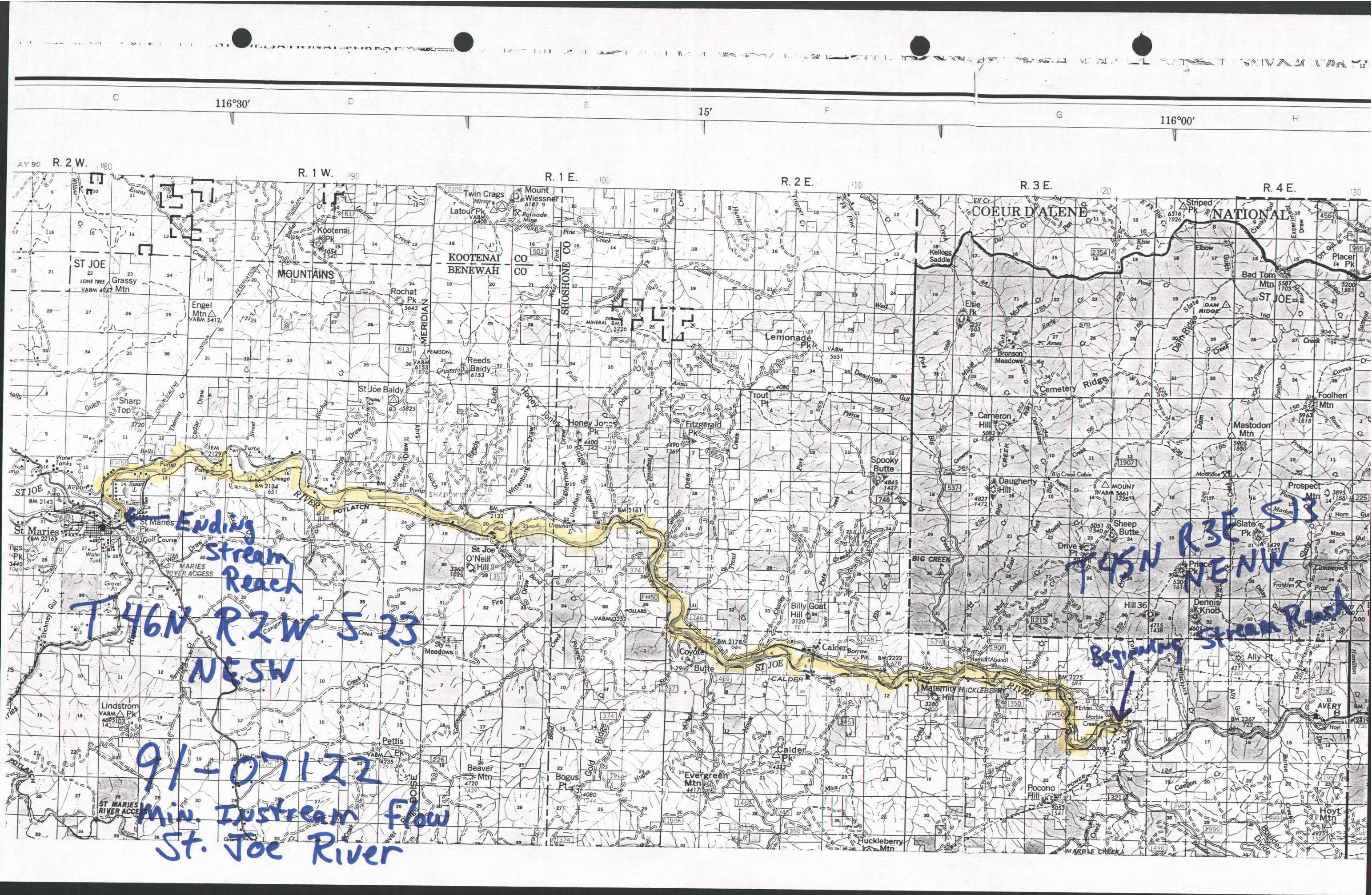




116°30'

15'

116°00'

R. 2 W.

R. 1 W.

R. 1 E.

R. 2 E.

R. 3 E.

R. 4 E.

Ending
Stream
Reach

T 46N R 2W S 23
N 3W

T 45N R 3E S 13
N 2W

Beginning
Stream
Reach

91-07122

Min. Instream Flow
St. Joe River

SPOKANE RIVER BASIN

81

12414500 ST. JOE RIVER AT CALDER, ID

LOCATION.--Lat 47°16'29", long 116°11'17", in NW 1/4 NW 1/4 SE 1/4 sec. 3, T. 45 N., R. 2 E., Shoshone County, Hydrologic Unit 17010304, on right bank, 125 ft downstream from road bridge at Calder, and at mile 42.9.

DRAINAGE AREA.--1,030 mi², approximately.

PERIOD OF RECORD.--April 1911 to September 1912 (published as "near Calder"), July 1920 to current year.

REVISED RECORDS.--WSP 1182: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,171.76 ft above sea level. Apr. 14, 1911, to Sept. 30, 1912, nonrecording gage at site 2.5 mi downstream at different datum. Nonrecording gage at present site July 13 to Dec. 21, 1920, water-stage recorder at present site thereafter. Datum July 13, 1920, to Sept. 30, 1966, 75 ft lower than present datum, and datum Oct. 1, 1966, to Aug. 14, 1972, 15 ft lower than present datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Station equipment includes telemetry.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,000 ft³/s Dec. 23, 1933, computed on basis of slope between gages downstream; maximum gage height, 18.1 ft, Apr. 18, 1938, from floodmark, present datum; minimum discharge, 87 ft³/s Nov. 29, 1979; minimum gage height, 3.43 ft, Dec. 5, 1928, present datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 31	1245	(a)	*13.80	Apr. 28	0015	20,700	13.05
Jan. 1	1430	12,600	11.40	May 14	0715	*25,100	13.42
Mar. 21	0145	10,100	10.66	June 1	0445	22,700	12.98

(a) backwater from ice

Minimum, 315 ft³/s Oct. 12, gage height, 5.30 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	353	375	698	9430	e1700	1350	3500	10000	21600	4740	1280	594
2	344	358	652	7720	e1800	1350	3190	8550	16500	4400	1240	584
3	342	360	603	6390	e1800	1270	3250	7930	13200	4010	1190	601
4	338	402	514	4680	e1600	1220	3080	8750	12700	3800	1130	652
5	350	422	547	3580	e1500	1160	2800	9450	12800	3730	1100	595
6	357	396	560	2920	e1400	1160	2650	10400	11600	3740	1070	595
7	340	404	534	2590	e1300	1310	2690	11300	10300	3520	1030	563
8	335	391	628	2270	e1300	1400	2840	11000	9990	3320	1010	542
9	332	419	1190	2070	e1400	1380	2850	11500	9840	3630	970	527
10	327	404	1540	1980	e1300	1520	2890	14400	9950	3770	941	515
11	323	395	2180	1900	e1300	1510	2760	17800	10600	3320	908	539
12	320	404	1590	e1500	1300	1520	2750	19600	10800	3020	877	558
13	338	422	1230	e1300	1190	1430	3050	22200	9530	2820	862	521
14	424	522	1040	e1200	1200	1300	3230	24000	9280	2690	855	504
15	655	556	890	e1100	1750	1270	3290	22800	9300	2570	820	617
16	613	499	e650	e1100	1920	1640	3920	22800	9120	2470	817	973
17	442	462	e550	e1200	2010	2310	5680	22200	8440	2410	795	877
18	438	506	e500	e1300	2140	2790	6550	22300	7930	2320	772	831
19	639	571	e550	e1400	2320	3430	6630	19400	7150	2230	776	683
20	538	1340	e600	e1400	2350	6830	10900	16600	6350	2200	737	594
21	430	906	e600	e1300	2110	8730	14000	15200	5730	2060	755	552
22	432	783	e550	e1200	1920	6480	10600	13600	5420	2020	706	525
23	469	745	e500	e1200	1730	5520	9790	12800	5040	1870	678	505
24	553	638	e480	e1100	1600	4760	9520	13300	4780	1770	828	498
25	662	626	e440	e1000	1590	4440	9430	14100	4460	1680	918	490
26	512	584	e420	e950	1620	5130	10200	13000	4360	1600	721	495
27	431	565	e420	e900	1570	6470	15800	12300	4280	1530	670	546
28	403	847	e460	e1000	1420	5830	18200	12400	4140	1470	648	555
29	459	878	e500	e1100	---	4770	13300	13300	4270	1420	638	502
30	510	713	e1000	e1200	---	4110	11300	14300	4120	1410	620	481
31	436	---	e3200	e1500	---	3840	---	17500	---	1340	605	---
TOTAL	13445	16893	25816	69480	46140	97230	206640	464780	263580	82880	26967	17614
MEAN	434	563	833	2241	1648	3136	6688	14990	8786	2674	870	587
MAX	662	1340	3200	9430	2350	8730	18200	24000	21600	4740	1280	973
MIN	320	358	420	900	1190	1160	2650	7930	4120	1340	605	481
AC-FT	26670	33510	51210	137800	91520	192900	398000	921900	522800	164400	53490	34940
CFSM	.42	.55	.81	2.18	1.60	3.05	6.49	14.6	8.53	2.60	.84	.57
IN.	.49	.61	.93	2.51	1.67	3.51	7.25	16.79	9.52	2.99	.97	.64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1997, BY WATER YEAR (WY)

	MEAN	556	1014	1382	1195	1569	2082	5328	8086	4599	1369	608	476
(WY)	1928	6025	8887	5442	6933	6414	10530	14990	13040	3251	953	839	
MIN	273	258	288	204	239	539	2073	3285	1154	554	356	316	1968
(WY)	1988	1930	1953	1929	1929	1964	1975	1941	1926	1926	1940	1987	

SUMMARY STATISTICS

	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1911 - 1997
ANNUAL TOTAL	1069424	1325465	2356
ANNUAL MEAN	2922	3631	3955
HIGHEST ANNUAL MEAN			1059
LOWEST ANNUAL MEAN			40000
HIGHEST DAILY MEAN	33900	24000	Dec 23 1933
LOWEST DAILY MEAN	320	320	Nov 27 1952
ANNUAL SEVEN-DAY MINIMUM	331	331	Nov 23 1952
ANNUAL RUNOFF (AC-FT)	2121000	2629000	1707000
ANNUAL RUNOFF (CFSM)	2.84	3.53	2.29
ANNUAL RUNOFF (INCHES)	38.62	47.87	31.08
10 PERCENT EXCEEDS	7180	10900	6470
50 PERCENT EXCEEDS	1760	1380	1000
90 PERCENT EXCEEDS	418	441	375

e Estimated

MICROFILMED
OCT 12 2001

SPOKANE RIVER BASIN

12414500 ST. JOE RIVER AT CALDER, ID

LOCATION.--Lat 47°16'29", long 116°11'17", in NW¼NW¼SE¼ sec.3, T.45 N., R.2 E., Shoshone County, Hydrologic Unit 17010304, on right bank, 125 ft downstream from road bridge at Calder, and at mile 42.9.

DRAINAGE AREA.--1,030 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1911 to September 1912 (published as "near Calder"), July 1920 to current year.

REVISED RECORDS.--WSP 1182: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,171.76 ft above sea level. Apr. 14, 1911, to Sept. 30, 1912, nonrecording gage at site 2.5 mi downstream at different datum. Nonrecording gage at present site July 13 to Dec. 21, 1920, water-stage recorder at present site thereafter. Datum July 13, 1920, to Sept. 30, 1966, 75 ft lower than present datum, and datum Oct. 1, 1966, to Aug. 14, 1972, 15 ft lower than present datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Station equipment includes telemetry.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,000 ft³/s Dec. 23, 1933, computed on basis of slope between gages downstream; maximum gage height, 18.1 ft, Apr. 18, 1938, from floodmark, present datum; minimum discharge, 87 ft³/s Nov. 29, 1979; minimum gage height, 3.43 ft, Dec. 5, 1928, present datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	0600	32,500	14.55	Feb. 19	0045	10,700	11.03
Feb. 9	1345	*39,200	*15.22	Apr. 24	1400	23,000	13.42
				May 18	2100	13,300	11.78

Minimum daily, 359 ft³/s Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	609	e750	23300	2450	e800	e2900	3040	5860	5700	2340	802	449
2	489	e660	17800	2360	e800	e2900	3830	5420	5690	2280	776	442
3	781	e680	11700	2830	e850	2810	3810	4990	6300	2230	798	438
4	1200	e720	9380	2670	e950	2830	3600	4640	7020	2150	800	436
5	701	809	7510	2410	e1300	2660	3460	4310	7240	2040	872	452
6	552	815	6420	2330	e2500	2460	3580	4080	6580	1910	871	480
7	502	738	5680	2380	e8000	2380	4120	3920	6310	1800	771	455
8	478	1520	4960	2940	18700	2330	6030	3770	6770	1720	726	430
9	469	4490	4700	3030	33900	2310	8200	3630	6890	1650	696	419
10	468	3100	4600	2950	20300	2400	9700	3530	6220	1580	671	407
11	660	3420	5320	2770	11300	2740	9510	3560	5640	1510	648	399
12	1440	4940	6410	2650	8050	3120	8710	4080	5190	1440	626	388
13	964	4000	9000	2540	6510	3380	7540	5000	4860	1390	611	381
14	744	3730	8560	2510	5670	3470	6610	6970	4730	1340	610	406
15	648	3810	7490	3090	5100	3620	6060	9290	4650	1290	604	452
16	661	3910	6550	5500	4780	3570	6290	9770	4530	1240	581	495
17	922	3940	5840	5200	4710	3420	7360	9710	4350	1200	561	443
18	1390	3850	5290	4110	7710	3270	7150	12700	4010	1160	551	423
19	1240	3530	4860	3790	9950	3190	6460	12100	3590	1140	545	433
20	1020	3200	4480	3360	8320	3140	5950	10400	3280	1110	537	466
21	954	2930	4150	3110	6990	3080	5500	9040	3050	1080	542	437
22	885	2740	3820	2790	6080	3100	5110	8620	3110	1040	530	439
23	798	2670	3550	2620	5420	3150	6110	8160	2960	1000	513	455
24	750	3570	3410	2530	4810	2970	19000	7570	2990	967	496	417
25	734	6360	3300	2380	4330	2740	16300	7270	2860	936	483	399
26	1700	7080	3130	2270	3930	2690	11700	7440	2760	907	474	387
27	1540	6250	2900	e2100	e3400	2580	9290	7710	2780	880	467	380
28	1260	5970	2930	e2000	e3000	2430	7760	7780	2720	856	535	373
29	1120	18000	2980	e1400	e2900	2350	6810	7300	2540	838	532	366
30	1010	29700	2810	e1300	---	2290	6160	6520	2410	885	480	359
31	919	---	2660	e1100	---	2220	---	5950	---	888	459	---
TOTAL	27608	137882	195490	85470	201060	88500	214750	211090	137730	42797	19168	12705
MEAN	891	4596	6306	2757	6933	2855	7158	6809	4591	1381	618	423
MAX	1700	29700	23300	5500	33900	3620	19000	12700	7240	2340	872	495
MIN	468	660	2660	1100	800	2220	3040	3530	2410	838	459	359
AC-FT	54760	273500	387800	169500	398800	175500	426000	418700	273200	84890	38020	25200
CFSM	.86	4.46	6.12	2.68	6.73	2.77	6.95	6.61	4.46	1.34	.60	.41
IN.	1.00	4.98	7.06	3.09	7.26	3.20	7.76	7.62	4.97	1.55	.69	.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1996, BY WATER YEAR (WY)

	MEAN	558	1020	1389	1182	1568	2068	5309	7997	4545	1352	605	475
MAX	1621	6025	8887	5442	6933	6414	10530	13900	13040	3251	953	839	
(WY)	1928	1928	1934	1934	1996	1934	1925	1971	1974	1950	1950	1968	
MIN	273	258	288	204	239	539	2073	3285	1154	554	356	316	
(WY)	1988	1930	1953	1929	1929	1964	1975	1941	1926	1926	1940	1987	

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR	FOR 1996 WATER YEAR	WATER YEARS 1911 - 1996
ANNUAL TOTAL	1069126	1374250	
ANNUAL MEAN	2929	3755	2340
HIGHEST ANNUAL MEAN			3955
LOWEST ANNUAL MEAN			1059
HIGHEST DAILY MEAN	29700	33900	40000
LOWEST DAILY MEAN	371	359	100
ANNUAL SEVEN-DAY MINIMUM	387	383	154
ANNUAL RUNOFF (AC-FT)	2121000	2726000	1695000
ANNUAL RUNOFF (CFSM)	2.84	3.65	2.27
ANNUAL RUNOFF (INCHES)	38.61	49.63	30.86
10 PERCENT EXCEEDS	5530	7710	6430
50 PERCENT EXCEEDS	2610	2840	1000
90 PERCENT EXCEEDS	479	482	374

e Estimated

SPOKANE RIVER BASIN

12414500 ST. JOE RIVER AT CALDER, ID

LOCATION.--Lat 47°16'29", long 116°11'17", in NW¼NW¼SE¼ sec.3, T.45 N., R.2 E., Shoshone County, Hydrologic Unit 17010304, on right bank, 125 ft downstream from road bridge at Calder, and at mile 42.9.

DRAINAGE AREA.--1,030 mi², approximately.

PERIOD OF RECORD.--April 1911 to September 1912 (published as "near Calder"), July 1920 to current year.

REVISED RECORDS.--WSP 1182: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,171.76 ft above sea level. Apr. 14, 1911, to Sept. 30, 1912, nonrecording gage at site 2.5 mi downstream at different datum. Nonrecording gage at present site July 13 to Dec. 21, 1920, water-stage recorder at present site thereafter. Datum July 13, 1920, to Sept. 30, 1966, 75 ft lower than present datum, and datum Oct. 1, 1966, to Aug. 14, 1972, 15 ft lower than present datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Station equipment includes telemetry.

Peak discharges greater than a base discharge of 8,500 ft³/s are available.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1994 TO SEPTEMBER 1995
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	286	1790	2700	e490	5940	4130	2860	3250	5200	1600	654	456
2	282	877	1700	e480	6320	3700	2840	3650	5100	1590	639	447
3	279	577	1080	e460	5080	3410	2700	4380	4990	1920	627	440
4	278	489	707	e460	3970	3180	2710	4520	4680	1750	615	436
5	278	460	e450	e470	3320	2890	2940	4700	4870	1560	601	436
6	277	431	e520	e480	3020	2660	3120	4950	4840	1460	586	455
7	275	415	e580	e500	2960	2420	3360	5090	4220	1440	772	461
8	274	391	e560	e550	2880	2300	4010	5260	3820	1350	840	505
9	273	377	e550	e950	2680	2750	3890	5550	3490	1290	685	456
10	273	392	e530	e1600	2490	3700	3610	5830	3280	1310	623	437
11	297	404	e510	e2400	2240	4790	3440	6180	3270	1320	614	435
12	306	413	e480	2310	1960	5500	3280	6310	3180	1250	617	425
13	285	401	e470	2030	e1550	5050	3520	5720	3110	1180	598	410
14	297	377	e450	2180	e1660	4600	3800	5130	3000	1120	580	404
15	343	362	e440	2660	e1630	4760	3680	5010	2890	1060	639	398
16	311	362	439	2340	e1650	4880	3510	5190	2790	1030	794	392
17	292	371	494	1970	1620	4650	3360	5630	2810	982	982	387
18	285	302	e780	1690	1640	4510	3220	5610	2690	942	683	384
19	282	293	e1050	1500	6560	5040	3160	5520	2610	909	598	391
20	280	377	882	1290	18700	5180	2990	5360	2640	896	560	436
21	373	e320	738	e1050	12500	5300	2800	5350	2570	861	539	402
22	409	e270	e660	e940	9560	4960	2680	5250	2350	842	520	387
23	320	e250	e600	e820	7470	4660	2670	5120	2240	823	513	383
24	300	e340	e580	e900	6230	4300	2850	5000	2150	795	505	376
25	290	e440	607	e1050	6020	3880	3070	4970	2080	772	497	371
26	294	e420	628	e1020	5860	3510	3270	4750	2010	763	489	380
27	1190	371	904	e960	5270	3240	3450	4440	1920	792	479	408
28	1420	357	1300	857	4640	3010	3490	4350	1820	736	473	473
29	688	348	1250	770	---	2870	3440	4590	1730	711	473	567
30	477	561	1010	812	---	2770	3330	5020	1660	684	484	522
31	520	---	e630	1680	---	2720	---	5280	---	674	466	---
TOTAL	12034	13538	24279	37669	135420	121320	97050	156960	94010	34412	18445	12860
MEAN	388	451	783	1215	4836	3914	3235	5063	3134	1110	595	429
MAX	1420	1790	2700	2660	18700	5500	4010	6310	5200	1920	840	567
MIN	273	250	439	460	1550	2300	2670	3250	1660	674	466	371
AC-FT	23870	26850	48160	74720	268600	240600	192500	311300	186500	68260	36590	25510
CFSM	.38	.44	.76	1.18	4.70	3.80	3.14	4.92	3.04	1.08	.58	.42
IN.	.43	.49	.88	1.36	4.89	4.38	3.51	5.67	3.40	1.24	.67	.46

STATISTICS OF MONTHLY MEAN DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	554	973	1325	1161	1495	2058	5284	8012	4544	1352	605	476
MAX	1621	6025	8887	5442	4836	6414	10530	13900	13040	3251	953	839
(WY)	1928	1928	1934	1934	1995	1934	1925	1971	1974	1950	1950	1968
MIN	273	258	288	204	239	539	2073	3285	1154	554	356	316
(WY)	1988	1930	1953	1929	1929	1964	1975	1941	1926	1926	1940	1987

SUMMARY STATISTICS

FOR 1994 CALENDAR YEAR

FOR 1995 WATER YEAR

PERIOD OF RECORD

ANNUAL TOTAL	470327	757997	2321
ANNUAL MEAN	1289	2077	3955
HIGHEST ANNUAL MEAN			1059
LOWEST ANNUAL MEAN			1974
HIGHEST DAILY MEAN	8670	18700	40000
LOWEST DAILY MEAN	250	250	100
ANNUAL SEVEN-DAY MINIMUM	275	275	154
INSTANTANEOUS PEAK FLOW		21000	^a 53000
INSTANTANEOUS PEAK STAGE		13.13	^b 18.10
INSTANTANEOUS LOW FLOW			^c 87
ANNUAL RUNOFF (AC-FT)	932900	1503000	1681000
ANNUAL RUNOFF (CFSM)	1.25	2.02	2.25
ANNUAL RUNOFF (INCHES)	16.99	27.38	30.62
10 PERCENT EXCEEDS	3160	5030	6390
50 PERCENT EXCEEDS	603	1120	990
90 PERCENT EXCEEDS	306	371	373

a Computed on basis of slope between gages downstream.

b From floodmark, present datum.

c Minimum gage height, 3.43 ft, Dec. 5, 1928, present datum.

e Estimated

1995
OCT 12 2001

SPOKANE RIVER BASIN

81

12414500 ST. JOE RIVER AT CALDER, ID

LOCATION.--Lat 47°16'29", long 116°11'17", in NW¼NW¼SE¼ sec.3, T.45 N., R.2 E., Shoshone County, Hydrologic Unit 17010304, on right bank, 125 ft downstream from road bridge at Calder, and at mile 42.9.

