PRELIMINARY ASSESSMENT

OF

THE COLD STREAM WATERSHED

A tributary of the Little Truckee River

Sierra County, California

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For

The Sagebrush Chapter of Trout Unlimited
And
The Feather River Chapter of Trout Unlimited

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INTRODUCTON

This document summarizes the findings of a "preliminary assessment" of the Cold Stream watershed, a tributary of the Little Truckee River. The Sagebrush Chapter and Feather River Chapter of Trout Unlimited commissioned this effort. As the title implies, this effort was limited in scope, designed to provide a current snapshot of watershed conditions in the basin. This assessment is a distillation of known information; a limited amount of new quantitative data, and qualitative observations based on field surveys of stream and hillslope conditions. Its purpose is to serve as a starting point for more extensive assessments of the upper portion of the Little Truckee. Of special interest are conditions affecting the fishery resource in the area.

SOILS AND GEOLOGY

Volcanism and glaciation are the processes that have shaped the dominant characteristics of the watershed. Pyroclastic rocks and lava flows form the basement rocks that are overlain by coarse glacial drift. The glacial material is a coarse textured mix of rocks of different sizes and compositions that is moderately consolidated. At an elevation around 7200', the main channel cuts across glacial moraine deposits. At this location, channel gradient increases and streamside landslides line both sides of the channel. Large boulders and bedrock chutes typify this section.

Resistance to Erosion. The net result is a surface soil that is extremely rocky and porous. This leads to a surface that is fairly resistant to erosion. Erosion pavements form quickly on disturbed ground and they retard soil movement once formed. The few areas along the main road where drainage had collected showed little serious erosion below the road where it drained.

Hillsides that were logged in the mid 1990s were walked and examined for evidence of erosion related to the logging. The few areas of erosion that were found were mostly related to temporary haul roads. Problems were small and few had resulted in any serious soil loss.

Landslides. Rockfalls constitute the most common form mass movement. Boulder covered talus slopes are common in the upper watershed.

Along the channel, there is a distinct section approximately 1000 ft in length that is dominated by debris slides and slumps on both sides. This is discussed in detail in a subsequent section.

Soil Hydrology. The underlying volcanic rocks appear to act as a restriction to downward percolation, especially in the upper half of the drainage. These areas are visible on air photos as numerous large spring areas that contribute year around base flow to the main stream.

Stream Channel. Channel reaches are described in detail in a subsequent section. The surrounding landscape has supplied a lot cobble- and boulder-size material within the channel's active flood zone. Much of this material accumulates behind debris jams during most flows. Periodically, debris jams give way, mobilizing this material and scouring the channel. It produces a channel that is well armored but subject to periodic scour as debris jams come and go

PHYSIOGRAPHY

The Cold Stream basin is relatively small at 2321 acres (3.62 mi^2) and elongate in shape with no major perennial tributaries. Elevation ranges from 6480 at the confluence with the Little Truckee River to 9150 at the summit of Mt. Lola.

Volcanic rock outcrops dominate the upper ridgelines with steep talus slopes immediately below them. Lower down, glacial drift partially fills the valley bottom producing a somewhat broader and more gently sloping valley bottom. Cold Stream Meadow is a unique feature in the watershed. It appears to be a remnant of a small glacial outflow lake that has since filled with alluvium.
As previously mentioned, the channel encounters the remnants of terminal moraine below 7200'. Below 6800', the stream begins to exit its canyon and starts to form an alluvial fan.

With a few exceptions, hillside slope gradients are mostly between 30%-55% and are highly variable. The steepest areas are limited to areas near ridgetop outcrops and along the main channel through the highest gradient reach between 6800' and 7200'.

HYDROLOGY

Precipitation. Precipitation estimates were derived from climatological summaries for three nearby stations (Sierraville RS, Truckee RS, and Squaw Valley Lodge). All stations are located at elevations representative of the lowest elevations in the Cold Stream basin. Orographic effects are presumed to deliver significantly higher amounts of precipitation to the upper portion of the basin (where elevations approach 9000 feet) than is indicated from station data.

Sierraville	Elevation 4975	Annual Precip 26.34 inches
Truckee	Elevation 6020	Annual Precip 30.85 inches
Squaw Valley	Elevation 6230	Annual Precip 51.02 inches

Without extended analysis, it would be reasonable to expect an overall basin precipitation of 60 inches or more.

Mean snow accumulation for the Jan-Mar period is estimated at 2-3 feet in the lowest portion of the basin and probably in excess of 6-10 feet at the highest elevations. Maximum accumulations are possible well in excess of these estimates.

Runoff. Estimates of surface runoff were derived from a combination of direct measurement and inference from nearby gauging stations. Neighboring Independence Creek has an extensive record of streamflow measurements between 1991 and 2009. The basin is larger than Cold Stream (5184 acres) and stream flow changes are undoubtedly buffered by changes in storage in Independence Lake. By adjusting for differences in basin sizes, a synthetic record of monthly streamflow for Cold Stream was generated.

Summer Baseflow: Typically 5-8 cfs. Consistently measured at 6 cfs during Jul-Aug 2010 field season.

Mean monthly flows in cfs (estimated from synthetic record):

January: 5.4	February: 5.2	March: 6.5
April: 9.5	May: 18.9	June: 20.2
July: 10.2	August: 7.2	September: 8.6
October: 7.4	November: 8.4	December: 6.0

Annual Runoff. Annual runoff totals approximately 35 inches equivalent depth, giving further support to precipitation estimates of 60 inches or greater.

