

Figure O-18. Middle Fork American River MF4.8 Effective Rainbow Trout Spawning Habitat Matrix.

Starting Discharge (cfs)	Ending Discharge (cfs)																Initial Habitat vs Flow Relationship
	2500	2000	1500	1018	911	800	600	452	407	300	225	175	125	111	80	60	
2500 cfs	764	315	155	54	34	18	4	2	1	0	0	0	0	0	0	0	764
2000 cfs		658	453	235	186	132	54	19	12	2	1	0	0	0	0	0	658
1500 cfs			1067	728	639	518	333	198	156	83	44	23	8	7	6	3	1067
1018 cfs				2011	1874	1680	1329	1030	921	701	522	376	248	222	115	69	2011
911 cfs					2341	2114	1730	1392	1270	998	766	580	398	359	204	131	2341
800 cfs						2602	2193	1808	1670	1322	1022	793	557	505	306	205	2602
600 cfs							3411	2957	2782	2302	1850	1505	1099	1012	696	519	3411
452 cfs								4076	3878	3282	2705	2241	1678	1563	1147	899	4076
407.6 cfs									4221	3594	2978	2482	1876	1753	1301	1030	4221
300 cfs										4409	3706	3134	2439	2295	1752	1410	4409
225 cfs											4265	3632	2875	2716	2105	1716	4265
175 cfs												4128	3305	3126	2441	2010	4128
125 cfs													3678	3478	2758	2296	3678
111 cfs														3564	2820	2346	3564
80 cfs															3130	2629	3130
60 cfs																2805	2805

