mep	38	17	3.5	1306
ART	IPICIAL P	OOL - DUG	OUT be	minin	X
)	0
94	SPLIT	98		-	5-7%
mil	madela	ble nou	thile si	UY FACES	highly
1011	141000000	A THE LAND	Weight -	1.10	1 1 1 1 1 1

*

	origin a	1/2. (E1B)	9-12-	OS -	KS/GB/DU
Ster	ting - an	Ur DI	HAN #10	D P	2015
int	Hab	L	W	MaxD	Notes
SPLIT	MIX	303	LGR/HG	R/GLE U	UITH
(CON FINI	ED CHANN	EL START)	HIGH De	wsity .	DARMERA
105	PON	92	47,47,45		PHOTO 1323
					()
106	MCP	20	20	2.5	LUS 1324
		11-3	355		
107	POW	170	30,40,42,	-	LU 5 1325
under	cut R	BA ~~	30'.	1.00030	
108	CAS	19.5	38		gradient 11%
109	POW	54	37,37		
110	CAS	18	42		gradient 12%
111	POW	25	30		
112	MCA	41	19,21	3.25	د
CA N	EWTID	WNSTRMAS	EPARATEL	BYBRE	NCH PT
113	MCP	73	24,24,18	3.5	· · · ·
114	CAS	22	32		gradient 11%
066	57691	4363	635 1	TAGGEB	@ base 115
115	MCP	42	33,28	3	
116	CAS	19	18+24		modient 12%
117	POW	184	40,42		gran ica
Pool UPS	TAL OF IL	but she	+ & chough	boulder.	s to
includ	e with	Pow on	17 117.4	STEPS I	N POW.
118	HGR	27	35	-	gradient 11%
					1.027

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1989	FYPING	SURVI YC	EY DA	TA (N	ID Yub	a-Bear,	PG&E	E Drun	n Spaul	ding)	Data	Sheet #	16			Here the second	
Stream/Reach/Subreach: Team: <u>K·PeaCOC</u>	K (Ion I.B	Cre	ey	P.H	ard	est	r			Page Date	3 9/1	of0	L			
UTM: 0665762	- 4:	3632	13 N	AD 83 (H:	abitat unit N	95	ek	oas	e		PM				Map Gra	dient:	
Habitat Unit #	T	95		A State of State		011		Constantion of	1	91		1	98	terig and successive	9	9	
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU RAI	FALL	CAS (CHU RAP	FALL	CAS C	HU RAP
	HGR	LGR	GLI	RUN	HGR	LGR.	GLI	RUN	HGR	LGR	(GLI) RUN	HGR	(LGR)	GLI RUN	HGR	LGR G	LI) RUN
	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT COL	STEP	POW S	SHT COP	STEP	POW S	HT COP
note if dammed pool	мср	(LAP)	TRP	PLP	МСР		TRP	PLP	МСР	LAP	TRP PLI	MCP	LAP 1	TRP PLP	MCP	LAP T	RP PLP
Fet Aug Width (ft)		32	2			24			-	20			30		10	2.2	Τ
Sol Arg. mull (it)	14 1	1 15	1 1	A		01				20			20				
Est. Avg. Pool Depth (ft)	110	1	1.5	,0													
Max. Pool Depth (II)		-0-								_		2					
Significant Cover? ²	INSIGNE	F	BLDR	-	INSIGNI	E) (BLDR		INSIGNI	F (BLDR	INSIGNI	F (BI	DR	INSIGNI	F BL	DR
SUBSTRATE COMPOSITIO	VEG		WOOD		VEG		WOOD	State of	VEG		WOOD	VEG	W	OOD	VEG	wo	DOD
Dominant	BED	BLD		COB	BED	BLD		(COB)	BED	BLD) сон	BED	(BLD)	COB	BED	BLD	COB
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	SLT
Subdominant	BED	BLD)	COB	BED	BLD		COB	BED	BLD	(con) BED	BLD	COB	BED	BLD	СОВ
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	SLT
Dominant	BED	BLD	(COB	BED	BLD	engogisches allematia	СОВ	BED	BLD	COL	BED	(BLD)	COB	BED	BLD	COB
3ank Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	SLT
Length of LB and RB Exposed Banks (feet)	und 80	er cut RBA	t bai	nK	Una IDRI	terCu 5A, 5	it be	ank 4		_				/		/	
Confinement ⁴		11				11	FPW	= 55		4			4			4	CARLES IN
init Flagged/ Labeled? (Y/N)	N	@ h	130			N	1100	- 00		A1			Ń		1	P TI	P
	Y	EU	ase			14				11			<u></u>			6 10	<u>, , , , , , , , , , , , , , , , , , , </u>
ributary Inflow in cis		0				0				-0-	-		0	-		0	
andmarks or photos	130	08	Lu	S		309	20	5	131	0	LUS	18	311	LUS	1	312	LDS
	#	class	AL.	Length class		class		Length class	#	Diameter class	Leng class	h # .	class	Length		class	Length class
Large Woody Debris ⁵	1	12	12	25	~				/		-			1	>	4.150	a spatiality in
vithin bankful width	1	12	15	50			-							<u></u>		-	
lo. of LWD Pieces		,				M				. 1			A 1	1			<u> </u>
vithin wetted width	1					N				N			N			N	
rish Migration Barrier	al farmer	N				N				N			N			N	
Spawnable Gravel Area (sqft)						6				0			0			0	1.1.1
Est.' 1/4" - 2.5")	Survey States	0-				-0-				0	~		Ð			0	
Maximum Spawning Gravel	0	0				A				1	_		0			0	an an taon an t
aten Size (SQ-II) ESE	A 1 -	1.00	ec 0	0				10		Ð			U	1 1100	-	i i i i i i i	265
Comments /	Adul	+ POS	S.C.	REF	gr	adiei	nt 4	6				gra	dien	1 4%	RO	.25	
Comments / Observations:		vera	1 Ju	V.	DOD	lalak	ale					m	dela	ble	ma	×D1.5	
Comments / Dbservations: řísh? Wildlife? Amphibs? Backwater or side chan, amphib	& se				11100	RIM	nc					1.10			SIL	1 50	sul do
Comments / Deservations: ish? Wildlife? Amphibs? ackwater or side chan. amphib abitat? Riparian? Landmarks,	\$ 56														DIO	in a lo	1 Co
Comments / Dbservations: ish? Wildlife? Amphibs? ackwater or side chan. amphib abitat? Riparian? Landmarks, hoto #s, Etc.	\$ 56														1 30 112		2 ~ ~ ~ ~ ~ ~ ~
omments / bservations: ish? Wildlife? Amphibs? ackwater or side chan. amphib ubitat? Riparian? Landmarks, noto #s, Etc. FALL = Falls, CAS = Cascade, C	4 Se HU = Chute	, RAP = Ra	apid, GLI :	= Glide, F	RUN = Run	STEP = S	tep Run, I	HGR = H	igh Gradier	nt Riffle (>4	%), LGR = Low	Gradient Riff	le, POW = Po	cket Water, SH	T = Sheetfle	ow;	a tor
omments / beservations: ish? Wildlife? Amphibs? ackwater or side chan. amphib abita? Riparian? Landmarks, hoto #s, Etc. FALL = Falls, CAS = Cascade, C Pools: COP = Convergence, M The minimum unit length s	HU = Chute CP = mid-ch	, RAP = Ra	apid, GLI : I, LAP = L	= Glide, F ateral, TI	RUN = Run RP = Trenc	, STEP = S h, PLP = Pl	tep Run, I lunge	HGR = H	igh Gradier	nt Riffle (>4	%), LGR = Low	Gradient Riff	le, POW = Po	cket Water, SH	T = Sheetfle	Chate	ed wi
Comments / Deservations: ish? Wildlife? Amphibs? ackwater or side chan. amphib abitat? Riparian? Landmarks, hoto #s, Etc. FALL = Falls, CAS = Cascade, C Pools: COP = Convergence, M The minimum unit length s Note if cover is a significant o	HU = Chute CP = mid-ch hould be 1 r dominant	, RAP = Ra iannel pool x active c feature of	apid, GLI = I, LAP = L hannel w f the unit	= Glide, F ateral, TI vidth, un	RUN = Run RP = Trenc less there	, STEP = S h, PLP = Pl is someth	tep Run, I lunge ning nota	HGR = H	igh Gradier nique abo	nt Riffle (>4 out it.	%), LGR = Low	Gradient Riff	le, POW = Po	cket Water, SH	T = Sheetfle PUN Shi	Chate VI L	ed wi GRS,
Comments / Deservations: ish? Wildlife? Amphibs? iackwater or side chan. amphib abitat? Riparian? Landmarks, hoto #s, Etc. FALL = Falls, CAS = Cascade, C Pools: COP = Convergence, M The minimum unit length s Note if cover is a significant o (e.g., logs in stream, lots of i Channel Confinement: 1=Con	HU = Chute CP = mid-ch ihould be 1 r dominant boulders, > fined Shall	, RAP = Ra iannel pool x active ci feature of 25% surfa ow; 2=Co	apid, GLI I, LAP = L hannel w f the unit ace area onfined D	= Glide, F ateral, TI vidth, un t: has ins eep; 3=	RUN = Run RP = Trenc less there tream or l Moderate	, STEP = S h, PLP = Pl is someth ow overha	tep Run, I lunge ning nota anging ve (<2x wet	HGR = H ble or u egetation	igh Gradier nique abo n, etc.) nnel width	nt Riffle (>4 out it.	%), LGR = Low	Gradient Riff	le, POW = Po Q/ nel widths)	cket Water, SH C initials:	T = Sheetfle Pun Shi	i Chate VI L	ed with the states,
Comments / Deservations: ish? Wildlife? Amphibs? ackwater or side chan. amphib abitat? Riparian? Landmarks, hoto #s, Etc. FALL = Falls, CAS = Cascade, C Pools: COP = Convergence, M The minimum unit length The minimum unit length to cover is a significant o (e.g., logs in stream, lots of I Channel Confinement: 1=Con Criteria for LWD is:any downe	HU = Chute CP = mid-ch hould be 1 r dominant boulders, > fined Shall id wood wit	, RAP = Rational pool x active c feature of 25% surfa ow; 2=Co hin bankfi	apid, GLI I, LAP = L hannel w if the unit ace area onfined D full width	= Glide, F ateral, Tl vidth, un t: has ins eep; 3= of chan	RUN = Run RP = Trenc less there tream or l Moderate nel =or> ti	, STEP = S h, PLP = Pl is someth ow overha Confined han 1/2 ba	tep Run, I lunge ning nota anging ve (<2x wet ankfull wi	HGR = H able or u egetation tted chai dth.	igh Gradier nique abo n, etc.) nnel width	nt Riffle (>4 out it. n); 4=Unce	%), LGR = Low	Gradient Riff	le, POW = Po Q/ nel widths)	cket Water, SH C initials:	T = Sheetik Pun Shi	vicuate vit 2	ed with the states,
Comments / Dhservations: ish? Wildlife? Amphibs? lackwater or side chan. amphib abita? Riparian? Landmarks, thoto #s, Etc. FALL = Falls, CAS = Cascade, C Pools: COP = Convergence, M The minimum unit length s Note if cover is a significant o (e.g., logs in stream, lots of I Channel Confinement: 1=Con Criteria for LWD is:any downe Size classes: 6-12", 12-24" Waterfalls, high velocity chute	HU = Chute CP = mid-ct ihould be 1 r dominant boulders, > fined Shall id wood wi s or casca	, RAP = Ra aannel pool x active c feature of 25% surfa ow; 2=Co thin bankfi '36"+ x 3 des at app	apid, GLI = I, LAP = L hannel w f the unit ace area Infined D full width 3-10', 10- prox ban	= Glide, F ateral, TI vidth, un t: has ins leep; 3= of chan 25', 25- kful flow	RUN = Run RP = Trenc less there tream or l Moderate nel =or> ti 50', 50-75 rs. NOTE	, STEP = S h, PLP = Pl is someth ow overha Confined han 1/2 ba ', 75'+ (ie. VERTICA	tep Run, I lunge ning nota anging ve (<2x wet ankfull wi . 6 25 = L DROP	HGR = H able or u egetation tted chain dth. 6-12", 2 and IF	igh Gradier nique abo n, etc.) nnel width 25-50') CONDITIO	nt Riffle (>4 out it. a); 4=Unce ONAL or	%), LGR = Low onfined (>= 2 v PERMANENT	L Gradient Riff	le, POW = Po Q/ nel widths)	cket Water, SH	T = Sheettle Pur Shi	vicuate VI L	ed with the states of the stat
Comments / Deservations: ish? Wildlife? Amphibs? ackwater or side chan. amphib abita? Riparian? Landmarks, hoto #s, Etc. FALL = Falls, CAS = Cascade, C Pools: COP = Convergence, M The minimum unit length s Note if cover is a significant o (e.g., logs in stream, lots of I Channel Confinement: 1=Con Criteria for LWD is:any downe Size classes: 6-12", 12-24" Naterfalls, high velocity chute Spawning Sized gravel subm	HU = Chute CP = mid-ct thould be 1 r dominant boulders, > fined Shall id wood wii 24-36",or s or casca arsed in an	, RAP = Ra hannel pool x active c feature of 25% surfa ow; 2=Co thin bankfi 36"+ x 3 des at app area of a	apid, GLI I, LAP = L hannel w f the unit ace area whined D full width 3-10' , 10- prox ban adequate	= Glide, F ateral, TI vidth, un t: has ins eep; 3= of chan 25', 25- ikful flow depth a	RUN = Run RP = Trenc less there trearn or l Moderate nel =or> tl 50', 50-75 vs. NOTE and velocit	, STEP = S h, PLP = Pl is someth ow overha Confined han 1/2 ba ', 75'+ (ie. VERTICA y within or	tep Run, I lunge ning nota tnging ve (<2x wet nkfull wi 6 25 = L DROP ne unit	HGR = H ble or u egetation tted char dth. c 6-12", 2 e and IF	igh Gradier nique abo n, etc.) nnel width 25-50') CONDITI	nt Riffle (>4 out it.)); 4=Unce ONAL or	%), LGR = Low onfined (>= 2 v PERMANENT	L Gradient Riff	le, POW = Po Q/ nel widths)	cket Water, SH	T = Sheetile Pun Shi	Vicuate VI L	ed wi GRS,
Comments / Deservations: ish? Wildlife? Amphibs? ackwater or side chan. amphib abitat? Riparian? Landmarks, hoto #s, Etc. FALL = Falls, CAS = Cascade, C Pools: COP = Convergence, M The minimum unit length s Note if cover is a significant o (e.g., logs in stream, lots of I Channel Confinerment: 1=Con Criteria for LWD is:any downe Size classes: 6-12", 12-24" Waterfalls, high velocity chute Spawning Sized gravel submo- totes regarding access	HU = Chute CP = mid-ct ihould be 1 r dominant boulders, > dined Shall id wood wil , 24-36",or is or casca arsed in an	, RAP = Ra hannel pool x active c feature o :25% surfa ow; 2=Co thin bankf 36"+ x 3 des at app area of a	apid, GLI = , LAP = L hannel w if the unit ace area onfined D ull width 3-10', 10- prox ban adequate	= Glide, F ateral, TI vidth, un t: t has ins eep; 3= of chan 25', 25- kful flow o depth a	RUN = Run RP = Trenc less there tream or l Moderate nel =or> tl 50°, 50~75 /s. NOTE ind velocit	, STEP = S h, PLP = Pi is someth ow overha Confined han 1/2 ba ', 75'+ (ie. VERTICA y within or	tep Run, I lunge ning nota anging ve (<2x wet ankfull wi . 6 25 = L DROP ne unit	HGR = H able or u agetation tted char dth. $\epsilon -12^{*}$, 2 and IF	igh Gradier nique abo n, etc.) nnel width 25-50') CONDITI	nt Riffle (>4 ut it.); 4=Unce	%), LGR = Low onfined (>= 2 v PERMANENT	Gradient Riff	le, POW = Po Q/ nel widths)	cket Water, SH	T = Sheetik Pun Sho	vicuate vit	ed with the states of the stat
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	1.5	1.125	3.2.	1.1.1	1	1989	4					*	2.5		- 10-10 - 11-10					
STREAM HABITAT	TYPING	SURV	EYD	ATA (P	VID Yul	ba-Bear	, PG&	E Dru	m Spaul	ding)	1.20		14 16 1	17		1.1	179	1.1	1	
	AV	PAD	01	210	ov		5				Da	ta Sh	eet #	1 1						
Stream/Reach/Subreach:	Ure	00	1.	10	<u>cr</u>	0,1		100	her	_	Pa	ge	1	of	-					
Team: K. Pealo	CK,	6,	Ba	ile	1,1	HI	aro	les	in		Da	te	911	210	7					
UTM: 066588°	1/43	632	88	AD 83 (H	labitat unit	No_19	, e	to	P	P	м						Map Gra	dient:		
Habitat Unit #	11	00*				101				102	_			103				104		Invitatio
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU F	AP	FALL	CAS	CHU	RAP	FALL	CAS	CHU R	AP
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR (GLI) F	UN	HGR	LGR	GLI	RUN	HGR	LGR	GLI R	UN
	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT C	OP	STEP	POW	SHT	COP	STEP	POW	SHT C	OP
*note if dammed pool	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP I	LP	MCP	LAP	TRP	PLP	MCP	LAP	TRP P	LP
Length (ft)	2	mp1	+8	8		40				110				29				80	5	
Est. Avg. Width (ft)		24			-	0	0			33				Ph	2	5		20	2	
Est. Avg. Pool Depth (ft)	2,75	5,1,7	5.	75, Đ	-						_									
Max. Pool Depth (ft)		3.	Ó								-		-		-					
Pooltail Embedded %	-	-0	-		C				-				0							
Significant Cover?*	VEG	GF (BLDR) WOOD)	INSIGN VEG	F	BLDR	No. of Concession, Name	VEG	F B W	LDR /OOD	100000	INSIGNI VEG		BLDR		INSIGNI	F	BLDR WOOD	106.07
Dominant	BED	BLD	Treasure and the	COB	BED	BLD		COB	BED	BLD	(0	OB	BED	BLD		COB	BED	BLD	6	OB
Substrate	GRV	SND	· · · · ·	SLT	GRV	SND		SLT	GRV	SND	s	LT	GRV /	SND	C	SLT	GRV	SND	S	LT
Subdominant	BED	BLD	\mathcal{D}	СОВ	BED	BLD	5	СОВ	BED	(BLD)	C	ов	BED	BLD) /	COB	BED	BLD	C	OB
Substrate	GRV	SND	ų.	SLT	GRV	SND	/	SLT	GRV	SND	s	LT	GRV	SND	\geq	SLT	GRV	SND) si	LT
Dominant	BED	BLD	(СОВ	BED	BLD		COB	BED	BLD	C	OB	BED	BLD	C	сов	BED	BLD	C	OB
Bank Substrate	GRV	SND	and the second	SLT	GRV	SND		SLT	GRV	SND	S	LT	GRV	SND		SLT	GRV	SND	SI	LT
Length of LB and RB Exposed Banks (feet)	เทธเ	sed	RBI	4	IN	CISE	DE	216A	INS	red	RBK	ţ	· · · ·		-		_	<u>IR a a c</u>		
Confinement ⁴		4	1º			4	17	-		4				4	<u>.</u>			4		
Unit Flagged/ Labeled? (Y/N)	N	sen	cp.	99		N				N				N			\rangle	10 -	top	
Tributary Inflow in cfs	. /	Ð	-'			0				Ð			1	0-	•		,	0		
Landmarks or photos	13	15	40	15	13	17L	VS	1	13	18 1	15		131	9	LOS		13	20	LUS	3
The second s Second second		Diameter		Length	0	Diameter		Length	1	Diameter	L	ngth	1	Diameter	1	Length	/	Diameter	Le	ngth
	1/	12	1	25	-	Class	1	class		class		ass	"	etass	C	class	"	class	Cla	ass
within bankful width		100									1		-	-/				1	-	
	1	1.1	1				1				1				V				X	
No. of LWD Pieces	they a	1				1-	_										-			
Fish Migration Barrier ⁶		N				N				N				N	J	-		N	N N Sert	
Spawnable Gravel Area (sqft)						10		1									la V	4*	6×2*	-
Est. ⁷ (1/4" - 2.5")		0				E)			0-				A	-		4x	4* 3	x2*	14
Maximum Spawning Gravel Patch Size (sq-ft) Est.		0				C	2			-0-	-			Ð				1.1.1.1	a de la como	
Comments /	*SPLI	TC	top	of	a	radia	ent	-201				\uparrow	0	adi	int	20	+50A	wnak	ne	
Observations:	uni	1 #	9901	high	14 0	rada	labi	010					g	ame	1112	216	gra	vels	oresci	nt
Backwater or side chan. amphib	mod	ified)	1	bus	- VAY	iet	af					mor	Icla	ble		But	paci	ked n	irf
habitat? Riparian? Landmarks, Photo #s, Etc.	Spli	+ len	gth	= 112	coni	trols	; Pol	r					,,,,,,,	~~~~			san	d.		and a second

¹ FALL = Falls, CAS = Cascade, CHU = Chute, RAP = Rapid, GLI = Glide, RUN = Run, STEP = Step Run, HGR = High Gradient Riffle (>4%), LGR = Low Gradient Riffle, POW = Pocket Water, SHT = Sheetflow Pools: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

The minimum unit length should be 1x active channel width, unless there is something notable or unique about it.