Peak flows. Channel dimensions were measured using recent scour and other high water marks and used to estimate recent peak flow events. This estimate was then compared to maximum daily flows from the Independence Creek data (USGS Station ID 10343000) as a reality check. Flows in Independence Creek are regulated adding additional uncertainty to this analysis. Estimates should be considered rough approximations.

Based on this analysis, serious channel scour is probably associated with daily mean flows over 100 cfs which probably occur with an average frequency of 25 years or less. Instantaneous peak flows can be much higher.

Snow obviously dominates the basin's hydrologic response. This feature helps keep summer flows elevated for an extended time. It also can result in elevated peak flood events through the well-documented rain-on-snow mechanism.

The bottom line is that the Cold Stream basin produces more stream flow per inch of precipitation than would a comparably sized basin at lower elevations or with deeper, less rocky soils.

Water Temperature. A water temperature data logger was installed for the period 7/26 through 8/30/2010. The logger was located in the main channel below the Henness Pass road and above the confluence with the Little Truckee. Stream temperature was recorded every 20 minutes. A statistical summary of these data is shown below.

	DEG C
MAX FOR PERIOD	15.49
AVG FOR PERIOD	10.22
MIN FOR PERIOD	5.70
MEDIAN FOR PERIOD	10.03

These data show that temperatures are ideal for support of cold-water fish with no indication of stressful temperatures at any time during the period of deployment.

STREAM REACH DESCRIPTIONS

Stream Reach Delineation 2010. Based on my field observations, I have broken the stream into the following reaches based on their dominant characteristics. These reaches are different than those established by USFS field crews during the 2000 survey. The differences between the two delineations will be discussed later in this section. Reach characteristics are summarized in Table 2 below.

Reaches 3 and 4 are the least accessible sections of the main channel owing to terrain and distance from the main road. On August 31, 2010, this section was traversed on foot while capturing video segments of representative sites along the way. These sites are referenced to GPS waypoints shown on the following map (Figure 1). Narration on the video clips identifies the waypoint identifier. The video is included on CD-R as a supplement to this report with the intent of giving the reader of this report a visual sense of this stream section. Reach 3 with its unstable hillsides and potential vertical and flow-velocity barriers to upstream fish migration is possibly the most critical reach from a fish habitat perspective.

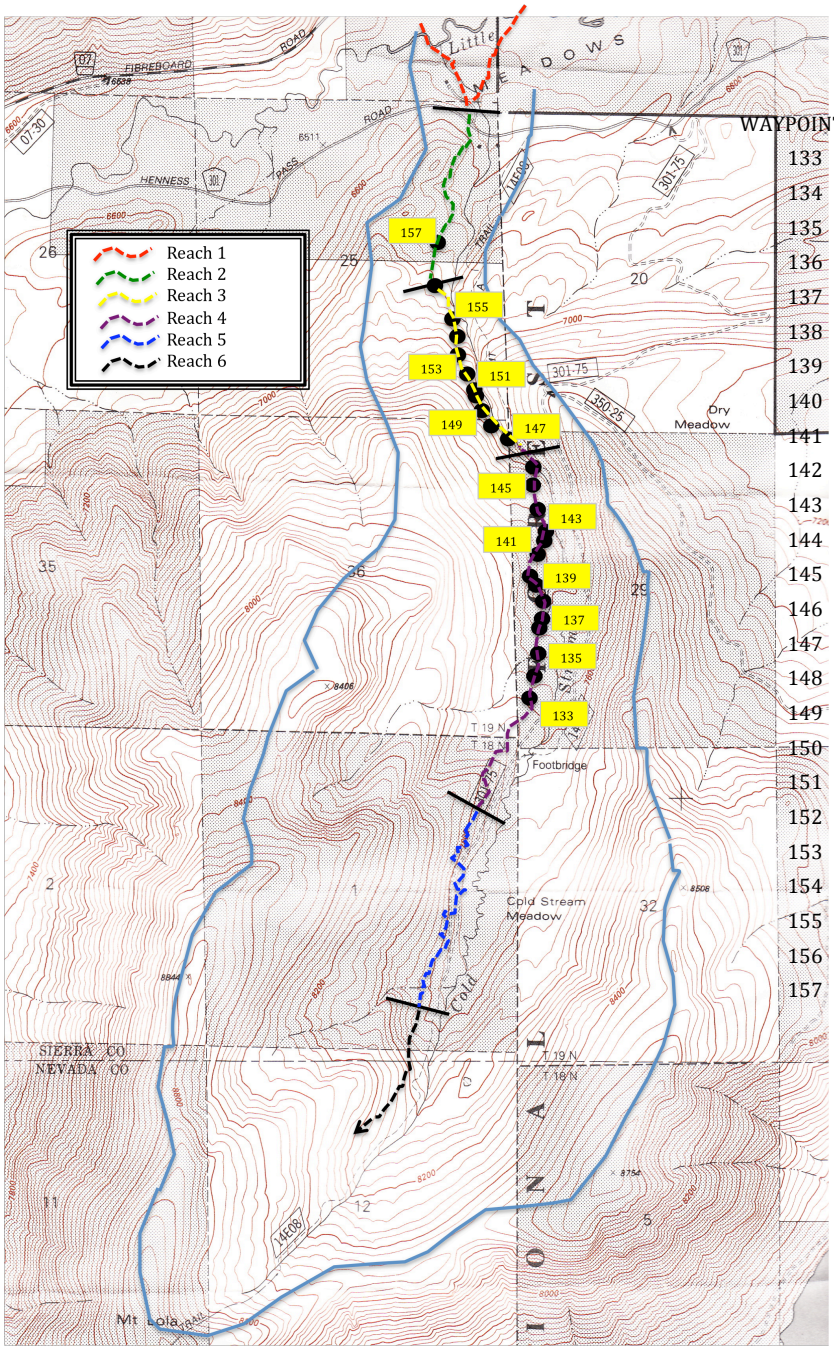
A photo gallery of selected sites on the main channel is included as Appendix A.