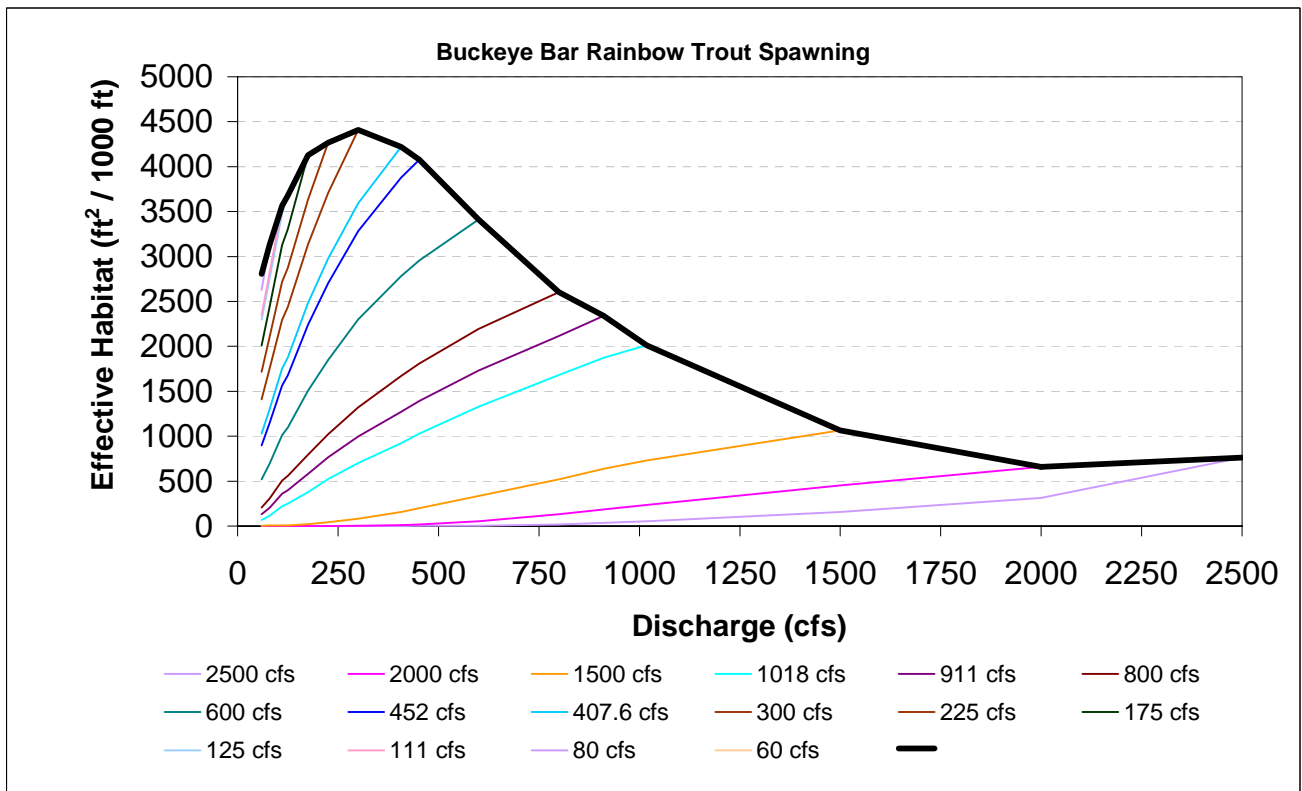


Figure O-19. Middle Fork American River MF4.8 Effective Rainbow Trout Incubation Habitat Matrix.

Starting Discharge (cfs)	Ending Discharge (cfs)																Initial Habitat vs Flow Relationship
	2500	2000	1500	1018	911	800	600	452	407	300	225	175	125	111	80	60	
2500 cfs	764	389	167	55	36	15	2	1	0	0	0	0	0	0	0	0	764
2000 cfs		658	496	298	232	150	53	16	7	0	0	0	0	0	0	0	658
1500 cfs			1067	884	776	633	384	222	172	68	30	16	6	6	5	1	1067
1018 cfs				2011	1957	1866	1551	1241	1122	783	536	350	234	221	117	65	2011
911 cfs					2341	2259	1976	1654	1527	1138	824	561	395	374	212	129	2341
800 cfs						2602	2401	2100	1972	1537	1150	805	581	551	337	223	2602
600 cfs							3411	3217	3116	2662	2176	1644	1283	1219	861	658	3411
452 cfs								4076	3990	3691	3219	2552	2075	1982	1495	1208	4076
407.6 cfs									4221	3964	3531	2848	2336	2237	1721	1409	4221
300 cfs										4409	4140	3586	3033	2926	2366	2007	4409
225 cfs											4265	3889	3459	3356	2796	2452	4265
175 cfs												4128	3761	3670	3163	2849	4128
125 cfs													3678	3517	3270	3025	3678
111 cfs														3564	3253	3023	3564
80 cfs															3130	2946	3130
60 cfs																2805	2805

