

13087500 HISTORIC DIVERSION SOUTH SIDE TWIN FALLS CANAL AT MILNER (1000 AC-FT)

W-YR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1980	87.3	1.2	0	0	0	5.2	81.3	191.2	167	216.4	210	130.5	1090.1
1981	74.9	1.3	0	0	0	2.7	91.5	189.1	186.3	218.6	216.3	169.1	1149.8
1982	69.8	0	0	0	0	0	16.3	178.2	188.7	213.2	216.3	153.2	1035.7
1983	48.5	0	0	0	0	1.3	45.9	154.8	196.6	215.3	200.9	166.8	1030.1
1984	73.6	0	0	0	0	0	23.9	144.8	163.6	216.7	207.2	163.6	993.4
1985	62.8	0	0	0	0	0	48.8	200.5	200.1	223.6	216.9	137.7	1090.4
1986	77.4	15.1	0	0	0	2	87.4	191.7	195.1	217.5	209.3	152.5	1148
1987	74.5	4.2	0	0	0	9	102.5	193.1	188.6	206.8	203.8	150.7	1133.2
1988	73.2	0	0	0	0	2.2	77.3	184.3	196.1	220.3	196.6	118.1	1068.1
1989	61.5	0	0	0	0	3.4	46.9	190.5	202.7	221.5	219.2	160	1105.7
1990	90.1	0	0	0	0	10.2	108.5	190.1	185.7	224	215.7	159.6	1183.9
1991	93.6	6.4	0	0	0	3.9	74	171.7	203.4	220.1	223.4	160.7	1157.2
1992	79.3	0	0	0	0	2.9	121.7	186.8	164.2	171.3	167.9	106.4	1000.5
1993	59.7	0	0	0	0	0	18.7	155	182	221.1	212.1	179.2	1027.8
1994	88.5	0	0	0	0	5.4	107.8	167	180.4	203.1	195.7	148.3	1096.2
1995	58.6	0	0	0	0	0	56.5	138.1	160.4	222.7	222.4	179	1037.7
1996	96.8	0	0	0	0	13.7	71.5	184.1	204.2	224.6	214.7	161	1170.6
1997	102.9	0	0	0	11.1	23.4	84.7	183.7	186.6	218.9	203.5	149	1163.8
1998	82.5	25.8	0	0	0	36.7	54	136.3	166.5	219.8	220.1	153.7	1095.4
1999	76.5	0.2	0	0	20.1	36.8	67.5	145.6	190.6	221.4	208.5	162.2	1129.4
2000	103.9	0	0	0	0	5	99.9	188.8	210.2	223.5	211.8	152.8	1195.9
2001	73.4	0	0	0	0	0	69.8	187.5	194.1	187.9	174.2	140.2	1027.1
2002	58.6	0	0	0	0	0	39.3	171.1	189	205.7	194	145.8	1003.5
2003	64.1	0	0	0	0	0	52.9	162.3	200	209	199.6	143.4	1031.3
2004	79.5	0	0	0	0	0	83.4	172.2	177.6	175.9	169.2	142.7	1000.5
2005	80.9	0	0	0	0	0	36.3	101.2	161.3	204.7	191.2	148.8	924.4
2006	74.4	0	0	0	0	0	33.1	164	188	211.6	198.5	131.3	1000.9
2007	69.3	0	0	0	0	4.9	79.3	176	193	208.1	193.4	142.2	1066.2
2008	56.9	0	0	0	0	6.8	60.8	183.7	189.4	215.4	201.7	161.7	1076.4

Return flow (AF) for Twin Falls Canal Company, return flow fractions based measured return flows (2005-2010), partial measured data scaled up (2002-2004), average return flow fraction (1980-2001)

W-YR	Annual Return Flow Fraction	Annual Returns
1980	0.205	223,471
1981	0.205	235,709
1982	0.205	212,319
1983	0.205	211,171
1984	0.205	203,647
1985	0.205	223,532
1986	0.205	235,340
1987	0.205	232,306
1988	0.205	218,961
1989	0.205	226,669
1990	0.205	242,700
1991	0.205	237,226
1992	0.205	205,103
1993	0.205	210,699
1994	0.205	224,721
1995	0.205	212,729
1996	0.205	239,973
1997	0.205	238,579
1998	0.205	224,557
1999	0.205	231,527
2000	0.205	245,160
2001	0.205	210,556
2002	0.217	217,760
2003	0.21	216,573
2004	0.2184	218,509
2005	0.19	175,636
2006	0.2217	221,900
2007	0.167	178,055
2008	0.185	199,134
2009	0.2405	
2010	0.2557	

Monthly ET (feet) for cropland in Twin Falls County (from 'ET\_TO\_COUNTIES\_20090717\_GIS1.ZIP' through 'ET\_TO\_COUNTIES\_20090717\_GIS4.ZIP')

W-YR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Water year ET (ft)	Irrigated Acres	ET (AF)
1980								0.389	0.441	0.569	0.375	0.300		213,319	
1981	0.140	0.071	0.086	0.040	0.064	0.122	0.239	0.323	0.432	0.625	0.438	0.240	2.820	213,026	600,734
1982	0.163	0.087	0.073	0.043	0.082	0.131	0.189	0.304	0.449	0.572	0.488	0.300	2.881	212,733	612,885
1983	0.133	0.084	0.053	0.072	0.111	0.166	0.219	0.378	0.442	0.599	0.456	0.285	2.998	212,441	636,897
1984	0.179	0.086	0.028	0.030	0.047	0.082	0.128	0.322	0.460	0.609	0.483	0.304	2.758	212,148	585,103
1985	0.141	0.092	0.047	0.039	0.050	0.082	0.106	0.332	0.529	0.684	0.488	0.069	2.659	211,855	563,322
1986	0.082	0.031	0.038	0.047	0.104	0.132	0.256	0.404	0.597	0.524	0.414	0.183	2.812	211,562	594,912
1987	0.189	0.053	0.013	0.051	0.097	0.150	0.254	0.396	0.515	0.601	0.414	0.231	2.964	211,269	626,202
1988	0.147	0.088	0.062	0.054	0.057	0.098	0.250	0.374	0.550	0.619	0.395	0.188	2.882	210,976	608,033
1989	0.140	0.077	0.044	0.056	0.038	0.183	0.192	0.346	0.471	0.649	0.390	0.287	2.873	210,683	605,293
1990	0.166	0.047	0.035	0.057	0.048	0.104	0.261	0.381	0.516	0.563	0.420	0.246	2.844	210,391	598,351
1991	0.104	0.039	0.024	0.060	0.048	0.133	0.183	0.348	0.396	0.634	0.481	0.279	2.729	210,098	573,356
1992	0.138	0.080	0.051	0.028	0.064	0.103	0.297	0.448	0.581	0.497	0.316	0.148	2.751	209,805	577,173
1993	0.109	0.061	0.045	0.041	0.037	0.158	0.184	0.363	0.458	0.543	0.421	0.273	2.693	208,604	561,771
1994	0.151	0.003	0.022	0.047	0.078	0.074	0.256	0.404	0.545	0.641	0.395	0.150	2.766	207,404	573,679
1995	0.163	0.060	0.036	0.065	0.081	0.183	0.203	0.393	0.433	0.577	0.464	0.266	2.924	206,203	602,938
1996	0.115	0.091	0.073	0.055	0.079	0.136	0.221	0.345	0.518	0.624	0.374	0.161	2.792	205,003	572,367
1997	0.126	0.059	0.058	0.053	0.054	0.075	0.184	0.401	0.521	0.593	0.407	0.214	2.745	203,802	559,437
1998	0.139	0.047	0.027	0.075	0.105	0.104	0.243	0.392	0.388	0.617	0.464	0.292	2.893	202,602	586,126
1999	0.139	0.081	0.055	0.053	0.095	0.077	0.169	0.349	0.417	0.649	0.462	0.282	2.828	201,401	569,562
2000	0.128	0.070	0.037	0.051	0.113	0.133	0.262	0.428	0.559	0.612	0.403	0.186	2.982	200,201	596,998
2001	0.178	0.043	0.026	0.052	0.063	0.085	0.220	0.426	0.549	0.609	0.419	0.231	2.901	199,000	577,299
2002	0.165	0.062	0.033	0.054	0.057	0.091	0.199	0.346	0.520	0.678	0.401	0.249	2.855	197,799	564,717
2003	0.116	0.057	0.037	0.074	0.064	0.126	0.242	0.403	0.538	0.716	0.401	0.198	2.972	196,599	584,292
2004	0.109	0.040	0.060	0.030	0.046	0.089	0.246	0.414	0.585	0.633	0.379	0.183	2.814	195,398	549,851
2005	0.163	0.071	0.046	0.032	0.110	0.085	0.269	0.422	0.421	0.611	0.454	0.293	2.977	194,198	578,127
2006	0.102	0.071	0.039	0.063	0.061	0.104	0.247	0.391	0.553	0.661	0.408	0.206	2.906	192,997	560,850
2007	0.183	0.083	0.049	0.049	0.041	0.096	0.281	0.432	0.599	0.629	0.365	0.194	3.001	192,997	579,185
2008	0.225	0.063	0.034	0.046	0.067	0.110	0.075	0.276	0.462	0.707	0.445	0.292	2.802	192,997	540,778