Stream Reach Descriptions from 2000 USFS survey. The 2000 survey was implemented following the Region 6 (USFS) Stream Inventory Protocols as they existed at that time. The main channel was broken into three reaches as described in Table 3. The full data summary from that survey is included in Appendix B. The following table displays some of the more important channel characteristics as highlighted by the data from this survey.

Table 1: Highlights from 2000 USFS Stream Survey of main channel

	Reach delineations from 2000 Survey			
INDICATOR	REACH 1	REACH 2	REACH 3	COMMENT
BANK INSTABLILTY (ft^2/mile)	21614	2831	1197	High values for reach 1 related to landslide zone between 6800-7100'
AVG % FINES (<6mm)	1%	14%	8%	Higher fines in reach 2 due to low gradient reach through Cold Stream Meadow
AVG % GRAVEL (6-64mm)	22%	55%	41%	Ample gravels present
WOODY DEBRIS (pcs/mile)	26.0	24.2	8.6	Ample woody debris
AVG GRADIENT	9%	4%	16%	Gradients within reaches are highly variable. Reach 1 has sections with channel gradients approaching 20%

Figure 1: Map of Stream Reaches with video waypoints (UTM).



WAYPOINT ID	EASTING	NORTHING
133	728659	4371388
134	728664	4371470
135	728682	4371594
136	728700	4371717
137	728715	4371763
138	728722	4371879
139	728676	4371974
140	728643	4372016
141	728681	4372111
142	728698	4372166
143	728715	4372201
144	728662	4372362
145	728672	4372486
146	728635	4372584
147	728560	4372662
148	728423	4372726
149	728378	4372831
150	728318	4372948
151	728298	4372983
152	728242	4373050
153	728222	4373177
154	728221	4373222
155	728188	4373303
156	728092	4373510
157	728183	4373799

TABLE 2: Reach delineations based on 2010 field survey

	From	To	Length	Gradient	Confinement	Substrate	Description
Reach 1	Confluence w/ Little Truckee (6470')	Henness Pass Road Crossing (6550')	2100	2%	Low	Cobble-gravel	Low gradient alluvial fan with numerous distributary channels
Reach 2	Henness Pass Road Crossing (6550')	approx. 6800'	3100	2-4%	Mod-low	Cobble	Upper portion of alluvial fan
Reach 3	approx. 6800'	approx. 7040'	1450	15-20%	High	Boulder-cobble	Equivalent to Rosgen Aa2+ Lots of large boulders, some scour to bedrock. Landslides on both sides of stream
Reach 4	approx. 7040'	approx. 7680' near lower end of Cold Stream Meadow	8900	7-9%	Mod-high	Mostly cobble w/ some boulder. Pocketed gravels on pool margins	Moderately entrenched channel equivalent to Rosgen A3
Reach 5	approx. 7680 near lower end of Cold Stream Meadow	Upper end of Cold Stream Meadow (7800')	4600	1-2%	Very Low	Gravel and fines	Cold Stream Meadow. Channel is alluvial and meandering. Equivalent to Rosgen E3/E4
Reach 6	Upper end of Cold Stream Meadow (7800')	approx. 8000'	1500	10-15%	Mod-high	Cobble-gravel	Perennial flow begins to terminate.

TABLE 3: Reach delineations based on 2000 USFS field survey

	From	To	Length	Gradient	Confinement	Substrate	Description
Reach 1	Confluence w/ Little Truckee (6470')	Confluence with first tributary (7400')	11365	2-18% avg=8.8%	Low (below 6800') High (above 6800')	Cobble-gravel	Multiple channel types lumped together in this reach. High values for bank instability in 2000 data probably due to short section dominated flanking landslides (6800'-7200') Includes Reaches 1-3 of 2010 survey.
Reach 2	Confluence with first tributary (7400')	Confluence with 2nd tributary (7740')	8273	2-9% avg=4.0%	Mod-high except through Cold Stream Meadow	Cobble-gravel	Cold Stream Meadow reach lumped with A3 channel below. Includes Reaches 4-5 of 2010 survey.
Reach 3	Confluence with 2nd tributary (7740')	approx. 8400'	7409	10-30% Avg=16.2%	Mod-High	Boulder-cobble	Very high gradient-very low flow. Includes Reach 6 of 2010 survey and beyond.