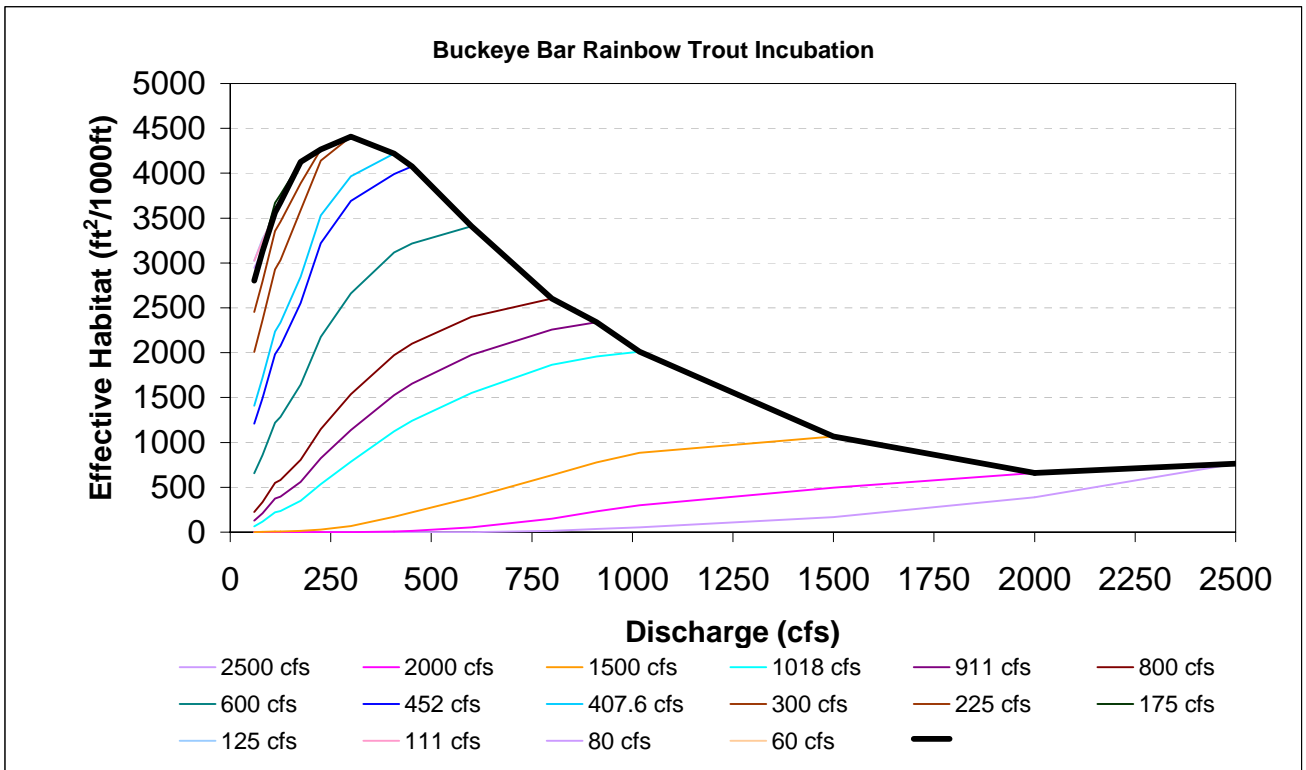


Figure O-20. Middle Fork American River MF4.8 Effective Rainbow Trout Depth Sensitivity Spawning Habitat Matrix.

Starting Discharge (cfs)	Ending Discharge (cfs)																Initial Habitat vs Flow Relationship
	2500	2000	1500	1018	911	800	600	452	407	300	225	175	125	111	80	60	
2500 cfs	16998	16140	15535	14483	14030	13506	12495	11126	10650	9150	7702	6327	4903	4544	3476	2878	16998
2000 cfs		18998	18366	17250	16728	16168	15087	13525	12917	10910	9143	7404	5720	5321	4096	3382	18998
1500 cfs			20774	19558	18977	18391	17251	15576	14853	12398	10283	8284	6416	5981	4577	3741	20774
1018 cfs				21107	20474	19876	18684	16932	16178	13474	11143	8981	6898	6432	4860	3955	21107
911 cfs					20840	20095	18894	17130	16373	13644	11293	9102	6978	6505	4905	3991	20840
800 cfs						20688	19332	17478	16711	13926	11518	9282	7096	6611	4978	4048	20688
600 cfs							19820	17933	17144	14296	11834	9547	7261	6757	5084	4125	19820
452 cfs								18284	17462	14531	11966	9642	7329	6819	5134	4161	18284
407.6 cfs									17522	14580	11997	9662	7342	6830	5142	4168	17522
300 cfs										14709	12085	9723	7390	6875	5181	4202	14709
225 cfs											12329	9830	7479	6961	5254	4264	12329
175 cfs												10063	7640	7065	5330	4328	10063
125 cfs													7825	7224	5472	4453	7825
111 cfs														7499	5526	4496	7499
80 cfs															5758	4688	5758
60 cfs																4796	4796