²Note if cover is a significant or dominant feature of the unit:

(e.g., logs in stream, lots of boulders, >25% surface area has instream or low overhanging vegetation, etc.) Q/C initials: ⁴ Channel Confinement: 1=Confined Shallow; 2=Confined Deep; 3=Moderate Confined (<2x wetted channel width); 4=Unconfined (>= 2 wetted channel widths)

⁵ Criteria for LWD is:any downed wood within bankfull width of channel =or> than 1/2 bankfull width.

Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 | 25 = 6-12", 25-50')

⁶Waterfalls, high velocity chutes or cascades at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

⁷ Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access points (road condition, bridge crossings, trails, etc.)

MUSSELS-2" long. Campsite & Top of unit 99 in Sterling's Property Campers catching brown trout

END MAPPING © UTMS 066 5875 (4363419

S.	oregi	m CK	9/12/	09 K	P/GB/PI	4 _ 1
1	Y	CWA	(P	D	P30.	f 5 -
and the second se	UNIT	HAB	L	N	MAXD	Notes
	119	Pow	55	39	1117	
	120	MCP	146	45 29	4.0	
	121	CAS	16 :	33		gradient 17
	12Z	RUN	50	A525		°
	BEBROCK	STEP D	IVIDES RU	N WITH UP	WER RON	SHORT& Wat
	SPLIT	with	HGR /	GLIDE \$	SMALL	MCA
	(CRLF)	Adult)	211			
	123	MCP	200	41 35,27	-6	
	CAMPER	REPOR	rs RING	TAILS ON	YUBA @	Peterson
ELOO	124	RUN	118124	18,30,	-	
PoHam	RUN W	itha	step-	ACO	wstm a	end on
Fithern	series	of step	o runs	& ups	tmena	L gradient
AVA A	nonm	odelab	IC.			0
	125	06658	98/43	63930	7	
	125	POW	53	52	-	-
	CAI	VENT	-			_
	126	MCA	144	4842		
	BOUL	DERS	STICK IN	GUPe	dunst	n Rol.
	127	CAS	18	40		grad: 17%
	128	MCP	34	30	2,75	-
	129	CAS	47	37		grad : 8%
	ATION	low cas	cade/hod	gepodge.	AT high	hhow
	it.	hugh	udacho.	dae int	1000 Pal	1110
	its a	True 1	10 and pour	anc , vui	Irribales	arr

0	regon Cr	uR	P41-	91	12/09
frank .	JewA	- (1	20	KP/G	BIPH
UNIT	HAB	L	W	MAXD	NOTES
130	RUN	27	45	-	
RC .	15/m	AXD 1.	75 i	-	
131	MCP	35	32,24	3	-
132	RUN	23	22	-	Step/Run
133	COP	25	25	0.5	
SPU	TMIX	272	MULTI-R	SRAIDED GUDES	SPLIT WITH
134	MCP	304	55	6+	PHOTOS -1829-31
0660	93/43	63938	& GRE	AT BIN	FHERON
UNIT 134	almost	looks li	Ke dam	pool	PHOTO 32 is outflow
but no	obvious	dam is	st broud	led cha	nnels
SPLIT		54	40,371	Some	at the
135	RUN	23	23	divinstim	e braids
06666	049/430	4033	FLAGIGE	DEBA	SE BS
136	LGR	82	40		arad: 3%
POOLING	s on per	meter	non mo	delable	
137	POW	60	30		
138	LGR	64	26		gradient: 2%
AMBIGUON	s due to M	ninor surf	ace aggift	ationed	urrent
flow. wow	id be L	GR@ ad	ditional	5 cfs.	
139	HGR	30	35		grad: 9%
140	STEP	58	31,42	2	
141	POIN	178	\$40		
142	STEP	46+62	35,37	-	
1. F C. 64 Mart					

Oregon Creek P5/5 9/12/09 KP/GB/PH MAXD NOTES HAB UNIT W MCP 143 25 3 72 MID-POOL CONTROL 144 RUN 25 19 FLAGGEDCTOP ENDS IN A CHUTE 0665954 /436 4170 END SURVEY FOR 9/12/09 DARLING CORP. TACOMA, WA SEESARD

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	· · · ·		Same	
				1.145
		_	- 11	14.0
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÷.				

YOWA P10. -09 < C.v. bridge Olm OK OB Unite HAB morde Nole 145 MCP 22,25,35 2.5 Rd photo/411 146 30 35 31 STEP bedrock ndlar 31 grad; steprun because of (chute-like) SU the 39,44,35 MCP 147 2 5 66 Sandbar Width includes à assoc, side pool MCP 34,33,30 3.25 148 78 photo 1412 Pool slit by surfacing bed rock in middle RIF 149 160 57,50,42 photo Bedrock riffle - some step-like features 4% -1413 150 37,36,48 MCP 101 3,75 31,40,29. 151 MCP 65 two above MCP separated by strong control 3.25 152 HGR 29 32,38 bedrock viAle 4% 9200 MCH 153 91 3.25 33,34 35 head of pool w/some surface agitation, quificant coutrol slightly pow like 50 Part 154 412 HGR 25,35 60 5% gradient mode STEP 155 45,45 oblique flow, multiple surbaces, paket-like (poor exposite p) = /. grad flag top 155 064009 2/41364377

P20F- (273) \$9-15-09 oregunde 211 br width marderth unit length notes/phote has MCP 82 3317.33 2 150 33,31 32 1577 MCP RC= 5 max depth: 2, area 2 meter 2 STEP 28 158 35,34 coloble/boulder bar creats split, for POW 19,34,37 159 156 605-1416 bedrock pool/shallow pocketwate directly under celestial vally rd bride 160 45 RUN 18,37 bedrock run, underbridge MCP 41,31 2,75 162 32 19,20 163 RUN 27 38 MCP 3 164 25, 28,29 tributary LBA ~. 5CFS LGR 230 165 31,39,40,36 california new? short run@ bottom, one LBA mid-chan modelable; modification \$ some puols borned from mining SWITCH TO MAPPING OGGODZ46/4364489 blagged at top 165, bottom 166

Stream/Reach/Subreach: Opegun Creek upstrem of CV Buidge Team: Kathi Peacock Gaea Bailey

STREAM HABITAT TYPING SURVEY DATA (NID Yuba-Bear, PG&E Drum Spaulding)

Data Sheet # of Page 91 Date

01010242 14264489 nse 166

/	10.7		-		11-				1184				11.0				1/20			
Habitat Unit #	146	CAR	CHU	DAD	FALL	CAR	CUIL	DAD	1125	C10	CITIL	DID	167	CLE	CITI	Din	170)	CTTT	
Habitat Type *	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	FALL	LGR	GLI	RUN	HCR	LGR	GLI	RUN	HGR	LCR	GLI	RAP
	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP
note if dammed pool	MCP	LAP	TRP	PLP	МСР	LAP	TRP	PLP	MCP	LAP	TRP	PLP	(MCP)	LAP	TRP	PLP	MCP	LAP	TRP	PLP
Length (ft)	48		- C		53		1		1	32,3	,1	100	TS		1.1		一葉	108	2	
Est. Avg. Width (ft)	38.	30,			32	34		4	3	0'		A	30	2,3	1.3	2	22	134	36	
Est. Avg. Pool Depth (ft)	2	£							2				5,	5	1.	4 ²				
Max. Pool Depth (ft)	Qu. 1.	5.2	, 75	0.1					2.1	75,	.7	50	5,5	5,3,1	,2.5	D	-	-		-
Pooltail Embedded %	NI	4'	e	·	-	-	_	S	30	7.		1	50	10	-	<u> </u>	-			
Significant Cover? ²	INSIGNI	æ	WOOD		INSIGNII	$\langle \rangle$	BLDR		INSIGNI	F	BLDR		INSIGNI	F (BLDR		INSIGNI	FC	BLDR	2
SUBSTRATE COMPOSITION	4		D.S.C.A	MANUSA	CLA STA	BOR	and the	2,118,2		10.22	1000	172.2	a sale of	BORRER	1.1					# W1
Dominant	BED	BLD	シ	COB	BED	BLD	-	COB	BED	BLD	2	COB	BED	BLD	>	COB	BED	BLD	2	COB
substrate	GRV	SND)	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	-	SLT	GRV	SND	of large	SLT
Subdominant .	BED	BLD)	COB	BED	BLD	1	COB	BED	BLD	ļ	COB	BED	BLD		COB	BED	BLD		COB
Substrate	GRV	SND)	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
Dominant	BED	BLD)	COB	BED (BLD	0	СОВ	BED	BLD)	СОВ	BED	BLD)	СОВ	BED	BLD	2	COB
Bank Substrate	GRV	SND)	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
Length of LB and RB Exposed Banks (feet)	ø				(A)	104	Ctr	2 BA	A)			30	ft	• •	· .	15	4	1112	
Confinement ⁴	A				FH				I					-1 -1		- 11	21		1	
Unit Flagged/ Labeled? (Y/N)	NPI	5-6	1. C.C		ho				no				00		1		11.1	1	-	
Cributary Inflow in cfs	RYSI	+ .E	TOF	5	10.0			-	50)	7		100	1			1 AP 2	-17	2P	-
andmarks or photos	141	2			1416			-	+110	200	~ 0		1-states	1 Cares	110		1110		ho	10.0
. 0172	111	Diameter		Length	110	Diameter	4	Length	THE	Diameter	W.S.C.	Length	Puppingin	Diameter	1	Length	4-1-6	Diameter	11.0	Length
		class	5	class	0	class		class	#	class	-	class		class		class		class		class
Large Woody Debris ⁵		/			-/	-				<u> </u>	<u> </u>			1				-		*
Within bankini winth	-/	r			/				/				-/				1			-
lo. of LWD Pieces					a				a				D				07			
within wetted width	10				10	_			φ				4				4	2		-
y/n)?	no				VIO				NP	6			no				m.	0		
Spawnable Gravel Area (sqft)	R				d				ph.				d				i	1		
1/4" - 2.5")	Ŷ				φ				P				φ				P			
Maximum Spawning Gravel Patch Size (sq-ft) Est.	N/A	κ			N	a	1		nto	ì			Na	34) -			NA			
Comments /		in tes den i		1.1	.37	Dal	All	at	1			100	Prol	168 3	140	<u>}</u>	25	1.9	4di	ente
Joservations: Fish? Wildlife? Amphibs?				· ·	511	110	MAG	1000 C					SPAN	white	call	y	\$57,	0(30	chai	inel
Backwater or side chan. amphib		2	-					<u> </u>					stro	ng b	com	nle	Wife	1e-4	I <e,< td=""><td>alt</td></e,<>	alt
abitat? Riparian? Landmarks, Photo #s, Etc.													604	1de	out	erop	ster	nilee	KB	A.1
		1. L.		ð., i					÷				Weale	eont	w(n	und	NO.	DELT	an	The
FALL = Falls, CAS = Cascade, C	HU = Chute	a, RAP = F	Rapid, GLI	= Glide, I	RUN = Run,	STEP = S	Step Run,	HGR = H	ligh Gradien	nt Riffle (>4	%), LGR	= Low G	radient Riffl	e, POW =	Pocket W	ater, SH	T = Sheetil	ow; th	1 yee	whe
The minimum unit length si	hould be "	1x active	channel	width, un	less there	is somet	hing not	able or u	inique abo	ut it.						2/	Sift	au	Bert	+
Note if cover is a significant or	dominan	t feature	of the un	it:						44677					0.01	11.	MA.	2000	275	Ner
Channel Confinement. 1=Conf	lined Shal	low; 2=C	onfined [a nas ins Deep; 3 =	Moderate	ow overh Confined	anging v I (<2x we	egetatio	n, etc.) Innel width); 4=Unco	onfined (>= 2 we	tted chanr	nel widths	Q/C miti	aus: /	5		P	
Criteria for LWD is:any downe	d wood wi	ithin bank	dull width	of chan	nel =or> th	ian 1/2 b	ankfull v	vidth.				.			1.67	0				
Naterfalls, high velocity chutes	s or cases	ades at a	pprox ba	nkful flow	50°, 50-75' vs. NOTE \	VERTICA	a. 6 25 Al Droi	= 6-12", P and IF	25-50') CONDITIO	ONAL or I	PERMA	NENT								
Spawning Sized gravel subme	arsed in ar	n area of	adequate	e depth a	and velocity	y within c	one unit													
otes regarding access				1											-			F		-
bints (road condition, bridge							1										-			
iosainga, traiis, etc.)	1	1-	2D	0 1	066	350	1/4	211	4570	1										
acres toy	101/) 11	10	2	P	14	11	N	00	/										
1000	U	6			a.). ***			i.	0				10	1.	1	.1				
- Dara	00	2	min	In	Cl	Li	V	150	A	Cil	ist	221	Ver	el.	61	200	L			
40)0	101 10 13)	Ő			l					/		0				

STREAM HABITAT T Stream/Reach/Subreach:	Prez	SURV	EY DA	TA (P	AL 0	a-Bear,	PG&EDru	m Spaul wl b	ding) vidze	Data Sl Page Date	2 2 9/15	25 of 2	car*	4		14	
UTM: 0666 36	02/4	345	24	AD 83 (H	labitat unit l	to bas	se171:		· PM	ſ	1				Map Grad	dient:	
Habitat Unit #	17	1			177	2	- 1.	17	3		170	/	-	-	17	5	
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU RAP	FALL	CAS CI	HU RAP	FALL	CAS	CHU F	RAP	FALL	CAS C	HU RAP
	HGR	LGR	GLI	RUN	HGR	LGR	ELI) RUN	HGR	LGR G	LI RUN	HGR	LGR	GLI) R	RUN	HGR	LGR (GLI RUN
	STEP	POW	SHT	COP	STEP	POW	SHT COP	STEP	POW SI	нт сор	STEP	POW	SHT C	COP	STEP	POW S	нт сор
*note if dammed pool	MCP	LAP	TRP	PLP	МСР	LAP	TRP PLP	MCP	LAP T	RP PLP	MCP	LAP	TRP P	PLP	(MCP)	LAP T	RP PLP
Length (ft)	00	ey s	1/0		- >	-27	7	-	764	0.10		43	12 .1	-		2:25	
Est. Avg. Width (ft)	-6-1	1.44	42	· .	56	75	51 L-1	- V	9.16	2842	41	4 9	13 4	5	41	35	54 23
Est. Avg. Pool Depth (ft)	.2		- 5	1 4 ²	BHI)=:	2.Ff	BP	D21.25		BFD	22			BRI	2=175/	LSX
Max. Pool Depth (ft)	3.5	F. C.				/			1			-				3.1	
Pooltail Embedded %	51	0	-	/		/	_		1		-		\frown			30%	
Significant Cover?*	INSIGNI	F	BLDR	2	INSIGNI	F	BLDR	INSIGNI	F BLI	DR	INSIGNI	D C	WOOD		INSIGNIE	BL W	DR
SUBSTRATE COMPOSITION	N .		1000		Section.	AL AL		17225123			Mar Balan						
Dominant	BED	BLD	1.00	COB	BED	BLD	COB	BED	BLD	COB	BED	BLD	(C	OB	BED	BLD	СОВ
Substrate	GRV	SND	-	SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	S	LT	GRV	SND	SLT
Subdominant	BED	BLD	-	COB	BED	BLD	СОВ	BED	BLD	COB	BED	BLD) C	OB	BED	BLD	COB
Substrate	GRV	SND	2	SLT	GRV	SND	SLT	GRV	SND	SLT	GRV	SND	S	LT	GRV	SND	SLT
Dominant	BED	BLD	é	COB	BED	BLD	СОВ	BED	BLD	COB	BED	BLD	ė	OB	BED	BLD	COB
Bank Substrate	GRV	SND	D	SLT	GRV	SND) SLT	GRV	SND	SLT	GRV	SND	S	LT	GRV	SND	SLT
Length of LB and RB Exposed Banks (feet)	154	4			501	rbe				5		5' R	RBD		incie	sed, u that	elero s
Confinement ⁴	4				·	4			4		1.000	l				1	
Unit Flagged/ Labeled? (Y/N)	Jes-	-bas	SP			N			N			N			V	105	0
Tributary Inflow in cfs	LBA	Oil «	2		vba	Thef	3		-0-			Ð					
Landmarks or photos	10	14	20	LDS	1	421	UDS	11	122 1	-VS	147	13 L	JUS		#140	15 LD	S
		Diameter		Length		Diameter	Length		Diameter	Length		Diameter	Lo	ength		Diameter	Length
	"	class	1	Class	#	class	ciass	- "	class	class		class	CI	ass	#	class	class
within bankful width		/				\nearrow							1			-/-	1
	/		1		/									_	1	/	1
No. of LWD Pieces	Ø					-		1	/				2	_		A	
Fish Migration Barrier ⁶ (y/n)?	no					no			no	<u></u>		no			V	10	
Spawnable Gravel Area (sqft) Est. ⁷ (1/4" - 2.5")	P					Ð			Q			-0-			4	9	
Maximum Spawning Gravel Patch Size (sq-ft) Est.	N/U	A				_			_			-			-		
Comments / Observations: Fish? Wildlife? Amphibs? Backwater or side chan. amphib habitat? Riparian? Landmarks, Photo #s, Etc.	t is aver dep	fer age	ef I BF	Sv	Ma			200 Seales	grad 65 0-henry	rrf × Bkelche Manatri	Gli peol	0500 pos hollo	e of r chuck 306	1	poor but shell	- SC. Fenov	sh.
¹ FALL = Falls, CAS = Cascade, C Pools: COP = Convergence, M The minimum unit length s ² Note if cover is a significant o (e.g., logs in stream, lots of i ⁴ Channel Confinement: 1=Con ⁶ Citatoria to UMD isour down	HU = Chute CP = mid-cl hould be 1 r dominant boulders, 2 fined Shal	e, RAP = F hannel poo 1x active t feature >25% sur llow; 2=C	Rapid, GLI channel of the un face are onfined [I = Glide, Lateral, T width, ur it: a has in: Deep; 3=	RUN = Run RP = Trenc nless there stream or I Moderate	o, STEP = S h, PLP = P is someth ow overha	tep Run, HGR = lunge ning notable or inging vegetation (<2x wetted ch	High Gradier unique abo on, etc.) annel width	nt Riffle (>4%), but it.	LGR = Low G	radient Riffi	ie, POW = P Q nel widths)	Pocket Water	, SHT (= Sheetflow	EUS6 SR	storen

Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 | 25 = 6-12", 25-50') ⁶ Waterfalls, high velocity chutes or cascades at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

⁷ Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access points (road condition, bridge crossings, trails, etc.) lotes regarding access noints (road condition, bridge rossings, trails, etc.) Kots first of most whitely RLF ywhystyr. flows (Thr) roles & mitple flow

tres	male >	allenta	1 will 8	Pro .	DICA	12
del n	ANDIN LA	its to 1	75	•	KI GD	
井	HAB	V	W	WAXD	NOTE	
176	1-6R	41	24	-	3%	
0	666360/4	364831	@ base	Bid/cos. S.J.	photo 1427 408	
177	MP	113	26 33 31 25	2.5	Dha121426	
Vai	had bri	ase x5	wit	Cob/Ald Sub.	30% ens	
178	LOR	60	29,26,28	BFD:2-	175 2%	
179	GLI	78	25,26,23	1.2	-	
V.C .:=	0.75 N	NX dep.	1.2 ! doe.	not met.	SW GU	
1:60	ich	24	25	29-	pm-120 Ctv.	
101	LOR	156	15,22,28	26	3910	1
182	MCP	337	38, 37, 43, 45, 30, 23	4.25	-	
	4 MMG	d/s cn	mit + BI	dis ishint	Vm @ top	
013, 5400	1 simon s	cobbles .	+ bldrs b	t at in bi	dep.	
atta	15, 1 m	henjing	ver. Bidy	1204. 5065	Wofe	
183	16R	53	15, 15,	Billillos.	32	
184	MCP	98	3028.29	1.25	Bld/cos w/sond	
185	LOR	86	24,26,33	NH WSI	94%	
04	66329/4	365161	(m hay)		
186	NCP	63	31 33 29	2	Cabl Bus Kand	
187	LGAL	26	ZB		22 .5	
188	MCP	LOB	35,269	0 2.5	- 10	
-	r.c.= 0.	a	Shella	1 stop	at a	
189	LOR	214	24 36 3	3	390 150	
	- 14.4	114	34 37 36		2% 5	

8 V.

8.9

	*			*		*		*			
	aregone	k (unt)	70. V. R.d.	4	(FC	9/15/09					
	11-	HAB	i	W	Max D	NOTES K	9/ 5B			R. 13	
	190	MCP	132	36,34,36	3						
	Smil	fills Doo	L	an and a second							
_	191	MCP	60	27,29	3						
	Bolder	control a	egenetos	190 + 191							
	Fen	ce @ goat	pasture	modific	ationld	ightered					
ŝ	192	Mor	26	27	· · ·	6%					
_	Bld	niffle.	и м.								
_	193	CGR	171	22,23		3%					
5	Lower .	M poorle	formed	steps; fla	e/deepo	Flumpcol					
g	194	RUN	46	22,17	1.25		 I 		27	10 B	37
5	V.L	0.75	v.d.	= 0.5 docon	+ meet	dever :. rm	,				
1	195	LGR	63	15.	243	3 4010					
	Mag	modelog	le Ok	ap only. O	666313/4	365457					
1	- 196	EUN	50	32,36	,35	uide, shallow					
	197	MCP	255	52, 41,46	4.25	long, deep					
f	illel w/ sa	nel; ad, h	o log yaca	1; +1' For	BFD	~ 1					
V	1-12,50	(W) 1-12	25 (W); 1	SOLED BE	12-31.90						
	198	LGR	49	29,36	-	3%					
	199	MCP	132	32,31,3	11,75						
	Brid	ge obble	325/436	SSAL	sand/Bidi	Sub, 30ken	rest,				
_	200	LGR	278	27,32,3	2,8,25	3%					
ę,	FD=1.5 p	10 del oble	· m fla	He ocenin	s but multip	the fimilines elser	we.				
1	201	MP	94	26,27,29	1.5						
	4	Y.L. =	0.4 -1	neeks,							

* *

F	HAB	L	W	MARD	Nores	
202	RUN	60	24,21,27	-		
non in	from a	apper M	in gli, b	tsin h	h.	
203	LGR	112	32,33,34	-	490-14	
204	MCP	193	32, 29,38,	36 3.75	50% Emuel	
3410	fills por	1. cows	streams de	rd. Chid	r/send) LOS	
205	LOR	36	27,		3%	
Padr/c	abde Fla	SOTOP	(but for sat	UTM)		
206	MP	94	32, 27, 21	2.25		
UT	u 06663	30/4365	849			
207	LGR	60	25	MM.	4% 1929	
208	RUN	30	27		425	
209	MCP	201	36	1.75	- (3) ·	
Fille	ed w/sand	- B) Al-	15and subsu	de Trick	w. alger	
dors, 50	mel pilias int	o str. (2.05 cfs a	lust/mil	LEA 11/22	
Shello	wowed	14	30-1432	- doys a	pool + book	
no	LOR	29	34	-	2%	
211	MCP	123	35,38,31	20	-	
WIN/G	Lizota	1 (~ 25	(mg)			
212	RUN	34	25,22,	26	bldi/cob	
213	MP	54	22 17 10	3 2.9	bldy/cob	
o' sko	Through no	trucss + B	ldrs Aiganore	0 212-17	13	
214	HGR	25	29	_	8%	
Show	doldr ->	pspedo ste	ps; dolique 1	MK will	Photo #1432.LUS	
25	NCP	87_	29 76 27	- 20	#11/24115	

1.000

усл	A - oneque	de 700	leens IV.ra	639.9-1	5-05 K/GB
#	HAD	4	w	MaxD	NOTES
216	LGF	93	30,5132	-	490-M.
217	Pas	36	30,27	-	(
8mi	11 sede, 1	mulh-An	ead, Bldr -	dum	#1436 phato
218	MCP	50	27,35,2	7 2.0	2m2 de
V.L.	=0.5	poor :	sh; wide,	Act, Shall	lm/
219	POW	186	37, 28,	29.25	rhubarb
220	MCP	20	21	2.0	
221	RUN	17	17	-	(
222	MLP	127	29,25,30	20	#1437 LDS
Thile Have	r.L.= 0.	5	Tail-	glide like	
223	Pow	32	28	0	#1432WS
224	LGR	70	29, 22, 2	f Bldr-cob	3%-NH-obligu
225	Purd	44	25	1.5	#1439 WS
	r.(.=0.5	Black	leds. No 1	nucement ver	tw 12t
D	ov sc. Can	cont me	tr.d.) no	flow mif	arnity : Pow
	FIND SW	avey a	1666538/	4366168	
		<i>i</i> 1			
			_		
					6
	_				
	1				
	-				
				÷	

CTDRAM HARTAT	TYPING	STIP	EVD	ATA (VTD Vn	ha-Bear	PG&	EDru	n Spaul	ding)		1								
SIRLAW HADIIAI	A TENNO	JORV	DI DI			Ja-Joean	,		C I	- b		Data Sh	eci #	1						
Stream/Reach/Subreach;	Ore	gor	10	ree	k-	peli	W	log	Cab	nD	am	Page	1	of	1					
Potty HO	vde	Ste	13	Ga	eas	zai	la	1				Date	10/1	3/00	2					
Team: 10000054	3/42	366	181		a b black sound a	26	ba	S			PM			·			Map Gra	dient:		0
UTM: 1000001	-110	21.		1710 83 (1	I Content Unit	10-1		-		20	2	-	2	09	-		1230	2		
Habitat Unit #		62.00	0111	DID	PATT	CAS	CHIL	DAP	RALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
Habitat Type '	HCR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGB	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SIIT	COP	STEP	POW	SHT	COP
Paole if demned pool	МСР	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP (MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP
Length (ft)	120,	5	•		51	-			86	2	-		12	4	24		16	er 1		
Est. Avg. Width (ft)	21,1	6,10			17	18			15	,19	17		HI	135	LL			016	2	-
Est. Avg. Pool Depth (ft)		-			•					-			5,4	, 2.5	,0		-			_
Max. Pool Depth (1)		-BF	Dal	.25		-BFD	sel.	95	-	_			St	-	· · · · ·		-			
Pooltail Embedded %	*	-			-	24	-		-				15	5/0	WY DD	5	INSIGNI	F	BIND	
Significant Cover?'	INSIGNI VEG'	F (BLDR'	2	INSIGN		BLDR	>	VEG	IF C	WOOD		VEG		WOOD		VEG		WOOD	
SUBSTRATE COMPOSITIO	N				ALC: NOT THE					-	5			-	0	COR	ner	PT D		COR
Dominant	BED	BLD	\supset	COB	BED	BLD		COB	BED	BL		COB	BED	BLD	D	COB	OPV	CND		CUB
Substrate	GRV	SND	All the second second	SLT	GRV	SND		SLT	GRV	SN		SLT	GRV	SND		SLI	GRY	and		361
Subdominant	BED	BLD	\langle	COB	BED	BLD	0	COB	BED	BL	D	COB	BED	BLD	(COB	BED	BLD		COB
Substrate	GRV	SND		SLT	GRV	SND	and all the	SLT	GRV	SNI		SLT	GRV	SND	No. of Concession, Name	SLT	GRV	SND		SLT
Dominant	BED	BLD	\supset	сов	BED	BLD	\mathcal{D}	COB	BED	BL	×	COB	BED	BLD	2	COB	BED	> BLD		COB
Bank Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SNI))	SLT	GRV	SND	100 - 111 oc	SLT	GRY	SND		SLT
Length of LB and RB	1 th				K				as				RBA	LE	3A		6			
Exposed Banks (feet)	P				P				4				Ø			1 a martine (* 1	P			
Confinement ⁴	1				1				10	5-1			3				3			
Unit Flagged/ Labeled? (Y/N)	Ves	ha	SP.		No	ŝ		1	no				na	2			yes	5 F	OP	
Tributary Inflow in cfs	AVA	e			NI	A			NI	4			NI	Ą			1	1/4	2-4712	
Landmarks or pho:25	100		215	27		2121	5		21	29			21	30			2	2131	2	
	1	Dismater	0.10	Length		Diemeter		Length		Discoster		Leagth		Diemster		Leagth	2	Dismeter		Lengt
10		class		class		class	1	class	#	CIASS	-	class		ciass	1	Class	1	0	1	CIEDO
Large Woody Dabris ⁵		4.	-	200		-					-		-	/	1			/	L	
	1		1		/		1		مر مستقل	-	1		1		1		/		1	
No. of LWD Pieces	Ó	1.			CS				ø				Ø				B			
Fish Migration Barrier ⁶	D				OD				Ø				Ø				Ø			
(y/n)? Snawnable Gravel Area (soft)	T				140				1								Dh			
Est.7	· Ø				B				Ø				17				φ			
(1/4" - 2.5")				-	P					LA.			111					^		
Maximum Spawning Gravel Patch Size (sq-ft) Est.	NA				N/	ł			N	71			N/	A			NP	4		
Comments / /	GA	beca	use		N	of POU	U be	cause	4	1.			top o	of po	al ru	1-	121			
Observations: Eish? Wildlife? Amphibs?	sur	Face	asi	tate	2 3	ivera	WA	FIDAS	, , ,		1 /		like	- due	1051	ight	111			
Backwater or side chan. amphib	Alth	push	ma	10	115	ed in	it #	25	Big	bul	ders		con-	Frol			064	1004	6/	
habitat? Riparian? I andmarks, Photo #s, Etc.	reser	FID	25	6	G	trutt	nine	4									11-	2/10	24	2
enternalised with the	In Sh	1.1		-1	101	a. A. es		3	1								1 7	200	-76	<i>.</i>

FALL = Falls, CAS = Cascade, CHU = Chule, RAP = Rapid, GLI = Glide, RUN = Rvn, STEP = Stop Run, HGR = High Gradient Rillie (>4%), LGR = Low Gradient Rillie, POW = Pocket Waler, SHT = Sheetlow, Pools: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

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Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-25', 25-50', 50-75', 75'+ (ie. 6 | 25 = 6-12", 25-50') Waterfalls, high vélocity chutes or cascades at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access points (road condition, bridge crossings, traits, olc.)

RRH

Q/C initials:

Stream/Reach/Subreach:	620	MUN	are :	RIM	10	Jua	81K	1 1.00			Page _	ain	of	109					
Ceann:	90	*	·	-							Date	710	1 1	0					
TM: 06666646	43660	-42	_NAD 83 (liabitet unit i	to 23	ba	se			PM						Map Gra	adient:		-
isbitat Unit #	2	31		2	32			23	3			2	34			2	36		
abitat Type ¹	FALL	CAS CH	U RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
	STEP	POW SH	T COP	STEP	POW	GLI SHT	COP	STEP	POW	SHT	COP	STEP	POW	GLI	COP	STEP	FOW	GLI	RUN
iois if demmed pool	MCP	LAP TR	P PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP
ength (ft)	3	129		15	7			. ++	lel			89	-			98			
st. Avg. Width (ft)	14	,10		243	1,38	,14		15	130,	13		42	23	,2 ((11 A) (1 - A)	12, 1	8,3	0	-
it. Avg. Pool Depth (ft)	-	-		6,5	, 4,	2.5	0	-				-							
ax. Pool Depth (ft)	BF	D 21.3	,	6+				BFD=	1.5							-			
eitail Embedded % gnificant Cover?'	INSIGNI	BLD	0	INSIGNIE	0	BLOR		INSIGNI		BLDR		INSIGNI	~ ~	BLDR	>	INSIGNI	F	BLDR	·
INSTRATE COMPOSITIO	VEG'	WOO	Ó	VEG	-	WOOD		VEG		WOOD	in and	VEG		WOOD	-	VEG		WOOD	(
minant	BED	BLD	COB	BED	BLD	-	COB	BED	BLD		COB	BED (BLD	5	COB	BED	BLD)	COB
bstrate	GRV	SND	SLT	GRV	SND	j	SLT	GRV	SND		SLT	GRV	SND	1-	SLT	GRV	SND		SLT
bdominant	BED	BLD	COB	BED	BLD	(COB	BED	BLD	(COB	BED	BLD	(CON	BED	BLD	\langle	COB
bileate	GRV	SND	SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	1000	SLT	GRV	SND	-	SLT
minant ak Sobstrate	BED GRV	BLD	COB SLT	BED GRV	(BLD) SND	1	COB SLT	BED GRV	BLD		COB SLT	BED GRV	SND	2	COB SLT	BED GRV	BLD	*	COB SLT
igth of LB and RB losed Banks (feet)	NA			N/	A		Τ	NA	t		1	NI	ł			NA	+		
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Flagged/ Labeled? (Y/N)	VDC	bas	2	00				M	0			no	1			1 0	A C	22.0	>
natary Inflow in cfs	20	7.00.2		10.0			-	h	0	-	-	n -2				100	10	-	
dmarks or nhoiss	212	2		10	32		-	1	0			21	24			2120	- 11	1	0170
and a provide	Di	ianater	Length	D	inmeter	L	cogth	D	lintustor		Leagth	01	Disputer		Leagth	115	Difaster	200	Length
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e Woody Debris" in bankful width		1			/	-			/	1	-	4	/	1			~		2
	-	1		1		1		1		1		-	_	1		-		1	
n wetted width	1.			Ø			1	φ				ý	9			B			
Migration Barrier ⁶	NE)		no			-1	no				n	2			no			
mble Gravel Area (sqft)	A			ch				R				1				d.	1		
-2.5")	φ			Ψ		-		Ø				9				P			
mum Spawning Gravel a Size (sq-fi) Est.	N	la.		N	4		P	J/A				NA	F			NA			
ments /	27.			top of	10 10	al	T	31.	;							Nea	kly s	step	red
Wildlife? Amphibs?				10 10	JW to	run	h	navh	0 -0	lik						but	stei	55	1
vater or side chan. muphib 17 Riparian? I andmarks,				like	Aller	ale	ľ	cha	Un	0						pres	ent	1.	.
Ns, Etc.				with	of the	ALK-	10	2 hic	ther	hic	INS				9	nodi	fied	- 3	The
= Falis, CAS = Cascada, CH	U = Chule, R	AP = Rapid, GL	= Gilde, Ri	IN = Run, S	TEP = Ster	Run, HOI	R = High	Gradient	Wile (>4%	,LOR -	Low Grad	tiont Rillia.	POWnP	ockel Wa	ter, SHT	- Sheatton	210	we	NEO
le: COP = Convergence, MC	P = mid-chan ould be 1 = e	nel pool, LAP = I	Lateral, TRI width unlo	= Trench, I ss there is	LP = Plun somethin	ge g notable	or unio	ue ebort	H.						/		ah	on	ine
Il cover is a significant or	dominant fee	sture of the uni	it:		Outshare	ion urou	aller .									-	PH	LDS	21
nel Conlinement: 1=Conti	ned Shallow	; 2=Confined [a nas instr Jeep; S=M	oderate Co	nlined (<	prig vaget 2x wetted	channe	el width); 4	4=Uncont	ined (>=	= 2 welle	d channel	Q widths)	Chung	u)1	1	PA	-	
tia for LWD is:any downed a classes: 6-12", 12-24", 1	wood within 24-36", or 36	barikluli width 5"+ x 3-10', 10	of channel -25', 25-50	i =or> than ', 50-75', 7	1/2 bank 5'+ tie, 6	dull width. 25 = 6-1	21, 25-	-50')					/						
Italis, high velocity chutes	or cascades	at approx bar	the flows	NOTE VE	ATICAL	DROP and	d IF CC	ONDITION	IAL or PE	RMANE	ENT		/						
wind Oren Busses arough	न्यत्त हा हो। हो	er or avequate	oepin an	a velocity w	HERE ONE	UNIX .	10		_		-						_		
regarding access (road condition, bridge												1					-		
nge, trais, elc.)												/			14	221	2		
	· •											/		er	mul	المرام	H		
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																	and the second se		