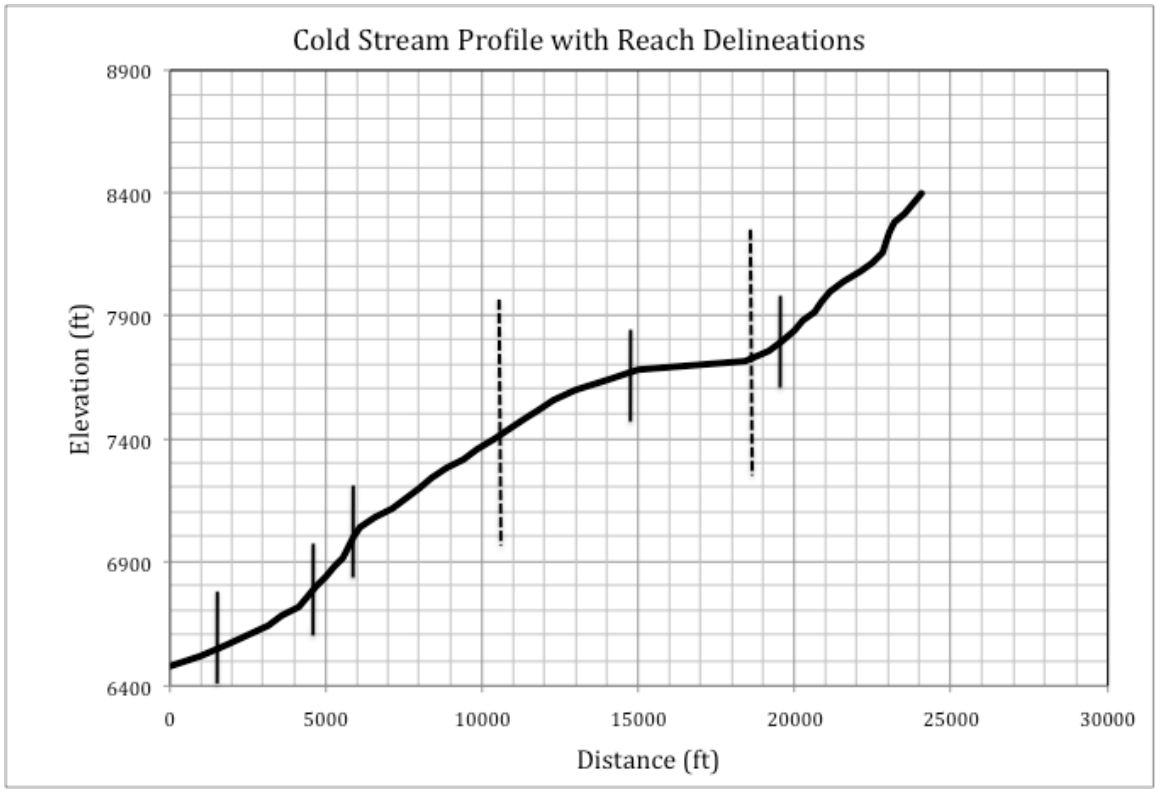
Taken together, the information gathered from these two surveys depict a high-energy channel, still working to adjust its profile as it cuts through layers of glacial material. The stream profile shown below depicts an unusual convex profile through reach 4 indicating a large volume of valley fill and resistant substrate.

Sufficient gravel is present to support spawning (22%-55% depending on reach). High flows and high stream gradients provide enough energy to flush fine sediments out of the basin (fines less than 8% on high gradient reaches and less than 14% through the Cold Stream Meadow reach).

Woody debris is abundant throughout with the exception of the meadow reach. Woody debris plays a very significant role in pool formation and in the rate of bedload movement through the system. Riparian vegetation is mostly in good shape with good recruitment potential for large woody debris.

The periodic release of logs and boulders through the demise of log-formed jams causes episodes of channel scour over short sections and is probably the main mechanism moving large cobbles and boulders down the channel. This dynamic process has the potential to create temporary barriers to upstream fish migration..

Figure 2



Solid vertical lines indicate 2010 reach delineations. Dashed lines show reach delineations from 2000 USFS survey

LAND USE

Roads. Henness Pass road crosses the alluvial fan of Cold Stream at 6550 ft. The crossing is a low bridge with concrete wing walls on the abutments. This crossing forces three distributary channels to coalesce through the crossing. Evidence at the site (repaired erosion around abutments) suggests that the crossing and its approaches are overtopped by high flows on a fairly regular basis. Although these problems are relatively minor, re-design of this crossing is probably justifiable from both engineering and resource conservation grounds.

One principal road accesses the upper basin for a total length of 2.16 miles and crosses Cold Stream twice via log stringer bridges. No major erosion problems were found on this road. Road grade is moderate and the surface is very hard and rocky because of ample rock in the native base material . The lower stringer bridge shows significant damage from over-topping, suggesting that its design results in too much constriction on channel cross sectional area. This road traverses the outer boundary of USFS designated Riparian Habitat Conservation Areas (RHCAs). Past logging associated with the road has reduced tree density in the RHCA but no major erosion sources related to the road were observed.

The upper basin has 2.22 miles of logging spur roads that are now closed, water-barred, and partially re-vegetated. A few small drainage problems were found but major erosion problems associated with these spur roads were not found.

Initial survey plans called for an itemization of road erosion problem sites. Problem sites were so few and small that this effort was deemed unnecessary. Road-related erosion is not an important issue in the Cold Stream Basin.

Timber Harvest History. Timber harvest has been most intense on the private lands in the basin. The "checkerboard" ownership pattern is very apparent on air photos from the differences in stand density alone. Changes to stand density were highest in Section 1, T18N, R14E. Current stand density is roughly 20-30 trees per acre. Most of the logging spur road miles occur in this section. The current stand density is probably the result of multiple harvest entries followed by a thinning.