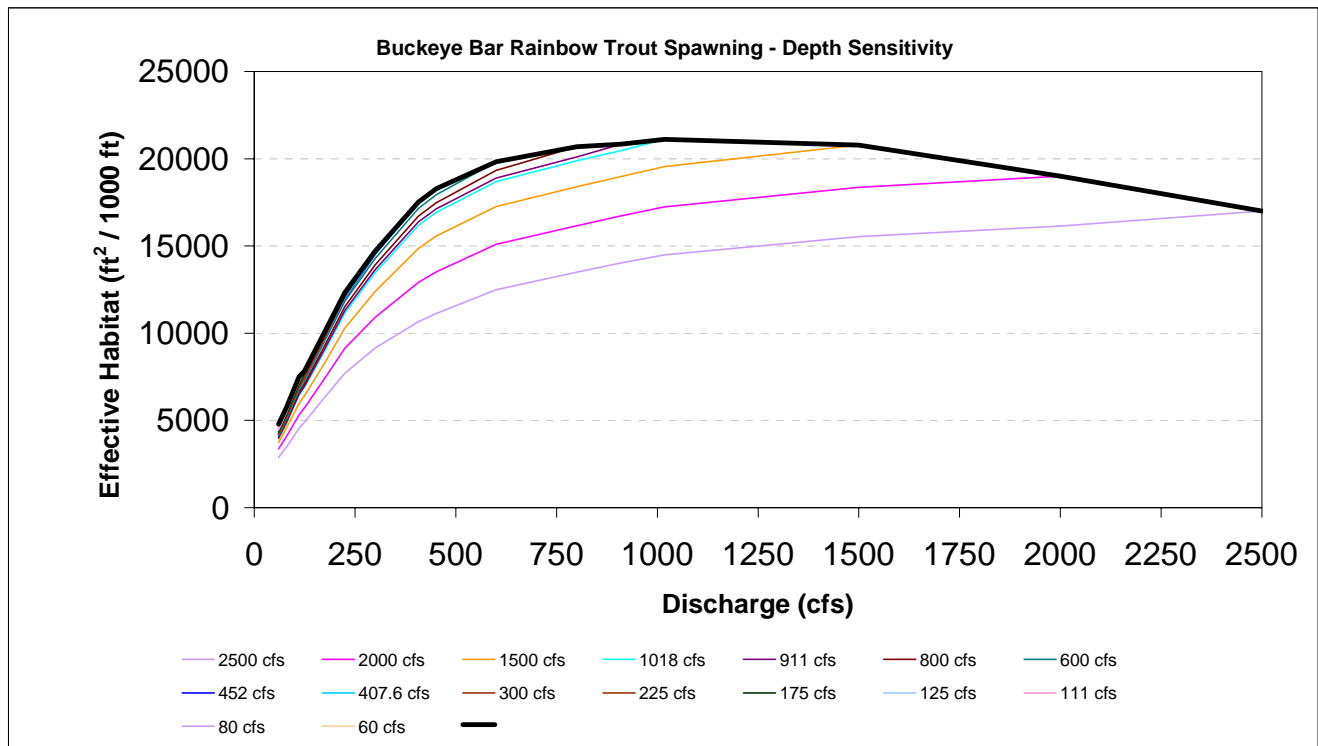


Figure O-21. Middle Fork American River MF4.8 Effective Rainbow Trout Spawning Depth Sensitivity Incubation Habitat Matrix.

Starting Discharge (cfs)	Ending Discharge (cfs)															Initial Habitat vs Flow Relationship	
	2500	2000	1500	1018	911	800	600	452	407	300	225	175	125	111	80		60
2500 cfs	16998	16581	16255	15922	15614	15299	14774	14001	13747	12954	11723	10487	8501	7611	5595	3776	16998
2000 cfs		18998	18783	18492	18225	17897	17339	16521	16263	15449	14217	12868	10699	9779	7329	5012	18998
1500 cfs			20774	20541	20288	19969	19404	18590	18324	17486	16278	14805	12476	11543	8800	6135	20774
1018 cfs				21107	20957	20795	20317	19550	19293	18461	17378	15819	13385	12499	9630	6821	21107
911 cfs					20840	20674	20251	19646	19415	18625	17509	15980	13533	12623	9740	6919	20840
800 cfs						20688	20371	19677	19445	18641	17581	16029	13595	12749	9875	7062	20688
600 cfs							19820	19312	19141	18430	17475	16010	13663	12854	10003	7224	19820
452 cfs								18284	18076	17641	16774	15518	13438	12678	9951	7212	18284
407.6 cfs									17522	17054	16252	15075	13106	12393	9808	7163	17522
300 cfs										14709	14051	13181	11638	11061	8975	6821	14709
225 cfs											12329	11486	10393	9960	8170	6353	12329
175 cfs												10063	8980	8563	7219	5869	10063
125 cfs													7825	7012	6198	5225	7825
111 cfs														7499	6105	5101	7499
80 cfs															5758	4379	5758
60 cfs																4796	4796