Irrigated agricultural acreage estimated within Twin Falls Canal Company service area in 1980, 1992, 2006

Year	Shapefile acres	Reduction factor	Add.Area (1980)	Add.Area (1980 red)	Add. Area (2006)	Irrigated acres
1980	248,045	0.14				213,319
1992	202,723	0.14	43,996	37,836	35,463	209,805
2006	192,997	0				192,997

Test Areas for Twin Falls reduction factors comparing hand drawn polygons (1987) to 1980 and 1992 irrigated lands shapefiles

Test Area	Hand Drawn acres	1980 shapefile	1992 shapefile	1980 reduction factor	1992 reduction factor
1	13,287.6	15,468.4	15,398.2	0.141	0.137
2	14,262.6	16,938.3	16,413.2	0.158	0.131
3	6,598.5	7,600.4	7,675.9	0.132	0.140
Average				0.144	0.136

Effective precipitation (ft) \* crop mix ratio

Twin Falls	Alfalfa	Barley	DrBean	GrCorn	SilCorn	Oats	Potatoes	SugBeet	SprWht	WinWht	Annual P <sub>eff</sub>		
											Sum (ft)	Sum (mm)	AF
1980	0.171	0.067	0.040	0.011	0.009	0.003	0.017	0.012	0.066	0.079	0.475	145	
1981	0.146	0.072	0.023	0.013	0.008	0.003	0.011	0.015	0.048	0.065	0.404	123	86,069
1982	0.111	0.053	0.025	0.019	0.005	0.002	0.015	0.016	0.041	0.051	0.339	103	72,042
1983	0.209	0.045	0.037	0.023	0.005	0.001	0.011	0.038	0.041	0.092	0.501	153	106,499
1984	0.138	0.068	0.023	0.010	0.004	0.002	0.010	0.014	0.020	0.032	0.321	98	68,037
1985	0.141	0.064	0.028	0.015	0.005	0.002	0.010	0.017	0.038	0.043	0.363	111	76,839
1986	0.162	0.056	0.009	0.005	0.002	0.002	0.008	0.015	0.034	0.040	0.332	101	70,313
1987	0.157	0.051	0.031	0.010	0.004	0.002	0.011	0.023	0.031	0.040	0.360	110	76,085
1988	0.120	0.054	0.032	0.009	0.005	0.003	0.012	0.022	0.030	0.036	0.324	99	68,283
1989	0.097	0.029	0.012	0.007	0.004	0.002	0.005	0.021	0.017	0.029	0.222	68	46,676
1990	0.142	0.048	0.016	0.004	0.003	0.000	0.017	0.021	0.016	0.067	0.335	102	70,502
1991	0.141	0.056	0.011	0.006	0.003	0.002	0.013	0.018	0.019	0.033	0.302	92	63,438
1992	0.090	0.051	0.052	0.006	0.003	0.001	0.011	0.022	0.031	0.055	0.321	98	67,444
1993	0.103	0.056	0.032	0.005	0.002	0.000	0.010	0.015	0.030	0.037	0.292	89	60,956
1994	0.125	0.059	0.027	0.003	0.004	0.001	0.013	0.023	0.029	0.059	0.343	105	71,140
1995	0.239	0.129	0.037	0.005	0.005	0.002	0.023	0.031	0.043	0.146	0.660	201	136,058
1996	0.162	0.080	0.035	0.005	0.007	0.001	0.019	0.029	0.064	0.117	0.519	158	106,299
1997	0.121	0.057	0.014	0.003	0.004	0.000	0.016	0.015	0.014	0.069	0.312	95	63,556
1998	0.228	0.083	0.048	0.008	0.010	0.001	0.021	0.028	0.020	0.097	0.544	166	110,146
1999	0.106	0.036	0.034	0.003	0.014	0.000	0.011	0.015	0.009	0.050	0.279	85	56,151
2000	0.131	0.069	0.008	0.007	0.009	0.001	0.009	0.011	0.015	0.049	0.308	94	61,644
2001	0.077	0.064	0.014	0.006	0.013	0.001	0.012	0.008	0.008	0.034	0.238	72	47,295
2002	0.173	0.067	0.019	0.005	0.014	0.001	0.014	0.021	0.007	0.056	0.376	115	74,465
2003	0.153	0.104	0.020	0.003	0.019	0.000	0.016	0.019	0.025	0.006	0.367	112	72,146
2004	0.172	0.136	0.014	0.004	0.022	0.000	0.017	0.024	0.033	0.006	0.428	130	83,541
2005	0.162	0.045	0.017	0.007	0.025	0.001	0.011	0.013	0.016	0.072	0.369	112	71,565
2006	0.173	0.047	0.017	0.009	0.041	0.001	0.015	0.021	0.017	0.045	0.386	118	74,433
2007	0.148	0.066	0.006	0.001	0.005	0.000	0.005	0.008	0.016	0.025	0.281	86	54,320
2008	0.158	0.091	0.024	0.005	0.021	0.001	0.009	0.012	0.022	0.032	0.375	114	72,294

Reach Gain Snake River Kimberly to Lower Salmon Falls less returns and Lower Salmon Falls Creek (100 Ac-Ft)