Harvesting also occurred in Section 29,T19N, R15E. In this area, stand densities are higher (50+ trees per acre) and the distribution of trees is clumpier indicating the salvage was the most likely prescription. Numerous skid trails are present in this section but no major logging spurs. This logging occurred in 1995.

Both logged areas were traversed on foot to look at the general state of soil erosion that might be attributable to harvest operations. Very little was found. Soil cover in the form of duff, litter, slash, and large rocks is usually in excess of 70-80%. The inherent rockiness and high infiltration capacity of the soil limits the erosion potential. These two sections are now under the ownership of the Tahoe-Donner

Land Trust making it highly unlikely that timber harvest entries will occur anytime in the near future.

Timber management on USFS lands in the basin has been minimal. Records indicate a small (~40 acre) 1987 entry in the lower basin but it is not visually apparent either on the ground or from air photos. USFS land in the upper basin shows no sign of entry for timber harvest.

Recreation Use. The Mt. Lola Trail attracts hikers, mountain bikers, and anglers to the basin. The upper basin road provides easy access to Cold Stream Meadow where angler success is undoubtedly higher than elsewhere in the basin. Some off-road vehicle use is also evident in the upper basin. The level of recreation use is not unusually high given the basin's proximity Highways 89 and 80 and the greater Tahoe/Truckee area. None of this activity is causing major problems relative to stream habitat, channel stability, or water quality.

Water Diversion. A few small residential diversions appear to operate periodically based on pipelines encountered during the field survey. Many appeared to be non-functional at the time of the field survey. All diversions were effected through use of natural pools. The amount of water diverted appears to be extremely small relative to natural base flows.

FISHERIES

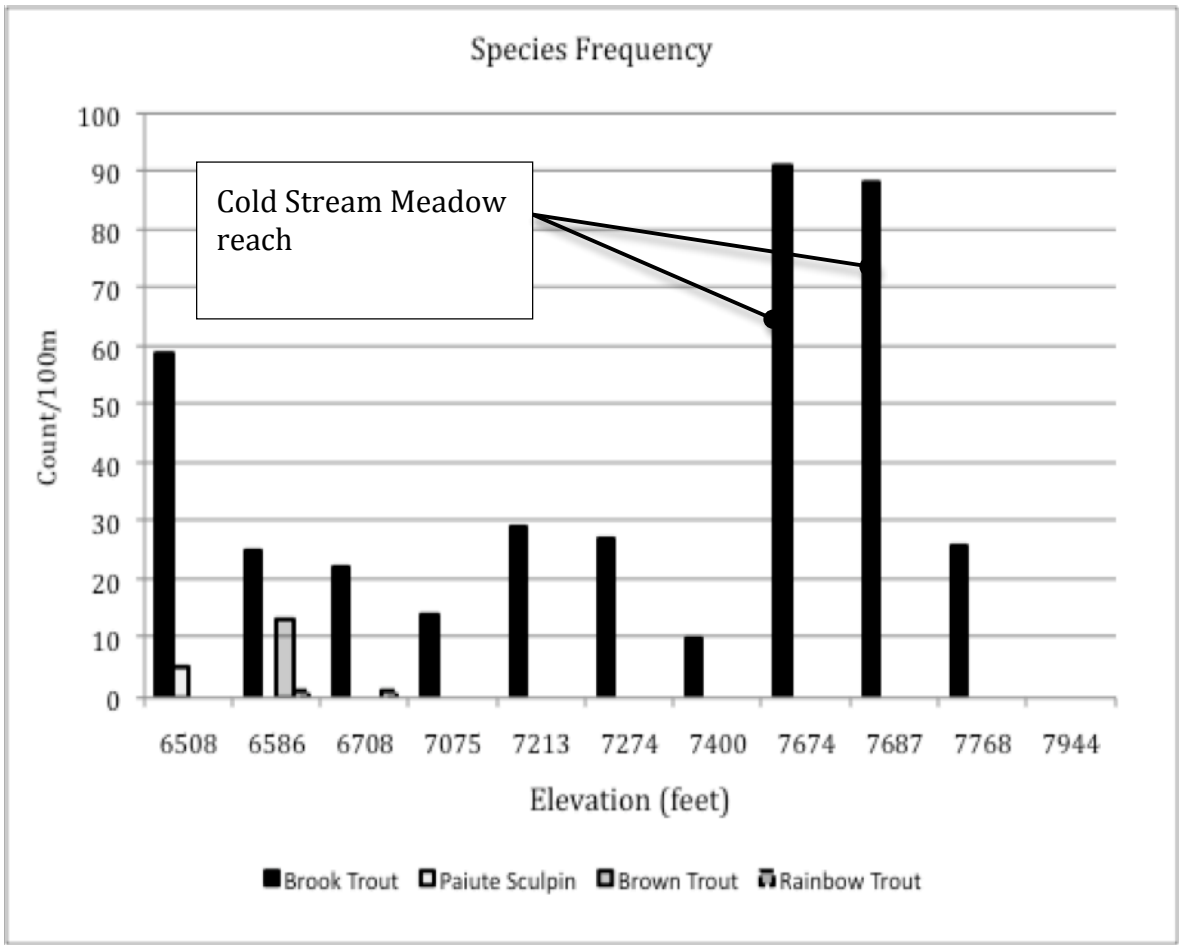
In September 2010, Mr. Derek Bloomquist of the US Fish and Wildlife Service (and his dedicated field crew), conducted fish census surveys in Cold Stream. Eleven transects were surveyed from the confluence with the Little Truckee to above Cold Stream Meadow near 8000' in elevation. A summary of those data is shown below.

