

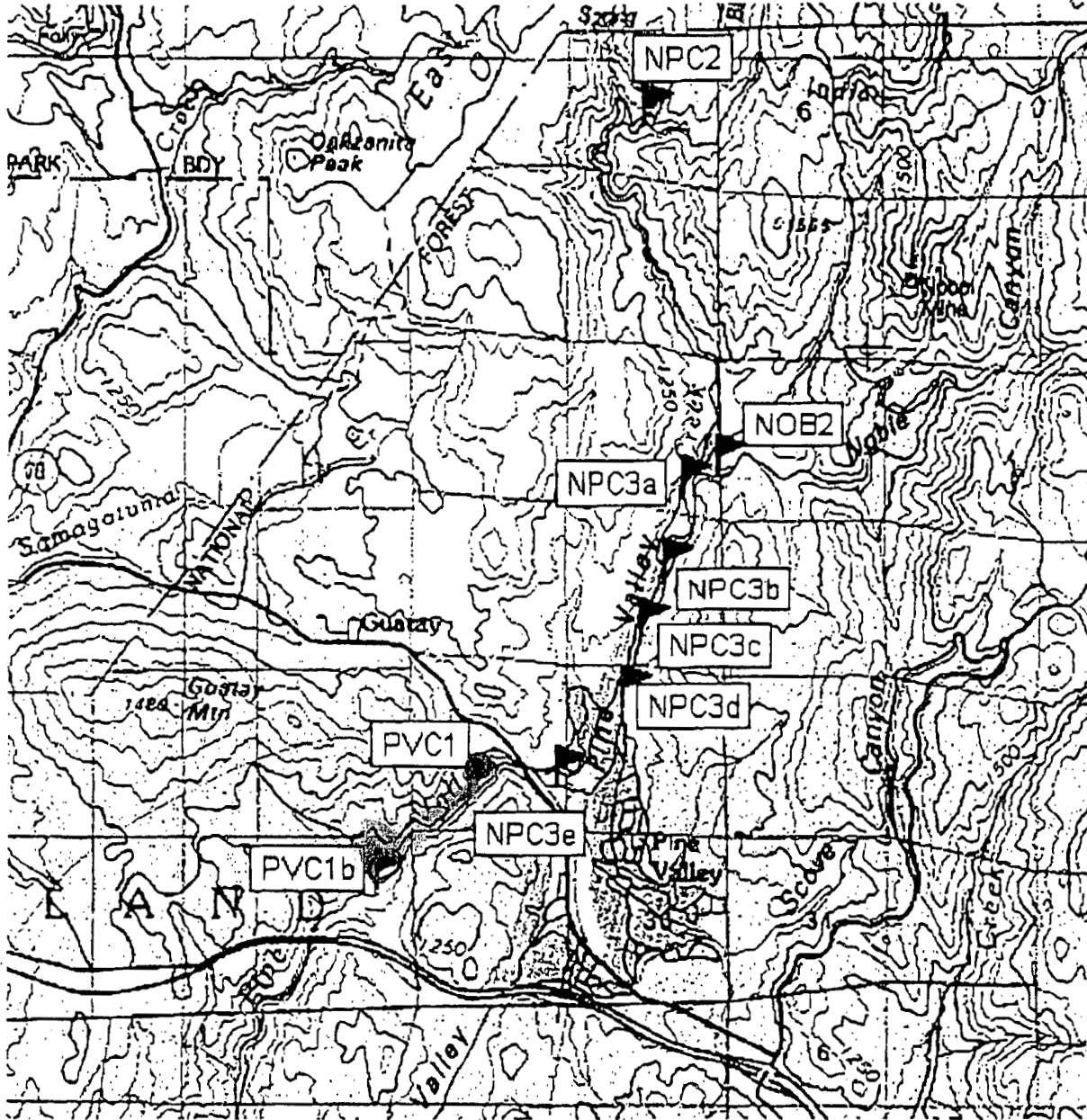
Dave Gibson

CITY OF SAN DIEGO
WATER DEPT

Page 1 of 2

29-48

Pine Valley Creek
AND PINE CR.



268

Just below stable

1000 Total
1000 local
Feet 200
Entire 35

file://C:\TEMP\pcap_map.jpg

Pine Sewage 100,000 to 1,000,000
3/16/99

City of San Diego, Water Department
Cleveland National Forest, Descanso Ranger District
Illegal Immigrant Impact Project (IIIP), 1997

Average Values Each value is the arithmetic mean of six samples (except *, which is five samples)

	Date	Total Coliform Bacteria		Fecal Coliform Bacteria		Enterococcus Bacteria	
		MPN/100ml (MPN method) Upstream	MPN/100ml (MPN method) Downstream	CFU/100ml (MF method) Upstream	CFU/100ml (MF method) Downstream	CFU/100ml (MF method) Upstream	CFU/100ml (MF method) Downstream
Upper Cottonwood Site	01/14	3047	2753	70	56	no data, lab error	
	02/04	725	562	2	14	2	2
	03/04	3783	1883	2	1	5	3
	04/01	520	686	1	1	14	10
Cibbetts Flat Site	01/14	478	143	1	1	12	19
	02/19	138	60	16	2	8	11
	03/12	103	227	1	2	7	11
	04/09	86	11	1	1	13	18
	05/13	66	118	1	4	28	65
Pine Valley Creek Site	01/16	2650	1000	281✓	8	2417	78
	02/19	314	174*	3	7*	11	12*
	03/19	141	120	10	1	10	8
	04/15	865	130	32	29	1	3
	05/20	438	328	85	13	79	57
Middle Cottonwood Site <i>Hammer</i>	04/21	130	933	20	147	45	213
	06/25	118	1067	8	80	52	178
	07/29	56	38	4	14	41	162
	08/26	65	917	4	23	48	435
	09/30	112	1400	6	92	118	567

Log-mean Values Each value is the arithmetic mean of six samples (except *, which is five samples)