W-YR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL	Estimated groundwater flow to Lower Salmon Falls Creek (AF)	Estimated Kimberly to LSF groundwater contributions (AF)
1980	3530	3208	3177	3123	2872	3030	2828	3248	3239	2805	2962	3395	37417	104,900	3,846,600
1981	3456	3253	3236	3135	2719	2775	2786	2672	3002	2683	2836	3200	35753	93,667	3,668,967
1982	3435	3026	3059	2962	2750	2837	2720	2797	2928	3019	2910	3316	35759	92,433	3,668,333
1983	3499	3294	3428	3351	2708	2816	3319	2954	2987	3125	3231	3262	37974	93,600	3,891,000
1984	3429	3127	3185	2897	2954	2899	2728	2593	2461	2914	2940	3296	35423	93,300	3,635,600
1985	3396	3120	3082	3206	3273	2853	2950	2649	2730	2696	2799	3400	36154	100,033	3,715,433
1986	3639	3321	3254	3340	3048	2879	2871	2750	3004	2960	2954	3492	37512	113,367	3,864,567
1987	3666	3222	3130	3120	2645	2770	2631	2641	2691	2839	2872	3186	35413	100,700	3,642,000
1988	3390	3087	3071	2959	2696	2775	2692	2715	2658	2719	2876	3199	34837	91,733	3,575,433
1989	3357	3121	3058	2802	2542	2833	2754	2707	2591	2734	3052	3391	34942	90,500	3,584,700
1990	3712	3149	3070	2987	2606	2785	2741	2835	2985	2793	2991	3270	35924	91,033	3,683,433
1991	3644	3144	3070	2899	2590	2696	2646	2783	2679	2734	2878	3297	35060	87,967	3,593,967
1992	3410	3022	2917	2808	2573	2542	2429	2260	2241	2437	2448	2621	31708	72,933	3,243,733
1993	2916	2801	2707	2631	2481	2628	2524	2496	2650	2415	2758	2904	31911	83,800	3,274,900
1994	3228	2810	2852	2773	2376	2500	2491	2470	2325	2369	2586	2791	31571	81,600	3,238,700
1995	3250	2856	2829	2753	2412	2555	2509	2389	2744	2468	2514	2839	32118	92,100	3,303,900
1996	3212	2894	2829	2578	2485	2486	2798	2715	2500	2453	2562	2942	32454	97,067	3,342,467
1997	3176	2933	3024	2982	2859	3330	3279	3032	3014	2790	2752	3208	36379	120,367	3,758,267
1998	3475	3321	3065	2906	2664	3007	3080	3349	3143	2572	2482	2897	35961	115,800	3,711,900
1999	3182	2984	3253	3107	2796	3034	3061	3206	3066	2435	2597	2845	35566	111,733	3,668,333
2000	3157	3000	2973	3047	2766	2703	2774	2767	2511	2427	2509	2916	33550	95,500	3,450,500
2001	3083	2735	2744	2690	2439	2618	2716	2528	2400	2558	2550	2785	31846	92,900	3,277,500
2002	3110	2893	2841	2816	2461	2583	2697	2513	2352	2345	2402	2702	31715	71,400	3,242,900
2003	3016	2775	2797	2714	2371	2458	2529	2522	2173	2263	2402	2681	30701	68,900	3,139,000
2004	2970	2794	2828	2767	2577	2547	2505	2411	2186	2247	2291	2502	30625	68,900	3,131,400
2005	2844	2598	2644	2569	2255	2396	2405	2669	2379	2245	2396	2565	29965	71,567	3,068,067
2006	2920	2675	2722	2670	2266	2570	2298	2873	2290	2285	2426	2655	30650	83,000	3,148,000
2007	2983	2659	2542	2586	2253	2525	2591	2516	2277	2291	2491	2667	30381	66,333	3,104,433
2008	2973	2682	2706	2628	2422	2455	2598	2457	2406	2244	2364	2588	30523	75,300	3,127,600
2009	2931	2681	2665	2592	2313	2489	2680	2768	2588	2556	2408	2647	31318		

Estimated groundwater baseflow included in Lower Salmon Falls Creek (AF)

W-YR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1980	9,533	9,533	9,533	9,533	9,400	9,300	7,000	8,900	9,533	6,200	6,900	9,533	104,900
1981	9,333	9,333	9,333	9,333	8,700	8,800	8,600	7,600	6,600	3,000	3,700	9,333	93,667
1982	9,067	9,067	9,067	8,900	9,067	8,700	8,400	6,200	4,800	5,300	4,800	9,067	92,433
1983	8,500	8,500	8,500	8,500	8,000	8,400	8,500	8,500	6,200	3,000	8,500	8,500	93,600
1984	8,100	8,100	8,100	8,000	7,300	8,100	8,100	8,100	8,100	5,100	8,100	8,100	93,300
1985	9,567	9,567	9,100	8,600	8,900	9,567	9,567	9,400	7,200	3,500	5,500	9,567	100,033
1986	10,567	10,567	10,567	10,500	10,567	10,567	10,567	8,600	6,500	6,400	7,400	10,567	113,367
1987	9,467	9,467	9,467	9,467	8,700	9,000	9,467	6,900	6,200	6,200	6,900	9,467	100,700
1988	9,167	9,167	9,167	9,167	9,100	7,900	9,167	8,600	5,400	2,800	3,200	8,900	91,733
1989	8,433	8,433	8,433	8,433	8,200	8,200	7,600	6,900	5,000	4,000	8,433	8,433	90,500
1990	8,267	8,267	8,267	8,267	8,000	7,300	8,267	8,267	8,267	3,800	5,800	8,267	91,033
1991	7,967	7,967	7,967	7,967	7,900	7,500	7,967	7,967	7,300	3,600	5,900	7,967	87,967
1992	7,933	7,933	7,933	7,933	7,900	6,700	7,300	3,100	2,200	3,800	3,300	6,900	72,933
1993	7,100	7,100	7,100	7,100	6,500	7,100	6,700	6,900	7,100	6,900	7,100	7,100	83,800
1994	8,100	8,100	8,100	8,100	7,600	7,300	8,100	8,100	3,900	3,000	4,200	7,000	81,600
1995	8,200	8,200	8,200	8,200	7,800	7,400	7,400	8,200	8,200	5,000	7,100	8,200	92,100
1996	8,767	8,767	8,767	8,767	8,700	7,800	8,767	8,767	5,800	5,100	8,300	8,767	97,067
1997	10,367	10,367	10,367	10,367	8,700	10,367	10,367	10,367	10,367	8,000	10,367	10,367	120,367
1998	10,467	10,467	10,467	10,200	9,900	10,467	10,000	10,467	10,100	5,700	7,100	10,467	115,800
1999	10,133	10,133	10,133	9,900	9,300	10,133	10,133	10,133	7,500	5,300	8,800	10,133	111,733
2000	8,900	8,900	8,900	8,900	8,400	8,400	8,900	8,900	5,100	4,700	6,600	8,900	95,500
2001	8,067	8,067	8,067	8,067	7,700	7,200	8,067	7,900	6,900	7,200	7,600	8,067	92,900
2002	7,400	7,400	7,400	7,400	7,300	6,600	6,400	5,700	3,100	2,600	3,300	6,800	71,400
2003	7,100	7,100	7,100	7,100	6,700	6,600	7,100	7,100	2,300	2,100	3,300	5,300	68,900
2004	7,300	7,300	7,300	7,300	7,300	6,800	6,200	5,500	2,200	1,900	2,500	7,300	68,900
2005	6,667	6,667	6,667	6,667	6,300	6,100	6,667	6,667	6,600	2,400	3,500	6,667	71,567
2006	7,800	7,800	7,800	7,800	6,900	7,500	7,800	7,800	6,000	3,000	5,000	7,800	83,000
2007	6,867	6,867	6,867	6,867	6,300	6,200	6,867	6,200	2,400	1,900	2,900	6,100	66,333
2008	7,200	7,200	7,200	7,200	7,000	6,800	7,200	7,000	6,200	2,200	3,000	7,100	75,300

Reach Gain Snake River Kimberly to Lower Salmon Falls less returns and surface water component of Lower Salmon Falls Creek (AF)