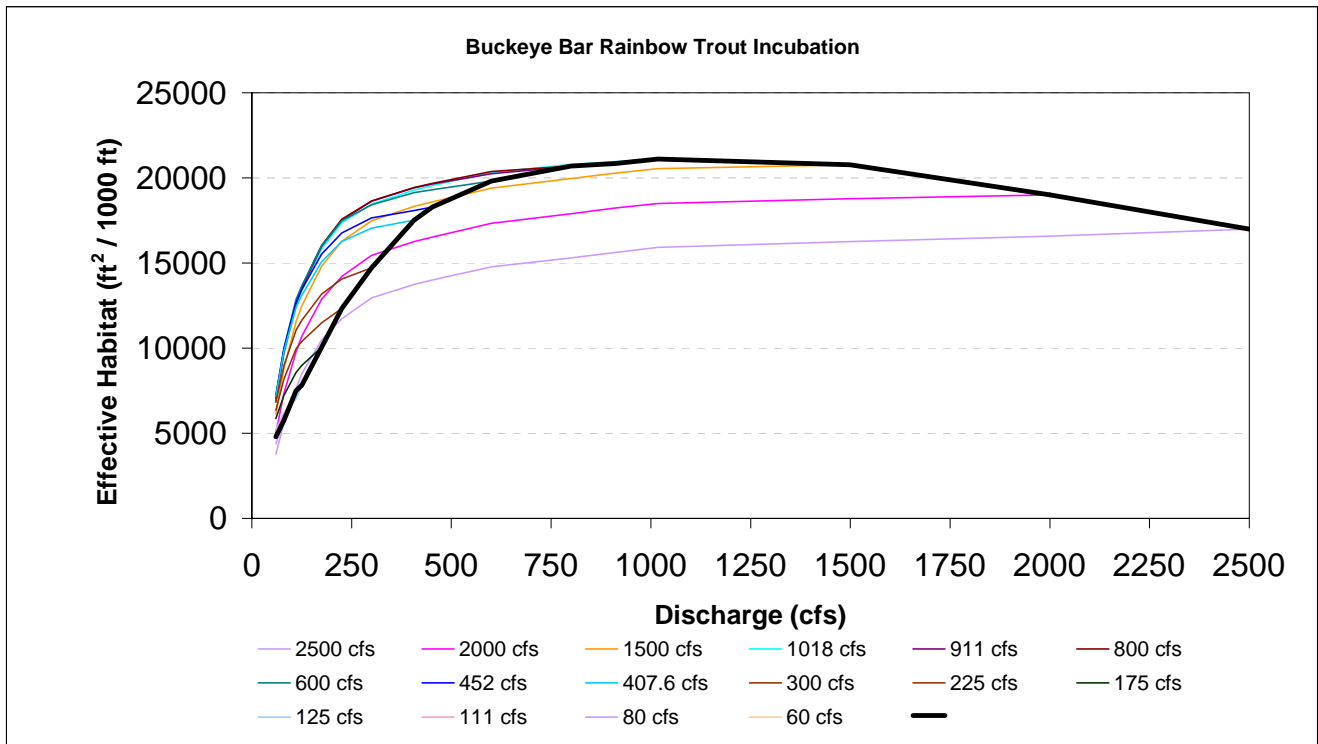


Figure O-22. Middle Fork American River MF4.8 Effective FYLF Egg Mass Habitat Matrix.

Starting Discharge (cfs)	Ending Discharge (cfs)																Initial Habitat vs Flow Relationship
	2500	2000	1500	1018	911	800	600	452	407	300	225	175	125	111	80	60	
2500 cfs	3309	1985	751	291	233	195	72	32	26	11	10	5	3	2	1	0	3309
2000 cfs		4029	2641	468	375	321	161	115	106	68	30	10	6	5	4	3	4029
1500 cfs			5145	2676	2028	1489	285	174	157	110	69	44	24	23	14	11	5145
1018 cfs				5202	4260	3518	1913	1159	895	272	157	97	66	63	45	40	5202
911 cfs					4842	4070	2425	1639	1349	684	218	128	78	75	55	48	4842
800 cfs						5036	3165	2134	1775	999	428	192	110	104	78	69	5036
600 cfs							4951	3412	2913	1852	1161	697	295	285	175	127	4951
452 cfs								4493	3855	2541	1755	1186	710	686	433	293	4493
407.6 cfs									4425	2912	2073	1474	970	944	676	461	4425
300 cfs										4380	3105	2297	1671	1637	1284	1029	4380
225 cfs											4894	3525	2577	2518	1951	1618	4894
175 cfs												4615	3450	3383	2714	2306	4615
125 cfs													5088	4919	3899	3344	5088
111 cfs														5790	4412	3747	5790
80 cfs															5898	5116	5898
60 cfs																6413	6413