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REVISED RECORDS.--WSP 1182: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,171.76 ft above sea level. Apr. 14, 1911, to Sept. 30, 1912, nonrecording gage at site 2.5 mi downstream at different datum. Nonrecording gage at present site July 13 to Dec. 21, 1920, water-stage recorder at present site thereafter. Datum July 13, 1920, to Sept. 30, 1966, 75 ft lower than present datum, and datum Oct. 1, 1966, to Aug. 14, 1972, 15 ft lower than present datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Station equipment includes telemetry.

Peak discharges greater than a base discharge of 8,500 ft³/s are available.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	447	523	e430	404	e370	632	2900	3730	2000	948	491	321
2	443	437	e630	422	e360	984	2860	3540	1940	977	482	319
3	443	423	e550	557	e350	1800	3260	3440	1790	960	477	334
4	443	456	521	637	e340	2930	3390	3490	1880	908	497	581
5	439	429	e520	1040	e350	3010	3090	3510	1780	881	490	545
6	438	412	e430	822	e365	2300	2850	3780	1910	864	452	388
7	501	405	395	651	e310	1810	2690	4220	1950	847	440	354
8	534	413	452	587	e250	1560	2480	4980	1790	818	436	342
9	472	390	650	556	e310	1380	2420	5620	1700	784	429	339
10	446	394	586	565	e365	1350	2450	5810	1610	763	419	356
11	439	371	564	564	e395	1320	2560	5530	1540	733	410	347
12	434	325	568	635	e420	1230	3080	5600	1500	714	407	344
13	441	403	e500	789	e455	1230	3570	5170	1560	706	404	332
14	464	394	461	970	488	1290	3400	4420	1600	695	392	324
15	532	345	444	1010	462	1560	3020	3990	1570	715	384	329
16	545	389	e380	924	e470	2060	3150	3740	1510	677	375	329
17	505	410	355	826	449	2140	4240	3380	1570	654	371	320
18	480	421	384	758	500	2070	6310	3170	1430	633	368	310
19	459	386	389	705	464	2190	7630	2970	1380	620	363	306
20	446	346	369	651	430	1940	8360	3140	1320	606	357	305
21	438	361	360	e590	408	1910	8660	3160	1280	595	352	298
22	434	404	345	608	409	1650	8670	2960	1240	581	349	292
23	427	255	e340	603	e405	1510	7590	2790	1200	566	356	288
24	424	e105	e290	630	e390	1370	6960	2680	1150	635	351	287
25	416	e130	e270	638	e370	1300	6840	2620	1120	588	344	282
26	413	e195	e260	652	404	1280	6050	2590	1190	552	340	277
27	410	e290	e280	636	426	1320	5230	2510	1180	534	340	274
28	413	e360	e300	599	461	1470	4590	2330	1070	518	332	273
29	419	e380	e320	556	---	1740	4160	2290	1020	507	331	273
30	411	e405	e340	520	---	1990	3930	2140	983	519	329	282
31	430	---	e390	e405	---	2380	---	1960	---	526	328	---
TOTAL	13986	10967	13073	20510	11176	52606	136390	111260	44763	21624	12196	9951
MEAN	451	366	422	662	399	1697	4546	3589	1492	698	393	332
MAX	545	523	650	1040	500	3010	8670	5810	2000	977	497	581
MIN	410	105	260	404	250	632	2420	1960	983	507	328	273
AC-FT	27740	21750	25930	40680	22170	104300	270500	220700	88790	42890	24190	19740
CFSM	.44	.35	.41	.64	.39	1.65	4.41	3.48	1.45	.68	.38	.32
IN.	.51	.40	.47	.74	.40	1.90	4.93	4.02	1.62	.78	.44	.36

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1994, BY WATER YEAR (WY)

	MEAN	556	980	1332	1160	1451	2033	5312	8051	4563	1355	605	476
MAX	1621	6025	8887	5442	4373	6414	10530	13900	13040	3251	953	839	
(WY)	1928	1928	1934	1934	1982	1934	1925	1971	1974	1950	1950	1968	
MIN	273	258	288	204	239	539	2073	3285	1154	554	356	316	
(WY)	1988	1930	1953	1929	1929	1964	1975	1941	1926	1926	1940	1987	

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1911 - 1994
ANNUAL TOTAL	692565	458502	
ANNUAL MEAN	1897	1256	2324
HIGHEST ANNUAL MEAN			3955
LOWEST ANNUAL MEAN			1059
HIGHEST DAILY MEAN	13200	May 14	40000
LOWEST DAILY MEAN	105	Nov 24	100
ANNUAL SEVEN-DAY MINIMUM	246	Nov 23	154
INSTANTANEOUS PEAK FLOW			a 53000
INSTANTANEOUS PEAK STAGE			b 18.10
INSTANTANEOUS LOW FLOW			c 87
ANNUAL RUNOFF (AC-FT)	1374000	909400	1684000
ANNUAL RUNOFF (CFSM)	1.84	1.22	2.26
ANNUAL RUNOFF (INCHES)	25.01	16.55	30.66
10 PERCENT EXCEEDS	5320	3160	6440
50 PERCENT EXCEEDS	664	545	990
90 PERCENT EXCEEDS	390	380	373

a Computed on basis of slope between gages downstream.

b From floodmark, present datum.

c Minimum gage height, 3.43 ft, Dec. 5, 1928, present datum.

e Estimated

MICROFILMED
OCT 12 2001

SPOKANE RIVER BASIN

12414500 ST. JOE RIVER AT CALDER, ID

1993

LOCATION---Lat 47°16'29", long 116°11'17", in NW¹/₄NW¹/₄SE¹/₄ sec.3, T.45 N., R.2 E., Shoshone County, Hydrologic Unit 17010304, on right bank, 125 ft downstream from road bridge at Calder, and at mile 42.9.

DRAINAGE AREA--1,030 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD---April 1911 to September 1912 (published as "near Calder"), July 1920 to current year.

REVISED RECORDS--WSP 1182: Drainage area.

GAGE--Water-stage recorder. Datum of gage is 2,171.76 ft above sea level. Apr. 14, 1911, to Sept. 30, 1912, nonrecording gage at site 2.5 mi downstream at different datum. Nonrecording gage at present site July 13 to Dec. 21, 1920, water-stage recorder at present site thereafter. Datum July 13, 1920, to Sept. 30, 1966, 75 ft lower than present datum, and datum Oct. 1, 1966, to Aug. 14, 1972, 15 ft lower than present datum.

REMARKS--Records good except for estimated daily discharges, which are fair. Station equipment includes telemetry.

Peak discharges greater than a base discharge of 8,500 ft³/s are available.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	464	675	e435	e465	e630	e480	3560	5510	5110	1450	1210	620
2	451	744	e405	e455	e580	e490	4000	6140	4670	1510	1170	604
3	450	574	e375	e460	e480	e500	4570	6620	4440	1780	1130	587
4	452	516	e350	e470	e420	511	5970	6990	4060	1670	1090	572
5	443	502	e380	e460	e440	632	6100	6820	3830	1670	1060	559
6	428	484	e420	e440	e450	838	5250	7190	3560	1600	1040	549
7	414	652	e460	e390	e460	1290	4540	7460	3470	1560	1010	545
8	407	1100	e490	e370	e440	1620	4250	6910	3270	1570	967	537
9	402	965	e505	e390	e460	1490	5230	6120	2990	1500	929	531
10	397	791	e515	e410	e480	e1320	5470	5860	2870	1440	893	523
11	393	709	e510	e405	e500	e1250	5070	7050	2770	1440	869	518
12	389	650	e505	e385	e520	e1150	4540	10100	2760	1360	847	538
13	447	619	e500	e360	e540	e1100	4080	12400	2570	1350	822	563
14	467	639	e490	e390	e480	1180	3820	13200	2390	1540	813	525
15	417	623	e480	e405	e430	2820	3620	13100	2360	1520	897	553
16	398	608	e450	e390	e380	3380	3420	11700	2480	1440	873	574
17	413	597	e480	e425	e420	2440	3460	10600	2270	1540	890	525
18	421	647	e455	e415	e450	2540	4120	9520	2150	1520	838	510
19	412	668	e430	e400	e540	3300	4390	9070	2060	1440	782	502
20	399	671	e460	e420	e590	3210	4130	8790	1980	1560	748	501
21	391	633	e475	e450	e560	3040	4080	8530	1990	1570	855	505
22	402	682	e480	e460	e540	2840	4140	7540	2140	1520	802	499
23	389	668	e480	e430	e520	3660	4310	6600	2030	1580	729	490
24	377	498	e475	e580	e490	6030	4360	5850	1920	1610	698	482
25	372	e370	e445	e860	e480	5160	4370	5420	1790	1540	680	477
26	367	e365	e470	e1300	e460	4720	5790	5890	1700	1550	664	469
27	362	e425	e485	e1250	e470	4640	5950	5720	1680	1530	650	466
28	358	e475	e480	e950	e475	4710	5490	5840	1600	1430	656	462
29	378	e460	e460	e820	---	4600	5090	5730	1610	1370	781	457
30	430	e450	e430	e740	---	4080	5170	5010	1510	1350	682	455
31	487	---	e450	e680	---	3570	---	4600	---	1270	635	---
TOTAL	12777	18460	14225	16825	13685	78591	138340	237880	80030	46780	26710	15698
MEAN	412	615	459	543	489	2535	4611	7674	2668	1509	862	523
MAX	487	1100	515	1300	630	6030	6100	13200	5110	1780	1210	620
MIN	358	365	350	360	380	480	3420	4600	1510	1270	635	455
AC-FT	25340	36620	28220	33370	27140	155900	274400	471800	158700	92790	52980	31140
CFSM	.40	.60	.45	.53	.47	2.46	4.48	7.45	2.59	1.47	.84	.51
IN.	.46	.67	.51	.61	.49	2.84	5.00	8.59	2.89	1.69	.96	.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1993, BY WATER YEAR (WY)

	MEAN	557	988	1344	1167	1465	2037	5322	8111	4604	1364	608	478
MAX	1621	6025	8887	5442	4373	6414	10530	13900	13040	3251	953	839	
(WY)	1928	1928	1934	1934	1982	1934	1925	1971	1974	1950	1950	1968	
MIN	273	258	288	204	239	539	2073	3285	1154	554	356	316	
(WY)	1988	1930	1953	1929	1929	1964	1975	1941	1926	1926	1940	1987	

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1911 - 1993
ANNUAL TOTAL	519630	700001	2339
ANNUAL MEAN	1420	1918	3955
HIGHEST ANNUAL MEAN			1059
LOWEST ANNUAL MEAN			40000
HIGHEST DAILY MEAN	6350	May 1	100
LOWEST DAILY MEAN	210	Jan 20	154
ANNUAL SEVEN-DAY MINIMUM	295	Jan 8	53000
INSTANTANEOUS PEAK FLOW			13900
INSTANTANEOUS PEAK STAGE			11.81
INSTANTANEOUS LOW FLOW			May 15
ANNUAL RUNOFF (AC-FT)	1031000	1388000	1694000
ANNUAL RUNOFF (CFSM)	1.38	1.86	2.27
ANNUAL RUNOFF (INCHES)	18.77	25.28	30.85
10 PERCENT EXCEEDS	3440	5320	6470
50 PERCENT EXCEEDS	707	709	998
90 PERCENT EXCEEDS	365	414	374

a Computed on basis of slope between gages downstream.

b From floodmark, present datum.

c Minimum gage height, 3.43 ft, Dec. 5, 1928, present datum.

e Estimated

OCT 12 2001

AFFIDAVIT OF PUBLICATION

State of Idaho

ss.

County of Bonner, Carolyn L. Russell
being duly sworn, says that he is the office clerk
of the **PRIEST RIVER TIMES**, a weekly newspaper printed and
published at Priest River, Bonner County, Idaho, and has been con-
tinuously and uninterruptedly published in said County during a period
of 78 consecutive weeks prior to the first publication of the annexed
notice for publication, in a newspaper of general circulation made up of
at least eight pages of at least six columns each, printed from typemat-
ter or stereotyped forms of at least nineteen and three-fourths inches
depth, has at least 1250 bona fide subscribers living within said Bonner
County, and is published at regular weekly intervals. That the annexed
is a true copy of the notice for publication in the case of
#2235

as it was published in the regular and entire issue of the
said paper for a period of 2 consecutive weeks,
commencing on 18 day of June, 1997
and ending on the 25 day of June, 1997
and that said notice was published in said newspaper.

On this 25 day of June in the year
of 1997, before me, a Notary Public, personally
appeared Carolyn L. Russell
known or identified to me to be the person whose name
subscribed to the within instrument, and being by me first
duly sworn, declared that the statements therein are true
and acknowledged to me that he executed the same.

London Jordan
Notary Public for Idaho

Residing at Priest River, Id

My commission expires: 1999

Applications: 96-08718 and
96-08730

Date and time: July 16, 1997,
at 10:00 a.m.

Place: NRCS Federal Building
1500 Hwy 2
Sandpoint, Idaho

Applications: 91-07122 and
92-07200

Date and time: July 17, 1997 at
10:00 a.m.

Place: Washington Water Power
528 College Ave.
St. Maries, Idaho

Any party who wishes to formally
appear in the hearings for the pur-
pose of presenting evidence and tes-
timony or cross-examining witness-
es should file a notice of appearance
with the Director of IDWR, State-
house Mail, Boise, Idaho 83720,
Attn: L. Glen Saxton, five (5) days
prior to the hearing. Other parties
may informally present their views
and comments without filing a notice
of appearance. Informal written
views and comments may also be
submitted to IDWR prior to the hear-
ing.

The hearings will be conducted in a
facility which meets the accessibility
requirements of the Americans with
Disabilities Act. If you require spe-
cial accommodations in order to
attend, participate in or understand
the hearing, please advise IDWR at
least (10) days prior to the hearing.
The hearing will be conducted by L.
Glen Saxton, IDWR, Statehouse
Mail, Boise, ID 83720, telephone
(208) 327-7900

If issued, these permits will be sub-
ject to all prior water rights.
#2235 PRT June 18, 25, 1997

NOTICE OF HEARINGS FOR MINIMUM STREAM FLOW

Notice is hereby given that on June
15, 1992, the Idaho Water Resource
Board filed four (4) applications for
permit with the Department of
Water Resources (IDWR) to pre-
serve minimum streamflows for the
protection of fish and wildlife habi-
tat, aquatic life and recreational val-
ues as follows:

Application No. 96-08718

Source: Clark Fork River tributary to
Pend Oreille Lake
Reach: 8.4 miles beginning at Cabi-
net Gorge Dam in the NWSE Sec-
tion 27, T55N, R3E, B.M. down-
stream to Lake Pend Oreille in SW
1/4 Section 3, T55N, R2E, B.M.
Rate of flow: 9,335 cubic feet per sec-
ond (cfs) year-round

Application No. 96-08730

Source: Pend Oreille River tributary
to Columbia River
Reach: 2.4 miles beginning at Albeni
Falls Dam in the NWNW Section 29,
T56N, R5W, B.M. downstream to the
state line on the west side of Sec-
tions 13 and 24, T56N, R6W, B.M.
Rate of flow: 10,655 cfs year-round

Application No. 91-07122

Source: St. Joe River tributary to
Coeur d'Alene Lake
Reach: 36 miles beginning at a point
in NENENW Sec. 13, T45N, R3E,
B.M. at the confluence of the St. Joe
River with Marble Creek and ending
at the confluence of St. Joe River
with the St. Maries river in SENESW
Sec. 23, T46N, R2W, B.M.
Rate of flow: 941 cfs from Nov. 1 to
July 31, and 470 cfs from August 1 to
October 31

Application No. 92-07200

Source: St. Maries River tributary to
St. Joe River
Reach: 26 miles beginning at a point
in the SWSWNE Section 6, T42N,
R2E, B.M. at the confluence of the
West and Middle Forks of the St.
Maries River downstream to the con-
fluence with John Creek in the
SENENW Section 33, T45N, R2W,
B.M.
Rate of flow: 141 cfs from December
1 to July 31, and 65 cfs from August
1 to November 30
IDWR will hold public hearings as
required in Section 42-1503, Idaho
Code, for the purpose of receiving
evidence and testimony in regard to
the applications as follows:

RECEIVED

JUL 02 1997

NORTHERN REGION
IDWR

MICROFILMED

APR 09 1998

LEGAL NOTICE

JUNE 18-25

RUN 2XS

Notice of hearing

NOTICE OF HEARING
FOR MINIMUM STREAM
FLOW APPLICATIONS

Notice is hereby given that on June 15, 1992, the Idaho Water Resource Board filed four (4) applications for permit with the Department of Water Resources (IDWR) to preserve minimum streamflows for the protection of fish and wildlife habitat, aquatic life and recreational values as follows:

APPLICATION NO. 98-08718

Source: Clark Fork River tributary to Pend Oreille Lake
Reach: 8.4 miles beginning at Cabinet Gorge Dam in the NWSE Section 27, T55N, R3E, B.M. downstream to Lake Pend Oreille in SW1/4 Section 3, T55N, R2E, B.M. *ok*

Rate of flow: 9,395 cubic feet per second (cfs) year-round

APPLICATION NO. 98-08730

Source: Pend Oreille River tributary to Columbia River

Reach: 2.4 miles beginning at Albeni Falls Dam in the NWNW Section 29, T58N, R5W, B.M. downstream to the state line on the west side of Sections 13 and 24, T60N, R6W, B.M. *ok*

Rate of flow: 10,655 cfs year-round

APPLICATION NO. 91-07122

Source: St. Joe River tributary to Cocur d'Alene Lake

Reach: 38 miles beginning at a point in NENENW Sec. 13, T45N, R3E, B.M. at the confluence of the St. Joe River with Marble Creek and ending at the confluence of St. Joe River with the St. Maries River in SENESW Sec. 23, T46N, R2W, B.M. *ok*

Rate of flow: 941 cfs from Nov. 1 to July 31, and 470 cfs from August 1 to October 31

APPLICATION NO. 92-07200

Source: St. Maries River tributary to St. Joe River

Reach: 26 miles beginning at a point in the SWSWNE Section 6, T42N, R2E, B.M. at the confluence of the West and Middle Forks of the St. Maries River downstream to the confluence with John Creek in the SENENW Section 33, T45N, R2W, B.M.

