

2002 303(d)
Ref. #130

Stream Report **Gualala Assessment Area** 214,385 Total Acres
28,977 GRI Acres

Station	Year	Temperature	Large Wood (Bank Full)		Substrate	Streambed			Riparian Zone	Fish per Mile	Macroinvertebrates				
			Seasonal Maximum	NWAT		CuFY 1000'	Pieces/ 1000'	< 0.85 mm			D50	Slope	R2	A/D	Canopy %

Planning Watershed Black Point 1113.850304

Stream **Sail Creek**

470	Sail	2000	15.3	13.5	2,161	129	20	4.69%	0.99	0	87%	89%	158	33	0.88	2.9	29
Avg			14.3	13.5	2,161	129	20	4.69%	0.99	0	87%	89%	158	33	0.88	2.9	29

Stream **School House Creek**

472	Sch	2000			850	66	0	5.86%	0.83	0	97%	97%	473				
Avg					850	66	0	5.86%	0.83	0	97%	97%	473				

Black Point	Avg	15.3	13.5	1,505	88	10	5.23%	0.91	0	92%	93%	316	33	0.88	2.9	29
	Min	15.3	13.5	850	66	0	4.69%	0.83	0	87%	89%	158	33	0.88	2.9	29
	Max	15.3	13.5	2,161	129	20	5.86%	0.99	0	97%	97%	473	33	0.88	2.9	29

Planning Watershed Buckeye 1113.830004

Stream

286		1998	15.1	14.3													
Avg			18.1	14.3													

Stream **Buckeye Creek**

223	Buc3	1995	23.0	19.0																
223	Buc3	1996	21.4	18.8																
223	Buc3	1997	22.4	19.5			25													
223	Buc3	1998	22.7	19.7								0	459							
223	Buc3	1999	21.1	18.0								0	0							
223	Buc3	2000			3,322	62	37	0.32%	0.67	0	81%	56%	143	0	194	32	0.88	4.0	5,713	28
223	Buc3	2001										0	67							
224	Buc2	1995	23.9	19.9																
224	Buc2	1996	22.1	19.3																
224	Buc2	1997	22.7	19.8			26													
224	Buc2	1998																		
224	Buc2	2000	20.9	18.1																
231	Buc1	1994	21.7	19.7																

Station	Year	Temperature		Large Wood (Bank Full)		Substrate		Streambed			Riparian Zone		Fish per Mile		Macroinvertebrates					
		Seasonal Maximum	HWAT	CuFu/1000'	Pieces/1000'	< 0.85 mm	D50	Slope	R2	A/D	Canopy % Riparian Channel	Basal Area	Coho (YOY+)	BH (1+)	Richness Simpson	Hilsenhoff	% Dominant Abundance			
231	Buc1	1995	24.4	20.9																
231	Buc1	1996	23.7	20.8																
231	Buc1	1997	23.7	21.1			24													
231	Buc1	1998	24.0	21.0	273	11	24	0.36%	0.7											
231	Buc1	1999																		
231	Buc1	2000																		
231	Buc1	2001																		
235		1994	21.1	18.3																
		Avg	22.6	18.6	1,797	36	27	0.34%	0.69	0	81%	56%	143	0	180	32	0.88	4.0	6,713	26
Backlogs		Avg	22.1	18.3	1,797	36	27	0.34%	0.69	0	81%	56%	143	0	180	32	0.88	4.0	6,713	26
		Min	18.1	14.3	273	11	24	0.32%	0.67	0	81%	56%	143	0	0	32	0.88	4.0	6,713	26
		Max	24.4	21.1	3,322	62	37	0.36%	0.7	0	81%	56%	143	0	458	32	0.88	4.0	6,713	26

Planning Watershed Doty Creek 1113.810003

Stream	Doty Creek			
256	1993		16.2%	
256	1994	14.1	12.9	11.4%
256	1995			16.6%
256	1996			16.9%
256	1997			17.0%
281	1998	14.8	13.7	
	Avg	14.4	13.3	16.7%

