2002 303(d) List Update
Ref. # 130

Stream Report — Gualala Assessment Area

Station		Year	Temperature: Seasonal Maximum	Temperature: MWAT	Large Wood (Bank Full): CuFt/1000'	Large Wood (Bank Full): Pieces/1000'	Substrate: < 0.85 mm	Substrate: D50	Streambed: Slope	Streambed: R2	Streambed: A/D	Riparian Zone: Canopy Riparian	Riparian Zone: % Channel	Riparian Zone: Basal Area	Fish per Mile: Coho (YOY+)	Fish per Mile: SH (1+)	Macroinvertebrates: Richness	Macroinvertebrates: Simpson	Macroinvertebrates: Hilsenhoff	Macroinvertebrates: % Dominant Abundance
Planning Watershed			Black Point						1113.850304											
[illegible]																				
470	Sal1	2000	15.3	13.5	2,161	129		20	4.69%	0.99	0	87%	89%	158			33	0.86	2.9	29
		Avg	**15.3**	**13.5**	**2,161**	**129**		**20**	**4.69%**	**0.99**	**0**	**87%**	**89%**	**158**			**33**	**0.86**	**2.9**	**29**
[illegible]																				
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**	**98**		**10**	**5.28%**	**0.91**	**0**	**92%**	**93%**	**316**			**33**	**0.86**	**2.9**	**29**
		Min	**15.3**	**13.5**	**850**	**66**		**0**	**4.69%**	**0.83**	**0**	**87%**	**89%**	**158**			**33**	**0.86**	**2.9**	**29**
		Max	**15.3**	**13.5**	**2,161**	**129**		**20**	**5.86%**	**0.99**	**0**	**97%**	**97%**	**473**			**33**	**0.86**	**2.9**	**29**
Planning Watershed			Buckeye						1113.830004											
[illegible]																				
286		1998	15.1	14.3																
		Avg	**15.1**	**14.3**																
[illegible]																				
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	26
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	MWAT	CoFV 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
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	19.6	1,787	36		27	0.34%	0.69	0	61%	56%	143	0	180	32	0.88	4.0	5,713	26
Backeye		Avg	22.1	18.3	1,787	36		27	0.34%	0.69	0	61%	56%	143	0	180	32	0.88	4.0	5,713	26
		Min	18.1	14.3	273	11		24	0.32%	0.67	0	61%	56%	143	0	0	32	0.88	4.0	5,713	26
		Max	24.4	21.1	3,322	62		37	0.36%	0.7	0	61%	56%	143	0	450	32	0.88	4.0	5,713	26

Planning Watershed Doty Creek 1113.810003

Stream: Doty Creek

256		1993					16.2%													
256		1994	14.1	12.9			11.4%													
256		1995					18.9%													
256		1996					18.9%													
256		1997					17.0%													
281		1998	14.8	13.7																
		Avg	14.4	13.3			16.7%													

Stream: Little North Fork Doty Creek

201		1992					10.9%													
201		1993					21.0%													
201		1994	15.8	14.7			20.4%													
201		1995	16.7	15.1			20.8%													
201		1996	15.9	14.8			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					18.8%													
202	LNF2	1996					17.2%													

Station		Year	Temperature		Large (Bank Full)	Wood	Substrate		Streambed			Riparian		Zone	Fish per Mile		Macroinvertebrates			
			Seasonal Maximum	MWAT	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	
202	LNF2	1997					21.6%	18												
202	LNF2	1998													32					
203	LNF1	1993					17.1%													
203	LNF1	1994	15.1	13.6			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	13.9	3,000	67		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					27.8%													
274		1995	16.4	14.6																
274		1996	16.1	14.1																
404	LNF3	1997						26												
404	LNF3	1998													16					
404	LNF3	2001			5,345	83		37	0.57%	0.76	0	97%	96%							
		Avg	**15.9**	**14.4**	**4,019**	**66**	**17.8%**	**36**	**1.32%**	**0.93**	**-0.09**	**92%**	**92%**	**298**	**6**	**192**	**31**	**0.85**	**4.5**	**5,340** **30**
Doty Creek		**Avg**	**16.7**	**14.3**	**4,019**	**66**	**17.8%**	**36**	**1.32%**	**0.93**	**-0.09**	**92%**	**92%**	**298**	**8**	**192**	**31**	**0.85**	**4.5**	**5,340** **30**
		Min	**14.1**	**12.9**	**3,000**	**67**	**4.9%**	**18**	**0.57%**	**0.76**	**-0.2**	**87%**	**89%**	**298**	**0**	**143**	**31**	**0.85**	**4.5**	**5,340** **30**
		Max	**16.7**	**15.4**	**5,345**	**125**	**36.1%**	**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