W-YR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1980	362,533	330,333	327,233	321,833	296,600	312,300	289,800	333,700	333,433	286,700	303,100	349,033	3,846,600
1981	354,933	334,633	332,933	322,833	280,600	286,300	287,200	274,800	306,800	271,300	287,300	329,333	3,668,967
1982	352,567	311,667	314,967	305,100	284,067	292,400	280,400	285,900	297,600	307,200	295,800	340,667	3,668,333
1983	358,400	337,900	351,300	343,600	278,800	290,000	340,400	303,900	304,900	315,500	331,600	334,700	3,891,000
1984	351,000	320,800	326,600	297,700	302,700	298,000	280,900	267,400	254,200	296,500	302,100	337,700	3,635,600
1985	349,167	321,567	317,300	329,200	336,200	294,867	304,567	274,300	280,200	273,100	285,400	349,567	3,715,433
1986	374,467	342,667	335,967	344,500	315,367	298,467	297,667	283,600	306,900	302,400	302,800	359,767	3,864,567
1987	376,067	331,667	322,467	321,467	273,200	286,000	272,567	271,000	275,300	290,100	294,100	328,067	3,642,000
1988	348,167	317,867	316,267	305,067	278,700	285,400	278,367	280,100	271,200	274,700	290,800	328,800	3,575,433
1989	344,133	320,533	314,233	288,633	262,400	291,500	283,000	277,600	264,100	277,400	313,633	347,533	3,584,700
1990	379,467	323,167	315,267	306,967	268,600	285,800	282,367	291,767	306,767	283,100	304,900	335,267	3,683,433
1991	372,367	322,367	314,967	297,867	266,900	277,100	272,567	286,267	275,200	277,000	293,700	337,667	3,593,967
1992	348,933	310,133	299,633	288,733	265,200	260,900	250,200	229,100	226,300	247,500	248,100	269,000	3,243,733
1993	298,700	287,200	277,800	270,200	254,600	269,900	259,100	256,500	272,100	248,400	282,900	297,500	3,274,900
1994	330,900	289,100	293,300	285,400	245,200	257,300	257,200	255,100	236,400	239,900	262,800	286,100	3,238,700
1995	333,200	293,800	291,100	283,500	249,000	262,900	258,300	247,100	282,600	251,800	258,500	292,100	3,303,900
1996	329,967	298,167	291,667	266,567	257,200	256,400	288,567	280,267	255,800	250,400	264,500	302,967	3,342,467
1997	327,967	303,667	312,767	308,567	294,600	343,367	338,267	313,567	311,767	287,000	285,567	331,167	3,758,267
1998	357,967	342,567	316,967	300,800	276,300	311,167	318,000	345,367	324,400	262,900	255,300	300,167	3,711,900
1999	328,333	308,533	335,433	320,600	288,900	313,533	316,233	330,733	314,100	248,800	268,500	294,633	3,668,333
2000	324,600	308,900	306,200	313,600	285,000	278,700	286,300	285,600	256,200	247,400	257,500	300,500	3,450,500
2001	316,367	281,567	282,467	277,067	251,600	269,000	279,667	260,700	246,900	263,000	262,600	286,567	3,277,500
2002	318,400	296,700	291,500	289,000	253,400	264,900	276,100	257,000	238,300	237,100	243,500	277,000	3,242,900
2003	308,700	284,600	286,800	278,500	243,800	252,400	260,000	259,300	219,600	228,400	243,500	273,400	3,139,000
2004	304,300	286,700	290,100	284,000	265,000	261,500	256,700	246,600	220,800	226,600	231,600	257,500	3,131,400
2005	291,067	266,467	271,067	263,567	231,800	245,700	247,167	273,567	244,500	226,900	243,100	263,167	3,068,067
2006	299,800	275,300	280,000	274,800	233,500	264,500	237,600	295,100	235,000	231,500	247,600	273,300	3,148,000
2007	305,167	272,767	261,067	265,467	231,600	258,700	265,967	257,800	230,100	231,000	252,000	272,800	3,104,433
2008	304,500	275,400	277,800	270,000	249,200	252,300	267,000	252,700	246,800	226,600	239,400	265,900	3,127,600

Reach Gain Snake River Milner to Kimberly less returns (100 AF)

W-YR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1980	209	183	184	182	157	172	194	86	212	179	200	210	2168
1981	174	73	44	29	120	119	-24	68	-79	177	198	228	1127
1982	250	223	212	170	188	5	209	135	151	116	255	314	2228
1983	52	-15	34	-50	-49	56	-87	719	148	231	203	198	1440
1984	188	237	351	540	406	102	418	892	1338	310	419	338	5539
1985	331	334	480	403	274	223	242	222	258	261	306	334	3668
1986	268	232	224	199	221	255	218	333	188	273	270	256	2937
1987	371	322	255	308	278	210	224	229	203	238	254	297	3189
1988	311	228	211	198	174	179	143	173	185	218	235	244	2499
1989	214	212	186	175	155	180	139	160	173	230	262	260	2346
1990	248	258	239	206	162	161	154	184	202	213	232	350	2609
1991	252	234	180	262	151	150	139	166	171	170	209	222	2306
1992	201	148	169	176	134	135	143	145	154	182	196	194	1977
1993	331	302	284	176	115	194	133	125	304	204	235	212	2615
1994	219	179	197	197	176	198	200	220	231	251	240	213	2521
1995	209	231	147	161	131	142	125	342	638	232	255	266	2879
1996	214	193	168	170	245	463	407	286	441	297	305	269	3458
1997	232	225	190	147	-228	-306	0	196	325	287	210	146	1424
1998	187	100	183	216	252	158	88	-53	77	299	298	297	2102
1999	276	131	-44	73	66	94	82	34	41	276	314	289	1632
2000	248	179	146	22	184	167	152	175	169	268	305	252	2267
2001	268	211	173	161	143	151	150	176	175	203	222	227	2260
2002	207	178	168	152	130	139	130	130	143	176	202	221	1976
2003	215	171	170	149	122	130	133	138	138	177	202	208	1953
2004	190	163	152	135	119	124	137	150	160	183	190	191	1894
2005	196	144	137	120	98	111	113	118	124	214	211	192	1778
2006	171	153	135	121	68	106	-89	68	141	191	259	227	1551
2007	207	171	144	146	179	166	146	141	152	249	249	235	2185
2008	209	159	137	123	107	124	133	156	154	156	270	210	1938
2009	211	162	152	129	106	101	-64	82	38	97	217	222	1453



Monthly tributary underflow (AF) from Salmon Falls Creek drainage

Based on annual underflow of 111,000 AF (Crosthwaite, 1969) and Silver Creek time series from Trib\_Underflow\_V2\_11\_04\_09.csv

W-YR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	Water year underflow (AF)
1980								10,202	9,873	10,202	10,202	9,873	
1981	10,202	9,873	10,202	10,202	9,215	10,202	9,873	9,559	9,250	9,559	9,559	9,250	116,947
1982	9,559	9,250	9,559	9,559	8,634	9,559	9,250	10,937	10,585	10,937	10,937	10,585	119,352
1983	10,937	10,585	10,937	10,937	9,879	10,937	10,585	10,937	10,585	10,937	10,937	10,585	128,780
1984	10,937	10,585	10,937	10,937	10,232	10,937	10,585	10,570	10,229	10,570	10,570	10,229	127,318
1985	10,570	10,229	10,570	10,570	9,547	10,570	10,229	10,018	9,695	10,018	10,018	9,695	121,730
1986	10,018	9,695	10,018	10,018	9,049	10,018	9,695	10,110	9,784	10,110	10,110	9,784	118,412
1987	10,110	9,784	10,110	10,110	9,132	10,110	9,784	9,072	8,779	9,072	9,072	8,779	113,914
1988	9,072	8,779	9,072	9,072	8,486	9,072	8,779	8,842	8,557	8,842	8,842	8,557	105,970
1989	8,842	8,557	8,842	8,842	7,986	8,842	8,557	9,145	8,850	9,145	9,145	8,850	105,603
1990	9,145	8,850	9,145	9,145	8,260	9,145	8,850	8,888	8,601	8,888	8,888	8,601	106,407
1991	8,888	8,601	8,888	8,888	8,028	8,888	8,601	8,869	8,583	8,869	8,869	8,583	104,557
1992	8,869	8,583	8,869	8,869	8,297	8,869	8,583	8,594	8,317	8,594	8,594	8,317	103,356
1993	8,594	8,317	8,594	8,594	7,762	8,594	8,317	9,651	9,339	9,651	9,651	9,339	106,401
1994	9,651	9,339	9,651	9,651	8,717	9,651	9,339	8,566	8,290	8,566	8,566	8,290	108,277
1995	8,566	8,290	8,566	8,566	7,737	8,566	8,290	10,110	9,784	10,110	10,110	9,784	108,481
1996	10,110	9,784	10,110	10,110	9,458	10,110	9,784	10,202	9,873	10,202	10,202	9,873	119,820
1997	10,202	9,873	10,202	10,202	9,215	10,202	9,873	10,386	10,051	10,386	10,386	10,051	121,030
1998	10,386	10,051	10,386	10,386	9,381	10,386	10,051	10,294	9,962	10,294	10,294	9,962	121,833
1999	10,294	9,962	10,294	10,294	9,298	10,294	9,962	9,926	9,606	9,926	9,926	9,606	119,390
2000	9,926	9,606	9,926	9,926	9,286	9,926	9,606	9,072	8,779	9,072	9,072	8,779	112,978
2001	9,072	8,779	9,072	9,072	8,194	9,072	8,779	8,658	8,379	8,658	8,658	8,379	104,770
2002	8,658	8,379	8,658	8,658	7,820	8,658	8,379	8,802	8,518	8,802	8,802	8,518	102,650
2003	8,802	8,518	8,802	8,802	7,950	8,802	8,518	8,793	8,509	8,793	8,793	8,509	103,586
2004	8,793	8,509	8,793	8,793	8,225	8,793	8,509	8,878	8,591	8,878	8,878	8,591	104,229
2005	8,878	8,591	8,878	8,878	8,019	8,878	8,591	9,559	9,250	9,559	9,559	9,250	107,888
2006	9,559	9,250	9,559	9,559	8,634	9,559	9,250	9,710	9,397	9,710	9,710	9,397	113,291
2007	9,710	9,397	9,710	9,710	8,770	9,710	9,397	8,927	8,639	8,927	8,927	8,639	110,462
2008	8,927	8,639	8,927	8,927	8,063	8,927	8,639	8,251	7,985	8,251	8,251	7,985	101,772