	Date	Total Coliform Bacteria		Fecal Coliform Bacteria		Enterococcus Bacteria	
		MPN/100ml (MPN method) Upstream	MPN/100ml (MPN method) Downstream	CFU/100ml (MF method) Upstream	CFU/100ml (MF method) Downstream	CFU/100ml (MF method) Upstream	CFU/100ml (MF method) Downstream
Upper Cottonwood Site	01/14	1646	1605	69	56	no data, lab error	
	02/04	393	295	2	11	2	1
	03/04	3277	1757	1	1	4	3
	04/01	358	531	1	1	14	10
Cibbetts Flat Site	01/14	311	112	1	1	12	19
	02/19	106	51	13	1	8	10
	03/12	80	179	1	2	7	11
	04/09	44	10	1	1	13	16
	05/13	53	104	1	3	27	57
Pine Valley Creek Site	01/16	1826	815	222	7	2344	76
	02/19	211	120*	3	7*	10	12*
	03/19	104	95	10	1	10	7
	04/15	678	78	31	29	1	3
	05/20	401	261	83	12	33	56
Middle Cottonwood Site	04/21	129	903	20	144	45	212
	06/25	114	989	8	79	51	177
	07/29	47	433	4	13	41	133
	08/26	62	825	3	22	48	429

h:\wtrshed\data\cw\iiip_97.wk4 7/13/01 + dwg

Pine Creek Drainage Water Quality Data

Sample Date: 15-Apr-97

Parameter

Station:	NH3-N	NO2-N	NO3-N	PO4 P	Turbidity
	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(NTU)
NPC2	NS	NS	NS	NS	NS
NPC3A	NS	NS	NS	NS	NS
NPC3B	NS	NS	NS	NS	NS
NPC3C	NS	NS	NS	NS	NS
NPC3D	NS	NS	NS	NS	NS
PVC1A	NS	NS	NS	NS	NS
PVC1B					
PVC2					

YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC3A

DATE

13-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/13/97 12:11	31397	130605	16.41	0.484	91.4	8.93	0.1	8.07	217
03/13/97 12:15	31397	131005	16.51	0.485	91.5	8.92	0.1	8.07	218
03/13/97 12:16	31397	131054	16.52	0.484	91.5	8.92	0.1	8.07	219
03/13/97 12:16	31397	131104	16.53	0.484	91.5	8.91	0.1	8.07	219
03/13/97 12:16	31397	131114	16.53	0.484	91.5	8.91	0.1	8.07	219

Observations:

Flow	14.99	cfs
Sky	clear	
Wind	calm	
Direction		
Air Temp	17	C

Comments:

Site inspection and survey. Good flow over cobbles. Few invertebrates observed - no hydrosyche or other stationary web/retreat building caddis larvae. Site undisturbed by human activity although much is evident in the area - trails, hikers, bikes etc. Little or no over storey on site. Most of the willows are dead or just recovering from se drought. Site just upstream of the recreational community of interest to the Descanso CNF.

Samples Taken Number

Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	1
CPOM	1
Organics	0

YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC3A

DATE

31-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/31/97 10:57	33197	115030	12.95	0.51	94.2	9.92	0	8.01	187
03/31/97 10:58	33197	115100	12.95	0.51	93.5	9.84	0	7.98	187
03/31/97 10:58	33197	115113	12.95	0.51	93.3	9.82	0	7.98	187
03/31/97 11:00	33197	115311	12.94	0.511	92	9.69	0	7.98	189

AVERAGE

12.9475	0.51025	93.25	9.8175	0	7.9875	187.5
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Observations:

Flow		cfs
Sky	PC 60%	
Wind	10	
Direction	NW	
Air Temp	18.6	C

Comments:

Site inspection and sampling.
Sampling for Pine Valley Project.
Hester Dendy samplers in place and undisturbed. Flow decreased at least 30% since sampling.

Samples Taken Number

Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	0

YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC3A

DATE

13-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/13/97 12:11	31397	130605	16.41	0.484	91.4	8.93	0.1	8.07	217
03/13/97 12:15	31397	131005	16.51	0.485	91.5	8.92	0.1	8.07	218
03/13/97 12:16	31397	131054	16.52	0.484	91.5	8.92	0.1	8.07	219
03/13/97 12:16	31397	131104	16.53	0.484	91.5	8.91	0.1	8.07	219
03/13/97 12:16	31397	131114	16.53	0.484	91.5	8.91	0.1	8.07	219

Observations:

Flow	14.99	cfs
Sky	clear	
Wind	calm	
Direction		
Air Temp	17	C

Comments:

Site inspection and survey. Good flow over cobbles. Few invertebrates observed - no hydropsyches or other stationary web/retreat building caddis larvae. Site undisturbed by human activity although much is evident in the area - trails, hikers, bikes etc. Little or no over storey on site. Most of the willows are dead or just recovering from severe drought. Site just upstream of the recreational community of interest to the Descanso CNF.

Samples Taken	Number
Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	1
CPOM	1
Organics	0

Crypto-Giardia	0



DWG
YSI #1

TDS

g/l

0.263

0.264

0.264

0.264

0.264

y

asonal

YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC3A

DATE

31-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/31/97 10:57	33197	115030	12.95	0.51	94.2	9.92	0	8.01	187
03/31/97 10:58	33197	115100	12.95	0.51	93.5	9.84	0	7.98	187
03/31/97 10:58	33197	115113	12.95	0.51	93.3	9.82	0	7.98	187
03/31/97 11:00	33197	115311	12.94	0.511	92	9.69	0	7.98	189

AVERAGE

12.9475	0.51025	93.25	9.8175	0	7.9875	187.5
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Observations:

Flow		cfs
Sky	PC 60%	
Wind	10	
Direction	NW	
Air Temp	18.6	C

Comments:

Site inspection and sampling.
Sampling for Pine Valley Project.
Hester Dendy samplers in place and undisturbed. Flow decreased at least 30% since sampling.