225		1995	24.8	20.8																
225		1997	22.1	20.6																
		Avg	**23.4**	**20.7**																
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	MWAT	CuFt/ 1000'	Pieces/ 1000'	< 0.85 mm	D50	Slope	R2	A/D	Canopy Riparian	% Channel	Basal Area	Coho (Y/OY+)	SH (1+)	Richness Simpson	Hilsenhoff Abundance	% Dominant
230		1995	22.9	18.9															
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%	0.84		76%	26%	197	0	400			
402	SFG	2000	22.4	18.9											0	268			
402	SFG	2001													0	153			
		Avg	22.0	19.7	1,468	35		17	0.33%	0.84		76%	26%	197	0	446			
German	Rancho	Avg	22.1	19.9	1,468	35		17	0.33%	0.84		76%	26%	197	0	446			
		Min	21.8	18.4	1,468	35		13	0.33%	0.84		76%	26%	197	0	153			
		Max	25.6	22.3	1,468	35		20	0.33%	0.84		76%	26%	197	0	961			

Planning Watershed Lower Rockpile 1113.820003

Stream: Rockpile Creek

221	Roc3	1995	23.1	18.6															
221	Roc3	1996	22.4	19.3															
221	Roc3	1997	22.4	19.7				27											
221	Roc3	1998	23.2	19.8	1,291	18		25	0.27%	0.65					0	677			
221	Roc3	1999			2,520	33		32	0.31%	0.84	-0.2	90%	37%	272	0	11			
221	Roc3	2000	22.1	18.4											0	169			
221	Roc3	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	Roc2	1997	20.1	19.5				26											
275	Roc2	1998	23.9	20.2											0	508			
276		1997	15.2	14.1															
276		1998	15.0	13.9															
276		2000																	
401	Roc1	1997						28											
401	Roc1	1998	23.7	20.8															
		Avg	21.6	18.8	1,905	26		27	0.29%	0.74	-0.2	90%	37%	272	0	284			

Station		Year	Temperature		Large Wood (Bank Full)		Substrate		Streambed			Riparian Zone			Fish per Mile		Macroinvertebrates			
			Seasonal Maximum	MWAT	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	
Lower Rockpile		Avg	21.5	18.8	1,905	26		27	0.29%	0.74	-0.2	90%	37%	272	0	284				
		Min	15.0	13.9	1,291	18		25	0.27%	0.55	-0.2	90%	37%	272	0	11				
		Max	23.9	20.8	2,520	33		32	0.31%	0.84	-0.2	90%	37%	272	0	677				

Planning Watershed Pepperwood 1113.850201

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%	0.90					0	153				
218	Ppw3	1999	15.9	14.4	2,349	91		31	1.46%	0.89	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	14.8																
		Avg	16.8	14.8	2,424	90		35	1.42%	0.9	0.25	90%	88%	348	0	88	32	0.79	4.7 4,961	39
250		1996	14.1	13.1																
277		1998	13.9	13.4																
277		2000	17.8	14.5																
		Avg	15.2	13.7																
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	MWAT	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	
217	Gua1	2001													0	11				
		Avg	24.3	20.6	790	16		23	0.07%	0.11	-0.1	90%	17%	230	0	21	28	0.87	4.4 7,112	28
Stream		**Little Pepperwood**																		
220		1994	15.8	14.3																
220		1995	19.4	18.0																
220		1996	17.8	15.0																
220		1997	18.7	16.0																
220		1998	17.8	15.8																
		Avg	17.5	15.4																
Pepperwood		Avg	18.8	18.7	1,667	53		31	0.74%	0.81	0.07	93%	46%	294	6	66	30	0.83	4.6 6,636	33
		Min	13.5	13.1	635	14		20	0.53%	0.62	-0.1	90%	16%	230	0	11	25	0.70	4.4 4,661	25
		Max	25.3	22.4	2,600	91		40	1.46%	0.90	0.25	96%	66%	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			16.8%													
211	Dry3	1996	17.7	15.9			14.7%													
211	Dry3	1997	16.9	15.2			11.6%	31												
211	Dry3	1998			3,150	58		45	0.76%	0.82										
211	Dry3	1999			2,833	58		62	0.72%	0.82	-0.1	86%	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				89												
212	Dry2	1998	20.6	17.6																
212	Dry2	2000			2,493	36			1.62%	0.97	0	76%	56%				41	0.92	4.5 1,526	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	55	14.2%	60	0.95%	0.85	-0.07	82%	73%	210	4	167	37	0.86	4.5 1,692	30