Contribution to reach gains between Kimberly and Hagerman (Lower Salmon Falls) from the south side of the Snake River

Water Year	TFCC Diversions (AF)	Measured TFCC Returns (AF)	Effective precipitation on irrigated lands (AF)	ET (AF)	Recharge from TFCC irrigation - Diversions + effective precip, less returns and ET (AF)	Underflow from Salmon Falls drainage (AF)	Estimated south side groundwater contribution, Milner to LSF (AF)	Milner to Kimberly reach gain (AF)	Milner to Kimberly reach gain as fraction of South Side contribution, Milner to LSF	Estimated south side groundwater contribution, Kimberly to LSF (AF)	Kimberly to LSF, reach gain from groundwater (AF)	Reach gain less south side groundwater contribution, Kimberly to LSF (AF)	% of Kimberly to LSF reach gain
1980	1,090,100	223,471						216,800			3,846,600		
1981	1,149,800	235,709	86,069	600,734	399,426	116,947	516,373	112,700	22%	246,744	3,668,967	3,422,223	6.7%
1982	1,035,700	212,319	72,042	612,885	282,539	119,352	401,891	222,800	55%	192,039	3,668,333	3,476,294	5.2%
1983	1,030,100	211,171	106,499	636,897	288,532	128,780	417,312	144,000	35%	199,408	3,891,000	3,691,592	5.1%
1984	993,400	203,647	68,037	585,103	272,687	127,318	400,005	553,900	138%	191,138	3,635,600	3,444,462	5.3%
1985	1,090,400	223,532	76,839	563,322	380,385	121,730	502,115	366,800	73%	239,930	3,715,433	3,475,503	6.5%
1986	1,148,000	235,340	70,313	594,912	388,061	118,412	506,473	293,700	58%	242,013	3,864,567	3,622,554	6.3%
1987	1,133,200	232,306	76,085	626,202	350,778	113,914	464,692	318,900	69%	222,048	3,642,000	3,419,952	6.1%
1988	1,068,100	218,961	68,283	608,033	309,389	105,970	415,359	249,900	60%	198,475	3,575,433	3,376,958	5.6%
1989	1,105,700	226,669	46,676	605,293	320,414	105,603	426,017	234,600	55%	203,568	3,584,700	3,381,132	5.7%
1990	1,183,900	242,700	70,502	598,351	413,352	106,407	519,760	260,900	50%	248,362	3,683,433	3,435,072	6.7%
1991	1,157,200	237,226	63,438	573,356	410,055	104,557	514,612	230,600	45%	245,902	3,593,967	3,348,065	6.8%
1992	1,000,500	205,103	67,444	577,173	285,668	103,356	389,024	197,700	51%	185,891	3,243,733	3,057,842	5.7%
1993	1,027,800	210,699	60,956	561,771	316,286	106,401	422,687	261,500	62%	201,976	3,274,900	3,072,924	6.2%
1994	1,096,200	224,721	71,140	573,679	368,940	108,277	477,217	252,100	53%	228,033	3,238,700	3,010,667	7.0%
1995	1,037,700	212,729	136,058	602,938	358,091	108,481	466,572	287,900	62%	222,946	3,303,900	3,080,954	6.7%
1996	1,170,600	239,973	106,299	572,367	464,559	119,820	584,379	345,800	59%	279,240	3,342,467	3,063,227	8.4%
1997	1,163,800	238,579	63,556	559,437	429,341	121,030	550,370	142,400	26%	262,989	3,758,267	3,495,278	7.0%
1998	1,095,400	224,557	110,146	586,126	394,862	121,833	516,695	210,200	41%	246,898	3,711,900	3,465,002	6.7%
1999	1,129,400	231,527	56,151	569,562	384,462	119,390	503,852	163,200	32%	240,760	3,668,333	3,427,573	6.6%
2000	1,195,900	245,160	61,644	596,998	415,387	112,978	528,364	226,700	43%	252,474	3,450,500	3,198,026	7.3%
2001	1,027,100	210,556	47,295	577,299	286,540	104,770	391,311	226,000	58%	186,984	3,277,500	3,090,516	5.7%
2002	1,003,500	217,760	74,465	564,717	295,489	102,650	398,138	197,600	50%	190,246	3,242,900	3,052,654	5.9%
2003	1,031,300	216,573	72,146	584,292	302,581	103,586	406,167	195,300	48%	194,083	3,139,000	2,944,917	6.2%
2004	1,000,500	218,509	83,541	549,851	315,681	104,229	419,910	189,400	45%	200,649	3,131,400	2,930,751	6.4%
2005	924,400	175,636	71,565	578,127	242,202	107,888	350,089	177,800	51%	167,287	3,068,067	2,900,780	5.5%
2006	1,000,900	221,900	74,433	560,850	292,583	113,291	405,874	155,100	38%	193,943	3,148,000	2,954,057	6.2%
2007	1,066,200	178,055	54,320	579,185	363,279	110,462	473,741	218,500	46%	226,372	3,104,433	2,878,061	7.3%
2008	1,076,400	199,134	72,294	540,778	408,782	101,772	510,554	193,800	38%	243,963	3,127,600	2,883,637	7.8%
<b>Average</b>	<b>1,077,007</b>	<b>219,801</b>	<b>74,580</b>	<b>583,580</b>	<b>347,870</b>	<b>112,114</b>	<b>459,984</b>	<b>236,090</b>	<b>52%</b>	<b>219,799</b>	<b>3,469,022</b>	<b>3,235,738</b>	<b>6.4%</b>