Samples Taken	Number
Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	0

DWG
YSI #1

TDS

g/l

0.255

0.255

0.255

0.255

0.255

last

CPOM	0
Organics	0
Crypto-Giardia	0

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YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC3B

DATE

31-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/31/97 10:43	33197	113638	12.97	0.502	99.6	10.48	0	7.95	181
03/31/97 10:44	33197	113711	12.99	0.502	99.6	10.48	0	7.95	182
03/31/97 10:44	33197	113740	12.99	0.502	99.5	10.47	0	7.95	183

AVERAGE

12.98	0.50	99.57	10.48	0.00	7.95	182.00
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Observations:

Flow		cfs
Sky	PC 65%	
Wind	10	
Direction	NW	
Air Temp	19	C

Comments:

Site inspection and sampling.
Decreased flow since last sampling at least 30% by visual estimation.

Samples Taken Number

Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	0

YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC3B

DATE

13-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY	TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/13/97	11:26	31397	122120	15.31	0.488	96.3	9.63	-0.1	8.01	203
03/13/97	11:27	31397	122219	15.31	0.488	95.6	9.56	0	8	204
03/13/97	11:29	31397	122353	15.33	0.488	95.1	9.5	0	8	206
03/13/97	11:30	31397	122520	15.29	0.489	94.3	9.43	-0.1	8	206

Observations:

Flow	14.38	cfs
Sky	clear	
Wind	calm	
Direction	calm	
Air Temp	20.8	C

Comments:

Site inspection and monitoring. At the Noble Canyon trailhead crossing. Sandy channel with little or no over storey. Some willows upstream; mostly small (<7'). Poor habitat for BMI/CPOM analysis. Site moderately to heavily disturbed by hikers and bikers are departing the trailhead. Tracks in streambed. Some trash.

Samples Taken Number

Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	0
CPOM	0
Organics	0

DWG
YSI #1

TDS

g/l

0.259

0.259

0.259

0.259

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ating
riving

YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC3C

DATE

01-Jan-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/13/97 10:57	31397	115158	14.6	0.47	88.2	8.95	0.1	7.83	202
03/13/97 10:58	31397	115326	14.65	0.47	88.3	8.96	0	7.83	203
03/13/97 10:59	31397	115410	14.68	0.47	88.2	8.94	0	7.82	201
03/13/97 11:00	31397	115506	14.71	0.47	88.3	8.94	0	7.82	199
03/13/97 11:03	31397	115801	14.85	0.471	88.7	8.96	0	7.84	196

Observations:

Flow	8.53 cfs
Sky	clear
Wind	calm
Direction	calm
Air Temp	18.5 C

Comments:

Site inspection and monitoring. Approx. 0.5 miles downstream of NPC3B. Just upstre of the lower crossing of Pine Creek. Flow lower, due to groundwater recharge? Cobbl and gravel on site. Partially covered by willows and trees. Poor coverage downstream both above and below crossing.

Samples Taken	Number
Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	0
CPOM	0
Organics	0

Crypto-Giardia	0

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DWG
YSI #1

TDS

g/l

0.245

0.245

0.245

0.246

0.247

am
les
1

YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC3C

DATE

01-Jan-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/13/97 10:57	31397	115158	14.6	0.47	88.2	8.95	0.1	7.83	202
03/13/97 10:58	31397	115326	14.65	0.47	88.3	8.96	0	7.83	203
03/13/97 10:59	31397	115410	14.68	0.47	88.2	8.94	0	7.82	201
03/13/97 11:00	31397	115506	14.71	0.47	88.3	8.94	0	7.82	199
03/13/97 11:03	31397	115801	14.85	0.471	88.7	8.96	0	7.84	196

Observations:

Flow	8.53	cfs
Sky	clear	
Wind	calm	
Direction	calm	
Air Temp	18.5	C

Comments:

Site inspection and monitoring. Approx. 0.5 miles downstream of NPC3B. Just upstre of the lower crossing of Pine Creek. Flow lower, due to groundwater recharge? Cobbl and gravel on site. Partially covered by willows and trees. Poor coverage downstream both above and below crossing.

Samples Taken Number

Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	0
CPOM	0
Organics	0

YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC3C

DATE

31-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/31/97 10:26	33197	111908	12.48	0.473	90.5	9.63	-0.2	7.98	182
03/31/97 10:27	33197	112004	12.47	0.472	88.9	9.46	0	7.96	180
03/31/97 10:27	33197	112026	12.45	0.472	88.6	9.43	0	7.95	179
03/31/97 10:43	33197	113630	12.97	0.502	99.7	10.49	0	7.95	181

AVERAGE

12.59	0.48	91.93	9.75	-0.05	7.96	180.50
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Observations:

Flow		cfs
Sky	PC75%	
Wind	15	
Direction	NW	
Air Temp	18.7	C

Comments:

Site inspection and sampling.
Flow substantially reduced, no longer reaches road crossing. Probably last sampling possible on this site for the season.

Samples Taken Number

Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	0

YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC3D

DATE

13-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/13/97 10:17	31397	111139	11.48	0.555	84.5	9.2	0	7.86	137
03/13/97 10:17	31397	111210	11.51	0.555	87.6	9.53	0	7.86	144
03/13/97 10:17	31397	111222	11.52	0.555	88.3	9.6	0	7.86	147

Observations:

Flow	12	cfs
Sky	clear	
Wind	calm	
Direction	calm	
Air Temp	21.13	C

Comments:

Site in arroyo just above confluence with South Fork of Pine Creek (SPC2). Flow mod high. This site takes in Scove Creek Flows also. Trout observed just downstream in a pool. Site heavily disturbed by horse and hikers on trail. Just upstream, site is undistu

Samples Taken	Number
Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	0
CPOM	0
Organics	0

DWG
YSI #1

TDS

g/l

0.268

0.268

0.268

erately
large
urbed.

YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC3D

DATE

31-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/31/97 10:13	33197	110547	12.01	0.588	91.7	9.86	-0.3	7.78	196
03/31/97 10:13	33197	110649	12.11	0.588	94.3	10.12	-0.3	7.73	197
03/31/97 10:14	33197	110714	12.14	0.587	94.7	10.15	-0.3	7.72	197
03/31/97 10:14	33197	110733	12.15	0.587	94.9	10.17	-0.3	7.72	197

AVERAGE

12.10	0.59	93.90	10.08	-0.30	7.74	196.75
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Observations:

Flow		cfs
Sky	PC 100%	
Wind	12	
Direction	NW	
Air Temp	18.7	C

Comments:

Site inspection and sampling.
Observed small trout (1 each) in plunge pool above the confluence with SPC and in be pool below confluence with SPC.