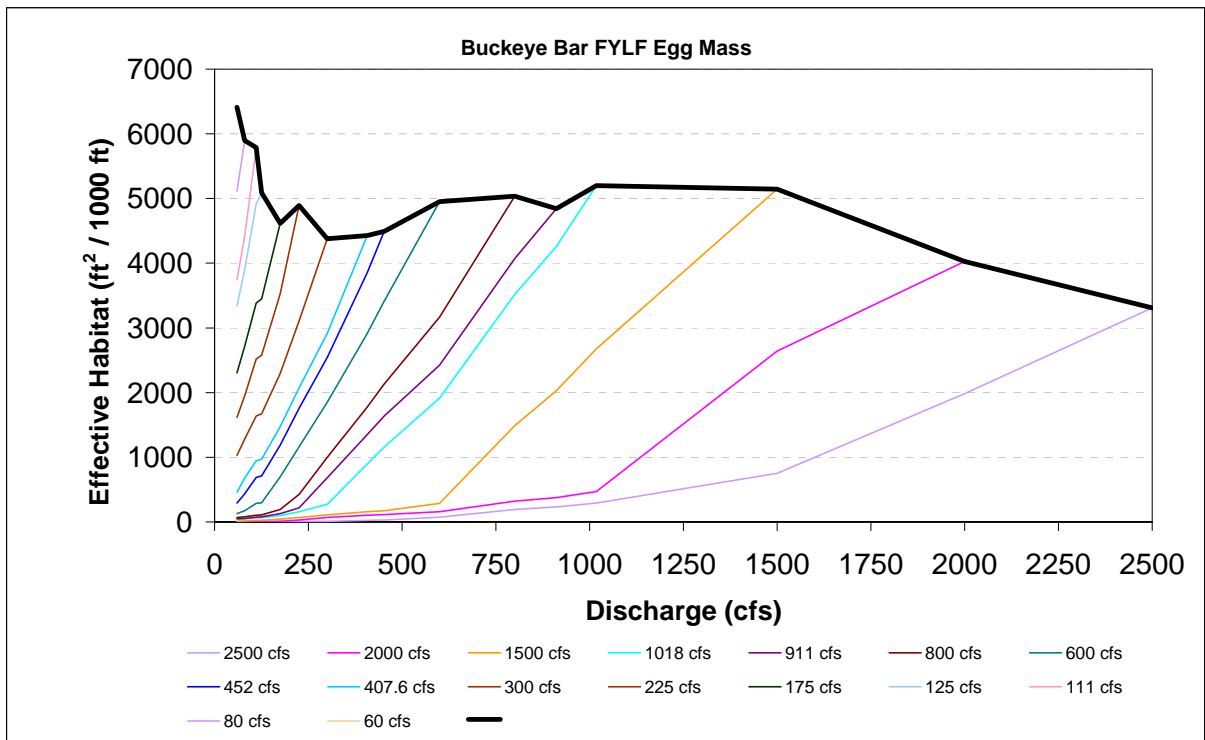


Figure O-23. Middle Fork American River MF4.8 Effective FYLF Tadpole Habitat Matrix.

Starting Discharge (cfs)	Ending Discharge (cfs)																Initial Habitat vs Flow Relationship
	2500	2000	1500	1018	911	800	600	452	407	300	225	175	125	111	80	60	
2500 cfs	2892	1385	363	194	167	140	36	10	9	6	5	1	1	0	0	0	2892
2000 cfs		3211	1593	347	298	247	121	76	69	33	9	4	3	2	2	1	3211
1500 cfs			3202	1396	1009	594	213	148	137	92	49	27	15	14	7	6	3202
1018 cfs				4380	3736	3146	1321	568	404	187	127	88	59	58	40	35	4380
911 cfs					4402	3741	1857	1075	898	261	164	116	82	81	58	52	4402
800 cfs						4831	2628	1665	1431	546	227	154	114	111	83	75	4831
600 cfs							4883	3389	3011	1815	942	346	210	187	147	133	4883
452 cfs								4985	4422	2877	1841	1113	540	499	296	231	4985
407.6 cfs									5191	3378	2261	1466	831	783	372	287	5191
300 cfs										5203	3558	2541	1720	1653	974	696	5203
225 cfs											6030	4257	3020	2914	1975	1543	6030
175 cfs												5915	4293	4159	3048	2532	5915
125 cfs													6308	6037	4478	3741	6308
111 cfs														7150	5213	4305	7150
80 cfs															7200	6039	7200
60 cfs																7856	7856