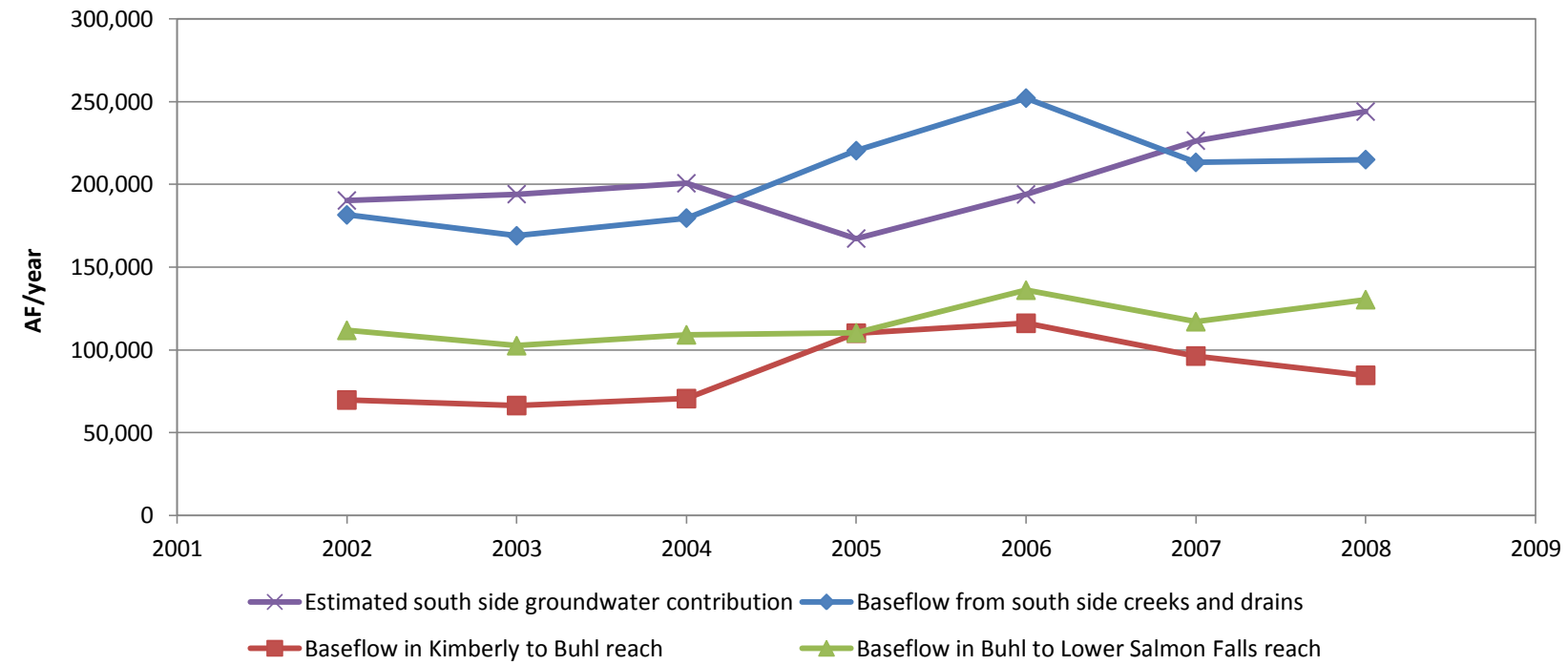
ESPA Contribution to Reach Gain; Snake River - Kimberly to Lower Salmon Falls (AF); groundwater reach gain less south side ground water contribution

W-YR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1980								312,744	313,153	265,744	282,144	328,753	
1981	333,977	314,353	311,977	301,877	261,672	265,344	266,920	253,844	286,520	250,344	266,344	309,053	3,422,223
1982	336,256	295,883	298,656	288,790	269,335	276,090	264,616	269,590	281,816	290,890	279,490	324,883	3,476,294
1983	341,464	321,510	334,364	326,664	263,503	273,064	324,010	286,964	288,510	298,564	314,664	318,310	3,691,592
1984	334,811	305,133	310,411	281,511	287,555	281,811	265,233	251,211	238,533	280,311	285,911	322,033	3,444,462
1985	328,789	301,846	296,922	308,822	317,794	274,489	284,846	253,922	260,480	252,722	265,022	329,846	3,475,503
1986	353,912	322,775	315,412	323,945	296,801	277,912	277,775	263,045	287,009	281,845	282,245	339,875	3,622,554
1987	357,208	313,416	303,608	302,608	256,166	267,141	254,316	252,141	257,049	271,241	275,241	309,816	3,419,952
1988	331,356	301,598	299,456	288,256	262,974	268,589	262,098	263,289	254,932	257,889	273,989	312,532	3,376,958
1989	326,844	303,802	296,944	271,344	246,784	274,211	266,268	260,311	247,368	260,111	296,344	330,802	3,381,132
1990	358,373	302,753	294,173	285,873	249,548	264,706	261,953	270,673	286,353	262,006	283,806	314,853	3,435,072
1991	351,482	302,156	294,082	276,982	248,036	256,215	252,356	265,382	254,989	256,115	272,815	317,456	3,348,065
1992	333,188	294,896	283,888	272,988	250,471	245,155	234,963	213,355	211,063	231,755	232,355	253,763	3,057,842
1993	281,546	270,599	260,646	253,046	239,106	252,746	242,499	239,346	255,499	231,246	265,746	280,899	3,072,924
1994	311,533	270,358	273,933	266,033	227,707	237,933	238,458	235,733	217,658	220,533	243,433	267,358	3,010,667
1995	314,265	275,476	272,165	264,565	231,897	243,965	239,976	228,165	264,276	232,865	239,565	273,776	3,080,954
1996	306,315	275,278	268,015	242,915	235,074	232,749	265,678	256,615	232,912	226,749	240,849	280,078	3,063,227
1997	305,631	282,051	290,431	286,231	274,426	321,031	316,651	291,231	290,151	264,664	263,231	309,551	3,495,278
1998	336,997	322,274	295,997	279,831	257,360	290,197	297,707	324,397	304,107	241,931	234,331	279,874	3,465,002
1999	307,885	288,745	314,985	300,152	270,431	293,085	296,445	310,285	294,311	228,352	248,052	274,845	3,427,573
2000	303,216	288,205	284,816	292,216	264,995	257,316	265,605	264,216	235,505	226,016	236,116	279,805	3,198,026
2001	300,486	266,198	266,586	261,186	237,256	253,119	264,298	244,819	231,531	247,119	246,719	271,198	3,090,516
2002	302,242	281,063	275,342	272,842	238,806	248,742	260,463	240,842	222,663	220,942	227,342	261,363	3,052,654
2003	292,216	268,648	270,316	262,016	228,911	235,916	244,048	242,816	203,648	211,916	227,016	257,448	2,944,917
2004	287,305	270,253	273,105	267,005	249,102	244,505	240,253	229,605	204,353	209,605	214,605	241,053	2,930,751
2005	276,859	252,717	256,859	249,359	218,967	231,492	233,417	259,359	230,750	212,692	228,892	249,417	2,900,780
2006	283,328	259,360	263,528	258,328	218,622	248,028	221,660	278,628	219,060	215,028	231,128	257,360	2,954,057
2007	285,941	254,161	241,841	246,241	214,234	239,474	247,361	238,574	211,494	211,774	232,774	254,194	2,878,061
2008	283,836	255,403	257,136	249,336	229,870	231,636	247,003	232,036	226,803	205,936	218,736	245,903	2,883,637

South side return site baseflows (Kimberly to Lower Salmon Falls)