Samples Taken	Number
Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	0

DWG
YSI #1

TDS

g/l

0.287

0.288

0.288

0.288

0.29

bedrock

YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC3D

DATE

13-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/13/97 10:17	31397	111139	11.48	0.555	84.5	9.2	0	7.86	137
03/13/97 10:17	31397	111210	11.51	0.555	87.6	9.53	0	7.86	144
03/13/97 10:17	31397	111222	11.52	0.555	88.3	9.6	0	7.86	147

Observations:

Flow	12	cfs
Sky	clear	
Wind	calm	
Direction	calm	
Air Temp	21.13	C

Comments:

Site in arroyo just above confluence with South Fork of Pine Creek (SPC2). Flow mod high. This site takes in Scove Creek Flows also. Trout observed just downstream in a pool. Site heavily disturbed by horse and hikers on trail. Just upstream, site is undistu

Samples Taken Number

Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	0
CPOM	0
Organics	0

YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC3D

DATE

13-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/13/97 10:17	31397	111139	11.48	0.555	84.5	9.2	0	7.86	137
03/13/97 10:17	31397	111210	11.51	0.555	87.6	9.53	0	7.86	144
03/13/97 10:17	31397	111222	11.52	0.555	88.3	9.6	0	7.86	147

Observations:

Flow	12	cfs
Sky	clear	
Wind	calm	
Direction	calm	
Air Temp	21.13	C

Comments:

Site in arroyo just above confluence with South Fork of Pine Creek (SPC2). Flow mod high. This site takes in Scove Creek Flows also. Trout observed just downstream in a pool. Site heavily disturbed by horse and hikers on trail. Just upstream, site is undistu

Samples Taken Number

Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	0
CPOM	0
Organics	0

YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC3D

DATE

31-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/31/97 10:13	33197	110547	12.01	0.588	91.7	9.86	-0.3	7.78	196
03/31/97 10:13	33197	110649	12.11	0.588	94.3	10.12	-0.3	7.73	197
03/31/97 10:14	33197	110714	12.14	0.587	94.7	10.15	-0.3	7.72	197
03/31/97 10:14	33197	110733	12.15	0.587	94.9	10.17	-0.3	7.72	197

AVERAGE

12.10	0.59	93.90	10.08	-0.30	7.74	196.75
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Observations:

Flow		cfs
Sky	PC 100%	
Wind	12	
Direction	NW	
Air Temp	18.7	C

Comments:

Site inspection and sampling.
Observed small trout (1 each) in plunge pool above the confluence with SPC and in be pool below confluence with SPC.

Samples Taken Number

Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	0

WATERSHED WATER QUALITY REPORT SHEET

Watershed	Cottonwood
Drainage	Pine Valley Creek
Station	PVC1A

Sampling Date	11-Jun-97
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YSI Datasonde Physicochemical Data

DATE	DATE	TIME	TEMP	SP COND	DO %	DO CONC	DEPTH	PH	ORP
MM/DD/YY	MM/DD/YY	TIME	C	ms/cm	%	mg/l	m		mV
06/11/97 11:28	61197	121338	19.12	0.653	103	9.51	0	8.01	87
06/11/97 11:30	61197	121544	19.19	0.654	103.1	9.51	0	8.02	86
06/11/97 11:31	61197	121646	19.2	0.655	103.1	9.5	0	8.01	86
06/11/97 11:33	61197	121942	19.29	0.653	103	9.48	0	8.02	85
06/11/97 11:34	61197	122036	19.3	0.654	103	9.47	0	8.02	85

AVERAGE	19.22	0.654	103.04	9.49	0.00	8.02	85.80
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Observations	Flow	Habitat Score	Sky	Wind	Direction	Air Temp
	<2 cfs	108	Clear	3	W	81 F

Samples Taken	Nutrients	TON/Turbidity	Metals	Bactl	Solids
Number	1	1	1	0	0

Comments: Watershed sampling and surveillance with Verne Chancer. Reach 3 at stream crossing sampled. Upstream reaches 1 and 2 both 100% covered heavily grazed watercress (Nasturtium sp.) No free flow at reach 1 and minimal free flow at reach 2. Notified Forest Service on 5/6/97 of cattle intrusion in this protected area. A second cattle intrusion was placed to the CNF office in Alpine on 6/12/97. Lower habitat score resulting from seasonally diminished flows and decreasing wet channel size.

Plankton	0
TOC	0
BMI	1
CPOM	0
Organics	0
Crypto-Giardia	0

Water Chemistry Profile

Rapid Bioassessment Protocol

Constituents	HACH Method	Results	Habitat Assessment				Benthic Macroinvertebra		
			Ref. Sta.	Score	% Comp.	Rating	Metric	Ref. Sta.	Study Site
NH4-N (mg/l)	380		CWD3a	143	75.52%	Supporting	MFBI		
NO2-N (mg/l)	371		LCC2	113	95.58%	Comprable	TR		
NO3-N (mg/l)	351				#DIV/0!		PER CONT		
PO4 P (mg/l)	490				#DIV/0!		EPT		
Turbidity (NTU)	2100P		Ideal	155	69.68%	Part. Supp.	% EPT		
Mn (mg/l)	290						EPT/CHIR		
Fe (Ferrous, mg/l)	255						SCFL		
Cu (mg/l)	135						HBI		
Al (mg/l)	10						CLI		
Analysis Date:	11-Jun-97		Analysis Date:	11-Jun-97			Analysis Date:	11-Jun-97	
Analyst:			Analyst:				Analyst:		

Habitat Assessment Scale

Metric Asses

> 90%	Comparable to reference	Excellent	Metric	Excellent	Very Good
75-88%	Supporting	Good	MFBI		
60-73%	Partially supporting	Fair	TR		
<58%	Not supporting	Poor	PER CONT		
			EPT		
			% EPT		
			EPT/CHIR		
			SCFL		
			HBI		
			CLI		