Stream	Little North Fork Gualala				
201	1992			10.6%	
201	1993			21.0%	
201	1994	15.8	14.7	20.4%	
201	1995	16.7	15.1	20.8%	
201	1996	15.9	14.6	15.4%	
201	1997	16.7	15.4	16.0%	
201	1998	16.3	15.0		
201	2001				
202	LNF2	1993		11.5%	
202	LNF2	1994	16.4	14.6	14.6%
202	LNF2	1995		16.8%	
202	LNF2	1996		17.2%	

Station	Year	Temperature		Large Wood (Bank Full)		Substrate < 0.85 mm	Streambed			Riparian Zone		Fish per Mile		Macroinvertebrates				
		Seasonal Maximum	MINAT	CuFu 1000'	Pieces/ 1000'		D50	Slope	R2	A/D	Canopy % Riparian Channel	Basal Area	Coho (YOY+)	BH (1+)	Richness Simpson	Hilsenhoff	% Dominant Abundance	
202	LNF2	1997				21.6%	18											
202	LNF2	1998											32					
203	LNF1	1993				17.1%												
203	LNF1	1994	15.1	13.8		20.4%												
203	LNF1	1995	15.8	14.2		11.6%												
203	LNF1	1996	15.3	13.7		19.6%												
203	LNF1	1997	15.8	14.5		18.8%	35											
203	LNF1	1998	15.2	13.8	3,000	87	34	1.54%	0.97				0					
203	LNF1	1999	15.1	13.8	3,618	78	46	1.52%	0.97	-0.2	87%	89%	298	0	285			
203	LNF1	2000	15.3	13.9	3,675	75	43	1.49%	0.97	-0.09			0	143	31	0.85	4.5 5,340 30	
203	LNF1	2001			4,459	125	42	1.49%	0.98	-0.1			0	148				
255		1993				19.4%												
255		1994	15.9	14.3		17.2%												
255		1995				11.9%												
255		1996				24.4%												
255		1997				27.6%												
274		1995	16.4	14.6														
274		1996	16.1	14.1														
404	LNF3	1997					26											
404	LNF3	1998											18					
404	LNF3	2001			5,345	83	37	0.57%	0.76	0	97%	98%						
		Avg	15.9	14.4	4,019	85	35	1.32%	0.83	-0.09	92%	92%	298	8	182	31	0.85 4.5 5,340 30	
Doty Creek		Avg	15.7	14.3	4,019	86	35	1.32%	0.83	-0.09	92%	92%	298	8	182	31	0.85 4.5 5,340 30	
		Min	14.1	12.9	3,080	87	4.5%	18	0.57%	0.78	-0.2	87%	89%	298	0	143	31	0.85 4.5 5,340 30
		Max	16.7	15.4	5,345	125	38.1%	46	1.54%	0.98	0	97%	96%	298	32	285	31	0.85 4.5 5,340 30

Planning Watershed German Rancho 1113.850202

Stream	Gualala River		
225	1995	24.8	20.8
225	1997	22.1	20.6
	Avg	23.4	20.7

Stream	South Fork Gualala River		
229	1995	23.4	19.9
229	1996	22.1	19.0
229	1997	25.6	20.5

Station	Year	Temperature		Large Wood (Bank Full)		Substrate		Streambed			Riparian Zone		Fish per Mile	Macroinvertebrates			
		Seasonal Maximum	WWAT	CuFt/1000'	Pieces/1000'	< 0.85 mm	D50	Slope	R2	AD	Canopy % Riparian Channel	Basal Area		Colo (YOY+)	BH (1+)	Richness Simpson	Hilsenhoff
230	1995	22.9	18.8														
230	1996	21.8	18.4														
230	1997	24.4	22.3														
230	1998	22.6	19.5														
402	SFG 1997							13									
402	SFG 1998	22.1	19.7										0	961			
402	SFG 1999			1,468	35		20	0.33%	0.64		76%	26%	197	0	400		
402	SFG 2000	22.4	18.9										0	268			
402	SFG 2001												0	153			
Avg		23.0	19.7	1,468	35		17	0.33%	0.64		76%	26%	197	0	448		
German Rancho		Avg	23.1	19.9	1,468	35	17	0.33%	0.64		76%	26%	197	0	448		
		Min	21.8	18.4	1,468	35	13	0.33%	0.64		76%	26%	197	0	163		
		Max	25.8	22.3	1,468	35	20	0.33%	0.64		76%	26%	197	0	961		