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OTDUANA MARITAT	TVPING	CITPU	FYD	TA (VID Vub	a-Rear	PG&	EDru	m Snaul	ding)										
SIKEAM HABIIAI	I I FINC	JORV	EIDI	1 111	up rub	a-mear	,100.		in opnu	ung)		Data Sh	eci #	2						
Stream/Reach/Subreach:)regi	on C	ree	KF	ela	sto	g Co	abiv	2			Page	3	of	1					
Toom Patty Hav	des	441	ind	Gae	eab	, aild	21					Date _	0/0	100						
UTM: 40 66021,	436	163	53_N	(A)D 83 (II	labitat unit M	ba	se 2	236			РМ			1			Map Gra	dient:	_	
Habitat linit #	23	6			12	37			2	38			2	39			2.	10		
Habitat Type 1	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS (CHU	RAP
	HGR	LGR) GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	COP
	STEP	POW	SIT	COP	STEP	POW	TPP	COP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP
*aole if demmed pool	lar	LAP	. TRP	PLF	105	LAT	IN		121	0			9	1			3	2		
Length (II)	15	74 7	0		33	21	15		-112	163	30,7	21	2	3.3	5.18	-	15	24		
ESL Avg. widen (II)	12	1.11.	0				12	0.000	1_	1					,		-			
Est. Avg. Pool Depth (ft)	-	1	in the second se		-	_			OF	2-1-	25	1.5	Br	nel	15			n		
Max. Pool Depth (A)	RF	2-1	2		-				131	1.	1 3			1				_		
Significant Cover?	INSIGNI	¥ (BLDR)	,	INSIGNI	,	BLDR	,	INSIGN	F	BLDR)	INSIGNI	F	BLDR		INSIGNI	F BI	LDR	1
ormown www.compositio	VEG'		WOOD	-	VEG		WOOD	A Sel	VEG		WOOD		VEG		WOOD		VEG	W	000	
SUBSTRATE COMPOSITIO	BED	BLD	2	COB	BED	BLD)	COB	BED	BLD		COB	BED	BLD	>	COB	BED (BLD		сов
Substrate	GRY	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRY	SND	1	SLT	GRY	SND		SLT
	BED	BLD	1	cos	BED	BLD		COB	BED	BLD		COB	BED	BLD	(COB	BED	BLD	(COB
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	Ren anv	SLT	GRV	SND		SLT	GRV	SND		SLT
Yana Jawa I	BED	BLD	U.	COB	BED	BLD		COB	BED	BLD)	COB	BED	BLD	>	COB	BED	BLD)	COB
Bank Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	A COLUMN	SLT	GRV	SND	terror and an	SLT
Leasth of LB and RB	-								,		5.000-5	180	17	/			int			
Exposed Banks (feet)	Ø				d				Ø				, Q				φ	2		8
Confinement ⁴	1				1				3				3				3			
Unit Flagged/ Labeled? (Y/N)	yes	60	je-		no				no				n	2			ye.	s-h	DE	>
Tributary Inflow in cfs	no	1			010				no				no				No	>		
Landmarks or pho:25	2	1.39			21	40)		214	d:			21	49			21	50		
· · · · ·		Dianater		Length class		Diameter class		Length class	۰.	Discotor		class		Diameter class	¥	 Leagth class 	1	class		class
Large Woody Debris ⁵			1				1	-		/	1					-			1	1
within bankful width		/	1			/	-		-	_				-	-			_		_
No of I WD Biares	10		1								- X.		-	6			6		•	
within wetted width	9				Q	l			Q.				<u></u>				P			_
Fish Migration Barrier	n	ο.			10.0				no				n	0			NU			
Spawmble Gravel Area (sqft)					AGV	5	3×3	21	1				1	1×1	C	ulal	1	1	1h	
Est." (1/4" - 2.5")	Ø.				34	1,2	×3	2	Ø				B	out	orn	Jerro	N	IR -	4	
Maximum Spawning Gravel Patch Size (sq-ft) Est.	N	1A			34	3			NIA	-			N	A-1	ΧI		W/A	5		
Comments /					POW 6	est a	locar	1-	mon	lified	R	midd	10 de	1	r.		3%	,	. 1	
Observations:	11	2		18	Word	lalo	e GL	1	ra	k-bu	ned	er	POW	1-1-1-14	e, low	K	06	6658	381	5
Backwater or side chan. amphib	0.000.4				but	yery	Un	nt do	2 do	mo) ro	nd	muc	ch t	20	Doces	4.0	4366	503	2
habitat? Riparian? I andmarks, Photo #s, Etc.					SHE	stra	te	nou	X-i	ngipl	votos	8	Sh	alle	w-	10 200	zhin	und bu	ruld	ers
						1.0			210	2,214	13	2.5%	NO	not	LGVZ	3.	2123	a		_

FALL = Falls, CAS a Cascade, CHU = Chule, RAP = Rapid, GLI = Glide, RUN = Run, STEP = Step Run, HOR = High Gradient Rifle (>4%), LGR = Low Gradient Rifle, POW = Pocket Water, SHT = Sheet Pools: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

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Notes regarding access points (road condition, bridge crossings, traits, olc.)

Red-begged adolf frug @ HMM 238 2144, 2145, 2146 = photos june mill-RLF 2147, 2148 = photos adult KLF

STREAM HABITA	Ore o	G SUR	Cr.	eek	NID Yul	a-Bear	,PG&	E Dru	m Spar	ılding)		Data S Page _	heei #	2	7					
Team: PH 3G	13	U.J.J	500		-			d.				Date _	10/	10.	1					
UTM: 00005	6/43	166.	190	NAD 83 (I	Labitat wait 1	10.1 <u>0</u> a	21	41			PM						Map Gr	adient:		-
Habitat Unit #		24	1		1	242	_			243			2	44			1	243	5	
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CRU	RAP
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	(LGR)	GLI	RUN	HGR	LGR	GLI	RUN
19 J 20 S - 25 S - 19	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP
*aote if duringed pool	MCF	10		PLP	MCP	H	110	FLF	-OA	LAP	IRP	FLF	ILT	LAP	IRP	PLP	HU	LAP	TICP	PLP
Length (II)		10	20	1	- di	4	22		-11	- 6	22	24	24	15			1.21	19	11	
ESL Avg. Width (II)		6,20	10		1 X Z	110	- 16	10	-1	-01	651	61	20	10			04	01		1 000
Est. Avg. Pool Depth (ft)					5.0	14.5	130	ip	1.5	5			-	_			9	BF	D = (15
Max. Pool Depth (fl)		_			0.5	t		_	-				-				4	-		
Pooltail Embedded % Significant Cover? ¹	INSIGN	IF	BLDR		INSIGNI	541	BLDR		INSIGN	IF (BLDR		INSIGNI	r	BLDR		INSIGNI	F	BLDR	,
SUBSTRATE COMPOSITIO	ON		1000		120	Sawa	1000	1	120	ina i	1000		100		1000		1120		1000	
Dominant	BED	BLD	2	COB	BED	BLD		COB	BED	BLD		COB	BED	BLD)	COB	BED	BLD)	COB
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	-	SLT	GRV	SND		SLT
Subdominant	BED	BLD		COB	BED	BLD		COB	BED	BLD		COB	BED	BLD	(CON	BED	BLD	(COB
Substrate	GRY	SND		SLT	GRV	SND		SLT	GRV	SND	·	SLT	GRV	SND		SLT	GRV	SND		SLT
Dominant	BED	BLD)	COB /	BED	BLD		COB	BED	BLD)	COB	BED	BLD		COB	BED	BLD		COB
Bank Sobstrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SNID		SLT	GRV	SND		SLT
Length of LB and RB Exposed Banks (feet)	Ø				ø		10040011		d				T	4			0			
Coolineisent ⁴	1				12	/	1 1000		7,				f		-5-42-114	0.000	/			
Unit Flagged/ Labeled? (YAV)	ye	5,6	ase	2	no				n	0			no)			A	FYC	st	V
Tributary Inflow in cfs	n	0			no)			n	0			no)			10			
Landmarks or pho:>5	.2	1.51			215	2			21	53			215	54			215	5	5	-
	. '	Diameter class		Length	D	iemster lass		Leagth	4	class		Leaguh		Class		Length class		Diamster		Length
I awas Waadu Dahris ⁵			1.	-			1				1	-			1				1	CIRZS
within bankful width		/	1			/	1			/	1			/	1			/	1	
	-		1		1		1		/	-	1	_			1		1		1	
No. of LWD Pieces within wetted width	Q.	• •			Ó				Ø				Ø				Ø			
Fish Migration Barrier ⁶	-00				AD				n	υ			no		_	- <u>1</u> - <u>1</u>	no	>		
5pawzable Gravel Area (sqft) Est. ⁷	de.	242	-,18	1	d				Ø				M.				Cl			
1/4" + 2.5") Maximum Spawning Gravel Patch Size (co-ft) Est.	da	. 2	62	+	Ma			-	NIA	4			na				N/A	1	-	-
Comments / Diservations: ish? Wildlife? Amphibs? lackwater or side chan. mmphib abitat? Riparian? I andmarks., hoto #s, Etc.	POW shall shall pow base	-life low	e la	それと	-l-				411, sternot	són ps ov	n Les	AL	fish Lus	n-4 R-d urfm	n Frit	2 4	0660	200	3/	

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ex?

bregon C lug cab	ndam	ivo		patty He	derty Barler
HMUH	habitat	length	width	max dept	photo
246	LGR	1024	19.25.23	-	2156
2.5%-	tra boulde	rs throw	ghont		
247	POW	39	23,30,		
248	LGK	44	30,25,		
34.		1.001			
249	MCP	89	33,35	3.5	
SPLIT		43	345		2157
250	LGR	71	21,25	-	2158
17, -	Surface	agitatis	n present	, chanely	vidiz
1777 D. 4	almost 1	tivenzent,	somelirun-	like Leature	sinot str
251	RUN	49	44.42		
POW-1	like, but sha	llow w/n	o scour as	round bid	ens
257	LGR	73	21,23	-	
,5%					
253	LGR	83	14,12	-	#2157
37.		1000 - 200			
split-	POOLRB	A, run	LBA -	-111 Long	x
2.54	MCH	56	63	6+	2140
255	FAL	15	15		
6 64	barrier	blagge	d@ topl	2ddo725/c	1366817
256	CHINT	22	30	0	
257	CAS	15	56		
258	PON	43	41		() (
	CAS	15	58		-
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Jugano	vele kelowi	аусоби De	(m	/0/ Pt	104109 1,GB	No 612
United	habitat	length	width	m. dept	photo	
2501	STEP	35	27	and a		
SPLIT	- dive 464	vojent, sl	allow unde	er darmava	2161	
2:60 -	MCP	42	40,33	4	2162	
di	ided by w	raised bed	brock in ce	nlev		1.2
2.69	LGR	35	49		2165	51
ч	1. 70	verbed	nock-			
24	MCP	94	33,49	64	22	1.
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Weil	at top	subsar	Hally re	ducing fl	ower	WWW C
irviouti	on from	weir-lo	poles print	ta; phot	us 2163,2	210
and 21	ude; Wette	d chony	el ~ 35f	4		16Raid
264	MC.P-	253	25,50	(1	2167	Lug A
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STREAM HABITAT TYPING SURVEY DATA (NID Yuba-Bear, PG&E Drum Spaulding)

Stream/Reach/Subreach: Oregon Creekibelow Log Cabin Dam. Team: Patty Havdesty & Gaca Baitey

3 Data Sheet # 0 Page 10/04/00 Date

UTM: 0666921	43	441:	21	(A)) 83 (II	abitat unit I	Yo,					PM						Map Gra	dient:		-
Habitat Unit #	12	100	-		T	200	7	s		2168	2		2	LLig			23	Ø		
Habitat Type 1	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
	STEP	POW	SITT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP
*aole if dammed pool	MCP	LAP	TRP	PLP	(MCP)	LAP	TRP	PLP	(MCP)	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP
Length (ft)	8		<u>.</u>	1.1	1	DY				4-4			- 31	2	15			20		
Est. Avg. Width (ft)	-13	56			30	37	,37	-	2	1,15	2		12	2,1	4			14,23	212	2
Est. Avg. Pool Depth (ft)	-	<u></u>			4,	3,	1,1	2	3.5	3	,25	.0	-	· · · · ·			<u> </u>	->		
Max. Pool Depth (ft)	-			-	4				30	<u> </u>			-					_		
Pooltail Embedded %		-			0		-		Q						-		-		5	>
Significant Cover?'	INSIGNIE VEG'	~	BLDR WOOD		INSIGNI		WOOD		INSIGNI		WOOD	0 	VEG	r (WOOD		VEG		WOOD	
SUBSTRATE COMPOSITIO	(RED)	DID		COR	820	bro	1	COR	Gen 2	BID		COR	(BED)	BLD		COB	BED	RLD	2	COB
Dominant Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRY	SND		SLT
Subdeminant	BED	BLD		COB	BED	BLD		COB	BED	BLD	7	COB	BED	BLD	· · ·	COB	BED)	BLD	2	COB
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	/	SLT	GRV	SND		SLT
Dominant	BED	BLD		COB	BED	BLD	2	COB	BED	BLD		COB	(BED)	BLD		COB	BED	BLD	2.0 C	COB
Bank Substrate	GRV	SND	-	SLT	GRV	SND		SLT	GRV	SND	eservitive	SLT	GRV	SND		SLT	GRV	SND		SLT
Length of LB and RB Exposed Banks (feet)	Ø	81-1			5	в			Ф				Ø				ø		1	*
Confinement ⁴	1	1				1			1				1				1	2		
Unit Flagged/ Labeled? (Y/N)	Ves	ba	se		01)			n)		1.11	no	6			tes	-to-	P	
Tributary Inflow in cfs	no			1	na	с. ¹ .			00)		_	no				No	6.2		
Landmarks or pho:>s DT	Ath2	.21	169	1	2	17	0		21	71			21	72			31-	73		
Large Woody Debris ⁵ within bankful width		Hamater class	-	Length		class	+	Length class		class	1	Length Class		class		class		class	4	Length
No. of LWD Pieces	et.				1		ì			Ń	Ì		0		i		d	7	1	
within wetted width Fish Migration Barrier ⁶	Y				0	~				<u> </u>			Z.				4	0		
y/n)?	1	185		_	A 10	/			1	10			110				41	v		
Spawmble Gravel Area (sqft) 8sL ⁷ 1/4" - 2.5")	¢	5	_		ø					Ø	-		Ø				ϕ			
Maximum Spawning Gravel Patch Size (sq-ft) Est.	N	10		4	N/	A		1	۱	NP	١		N/	A	3	_	N	A	2	-
Comments / Diservations: Tish? Wildlife? Amphibs? Inckwater or side chan, amphib abitat? Riparian? I andmarks, hoto #s, Etc.	461	ba	wi	ev .	Bedra thre top 1	ough obp	"cont would hooli	いろち	Rid busi	le se	at par er i	ate	. 5Y.				06dd 43	615	7/ 234	f

¹ FALL = Falls, CAS = Cascade, CHU = Chule, RAP = Rapid, GLI = Glide, RUN = Run, STEP = Step Run, HOR = High Gradient Allfile (>4%), LOR = Low Gradient Riffle, POW = Pocket Water, SHT = Sheetliow, Pools: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

The minimum unit length should be 1x active channel width, unless there is something notable or unique about it.

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7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access points (road condition, bridge crossings, traits, otc.)

STREAM HABITAT TYPING SURVEY DATA (NID Yuba-Bear, PG&E Drum Spaulding)

Stream/Reach/Subreach: Oreancreek below Log color Dam (nh DHA 0466967/4267038 WACP 77

Data Sheet # 6 Page

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Habitat Unit #		271	1		1	27	2	·····	1 2	173			2	74			-	27	5	
Habitat Type 1	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CRU	RAT
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	CO
Paole if demmad pool	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP
Length (ft)	10	14	2 2	1	24	2			34	-			0.7	45	21		4	8	-	
Est. Avg. Width (ft)	0.	ML.	22	4	32	/		-	67	,			24	121	21		6	510	0	-
Est. Avg. Pool Dauth (ft)	3,	21	1,0	5		-			BFI	7-11	75.	-2,00	· · ·	~		_	(A	6.	5,5	5,3
Max. Pool Depth (fl)	m				-	-											64		1.5	1
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Significant Cover?1	INSIGNI	(BLDR	_	INSIGNI	Y	BLDR	14	INSIGNI	r (BLDR		INSIGNI	. (BLDR		INSIGNI	F (BLDR	
SUBSTRATE COMPOSITIO	N	114	WOOD	JUANES	VEG	V ik	WOOD		VEG	A DAMAGE W	WOOD	autore a	VEG		WOOD		VEG		WOOD	
Deminant	BED	BLD	1-	COB	(BED)	BLD		COB	(BED)	BLD		COB	(BED)	BLD		COB	BED	BLD	1	COB
Substrate	GRY	SND	S	SLT	GRV	SND		SLT	GRV	SND		SLT	GRY	SND		SLT	GRV	SND		SLT
Cub downlasest	BED	(BLD))	COB	BED	BLD		COB	BED	BLD	>	COB	BED	(BLD)	(COR	NED	RLD)	COR
Substrate	GRV	SND		SLT	GRV	SND		SUT	GRV	SND		SUT	CRV	SND	1	SLT	GRV	SND	1	er m
	1 (See	DITE	10	001	(feeb)	0410			-	0.10	-	OLLY .	GICT	(and		361	GAT	SIL	-	261
Dominant Back Cohstants	BED	BLD		COB	(BED)	BLD		сов	BED	BLD		COB	BED	BLD	>	COB	BED	BLD		COB
Dank Substrate	GRV	SND	-	SLT	GRV	SND		SLT	GRV	SND	-	SLT	GRV	SND		SLT	GRV	SND	the later	SLT
Length of LB and RB Exposed Banks (feet)	Ø				Ф				Ø				đ	Ś			Б			
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init Flagged/ Labeled? (Y/N)	Yeu	260	ASe	. 1	no			- 1	ho	- 1			10				you	-10	p	
ributary Inflow in cfs	no				no				ni	a. 7			No				n	D		
andmarks or phoios	21:	TH			21	Th			21	TU			21	77.	217	8	2	170	18	D
	Di	ianater Ioan		Leagth	D	tiemster .		Length	a	inconter		Length	1	Corneter		Length		Discuster	1	Leogth
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arge Woody Debris"	-	20	1			/		-		/	-	-		/	-			011-0	- a	5.00
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e. of LWD Pieces	d		-		0				C	p			Ø				N			
sh Migration Barrier *	n).			Tr	0			И	0			10)			no	,		-
nawanble Gravel Area (soft)		-		-	1			\rightarrow			110001 C	-	1.0	-						
sl. ⁷	00	NO			Ch	-			(D)	<u>.</u>		ch			- 1	B			
(4*-2.5*)				+	Y			-	4			-	V				r	-		
animum Spawning Gravel rich Size (sq-ft) Est.	N	a.			N	A			W	/A			NF				N/A			-
naments / beervations: th? Wildlife? Amphilos? tchwater or side chan. amphilo bitat? Riparian? I andenarks, oto Ms, Etc.	POW boke HGR	-111 e; !	te 6 short	DAY IS	,				61.				POW Som Sha	tike este ilow	ps, l	the way	here	e-v su	court vater nder	1.19

PALL = Palls, CAS - Cascade, CHU = Chuis, RAP = Rapid, GLI = Gilde, RUN =: Run, STEP = Step Run, HGR = High Gradient Rifle (>4%), LGR = Low Gradient Rifle, POW = Pocket Water, SHT = Sheetlew, Poels: COP = Convergence, MCP = mid channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

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Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-28', 25-59', 50-78', 75'+ (e. 6) 25 = 6-12', 25-59') ⁶Waterialis, high velocity chutes or classades at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

7 Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

Notes regarding access points (road condition, bridge crossings, traits, etc.)