Brook trout clearly dominate the stream as a whole. Sculpin, Brown trout and Rainbow trout were all found in very low numbers, all below the high gradient section that begins around 6800'. The highest densities of Brook trout were found in the lowest gradient reaches that include the alluvial fan (reach 1) and the Cold Stream Meadow (reach 5). One plausible scenario is that Cold Stream Meadow is something of a fish "nursery" that supplies the rest of the system through downstream migration and that the rigors of the high gradient reaches below limit the upstream advance of competing salmonids.

Table 4: Summary of fish survey data gathered September 2010

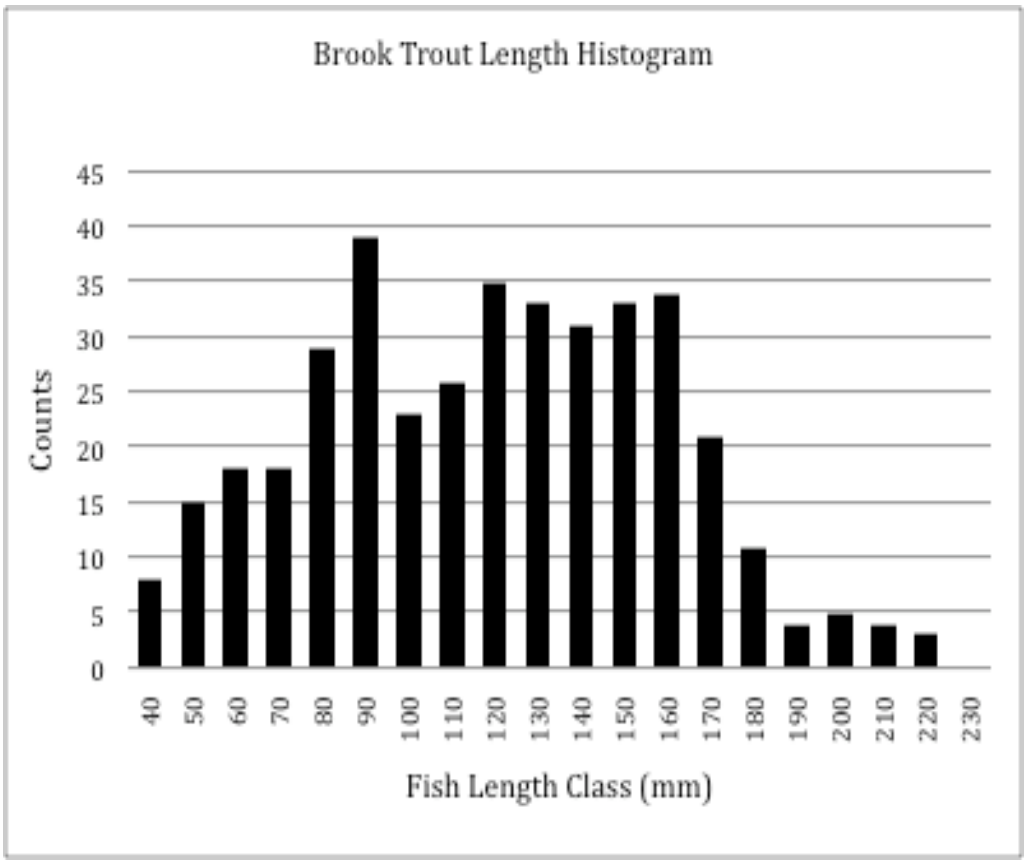
Transect #	Elevation	Brook Trout	Paiute Sculpin	Brown Trout	Rainbow Trout
1	6508	59	5	0	0
2	6586	25	0	13	1
3	6708	22	0	0	1
4	7075	14	0	0	0
5	7213	29	0	0	0
6	7274	27	0	0	0
7	7400	10	0	0	0
8	7674	91	0	0	0
9	7687	88	0	0	0
10	7768	26	0	0	0
11	7944	0	0	0	0

Figure 3: Fish survey results by transect elevation



Frequency Distributions. Only Brook trout were present in sufficient numbers to look at the distribution of sizes and life stages. This analysis suggests that all life stages are present. The median length of BT was 115 mm. The largest BT found was 240 mm. The frequency histogram shows a good spread of size/age classes.

Figure 4: Frequency distribution of Brook trout lengths, all transects combined.



CONCLUSIONS

The Cold Stream watershed exhibits the following important attributes.

- Abundant precipitation dominated by snow. Frequent scouring peak flows and generous summer base flow result.
- Extremely rocky and porous soil surface limits surface erosion
- Frequent channel scour and heavy bedload movement in main channel below Cold Stream Meadow.
- Most sediment input from landslides adjacent to channel in Reaches 3 and 4
- Very good summer base flow (6 cfs) and low water temperatures
- Vegetative recovery from past logging well underway (20 years)
- Future logging on private land in upper basin is unlikely in the near future.
- No significant road problems except at crossings
- Opportunity exists to improve stream crossings at Henness Pass Road and at log-stringer bridge in upper basin.
- Brook Trout dominate fish population throughout. Highest densities of fish are found in the lowest gradient reaches, particularly through Cold Stream Meadow.
- All life stages of fish are present suggesting adequate spawning-rearing habitat is present
- Other species not found above high gradient reach (Reach 3) suggesting normal presence of upstream migration barriers.