Planning Watershed Lower Rockpile 1113.820003

Station	Year	Temperature	Large Wood (Bank Full)	Substrate	Streambed	Riparian Zone	Fish per Mile	Macroinvertebrates								
221	Rec3 1995	23.1	19.6													
221	Rec3 1996	22.4	19.3													
221	Rec3 1997	22.4	19.7		27											
221	Rec3 1998	23.2	19.5	1,291	18	25	0.27%	0.65	0	677						
221	Rec3 1999			2,520	33	32	0.31%	0.84	-0.2	80%	37%	272	0	11		
221	Rec3 2000	22.1	18.4									0	169			
221	Rec3 2001											0	53			
222	1994	21.9	19.4													
222	1995	23.5	19.7													
222	1996	22.1	19.4													
222	1997	22.4	19.8													
275	Rec2 1997	20.1	19.5		26											
275	Rec2 1998	23.9	20.2									0	508			
276	1997	15.2	14.1													
276	1998	15.0	13.9													
276	2000															
401	Rec1 1997				28											
401	Rec1 1998	23.7	20.8													
Avg		21.5	18.8	1,905	26	27	0.29%	0.74	-0.2	80%	37%	272	0	284		

Station	Year	Temperature		Large Wood (Bank Full)		Substrate		Streambed			Riparian Zone		Fish per Mile		Macroinvertebrates		
		Seasonal Maximum	MMWT	CuFt/ 1000'	Pieces/ 1000'	< 0.85 mm	D50	Slope	R2	ARD	Canopy % Riparian Channel	Basal Area	Coho (YOY+)	SH (1+)	Richness Simpson	Hilsenhoff	% Dominant
Lower Rockpile	Avg	21.5	18.5	1,965	28		27	0.20%	0.74	-0.2	99%	37%	272	0	284		
	Min	15.0	13.9	1,391	18		25	0.27%	0.65	-0.2	99%	37%	272	0	11		
	Max	23.9	20.3	2,520	33		32	0.31%	0.84	-0.2	99%	37%	272	0	677		

Planning Watershed Pepperwood 1113.850201

Stream: Big Pepperwood																				
218	Ppw3	1994	15.9	14.4																
218	Ppw3	1995	16.5	15.0																
218	Ppw3	1996	16.2	14.3																
218	Ppw3	1997	17.3	15.6			31													
218	Ppw3	1998	17.2	15.2	2,500	89	40	1.37%	0.80			0	153							
218	Ppw3	1999	15.9	14.4	2,349	91	31	1.46%	0.88	0.25	90%	88%	348	0	132					
218	Ppw3	2000	16.2	14.5								0	21	32	0.79	4.7	4,961	39		
218	Ppw3	2001										0	48							
219	Ppw2	1995	17.0	14.9																
219	Ppw2	1996	16.7	14.7																
219	Ppw2	1997	17.8	15.0			39													
219	Ppw2	1998	17.3	14.9																
219	Ppw2	2000																		
248		1994	17.2	14.6																
	Avg		16.8	14.8	2,434	90	35	1.42%	0.9	0.25	90%	85%	348	0	88	32	0.79	4.7	4,961	39

Stream: Gualala Gulch																		
250		1996	14.1	13.1														
277		1998	13.9	13.4														
277		2000	17.8	14.5														
	Avg		15.2	13.7														

Stream: Gualala River																				
217	Gua1	1994	22.7	19.2																
217	Gua1	1995	25.3	20.6																
217	Gua1	1996	24.4	20.1																
217	Gua1	1997	24.6	22.4																
217	Gua1	1998			943	18	25	0.11%	0.20		93%	16%								
217	Gua1	1999											0	32						
217	Gua1	2000			638	14	20	0.03%	0.02	-0.1	96%	17%	239	0	21	28	0.87	4.4	7,112	28