Reach	Kimberly to Buhl					Buhl to LSF	Kimberly to Buhl	Buhl to LSF	Kimberly to Buhl	Sum (AF/year)	Buhl to LSF	Kimberly to LSF	Estimated south side contribution by water budget (AF/yr)	Difference (AF/yr)	Difference (%)	Difference (cfs)
	East Perrine (cfs)	Perrine Coulee (AF/year)	LSLQ or S+Q (AF/year)	Cedar Draw (AF/year)	I Coulee (AF/year)	Mud Creek (AF/year)	Rock Creek (AF/year)	Deep Creek (AF/year)	S2 (AF/year)		Estimated baseflow in Lower Salmon Falls Creek (AF/yr)	Sum LSF baseflow + 4B return sites' baseflow (AF/yr)				
2002	3,093	290	6,226	15,854	2,302	29,828	41,740	10,581	226	110,139	71,400	181,539	190,246	-8,708	-4.6%	-12
2003	2,998	145	8,181	15,276	1,665	24,036	37,905	9,609	205	100,021	68,900	168,921	194,083	-25,162	-13.0%	-35
2004	3,022	436	6,824	16,044	2,033	29,547	41,966	10,638	227	110,736	68,900	179,636	200,649	-21,013	-10.5%	-29
2005	5,647	0	13,104	14,479	5,502	25,050	70,493	13,683	845	148,804	71,567	220,371	167,287	53,084	31.7%	73
2006	5,213	0	6,805	23,746	6,950	38,371	73,128	14,697	217	169,127	83,000	252,127	193,943	58,185	30.0%	80
2007	5,430	0	6,805	20,489	6,516	38,516	56,596	12,163	434	146,948	66,333	213,281	226,372	-13,091	-5.8%	-18
2008	4,574	0	11,107	22,432	3,702	38,331	42,672	16,697	145	139,660	75,300	214,960	243,963	-29,003	-11.9%	-40
2009	5,068	0	10,715	24,036	2,896	38,226	32,551	15,566	145	129,201						
2010	3,330	0	5,647	21,068	3,403	38,226	54,600	10,860	0	137,133						

South side return site and LSF Creek baseflows by reach				
Year	Kimberly to Buhl (AF/year)	Kimberly to Buhl (%)	Buhl to LSF (AF/year)	Buhl to LSF (%)
2002	69,730	38.4%	111,809	61.6%
2003	66,376	39.3%	102,545	60.7%
2004	70,551	39.3%	109,085	60.7%
2005	110,071	49.9%	110,300	50.1%
2006	116,060	46.0%	136,067	54.0%
2007	96,270	45.1%	117,011	54.9%
2008	84,632	39.4%	130,328	60.6%
2009	75,410			
2010	88,047			
Average, 2002-2008	87,670	42.5%	116,735	57.5%



Reach Gain Snake River Kimberly to Buhl less returns (100 Ac-Ft)

W-YR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1980	978	856	820	778	720	673	735	949	930	766	825	1034	10064
1981	1019	935	943	896	726	647	722	660	876	710	784	968	9886
1982	954	794	780	712	670	594	334	394	746	822	723	941	8464
1983	1026	805	755	720	660	639	614	317	540	784	837	893	8590
1984	865	744	770	659	731	669	477	596	352	798	755	1016	8432
1985	972	844	815	880	903	658	801	668	791	705	796	1074	9907
1986	1194	1032	1094	1121	931	547	549	444	705	880	840	1147	10484
1987	1319	1002	982	975	713	716	676	646	718	819	841	987	10394
1988	1050	899	885	835	742	675	669	692	714	791	892	1082	9926
1989	1055	921	850	773	642	697	724	680	630	701	898	1092	9663
1990	1169	837	755	751	650	665	573	643	834	744	787	965	9373
1991	1159	929	855	773	716	651	664	789	761	715	846	1107	9965
1992	1101	937	874	831	734	656	629	542	614	699	684	733	9034
1993	846	792	735	650	610	594	614	650	582	601	756	838	8268
1994	985	784	776	733	591	523	538	504	503	569	756	881	8143
1995	1132	881	813	756	659	644	614	458	581	628	669	900	8735
1996	1072	808	787	714	434	214	369	556	348	632	665	941	7540
1997	1004	830	813	641	671	913	696	539	1118	726	690	824	9465
1998	945	918	656	594	572	676	647	756	616	638	635	846	8499
1999	942	789	791	633	601	636	538	575	558	608	703	851	8225
2000	1020	959	935	1002	762	654	919	659	564	623	749	944	9790
2001	1022	847	812	749	625	564	608	492	519	639	697	818	8392
2002	921	805	807	773	652	629	664	625	530	570	694	824	8494
2003	903	755	756	716	617	585	602	561	477	577	708	811	8068
2004	869	773	758	705	641	566	547	536	519	600	647	742	7903
2005	930	772	741	672	567	534	563	748	604	508	670	751	8060
2006	807	684	670	648	632	769	418	943	560	658	740	874	8403
2007	970	778	708	807	608	701	671	649	615	684	819	879	8889
2008	960	805	795	750	669	616	658	608	623	585	648	774	8491
2009	859	790	780	742	663	624	917	933	808	874	673	799	9462







Reach Gain Snake River Buhl to LSF less returns (100 Ac-Ft)

W-YR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1980	2552	2352	2357	2345	2152	2357	2093	2299	2309	2039	2137	2361	27353
1981	2437	2318	2293	2239	1993	2128	2064	2012	2126	1973	2052	2232	25867
1982	2481	2232	2279	2250	2080	2243	2386	2403	2182	2197	2187	2375	27295
1983	2473	2489	2673	2631	2048	2177	2705	2637	2447	2341	2394	2369	29384
1984	2564	2383	2415	2238	2223	2230	2251	1997	2109	2116	2185	2280	26991
1985	2424	2276	2267	2326	2370	2195	2149	1981	1939	1991	2003	2326	26247
1986	2445	2289	2160	2219	2117	2332	2322	2306	2299	2080	2114	2345	27028
1987	2347	2220	2148	2145	1932	2054	1955	1995	1973	2020	2031	2199	25019
1988	2340	2188	2186	2124	1954	2100	2023	2023	1944	1928	1984	2117	24911
1989	2302	2200	2208	2029	1900	2136	2030	2027	1961	2033	2154	2299	25279
1990	2543	2312	2315	2236	1956	2120	2168	2192	2151	2049	2204	2305	26551
1991	2485	2215	2215	2126	1874	2045	1982	1994	1918	2019	2032	2190	25095
1992	2309	2085	2043	1977	1839	1886	1800	1718	1627	1738	1764	1888	22674
1993	2070	2009	1972	1981	1871	2034	1910	1846	2068	1814	2002	2066	23643
1994	2243	2026	2076	2040	1785	1977	1953	1966	1822	1800	1830	1910	23428
1995	2118	1975	2016	1997	1753	1911	1895	1931	2163	1840	1845	1939	23383
1996	2140	2086	2042	1864	2051	2272	2429	2159	2152	1821	1897	2001	24914
1997	2172	2103	2211	2341	2188	2417	2583	2493	1896	2064	2062	2384	26914
1998	2530	2403	2409	2312	2092	2331	2433	2593	2527	1934	1847	2051	27462
1999	2240	2195	2462	2474	2195	2398	2523	2631	2508	1827	1894	1994	27341
2000	2137	2041	2038	2045	2004	2049	1855	2108	1947	1804	1760	1972	23760
2001	2061	1888	1932	1941	1814	2054	2108	2036	1881	1919	1853	1967	23454
2002	2189	2088	2034	2043	1809	1954	2033	1888	1822	1775	1708	1878	23221
2003	2113	2020	2041	1998	1754	1873	1927	1961	1696	1686	1694	1870	22633
2004	2101	2021	2070	2062	1936	1981	1958	1875	1667	1647	1644	1760	22722
2005	1914	1826	1903	1897	1688	1862	1842	1921	1775	1737	1726	1814	21905
2006	2113	1991	2052	2022	1634	1801	1880	1930	1730	1627	1686	1781	22247
2007	2013	1881	1834	1779	1645	1824	1920	1867	1662	1607	1672	1788	21492
2008	2013	1877	1911	1878	1753	1839	1940	1849	1783	1659	1716	1814	22032
2009	2072	1891	1885	1850	1650	1865	1763	1835	1780	1682	1735	1848	21856

Reach Gain Snake River Buhl to LSF less returns and surface water component of Lower Salmon Falls Creek (AF)