Rate of flow: 141 cfs from December 1 to July 31, 85 cfs from August 1 to November 30

IDWR will hold public hearings as required in Section 42-1503, Idaho Code, for the purpose of receiving evidence and testimony in

regard to the applications as follows:

Applications: 98-08718 and 98-08730

Date and time: July 16, 1997 at 10:00 a.m. Place: NRCS Federal Building, 1500 Hwy. 2, Sandpoint, Idaho

Applications: 91-07122 and 92-07200

Date and time: July 17, 1997 at 10:00 a.m.

Place: Washington Water Power, 528 College Ave., St. Maries, Idaho

Any party who wishes to formally appear in the hearings for the purpose of presenting evidence and testimony or cross-examining witnesses should file a notice of appearance with the Director of IDWR, Statehouse Mall, Boise, Idaho 83720, Attn: L. Glen Saxton, five (5) days prior to the hearing. Other parties may informally present their views and comments without filing a notice of appearance. Informal written views and comments may also be submitted to IDWR prior to the hearing.

The hearings will be conducted in a facility which meets the accessibility requirements of the Americans with Disabilities Act. If you require special accommodations in order to attend, participate in or understand the hearing, please advise IDWR at least ten (10) days prior to the hearing. The hearing will be conducted by L. Glen Saxton, IDWR, Statehouse Mall, Boise, Idaho 83720, telephone (208) 327-7900.

If issued, these permits will be subject to all prior water rights.

Karl J. Dreher
Director, IDWR
3034--June 18-25 *ok*

MICROFILMED

APR 09 1998

Please confirm by fax when legal has been prepared
Thanks
769-1454

RECEIVED

JUL 07 1997

NORTHERN REGION
IDWRThe Idaho
Statesman

P.O. BOX 40, BOISE, IDAHO 83707-0040

LEGAL ADVERTISING INVOICE

Amount Due

\$158.52

Account Number/Trans. #		Identification	
100631		Notice of Hearings for Minimum Stream Flow Applications	
Ordered By	P.O. Number	Rate	Run Dates
Dianne Ball		TT	June 19, 26, 1997
STATE OF IDAHO DEPT OF WATER RESOURCES Northern Region, Suite No. 210 1910 Northwest Blvd. Coeur d' Alene, ID 83814-2615		Estimated Inches	Real Inches
		# Affidavits	Legal Number
		1	7936

LEGAL NOTICE
NOTICE OF HEARINGS FOR MINIMUM
STREAM FLOW APPLICATIONS

Notice is hereby given that on June 15, 1992, the Idaho Water Resource Board filed four (4) applications for permit with the Department of Water Resources (IDWR) to preserve minimum streamflows for the protection of fish and wildlife habitat, aquatic life and recreational values as follows:

Application No. 96-08718

Source: Clark Fork River tributary to Pend Oreille Lake
Reach: 8.4 miles beginning at Cabinet Gorge Dam in the NWSE Section 27, T55N, R3E, B.M. downstream to Lake Pend Oreille in SW1/4 Section 3, T55N, R2E, B.M.
Rate of flow: 9,335 cubic feet per second (cfs) year-round

Application No. 96-08730

Source: Pend Oreille River tributary to Columbia River
Reach: 2.4 miles beginning at Albeni Falls Dam in the NWNW Section 29, T56N, R3W, B.M. downstream to the stateline on the west side of Sections 13 and 24, T56N, R6W, B.M.
Rate of flow: 10,655 cfs year-round

Application No. 91-07122

Source: St. Joe River tributary to Coeur d'Alene Lake
Reach: 36 miles beginning at a point in NENENW Sec. 13, T45N, R3E, B.M. at the confluence of the St. Joe River with Marble Creek and ending at the confluence of St. Joe River with the St. Maries River in SENESW Sec. 23, T46N, R2W, B.M.
Rate of flow: 941 cfs from Nov. 1 to July 31, and 470 cfs from August 1 to October 31

Application No. 92-07200

Source: St. Maries River tributary to St. Joe River
Reach: 26 miles beginning at a point in the SWSWNE Section 6, T42N, R2E, B.M. at the confluence of the West and Middle Forks of the St. Maries River downstream to the confluence with John Creek in the SENENW Section 33, T45N, R2W, B.M.
Rate of flow: 141 cfs from December 1 to July 31, 65 cfs from August 1 to November 30

IDWR will hold public hearings as required in Section 42-1503, Idaho Code, for the purpose of receiving evidence and testimony in regard to the applications as follows:

Applications: 96-08718 and 96-08730
Date and time: July 16, 1997, at 10:00 a.m.
Place: NRCS Federal Building
1500 Hwy 2, Sandpoint, Idaho

Applications: 91-07122 and 92-07200
Date and time: July 17, 1997 at 10:00 a.m.
Place: Washington Water Power 528 College Ave. St. Maries, Idaho

Any party who wishes to formally appear in the hearings for the purpose of presenting evidence and testimony or cross-examining witnesses should file a notice of appearance with the Director of IDWR, Statehouse Mail, Boise, Idaho 83720, Attn: L. Glen Saxton, five (5) days prior to the hearing. Other parties may informally present their views and comments without filing a notice of appearance. Informal written views and comments may also be submitted to IDWR prior to the hearing.

The hearings will be conducted in a facility which meets the accessibility requirements of the Americans with Disabilities Act. If you require special accommodations in order to attend, participate in or understand the hearing, please advise IDWR at least (10) days prior to the hearing. The hearing will be conducted by L. Glen Saxton, IDWR, Statehouse Mail, Boise, ID 83720, telephone (208)327-7900. If issued, these permits will be subject to all prior water rights.

Karl J. Dreher
Director, IDWR

Pub. June 19, 26, 1997

7936

JANICE HILDRETH

, being duly sworn, deposes and says: That she is the Principal Clerk of The Idaho Statesman, a daily newspaper printed and published at Boise, Ada County, State of Idaho, and having a general circulation therein and which said newspaper has been continuously and uninterruptedly published in said County during a period of twelve consecutive months prior to the first publication of the notice, a copy of which is attached hereto; that said notice was published in The Idaho Statesman in conformity with Section 60-108, Idaho Code as amended, for two

☒ consecutive weekly single
☐ consecutive daily odd skip

insertion(s) beginning with the issue of

June 19, 1997

and ending with the issue of

June 26, 1997

Janice Hildreth

STATE OF IDAHO)

ss.

COUNTY OF ADA)

On this 26th day of June in the year of 1997, before me, a Notary Public, personally appeared JANICE HILDRETH known or identified to me to be the person whose name subscribed to the within instrument, and being by me first duly sworn, declared that the statements therein are true, and acknowledged to me that she executed the same.

Notary Public for Idaho

Residing at:

Boise, Idaho

My commission expires:

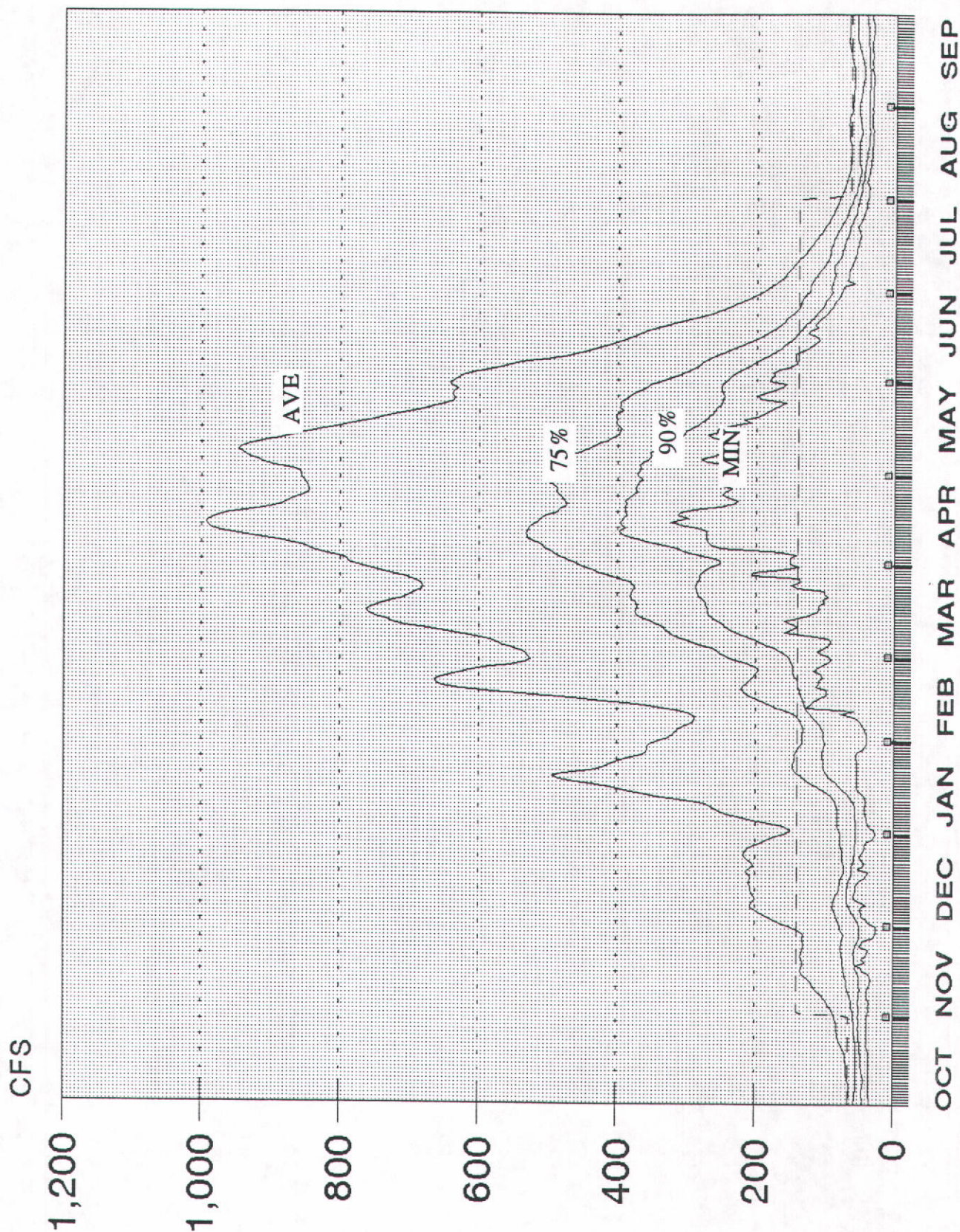
5703

MICROFILMED
APR 09 1998

*Statesman
Advertiser*

ST. MARIES RIVER NR SANTA

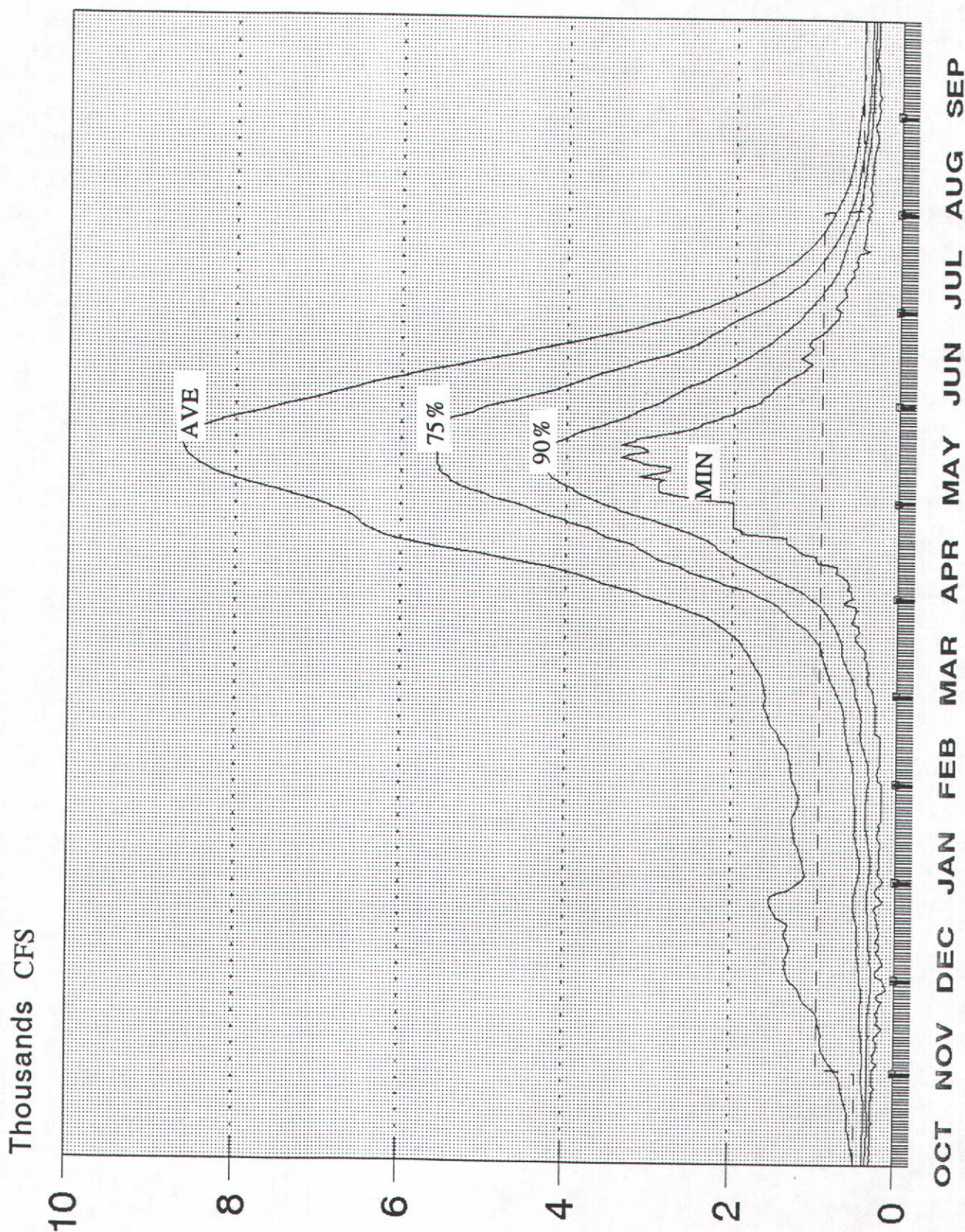
SUMMARY HYDROGRAPH PERIOD OF RECORD 1966-90



MICROFILMED
APR 09 1998

ST. JOE RIVER AT CALDER

SUMMARY HYDROGRAPH PERIOD OF RECORD 1920-90



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APR 09 1998

FISHERY RESEARCH



VOL. 67 #4

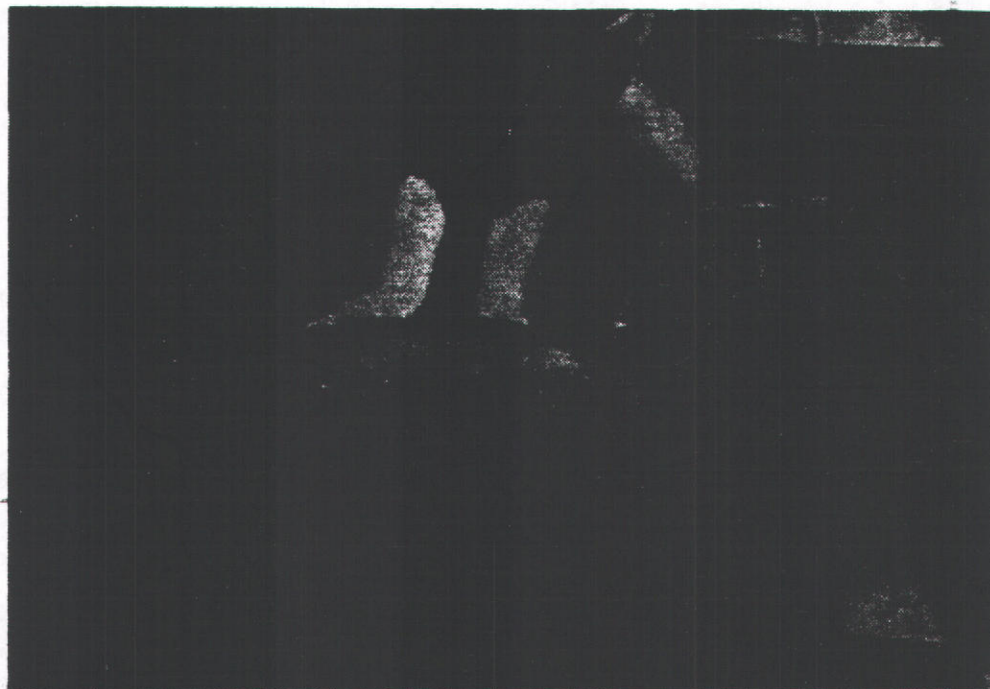
Department of Water Resources
APPLICANT'S
Exhibit <u>FG-8</u>
Date Admitted <u>7-17-97</u>

VJ

FEDERAL AID
IN
FISH RESTORATION
RETURN TO THE
IDAHO FISH & GAME LIBRARY
P. O. BOX 25

BOISE ID. 83707

Study Completion Report, Project F-73-R-10
Subproject IV: RIVERS AND STREAMS INVESTIGATIONS
Study IV: North Idaho Streams Fishery Research
Job 1: Fish Population Inventory
Job 2: Fish Habitat Description
Job 3: Fish Species and Stock Evaluation



By

Kimberly A. Apperson, Fishery Research Biologist
Michael Mahan, Fishery Technician
William D. Horton, Fishery Staff Biologist

And

St. Joe and St. Maries Rivers Limnology Update - 1987

By

C. Michael Falter, Professor, Fishery Resources
University of Idaho, Moscow

APR 09 1998

July 1988

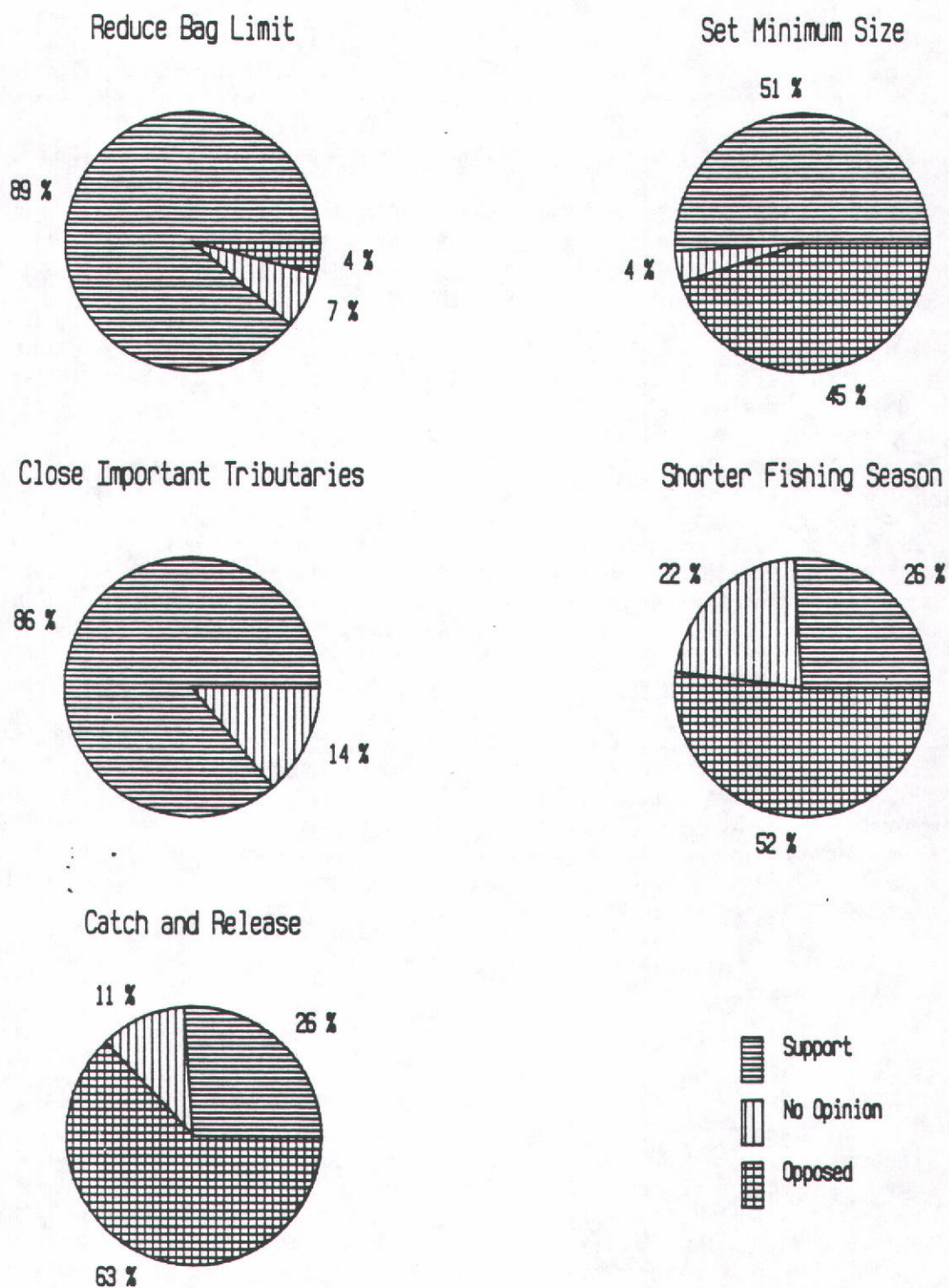
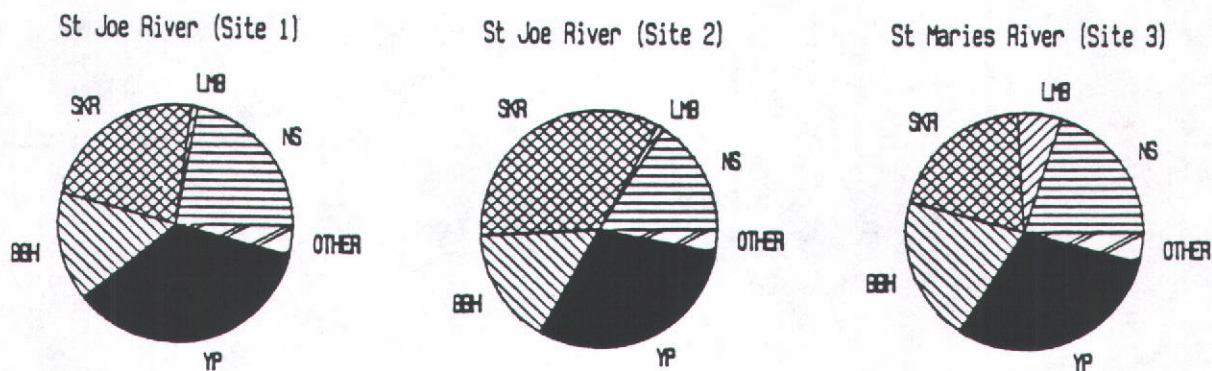