Station	Year	Temperature		Large Wood (Bank Full)		Substrate			Streambed			Riparian Zone			Fish per Mile		Macroinvertebrates						
		Seasonal Maximum	HWAT	CuFV 1000'	Pieces/ 1000'	< 0.85 mm	D50	Slope	R2	A/D	Canopy % Riparian Channel	Basal Area	Cobo (YOY+)	SH (1+)	Richness	Hilsenhoff	% Dominant	Bigrams	Abundance				
217	Gua1	2001																					
			Avg	24.3	29.8	790	18		23	0.07%	0.11	-0.1	85%	17%	239	0	11	21	28	0.87	4.4	7,112	28

Stream Little Pepperwood

220	1994		15.8	14.3																				
220	1995		19.4	16.0																				
220	1996		17.8	15.0																				
220	1997		16.7	16.0																				
220	1998		17.8	15.6																				
			Avg	17.5	16.4																			
Pepperwood			Avg	18.8	16.7	1,607	83		31	0.74%	0.51	0.07	83%	40%	294	0	68	30	0.83	4.8	6,836	33		
			Min	13.9	13.1	638	14		29	0.03%	0.82	-0.1	90%	16%	239	0	11	28	0.79	4.4	4,981	28		
			Max	25.3	22.4	2,500	91		49	1.48%	0.80	0.25	98%	88%	348	0	163	32	0.87	4.7	7,112	39		

Planning Watershed Robinson Creek 1113.810002

Stream Dry Creek

211	Dry3	1995	17.7	15.7																				
211	Dry3	1996	17.7	15.9																				
211	Dry3	1997	16.9	15.2																				
211	Dry3	1998			3,150	58		45	0.76%	0.82														
211	Dry3	1999			2,833	58		62	0.72%	0.82	-0.1	88%	87%	210	0	148								
211	Dry3	2000	16.5	14.8	2,842	49		60	0.74%	0.80	-0.07	84%	77%		0	48	32	0.79	4.4	1,857	40			
211	Dry3	2001			5,326	87		64	0.69%	0.82	-0.1				0	127								
212	Dry2	1995	20.9	17.9																				
212	Dry2	1996	20.7	17.8																				
212	Dry2	1997	20.5	17.9				69																
212	Dry2	1998	20.6	17.6																				
212	Dry2	2000			2,483	36			1.82%	0.97	0	76%	56%							41	0.82	4.5	1,528	19
213		1995	17.0	16.0																				
213		1996	17.3	16.1																				
213		1997	17.8	16.4																				
269		1994	16.2	15.7																				
269		1998	17.5	16.0																				
405	Dry1	1997						65																
405	Dry1	1998														16								
			Avg	18.3	16.4	3,329	58	14.2%	60	0.95%	0.85	-0.07	82%	73%	210	4	107	37	0.86	4.5	1,632	30		

Station	Year	Temperature		Large Wood (Bank Full)		Substrate		Streambed		Riparian Zone		Fish per Mile		Macroinvertebrates		
		Seasonal Maximum	HWAT	CuFt/1000'	Pieces/1000'	< 0.85 mm	D50	Slope	R2	A/D	Canopy % Riparian Channel	Basal Area	Coho (YOY+)	SH (1+)	Richness Simpson	Hilsenhoff % Dominant Abundance
Stream: McCann Gulch																
209	1995	16.7	15.9			19.2%										
209	1996	16.4	15.8			26.8%										
209	1997	15.5	14.4			19.9%										
210	MGG1 1995	20.4	16.4													
210	MGG1 2001															
	Avg	17.2	16.6			22.6%										
Stream: North Fork Gualala																
204	NFG3 1995	20.6	17.5													
204	NFG3 1996	20.1	18.7													
204	NFG3 1997	19.4	18.2					14								
204	NFG3 1998	20.2	17.7									0				
204	NFG3 1999			2,338	49		20	0.37%	0.86	64%	46%	140	0	109		
204	NFG3 2000	19.9	17.0										0	698		
204	NFG3 2001												0	84		
205	1995	21.4	17.7													
205	1996	20.4	17.8													
205	1997	21.1	18.1													
205	2001															
251	1996	19.0	16.6													
251	1997	19.3	17.5													
258	1994	24.5	19.3													
406	NFG2 1997							18								
406	NFG2 1998	21.4	18.6													
473	NFG4 2001			2,564	68		28	0.26%	0.68	0	93%	84%				
	Avg	20.8	17.8	2,451	58		20	0.32%	0.77	0	79%	65%	148	0	297	
Stream: Robinson Creek																
206	1995	20.4	14.2													
206	1996	16.9	14.2													
206	1997	16.4	13.8													
206	1998	16.5	14.4													
206	2000	18.0	14.0													
207	Rob2 1995	19.6	15.8			15.2%										
207	Rob2 1996	19.6	15.7			18.1%										