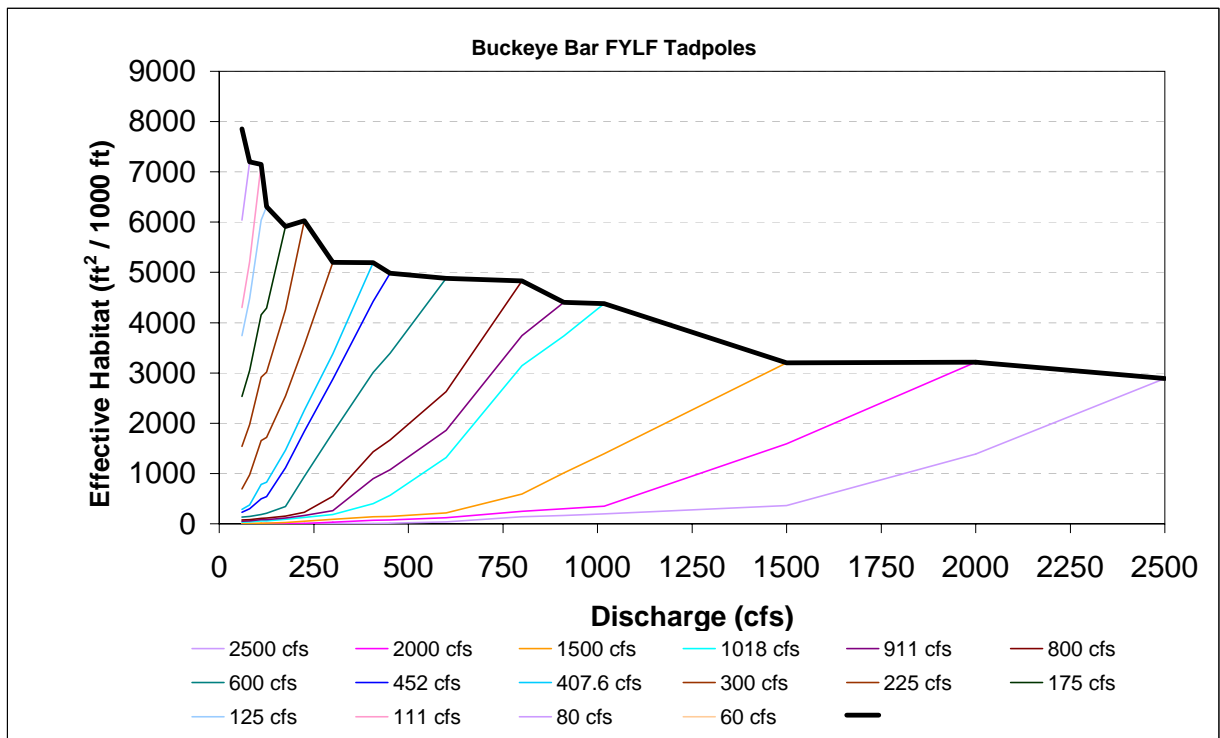


Figure O-24. Middle Fork American River MF4.8 Effective Food Production Habitat Matrix

Starting Discharge (cfs)	Ending Discharge (cfs)																Initial Habitat vs Flow Relationship
	2500	2000	1500	1018	911	800	600	452	407	300	225	175	125	111	80	60	
2500 cfs	94386	87594	81657	73449	71476	67927	62685	57763	55986	49601	41510	32140	21472	19456	11620	8995	94386
2000 cfs		94191	87787	79050	76344	72470	66875	61623	59700	52944	44265	34735	23680	21525	12895	9826	94191
1500 cfs			93796	84480	80996	77039	71228	65705	63660	56565	47363	37634	26276	23856	14712	10992	93796
1018 cfs				90811	87111	83130	77198	71498	69391	62012	52457	42567	30896	28153	18513	14424	90811
911 cfs					90275	84841	78856	73096	70966	63477	53820	43885	32162	29394	19681	15524	90275
800 cfs						88394	81700	75458	73306	65736	55946	45899	34050	31203	21425	17163	88394
600 cfs							86248	79817	77655	70029	60062	49796	37700	34759	24891	20513	86248
452 cfs								83693	81189	73163	62928	52443	40149	37164	27224	22789	83693
407.6 cfs									82057	73954	63667	53158	40829	37845	27882	23422	82057
300 cfs										75891	65434	54858	42480	39480	29494	24976	75891
225 cfs											66817	56008	43621	40616	30625	26093	66817
175 cfs												57403	44664	41506	31412	26772	57403
125 cfs													45641	42223	31996	27235	45641
111 cfs														44190	32091	27313	44190
80 cfs															33184	28109	33184
60 cfs																28269	28269