Overall, watershed conditions in Cold Stream are reasonably good and hydrologic function is mostly unimpaired by past land use. Road density is low and erosion rates are close to those that would occur naturally.

BIBLIOGRAPHY

Moar, R.R., G.J. Saucedo, and J.D. Little. Geologic map of the Sierraville 15′ quadrangle, Sierra and Plumas Counties, California. State of California, Department of Conservation, Division of Mines and Geology.

USDA Forest Service, Region 6. Stream Inventory Handbook: Level I and II. 2002.

USDA Forest Service, Tahoe National Forest. Tahoe National Forest Land and Resource Management Plan (LRMP). 1990.

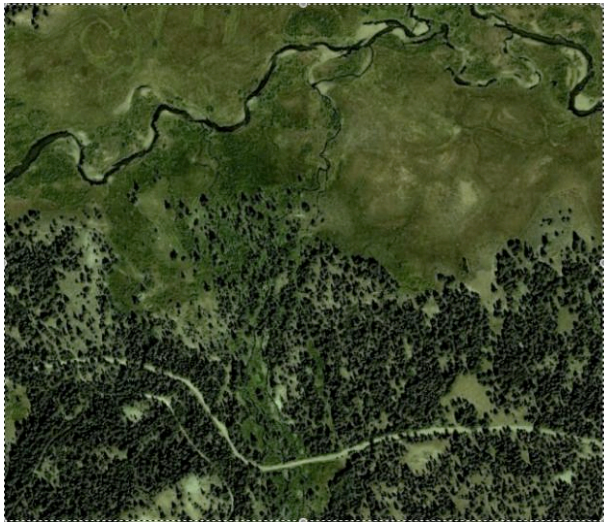
USDA Forest Service, Tahoe National Forest. Sierraville Ranger District. Unpublished data from Cold Stream Survey, August 2000

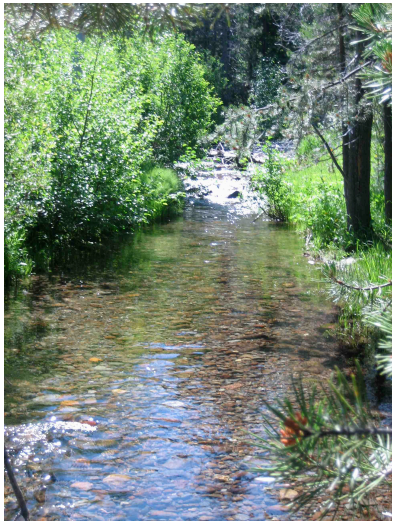
US Department of Commerce, National Climatic Data Center. Climatological Data No. 20. Available online at http://www.ncdc.noaa.gov/oa/mpp/freedata.html.

US Department of the Interior, US Geological Survey. Surface Water Resources of the United States. Available online at http://waterdata.usgs.gov/nwis/.

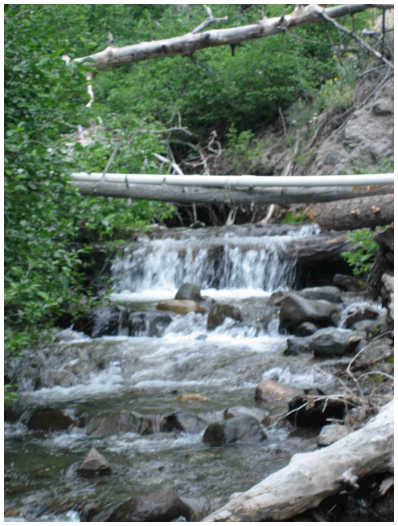
APPENDIX A

ANNOTATED PHOTO GALLERY OF COLD STREAM





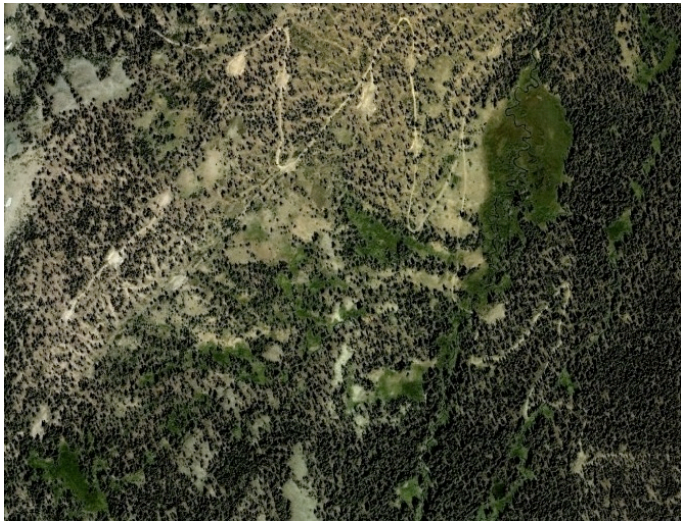
PHOTOS DEPICTING ALLUVIAL FAN REACH OF COLD STREAM. Notice numerous wetted channels (distributaries) apparent on aerial view (TOP LEFT)



TOP/BOTTOM LEFT highlights the role of log steps in pool formation and bedload retention in the high gradient reach. TOP RIGHT: Bedrock chute through reach 3. BOTTOM RIGHT: Landslides flanking channel in reach 3

PHOTOS DEPICTING COLD STREAM MEADOW REACH

TOP ROW: Views of logged areas in Section 1, T16N, R14E. BOTTOM LEFT shows hard road surface resisting surface erosion from upslope. BOTTOM RIGHT shows a small drainage problem on spur road.