SAMPLER	DWG
UNIT	YSI #1

TDS
g/l

0.377

0.378

0.378

0.378

0.379

0.38

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YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
PVC1

DATE

15-Apr-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
04/15/97 09:15	41597	100657	12.25	0.635	93	9.94	0	7.95	184
04/15/97 09:16	41597	100733	12.27	0.634	93	9.94	0	7.95	184
04/15/97 09:16	41597	100805	12.3	0.635	93	9.93	0	7.95	184
04/15/97 09:46	41597	103743	13.25	0.634	93.8	9.8	0	7.97	197

AVERAGE

12.52	0.63	93.20	9.90	0.00	7.96	187.25
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Observations:

Flow	14.1	cfs
Sky	clear	
Wind	calm	
Direction		
Air Temp	27.5	C

Comments:

Site inspection and sampling.
Illegal Immigrant Impact Project sampling. Protocol modified to sample at station PVC rather than PVC1B. Ride along and meeting with Jim Harrington and assistant of CDF
Observed 20-30 stickleback fish in pool 2.
Discussed monitoring, sampling and protocol for Southern California Streams.

Samples Taken Number

Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	6
Solids	0
Plankton	0
TOC	0
BMI	1

YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
PVC1A

DATE

13-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/13/97 08:47	31397	94140	7.89	0.581	84.5	10.01	-0.9	7.95	154
03/13/97 08:53	31397	94835	8.06	0.581	84.7	9.99	-0.9	7.95	147
03/13/97 09:09	31397	100351	8.5	0.58	85.8	10.02	-0.9	7.92	152
03/13/97 09:10	31397	100445	8.52	0.579	85.9	10.02	0	7.92	153
03/13/97 09:10	31397	100526	8.54	0.579	85.9	10.02	0	7.92	153
03/13/97 09:16	31397	101121	8.73	0.579	86.4	10.03	0	7.92	156
Average			8.37	0.580	85.53	10.02	-0.45	7.93	152.50

Observations:

Flow	14.59	cfs
Sky	clear	
Wind	calm	
Direction	cam	
Air Temp	15.5	C

Comments:

Site inspection and monitoring. Set four hester-dendy samplers in two pairings. Site relatively undisturbed. Moderate flow. Observed many small fish less than 3" long but no larger fish. Observed many BMI's on rocks and gravel substrates. Cattle activity in the area - tracks and feces in and along stream channel.

Samples Taken	Number
Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	1
CPOM	1

YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
PVC1B

DATE

19-Feb-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
02/19/97 09:35	21997	103043	6.67	0.609	90.8	11.09	-0.9	8.18	226
02/19/97 09:35	21997	103232	6.7	0.609	105.2	12.84	-0.9	8.16	225
02/19/97 09:46	21997	104340	6.87	0.607	105.5	12.82	-0.9	8.13	222
02/19/97 09:49	21997	104608	6.94	0.608	92.2	11.18	-0.9	8.14	222
02/19/97 10:02	21997	105921	7.2	0.608	92.9	11.2	-0.9	8.13	224
02/19/97 10:22	21997	111856	7.46	0.606	91.8	10.99	-0.9	8.14	227
02/19/97 10:38	21997	113538	7.92	0.606	92.7	10.97	-0.9	8.15	229
02/19/97 10:48	21997	114541	8.16	0.606	93.5	11	-0.9	8.16	230
Average			7.24	0.61	95.58	11.51	-0.90	8.15	225.63

Observations:

Flow	16.18	cfs
Sky	clear	
Wind	calm	
Direction	calm	
Air Temp	22.4	C

Comments:

Illegal Immigrant Impact Project sampling and general watershed monitoring.
Assisted by Dennis_____. Open channel flow estimation. Site relatively undisturb
Cattle have heavily grazed this area. Numerous fecal piles observed throughout the ai
Observed BMI's through Pluck and Pick method.
Simuliidae
Lepidostomatidae
Brachycentridae
Gomphiidae (in sand)
Hydropsychidae
Psychomyiidae
Chironomidae - Tanytarsini
Chironomidae- Orthocladiinae

Samples Taken Number

Nutrients	1
TON/Turbidity	1
Metals	0
Bacti	6
Solids	0
Plankton	0
TOC	0

BMI	0
CPOM	0
Organics	0
Crypto-Giardia	0

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DWG
YSI #1

TDS

g/l

0.257

0.257

0.258

0.259

0.261

0.262

0.265

0.267

0.26

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YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
PVC2

DATE

19-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY	TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/19/97	09:37	31997	103134	13.81	0.713	98.9	10.21	0.6	8.46	238
03/19/97	09:49	31997	104347	14.02	0.714	99.3	10.20	0.6	8.47	239
03/19/97	10:02	31997	105638	14.25	0.713	100	10.22	0.6	8.47	239
03/19/97	10:03	31997	105739	14.26	0.713	100	10.22	0	8.47	240
03/19/97	10:22	31997	111621	14.59	0.713	100.9	10.24	0	8.50	240
03/19/97	10:34	31997	112820	14.80	0.713	101.4	10.24	0	8.50	240
AVERAGE				14.48	0.713	100.6	10.23		8.49	239.8

Observations:

Flow	~20.00	cfs
Sky	clear	
Wind	calm	
Direction	calm	
Air Temp	29.5	C

Comments:

Illegal Immigrant Impact Project sampling with Darcy Bestor and two Santana High School Special Education teachers (Steve and Mike). Six Bacti samples taken at 15 minute intervals from cascade just above a large pool about 0.2 miles upstream from the main trail crossing. Site consists of deep bedrock pools and short cobble and boulder or bedrock riffles/runs. Vegetation sparse, consisting of shrubs and small isolated trees (willows and live oaks). No fish observed in pools other than a few small minnow sized fish. Illegal immigrant trail alongside creek on site, fair amount of trash on site and evidence of large numbers of people passing through area (>100).