1.5

6 top MCP#275 0667048 4367070

STREAM HABITAT TYPING SURVEY DATA (NID Yuba-Bear, PG&E Drum Spaulding)

Oregon Creck above LOQCALON Stream/Reach/Sub 3 Gaea Bailer 1ardes Patt Tea 0/01071748 4367070 base 276

Data Sheet # or 01

Canal							-	-	and the second			-	-							
Habitat Unit #	1 6	2710	2		1	27	7		at a second	27	14			25	à		0	80	-1-1-1-	
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	ĊHU	RAP	FALL	CAS	CHU	RAP
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LOR) CLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
	STEP) POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COF	STEP	POW	SHT	COP	STEP	POW	SHT	COP
*aole if demmed pool	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	(MCP)	LAP	TRP	PLP	MCP	LAP	TRP	PLP
Length (ft)		95.	6 I.		13	25		10	1	03	2		0	171			0	57		
Est. Avg. Width (ft)	13	50	,15		23	,20,	24,	19	12	8,3	52,1	25	28	49	39		9	15		
Est. Avg. Pool Depth (ft)	BF	D=	-1.5	5	GF	12=	1		-	-BF	D=	1	6,	5,3	,5,2	,0	-			
Max. Pool Depth (ft)	+1				-				-	-			64	-			-	-		
Pooltall Embedded %	-		-		-		15	>	-	-	-	_	NZ	A	-		-	-		_
Significant Cover?1	INSIGNE		ILDR		NSIGNI		BLDR	1	INSIGN	IF C	BLDR	~	DISIGN	F	BLDR	/	INSIGNI	' C	BLDR	
SUBSTRATE COMPOSITIO	N		1005		120		ITOOD		1150		TOOL		120	10					moos	
Dominant	BED	(BLD)		COB	BED	BLD	>	COB	BED	BLD	>	COB	BED	BLD	r.	COB	BED	BLD		COB
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRY	SND	0	SLT	GRY	SND		SLT
Cub Jamia ant	BED	BLD	(COB	(BED)	BLD		COB	BED	BLD		COB	BED	BLD	5	COB	BED	BLD).	COB
Substrate	GRY	SND		SLT	GRV	SND		SLT	GRV	SND	1	SLT	GRV	SND		SLT	GRV	SND		SLT
	-	din.	7	001			BORN	007	PED	(III)	5	COR	EPD.	RID	P.Les etc.	CON	(199)	PT D		007
Dominant Look Sobstants	BED	ero	/	COB	BED	BLD		CUS	950	BLD	-	CUP	BEL	CALD		CUP	CHU	(NID)		COB
Exposed Banks (feet) Coafineinent ⁴ Unit Flagged/ Labeled? (Y/N) Fributary Juflow in cfs	Q B yes	5-ba	Ŷ		100	0			0 ne)			Q2 no	> 0			Q Yes	5-1	oP	, ,
Landmarks or pho:>5	.2	1.81			21	82	÷		21	83			21	64	2183	5	21	66		
		Hampter class		Length		class	7	Length class	•	class	+	class	•	Class	4	class	-	class	-	Length class
lo. of LWD Pieces	215	Carl	D		ch				th				P				D			
rithin wetted width ish Migration Barrier ⁶ v(a)?	no		<u>~</u>	1	5	0			no					00			n	0		
pawanble Gravel Area (sqft) st. ⁷ 1/4° - 2.5°)	Ø.				ø				Ø				Ø		_	-	в			
laximum Spawning Gravel atch Size (sq-ft) Est.	N/	A.			NI	4			N/	4			N/	A			NI	4		
ocaments / beervations: sh? Wildlife? Amphilos? ackwater or side chan. amphilo bitu? Riparian? I andmarks., was for live	i i	141			2%				2	νu			-				Nar	ron	eloi	oti

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Notes regarding access points (road condition, bridge crossings, traits, etc.)

top # 280 0667047 4367258

222 223

Q/C initials:

STREAM HABITAT	TYPINO	SUR	EY D	ATA (I	VID Yub	a-Beau	,PG&	E Dru	m Spaul	ding)				2				0.000		
	2-00	di .	~~	14	.0.	~ 1	100	= d		-		Data Si	hees #	20						
Stream/Reach/Subreach:	reg	(Dn	re	YL	bell	NN_	100)Ce	ipin	170	in	Page_	8	of 7	-					
Team: PHBC	B	/	4.		-							Date _	10/	9100	1					
UTM: 066703	0/43	072	61,	(AD 83 (H	abitat unit ?	10 2	G11	oas	r		РМ						Map Gra	dient:		e (
Habitat Unit #		28)		2	82	-		9	PLIT	-2			28	3			251	4	Carto.
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	сни	RAP	FALL	CAS	CHU	BAR
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI (RUN
	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP
Length (ft)	12	2.5			\bigcirc	101				10			8ª	1			6	P		
Est. Ave. Width (ft)	11	5			40	. 40	0			-1			20	5.2	2,1	9	18.1	3 4	1.2	3
		-			5	42	1.5	0	45 .	il da	41	0.1	BE	- 1	,25	5	12		,	
Est. Avg. Pool Depth (ft)					5+	0.7	10.00		15-st	1		-1.1			2.2		-			
Max. Pool Depin (1)					25	¢7.	1						-	-			-			
Significant Cover?'	INSIGNI	F	BLDR	>	INSIGNI	icolin	BLDE		INSIGNI	BLOOK	BLDR		INSIGNI	r 7	BLDR	,	INSIGNI	F Q	BLDR	
SUBSTRATE COMPOSITIO	VEG'		WOOD		VEG (WOOD		VEG	- 19 A	WOOD	E U.S	VEG	-	WOOD	100	VEG	-	NOOD	and the Walt
Dominant	BED	BLD		COB	BED	BĻD		COB	BED	BLD		COB	BED	BLD	7	COB	BED	BLD)/	COB
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRY	SND		SLT	GRV	SND		SLT
Subdeminant	BED	BLD	>	COB	BED	BLD	/	COB	BED	BLD		COB	(BED)	BLD		COB	BED	BLD		COB
Substrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	(SLT
Dominant	BED)	BLD		COB	(BED)	BLD		COB	BED	BLD	100-000	COB	BED	BLD	/	COB	BED	BLD	in	COB
Bank Substrate	GRY	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
		- 11-17 - 1			1	and the second second	11110000000000	5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-			12111124	inanan da da	d	THE R. LOW	107710 BILLION			A latencia al an	al nation of	est (e true
Length of LB and RB Exposed Banks (feet)	ntos			- 1	10			1					(D)				ch			.
	¥.				9								Ŷ				4			
Confinement ⁴	1				2								1				1			
Unit Flagged/ Labeled? (Y/N)	Ye	5-4	as	C	ni)				N	υ		no				-10	r.	-	
Tributary Inflow in cfs	ne	2			ne	2		_					A	2			ní)		
Landmarks or pho:25 DTA 2	1	210	7		ZI	38			N	one			2	191-	2		21	91		
	Q	Dismater	1	Length	I	Dismeter		Length	· · · ·	Diemeter	<u> </u>	Length		Diemeter		Leagth	1.1	Diameter		Length
	*	class		class		class		class		class		class		class		class	# .	class	~	class
Large Woody Debris ³ within bankful width		-11-	1	_		/	-							/	-			/	1	
The Local Division of the Local	/		1		1		1				1		/		1		/		1	
No. of LWD Pieces	ch .				0	5	1110.000						D				Ø			_
Ash Migration Barrier 6	100		/	-1		NDO	the	JUL						1.1			h	2		
y/n)?	ye:	22	104	F	Pas	10	2 100	MER					210				110		_	
pawnable Gravel Area (sqff) Ist. ⁷	ch				A		N	ven			•0	1997	1				Ø			
1/4" - 2.5")	4				Q.					124	a -		Q A							
faximum Spawning Gravel atch Size (sq-ft) Est.	N	1. A	2		N/r	7							NA	1	ł		N/	A		
omments / beervations: ish? Wildlife? Amphibs? ackwater or side chan. amphib bbitu? Riparian? I andmarks., both W. Fire	We	ir (e Bea	et.	ne i	and	both	top	1	R.P. LBI	A-1 4-1	pool uni	nta	0	7.			Bun	nde	1ste in	ep per to
TOLO NOT THE.									4.00	1		-	0				r	vu.	2	

FALL = Falls, CAS = Cascade, CHU = Chuie, RAP = Rapid, GLI = Gilde, RUN = Run, STEP = Step Run, HOR = High Gradient Riffle (>4%), LGR = Low Gradient Riffle, POW = Pocket Water, SHT = Sheettlow,
Pools: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TAP = Trench, PLP = Plunge

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Channel Continement: 1=Contined Shallow; 2=Contined Deep; 3=Moderate Contined (<2x wetted channel width); 4=Uncontined (>= 2 wetted channel width); Criteria for LWD is:any downed wood within bankfull width of channel ==or> than 1/2 bankfull width.

Citient for LiveD is any downed wood winnin bankua widn of charine #ofor inten 1/2 bankua widn. Size classes: 61/2*, 12-24*, 24-36*, or 36*+ x 3-10*, 10-25*, 26-50*, 50-75*, 75* {i.e. 6 | 25 = 6-12*, 25-50*) ⁶Waterfalls, high velocity chutes or clascades at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT ⁷ Spawning Sized gravel submersed in an area of adequate depth and velocity within one unit

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Notes regarding access points (road condition, bridge crossings, traits, olc.)

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PRA

Q/C initials:

STREAM HABITAT	TYPING	SURV	EYD	ATA (I	VID Yu	ba-Bear,	PG&	E Dru	m Spaul	ding)				1						
	Bria		1	ol/	hal	In	u ()	ali	0			Data Sł	eci #	- /	2					
Stream/Reach/Subreach:	0107	DUNC	20	an .	pen	2Mm	200	1.31 -				Page	1	01-0	1					
Team: Patty M	6v,00	sty	10	CIA	20.4	auc	10_					Date	101.	100						
UTM: 066700	06/43	635	9	IN 68 (TA	abitat unit	No. 28	55	+0	0		PM						Map Gra	dient:		. 1
Habitat Unit #	1	28	5		1	24	6		ľ.	29	T		6	88				2.5	190	
Babitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	СНÚ	RAP
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN
	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	PLP	MCP	POW	SHT	COP
*aote if damated pool	men	LAS	55	FLF	MLF	na	IN	TUT	Caller	39	104	1.04	5	5				-20		14
Fet Ave Width (P)	0	-37	7	21		29.1	9	20	10	1.11	1		10.	12	9					
ED. 7475. 11804 (11)	21	< · ·	27	10	Q	FD	1-	5	2.1	27	1	n		_			8	5	6 1	27
Est. Avg. Pool Depth (fi)	2	E	2,2	1		120	in .		2	200	4	<u>v</u>					01	171	411	1 30
Max. Pool Depih (11)	20	5					-		w/	6							0	3%		
Significant Cover? ¹	INSIGNU	10	BLDR		INSIGNI	v (1	LDP		INSIGNI	10	BLDR	5	INSIGNI	(BLDR	,	INSIGNI	10	BLDR	
STREEP ATE COMPOSITIO	VEG'		woob	100	VEG	1	NOOD		VEG		WOOD	24.46	VEG		WOOD		VEG		WOOD	
SUBSTRATE COMPOSITIO	BED	BLD	2	COB	BED	(BLD))	COB	BED (BLB	-	COB	BED	BLD	>	COB	BED	GELD	V	COB
Substrate	GRY	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRY	SND		SLT
Subdeminant	BED	BLD	0	COB	BED	BLD	1	COB	BED	BLD		COB	BED	BLD	2	COB	BED	BLD		COB
Substrate	GRY	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	-	SLT	GRV	SND		SLT
Dominant	BED (BLD)	COB	BED	BLD)	COB	BED)	BLD		COB	BED	BLD	>	COB	BED (BLD)	COB
Bank Sobstrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
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andmarks or pho:>s	219	2			21	93			210	14			2	190	11		210	all		
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arge Woody Debris" ithin bankful width		1	1			/	1			/	1		-	1	1		-	-	1	
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animum Spowning Gravel tch Size (19-ft) Est.	NIA	9.			N	IA			NI	A			AV	A			N	4		
mments / servations: h? Wildlife? Amphibs? ckware or side chan. mmphib	- 1.				31	,							47	,			poo	Jul 200	he c da	m
bitat? Riparian? I andenarks, 1010 No, Etc.																	43	57	39	4

FALL = Palls, CAS = Cascade, CHU = Chule, RAP = Rapid, GLI = Glide, RUN =: Run, STEP = Step Run, HGR = High Gradient Rillie (>4%), LGR = Low Gradient Rillie, POW =: Pockel Water, SHT = Sheettlew, Pools: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Tench, PLP = Plungs

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Q/C initials:

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Notes regarding access points (road condition, bridge crossings, traits, etc.)

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Stream/Reach/Subreach:			_			_						Page_		of						
Team:		1-02	. <u>.</u> .									Date_								
UTM:				VAD 83 (liabitat unit	No	L				PM						Map Gr	adient:		
Habitat Unit #	T				1				T				T			-	1		-	-
Habitat Type ¹	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RAP	FALL	CAS	CHU	RA
	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RUN	HGR	LGR	GLI	RU
	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	COP	STEP	POW	SHT	CO
*aote if dammed pool	MCP	LAP	TRP	PLP	МСР	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PLP	MCP	LAP	TRP	PL,
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ESE Avg. widen (II)	1																			
Est. Avg. Pool Depth (ft)	-																			
Max. Pool Depth (ft)						_		-			_	_			·····					
Pooltail Embedded % Similifeant Cover??	INSIGNI	P	BIND		INSIGNI		PT DD		INSIGNI	,	DT TOD		DICIONI				DIGIONI			
Significant Covers	VEG'		WOOD		VEG		WOOD		VEG	5	WOOD		VEG		WOOD		VEG	r	BLDR	
SUBSTRATE COMPOSITION	N .			-								1		na inter vi						
Dominant Substants	BED	BLD		COB	BED	BLD		COB	BED	BLD		COB	BED	BLD		COB	BED	BLD		COR
Subtrate	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND	the same to be	SLT	GRV	SND		SLT
Subdominant	BED	BLD		COB	BED	BLD		COB	BED	BLD		СОВ	BED	BLD		COB	BED	BLD		COB
Substrate	GRY	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
Dominant	BED	BLD	Į.	COB	BED	BLD		COB	BED	BLD		COB	BED	BLD		COB	BED	BLD		COB
Bank Substrate	GRY	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT	GRV	SND		SLT
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arge Woody Debris"			1.0	-			-													
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sh Migration Barrier ⁶ /n)?	2 4 1																		212	
nawnable Gravel Area (sqft) sL ⁷ /4" - 2.5")											5									
aximum Spawning Gravel tch Size (sq-ft) Est.		•				_				i.									-	
onments / servations: h? Wildlife? Amphibs? ckwater or side chan. amphib bita? Riparian? I andmarks., oto #s. Etc.	*			2					0	1							-	× ·	2	

Pools: COP = Convergence, MCP = mid-channel pool, LAP = Lateral, TRP = Trench, PLP = Plunge

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Criateria for LWD is:any downed wood within bankfull width of channel =or> than 1/2 bankfull width. Size classes: 6-12", 12-24", 24-36", or 36"+ x 3-10', 10-25", 25-50', 50-75', 75'+ (ie. 6] 25 = 6-12", 25-50') Waterfalls, high velocity chutes or cascades at approx bankful flows. NOTE VERTICAL DROP and IF CONDITIONAL or PERMANENT

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Notes regarding access points (road condition, bridge crossings, traits, otc.)