W-YR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1980	264,733	244,733	245,233	244,033	224,600	245,000	216,300	238,800	240,433	210,100	220,600	245,633	2,840,200
1981	253,033	241,133	238,633	233,233	208,000	221,600	215,000	208,800	219,200	200,300	208,900	232,533	2,680,367
1982	257,167	232,267	236,967	233,900	217,067	233,000	247,000	246,500	223,000	225,000	223,500	246,567	2,821,933
1983	255,800	257,400	275,800	271,600	212,800	226,100	279,000	272,200	250,900	237,100	247,900	245,400	3,032,000
1984	264,500	246,400	249,600	231,800	229,600	231,100	233,200	207,800	219,000	216,700	226,600	236,100	2,792,400
1985	251,967	237,167	235,800	241,200	245,900	229,067	224,467	207,500	201,100	202,600	205,800	242,167	2,724,733
1986	255,067	239,467	226,567	232,400	222,267	243,767	242,767	239,200	236,400	214,400	218,800	245,067	2,816,167
1987	244,167	231,467	224,267	223,967	201,900	214,400	204,967	206,400	203,500	208,200	210,000	229,367	2,602,600
1988	243,167	227,967	227,767	221,567	204,500	217,900	211,467	210,900	199,800	195,600	201,600	220,600	2,582,833
1989	238,633	228,433	229,233	211,333	198,200	221,800	210,600	209,600	201,100	207,300	223,833	238,333	2,618,400
1990	262,567	239,467	239,767	231,867	203,600	219,300	225,067	227,467	223,367	208,700	226,200	238,767	2,746,133
1991	256,467	229,467	229,467	220,567	195,300	212,000	206,167	207,367	199,100	205,500	209,100	226,967	2,597,467
1992	238,833	216,433	212,233	205,633	191,800	195,300	187,300	174,900	164,900	177,600	179,700	195,700	2,340,333
1993	214,100	208,000	204,300	205,200	193,600	210,500	197,700	191,500	213,900	188,300	207,300	213,700	2,448,100
1994	232,400	210,700	215,700	212,100	186,100	205,000	203,400	204,700	186,100	183,000	187,200	198,000	2,424,400
1995	220,000	205,700	209,800	207,900	183,100	198,500	196,900	201,300	224,500	189,000	191,600	202,100	2,430,400
1996	222,767	217,367	212,967	195,167	213,800	235,000	251,667	224,667	221,000	187,200	198,000	208,867	2,588,467
1997	227,567	220,667	231,467	244,467	227,500	252,067	268,667	259,667	199,967	214,400	216,567	248,767	2,811,767
1998	263,467	250,767	251,367	241,400	219,100	243,567	253,300	269,767	262,800	199,100	191,800	215,567	2,862,000
1999	234,133	229,633	256,333	257,300	228,800	249,933	262,433	273,233	258,300	188,000	198,200	209,533	2,845,833
2000	222,600	213,000	212,700	213,400	208,800	213,300	194,400	219,700	199,800	185,100	182,600	206,100	2,471,500
2001	214,167	196,867	201,267	202,167	189,100	212,600	218,867	211,500	195,000	199,100	192,900	204,767	2,438,300
2002	226,300	216,200	210,800	211,700	188,200	202,000	209,700	194,500	185,300	180,100	174,100	194,600	2,393,500
2003	218,400	209,100	211,200	206,900	182,100	193,900	199,800	203,200	171,900	170,700	172,700	192,300	2,332,200
2004	217,400	209,400	214,300	213,500	200,900	204,900	202,000	193,000	168,900	166,600	166,900	183,300	2,341,100
2005	198,067	189,267	196,967	196,367	175,100	192,300	190,867	198,767	184,100	176,100	176,100	188,067	2,262,067
2006	219,100	206,900	213,000	210,000	170,300	187,600	195,800	200,800	179,000	165,700	173,600	185,900	2,307,700
2007	208,167	194,967	190,267	184,767	170,800	188,600	198,867	192,900	168,600	162,600	170,100	184,900	2,215,533
2008	208,500	194,900	198,300	195,000	182,300	190,700	201,200	191,900	184,500	168,100	174,600	188,500	2,278,500



ESPA Contribution to Reach Gain; Snake River - Buhl to Lower Salmon Falls (AF); reach gain less south side ground water contribution

W-YR	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
1980								226,749	228,771	198,049	208,549	233,971	
1981	240,983	229,471	226,583	221,183	197,115	209,549	203,338	196,749	207,538	188,249	196,849	220,871	2,538,478
1982	247,788	223,190	227,588	224,521	208,595	223,621	237,923	237,121	213,923	215,621	214,121	237,490	2,711,502
1983	246,061	247,975	266,061	261,861	204,003	216,361	269,575	262,461	241,475	227,361	238,161	235,975	2,917,331
1984	255,190	237,391	240,290	222,490	220,891	221,790	224,191	198,490	209,991	207,390	217,290	227,091	2,682,487
1985	240,249	225,827	224,082	229,482	235,316	217,349	213,127	195,782	189,760	190,882	194,082	230,827	2,586,762
1986	243,247	228,028	214,747	220,580	211,591	231,947	231,328	227,380	224,962	202,580	206,980	233,628	2,676,998
1987	233,322	220,972	213,422	213,122	192,105	203,555	194,472	195,555	193,005	197,355	199,155	218,872	2,474,912
1988	233,500	218,612	218,100	211,900	195,457	208,233	202,112	201,233	190,445	185,933	191,933	211,245	2,468,701
1989	228,691	218,812	219,291	201,391	189,220	211,858	200,979	199,658	191,479	197,358	213,891	228,712	2,501,339
1990	250,437	227,728	227,637	219,737	192,644	207,170	213,328	215,337	211,628	196,570	214,070	227,028	2,603,314
1991	244,457	217,844	217,457	208,557	184,453	199,990	194,544	195,357	187,478	193,490	197,090	215,344	2,456,062
1992	229,779	207,671	203,179	196,579	183,330	186,246	178,538	165,846	156,138	168,546	170,646	186,938	2,233,437
1993	204,236	198,454	194,436	195,336	184,690	200,636	188,154	181,636	204,354	178,436	197,436	204,154	2,331,954
1994	221,263	199,922	204,563	200,963	176,041	193,863	192,622	193,563	175,322	171,863	176,063	187,222	2,293,271
1995	209,111	195,163	198,911	197,011	173,265	187,611	186,363	190,411	213,963	178,111	180,711	191,563	2,302,196
1996	209,166	204,205	199,366	181,566	201,077	221,399	238,505	211,066	207,838	173,599	184,399	195,705	2,427,891
1997	214,722	208,237	218,622	231,622	215,899	239,222	256,237	246,822	187,537	201,556	203,722	236,337	2,660,536
1998	251,408	239,097	239,308	229,342	208,209	231,508	241,631	257,708	251,131	187,042	179,742	203,897	2,720,023
1999	222,375	218,254	244,575	245,541	218,179	238,175	251,054	261,475	246,921	176,241	186,441	198,154	2,707,385
2000	210,303	201,100	200,403	201,103	197,296	201,003	182,500	207,403	187,900	172,803	170,303	194,200	2,326,316
2001	205,034	188,029	192,134	193,034	180,852	203,468	210,029	202,368	186,162	189,968	183,768	195,929	2,330,776
2002	217,008	207,208	201,508	202,408	179,808	192,708	200,708	185,208	176,308	170,808	164,808	185,608	2,284,100
2003	208,921	199,927	201,721	197,421	173,538	184,421	190,627	193,721	162,727	161,221	163,221	183,127	2,220,594
2004	207,627	199,942	204,527	203,727	191,758	195,127	192,542	183,227	159,442	156,827	157,127	173,842	2,225,717
2005	189,896	181,360	188,796	188,196	167,720	184,130	182,960	190,596	176,193	167,930	167,930	180,160	2,165,869
2006	209,628	197,733	203,528	200,528	161,745	178,128	186,633	191,328	169,833	156,228	164,128	176,733	2,196,174
2007	197,111	184,267	179,211	173,711	160,814	177,544	188,167	181,844	157,901	151,544	159,044	174,201	2,085,359
2008	196,618	183,401	186,418	183,118	171,184	178,818	189,701	180,018	173,001	156,218	162,718	177,001	2,138,210