Station		Year	Temperature		Large Wood (Bank Full)		Substrate		Streambed			Riparian Zone			Fish per Mile		Macroinvertebrates		
			Seasonal Maximum	MWAT	CuFt/ 1000'	Pieces/ 1000'	< 0.85 mm	D50	Slope	R2	A/D	Canopy Riparian	% Channel	Basal Area	Coho (YOY+)	SH (1+)	Richness Simpson	Hilsenhoff Abundance	% Dominant
[illegible]																			
209		1995	16.7	15.9			19.2%												
209		1996	16.4	15.6			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			22.0%												
[illegible]																			
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	20.6	17.9	2,451	58		20	0.32%	0.77	0	79%	65%	140	0	297			
[illegible]																			
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	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	
207	Rob2	1997		20.2	16.2			17.9%	38													
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																	
260		1994		14.6	13.8																	
263		1994		17.7	15.5																	
			Avg	17.8	14.8	1,650	50	17.1%	34	1.39%	0.98		66%	74%	246	3	183					
Robinson	Creek		Avg	18.8	16.2	2,830	57	17.9%	43	0.84%	0.84	-0.05	78%	70%	199	2	196	37	0.86	4.6	1,692	30
			Min	14.6	13.8	1,650	36	8.9%	14	0.29%	0.68	-0.1	64%	46%	140	0	13	32	0.79	4.4	1,528	19
			Max	24.6	19.3	5,326	87	48.3%	89	1.82%	0.98	0	93%	87%	246	16	698	41	0.92	4.5	1,857	49

Planning Watershed Stewart Gualala 1113.810001

Stream	Lost Creek																					
215		1995		16.4	15.3																	
215		1996		15.8	15.1																	
215		1998		17.0	15.9																	
			Avg	16.4	15.4																	

Stream	North Fork Gualala																					
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				41													
272		1994		24.5	21.4																	
272		2001																				
			Avg	24.9	21.4				41													

Station		Year		Temperature		Large Wood (Bank Full)		Substrate		Streambed			Riparian Zone			Fish per Mile		Macroinvertebrates				
				Seasonal Maximum	MWAT	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	
Stewart	Gualala		Avg	22.6	19.8				41													
			Min	15.8	15.1				41													
			Max	26.9	22.8				41													
Planning		**Watershed**		Wheatfield						1113.840303												
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	CuFt/ 1000'	Pieces/ 1000'	< 0.85 mm	D50	Slope	R2	A/D	Canopy Riparian	% Channel	Basal Area	Coho (YOY+)	SH (1+)	Richness	Hilsenhoff Simpson	% Dominant Abundance	
Summary for Assessment Area = Gualala																			(532 detail records)
	Avg	19.7	17.2	2,537	69	17.6%	33	1.19%	0.76	-0.05	65%	63%	249	2	232	32	0.88	4.2 4,832	39
	Min	13.9	12.9	273	11	4.5%	0	0.03%	0.52	-0.2	54%	16%	140	0	0	23	0.79	2.9 1,625	19
	Max	26.9	22.9	5,345	129	48.5%	89	5.80%	0.99	0.25	97%	97%	473	32	981	41	0.92	4.7 7,312	46
Old Growth Watersheds (HRSP)		18.5	16.6			21.6%										26.2	0.89		
Poor-Normal-Good																26-35	.8-.89	4.6-3.1	39-15
NCWQCB Target		23.9	17.8			<14%													

Temperature

- 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

Large Woody Debris (LWD)

- 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'

Stream Substrate

- <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.

Streambed (Thalweg) Survey

- Slope – the slope of the channel
- R^2 – 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 measureme nt.

Fish Surveys

- 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.

Riparian Condition

- 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 riparial 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

Macroinvertabratos

- 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 esti mate of the total number of insects per sample.
- Percent Dominant Taxon – this is a species distribution index