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Oregon Creek Habitat Mapping Data

Yuba River Development Project FERC No. 2246

Oregon Creek – Ground-based Habitat Mapping Data

Stream: Oregon Creek							Č		Date:	8/15/2009			Parent Ma	granitio terial: metase	c pluton, edimentary																
Reach:													Map Gradie	nt (%):	2.3%																
Date Section Number	Ordered Unit #	Original Unit #	Unit Habitat Type	Length (ft)	Cum. Lenath (ft)	River Mile	Est avg BFW (ft)	BFD (ft)	Est avg pool depth (ft)	Max. pool depth (ft)	Pooltail embed- dedness (%)	Dom Cover sub	ninant domin strate subst	b- Domin nant ban trate substr	nant Ik rate Erosion	(ft) FPW	Confine- ment	Flag/	Flag Description	Trib	Lan mar or Ph	id- Tot ks LW otos (ban)	tal L\ /D we kful) wi	otal WD etted I	Fish Migration Barrier?	Total Spawnable gravel area (sq. ft.)	Max spawning gravel patch (sq ft)	Northing	Easting	Post-Field Changes	Comments
8/15/2009 OC into to CV Br		1	HGR	6	0 60	0.00	30	0	. /		IN	SIGNIE COB	BLD	СОВ		5	3	3 N	too public	S.C. end	DTA1 117	7 LDS,	0	0 N		(1)		0665014	4362378	8	S.C. begins 60' u/s from junction. Begin at junction with M Yuba, 6% HGR - transverse - NM
8/15/2009 OC jntn to CV Br		2	2 STEP	8	0 140	0.03	27	7			В	LDR BLD	COB	BLD		20	3	3 N		S.C. LBA	DTA1 117	9	0	0 N		C) ()	1002010		S.C. LBA lots of flat pockets, modelable
8/15/2009 OC jntn to CV Br		3	3 MCP	3	6 176	0.03	15	7 2	1	1.75	0 V	EG BLD	СОВ	СОВ		0	3	3 N			DTA1 118	0	1	1 N		c)			barely meets
8/15/2009 OC jntn to CV Br		4	1 STEP	8	0 256	0.05	19.67	7		1.75	0 V	EG BLD	СОВ	BLD		0	3	3 N		S.C. begin @	⊉ bp DTA1 118	1	0	0 N		1.5	i 1.:	5			short (10') sc pool near base, heavy blackberry, nm - too many steps transpose.
8/15/2009 OC jntn to CV Br 8/15/2009 OC jntn to CV Br		5	5 LGR 5 POW	11 ⁻ 10:	7 373 2 475	0.07	32.67 48.33	7 3 2			na B	LDR BLD	COB	BLD BLD		0 10	3	3 N 3 N	too public		DTA1 118 DTA1 118	2 3	0	0 N 0 N		26) 5 0665074	4362464	4	3.5% - M.(0.3 deg), 2" trout, small frog S.C. holes around boulders, flat complex 3D flow, trail to car park
8/15/2009 OC jntn to CV Br		7	7 MCP	8	9 564	0.11	39.33	3	1	1.75	50 B	DR BLD	COB	BLD		0	3	B N			DTA1 118	4	1	0 N		C)			r.c. = 1' area > 2m/2, separated at 55' by mid control, short upper pool
8/15/2009 OC jntn to CV Br		8	B POW	5	622	0.12	40	D			В	DR BLD	СОВ	BLD		0	1	N			DTA1 118	5	1	1 N		c)			in a series of steps, Ims flat, separated by short boulder steps, split by
8/15/2009 OC jntn to CV Br 8/15/2009 OC intn to CV Br		9	POW MCP	18	0 802 8 910	0.15	54.5 34.33	5 3 3	1.5	2.5 3.5	50 B	LDR BLD	GRV BLD	BLD		0	1	N Y	at top		DTA1 118 DTA1 119	9 0	0	0 N 0 N		68	5	5			boulder pile at upper end some sand ~10%. ~ 5 cm deep
8/15/2009 OC jntn to CV Br		11	I MCP	4	1 951	0.18	3'	1	1.25	3	na B	DR BLD	BLD	BED		0	1	N			DTA1 119	1 2 1194	0	0 N		4		1 0665175	4362622	2	small mini pool @ base on LBA, sand 3x4 ~5 cm
8/15/2009 OC jntn to CV Br		12	POW	6	6 1017	0.19	31.67	7	4 75	25	B	DR BLD	BED	BED		0	1	N		no (from top)) LDS	2	0	0 N		0)			late of and an hanks represents kick flow
8/15/2009 OC jntn to CV Br		13	1 CAS	4	0 1120	0.20	33	3	1.75	3.5	B	LDR BLD	COB	BED		0	1	N			DTA1 119	5	0	0 N		g)	9			9% gradient - CAS because pocket pools
8/15/2009 OC jntn to CV Br 8/15/2009 OC jntn to CV Br		15	5 MCP 6 HGR	4	8 1168 0 1188	0.22	37	7 5	2	4.5	50 B B	LDR BLD	COB	BED BED		0	2	2 Y I Y	at top at base		DTA1 119 DTA1 119	8 LDS 6	0	0 N 0 N		0) () 0665223	4362687	7	13%, no pocket water
8/15/2009 OC jntn to CV Br		17	7 MCP	2	6 1214	0.23	24	4	1.5	3.75	50 B	LDR BLD	COB	BED		0	1	N			DTA1 119	7	0	0 N		4		1			short but significant depth
8/15/2009 OC jnth to CV Br		19	POW	5	4 1304	0.24	26.67	7			B	LDR BLD	COB	BED		0	1	N			DTA1 120	0 LDS	0	0 N		0) ()			short steps @ base and top
8/15/2009 OC jntn to CV Br		20	MCP	15	4 1458	0.28	2'	1	1.75	3.5	50 B	DR BLD	BED	BED		0	2	2 Y	at top		LDS < top DTA1 120	1, 1202) 3 at	1	1 N		c) ()			2" fish, 4" brown, 2" fish 12% gradient, thin colluvial sandy soil over bedrock, undermine > failure.
8/15/2009 OC jntn to CV Br		21	CAS	7:	2 1530	0.29	24	4													base										2" fish, pocket pools "Federal Mining claim over ch #2_ROCKPROPERTIES LISA CAMC#"
8/15/2009 OC jntn to CV Br		22	2 MCP	5	7 1587	0.30	24	4		1.57																					@ top.
8/15/2009 OC jntn to CV Br		23	3 LGR	3	0 1617	0.31	29	9			IN	SIGNIF GRV	СОВ	BLD		0	1	N			DTA1 120 DTA1 120	4 6 LDS <	0	0 N		29	20)			deleted
8/15/2009 OC jntn to CV Br		24	4 GLI	7	1 1688	0.32	29.5	5	1		IN	SIGNIF GRV	SND	DI D		0	1	N			top	-	0	0 N		0)			spawning gravel too embedded, small sc hole around boulder at base
8/15/2009 OC jntn to CV Br 8/15/2009 OC jntn to CV Br		25	6 MCP	5	3 1751 8 1809	0.33	32.5	5	3	7	B	DR BLD	COB	BED		0	2	2 N			DTA1 120 DTA1 120	8	0	0 N		0)			gravel too embedded, top formed by dug-out minning debris two 3" trout, max dep < digging; d/s control excavated water,
8/15/2009 OC jntn to CV Br 8/15/2009 OC into to CV Br		27	7 HGR	4:	3 1852	0.35	25	5																							CHARACTERZED UNITS 27 TO 36, S.C. starts - debries U-28.
8/15/2009 OC jntn to CV Br		29	POW	8	3 2015	0.38	46.5	5																							lots of Indian Rhubarb
8/15/2009 OC jntn to CV Br		30	MCP	4	0 2055	0.39	44	4		2.5																		,			0.75 r.c., sc <- LBD 8%, 2 degrees, Pockety therefore CAS, nm - too many splits, flag tied
8/15/2009 OC jntn to CV Br 8/15/2009 OC jntn to CV Br		31 32	CAS POW	4	9 2104 9 2133	0.40	36	6 0										Y	at top									0665457	4362829	9	@ top
8/15/2009 OC intn to CV Br		33	MCP	15	0 2283	0.43	33.67	7		4	в	DR														18	1	3			tons of 2" fish, six 4" fish, long deep pool; boulder cover, some spawning gravel, pocket water at top
8/15/2009 OC jntn to CV Br		34	1 POW	2	7 2310	0.44	26	6		25																					
8/15/2009 OC Jnth to CV Br		35	MCP	2	2338	0.44	2.	3		2.5																					9% non-modelable, 3.3 degrees. Frog - adult couln't identify - cream
8/15/2009 OC jntn to CV Br	s	PLIT	CAS	15	8 2496	0.47	24.67	7													DTA1 120	9 LUS									throat, black spots. Considered CAS because pockets of depth and flat. MCP > LGR > top of split. SPLIT begins at base of continues to top of
8/15/2009 OC jntn to CV Br	S	PLIT	MCP	3	3 2529	0.48	25	5		2.75																					U35.
8/15/2009 OC jntn to CV Br	S	PLIT	MCP	12	2 2709	0.49				3																					fish 2" - 4"
8/15/2009 OC jntn to CV Br		36	5 PLP	6	1 2770	0.52	46	6	4	10	60 B	DR BED	SND	BED		0	2	2 y	at base		DTA1 121 1211 LUS	0 LUS,	0	0 n		c		665476	4362988	8	4" trout sand on margin but not at max depth
8/15/2009 OC jntn to CV Br 8/15/2009 OC into to CV Br		37	7 MCP	6	5 2835 2 2927	0.54	30.24	3	2	3.5	0 1	SIGNIF BED	BED	BED		0	1	l n			DTA1 121	2 LDS	0	0 n		C)			Falls at base not a barrier, no sand
			0111		2 2321	0.00	50.20					DIGINI DED	020	020		0					DTA1 121	4 RBA,	0	011				•			
8/15/2009 OC jntn to CV Br 8/15/2009 OC jntn to CV Br		39	PALL POW	1	7 2944 3 2987	0.56	66	6			B	LDR BLD	BED COB	BED BED		0	1	n V	at top		1215 LBA DTA1 121	6 LUS	0	0 n 0 n		0)			Falls height (min) LB = 2' RB = 1.5' :PERM
8/15/2009 OC jntn to CV Br		41	I MCP	5	1 3038	0.58	25	5	3	5	30 B	DR BLD	COB	BLD		0	2	2 y	at base		DTA1 121	7 LUS	0	0 n		0		665452	4363062	2	experience from 1144 by Dide control acord doors 500/
		42			3109	0.59	24.3	_	4	0			BLD	BLD			2				DTA1 121	9 LBA >		011			/	,			separated from 041 by Bidi Control, Sand deep ~30%
8/15/2009 OC jntn to CV Br		43	3 FALL	1:	3 3122	0.59	15	5			В	LDR BLD	BED	BED		0	1	n			DTA1 122	0 @ top	0	0 n		C) ()			
8/15/2009 OC jntn to CV Br		44	1 PLP	2	0 3142	0.60	15	5	3	4	в	LDR BLD	BED	BED		0	1	In			of U45 LD U44&45	S >	0	0 n		C)			
8/15/2009 OC jntn to CV Br		45	5 FALL	1	0 3152	0.60	15	5			IN	SIGNIF BED	BED	BED		0	1	у	at base		DTA1 122	2 \1225	0	0 Y		C) ()			BARRIER: 665419/ 4363109
8/15/2009 OC jntn to CV Br		46	6 PLP	6	5 3217	0.61	22.5	5	2	4.5	IN	SIGNIF BED	GRV	BED		0	2	2 y	at base		LUS DTA1 122	2 >1225	1	1 n		C		665448	4363098	8	
8/15/2009 OC jntn to CV Br		47	FALL	1	0 3227	0.61	25	5	15		IN	SIGNIF BED	BED	BED		0	1	n			LUS	01110	0	0 Y		c		0			10' high, PERM
8/15/2009 OC jnth to CV Br 8/15/2009 OC jnth to CV Br		48	9 RUN	3	4 3286	0.62	11.5	5	1.5	3	B	LDR BED	BLD	BED		0	1	n I n			DTA1 122 DTA1 122	7 LUS	0	0 n		0)			
8/15/2009 OC jntn to CV Br		50	POW	5	4 3340	0.63	16.5	5			В	DR BLD	COB	BED		0	1	у	at top		DTA1 122 DTA1 122	8 9 <lba< td=""><td>0</td><td>0 n</td><td></td><td>C</td><td>) (</td><td>665445</td><td>4363130</td><td>0</td><td>UTM +,- 46'</td></lba<>	0	0 n		C) (665445	4363130	0	UTM +,- 46'
8/15/2009 OC jntn to CV Br		51	I PLP	2	6 3366	0.64	11	1		2.5											> RBA										
8/15/2009 OC jntn to CV Br 8/15/2009 OC jntn to CV Br		54	1 PLP	3	5 3452	0.65	16.:	1		5											DTA1 123	0 LUS									3 Fails at base W/ 1/2 Fail 1/2 sheet
8/15/2009 OC jntn to CV Br 8/15/2009 OC intn to CV Br		55	5 CAS	5	2 3504 3 3557	0.66	18	8		5																					under boulders
8/15/2009 OC jntn to CV Br		57	CAS	4	0 3597	0.68	32	2																							14%, 5 degrees, under boulders
8/15/2009 UC jnth to CV Br		58	5 MCP	8	2 3679	0.70	33.33	5		3.5							_														run at top Boulder/bedrock control separates U58 and U59, lots of fingerlings, trib
8/15/2009 OC jntn to CV Br 8/15/2009 OC into to CV Br		59	MCP	6	9 3748	0.71	37	7		4								v	at base	LBA ~0.01 cf	fs							665076	1000400	8	enters LBA ~ 0.01cfs
8/15/2009 OC jntn to CV Br		61	CAS	6	9 3845	0.72	2:	5										У	al Dase									000076	4303 198		12%, 3.6 deg
8/15/2009 OC jntn to CV Br 8/15/2009 OC jntn to CV Br		62	2 MCP 3 MCP	2	7 3872 8 3890	0.73	31	5		4							_														separated < 62 by short 2' step
8/15/2009 OC jntn to CV Br		64	HGR	2	3 3913	0.74	14	4																							Bedrock
8/15/2009 OC jntn to CV Br 8/15/2009 OC jntn to CV Br		65	6 FALL	3	2 3945 0 3955	0.75	27	5		3																					1.5' Perm
8/15/2009 OC jntn to CV Br 8/15/2009 OC intn to CV Br		67	7 MCP 3 POW	3	1 3986 5 4021	0.75	18	9		3.5																					
8/15/2009 OC jntn to CV Br		69	PLP	2	2 4043	0.77	39	9		3.5																					

Oregon Creek – Ground-based Habitat Mapping Data (cont.)

		Ordere	Unit d Original Habitat	Length	Cum.		Est avg BFW	р	Est avg pool depth	Max. pool	Pooltail embed- dedness	Dominal	Sub- nt dominan	Dominant t bank	t		Confine-	Flag/	Flag	Trib	Land- marks	Total LWD	Total LWD wetted	Fish Migration	Total Spawnable gravel area	Max spawning gravel patch				
Date	Section Numb	er Unit#	Unit # Type	(ft)	Length (ft)	River Mile	(ft)	BFD (ft)	(ft)	depth (ft)	(%) Co	over substrat	e substrate	substrate	Erosion (ft)	FPW	ment	Label	I Description	cfs	or Photos	(bankful)	width	Barrier?	(sq. ft.)	(sq ft)	Northing	Easting	Post-Field Changes	Comments
8/15/2009	OC inth to CV B		70 FALL 71 MCP	29	9 4053	0.77	20			3																				2 high, no sat, so goes around main channel at HP
8/15/2009	OC jntn to CV B		72 POW	37	7 4119	0.78	50																				665525	436330	5	w/ steps
8/15/2009	OC into to CV B	.	73 POW	34	4 4153	0.79	38																							no steps, dead dace = DTA1 1231, sc begins at this unit > under around to U69
8/15/2009	OC jntn to CV B		74 PLP	60	0 4213	0.80	39			10																				ground to oco
8/15/2009	OC jntn to CV B	•	75 CHU	20	0 4233	0.80	20														DTA1 1232 <									4' step
																					base 74 > 76,									
																					1233 < base U76									gauge, heavy recreational use, tree frog. TRAIL FROM GAUGE TO
9/12/2009	OC into to CV B		76 PLP 77 CHU	2	1 4344 7 4371	0.82	22.5			10	INSI	SNIE BED	BED	BED			1	v	at base		LUS DTA1 1283 LUS	(0 0 0	n	0	0	665544	436332	7	ROAD. Total distance = 4304' = 0.8 mi.
9/12/2009	OC jntn to CV B	•	78 MCP	57	7 4428	0.84	22.67		1.88	4.5	0 BLDF	R BED	COB	BED			2	n	at babb		DTA1 1284 LUS	(0 n	n	0	0)	100002		slight sand pocket
9/12/2009	OC jntn to CV B	•	79 CHU	31.5	5 4459.5	0.84	9				BLDF	R BLD	SND	BED			1	n			DTA1 1285 LUS	0	0 n 0	n	0	0)			large, slow pool at bottom
9/12/2009	OC intn to CV B		80 CAS	80	0 4539.5	0.86	16			2, 1.5, 3.5	BLDF	R BED	BLD	BED			1	n			DTA1 1286, 1287 LUS		0 n	n	0	0)			2 larger pools, 11%, possible red-legged F. No photo/ no ID.
																														vertical bedrock wall on RBA. Some large boulders but not enough to
9/12/2009	OC into to CV B		81 MCP	75	5 4614.5	0.87	20		1.35	2.6	0 BLDF	R BED	BLD	BED			1	у	at top		DTA1 1290 LUS	0	n 0 C	n	0	0) 665500	426227	6	call POW, dead sucker fish = Photos DTA1 1288, 1289.
9/12/2009	OC jnth to CV B		83 MCP	108	8 4744.5	0.90	26.33		2.45	4.5	BLDF	R BED	COB	BED			1	n	at base		DTA1 1292 LUS	(0 n 0	n	0	0)	430337		mid-pool control pinch. Only 1 small scour hole at max
																														almost a step pool but water diverges around boulders and not enough
9/12/2009	OC into to CV B		84 CAS 85 MCP	88	8 4832.5 6 4908.5	0.92	18.67		2.88	4.5	BLDF	R BED	BLD	BED	_		2	n			DTA1 1293 LUS	0	0 O n	n	0	0)			ds pool controls trench like in some parts
3/12/2003	00 jian to 00 bi		00 1101		4300.3	0.35	10.00		1.35		BEBI	IC DED	DED	DED			2				DIAT 1234 200		5 01		0		,			small cascade at base, one small pool at highflow is going to become
9/12/2009	OC jntn to CV B	•	86 CHU	35	5 4943.5	0.94	8.67		1.38	3.5	INSIC	GNIF BED	COB	BED			1	у	at top		DTA1 1299 LUS	0	0 O n	n	0	0)			chute. ENDING MAPPING@ UTM: 0665700/ 4363395
																														two big pools separated by small pool. 3 Plunge pools wit mid-pool control waterfalls is a plunge pool. Other pools may depths = 4.5.8
9/12/2009	OC jntn to CV B		87 MCP	58	8 5001.5	0.95	17			3.5											DTA1 1300, 1301									10+'
																														Falls plunge into deep scour holes - fall/scour/fall/scour. 4 falls = 6', 4',
9/12/2009	OC into to CV B		88 FALL 89 POW	35	5 5036.5 0 5086.5	0.95	25			4.5											DTA1 1302 DTA1 1303		۱ ۱	Y						3', 3'. BARRIER @ UTM: 0665718/ 4363392
9/12/2009	OC jntn to CV B	•	90 MCP	97	7 5183.5	0.98	30			2.5											DIAT 1000									
9/12/2009	OC jntn to CV B	•	91 POW	52	2 5235.5	0.99	25														DTA1 1304									
9/12/2009	OC Inth to CV B		92 STEP 93 MCP	38	8 5323.5 8 5361.5	1.01	17			3.5											DTA1 1305									Artificial pool dugout by minning.
																														5-7%, not modelable, multiple surfaces, highly modified by minning,
9/12/2009	OC into to CV B		94 SPLIT	88	8 5449.5	1.03	22		1.04	4	VEG	COR	PI D	COP	0	0	4		at baca		DTA1		2 2 1	N	0	0	665762	426227	2	HGR on both sides of SPLIT. Unconfined
5/12/2003	B OC JILIT IO CV BI		35 LAF	00	0 3337.3	1.05	32		1.54		VEG	COB	BLD	COB	0	0	4	y	al base		DIAT 1308	2	2 21		0	0	005702	430327	filled in BLD because	Aduit poss. OKEP and several juvenines
																													'Dominant Bank	
9/12/2009	OC into to CV B		96 LGR 97 GU	30	0 5567.5 5 5622.5	1.05	24				BLDF	R BLD R BLD	COB	BLD	1	5 5	5 4	n			DTA1 1309 DTA1 1310	(40 C	N N	0	0)		Substrate' was blank.	gradient 4%, modelable
9/12/2009	OC jntn to CV B	•	98 LGR	24	4 5646.5	1.07	30				BLDF	R BLD	COB	BLD			4	n			DTA1 1311	(4 0 C	N	0	0)			gradient 4%, modelable, tree frogs
0/40/000			20 011		5070 5						1/50	000	01.0	0.10													005000	400000		RC 0.25, max D 1.5, small scour area therefore glide plane bed form
9/12/2009	OC inth to CV B		99 GLI SPLIT	22	7 5873.5 2 5985.5	1.11	23				VEG	COB	BLD	SND			4	у	at top		DTA1 1312 LDS	(J 0 M	N	0	0	665889	436328	8	*SPLIT @ top of unit #99 (highly modified) split length = 112
9/12/2009	OC jntn to CV B	•	100 LAP	118.5	5 6104	1.16	24		1.31	3	BLDF	R COB	BLD	COB			4	n			DTA1 1315	0	0 n	n	0	0)			••• ••• ••• ••• •••• •••• (g) •••••••••
9/12/2009	OC jntn to CV B		101 LGR	4(0 6144	1.16	30				INSIC	GNIF COB	BLD	COB			4	n			DTA1 1317	0	n 0 C	n	0	0)			gradient 2%, modelable but variety of controls; poor modelability
9/12/2009	OC Inth to CV B		102 GLI 103 LGR	29	0 6254 9 6283	1.18	23				INSIC	GNIF COB	BLD	COB			4	n			DTA1 1318 LDS		0 0 r 0 0 r	n n	0	0)			gradient 3% modelable
9/12/2009	OC jntn to CV B	•	104 GLI	88	8 6371	1.21	25				INSI	GNIF COB	SND	COB			4	Y	at top		DTA1 1320	0	0 n 0	n	58	24	665875	436341	9	spawining gravel present but packet with sand
9/12/2009	OC into to CV B		SPLIT 105 POW	303	3 6674	1.26	46.22														DTA1 1222 LDS									(Confined channel at start) LGR/HGR/GLI with high density Darmera
9/12/2009	OC jnth to CV B		105 FOW	20	0 6786	1.20	40.33			2.5											DTA1 1323 LD3									
9/12/2009	OC jntn to CV B	•	107 POW	170	0 6956	1.32	36.25								3	0					DTA1 1325									
9/12/2009	OC into to CV B		108 CAS	19.5	5 6975.5 4 7029.5	1.32	38																							gradient 11%
9/12/2009	OC jntn to CV B	•	110 CAS	18	8 7047.5	1.33	42																							gradient 12%
9/12/2009	OC jntn to CV B		111 POW	25	5 7072.5	1.34	30			2.05																				CA yout, downstream wit concreted by hedreak sight point
9/12/2009	OC inth to CV B		112 MCP 113 MCP	73	3 7186.5	1.35	20			3.25																				CA newl, downstream unit separated by bedrock pinch point
9/12/2009	OC jntn to CV B	•	114 CAS	22	2 7208.5	1.37	32																							gradient 11%
9/12/2009	OC into to CV B		115 MCP 116 CAS	42	2 7250.5	1.37	30.5			3								у	at base								665769	436363	5	gradient 12%
																														pool upstream of U116 but short & enough boulders to include with
9/12/2009	OC into to CV B		117 POW	184	4 7453.5	1.41	40.33																							POW unit 117. 4 steps in POW
9/12/2009	OC jntn to CV B	·	119 POW	55	5 7535.5	1.42	39									1							+ +							gravient i 170
9/12/2009	OC jntn to CV B		120 MCP	146	6 7681.5	1.45	34			4																				
9/12/2009	OC into to CV B		121 CAS 122 RUN	16	6 7697.5 0 7747.5	1.46	33																							gradient 17% bedrock step divides rup with upper rup short & wide
9/12/2009	OC jntn to CV B	•	SPLIT	21	1 7958.5	1.51	22.07																							SPLIT with HGR/GLIDE & SMALL MCP (CRLF Adult)
9/12/2009	OC jntn to CV B	•	123 MCP	222	2 8180.5	1.55	30.2			6	i																			camper reports Ringtails on Yuba @ Peterson Corner
9/12/2009	OC intn to CV B		124 RUN	142	2 8322.5	1.58	27.67																				665898	436393	0	end, non-modelable. Gradient 8%.
9/12/2009	OC jntn to CV B		125 POW	53	3 8375.5	1.59	52																							CA newt
9/12/2009	OC into to CV B		126 MCP	14	4 8519.5 9 9527.5	1.61	39																							boulders sticking up at downstream pool
9/12/2009	OC jnth to CV B		128 MCP	34	4 8571.5	1.62	30			2.75																				gradient 1770
																														gradient 8%, At low flow cascade/hodgepodge. At high flow it's a true
9/12/2009	OC into to CV B		129 CAS 130 RUN	2	7 8618.5 7 8645.5	1.63	37			1 75																				hodgepodge. Nonmodelable.
9/12/2009	OC jntn to CV B	·	131 MCP	35	5 8680.5	1.64	29			3																				
9/12/2009	OC jntn to CV B	•	132 RUN	23	3 8703.5	1.65	22																							Step/Run
9/12/2009	OC jnth to CV B		133 COP SPLIT	25	2 9000.5	1.65	25			2.5																				Multi-braided split with LGR GLIDES mix.
																														Great Blue Heron, Unit 134 almost looks like dam pool but no obvious
9/12/2000	OC into to CV P	.	134 MCP	20.	4 9304.5	1.76	55			6											DTA1 1329, 1330, 1331						e0033	136303	8	dam just braided channels, some sort of depositg at the downstream & braids at deposit. Photo DTA1 1332 is outflow
9/12/2009	OC jntn to CV B		SPLIT	54	4 9358.5	1.77	38.5			0																	00093	+30393		orando as depusita i moto di nel 1632 la Outiliuw.
9/12/2009	OC jntn to CV B		135 RUN	23	3 9381.5	1.78	23											у	at base								666049	436403	3	andient 20/ pooling op perimeter and and the
9/12/2009	OC Inth to CV B		136 LGR 137 POW	82	2 9463.5 0 9523.5	1.79	40									-														gradient 5%, pooling on permeter, non modelable
																														gradient 2%, ambiguous due to minor surface aggitation @ current flow.
9/12/2009	OC inth to CV B	•	138 LGR 139 HGP	64	4 9587.5 0 9617.5	1.82	26																							Would be LGR @ additional 5 cfs.
0, 12/2003			100 1101	30																										g