Samples Taken

Samples Taken	Number
Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	6
Solids	0
Plankton	0
TOC	0
BMI	1
CPOM	0
Organics	0

DWG
YSI #1

TDS

g/l

0.365

0.367

0.369

0.369

0.371

0.373

0.371

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YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC2

DATE

13-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/13/97 12:53	31397	134812	13.17	0.439	84.5	8.85	0	7.84	238
03/13/97 12:54	31397	134922	13.35	0.44	82.1	8.57	0	7.85	239
03/13/97 12:54	31397	134941	13.32	0.439	82.1	8.57	0	7.89	239
03/13/97 12:56	31397	135047	13.22	0.44	81.8	8.56	0	7.85	239
03/13/97 12:56	31397	135123	13.35	0.437	81.2	8.47	0	7.83	239
03/13/97 12:56	31397	135140	13.15	0.438	81.2	8.51	0	7.84	240

Observations:

Flow	8.69	cfs
Sky	clear	
Wind	calm	
Direction	calm	
Air Temp	21	C

Comments:

Site inspection and monitoring. General watershed monitoring samples and YSI profile. Site moderately disturbed since last inspection. Some trash and channel modification in area of the weir and pool. Site is an old mining/milling site approximately 0.5 miles below an abandoned mine name unknown. Access by 4wd although probably accessible by prudent two wheel drive vehicle operator.

Samples Taken Number

Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	0
CPOM	0
Organics	0

DWG
YSI #1

TDS

g/l

0.221

0.222

0.222

0.222

0.221

0.22

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YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
NPC2

DATE

31-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/31/97 11:59	33197	125219	12.03	0.475	92.6	9.95	0	7.98	213
03/31/97 11:59	33197	125243	12.04	0.474	92.5	9.94	0	7.98	213
03/31/97 12:03	33197	125638	12.17	0.474	93	9.97	0	7.98	214

AVERAGE

12.08	0.4743333	92.7	9.9533333	0	7.98	213.33333
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Observations:

Flow		cfs
Sky	PC 60%	
Wind	10-12	
Direction	NW	
Air Temp	18.6	C

Comments:

Site inspection and sampling.
Checked out site and found claim marker above the dam inscribed "FREE COINAGE MILL SITE". Moderate recent impact by day trippers or campers on site. More activity downstream at the spur. Good flow and a deep pool below the dam.

Samples Taken Number

Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	0

CPOM	0
Organics	0
Crypto-Giardia	0

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DWG
YSI #1

TDS

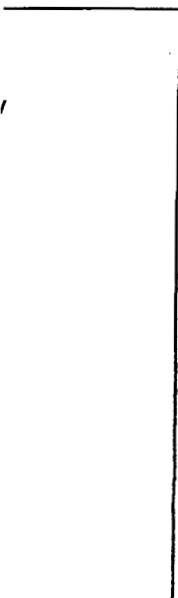
g/l

0.232

0.232

0.233

0.2323333



YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
SPC2

DATE

13-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY	TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/13/97	10:15	31397	111011	10.73	0.535	83.5	9.25	0	7.79	130
03/13/97	10:15	31397	111040	10.69	0.533	82.7	9.17	0	7.79	129

Observations:

Flow	0.5	cfs
Sky	clear	
Wind	calm	
Direction	calm	
Air Temp	19	C

Comments:

Site inspection and sampling. Just downstream of horse boarding facility. Water laden with rusty red mineralization on substrate. Oily film observed on water. No BMI's observed. Took samples anyway.

Samples Taken	Number
Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	1
CPOM	1
Organics	0

Crypto-Giardia	0

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DWG
YSI #1

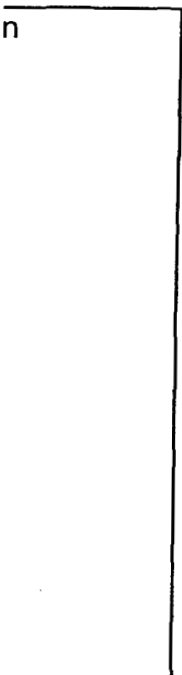
TDS

g/l

0.253

0.252

n



YSI WATER QUALITY PROFILE REPORT SHEET

Watershed
Drainage
Station

Cottonwood
Pine Creek
SPC2

DATE

31-Mar-97

SAMPLER
UNIT

DATE MM/DD/YY TIME	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
03/31/97 10:10	33197	110249	11.74	0.548	95.7	10.35	-0.3	8.12	192
03/31/97 10:10	33197	110332	11.55	0.546	93.6	10.17	-0.3	7.97	195
03/31/97 10:11	33197	110405	11.44	0.543	92.3	10.05	-0.3	7.92	195
03/31/97 10:11	33197	110448	11.34	0.538	91.3	9.97	-0.3	7.88	195

AVERAGE

11.52	0.54	93.23	10.14	-0.30	7.97	194.25
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Observations:

Flow		cfs
Sky	O 100%	
Wind	10	
Direction	NW	
Air Temp	18.7	C

Comments:

Site inspection and sampling.
Lower flow than last sample. Still very reddish deposits in stream. Observed dumping of horse manure upstream by Pine Valley Stables.