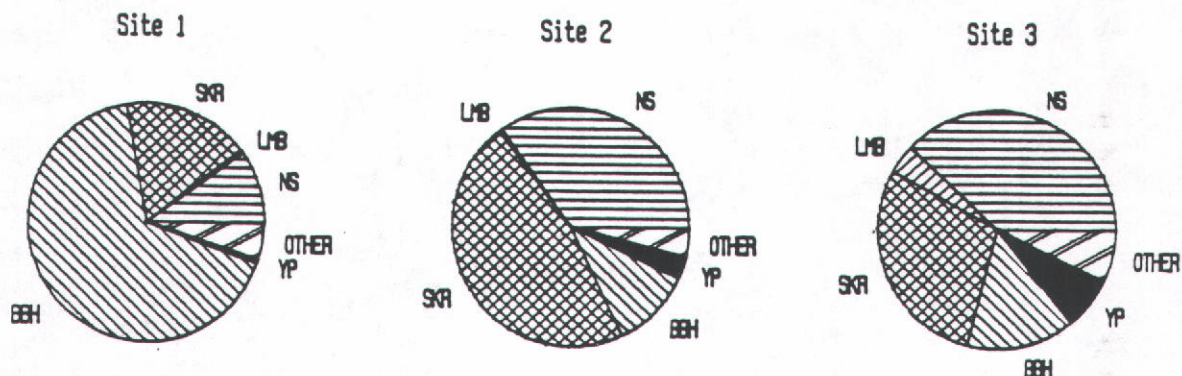
Figure 7. Support of management options by anglers interviewed during the Coeur d'Alene River creel survey, 1986.

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Electrofishing (Summer)



Gillnetting (Summer)



Gillnetting (Winter)

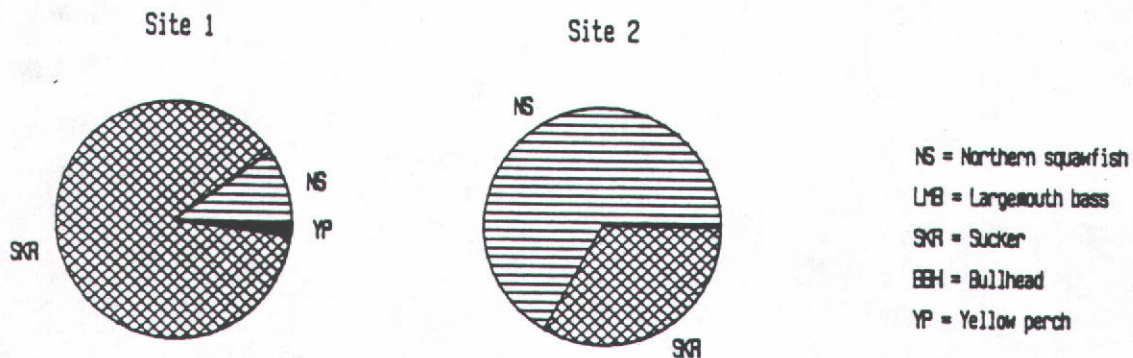


Figure 9. Relative species abundance in slackwater reaches of the St. Joe and St. Maries rivers, as determined from gill net and electrofishing samples, 1987.

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28
APR 09 1998

State of Idaho
Department of Water Resources
Water Right License

WATER RIGHT NO. 91-07122

Priority: June 15, 1992

Minimum Stream Flow: 941.00 CFS

It is hereby certified that STATE OF IDAHO
IDAHO WATER RESOURCE BOARD
PO BOX 83720
BOISE ID 837200098 has complied with the terms and
conditions of the permit, issued pursuant to Application for Permit dated June 15, 1992; and has
submitted Proof of Beneficial Use on August 31, 1998. A minimum stream flow for:

ST. JOE RIVER

Tributary: COEUR D'ALENE LAKE

has been established as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>MINIMUM STREAM FLOW</u>
MINIMUM INSTREAM FLOW	08/01 to 10/31	470.00 CFS
MINIMUM INSTREAM FLOW	11/01 to 07/31	941.00 CFS

MINIMUM STREAM FLOW REACH:

Beginning of Reach	NE $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$	Sec. 13, Twp 45N, Rge 03E, B.M.	SHOSHONE County
Ending of Reach	SE $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$	Sec. 23, Twp 46N, Rge 02W, B.M.	BENEWAH County

CONDITIONS OF APPROVAL

1. Use of water under this right shall be non-consumptive.
2. Upon future finding and order of the Director that gaging stations are required to maintain the approved minimum stream flow, the right holder shall permanently install and maintain gaging stations as specified by the department.
3. The Idaho Water Resource Board, upon receiving a request, or upon its own initiative, may petition the Director for an amendment to this water right. The petition must set forth any significant change in circumstances and evidence of the public interest supporting the proposed amendment. The Director will notify the general public and specific persons or notify interested parties of the proposed change, and conduct a hearing for the purpose of determining whether the right should be amended in the public interest. The burden of proof at the hearing shall be upon the person or parties seeking the amendment to establish that the amendment of the right would be in the public interest.
4. This minimum stream flow is for the protection of fish and wildlife habitat, aquatic life and recreational values.
5. This minimum streamflow begins at the confluence of St. Joe River with Marble Creek in the NENENW, S13, T45N, R3E and ends 36 miles downstream at the confluence of St. Joe River with the St. Maries River in the SENESW, S23, T46N, R2W.

MICROFILMED

OCT 12 2001

State of Idaho
Department of Water Resources
Water Right License

WATER RIGHT NO. 91-07122

This license is issued pursuant to the provisions of Section 42-219, Idaho Code. The water right confirmed by this license is subject to all prior water rights and shall be used in accordance with Idaho law and applicable rules of the Department of Water Resources.

Signed and sealed this 30TH day of APRIL, 2001.

Acting for

KARL J. DREHER
Director

MICROFILMED
OCT 12 2001

RECEIVED

AUG 31 1998

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

Department of Water Resources

PROOF OF BENEFICIAL USE

The Idaho Department of Water Resources considers this form a statement that the permit holder(s) has/have completed all development that will occur under this permit and that water has been applied according to the provisions of the permit for the beneficial use(s) described below. This form must be accompanied by a license examination fee, when necessary, or be accompanied by a completed field examination report prepared by a certified water right examiner who has been appointed by the department.

1. Permit No. 91-07122 Telephone No. 208-327-7900

2. Name(s) of Permit Holder(s): IDAHO WATER RESOURCE BOARD

3. Mailing Address: P.O. Box 83720, Boise ID 83720-0098

4. Source of Water: St. Joe River If **GROUNDWATER** (well), Date Drilled: mo. _____ / yr. _____

a. Well Driller: _____ Drilling Permit Number: _____ - _____ - _____

b. **OPTIONAL:**
Pump Horsepower: _____ Pressure (psi): _____ Dynamic pumping level (ft): _____

5. Use(s) (as authorized by the water right permit):

Domestic (No. of households): _____ Stockwater (No. and type of stock): _____

Irrigation (No. of acres): _____ Other: Minimum Instream Flow

6. Total rate of diversion and/or volume for which proof is submitted: 941 cfs OR _____ acre feet

7. Measuring Device Requirement: (refer to the approval conditions on your permit and respond accordingly)

(This question is not optional. Please check either yes or no. Proofs returned not checked accordingly, will be considered incomplete)

Measuring Device: Is a measuring device required? Yes _____ or No X

Has the measuring device been installed? Yes _____ or No X

Flow Measurement Port: Is a flow measurement port required? Yes _____ or No X

Has the measurement port been installed? Yes _____ or No X

8. Fee Enclosed: \$ N/A (See Fee Schedule on back of the instructions for filing proof of beneficial use)

9. Person to contact to accompany the Department representative during field examination of the water system.

Name: _____ Telephone Number: _____

Address: _____

10. The information given on this form is my true statement of the extent to which the above numbered permit has been developed and I relinquish any undeveloped portion of the permit to the State of Idaho.

Signature of permit holder: Clarence Pass Date: 8/28/98

(Include your title, if on behalf of company or organization)

OCT 28 1998

State of Idaho
Department of Water Resources
Permit To Appropriate Water

NO. 91-07122

Proposed Priority: June 15, 1992

Maximum Diversion Rate:

941.00 CFS

This is to certify, that **STATE OF IDAHO**
IDAHO WATER RESOURCE BOARD
STATEHOUSE
BOISE ID 83720

has applied for a permit to appropriate water from:
ST JOE RIVER tributary of **COEUR D ALENE LAKE**

and a permit is **APPROVED** for development of water as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>
MINIMUM INSTREAM FLOW	11/01 to 07/31	941.00 CFS
MINIMUM INSTREAM FLOW	08/01 to 10/31	470.00 CFS
	Totals	941.00 CFS

LOCATION OF POINT(S) OF DIVERSION:

Beginning of Stream Flow Reach

NENENW , Sec. 13, Township 45N, Range 03E
SHOSHONE County

End of Stream Flow Reach

SENESEW , Sec. 23, Township 46N, Range 02W
BENEWAH County

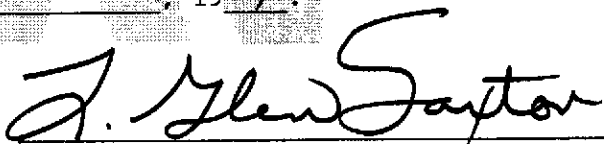
PLACE OF USE: See Remarks

CONDITIONS OF APPROVAL AND REMARKS

1. See Final Order for conditions and limitations for use of water under this approval.

This permit is issued pursuant to the provisions of Section 42-204, Idaho Code.
Witness the signature of the Director, affixed at Boise, this

11th day of December, 1997.


for Karl J. Dreher, Director

MICROFILMED
APR 03 1998

**BEFORE THE DEPARTMENT OF WATER RESOURCES
OF THE
STATE OF IDAHO**

IN THE MATTER OF APPLICATIONS FOR)	
PERMIT NOS. 91-07122 AND 92-07200)	
IN THE NAME OF THE IDAHO WATER)	FINAL ORDER
RESOURCE BOARD)	
_____)	

On June 15, 1992, the Idaho Water Resource Board (Board) filed the above captioned applications for permit with the Department of Water Resources (department) seeking to establish minimum stream flows on the St. Joe River and St. Maries River. The applications were filed pursuant to Chapter 15, Title 42, Idaho Code.

The department provided notice of the applications describing the proposed appropriations and setting the time and place for hearing on the applications. Notice was published on June 19 and 26, 1997 in the Bonner County Daily Bee, Sandpoint, Idaho, the Shoshone County News Press, Kellogg, Idaho, and on June 18 and 25, 1997 in the Priest River Times, Priest River, Idaho and in the St. Maries Gazette Record, St. Maries, Idaho. Statewide notice of the applications was also published on June 19 and 26, 1997 in the Lewiston Morning Tribune, Lewiston, Idaho, The Times News, Twin Falls, Idaho, The Post Register, Idaho Falls, Idaho and in the Idaho Statesman, Boise, Idaho.

On July 16 and 17, 1997, the department conducted public hearings in Sandpoint, Idaho and St. Maries, Idaho for the purpose of eliciting testimony regarding the applications.

Parties appearing in a formal capacity at the hearings included John Beal for the Idaho Water Resource Board, Cindy Robertson for the Idaho Department of Fish and Game, Bob Schloss for the Corps of Engineers, Bob Dunnagan for Trout Unlimited, Marti Bridges for Idaho Rivers United and Steven A. Fry for Washington Water Power. Public witnesses who testified in the matter included John Bentley and Buell Hollister.

On August 28, 1997, the hearing officer for the department issued a Recommended Order in connection with the above captioned matter. None of the parties filed a petition for reconsideration, briefs or exceptions in connection with the Recommended Order. Based upon his understanding of the law and the facts in this matter, the Director makes the following Findings of Fact, Conclusions of Law and Final Order:

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APR 09 1998

FINDINGS OF FACT:

1. Application for Permit No. 91-07122 seeks a minimum flow of 941 cubic feet per second (cfs) from November 1 to July 31, and 470 cfs from August 1 to October 31 of the water of the St. Joe River tributary to Coeur d'Alene Lake. The thirty-six (36) mile reach for the minimum flow begins at a point in NE1/4NE1/4NW1/4 Sec. 13, T45N, R3E, B.M. at the confluence of the St. Joe River with Marble Creek and ends at the confluence of St. Joe River with the St. Maries River in SE1/4NE1/4SW1/4 Sec. 23, T46N, R2W, B.M. The purpose of the application is to protect fish and wildlife habitat, aquatic life and recreational values. (Note: The "1/4" designations will be omitted from subsequent legal descriptions in this order).

2. Application for Permit No. 92-07200 seeks a minimum flow of 141 cfs from December 1 to July 31 and 65 cfs from August 1 to November 30 of the water of the St. Maries River tributary to St. Joe River. The twenty-six (26) mile reach for the minimum flow begins at a point in the SWSWNE Section 6, T42N, R2E, B.M. at the confluence of the West and Middle Forks of the St. Maries River and ends at the confluence with John Creek in the SENENW Section 33, T45N, R2W, B.M.

3. Exhibits offered and accepted as a part of the record include the following:

- a. Applicant's Exhibit 1 - Graph of average monthly flows, Flow Duration Curves, and Summary Hydrograph for St. Maries River.
- b. Applicant's Exhibit 2 - Listing of St. Maries River Water Rights.
- c. Applicant's Exhibit 3 - Graph of average monthly flows, Flow Duration Curves, and Summary Hydrograph for St. Joe River.
- d. Applicant's Exhibit 4 - Listing of St. Joe River Water Rights.
- e. IDFG Exhibit 1 - Table 1 - Instream Flow Regimens for Fish, Wildlife, Recreation and Related Environmental Resources.
- f. IDFG Exhibit 2 - Graph titled Species Composition Electrofishing for St. Joe River and St. Maries River.
- g. IDFG Exhibit 3 - Graph titled Species Composition Gillnetting for St. Joe River.
- h. IDFG Exhibit 4 - St. Joe River Harvest data.

- i. IDFG Exhibit 5 - St. Maries River Harvest data.
- j. IDFG Exhibit 6 - St. Joe River Management data.
- k. IDFG Exhibit 7 - St. Maries River Management data.
- l. IDFG Exhibit 8 - Fishery Research report, Project P-73-R-10, dated July 1988.

4. Flows in the sources for the applications have been measured as follows:

- a. 91-07122 - St. Joe River
 - Average Annual Flow = 2,353 cfs.
 - The requested flow of 941 cfs is equalled or exceeded about 67% of the time during the November 1 to July 31 period.
 - The requested flow of 470 cfs is equalled or exceeded about 52% of the time during the August 1 to October 31 period.
- b. 92-07200 - St. Maries River
 - Average Annual Flow = 353 cfs.
 - The requested flow of 65 cfs is equalled or exceeded about 73% of the time during the December 1 to July 31 period.
 - The requested flow of 141 cfs is equalled or exceeded about 52% of the time during the August 1 to November 30 period.

5. All rights acquired under application Nos. 91-07122 and 92-07200 are for instream non-consumptive use and are subject to all vested water rights, permits or applications for permit having dates of priority earlier than June 15, 1992.

6. The parties supported the minimum stream flow applications. There was no opposition to the approval of the applications.

CONCLUSIONS OF LAW:

1. Chapter 15, Title 42, Idaho Code, provides that stream flow preservation for the protection of fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, navigation and water quality, when made pursuant to this statute, is in the public interest and is declared to be a beneficial use of such water.

2. The proposed minimum stream flows will not interfere with any vested water right, permit, or application for permit having a priority date earlier than June 15, 1992.

3. The flows requested in the applications are the minimum flows required to preserve the existing unique characteristics of the streams for the public benefit, and are not the ideal or most desirable flows which could be utilized for those purposes.

4. The proposed minimum stream flows are in the public, as opposed to private, interest.

5. The minimum stream flows proposed by the applications are necessary to fish and wildlife habitat, aquatic life and recreational values.

6. The proposed minimum stream flows as approved in this final order are generally capable of being maintained.

7. The department should approve the applications with certain conditions and limitations.

ORDER:

IT IS, THEREFORE, HEREBY ORDERED That Application for Permit Nos. 91-07122 and 92-07200 in the name of the Idaho Water Resource Board are **APPROVED** subject to the following conditions and limitations as follows:

1. The use of water under the permits is subject to all prior water rights.

2. The use of water under the permits shall be non-consumptive.

3. Upon the future finding and order of the Director that gaging stations are required to maintain the approved minimum stream flows, the right holder shall permanently install and maintain gaging stations as specified by the department.

4. The Director retains jurisdiction, as described below, to review and amend any and all parameters of these rights. The Board, upon receiving a request, or upon its own initiative, may petition the Director for an amendment to the right. The petition must set forth any significant change in circumstances and evidence of the public interest supporting the proposed amendment. The Director will notify the general public and specific persons or known interested parties of the proposed change, and conduct a hearing for the purpose of determining whether the right should be amended in the public interest. The burden of proof at the hearing shall be upon the persons or parties seeking the amendment to establish that the amendment of the right would be in the public

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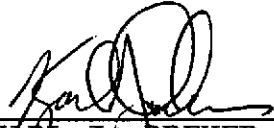
interest.

5. The applications hereby approved by the Director shall be submitted to the Idaho Legislature by the fifth day of the next regular legislative session and the Director's approval shall not become finally effective until approved by the legislature pursuant to provisions of Section 42-1503, Idaho Code.

6. Proof of instream beneficial use of the minimum flows appropriated shall be submitted in a manner approved by the Department on or before **October 1, 2002**.

7. This minimum stream flow is for the protection of fish and wildlife habitat, aquatic life and recreational values.

Dated this 11th day of December, 1997.



KARL J. DREHER
Director

CERTIFICATE OF SERVICE

I DO HEREBY CERTIFY that on the 12th day of December, 1997, the above and foregoing document was served upon the following, via certified mail, by placing a copy of the same in the United States Mail, postage prepaid and properly addressed to the following:

HAND DELIVERED

JOHN BEAL
IDWR
PO BOX 83720
BOISE ID 83720-0098

BOB SCHLOSS
CORPS OF ENGINEERS
ALBANY FALLS DAM PROJECT
2376 E HWY 2
OLDTOWN ID 83822

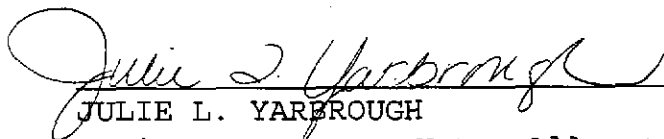
CERTIFIED MAIL

CINDY ROBERTSON
DEPT OF FISH AND GAME
PO BOX 25
BOISE ID 83707

BOB DUNNAGAN
TROUT UNLIMITED
361 EVERGREEN RD
SANDPOINT ID 83862

MARTI BRIDGES
IDAHO RIVERS UNITED
PO BOX 633
BOISE ID 83701

STEVEN A FRY
WASHINGTON WATER POWER
PO BOX 3727
SPOKANE WA 99220-3727


JULIE L. YARBROUGH
Senior Secretary, Water Allocation Bureau

BEFORE THE DEPARTMENT OF WATER RESOURCES
OF THE
STATE OF IDAHO

IN THE MATTER OF APPLICATIONS FOR)
PERMIT NOS. 91-07122 AND 92-07200)
IN THE NAME OF THE IDAHO WATER)
RESOURCE BOARD)

RECOMMENDED ORDER

On June 15, 1992, the Idaho Water Resource Board (Board) filed the above captioned applications for permit with the Department of Water Resources (department) seeking to establish minimum stream flows on the St. Joe River and St. Maries River. The applications were filed pursuant to Chapter 15, Title 42, Idaho Code.