TOP LEFT is aerial view showing numerous springs in upper basin. TOP RIGHT shows accumulation of glacial drift in reach 4. BOTTOM LEFT: Granite “erratic” boulders. BOTTOM RIGHT: Volcanic outcrop with talus slope below

APPENDIX B

SUMMARY OF USFS 2000 STREAM SURVEY

Reach Summary

Stream Name	Reach	Reach Length (ft)	Reach Length (miles)	Start Survey Date	End Survey Date	Rosgen	Mapped Sinuosity	Entrench-ment Ratio	Width To Depth Ratio	Channel Gradient	Reach Comments
Coldstream (Perazzo)											
	1	11,365.4	2.15	08/08/2000	08/14/2000	A3	1.1	1.4	20.6	8.76%	Started survey upstream of private property surrounding Little Truckee confluence; returned later to survey stream section within private land
	2	8,273.1	1.57	08/10/2000	08/17/2000	A3	1.2	1.2	18.5	4.02%	Meadow portion of Cold stream is low gradient and highly sinuous
	3	7,408.7	1.40	08/17/2000	08/29/2000	A3a+	1.0	1.2	16.7	16.18%	
Coldstream (Perazzo), Trib 1											
	1	2,031.0	0.38	08/30/2000	08/30/2000		1.0			12.51%	Mapped channel length is nearly double surveyed channel length
Coldstream (Perazzo), Trib 1 of Trib 2											
	1	1,035.0	0.20	08/29/2000	08/29/2000		1.0			15.50%	This trib to T2 is not on map; cannot determine channel length, sinuosity, etc.; should have been surveyed as a G channel
Coldstream (Perazzo), Trib 2											
	1	3,329.8	0.63	08/29/2000	08/29/2000		1.0			16.00%	

Pool and Riffle Information Summary

Stream Name	Reach	Pool Riffle Ratio	Average Wetted Width (ft)	Number Of Pools	Total Pool Length (ft)	Total Pool Area (sq ft)	Average Pool Length (ft)	Average Pool Maximum Depth (ft)	Average Residual Pool Depth (ft)	Number Of Riffles	Total Riffle Length (ft)	Total Riffle Area (sq ft)	Average Riffle Length (ft)	Average Riffle Maximum Depth (ft)	Average Riffle Depth (ft)
Coldstream (Perazzo)															
	1	0.055	10.65	24	543.91	6,267.5	22.7	2.10	1.47	31	10,258.0	113,133.3	330.9	1.70	0.63
	2	0.144	9.62	27	916.69	11,097.4	34.0	2.13	1.59	29	7,355.3	77,313.2	253.6	1.36	0.54
	3	0.011	4.66	6	73.03	419.1	12.2	1.50	1.20	14	6,270.8	36,694.0	447.9	1.21	0.30
Coldstream (Perazzo), Trib 1															
	1	0.004	4.00	1	7.00	28.0	7.0	1.30	1.10	3	2,024.0	7,171.0	674.7	1.00	0.20
Coldstream (Perazzo), Trib 1 of Trib 2															
	1		0.83	0						2	955.0	1,382.5	477.5	0.60	
Coldstream (Perazzo), Trib 2															
	1	0.008	4.39	3	19.00	107.0	6.3	1.30	1.07	8	3,304.0	13,547.0	413.0	1.04	0.23

Bank Instability and Large Woody Debris (LWD) Summary

StreamName	Reach	Reach Length (miles)	Bank Instability Length (ft) /Mile	Bank Instability Area (sq ft) /Mile	Average Percent Fines <6 mm	Average Percent Gravel 6-64 mm	Small LWD	Small LWD/Mile	Medium LWD	Medium LWD/Mile	Large LWD	Large LWD/Mile
Coldstream (Perazzo)												
	1	2.15	1,519	21,614	1%	22%	34	15.8	14	6.5	8	3.7
	2	1.57	415	2,831	14%	55%	22	14.0	8	5.1	8	5.1
	3	1.40	242	1,197	8%	41%	5	3.6	3	2.1	4	2.9
Coldstream (Perazzo), Trib 1 of Trib 2												
	1	0.20					0	0.0	1	5.1	0	0.0
Coldstream (Perazzo), Trib 2												
	1	0.63	95	349			2	3.2	0	0.0	2	3.2

Habitat Unit Summary

Stream Name	Reach	# Of Dry Units	Length of Dry (ft)	# Of Side Channels	Side Channel Area (sq ft)	# Of Falls	Max Height Of Falls (ft)	# Of Marshes	Marsh Area (sq ft)	# Of Dams	Max Height Of Dams (ft)	# Of Braids	Braid Area (sq ft)	# Of Culverts	# Of Tribs	# of Non-USGS Perennials
Coldstream (Perazzo)																
	1			4	3,309.5	2	8					1	1,343.8	1	1	1
	2			3	4,451.9	1	4								1	1
	3	4	861.10	2	630.1	1	75									3
Coldstream (Perazzo), Trib 1																
	1			1	115.0											
Coldstream (Perazzo), Trib 1 of Trib 2																
	1	1	80.00													
Coldstream (Perazzo), Trib 2																
	1					2	30									