Station	Year	Temperature		Large Wood (Bank Full)		Substrate		Streambed			Riparian Zone			Fish per Mile		Macroinvertebrates				
		Seasonal Maximum	MWAT	CuFu/1000'	Pieces/1000'	< 0.85 mm	D50	Slope	R2	AD	Canopy % Riparian Channel	Basal Area	Coho (VOY+)	BH (1+)	Richness Stimpson	Hilsenhoff	% Dominant	Abundance		
207	Rob2	1997	20.2	16.2			17.6%	36												
207	Rob2	1998	18.5	15.4											12					
207	Rob2	1999			1,650	50		36	1.39%	0.98	66%	74%	246	0	113					
207	Rob2	2000	17.2	14.7										0	422					
207	Rob2	2001												0	13					
208	Rob1	1995	16.6	14.9																
208	Rob1	1996	16.4	15.0																
208	Rob1	1997	16.7	14.9			29													
208	Rob1	1998	16.2	14.9																
280		1994	14.6	13.8																
283		1994	17.7	15.5																
		Avg	17.5	14.8	1,650	50	17.1%	34	1.39%	0.98	66%	74%	246	3	183					
Robinson Creek	Avg	18.6	16.2	2,399	57	17.3%	43	0.84%	0.84	-0.93	76%	70%	199	2	106	37	0.86	4.5	1,622	30
	Min	14.6	13.8	1,650	36	8.9%	14	0.26%	0.68	-0.1	64%	46%	140	0	13	32	0.79	4.4	1,628	19
	Max	24.5	19.3	5,326	87	48.3%	89	1.62%	0.98	0	93%	87%	246	16	696	41	0.92	4.5	1,657	40

Planning Watershed Stewart Gualala 1113.810001

Stream	Year	Temp	Temp
215	1995	16.4	15.3
215	1996	15.9	15.1
215	1998	17.0	15.9
	Avg	16.4	15.4

Stream	Year	Temp	Temp	
214	1995	23.9	21.0	
214	1996	23.7	21.1	
214	1997	24.0	21.2	
214	1998	24.3	21.4	
216	NFG1	1995	25.9	21.5
216	NFG1	1996	26.4	21.8
216	NFG1	1997	26.9	22.0
272	1994	24.5	21.4	
272	2001			
	Avg	24.9	21.4	

Station	Year	Temperature		Large Wood (Bank Full)		Substrate		Streambed			Riparian Zone		Fish per Mile		Macroinvertebrates		
		Seasonal Maximum	WWAT	CuFt/1000'	Pieces/1000'	< 0.85 mm	D50	Slope	R2	ARD	Canopy % Riparian Channel	Basal Area	Coho (YOY+)	SH (1+)	Richness Simpson	Hilsenhoff	% Dominant Abundance
Stewart	Gualala	Avg	22.8	19.9													
		Min	18.8	16.1													
		Max	26.9	22.0													

Planning Watershed Wheatfield 1113.840303

Stream	Wheatfield	Rock	Gualala	River																
226	Wfg3	1995	25.5	20.9																
226	Wfg3	1996	23.8	20.3																
226	Wfg3	1997	23.1	21.9					45											
226	Wfg3	1998	24.7	21.7										0	981					
226	Wfg3	2000			1,819	26		30		86%	40%	156				32	0.85	4.3	7,312	32
227	Wfg2	1996	24.0	21.2																
227	Wfg2	1997	25.3	22.2				34												
227	Wfg2	1998	24.3	21.5																
227	Wfg2	2000	25.3	21.2																
228		1995	14.5	13.9																
228		1996	14.0	13.4																
228		1997	14.8	14.2																
228		1998	14.1	13.6																
273		1995	26.4	22.0																
273		2000																		
403	WFG1	1997						24												
403	WFG1	1998	26.4	22.9																
403	WFG1	2000																		
		Avg	21.9	19.4	1,819	26		33		86%	40%	156	0	981	32	0.85	4.3	7,312	32	
Wheatfield		Avg	21.9	19.4	1,819	26		33		86%	40%	156	0	981	32	0.85	4.3	7,312	32	
		Min	14.0	13.4	1,819	26		24		86%	40%	156	0	981	32	0.85	4.3	7,312	32	
		Max	26.4	22.9	1,819	26		45		86%	40%	156	0	981	32	0.85	4.3	7,312	32	