The department provided notice of the applications describing the proposed appropriations and setting the time and place for hearing on the applications. Notice was published on June 19 and 26, 1997 in the Bonner County Daily Bee, Sandpoint, Idaho, the Shoshone County News Press, Kellogg, Idaho, and on June 18 and 25, 1997 in the Priest River Times, Priest River, Idaho and in the St. Maries Gazette Record, St. Maries, Idaho. Statewide notice of the applications was also published on June 19 and 26, 1997 in the Lewiston Morning Tribune, Lewiston, Idaho, The Times News, Twin Falls, Idaho, The Post Register, Idaho Falls, Idaho and in the Idaho Statesman, Boise, Idaho.

On July 16 and 17, 1997, the department conducted public hearings in Sandpoint, Idaho and St. Maries, Idaho for the purpose of eliciting testimony regarding the applications.

Parties appearing in a formal capacity at the hearings included John Beal for the Idaho Water Resource Board, Cindy Robertson for the Idaho Department of Fish and Game, Bob Schloss for the Corps of Engineers, Bob Dunnagan for Trout Unlimited and Steven A. Fry for Washington Water Power. Public witnesses who testified in the matter included John Bentley and Buell Hollister.

Based upon his understanding of the law and the facts in this matter, the hearing officer recommends the following Findings of Fact, Conclusions of Law and Order:

FINDINGS OF FACT:

1. Application for Permit No. 91-07122 seeks a minimum flow of 941 cubic feet per second (cfs) from November 1 to July 31, and 470 cfs from August 1 to October 31 of the water of the St. Joe

MICROFILMED
APR 8 9 1998

River tributary to Coeur d'Alene Lake. The thirty-six (36) mile reach for the minimum flow begins at a point in NE1/4NE1/4NW1/4 Sec. 13, T45N, R3E, B.M. at the confluence of the St. Joe River with Marble Creek and ends at the confluence of St. Joe River with the St. Maries River in SE1/4NE1/4SW1/4 Sec. 23, T46N, R2W, B.M. The purpose of the application is to protect fish and wildlife habitat, aquatic life and recreational values. (Note: The "1/4" designations will be omitted from subsequent legal descriptions in this order).

2. Application for Permit No. 92-07200 seeks a minimum flow of 141 cfs from December 1 to July 31 and 65 cfs from August 1 to November 30 of the water of the St. Maries River tributary to St. Joe River. The twenty-six (26) mile reach for the minimum flow begins at a point in the SWSWNE Section 6, T42N, R2E, B.M. at the confluence of the West and Middle Forks of the St. Maries River and ends at the confluence with John Creek in the SENENW Section 33, T45N, R2W, B.M.

3. Exhibits offered and accepted as a part of the record include the following:

- a. Applicant's Exhibit 1 - Graph of average monthly flows, Flow Duration Curves, and Summary Hydrograph for St. Maries River.
- b. Applicant's Exhibit 2 - Listing of St. Maries River Water Rights.
- c. Applicant's Exhibit 3 - Graph of average monthly flows, Flow Duration Curves, and Summary Hydrograph for St. Joe River.
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- i. IDFG Exhibit 5 - St. Maries River Harvest data.
- j. IDFG Exhibit 6 - St. Joe River Management data.

k. IDFG Exhibit 7 - St. Maries River Management data.

l. IDFG Exhibit 8 - Fishery Research report, Project P-73-R-10, dated July 1988.

4. Flows in the sources for the applications have been measured as follows:

a. 91-07122 - St. Joe River

- Average Annual Flow = 2,353 cfs.

- The requested flow of 941 cfs is equalled or exceeded about 67% of the time during the November 1 to July 31 period.

- The requested flow of 470 cfs is equalled or exceeded about 52% of the time during the August 1 to October 31 period.

b. 92-07200 - St. Maries River

- Average Annual Flow = 353 cfs.

- The requested flow of 65 cfs is equalled or exceeded about 73% of the time during the December 1 to July 31 period.

- The requested flow of 141 cfs is equalled or exceeded about 52% of the time during the August 1 to November 30 period.

5. All rights acquired under application Nos. 91-07122 and 92-07200 are for instream non-consumptive use and are subject to all vested water rights, permits or applications for permit having dates of priority earlier than June 15, 1992.

6. The parties supported the minimum stream flow applications. There was no opposition to the approval of the applications.

CONCLUSIONS OF LAW:

1. Chapter 15, Title 42, Idaho Code, provides that stream flow preservation for the protection of fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, navigation and water quality, when made pursuant to this statute, is in the public interest and is declared to be a beneficial use of such water.

2. The proposed minimum stream flows will not interfere with any vested water right, permit, or application for permit having a priority date earlier than June 15, 1992.

3. The flows requested in the applications are the minimum flows required to preserve the existing unique characteristics of the streams for the public benefit, and are not the ideal or most desirable flows which could be utilized for those purposes.

4. The proposed minimum stream flows are in the public, as opposed to private, interest.

5. The minimum stream flows proposed by the applications are necessary to fish and wildlife habitat, aquatic life and recreational values.

6. The proposed minimum stream flows as approved in this recommended order are generally capable of being maintained.

7. The department should approve the applications with certain conditions and limitations.

ORDER:

IT IS, THEREFORE, HEREBY ORDERED That Application for Permit Nos. 91-07122 and 92-07200 in the name of the Idaho Water Resource Board are **APPROVED** subject to the following conditions and limitations as follows:

1. The use of water under the permits is subject to all prior water rights.

2. The use of water under the permits shall be non-consumptive.

3. Upon the future finding and order of the Director that gaging stations are required to maintain the approved minimum stream flows, the right holder shall permanently install and maintain gaging stations as specified by the department.

4. The Director retains jurisdiction, as described below, to review and amend any and all parameters of these rights. The Board, upon receiving a request, or upon its own initiative, may petition the Director for an amendment to the right. The petition must set forth any significant change in circumstances and evidence of the public interest supporting the proposed amendment. The Director will notify the general public and specific persons or known interested parties of the proposed change, and conduct a hearing for the purpose of determining whether the right should be amended in the public interest. The burden of proof at the hearing shall be upon the persons or parties seeking the amendment to establish that the amendment of the right would be in the public interest.

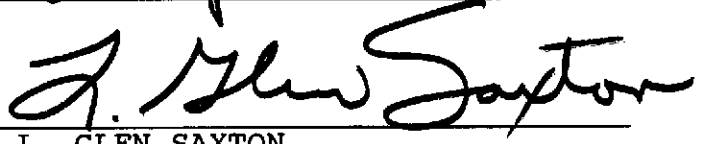
5. The applications hereby approved by the Director shall be submitted to the Idaho Legislature by the fifth day of the next

regular legislative session and the Director's approval shall not become finally effective until approved by the legislature pursuant to provisions of Section 42-1503, Idaho Code.

6. Proof of instream beneficial use of the minimum flows appropriated shall be submitted in a manner approved by the Department on or before the date in the Final Order.

7. This minimum stream flow is for the protection of fish and wildlife habitat, aquatic life and recreational values.

Dated this 27th day of August, 1997.



L. GLEN SAXTON
Hearing Officer

CERTIFICATE OF MAILING

I HEREBY CERTIFY that on the 28th day of August, 1997, a true and correct copy of the foregoing **RECOMMENDED ORDER** was forwarded, by regular U.S. Mail, to the parties listed:

John Beal
IDWR
PO Box 83720
Boise ID 83720-0098

Cindy Robertson
Dept of Fish and Game
PO Box 25
Boise ID 83707

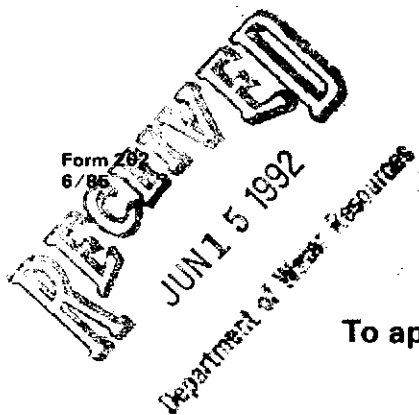
Marti Bridges
Idaho Rivers United
PO Box 633
Boise ID 83701

Bob Schloss
Corps of Engineers
Albany Falls Dam Project
2376 E HWY 2
Oldtown ID 83822

Bob Dunnagan
Trout Unlimited
361 Evergreen Rd
Sandpoint ID 83862

Steven A Fry
Washington Water Power
PO Box 3727
Spokane WA 99220-3727


JULIE L. YARBROUGH
Senior Secretary, Water Allocation Bureau



Ident. No. 91-7122

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
APPLICATION FOR PERMIT

To appropriate the public waters of the State of Idaho

1. Name of applicant Idaho Water Resource Board Phone 327-7910
Post office address Statehouse, Boise, ID 83720
2. Source of water supply St. Joe River which is a tributary of Coeur d'Alene Lake
Instream flow downstream from the confluence with Marble Creek in the
3. Location of point of diversion is NE $\frac{1}{4}$ of NE $\frac{1}{4}$ of NW $\frac{1}{4}$, Govt. Lot _____
Sec. 13 Township 45N Range 3E B.M. Shoshone County; additional
to the confluence with the St. Maries River
points of diversion if any: in the SE $\frac{1}{4}$ of NE $\frac{1}{4}$ of SW $\frac{1}{4}$, Sec. 23, T46N, R2W, B.M. Benewah
County.
4. Water will be used for the following purposes:
Amount 941 cfs for instream purposes from Nov. 1 to July 31 (both dates inclusive)
(cfs or acre-feet per annum)
Amount 470 cfs for instream purposes from Aug. 1 to Oct. 31 (both dates inclusive)
(cfs or acre-feet per annum)
Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre-feet per annum)
Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre-feet per annum)
5. Total quantity to be appropriated is (a) 941 and/or (b) _____
cubic feet per second acre feet per annum
6. Proposed diverting works:
 - a. Description of ditches, flumes, pumps, headgates, etc. _____
None
 - b. Height of storage dam _____ feet; active reservoir capacity _____ acre-feet; total
reservoir capacity _____ acre-feet; period of year when water will be diverted to storage:
_____ to _____ inclusive.
 - c. Proposed well diameter is _____ inches; proposed depth of well is _____ feet.
 - d. Is ground water with a temperature of greater than 90°F being sought? _____
7. Time required for the completion of the works and application of the water to the proposed beneficial use is
5 years (minimum 1 year).

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10. Describe any other water rights used for the same purposes as described above. _____

11. a. Who owns the property at the point of diversion? _____
b. Who owns the land to be irrigated or place of use? _____
c. If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing. _____

Total number of acres to be irrigated.

TWP	RANGE	SEC.	NEW				NW¼				SW¼				SE¼			
			NEW	NW¼	SW¼	SE¼	NEW	NW¼	SW¼	SE¼	NEW	NW¼	SW¼	SE¼	NEW	NW¼	SW¼	SE¼
TOTALS			NEW				NW¼				SW¼				SE¼			

ponding place of use below. See instructions for standard symbols.

a. If water is for irrigation, indicate acreage in each subdivision in the tabulation below.

9. Description of place of use:

habitat, aquatic life and recreational values.

e. Other; describe fully. A minimum streamflow for the protection of fish and wildlife

d. Domestic; show number of households.

c. Municipal; show name of municipality.

b. Stockwatering; list number and kind of livestock.

a. Hydropower, show total feet of head and proposed capacity in kW.

8. Description of proposed uses (if irrigation only, go to item 9):

ATTACHMENT TO APPLICATION FOR PERMIT
TO APPROPRIATE A MINIMUM STREAM FLOW

14. Provide evidence that the appropriation will not interfere with any vested water right, permit, or water right application of earlier date of priority.

The appropriation is junior to rights, permits, or applications with earlier dates of
priority. As a nonconsumptive, instream use this appropriation can have no impact on any
water user downstream except to help insure water availability.

15. Provide evidence to show that the appropriation would be in the public interest as opposed to private interest.

The appropriation will be held by the Water Resource Board rather than a private entity.
The appropriated water will preserve river values for the benefit and enjoyment of all citizens
of the state.

16. Provide evidence or justification that the appropriation is necessary for the purposes shown in Item 4.

The appropriation is for 40% of the mean annual flow for the period of November through July.
The request for the rest of the year is for the average monthly flow for September, the lowest
month for the period of record. This flow is close to 20% of the mean annual flow. These flows
will provide a "good" minimum flow for fish and wildlife habitat, aquatic life, and recreational
values for April through July.

17. Provide evidence that the minimum flow or lake level is minimum and not the ideal or most desirable flow or lake level.

The requested flows are based on the Montana Method which utilized field studies to identify
riverine conditions at varying flow rates. The optimum flow for fish, wildlife, recreation, and
related environmental resources ranges from 60% to 100% of the mean flow value.

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18. Provide evidence that the flow or lake level requested is capable of being maintained as evidenced by records of stream flows and water levels.

A flow of 941 cfs is less than the average monthly flow for the requested period of use. The flow of 470 cfs is the lowest average monthly flow of the year for the period of record.

19. Describe the location of existing gaging stations that can be used in the administration of this appropriation.

The requested flow is based on records for the Calder gage, 75 feet downstream of the road bridge at Calder. This gage has been used since 1921.

20. Do you intend to install additional gaging stations? Describe the location.

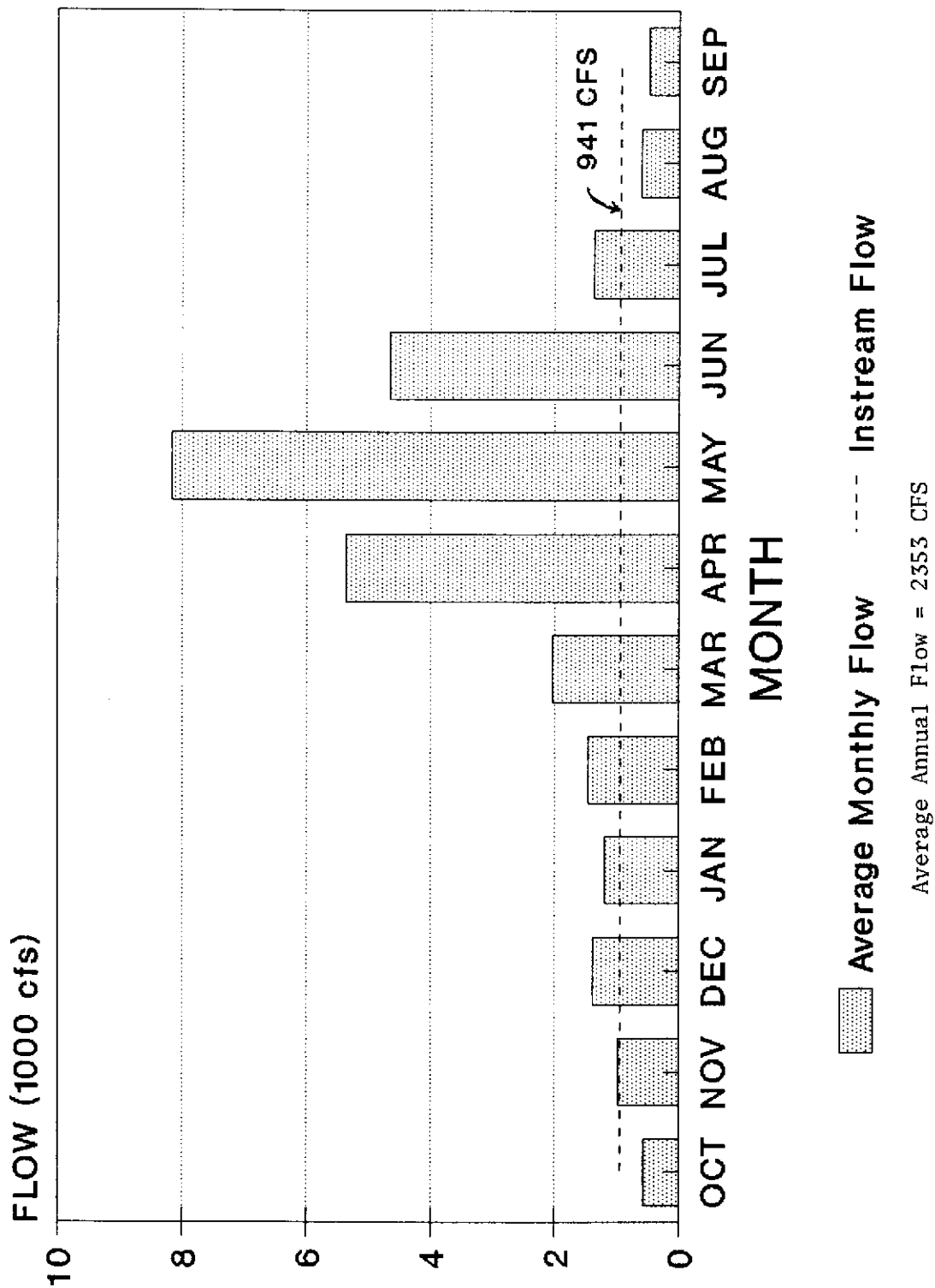
No

21. List any additional remarks related to this minimum stream flow application.

The flow request provides a "good" minimum flow for April to July and October, a "fair to poor" flow for August to September and an "outstanding" flow for November to March. Following consultation with the Division of Environmental Quality and Departments of Fish & Game and Parks & Recreation, the Water Resource Board may amend this application to more accurately reflect the necessary minimum flow based on new data provided by the above or other agencies.