Oregon Creek – Ground-based Habitat Mapping Data (cont.)

											granitic pluto	on,											
Stream: Oregon Creek						D	ate: 8/15/2009		Pa	arent Materi	ial: metasedime	ntary											
Reach:									Map	o Gradient ((%): 2.3%												
9/12/2009 OC jntn to CV Br	140 STEP	58	9675.5	1.83	36.5		2																
9/12/2009 OC jnth to CV Br	141 POW	109	9/53.5	1.85	40																		
9/12/2009 OC intr to CV Br	143 MCP	72	9933.5	1.88	25		3															Mi	d-pool control
9/12/2009 OC jntn to CV Br	144 RUN	25	9958.5	1.89																		EN	IDS in a CHUTE flagged at top, END SURVEY FOR 9/12/09
9/12/2009 OC jntn to CV Br	145 MCP	38	9996.5	1.89	27.33		2.5															be	drock
0/42/2000 OC into to CV/ Br	AAC OTED	25	10021 5	1.00	20.5												DTA4 4444					be	drock, 3% gradient, step run unclear because of substrate (chute-
9/12/2009 OC Intri to CV Br	140 STEP 147 MCP	56	10031.5	1.90	39.33		2.5										DTA1					Wi	a) dth includes midchannel sidebar and associated side pool
9/12/2009 OC jntn to CV Br	148 MCP	78	10175.5	1.93	32.33		3.25										DTA1 1412					po	ol slit by surfacing bedrock in middle
9/12/2009 OC jntn to CV Br	149 LGR	160	10335.5	1.96	49.67												DTA1 1413					be	drock riffle - some step-like features, 4%
9/12/2009 OC jntn to CV Br	150 MCP	101	10436.5	1.98	40.33		3.75																
9/12/2009 OC jntn to CV Br	151 MCP	65	10501.5	1.99	33.33		3.25															tw	above MCP separated by strong bedrock control
9/12/2009 OC jnth to CV Br	152 HGR	29	10530.5	1.99	35				_													be	drock rittle, 4% gradient
9/12/2009 OC into to CV Br	153 MCP	91	10621 5	2.01	34		3 25															sir	an of pool w some surface agration, signify POW - like but no
9/12/2009 OC jntn to CV Br	154 HGR	66	10687.5	2.02	30												DTA1 1414					5%	6 gradient, modelable
																						ob	lique flow, multiple water surfaces, pocket-like (poor exp of step), 3%
9/12/2009 OC jntn to CV Br	155 STEP	50	10737.5	2.03	45									у	at top		DTA1 1415			666092	4364377	gra	id.
9/12/2009 OC jntn to CV Br	156 MCP	82	10819.5	2.05	37.67		2															D/	2. 0.5 men death - 0 and - 0 meters
9/12/2009 OC Jith to CV Br	158 STEP	32	10879.5	2.06	34.5		2															KU 00	ble/ boulder bar creates split few steps
																						be	drock pool/ shallow pocket water - directly under Celestial Valley
9/12/2009 OC jntn to CV Br	159 POW	156	11035.5	2.09	40												DTA1 1416					Ro	ad bridge.
9/12/2009 OC jntn to CV Br	160 RUN	45	11080.5	2.10	27.5																	be	drock under bridge
9/12/2009 OC jntn to CV Br	162 MCP	32	11112.5	2.10	36		2.75																
9/12/2009 OC Inth to CV Br	163 KUN 164 MCP	27	11139.5	2.11	19.5		3									IBA 0.5 cfs						trit	outany I BA - 0.5 cfe
0122000 00 jiii 10 01 bi					21.00		0									LB/ CO.O OID						ca	lifornia newt!, short run at bottom, one LBA midchannel modelable:
																						ma	odification & some pools formed from mining. SWITCH TO MAPPING
9/12/2009 OC jntn to CV Br	165 LGR	230	11407.5	2.16	34.25)	у	at top					666246	4364489	@	UTM: 0666246/ 4364489
9/15/2009 CV Br to Pvt Prop	166 MCP	48	11455.5	2.17	34		2 1.06	BLDR	BLD	COB	COB		4)	у	at base	RBA 0.5 cfs	DTA1 1417	0 0 n	0	0 666242	4364489		
9/15/2009 CV Br to Pvt Prop	167 STEP	53	11508.5	2.18	33		2 1 12	20 PL DR	BLD	COB	BLD	10	4 1	n N			DIA1 1418	0 0 n	0	0		39	3 gradient
9/15/2009 CV BI to PVL Plop	100 MCP	32	11540.5	2.19	30.5		2 1.13	30 BLDR	BLD	СОВ	BLU		41	IN				0 0 1	0	0		00	ol 168 & 169 separated by strong bedrock boulder outcrop, weak
9/15/2009 CV Br to Pvt Prop	169 MCP	151	11691.5	2.21	31.67		5.5 2.78	50 BLDR	BLD	COB	BLD	30	4 r	n			DTA1 1419	0 0 n	0	0		co	introl mid-pool
																						2.5	5% gradient, 75% of channel RBA riffle-like, although steplike RBA
																						NC	JT MODELABLE because more than one habitat type across
9/15/2009 CV Br to Pvt Prop	170 LGR	108	11799.5	2.23	30.67			BLDR	BLD	COB	BLD	4	4)	у	at top			0 0 n	0	0 666359	4364524	tra	nsverse (2/3 riffle, 1/3 run)
9/15/2009 CV Br to Pvt Prop	171 MCP	243	12042.5	2.28	41.67	2	2 3.5	50 BLDR	COB	SND	SND	15	4)	y n	at base	LBA < 0.1 cfs	DTA1 1420 LDS	0 0 n	0	0		'+	J.5 feet for average BF depth
9/15/2009 CV BI to PVL Plop	172 GLI	214	12310.5	2.33	29.75	2		BLUK	COB	BLU	SIND	50	41	n		RDA 1.0 CIS	DTAT 1421 LDS	0 01	0	0		29	6 gradient sedges banks - beaw blackberry cobble is sand matrix
																						wit	th some boulder. Modelable at higher flows (through rocks and
9/15/2009 CV Br to Pvt Prop	173 LGR	264	12580.5	2.38	32.5	1.25		BLDR	COB	BLD	COB		4 r	n			DTA1 1422	0 0 n	0	0		mu	ultiple flow line at current flow)
9/15/2009 CV Br to Pvt Prop	174 GLI	43	12623.5	2.39	44	2		BLDR	COB	BLD	COB	5	1 r	n			DTA1 1423	0 0 n	0	0		GI	de at base of pool, poor control between GLI & Pool (U174 & 175)
9/15/2009 CV Br to Pvt Prop	175 MCP	225	12848.5	2.43	32.75	1.75	1.5 3.1	30 BLDR	BLD	COB	BLD		1)	у	at top		DTA1 1425 LDS	0 0 n	0	0	4264921	p0	or sc but enough shallow, slow, wide. Photo DTA1 1424 LUS butterily
9/15/2009 CV Br to Pvt Prop	177 MCP	113	12009.5	2.44	28.75		2.5										DTA1 1426			000380	4304031	rai	Iroad bridge crosses unit, cobble/ boulder substrate, 30% each
9/15/2009 CV Br to Pvt Prop	178 LGR	60	13062.5	2.47	27.67	1.75																29	6 gradient
																						rc	= 0.75, max depth = 1.2 therefore does not meet, slow, therefore
9/15/2009 CV Br to Pvt Prop	179 GLI	78	13140.5	2.49	25.33		1.2		_													GI	de
9/15/2009 CV Br to Pvt Prop	180 LGR	27	13167.5	2.49	25																	29	a, run-like character
9/15/2009 CV BI to PVL Plop	TOT LOR	100	13323.5	2.52	25.25																	37	and downstream control < boulders: short run at top, lots of sand
																						su	prounds cobbles and boulders but not in big depth, cat tails increase
9/15/2009 CV Br to Pvt Prop	182 MCP	337	13660.5	2.59	36		4.25															ov	erhanging veg. Boulder/cobble substrate
9/15/2009 CV Br to Pvt Prop	183 LGR	53	13713.5	2.60	25																	bo	ulder/cobble, 3%
9/15/2009 CV Br to Pvt Prop	184 MCP	98	13811.5	2.62	29		2.25													096999	4005464	bo	ulder/cobble w/ sand
9/15/2009 CV BI to Pvt Prop	186 MCP	83	13980.5	2.65	27.07		2						,	у						000309	4303101	10	hole/boulder/sand
9/15/2009 CV Br to Pvt Prop	187 LGR	26	14006.5	2.65	28		-															29	6 gradient
9/15/2009 CV Br to Pvt Prop	188 MCP	108	14114.5	2.67	33		2.5															rc'	= 0.6, shallow at top
9/15/2009 CV Br to Pvt Prop	189 LGR	214	14328.5	2.71	33.33																	2.5	j% grad
9/15/2009 CV Br to Pvt Prop	190 MCP	132	14460.5	2.74	35.33		3															sa	nd fills pool
9/15/2009 CV Br to Pyt Prop	191 MCP	68	14528 5	2 75	28		3															DO	adder control separates 190 & 191, tence at goat pasture,
9/15/2009 CV Br to Pvt Prop	192 HGR	26	14554.5	2.76	27		0															6%	6 grad, boulder/riffle, non modelable
																						3%	gradient, lower w/ poorly formed steps; flater/deeper - lumped
9/15/2009 CV Br to Pvt Prop	193 LGR	71	14625.5	2.77	22.5																	со	oble bar on LBA.
9/15/2009 CV Br to Pvt Prop	194 RUN	46	14671.5	2.78	19.5		1.25															rc	= 0.75, r.d. = 0.5 doesn't meet; deeper therefore run
9/15/2009 CV Br to Pvt Prop 9/15/2009 CV Br to Pvt Prop	195 LGR 196 RUN	63	14/34.5	2.79	34 33															666363	4365457	49	gradient, flag, modelable at top only
3/13/2003 OV DI 10 1 10 100	130 1014		14704.5	2.00	04.00																	lor	ag. deep. filled with sand: adjacent to log vard: +1 for BED (WD 1-
9/15/2009 CV Br to Pvt Prop	197 MCP	255	15039.5	2.85	46.33		4.25															12	.,50 (w) 1-12,25 (w); 150 LBD BE
9/15/2009 CV Br to Pvt Prop	198 LGR	49	15088.5	2.86	32.5																	3%	o gradient
9/15/2009 CV Br to Pvt Prop	199 MCP	132	15220.5	2.88	32.33		1.75	30												666325	4365576	bri	dge 666325/ 4365576, sand/boulder substrate 30% embedded.
9/15/2009 CV Br to Pvt Prop	200 LGR	278	15498.5	2.94	28.6	1.5	15		_													39	a, modelable in flatter sections but multiple flow lines elsewhere
9/15/2009 CV BI to Pvt Prop	201 MCP 202 RUN	94	15642.5	2.95	21.33		1.5															1.0	. = 0.04 > meets
9/15/2009 CV Br to Pvt Prop	203 LGR	112	15754.5	2.98	33																	49	6, flat section modelable
																						sa	nd fills pool, cows, stream side road (boulder/sand), 50% pool tail
9/15/2009 CV Br to Pvt Prop	204 MCP	193	15947.5	3.02	33.75		3.75	50									DTA1 1428 LDS					en	ibeddedness
9/15/2009 CV Br to Pvt Prop	205 LGR	36	15983.5	3.03	27)	у	at top						1005010	bo	ulder/cobble flat at top (but forgot UTM)
9/15/2009 CV Br to Pvt Prop	206 MCP	94	16077.5	3.04	26.67												DTA1 1420			666330	4365849		n modelable 4% gradient
9/15/2009 CV Br to Pvt Prop	208 RUN	30	16167.5	3.06	23												DIA1 1423					10	i modelable, 4 % gradieni
	200 11011		10101.0	0.00	2.																	fille	ed with sand - boulder/sand substrate, thick green algae, dogs sand
																						pil	ing into stream, 0.05 cfs culvert/ trib LBA, shallow at head, PHOTOS
9/15/2009 CV Br to Pvt Prop	209 MCP	201	16368.5	3.10	36		1.75									LBA 0.05 cfs	DTA1 1430-1432					DT	A1 1430-1432 dogs, pool, and bank.
9/15/2009 CV Br to Pvt Prop	210 LGR	29	16397.5	3.11	34																	29	s grad
9/15/2009 CV Br to Pvt Prop 9/15/2009 CV Br to Pvt Prop	211 MCP 212 PLIN	123	16554.5	3.13	34.67		2															RU	ulder/ cobble
3/13/2009 GV BI t0 PVL PI0P	212 KUN	34	10354.5	3.14	24.33																	bo	ulder/ cobble, 10' step through not mass and boulders separate
9/15/2009 CV Br to Pvt Prop	213 MCP	54	16608.5	3.15	19		2															21	2&213
																						8%	 gradient, strong boulder -> psuedo steps, oblique flow, non-
9/15/2009 CV Br to Pvt Prop	214 HGR	25	16633.5	3.15	29				-	-							DTA1 1433					ma	Jdelable
9/15/2009 CV Br to Put Prop	215 MCP	00	16715 5	3 17	25.67		2							v	at top		DIA1 1434 of unit			0014333	4366040	80	a long parrow tail (run-like) bldr/cob (less sand) rc = 0.75
5.15/2003 OV DI 10 PV PIOP	213 WOF	02	10/10.0	3.17	20.07		2)	,	artop		call	I		000403		lia	, iong nanow tan (runnike), bianeod (icss salid), ic = 0.15.
Oregon Creek – Ground-based Habitat Mapping Data (cont.)