Samples Taken Number

Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0
Plankton	0
TOC	0
BMI	0

CPOM	0
Organics	0
Crypto-Giardia	0

DWG
YSI #1

TDS

g/l

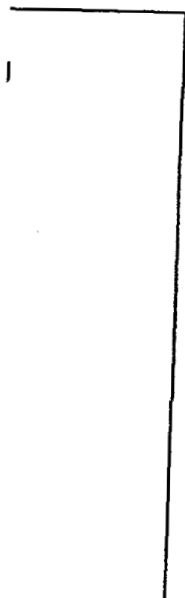
0.266

0.264

0.261

0.259

0.26



WATERSHED WATER QUALITY REPORT SHEET

Watershed	Cottonwood
Drainage	Pine Valley Creek
Station	PVC1b

Sampling Date	20-May-97
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YSI Datasonde Physicochemical Data

DATE		DATE	TIME	TEMP	SP COND	DO %	DO CONC	DEPTH	PH	ORP
MM/DD/YY	TIME	MMDDYY		C	mS/cm	%	mg/l	m		mV
05/20/97	10:36	52097	112440	19.68	0.648	99.8	9.11	0	8.09	83
05/20/97	10:39	52097	112711	19.79	0.649	99.9	9.1	0	8.1	82
05/20/97	10:45	52097	113303	20.08	0.648	100.2	9.07	0	8.1	78
05/20/97	10:51	52097	113932	20.37	0.648	100.2	9.02	0	8.13	76

AVERAGE

19.98	0.648	100.03	9.08	0.00	8.11	79.75
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Observations:	
Flow	8.7 cfs
Habitat Score	135
Sky	Clear
Wind	1-2
Direction	WSW
Air Temp	76.8 F

Samples Taken	Number
Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	6
Solids	0

Comments:
Watershed sampling and surveillance.
Illegal Immigrant Impact Sampling. Six bacti samples collected over 90 minutes at 15 intervals.
Stream flow increased over upstream site PVC1a. Livestock have recently entered this Area is also used extensively by hikers and equestrians. Light to moderate trash levels on the trail and stream banks.
Stream confined to a narrow, natural channel of 3-5ft in an open flood plain. Very little vegetation upstream of site. Site within an open, mature riparian zone dominated by widely spaced willows, sycamores, and live oaks with a very thin understory of grasses and forbs. Streambed composed of cobbles and boulders within a gravel and sand matrix. In stream vegetation sparse; small clumps of nasturtium and tules were observed in the slower moving water.

Plankton	0
TOC	0
BMI	1
CPOM	0
Organics	0
Crypto-Giardia	0

pools. Only small amounts of leaf litter were observed.

BMI composed primarily of Hydropsyche, Pyschomyiidae, Baetidae, Glossosomatidae, Coenagrionidae, and Bracycentridae.

Water Chemistry Profile

Rapid Bioassessment Protocol

Constituents	HACH Method	Results	Habitat Assessment				Benthic Macroinvertebra		
			Ref. Sta.	Score	% Comp.	Rating	Metric	Ref. Sta.	Study Site
NH4-N (mg/l)	380	0.07	CWD3a	143	94.41%	Comparable	MFBI		
NO2-N (mg/l)	371	0.001	LCC2	113	119.47%	Supporting	TR		
NO3-N (mg/l)	351	0.04			#DIV/0!		PER CONT		
PO4 P (mg/l)	490	0.2			#DIV/0!		EPT		
Turbidity (NTU)	2100P	0.64	Ideal	155	87.10%	Supporting	% EPT		
Mn (mg/l)	290						EPT/CHIR		
Fe (Ferrous, mg/l)	255						SCFL		
Cu (mg/l)	135						HBI		
Al (mg/l)	10						CLI		
Analysis Date:	21-May-97		Analysis Date:	20-May-97			Analysis Date:	01-Jan-97	
Analyst:			Analyst:				Analyst:		

Habitat Assessment Scale

Metric Asses

> 90%	Comparable to reference	Excellent	Metric	Excellent	Very Good
75-88%	Supporting	Good	MFBI		
60-73%	Partially supporting	Fair	TR		
<58%	Not supporting	Poor	PER CONT		
			EPT		
			% EPT		
			EPT/CHIR		
			SCFL		
			HBI		
			CLI		

SAMPLER	DWG
UNIT	YSI #1

TDS
g/l

0.378

0.38

0.382

0.384

0.38

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WATERSHED WATER QUALITY REPORT SHEET

Watershed	Cottonwood
Drainage	Pine Valley Creek
Station	PVC1a

Sampling Date	19-May-97
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YSI Datasonde Physicochemical Data

DATE MM/DD/YY	DATE MMDDYY	TIME	TEMP C	SP COND mS/cm	DO % %	DO CONC mg/l	DEPTH m	PH	ORP mV
05/19/97 09:10	51997	95722	15.69	0.654	77.9	7.72	0	7.76	141
05/19/97 09:14	51997	100203	15.89	0.649	85.6	8.45	0	7.85	129
05/19/97 09:14	51997	100259	15.91	0.65	85.8	8.46	0	7.85	128
05/19/97 09:15	51997	100347	15.93	0.65	85.8	8.46	0	7.85	128
05/19/97 09:25	51997	101323	16.15	0.649	86	8.44	0	7.86	120
05/19/97 09:54	51997	104300	16.7	0.649	86.6	8.4	0	7.85	110
05/19/97 09:55	51997	104307	16.7	0.649	86.6	8.4	0	7	110

AVERAGE

16.14	0.650	84.90	8.33	0.00	7.72	123.71
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Observations:	
Flow	5.8 cfs
Habitat Score	111
Sky	PC 10%
Wind	1-2
Direction	W
Air Temp	74.8 F

Samples Taken	Number
Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0
Solids	0

Comments:
Watershed sampling and surveillance with Roy Tamanaha. RT collected one CG sample upstream from reach "a." Nasturtium dominates the site, clogging the channel nearly 100% from the gradient drc the pool downstream from the fenceline until the stream leaves the canopy of willows (Sticklebacks observed feeding on small insects in open pools and slow runs. Cattle observed in flood channel Fresh feces were observed along with tracks of both along the streambed.
Red flagging at head of reach. Both Hester-Dendy sampler sets in place and undisturt will be retrieved next week.