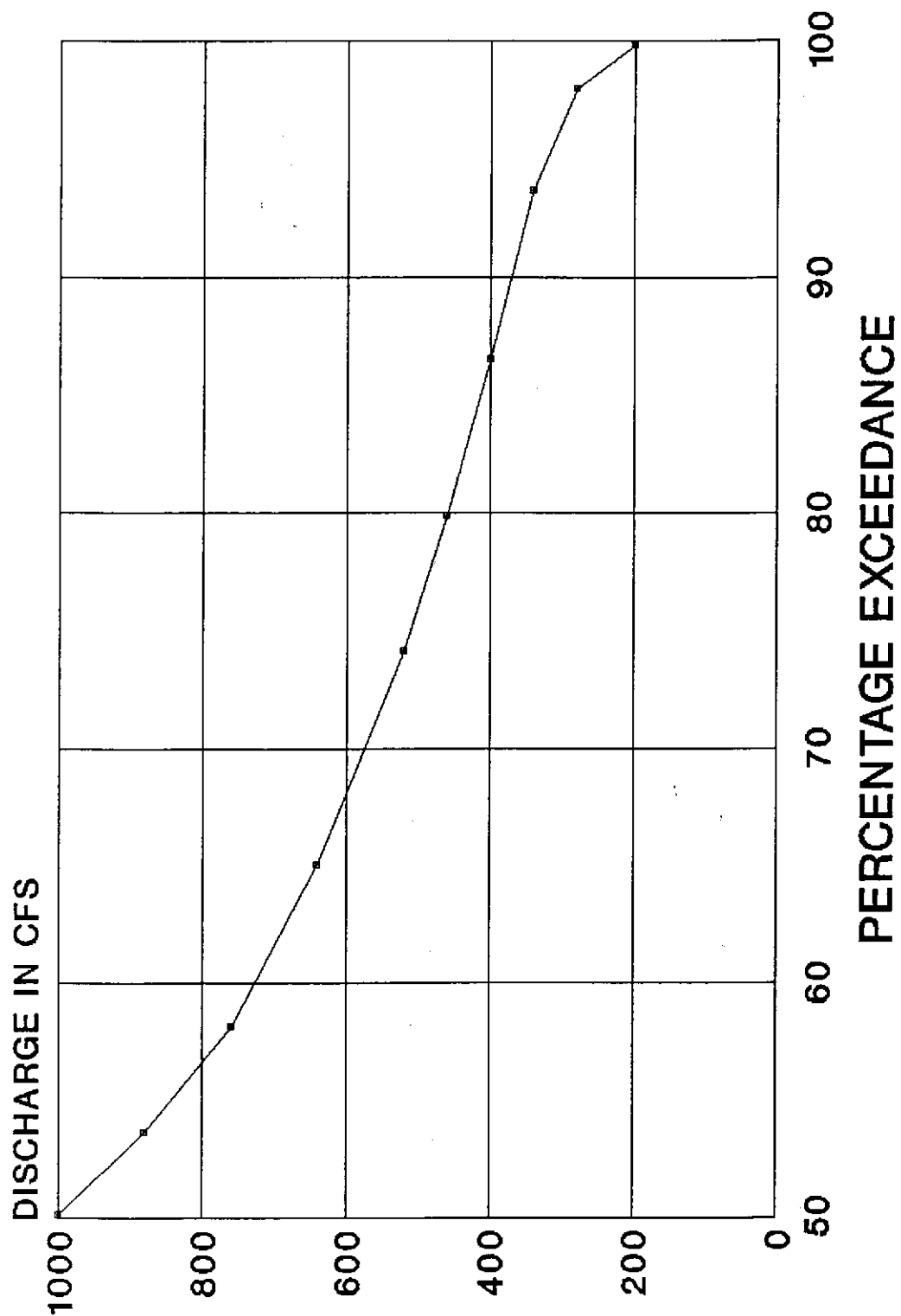
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ST. JOE RIVER AT CALDER (1921-90)



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APR 6 3 1978

FLOW DURATION CURVE ST. JOE RIVER AT CALDER



PERIOD 1921-90

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APR 09 1998

FLOW DURATION TABLE FOR STATION 12414500

FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +
15000.	0.79	14000.	1.11	13000.	1.60	12000.	2.22	11000.	3.00	10000.	3.91	9000.	5.21	8000.	6.76
9000.	5.21	8000.	6.76	7000.	8.83	6000.	11.53	5500.	12.92	5000.	14.65	4500.	16.60	4000.	18.60
4500.	16.60	4000.	18.60	3500.	21.00	3000.	23.85	2500.	27.38	2000.	32.09	1500.	39.25	1000.	50.14
1500.	39.25	1000.	50.14	980.	50.69	960.	51.18	940.	51.85	920.	52.36	900.	53.06	880.	53.67
900.	53.06	880.	53.67	860.	54.20	840.	54.87	820.	55.60	800.	56.49	780.	57.29	760.	58.19
780.	57.29	760.	58.19	740.	59.26	720.	60.22	700.	61.42	680.	62.49	660.	63.54	640.	65.00
660.	63.54	640.	65.00	620.	66.20	600.	67.60	580.	69.14	560.	70.53	540.	72.24	520.	74.14
540.	72.24	520.	74.14	500.	76.19	480.	78.09	460.	79.88	440.	82.01	420.	84.09	400.	86.56
420.	84.09	400.	86.56	390.	87.83	380.	88.99	370.	90.41	360.	91.50	350.	92.70	340.	93.65
350.	92.70	340.	93.65	330.	94.64	320.	95.48	310.	96.22	300.	96.98	290.	97.49	280.	97.94
290.	97.49	280.	97.94	270.	98.33	260.	98.66	250.	98.93	240.	99.18	230.	99.32	220.	99.53
230.	99.32	220.	99.53	210.	99.69	200.	99.82								

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Table 1

Instream Flow Regimens for Fish, Wildlife, Recreation and Related
Environmental Resources

Narrative Description of Flows ^{1/}	Fisheries Classification ^{2/}	Recommended Base Flow Regimens	
		Oct.-Mar.	: Apr.-Sept.
Flushing or Maximum	--	200% of the average flow ^{3/}	
Optimum Range	--	60%-100% of the average flow ^{4/}	
Outstanding	I	40%	60%
Excellent	II	30%	50%
Good	III	20%	40%
Fair or Degrading	IV	10%	30%
Poor or Minimum	--	10%	10%
Severe Degradation	--	10% of average flow to zero flow	

^{1/}Most appropriate description of the general condition of the streamflow for all the parameters listed in the title of this paper.

^{2/}Roman numeral ratings for Fisheries Classification Systems like those developed for the States of Idaho, Montana, West Virginia, Wyoming, and the Delaware River Basin Comprehensive Study by the U.S. Fish and Wildlife Service.^{5, 11, 14, 19, 26} The base flow regimens outlined above in columns 3 and 4 to maintain the respective designated classes, are judged to be as reliable and valid as the classification systems themselves. These recommended flows generally apply very well to both cold and warm water streams. Regimens should be reversed or altered to fit different hydrologic cycles, like the Salmonid streams on the West Coast, or to favor species like the fall spawning brown trout. Flows may be refined further by specifically matching them to vital periods of the life cycle of fishes, like migration, spawning, incubation, growth, etc. Use of the Montana Method on spring creeks or streams that have a very uniform flow year-around may provide unprecedented low-flow regimens at the minimum or base flow levels.

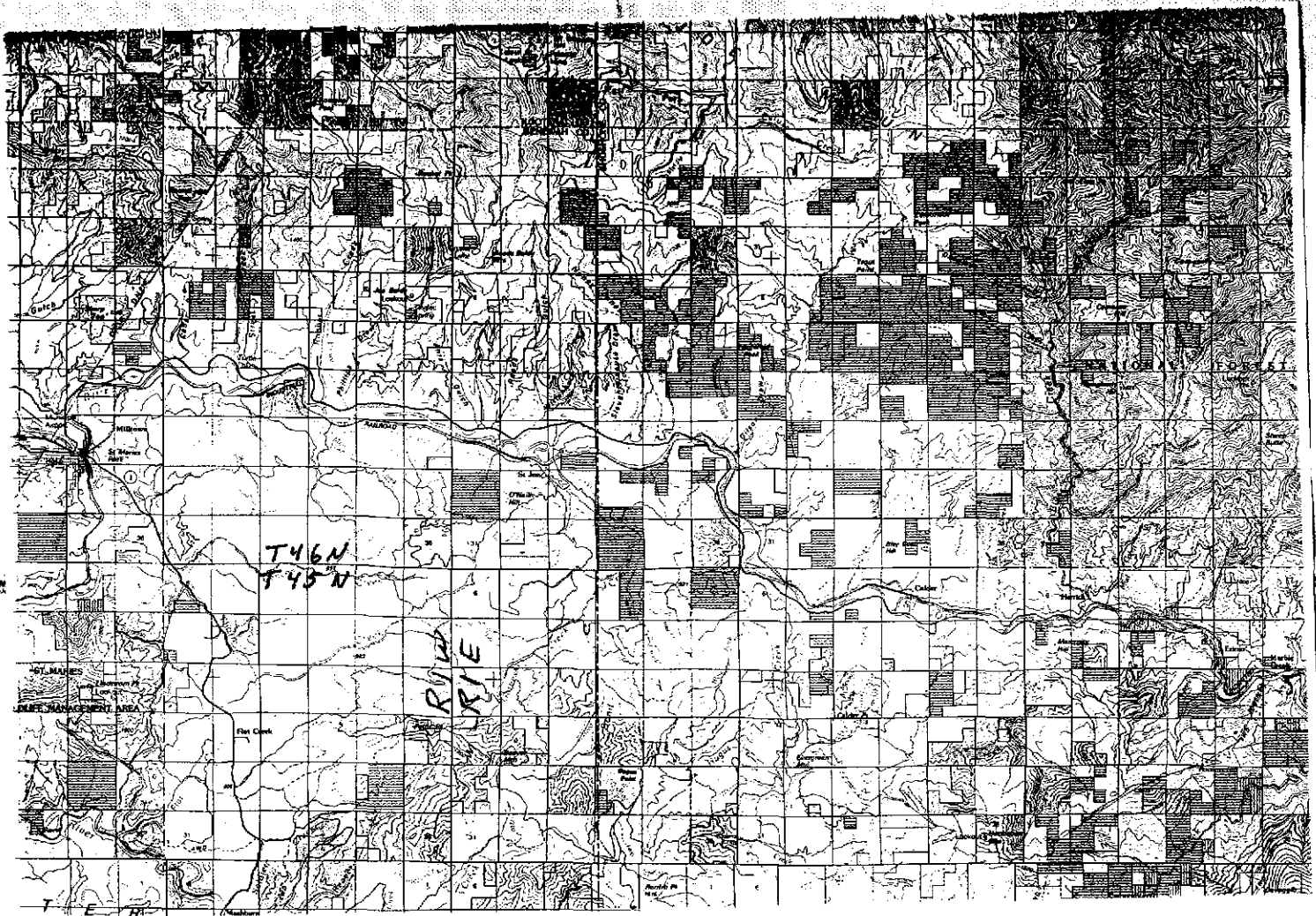
^{3/}The average flow will usually fill the active stream channel approximately 1/3 full or to the line of permanent terrestrial vegetation, while 3 times the average flow will often fill the active channel approximately to the point of spilling out on the first bench of the flood plain.¹⁵ Twice the average flow will produce effective depths and velocities within the stream channel for moving silt, sediment and other bed load material without doing extensive damage to the banks and riparian vegetation. Twice the average flow is a good maximum flow recommendation as well as a good flushing flow (Fig. 1).

^{4/}Optimum is a nebulous term; however, this flow range covers that definition best for all the parameters of this paper collectively.

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13. Map of proposed project: show clearly the proposed point of diversion, place of use, section number, township and range number.



Scale: 2 inches equal 1 mile.

BE IT KNOWN that the undersigned hereby makes application for permit to appropriate the public waters of the State of Idaho as herein set forth.

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APR 09 1936

William S. Platt

(Applicant)

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APR 9 3 1978

e. Other:

d. The water right acquired under this permit if for hydropower purposes shall be junior and subordinate to all rights to the use of water, other than hydropower, within the State of Idaho that are initiated later in time than the priority of this permit and shall not give rise to any right or claim against any future rights to the use of water, other than hydropower, within the State of Idaho initiated later in time than the priority of this permit.

c. The rate of diversion, if water is to be used for irrigation under this permit, when combined with all other water rights for the same land shall not exceed 0.02 cubic feet per second for each acre of land.

_____, 19____.

b. Proof of construction of works and application of water to beneficial use shall be submitted on or before

a. SUBJECT TO ALL PRIOR WATER RIGHTS.

1. Approval of said application is subject to the following limitations and conditions:

Idaho No. _____, and said application is hereby _____.

This is to certify that I have examined Application for Permit to appropriate the public waters of the State of

ACTION OF THE DIRECTOR, DEPARTMENT OF WATER RESOURCES

Publication approved _____ Date _____

Publication prepared by _____ Date _____ Published in _____

Fee \$ _____ Received by _____ # _____ Date _____

Received by DB Date 6-15-92 Time 11:45am Preliminary check by _____



State of Idaho

DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, Boise, ID 83706 - P.O. Box 83720, Boise, ID 83720-0098
Phone: (208) 327-7900 Fax: (208) 327-7866 Web Site: www.idwr.state.id.us

DIRK KEMPTHORNE
Governor

KARL J. DREHER
Director

May 2, 2001

STATE OF IDAHO
IDAHO WATER RESOURCE BOARD
PO BOX 83720
BOISE ID 837200098

RE: License No. 91-7122 - Issuance of License

Dear Water Right Holder(s):

The Department of Water Resources has issued the enclosed Water Right License confirming that a water right has been established in accordance with your permit. Please be sure to thoroughly review the conditions of approval and remarks listed on your license.

The license is a PRELIMINARY ORDER issued by the Department pursuant to section 67-5243, Idaho Code. It can and will become a final order without further action by the Department unless a party petitions for reconsideration or files an exception and/or brief within fourteen (14) days of the service date as described in the enclosed information sheet.

Please note that water right owners are required to report any change of water right ownership and/or mailing address to the Department within 120 days of the change. Failure to report these changes could result in a \$100 late filing fee. Contact any office of the Department or visit the Department's homepage on the Internet to obtain the proper forms and instructions.

If you have any questions, please contact me at 208-327-7946.

Sincerely,

Shelley W. Keen

Water Rights Supervisor

SWK:klr

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OCT 12 2001

Enclosure(s)

CERTIFICATE OF MAILING

I hereby certify that on May 2, 2001 I mailed a true and correct copy, postage prepaid, of the foregoing PRELIMINARY ORDER(Approved License) to the person(s) listed below:

RE: WATER RIGHT NO. 91-7122

**STATE OF IDAHO
IDAHO WATER RESOURCE BOARD
PO BOX 83720
BOISE ID 837200098**


**Kari Lynn Townsend
Secretary**

MICROFILMED

MAY 12 2001

**EXPLANATORY INFORMATION
TO ACCOMPANY A
PRELIMINARY ORDER**

The accompanying order or approved document is a "**Preliminary Order**" issued by the department pursuant to section 67-5243, Idaho Code. It can and will become a final order without further action of the Department of Water Resources (department) unless a party petitions for reconsideration, files an exception and brief, or requests a hearing as further described below:

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a preliminary order with the department within fourteen (14) days of the service date of this order. The department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See Section 67-5243(3) Idaho Code.

EXCEPTIONS AND BRIEFS

Within fourteen (14) days after (a) the service date of a preliminary order, (b) the service date of a denial of a petition for reconsideration from this preliminary order, or (c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration from this preliminary order, any party may in writing support or take exceptions to any part of a preliminary order and may file briefs in support of the party's position on any issue in the proceeding with the Director. Otherwise, this preliminary order will become a final order of the agency.

REQUEST FOR HEARING

Unless a right to a hearing before the department or the Idaho Water Resource Board (Board) is otherwise provided by statute, any person aggrieved by any final decision, determination, order or action of the Director of the department and who has not previously been afforded an opportunity for a hearing on the matter may request a hearing pursuant to section 42-1701A(3), Idaho Code. A written petition contesting the action of the Director and requesting a hearing shall be filed within fifteen (15) days after receipt of the denial or conditional approval.

ORAL ARGUMENT

If the Director grants a petition to review the preliminary order, the Director shall allow all parties an opportunity to file briefs in support of or taking exceptions to the preliminary order and may schedule oral argument in the matter before issuing a final order. If oral arguments are to be heard, the Director will within a reasonable time period notify each party of the place, date and hour for the argument of the case. Unless the Director orders otherwise, all oral arguments will be heard in Boise, Idaho.

CERTIFICATE OF SERVICE

All exceptions, briefs, requests for oral argument and any other matters filed with the Director in connection with the preliminary order shall be served on all other parties to the proceedings in accordance with IDAPA Rules 37.01.01302 and 37.01.01303 (Rules of Procedure 302 and 303).

FINAL ORDER

The Director will issue a final order within fifty-six (56) days of receipt of the written briefs, oral argument or response to briefs, whichever is later, unless waived by the parties or for good cause shown. The Director may remand the matter for further evidentiary hearings if further factual development of the record is necessary before issuing a final order. The department will serve a copy of the final order on all parties of record.

Section 67-5246(5), Idaho Code, provides as follows:

Unless a different date is stated in a final order, the order is effective fourteen (14) days after its issuance if a party has not filed a petition for reconsideration. If a party has filed a petition for reconsideration with the agency head, the final order becomes effective when:

- (a) the petition for reconsideration is disposed of; or
- (b) the petition is deemed denied because the agency head did not dispose of the petition within twenty-one (21) days.

APPEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, if this preliminary order becomes final, any party aggrieved by the final order or orders previously issued in this case may appeal the final order and all previously issued orders in this case to district court by filing a petition in the district court of the county in which:

- i. A hearing was held,
- ii. The final agency action was taken,
- iii. The party seeking review of the order resides, or
- iv. The real property or personal property that was the subject of the agency action is located.

The appeal must be filed within twenty-eight (28) days of this preliminary order becoming final. See section 67-5273, Idaho Code. The filing of an appeal to district court does not itself stay the effectiveness or enforcement of the order under appeal.

Flow Data
Permit 91-7122

1993					
	Total	Ave.	Min Flow		
Nov	18460	615.3	941	-325.7	Flow met 58% of months
Dec	14225	458.9	941	-482.1	
Jan	16825	542.7	941	-398.3	
Feb	13685	441.5	941	-499.5	
Mar	78591	2535.2	941	1594.2	
Apr	138340	4611.3	941	3670.3	
May	237880	7673.5	941	6732.5	
Jun	80030	2667.7	941	1726.7	
Jul	46780	1509.0	941	568.0	
Aug	26710	861.6	470	391.6	
Sep	15698	523.3	470	53.3	
Oct	12777	412.2	470	-57.8	
1994					
	Total	Ave.	Min Flow		
Nov	10967	365.6	941	-575.4	Flow met 33% of months
Dec	13073	421.7	941	-519.3	
Jan	20510	661.6	941	-279.4	
Feb	11176	360.5	941	-580.5	
Mar	52606	1697.0	941	756.0	
Apr	136390	4546.3	941	3605.3	
May	111260	3589.0	941	2648.0	
Jun	44763	1492.1	941	551.1	
Jul	21624	697.5	941	-243.5	
Aug	12196	393.4	470	-76.6	
Sep	9951	331.7	470	-138.3	
Oct	13986	451.2	470	-18.8	
1995					
	Total	Ave.	Min Flow		
Nov	13538	451.3	941	-489.7	Flow met 67% of months
Dec	24279	783.2	941	-157.8	
Jan	37669	1215.1	941	274.1	
Feb	135420	4368.4	941	3427.4	
Mar	121320	3913.5	941	2972.5	
Apr	97050	3235.0	941	2294.0	
May	156960	5063.2	941	4122.2	
Jun	94010	3133.7	941	2192.7	
Jul	34412	1110.1	941	169.1	
Aug	18445	595.0	470	125.0	
Sep	12860	428.7	470	-41.3	
Oct	12034	388.2	470	-81.8	
1996					
	Total	Ave.	Min Flow		
Nov	137882	4596.1	941	3655.1	Flow met 92% of months
Dec	195490	6306.1	941	5365.1	
Jan	85470	2757.1	941	1816.1	
Feb	201060	6485.8	941	5544.8	
Mar	88500	2854.8	941	1913.8	
Apr	214750	7158.3	941	6217.3	
May	211090	6809.4	941	5868.4	
Jun	137730	4591.0	941	3650.0	
Jul	42797	1380.5	941	439.5	
Aug	19168	618.3	470	148.3	
Sep	12705	423.5	470	-46.5	
Oct	27608	890.6	470	420.6	

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Flow Data
Permit 91-7122

1997					
	Total	Ave.	Min Flow		
Nov	16893	563.1	941	-377.9	Flow met 75% of months
Dec	25816	832.8	941	-108.2	
Jan	69480	2241.3	941	1300.3	
Feb	46140	1488.4	941	547.4	
Mar	97230	3136.5	941	2195.5	
Apr	200640	6688.0	941	5747.0	
May	464780	14992.9	941	14051.9	
Jun	263580	8786.0	941	7845.0	
Jul	82880	2673.5	941	1732.5	
Aug	26967	869.9	470	399.9	
Sep	17614	587.1	470	117.1	
Oct	13445	433.7	470	-36.3	

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LICENSING REVIEW
MINIMUM STREAM FLOW

RIGHT NO. 91-07122

Proof of beneficial use rec'd 8/31/98

Was flow data submittal a requirement
with proof submittal? Yes No ✓

If yes, has data been reviewed and a determination
made that minimum flow is capable of being
maintained? Yes No

Data submitted fully complies with permit condition Not rec'd but was Submitted
(i.e. # of years of flow data sufficient)

Data Entry for License:

Name Standardized ✓
Total cfs & div. capacity listed as highest flow ✓
P/D(s) beginning and ending descriptions listed ✓
Use flows defined for entire year ✓
P/U left blank (description in remarks) ✓
Remarks/non-standard conditions ✓
 Non-consumptive ✓
 Watermaster control N/A
 Jurisdiction retains to amend ✓
 Description of reach(es) ✓
 All other applicable permit conditions ✓
 carried forward ✓

Comments/adjustments

Printed license hand-edited

91 days 52%
274 days 67%
11/1-7/31 941.0 cfs 10/92-9/97
8/1-10/31 470.0 cfs
lowest ave 340±
" " 345±
mean - met or exceeded permit rates/season
(22) 78% short 96-97 (54) 41% short 94-95 (35) 62% short 92-93
(53) 88% long " (89) 72% long " (120) 56% long "
(38) 64% short 95-96 (19) 140% short 93-94
(17) 94% long " (146) 6% long "

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED

JAN 20 1999

Department of Water Resources

A. GENERAL INFORMATION

Permit No. 91-07122

1. Owner: Idaho Water Resource Board Phone No. (208) 327-7910

Current Address: P.O. Box 83720 Boise ID 83720-0098

2. Accompanied by: _____ EXAM DATE: 1-14-99

Address: _____ Phone No. _____

Relationship to Permit Holder: _____

3. Source: St. Joe River tributary to Coeur d'Alene Lake

B. OVERLAP REVIEW

1. Other water rights with the same place of use: _____

2. Other water rights with the same point of diversion: _____

C. DIVERSION AND DELIVERY SYSTEM

1. Point(s) of Diversion:

Ident No.	Gov't Lot	1/4	1/4	1/4	Sec.	Twp.	Rge.	County	Method of Determination/Remarks
			NE	NW	13	45N	3W	Shoshone	US Forest Service Map / Beginning Stream Reach
			NE	SW	23	46N	2W	Beneviah	US Forest Service / Ending Stream Reach