Station	Year	Temperature		Large Wood (Bank Full)		Substrate		Streambed			Riparian Zone		Fish per Mile		Macroinvertebrates					
		Seasonal Maximum	MWAT	CuFV/1000'	Pieces/1000'	< 0.85 mm	D50	Slope	R1	A/D	Canopy % Riparian Channel	Basal Area	Coho (YOY+)	SH (1+)	Richness	Hilsenhoff Slopes	% Dominant Abundance			
Summary for Assessment Area = Gualala (532 detail records)																				
	Avg	18.7	17.2	2,537	58	17.6%	33	1.18%	0.78	-0.05	85%	63%	240	2	232	32	0.85	4.2	4,832	30
	Min	13.9	12.9	273	11	4.8%	0	0.03%	0.02	-0.2	64%	16%	148	0	0	28	0.79	2.9	1,628	18
	Max	26.9	22.9	5,345	129	48.3%	89	5.88%	0.99	0.25	97%	97%	473	32	881	41	0.92	4.7	7,312	40
Old Growth Watersheds (HRSP)		18.5	16.6			21.8%											26.2	0.89		
Poor-Normal-Good																	28-35	.8-.89	4.6-3.1	39-15
NCWQCB Target		23.8	17.8			<14%														

<p>Temperature</p> <ul style="list-style-type: none"> Seasonal Maximum - The highest water temperature recorded during the summer. Maximum weekly average temperature (MWAT) - The highest average temperature for any seven day rolling average 	<p>Large Woody Debris (LWD)</p> <ul style="list-style-type: none"> LWD must be at least 6 inches on the small end and longer than 4 feet. Cubic Feet per 1,000 feet - The cubic volume of LWD located between the bankfull lines. Pieces per 1,000' - The number of LWD pieces per 1000' 	<p>Stream Substrate</p> <ul style="list-style-type: none"> <0.85mm - The percent fines less than 0.85 millimeters in a McNeal sample. D50 - The pebble size of the median pebble of a 100 pebble sample. Three sample sites on each reach are averaged. 	<p>Streambed (Thalweg) Survey</p> <ul style="list-style-type: none"> Slope - the slope of the channel R² - Variability around the mean. The range is 0 to 1. The lower the better. A/D - The change in elevation of the channel (aggradation or degradation) relative to the first year of measurement. 	<p>Fish Surveys</p> <ul style="list-style-type: none"> Presence absence snorkel surveys were conducted. Rough estimates were made of fish numbers per mile. Coho YOY - Coho salmon young of the year. SH (1+) - Steelhead one year old or older.
<p>Riparian Condition</p> <ul style="list-style-type: none"> Canopy Cover percent as measured with a vertical densiometer. Every 200', canopy percent is measured in the center of the channel. And at bank full and 50' into the riparian zone from bankfull on both sides of the channel. Four measurements are averaged at each point. Riparian Cover - The average of all the measurements taken on either side of the channel 50' into the riparian zone. Channel - The average of all the measurements taken in the center of the channel. Riparian inventory plots were locate both sides of the channel every 200' Basal Area - Is the average basal area in square feet of all the riparian plots 	<p>Macroinvertebrates</p> <ul style="list-style-type: none"> Richness - Total number of Genuses represented. Simpson Diversity Index - Measures the evenness of species diversity Hilsenhoff - This is a locally modified Hilsenhoff index indicates levels of organic pollution Abundance - A rough estimate of the total number of insects per sample. Percent Dominant Taxon - this is a species distribution index 			