WATERSHED WATER QUALITY REPORT SHEET

Watershed	Cottonwood
Drainage	Pine Valley Creek
Station	PVC1a

Sampling Date 19-May-97

YSI Datasonde Physicochemical Data

DATE	DATE	TIME	TEMP	SP COND	DO %	DO CONC	DEPTH	PH	ORP
MM/DD/YY	TIME	MMDDYY	C	ms/cm	%	mg/l	m		mV
05/19/97 09:10	51997	95722	15.69	0.654	77.9	7.72	0	7.76	141
05/19/97 09:14	51997	100203	15.89	0.649	85.6	8.45	0	7.85	129
05/19/97 09:14	51997	100259	15.91	0.65	85.8	8.46	0	7.85	128
05/19/97 09:15	51997	100347	15.93	0.65	85.8	8.46	0	7.85	128
05/19/97 09:25	51997	101323	16.15	0.649	86	8.44	0	7.86	120
05/19/97 09:54	51997	104300	16.7	0.649	86.6	8.4	0	7.85	110
05/19/97 09:55	51997	104307	16.7	0.649	86.6	8.4	0	7	110

AVERAGE

16.14	0.650	84.90	8.33	0.00	7.72	123.71
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Observations:						
Flow	5.8	cfs				
Habitat Score	111					
Sky	PC 10%	1-2				
Wind	Direction	W				
Air Temp	74.8	F				

Samples Taken	Number
Nutrients	1
TON/Turbidity	1
Metals	1
Bactl	0
Solids	0

Comments: Watershed sampling and surveillance with Roy Tamanaha. RT collected one CG sample upstream from reach "a." Nasturtium dominates the site, clogging the channel nearly 100% from the gradient down the pool downstream from the fence line until the stream leaves the canopy of willows (Stickiebacks observed feeding on small insects in open pools and slow runs. Cattle observed in flood channel. Fresh feces were observed along with tracks of both along the streambed. Red flagging at head of reach. Both Hester-Dendy sampler sets in place and undisturbed. Will be retrieved next week.

Plankton	0
TOC	0
BMI	2
CPOM	1
Organics	0
Crypto-Giardia	1

Water Chemistry Profile

Rapid Bioassessment Protocol

Constituents	HACH Method	Results	Habitat Assessment				Benthic Macroinvertebra		
			Ref. Sta.	Score	% Comp.	Rating	Metric	Ref. Sta.	Study Site
NH4-N (mg/l)	380	0.08	CWD3a	143	77.62%	Supporting	MFBI		
NO2-N (mg/l)	371	0.005	LCC2	113	98.23%	Comparable	TR		
NO3-N (mg/l)	351	0.19			#DIV/0!		PER CONT		
PO4 P (mg/l)	490	0.36			#DIV/0!		EPT		
Turbidity (NTU)	2100P	0.54	Ideal	155	71.61%	Partially	% EPT		
Mn (mg/l)	290						EPT/CHIR		
Fe (Ferrous, mg/l)	255						SCFL		
Cu (mg/l)	135						HBI		
Al (mg/l)	10						CLI		
Analysis Date:	21-May-97		Analysis Date:	19-May-97			Analysis Date:	01-Jan-97	
Analyst:			Analyst:				Analyst:		

Habitat Assessment Scale

Metric Asses

> 90%	Comparable to reference	Excellent	Metric	Excellent	Very Good
75-88%	Supporting	Good	MFBI		
60-73%	Partially supporting	Fair	TR		
<58%	Not supporting	Poor	PER CONT		
			EPT		
			% EPT		
			EPT/CHIR		
			SCFL		
			HBI		
			CLI		

SAMPLER	DWG
UNIT	YSI #1

TDS
g/l

0.35
0.348
0.349
0.349
0.35
0.355
0.355

0.35

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op above
(~400ft).

adults and calves

bed. They

WATERSHED WATER QUALITY REPORT SHEET

Watershed	Cottonwood
Drainage	Pine Creek
Station	PVC1A

Sampling Date	09-Oct-97
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YSI Datasonde Physicochemical Data

DATE		DATE	TIME	TEMP	SP COND	DO %	DO CONC	DEPTH	PH	ORP
MM/DD/YY	TIME	MMDDYY		C	mS/cm	%	mg/l	m		mV
10/09/97	14:09	100997	144319	16.39	0.647	120.2	11.74	0	8.41	118
10/09/97	14:10	100997	144417	16.4	0.647	120.5	11.77	0	8.42	118
10/09/97	14:11	100997	144512	16.41	0.647	120.5	11.76	0	8.43	119
10/09/97	14:11	100997	144532	16.41	0.647	120.6	11.77	0	8.43	119
10/09/97	14:12	100997	144546	16.41	0.648	120.6	11.77	0	8.43	118

AVERAGE

16.40	0.647	120.48	11.76	0.00	8.42	118.40
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Observations:		
Flow	0.39	cfs
Habitat Score	106	
Sky	PC 40	
Wind	calm	
Direction	na	
Air Temp	26.3	C

Samples Taken	Number
Nutrients	1
TON/Turbidity	1
Metals	1
Bacti	0

Comments:
Watershed sampling and surveillance.
Site grazed by cattle recently. Fresh tracks and pats observed in creek banks.
Low flows observed. Small fishes and few benthic invertebrates observed.
Little or no trash on site. Stream vegetation grazed to stubbs - nasturtium, grasses, ca

Solids	0
Plankton	0
TOC	0
BMI	1
CPOM	0
Organics	0
Crypto-Giardia	0
Photo Documentation	4

Water Chemistry Profile

Rapid Bioassessment Protocol

Constituents	HACH Method	Results	Habitat Assessment				Benthic Macroinvertebra	
			Ref. Sta.	Score	% Comp.	Rating	Metric	Ref. Sta.
NH4-N (mg/l)	380	0.06	CWD3a	143	74.13%		MFBI	
NO2-N (mg/l)	371	0.002	LCC2	113	93.81%		TR	
NO3-N (mg/l)	351	0.10			#DIV/0!		PER CONT	
PO4 P (mg/l)	490	0.17			#DIV/0!		EPT	
Turbidity (NTU)	2100P	0.31	Ideal	155	68.39%		% EPT	
Mn (mg/l)	290						EPT/CHIR	
Fe (Ferrous, mg/l)	255						SCFL	
Cu (mg/l)	135						HBI	
Al (mg/l)	10						CLI	
Analysis Date:	10-Oct-97		Analysis Date:	09-Oct-97			Analysis Date:	10-Oct-97
Analyst:			Analyst:				Analyst:	

SAMPLER	DWG
UNIT	YSI #1

TDS
g/l

0.352

0.352

0.352

0.352

0.352

0.35



attails and tules.