2. Place(s) of Use:

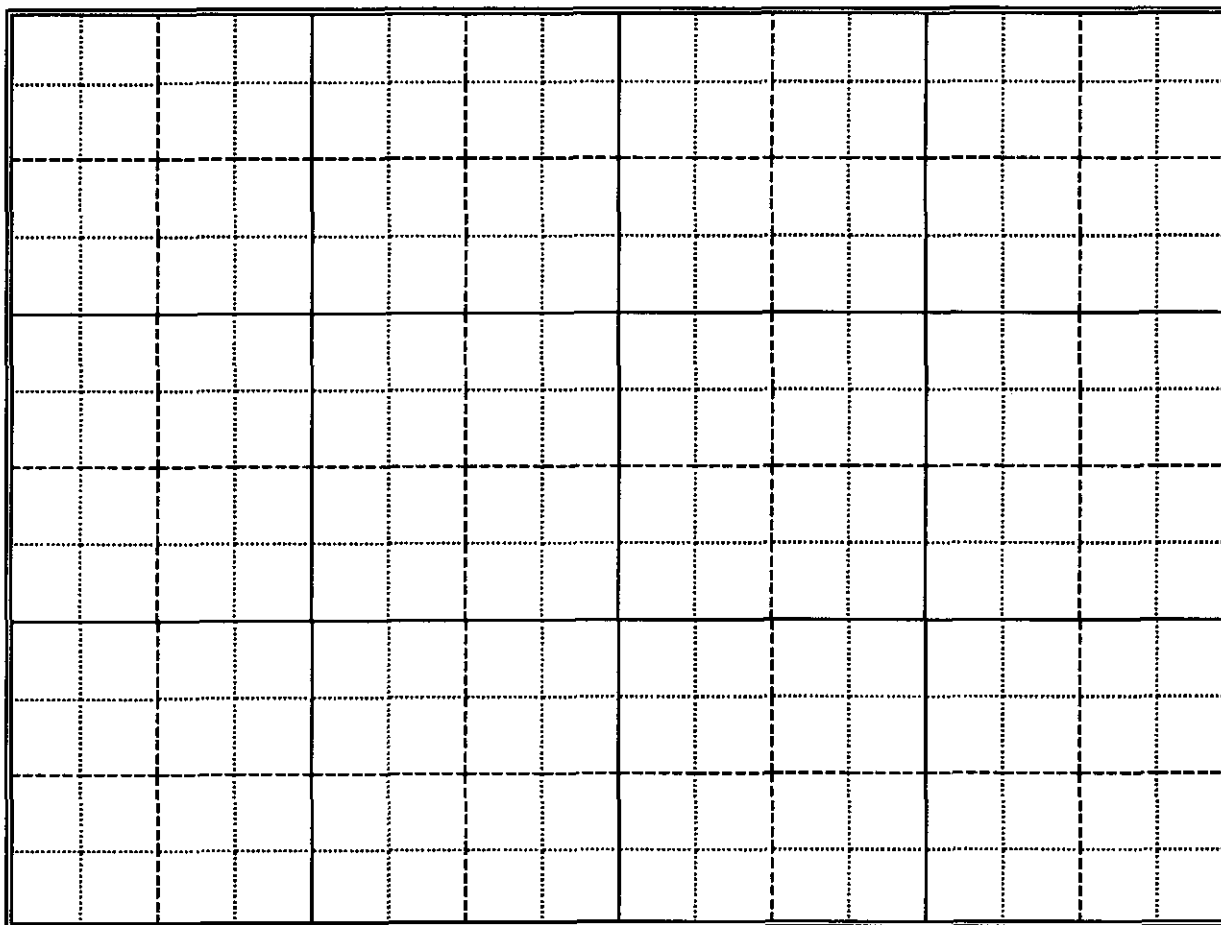
Indicate Method of Determination

TWP	RGE	SEC	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	

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3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe i.d. as applicable.



Scale: 1" = _____

_____ Copy of USGS Quadrangle Attached Showing location(s) of point(s) of diversion and place(s) of use (required).

_____ Aerial Photo Attached (required for irrigation of 10+ acres)

_____ Photo of Diversion and System Attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2. Measurements: See USGS Discharge Records

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OCT 6 1981

[illegible]

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F. FLOW CALCULATIONS

Measured Method:

☒ Additional Computation Sheets Attached**G. VOLUME CALCULATIONS****1. Volume Calculations for Irrigation:**

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \underline{\hspace{2cm}}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = \underline{\hspace{2cm}}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \underline{\hspace{2cm}}$$

2. Volume Calculations for Other Uses:

$$\frac{1 \text{ cfs}}{941 \text{ cfs}} = \frac{1.9835 \text{ af/day}}{x} \text{ then } x = 1866.5 \text{ af/day}$$

$$1866.5 \text{ af/day} \times 273 \text{ days} = 509547 \text{ af}$$

(11/01 to 7/31)

$$\frac{1 \text{ cfs}}{470 \text{ cfs}} = \frac{1.9835 \text{ af/day}}{x} \text{ then } x = 932 \text{ af/day}$$

$$932 \text{ af/day} \times 92 \text{ days} = 85766.5 \text{ af}$$

(8/1 to 10/31)

H. RECOMMENDATIONS**1. Recommended Amounts**

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Minimum Instream Flow	11/01	07/31	941 cfs	509547
Minimum Instream Flow	08/01	10/31	470 cfs	85766.5
Totals:			941 cfs	595313.5 afa

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATIONField Examiner's Name David A. Page Date 1-14-99

Reviewer _____ Date _____

SEAL

MICROFILMED

C

116°30'

D

E

15'

F

G

H

116°00'

2490 R. 2 W. 1080

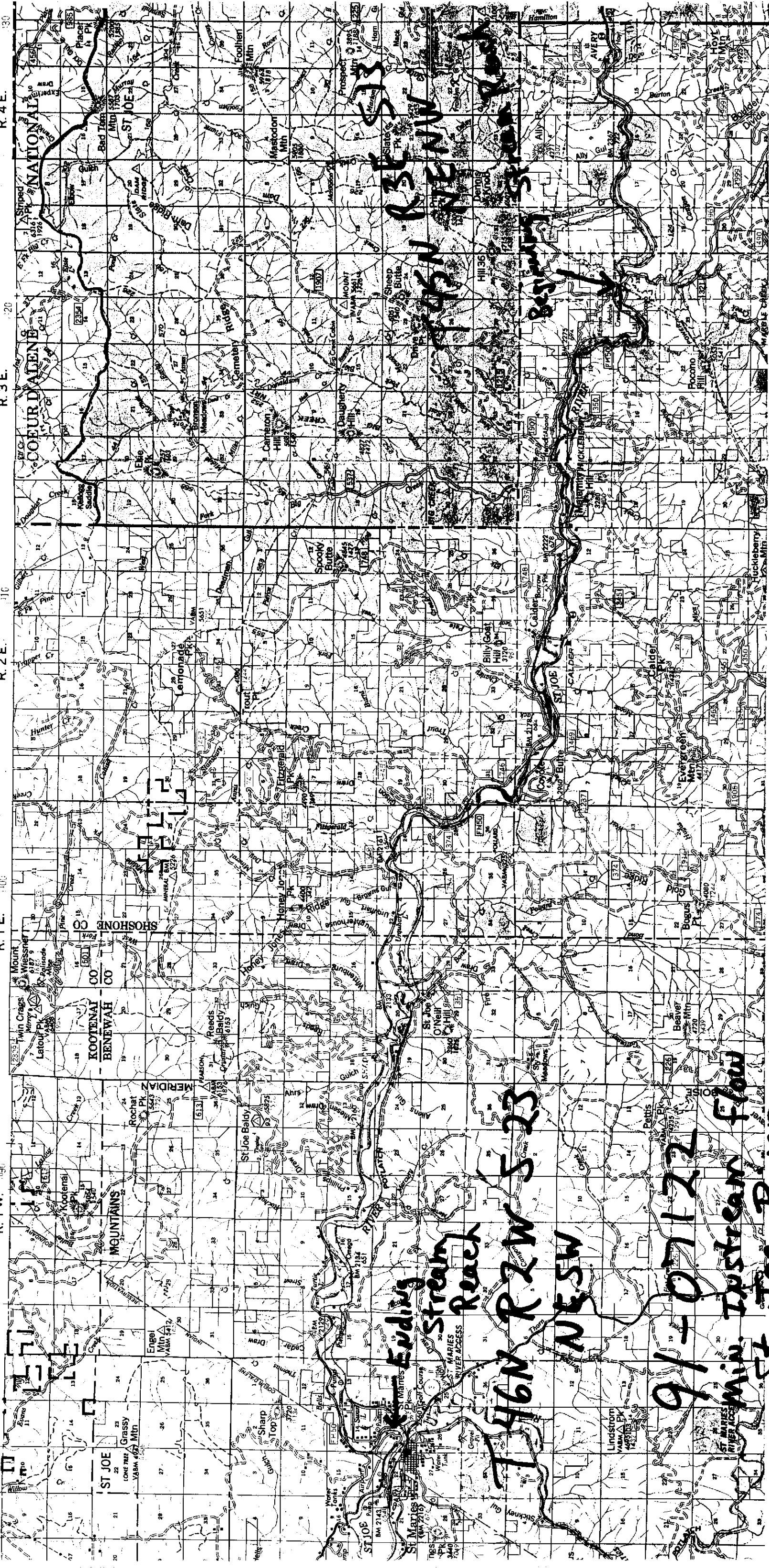
R. 1 W. 1090

R. 1 E. 1000

R. 2 E. 1100

R. 3 E. 1200

R. 4 E. 1300



Ending Stream Reach

T46N R2W S23 NE SW

91-07122
St. Joe River

12414500 ST. JOE RIVER AT CALDER, ID

LOCATION.--Lat 47°16'29", long 116°11'17", in NW¼NW¼SE¼ sec.3, T.45 N., R.2 E., Shoshone County, Hydrologic Unit 17010304, on right bank, 125 ft downstream from road bridge at Calder, and at mile 42.9.

DRAINAGE AREA.--1,030 mi², approximately.

PERIOD OF RECORD.--April 1911 to September 1912 (published as "near Calder"), July 1920 to current year.

REVISÉD RECORDS.--WSP 1182: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,171.76 ft above sea level. Apr. 14, 1911, to Sept. 30, 1912, nonrecording gage at site 2.5 mi downstream at different datum. Nonrecording gage at present site July 13 to Dec. 21, 1920, water-stage recorder at present site thereafter. Datum July 13, 1920, to Sept. 30, 1966, 75 ft lower than present datum, and datum Oct. 1, 1966, to Aug. 14, 1972, 15 ft lower than present datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Station equipment includes telemetry.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,000 ft³/s Dec. 23, 1933, computed on basis of slope between gages downstream; maximum gage height, 18.1 ft, Apr. 18, 1938, from floodmark, present datum; minimum discharge, 87 ft³/s Nov. 29, 1979; minimum gage height, 3.43 ft, Dec. 5, 1928, present datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 31	1245	(a)	*13.80	Apr. 28	0015	20,700	13.05
Jan. 1	1430	12,600	11.40	May 14	0715	*25,100	13.42
Mar. 21	0145	10,100	10.66	June 1	0445	22,700	12.98

(a) backwater from ice

Minimum, 315 ft³/s Oct. 12, gage height, 5.30 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	353	395	698	9430	e1700	1350	3500	10000	21600	4740	1280	594
2	344	358	652	7720	e1800	1350	3190	8550	16500	4400	1240	584
3	342	360	603	6390	e1800	1270	3250	7930	13200	4010	1190	581
4	338	402	514	4680	e1600	1220	3080	8750	12700	3800	1130	652
5	350	422	547	3580	e1500	1160	2800	9450	12800	3730	1100	595
6	357	396	560	2920	e1400	1160	2650	10400	11600	3740	1070	595
7	340	404	534	2590	e1300	1310	2690	11300	10300	3520	1030	563
8	335	391	628	2270	e1300	1400	2840	11000	9990	3320	1010	542
9	332	419	1190	2070	e1400	1380	2850	11500	9840	3630	970	527
10	327	404	1540	1980	e1300	1520	2890	14400	9950	3770	941	515
11	323	395	2180	1900	e1300	1510	2760	17800	10600	3320	908	539
12	320	404	1590	e1500	1300	1520	2750	19600	10800	3020	877	558
13	338	422	1230	e1300	1190	1430	3050	22200	9530	2820	862	521
14	424	522	1040	e1200	1200	1300	3230	24000	9280	2690	855	504
15	655	556	890	e1100	1750	1270	3290	22800	9300	2570	820	617
16	613	499	e650	e1100	1920	1640	3920	22800	9120	2470	817	973
17	442	462	e550	e1200	2010	2310	5680	22200	8440	2410	795	877
18	436	506	e500	e1300	2140	2790	6550	22300	7930	2320	772	831
19	639	571	e550	e1400	2320	3430	6630	19400	7150	2230	776	683
20	538	1340	e600	e1400	2350	6830	10900	16600	6350	2200	737	594
21	430	906	e600	e1300	2110	8730	14000	15200	5730	2060	755	552
22	432	783	e550	e1200	1920	6480	10600	13600	5420	2020	706	525
23	469	745	e500	e1200	1730	5520	9790	12800	5040	1870	678	605
24	553	638	e480	e1100	1600	4760	6320	13300	4780	1770	828	498
25	662	626	e440	e1000	1590	4440	9430	14100	4450	1680	918	490
26	512	584	e420	e950	1620	5130	10200	13000	4360	1600	721	495
27	431	565	e420	e900	1570	6470	15800	12300	4280	1530	670	546
28	403	847	e460	e1000	1420	5830	18200	12400	4140	1470	648	553
29	459	878	e500	e1100	---	4770	13300	13300	4270	1420	638	502
30	510	713	e1000	e1200	---	4110	11300	14300	4120	1410	620	481
31	436	---	e3200	e1500	---	3840	---	---	---	1340	605	---
TOTAL	13445	16893	25816	69480	46140	97230	200640	464780	263580	82880	26967	17614
MEAN	434	563	833	2241	1648	3135	6688	14990	8786	2674	870	587
MAX	662	1340	3200	9430	2350	8730	18200	24000	21600	4740	1280	973
MIN	320	358	420	900	1190	1160	2650	7930	4120	1340	605	481
AC-PT	26670	33510	51210	137800	91520	192900	398000	921900	522800	164400	53490	34940
CFPM	.42	.55	.81	2.18	1.60	3.05	6.49	14.6	8.53	2.60	.84	.57
IN.	.49	.61	.93	2.51	1.67	3.51	7.25	16.79	9.52	2.99	.97	.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1997, BY WATER YEAR (WY)

MEAN	556	1014	1382	1195	1569	2082	5128	8086	4599	1369	608	476
MAX	1621	6025	8887	5442	6933	6414	10530	14990	13040	3251	953	839
(WY)	1928	1928	1934	1934	1996	1934	1925	1997	1974	1950	1950	1968
MIN	273	258	288	204	239	539	2073	3285	1154	554	356	316
(WY)	1998	1930	1953	1929	1929	1964	1975	1941	1926	1926	1940	1987

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1911 - 1997

ANNUAL TOTAL	1069424		1325465			
ANNUAL MEAN	2922		3631		2156	
HIGHEST ANNUAL MEAN					3955	1974
LOWEST ANNUAL MEAN					1059	1944
HIGHEST DAILY MEAN	33900	Feb 9	24000	May 14	40000	Dec 23 1933
LOWEST DAILY MEAN	320	Oct 12	320	Oct 12	100	Nov 27 1952
ANNUAL SEVEN-DAY MINIMUM	331	Oct 7	331	Oct 7	154	Nov 23 1952
ANNUAL RUNOFF (AC-FT)	2121000		2629000		1707000	
ANNUAL RUNOFF (CFSM)	2.84		3.53		2.29	
ANNUAL RUNOFF (INCHES)	38.62		47.87		31.08	
10 PERCENT EXCEEDS	7180		10900		6470	
50 PERCENT EXCEEDS	1760		1380		1000	
90 PERCENT EXCEEDS	418		441		375	

e Estimated

SPOKANE RIVER BASIN

12414500 ST. JOE RIVER AT CALDER, ID

LOCATION.--Lat 47°16'29", long 116°11'17", in NW¼NW¼SE¼ sec.3, T.45 N., R.2 E., Shoshone County, Hydrologic Unit 17010304, on right bank, 125 ft downstream from road bridge at Calder, and at mile 42.9.

DRAINAGE AREA.--1.030 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1911 to September 1912 (published as "near Calder"), July 1920 to current year.

REVISED RECORDS.--WSP 1182: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,171.76 ft above sea level. Apr. 14, 1911, to Sept. 30, 1912, nonrecording gage at site 2.5 mi downstream at different datum. Nonrecording gage at present site July 13 to Dec. 21, 1920, water-stage recorder at present site thereafter. Datum July 13, 1920, to Sept. 30, 1966, 75 ft lower than present datum, and datum Oct. 1, 1966, to Aug. 14, 1972, 15 ft lower than present datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Station equipment includes telemetry.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,000 ft³/s Dec. 23, 1933, computed on basis of slope between gages downstream; maximum gage height, 18.1 ft, Apr. 18, 1938, from floodmark, present datum; minimum discharge, 87 ft³/s Nov. 29, 1979; minimum gage height, 3.43 ft, Dec. 5, 1928, present datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	0600	32,500	14.55	Feb. 19	0045	10,700	11.03
Feb. 9	1345	*39,200	*15.22	Apr. 24	1400	23,000	13.42
				May 18	2100	13,300	11.78

Minimum daily, 359 ft³/s Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	609	2750	23300	2450	e800	e2900	3040	5860	5700	2340	802	449
2	489	6660	17800	2360	e800	e2900	3830	5420	5690	2280	776	442
3	781	6680	11700	2830	e850	2810	3810	4990	6300	2230	798	438
4	1200	e720	9380	2670	e950	2830	3600	4640	7020	2150	800	436
5	701	809	7510	2410	e1300	2660	3460	4310	7240	2040	872	452
6	552	815	6420	2330	e2500	2460	3580	4080	6580	1910	871	480
7	502	738	5680	2380	e8000	2380	4120	3920	6310	1800	771	455
8	478	1520	4960	2940	18700	2330	6030	3770	6770	1720	726	430
9	469	4490	4700	3030	33900	2310	8200	3630	6890	1650	696	419
10	468	3100	4600	2950	20300	2400	9700	3530	6220	1580	671	407
11	660	3420	5320	2770	11300	2740	9510	3560	5640	1510	648	399
12	1440	4940	6410	2650	8050	3120	8710	4080	5190	1440	626	388
13	964	4000	9000	2540	6510	3380	7540	5000	4860	1390	611	381
14	744	3730	8560	2510	5670	3470	6610	6970	4730	1340	610	406
15	648	3810	7490	3090	5100	3620	6060	9290	4650	1290	604	452
16	661	3910	6550	5500	4780	3570	6290	9770	4530	1240	581	495
17	922	3940	5840	5200	4710	3420	7360	9710	4350	1200	561	443
18	1390	3850	5290	4110	7710	3270	7150	12700	4010	1160	551	423
19	1240	3530	4860	3790	9950	3190	6460	12100	3590	1140	545	433
20	1020	3200	4480	3360	8320	3140	5950	10400	3280	1110	537	466
21	954	2930	4150	3110	6990	3080	5500	9040	3050	1080	542	437
22	885	2740	3820	2790	6080	3100	5110	8620	3110	1040	530	439
23	798	2670	3550	2620	5420	3150	6110	8160	2960	1000	513	455
24	750	3570	3410	2536	4810	2970	19000	7570	2990	967	496	417
25	734	6360	3300	2380	4330	2740	16300	7270	2860	936	483	399
26	1700	7080	3130	2270	3930	2690	11700	7440	2760	907	474	387
27	1540	6250	2900	e2100	e3400	2580	9290	7710	2780	880	467	380
28	1260	5970	2930	e2000	e3000	2430	7760	7780	2720	856	535	373
29	1120	18000	2980	e1400	e2900	2350	6810	7300	2540	838	532	365
30	1010	29700	2810	e1300	...	2290	6160	6520	2410	885	480	359
31	919	---	2650	e1100	---	2220	...	5950	...	888	459	...
TOTAL	27608	137882	195490	85470	201060	98500	214750	211090	137730	42797	19168	12705
MEAN	891	4596	6306	2757	6933	2855	7158	6809	4591	1381	618	423
MAX	1700	29700	23300	5500	33900	3620	19000	12700	7240	2340	872	495
MIN	468	660	2660	1100	800	2220	3040	3530	2410	838	459	359
AC-FT	54760	273500	387800	169500	398800	175500	426000	418700	273200	84890	38020	25200
CFSM	.86	4.46	6.12	2.68	6.73	2.77	6.95	6.61	4.46	1.34	.60	.41
IN.	1.00	4.98	7.06	3.09	7.26	3.20	7.76	7.62	4.97	1.55	.69	.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1996, BY WATER YEAR (WY)

	MEAN	558	1020	1389	1182	1568	2068	5309	7997	4545	1352	605	475
MAX	1621	6025	8887	5442	6933	6414	10530	13900	13040	3251	953	839	
(WY)	1928	1928	1934	1934	1996	1934	1925	1971	1974	1950	1950	1968	
MIN	273	258	288	204	239	539	2073	3285	1154	554	356	316	
(WY)	1988	1930	1953	1929	1929	1964	1975	1941	1926	1926	1940	1987	

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR	FOR 1996 WATER YEAR	WATER YEARS 1911 - 1996
ANNUAL TOTAL	1069126	1374250	
ANNUAL MEAN	2929	3755	2340
HIGHEST ANNUAL MEAN			3955
LOWEST ANNUAL MEAN			1059
HIGHEST DAILY MEAN	29700	Nov 30	40000
LOWEST DAILY MEAN	371	Sep 25	100
ANNUAL SEVEN-DAY MINIMUM	387	Sep 21	154
ANNUAL RUNOFF (AC-FT)	2121000	2726000	1695000
ANNUAL RUNOFF (CFSM)	2.84	3.65	2.27
ANNUAL RUNOFF (INCHES)	38.61	49.63	30.86
10 PERCENT EXCEEDS	5530	7710	6430
50 PERCENT EXCEEDS	2610	2840	1000
90 PERCENT EXCEEDS	479	482	374

e Estimated

SPOKANE RIVER BASIN

12414500 ST. JOE RIVER AT CALDER, ID

LOCATION.--Lat 47°16'29", long 116°11'17", in NW¼NW¼SE¼ sec.3, T.45 N., R.2 E., Shoshone County, Hydrologic Unit 17010304, on right bank, 125 ft downstream from road bridge at Calder, and at mile 42.9.