					Ŭ	<u>`</u>	Ĺ.																		
									Pooltail									Tota		Total	Max				
	Unit				Est avg		Est avg		embed-		Sub-	Dominant					Land-	Total LWI	D Fish	Spawnable	spawning				
	Ordered Original Habitat	Length	Cum.		BFW		pool depth	Max. pool	dedness	Dominan	t dominan	t bank		Confine- Flag/	Flag	Trib	marks	LWD wette	d Migration	gravel area	gravel patch				
Date Section Number	Unit # Unit # Type	(ft)	Length (ft)	River Mile	e (ft)	BFD (ft)	(ft)	depth (ft)	(%) Cover	r substrate	substrate	substrate Ero	sion (ft) FPW	ment Label	Description	cfs	or Photos	(bankful) widt	h Barrier?	(sq. ft.)	(sq ft)	Northing	Easting Post-	-Field Changes	Comments
9/15/2009 CV Br to Pvt Prop	216 LGR	93	16808.5	3.18	31																			4	4% gradient, modelable
9/15/2009 CV Br to Pvt Prop	217 POW	36	16844.5	3.19	28.5												DTA1 1436							5	small scale, multi-thread, boulder dominant
9/15/2009 CV Br to Pvt Prop	218 MCP	56	16900.5	3.20	29.67			2																r	c = 0.5, poor sc; wide, flat, shallow
9/15/2009 CV Br to Pvt Prop	219 POW	86	6 16986.5	3.22	29.75																			r	nubarb
9/15/2009 CV Br to Pvt Prop	220 MCP	20	17006.5	3.22	21			2																	
9/15/2009 CV Br to Pvt Prop	221 RUN	17	17023.5	3.22	17			2									DT44 4427 LDC								thisk slass as 0.5 toil slide like
9/15/2009 CV BI to Pvt Plop	222 MCP	127	1710.5	3.25	20			2									DTA1 1437 LDS							L. L.	lick algae, ic = 0.5, tall glide-like.
9/15/2009 CV BI to Pvt Plop	223 POW 224 LGP	32	17252.5	3.25	20												DTAT 1436 LUS							ŀ	coulder sub cobble 3% gradient non-modelable obligue
3/13/2003 OV DI to T with top	224 EON	70	17252.5	5.21	20																				rc = 0.5 boulder/cobble no movement n 1 > t poor sc (doesn't meet
9/15/2009 CV Br to Pvt Prop	225 POW	44	17296.5	3.28	25			1.5									DTA1 1439					666538	4366168	·	rd), no flow uniformity THEREFORE POW, END SURVEY.
				0.20	_																			i i	GR because surface agitation, although may resemble POW @ high
10/4/2009 Below Log Cabin	226 LGR	120.5	5 17417	3.30	15.67	1.25			BLDR	BLD	COB	BLD		1 y	at base		DTA2 2127		n			666543	4366181	f	lows, 2% gradient.
-																								1	Not POW because shallow and no divergent flows. Used unit #225 for
10/4/2009 Below Log Cabin	227 RUN	51	17468	3.31	17.5	1.75			BLDR	BLD	COB	BLD		1 n			DTA2 2128		n					t	.ruthing.
10/4/2009 Below Log Cabin	228 HGR	86	17554	3.32	17				BLDR	BLD	COB	BLD		1 n			DTA2 2129		n					4	4%, big boulders
10/4/2009 Below Log Cabin	229 MCP	124	17678	3.35	32		2.875	5	15 BLDR	BLD	COB	BED		3 n			DTA2 2130		n					t	op of pool run - like due to slight control
10/4/2009 Below Log Cabin	230 CAS	16	5 17694	3.35	6.33				BLDR	BED	BLD	BED		3 у	at top		DTA2 2131		n			666646	4366242	7	% gradient
10/4/2009 Below Log Cabin	231 LGR	29	17723	3.36	12	1.5			BLDR	BLD	COB	BLD		3 y	at base		DTA2 2132		n			666646	4366242	2	.% gradient
10/4/2009 Below Log Cabin	232 MCP	15/	17880	3.39	26.75		3.5	6	10 BLDR	BED	BLD	BLD		2 n			DTA2 2133		n					t	op of pool narrow & run-like with weak control
10/4/2009 Below Log Cabin	233 LGR	61	17941	3.40	19.33	1.5			BLDR	BLD	COB	BLD		3 n			DT40.0404		n					2	/%, maybe split channel @ higher flows
10/4/2009 Below Log Cabin	234 POW	89	18030	3.41	32				BLDR	BLD	COB	BED		3 N			DTA2 2134		n						weekly stepped byt stepp present. Medified therefore strended reals in
																									reakiy stepped but steps present. Modified therefore stranded focks in
10/4/2009 Below Log Cabin	235 STEP	08	18128	3.43	21				BLDR	BLD	COB	BLD		3 1	at top		DTA2 2135 LDS		n			666614	4366372	i i i	CR in higher flows
10/4/2009 Below Log Cabin	236 LGR	61	18189	3.44	16 33	1.5			BLDR	BED	COB	BLD		1 v	artop		DTA2 2139 LD0		n			666604	4366353		1% gradient
Tor 4/2003 Delow Edg Gabin	230 EON	01	10103	3.44	10.00	1.5			DEDIX	DED	005	000		, y			DTA2 2100					000004	4000000		POW best describes would be GLI but very ununiform/boulder
10/4/2009 Below Log Cabin	237 POW	105	18294	3.46	23				BLDR	BLD	BED	BED		1 n			DTA2 2140		n	22	9				substrate
																								-	
																								r	modified at middle, rock-boulder dam at road crossing; photos DTA2 #
																								2	2142, 2143, 2.5% gradient, Red-legged adult frog (Photos: DTA2 #'s
10/4/2009 Below Log Cabin	238 LGR	136	18430	3.49	19.25	1.7			BLDR	BLD	COB	BLD		3 n			DTA2 2141		n					2	2144, 2145, 2146 are of iuvenile RLF, #'s 2147, 2148 are of adult RLF).
																								s	spawn gravel out of water, POW-like, but much too shallow, no scour
10/4/2009 Below Log Cabin	239 RUN	91	18521	3.51	25.33	1.5			BLDR	BLD	COB	BLD		3 n			DTA2 21549		n	1	1			a	around boulders, no surface agitation so not LGR
10/4/2009 Below Log Cabin	240 LGR	32	18553	3.51	19.5				BLDR	BLD	COB	BLD		3 у	at top		DTA2 2150		n			666588	4366503	3	3% gradient
10/4/2009 Below Log Cabin	241 RUN	108	18661	3.53	19.67				BLDR	BLD	COB	BLD		1 y	at base		DTA2 2151		n	5	i 4	666658	4366498	F	OW-like, but shallow, little scour, more POW-like at base.
10/4/2009 Below Log Cabin	242 MCP	94	18755	3.55	41.5		2.9	5.5	25 BLDR	BED	BLD	BED		2 n			DTA2 2152		n						
10/4/2009 Below Log Cabin	243 HGR	83	18838	3.57	21.33	1.5			BLDR	BLD	BED	BLD		1 n			DTA2 2153		n					4	+% gradient, some steps on LBA, not mappable
10/4/2009 Below Log Cabin	244 LGR	47	18885	3.58	25.5				BLDR	BLD	COB	BLD		1 n			DTA2 2154		n					4	" fish, LGR due to surface agitation, 1% gradient
10/4/2009 Below Log Cabin	245 RUN	44	18929	3.59	17	1.5			BLDR	BLD	COB	BLD		1 y	at top		DTA2 2155		n			666603	4366620		
10/4/2009 Below Log Cabin	246 LGR	104	19033	3.60	22.33												DTA2 2156								
10/4/2009 Below Log Cabin	247 POW	39	19072	3.61	20.5																				
10/4/2009 Below Log Cabin	246 LGK	80	19705	3.64	21.5		2.5																		
10/4/2009 Below Log Cabin	SPI IT	43	19203	3.65			2.5										DTA2 2157								
10/4/2009 Below Edg Cabin	SFEIT	40	19240	3.05													DTA2 2137							1	1% surface aditation present, channel wide and almost divergent: somei
10/4/2009 Below Log Cabin	250 I GR	71	19319	3.66	23												DTA2 2158							i	indistinct run-like features, not stepped.
10/4/2009 Below Log Cabin	251 RUN	49	19368	3.67	43																			r	/un-like but shallow with no scour around boulders
10/4/2009 Below Log Cabin	252 LGR	73	3 19441	3.68	22).50%
10/4/2009 Below Log Cabin	253 LGR	83	19524	3.70	15												DTA2 2159							3	3%
10/4/2009 Below Log Cabin	SPLIT	111	19635	3.72																				F	pool rba, run Iba
10/4/2009 Below Log Cabin	254 MCP	58	19693	3.73	63		6	i									DTA2 2160								
10/4/2009 Below Log Cabin	255 FALLS	15	19708	3.73	15														у			666725	4366817	6	j' barrier, flagged at top
10/4/2009 Below Log Cabin	256 CHU	22	19730	3.74	30																				
10/4/2009 Below Log Cabin	257 CAS	15	5 19745	3.74	58																				
10/4/2009 Below Log Cabin	258 POW	63	19808	3.75	41																				di bardan na angli a tan ƙasal ba'a Orr
10/4/2009 Below Log Cabin	CAS	15	19823	3.75	58														У					2	a barrier see coordinates for Unit 255
10/4/2009 Below Log Cabin	209 STEP	120	19000	3.70	21												DTA 2 2161								divergent challow
10/4/2009 Below Log Cabin	260 MCP	62	20049	3.80	36.5												DTA2 2101								Neigent, shallow
10/4/2009 Below Log Cabin	261 LGR	35	20043	3.80	49				BED															4	4%
10/4/2009 Below Log Cabin	262 MCP	94	20178	3.82	41				525																
																	DTA2							v	weir at top substantially reducting flows: irrigation from weir - looks
10/4/2009 Below Log Cabin	263 FALL	20	20198	3.83	35												2163,2164,2166							F	private
10/4/2009 Below Log Cabin	264 MCP	253	20451	3.87	42.5		6	5									DTA2 2167								
10/4/2009 Below Log Cabin	265 POW	88	20539	3.89	30																			t	ail is rapid-like
10/4/2009 Below Log Cabin	266 FALL	8	20547	3.89	36				INSIGNI	F BED	BED	BED		1 y	at base		DTA2 2169		у			666921	4366959	4	i foot fish migration barrier
10/4/2009 Below Log Cabin	267 MCP	106	20653	3.91	35		2	4	BLDR	BLD	BED	BLD		1 n			DTA2 2170		n					E	Jedrock "controls" throughout, top of pool is POW-like.
10/4/2009 Below Log Cabin	268 MCP	47	20700	3.92	22		2.25	3.5	BLDR	BED	BLD	BED		1 n			DTA2 2171		n					F	ciffle at base separates from lower pool, 5% gradient.
10/4/2009 Below Log Cabin	269 HGR	39	20739	3.93	19.5				BLDR	BED	BLD	BED		1 n			DTA2 2172		n					Ę	/% gradient
10/4/2009 Below Log Cabin	270 POW	100	20839	3.95	27.33				BLDR	BLD	BED	BED		1 y	at top		DTA2 2173		n			666957	4367034		DOW I've at here shorts 1/0D and and for DOW half
10/4/2009 Below Log Cabin	271 MCP 272 POW	114	20953	3.97	25.67		1.5	0 3	BLDR	BED	BLD	BED		1 y	at base		DTA2 2174		n			666962	4367038		OW-like at base; shorty HGR separates from POW below
10/4/2009 Below Log Cabin	272 FOW	30	20909	3.90	30	1.0			BLDR	BED	BLD	RED		1 n			DTA2 2175		n 0					4	69/ andient
TOV-#2003 Delow Log Cabin	273 1161		21025	0.00	2.5	1.5			DEDIX	DED	DED	DED					D1A2 2110								70 gradient
10/4/2009 Below Log Cabin	274 RUN	45	21070	3.99	20.33				BLDR	BED	BLD	BLD		1 n			DTA2 2177, 2178		n					F	POW-like with some steps, but shallow and no scour around boulders
																							change	ed from POW in	
																							spite of	of under cliff and	
10/4/2009 Below Log Cabin	275 MCP	48	21118	4.00	62.5		3.8	6	BLDR	BED	BLD	BED		1 y	at top		DTA2 2179, 2180	1	1 n			667048	4367070 around	l boulders l	JTM is at top of U275, creepy cave here, water goes under bedrock cliff.
10/4/2009 Below Log Cabin	276 STEP	95	21213	4.02	19.33	1.5			BLDR	BLD	COB	BLD		3 у	at base		DTA2 2181		n			667048	4367070		· · · · · ·
10/4/2009 Below Log Cabin	277 RUN	135	21348	4.04	21.5				BLDR	BLD	BED	BED		1 n			DTA2 2182		n						
10/4/2009 Below Log Cabin	278 LGR	203	21551	4.08	23.5	1			BLDR	BLD	COB	BLD		1 n			DTA2 2183		n					2	2% gradient
10/4/2009 Below Log Cabin	279 MCP	172	2 21723	4.11	35		3.3	6	BLDR	BED	BLD	BED		2 n			DTA2 2184, 2185		n						
10/4/2009 Below Log Cabin	280 RUN	33	21756	4.12	12				BLDR	BED	BLD	BED		1 y	at top		DTA2 2186		n			667047	4367258	r	arrow channel, bedrock on both sides
10/4/2009 Below Log Cabin	281 CAS	13.5	21769.5	4.12	15				BLDR	BED	BLD	BED		1 Y	at top		DTA2 2187		У	0)	667030	4367261	1	0 perm barrier; weir at top of feature
10/4/2009 Below Log Cabin	282 MCP	101	21870.5	4.14	43			5	35 BLDR	BED	BLD	BED		2 n			DTA2 2188		У					4	weir at top; weir at bottom; gauges here
10/4/2009 Below Log Cabin	SPLIT	19	21889.5	4.15	~~	4.05			DI DO	PLP	BED	PLD		4 M			DTA 2 2400							r	Ja - pool; Iba - run into weir
10/4/2009 Below Log Cabin	283 LGR	84	219/3.5	4.16	10.00	1.25			BLDR	BLD	BED	BLU		1 N			DTA2 2190		n					2	.76 gradient
10/4/2009 Below Log Cabin	284 KUN	66	22039.5	4.17	18.33		1.0	35	30 BLUK	IBD	COP	BLD		1 1	at top		DTA2 2191		0			667000	136350	F	rungerstep nom upper poor into run
10/4/2009 Below Log Cabin	200 WIGP 286 LGR	108	22094.5	4.10	22 67	15	1.9	3.5		BLD	COB	BLD		1 1	at base		DTA2 2192		n			007008	430339		3% gradient
10/4/2009 Below Log Cabin	287 MCP	30	22241 5	4.21	16 5	1.0	1.4	25	BLDR	BLD	BED	BED		1 N			DTA2 2194		 n						
10/4/2009 Below Log Cabin	288 I GR	55	22296.5	4.22	10.33		1	2.0	BLDR	BLD	COB	BLD		1 Y	at top		DTA2 2199								4%
10/4/2009 Below Log Cabin	289 PLP	79	22375.5	4.24			4.7	8	5 BLDR	BLD	BED	BLD		2 y	at base		DTA2 2200		n			667048	4367394 change	ed from MCP	pool directly below dam
, v																									

Table	1a.	Summary	Statistics - Mapped Ur	nits
Table	ıa.	ounnary	otationes - mapped of	nto

							Average	
				Number of		Average	maximum	Average pooltail
	Total	Length Rel		Units	Average	pool depth	pool depth	embeddedness
Unit Type	Length (ft)	Frequency	Number	(frequency)	width (ft)	(ft)	(ft)	(%)
Fall	133	0.6%	9	3.1%	25.9			
Cascade	852	4.1%	19	6.6%	30.2			
Chute	157.5	0.8%	6	2.1%	15.3			
Rapid								
High Gradient Riffle	673	3.2%	15	5.2%	26.3			
Low Gradient Riffle	4169.5	19.9%	49	17.0%	26.7			
Glide	946	4.5%	8	2.8%	29.3			
Run	1245	5.9%	24	8.3%	23.5			
Step Run	808	3.9%	12	4.2%	29.1			
Pocket Water	2613	12.5%	38	13.2%	34.6			
Sheet	92	0.4%	1	0.3%	30.3			
Convergance Pool	25	0.1%	1	0.3%	25.0		2.5	
Mid-Channel Pool	8476	40.4%	93	32.3%	30.8	2.4	3.3	7.6
Lateral Scour Pool	206.5	1.0%	2	0.7%	28.0	1.6	3.5	
Trench Pool								
Plunge Pool	582	2.8%	11	3.8%	25.7	3.5	6.0	5.9
TOTAL	20978.5	100.0%	288	100.0%	29.4	2.5	3.8	6.7
QC			0		Weighted			
					Average			

Table 2. Stream Cover

Dominant		Relative
Cover Type	Number	Frequency
Insignificant	16	14.04%
Boulder	93	81.58%
Vegetation	5	4.39%
Wood	0	
SUM	114	100%
QC		

Table 3. Reach Summary

Total Reach Length:	4.2 mi.	
Total Mapped Length:	4.0 mi.	94.6% mapped
Average Bankfull Width:	29.4 ft.	0.00 mi. charac
Bankfull Depth:	1.7 ft.	94.67% Total m & c
Width:Depth:	17	
Flood Prone Width:	0 ft.	
Entrenchment Ratio:	0.0	
Total Spawnable Gravel:	255 ft ² - trout	
Avg Largest Patch Size:	12 ft ² - trout	
LWD Density:	2 / mile (ban	kful)
Wetted LWD Density:	2 / mile (wet	ted width)
Parent Material:	granitic pluton, metase	edimentary
Bank Erosion % of Reach:	0.6%	
Tot No. Passage Barriers:	8	

By Length (ft)

Table 4. Reach Summary - Substrate and Bank Characteristics

	Dominan	t Substrate	Subdomina	ant Substrate	Bank Su	ubstrate	Bank Substrate Erosion		
	Total	Length Rel	Total	Length Rel	Total Length	Length Rel	Total Length	Length Rel	
	Length (ft)	Frequency	Length (ft)	Frequency	(ft)	Frequency	(ft)	Frequency	
Bedrock	2058.5	24.1%	1284	14.9%	3135	36.7%	0		
Boulder	4749	55.5%	2762	32.1%	3670.5	43.0%	89	36.5%	
Cobble	1584.5	18.5%	3789.5	44.0%	814.5	9.5%	90	36.9%	
Gravel	164	1.9%	281	3.3%	0		0		
Sand	0		494.5	5.7%	920	10.8%	65	26.6%	
Silt	0		0		0		0		
SUM	8556	100.0%	8611	100.0%	8540	100.0%	244	100.0%	

Yuba County Water Agency Yuba River Development Project FERC 2246







Excel Data - Attachment to Attachment 3.10A Habitat Mapping Report Page $\mathbf{6}$



Oregon Creek - Habitat Mapping Units using ground-mapped data.