DRAINAGE AREA.--1,030 mi², approximately.

PERIOD OF RECORD.--April 1911 to September 1912 (published as "near Calder"), July 1920 to current year.

REVISED RECORDS.--WSP 1182: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,171.76 ft above sea level. Apr. 14, 1911, to Sept. 30, 1912, nonrecording gage at site 2.5 mi downstream at different datum. Nonrecording gage at present site July 13 to Dec. 21, 1920, water-stage recorder at present site thereafter. Datum July 13, 1920, to Sept. 30, 1966, 75 ft lower than present datum, and datum Oct. 1, 1966, to Aug. 14, 1972, 15 ft lower than present datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Station equipment includes telemetry.

Peak discharges greater than a base discharge of 8,500 ft³/s are available.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1994 TO SEPTEMBER 1995
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	286	1790	2700	e490	5940	4130	2860	3250	5200	1600	654	456
2	282	877	1700	e480	6320	3700	2840	3650	5100	1590	639	447
3	279	577	1080	e460	5080	3410	2700	4380	4990	1920	627	440
4	278	489	707	e460	3970	3180	2710	4520	4680	1750	615	436
5	278	460	e450	e470	3320	2890	2940	4700	4870	1560	601	436
6	277	431	e520	e480	3020	2660	3120	4950	4840	1460	586	455
7	275	415	e580	e500	2960	2420	3360	5090	4220	1440	772	461
8	274	391	e560	e550	2880	2300	4010	5260	3820	1350	840	505
9	273	377	e550	e950	2660	2750	3890	5550	3490	1290	685	456
10	273	392	e530	e1600	2490	3700	3610	5830	3280	1310	623	437
11	297	404	e510	e2400	2240	4790	3440	6180	3270	1320	614	435
12	306	413	e480	2310	1960	5500	3280	6310	3180	1250	617	425
13	285	401	e470	2030	e1550	5050	3520	5720	3110	1180	598	410
14	297	377	e450	2180	e1660	4600	3800	5130	3000	1120	580	404
15	343	362	e440	2660	e1630	4760	3680	5010	2890	1060	639	398
16	311	362	439	2340	e1650	4880	3510	5190	2790	1030	794	392
17	292	371	494	1970	1620	4650	3360	5630	2810	982	682	387
18	285	302	e780	1690	1640	4510	3220	5610	2690	942	683	384
19	282	293	e1050	1500	6560	5040	3160	5520	2610	909	598	391
20	280	377	882	1290	18700	5180	2990	5360	2640	896	560	436
21	373	e320	738	e1050	12500	5300	2800	5350	2570	861	539	402
22	409	e270	e660	e940	9560	4960	2680	5250	2350	842	520	387
23	320	e250	e600	e820	7470	4660	2670	5120	2240	823	513	383
24	300	e340	e580	e900	6230	4300	2850	5000	2150	795	505	376
25	290	e440	607	e1050	6020	3880	3070	4970	2080	772	497	371
26	294	e420	628	e1020	5860	3510	3270	4750	2010	763	489	380
27	1190	371	904	e960	5270	3240	3450	4440	1920	792	479	408
28	1420	357	1300	857	4640	3010	3490	4350	1820	736	473	473
29	688	348	1250	770	---	2870	3440	4590	1730	711	473	567
30	477	561	1010	812	---	2770	3330	5020	1660	684	484	522
31	520	---	e630	1680	---	2720	---	5280	---	674	466	---
TOTAL	12034	13538	24279	37669	135420	121320	97050	156960	94010	34412	18445	12860
MEAN	388	451	783	1215	4836	3914	3235	5063	3134	1110	595	429
MAX	1420	1790	2700	2660	18700	5500	4010	6310	5200	1920	840	567
MIN	273	250	439	460	1550	2300	2670	3250	1660	674	466	371
AC-FT	23870	26850	48160	74720	268600	240600	192500	311300	186500	68260	36590	25510
CFSM	.38	.44	.76	1.18	4.70	3.80	3.14	4.92	3.04	1.08	.58	.42
IN.	.43	.49	.88	1.36	4.89	4.38	3.51	5.67	3.40	1.24	.67	.46

STATISTICS OF MONTHLY MEAN DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	554	973	1325	1161	1495	2058	5284	8012	4544	1352	605	476
MAX	1621	6025	8887	5442	4836	6414	10530	13900	13040	3251	953	839
(WY)	1928	1928	1934	1934	1995	1934	1925	1971	1974	1950	1950	1968
MIN	273	258	288	204	239	539	2073	3285	1154	554	356	316
(WY)	1988	1930	1953	1929	1929	1964	1975	1941	1926	1926	1940	1987

SUMMARY STATISTICS

FOR 1994 CALENDAR YEAR

FOR 1995 WATER YEAR

PERIOD OF RECORD

ANNUAL TOTAL	470327	757997	2321
ANNUAL MEAN	1289	2077	3955
HIGHEST ANNUAL MEAN			1974
LOWEST ANNUAL MEAN			1059
HIGHEST DAILY MEAN	8670	18700	40000
LOWEST DAILY MEAN	250	250	100
ANNUAL SEVEN-DAY MINIMUM	275	275	154
INSTANTANEOUS PEAK FLOW		21000	^a 53000
INSTANTANEOUS PEAK STAGE		13.13	^b 18.10
INSTANTANEOUS LOW FLOW			^c 87
ANNUAL RUNOFF (AC-FT)	932900	1503000	1681000
ANNUAL RUNOFF (CFSM)	1.25	2.02	2.25
ANNUAL RUNOFF (INCHES)	16.99	27.38	30.62
10 PERCENT EXCEEDS	3160	5030	6390
50 PERCENT EXCEEDS	603	1120	990
90 PERCENT EXCEEDS	306	371	373

a Computed on basis of slope between gages downstream.

b From floodmark, present datum.

c Minimum gage height, 3.43 ft, Dec. 5, 1928, present datum.

e Estimated

SPOKANE RIVER BASIN

81

12414500 ST. JOE RIVER AT CALDER, ID

LOCATION.--Lat 47°16'29", long 116°11'17", in NW¼NW¼SE¼ sec.3, T.45 N., R.2 E., Shoshone County, Hydrologic Unit 17010304, on right bank, 125 ft downstream from road bridge at Calder, and at mile 42.9.

DRAINAGE AREA.--1,030 mi², approximately.

PERIOD OF RECORD.--April 1911 to September 1912 (published as "near Calder"), July 1920 to current year.

REVISED RECORDS.--WSP 1182: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,171.76 ft above sea level. Apr. 14, 1911, to Sept. 30, 1912, nonrecording gage at site 2.5 mi downstream at different datum. Nonrecording gage at present site July 13 to Dec. 21, 1920, water-stage recorder at present site thereafter. Datum July 13, 1920, to Sept. 30, 1966, 75 ft lower than present datum, and datum Oct. 1, 1966, to Aug. 14, 1972, 15 ft lower than present datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Station equipment includes telemetry.

Peak discharges greater than a base discharge of 8,500 ft³/s are available.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	447	523	e430	404	e370	632	2900	3730	2000	948	491	321
2	443	437	e630	422	e360	984	2860	3540	1940	977	482	319
3	443	423	e550	557	e350	1800	3260	3440	1790	960	477	334
4	443	456	521	637	e340	2930	3390	3490	1880	908	497	581
5	439	429	e520	1040	e350	3010	3090	3510	1780	881	490	545
6	438	412	e430	822	e365	2300	2850	3780	1910	864	452	388
7	501	405	395	651	e310	1810	2690	4220	1950	847	440	354
8	534	413	452	587	e250	1550	2480	4980	1790	818	436	342
9	472	390	650	556	e310	1380	2420	5620	1700	784	429	339
10	446	394	586	565	e365	1350	2450	5810	1610	763	419	356
11	439	371	564	564	e395	1320	2560	5530	1540	733	410	347
12	434	325	568	635	e420	1230	3080	5600	1500	714	407	344
13	441	403	e500	789	e455	1230	3570	5170	1560	706	404	332
14	464	394	461	970	488	1290	3400	4420	1600	695	392	324
15	532	345	444	1010	462	1560	3020	3990	1570	715	384	329
16	545	389	e380	924	e470	2060	3150	3740	1510	677	375	329
17	505	410	355	826	449	2140	4240	3380	1570	654	371	320
18	480	421	384	758	500	2070	6310	3170	1430	633	368	310
19	459	386	389	705	464	2190	7650	2970	1380	620	363	306
20	446	346	369	651	430	1940	8360	3140	1320	606	357	305
21	438	361	360	e590	408	1810	8660	3160	1280	595	352	298
22	434	404	345	608	409	1650	8670	2960	1240	581	349	292
23	427	265	e340	603	e405	1510	7590	2790	1200	566	356	288
24	424	e135	e290	630	e390	1370	6960	2680	1150	635	351	287
25	416	e130	e270	638	e370	1300	6840	2620	1120	588	344	282
26	413	e195	e260	652	404	1280	6050	2590	1190	552	340	277
27	410	e290	e280	636	426	1320	5230	2510	1180	534	340	273
28	413	e360	e300	599	461	1470	4590	2330	1070	518	332	273
29	419	e380	e320	556	---	1740	4160	2290	1020	507	331	273
30	411	e405	e340	520	---	1990	3930	2140	983	519	329	282
31	430	---	e390	e405	---	2180	---	1960	---	526	328	---
TOTAL	13986	10967	13073	20510	11176	52606	136390	111260	44763	21624	12196	9951
MEAN	451	366	422	662	399	1697	4546	3589	1492	698	393	332
MAX	545	523	650	1040	500	3010	8670	5810	2000	977	497	581
MIN	410	105	260	404	250	632	2420	1960	983	507	328	273
AC-FT	27740	21750	25930	40680	22170	104300	270500	220700	88790	42890	24190	19740
CFSM	.44	.35	.41	.64	.39	1.65	4.41	3.48	1.45	.68	.38	.32
IN.	.51	.40	.47	.74	.40	1.90	4.93	4.02	1.62	.78	.44	.36

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1994, BY WATER YEAR (WY)

MEAN	556	980	1332	1160	1451	2033	5312	8051	4563	1355	605	476
MAX	1621	6025	8887	5442	4373	6414	10530	13900	13040	3251	953	839
(WY)	1928	1928	1934	1934	1982	1934	1925	1971	1974	1950	1950	1968
MIN	273	258	288	204	239	539	2073	3285	1154	554	356	316
(WY)	1988	1930	1953	1929	1929	1964	1975	1941	1926	1926	1940	1987

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR	FOR 1994 WATER YEAR	WATER YEARS 1911 - 1994
ANNUAL TOTAL	692565	458502	
ANNUAL MEAN	1897	1256	2324
HIGHEST ANNUAL MEAN			3955
LOWEST ANNUAL MEAN			1059
HIGHEST DAILY MEAN	13200	May 14	40000
LOWEST DAILY MEAN	105	Nov 24	100
ANNUAL SEVEN-DAY MINIMUM	246	Nov 23	154
INSTANTANEOUS PEAK FLOW			53000
INSTANTANEOUS PEAK STAGE			18.10
INSTANTANEOUS LOW FLOW			87
ANNUAL RUNOFF (AC-FT)	1374000	909400	1684000
ANNUAL RUNOFF (CFSM)	1.84	1.22	2.26
ANNUAL RUNOFF (INCHES)	25.01	16.56	30.66
10 PERCENT EXCEEDS	5320	3160	6440
50 PERCENT EXCEEDS	664	545	990
90 PERCENT EXCEEDS	390	330	373

- a Computed on basis of slope between gages downstream.
- b From floodmark, present datum.
- c Minimum gage height, 3.43 ft, Dec. 5, 1928, present datum.
- e Estimated

SPOKANE RIVER BASIN

12414500 ST. JOE RIVER AT CALDER, ID

LOCATION.--Lat 47°16'29", long 116°11'17", in NW¹/₄NW¹/₄SE¹/₄ sec.3, T.45 N., R.2 E., Shoshone County, Hydrologic Unit 17010304, on right bank, 125 ft downstream from road bridge at Calder, and at mile 42.9.

DRAINAGE AREA.--1,030 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1911 to September 1912 (published as "near Calder"), July 1920 to current year.

REVISED RECORDS.--WSP 1182: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,171.76 ft above sea level. Apr. 14, 1911, to Sept. 30, 1912, nonrecording gage at site 2.5 mi downstream at different datum. Nonrecording gage at present site July 13 to Dec. 21, 1920, water-stage recorder at present site thereafter. Datum July 13, 1920, to Sept. 30, 1966, 75 ft lower than present datum, and datum Oct. 1, 1966, to Aug. 14, 1972, 15 ft lower than present datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Station equipment includes telemetry.

Peak discharges greater than a base discharge of 8,500 ft³/s are available.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	464	675	e435	e465	e630	e480	3560	5510	5110	1450	1210	620
2	451	744	e405	e455	e580	e490	4000	6140	4670	1510	1170	604
3	450	574	e375	e460	e480	e500	4570	6620	4440	1780	1130	587
4	452	516	e350	e470	e420	511	5970	6990	4060	1670	1090	572
5	443	502	e380	e460	e440	632	6100	6820	3830	1670	1060	559
6	428	484	e420	e440	e450	838	5250	7190	3560	1600	1040	549
7	414	652	e460	e390	e450	1290	4540	7460	3470	1560	1010	545
8	407	1100	e490	e370	e440	1620	4250	6910	3270	1570	967	537
9	402	965	e505	e390	e460	1490	5230	6120	2990	1500	929	531
10	397	791	e515	e410	e480	e1320	5470	5860	2870	1440	893	523
11	393	709	e510	e405	e500	e1250	5070	7050	2770	1440	869	518
12	389	650	e505	e385	e520	e1150	4540	10100	2760	1360	847	538
13	447	619	e500	e360	e540	e1100	4080	12400	2570	1350	822	563
14	467	639	e490	e390	e480	1180	3820	13200	2390	1540	813	525
15	417	623	e480	e405	e430	2820	3620	13100	2360	1520	897	553
16	398	608	e450	e390	e380	3380	3420	11700	2480	1440	873	574
17	413	597	e480	e425	e420	2440	3460	10600	2270	1540	890	525
18	421	647	e455	e415	e450	2540	4120	9520	2150	1520	838	510
19	412	668	e430	e400	e540	3300	4390	9070	2060	1440	782	502
20	399	671	e460	e420	e590	3210	4130	8790	1980	1560	748	501
21	391	633	e475	e450	e560	3040	4080	8530	1990	1570	855	505
22	402	682	e480	e460	e540	2840	4140	7540	2140	1520	802	499
23	389	668	e480	e430	e520	3660	4310	6600	2030	1580	729	490
24	377	498	e475	e580	e490	6030	4360	5850	1920	1620	698	482
25	372	e370	e445	e860	e480	5160	4370	5420	1790	1540	680	477
26	367	e365	e470	e1300	e460	4720	5790	5890	1700	1550	664	469
27	362	e425	e485	e1250	e470	4640	5950	5720	1680	1530	650	466
28	358	e475	e480	e950	e475	4710	5490	5840	1600	1430	656	462
29	378	e460	e460	e820	---	4600	5090	5730	1610	1370	781	457
30	430	e450	e430	e740	---	4080	5170	5010	1510	1350	682	455
31	487	---	e450	e580	---	3570	---	4600	---	1270	635	---
TOTAL	12777	18460	14225	16825	13685	78591	138340	237880	90030	46780	26710	15698
MEAN	412	615	459	543	489	2535	4611	7674	2668	1509	862	523
MAX	487	1100	515	1300	630	6030	5100	13200	5110	1780	1210	620
MIN	358	365	350	360	380	480	3420	4600	1510	1270	635	455
AC-FT	25340	36620	28220	33370	27140	155900	274400	471800	158700	92790	52980	31440
CFSM	.40	.60	.45	.53	.47	2.46	4.48	7.45	2.59	1.47	.84	.51
IN.	.46	.67	.51	.61	.49	2.84	5.00	8.59	2.89	1.69	.96	.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1993, BY WATER YEAR (WY)

	MEAN	557	988	1344	1167	1465	2037	5322	8111	4604	1364	608	478
MAX	1621	6025	8887	5442	4373	6414	10530	13900	13040	3251	993	839	
(WY)	1928	1928	1934	1934	1982	1934	1925	1971	1974	1950	1950	1968	
MIN	273	258	288	204	239	539	2073	3285	1154	554	356	316	
(WY)	1988	1930	1953	1929	1929	1964	1975	1941	1926	1926	1940	1987	

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1911 - 1993

ANNUAL TOTAL	519630	700001	2339
ANNUAL MEAN	1420	1918	3955
HIGHEST ANNUAL MEAN			1059
LOWEST ANNUAL MEAN			40000
HIGHEST DAILY MEAN	6350	May 1	100
LOWEST DAILY MEAN	210	Jan 20	134
ANNUAL SEVEN-DAY MINIMUM	295	Jan 8	134
INSTANTANEOUS PEAK FLOW			53000
INSTANTANEOUS PEAK STAGE			18.10
INSTANTANEOUS LOW FLOW			87
ANNUAL RUNOFF (AC-FT)	1031000	1388000	1694000
ANNUAL RUNOFF (CFSM)	1.38	1.86	2.27
ANNUAL RUNOFF (INCHES)	18.77	25.28	30.85
10 PERCENT EXCEEDS	3440	5320	6470
50 PERCENT EXCEEDS	707	709	998
90 PERCENT EXCEEDS	365	414	374

a Computed on basis of slope between gages downstream.

b From floodmark, present datum.

c Minimum gage height, 3.43 ft, Dec. 5, 1928, present datum.

e Estimated

**ANALYSIS SHEET
FOR
PROOF OF BENEFICIAL USE**

Permit No. 91-87122 Reviewed by QJ Date 10-22-98

GENERAL CONSIDERATIONS

yes Name same as permit?

yes Address same as permit?

yes Proof timely received?
If not, complete calculation below.

TYPES OF USE

min. stream flow

Correct Uses? yes

SOURCE OF WATER

☒ Surface water source

☐ Ground water source

☐ Drilling permit required?

☐ Copy in the file? Drilling Permit No. _____

☐ Amount paid for permit

☐ Well log in the file?

_____ Correct?

LICENSE EXAMINATION FEE

NO Required? - exempt

1 Amount Submitted

1 Correct?

MEASURING DEVICE

☐ Required?

☐ Installed?

☐ Waiver requested?

PRIORITY CALCULATION

Date proof received	_____	_____
Date proof due	_____	_____
No. of days late	_____	_____
Priority Date	_____	_____
New Priority Date	_____	_____

DEFICIENCIES OR ACTION ITEMS

Proof Acceptable

DATA ENTRY

New Address _____ Proof Made 8-31-98



State of Idaho

DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, P.O. Box 83720, Boise, Idaho 83720-0098

Phone: (208) 327-7900 FAX: (208) 327-7866

PHILIP E. BATT
GOVERNOR

KARL J. DREHER
DIRECTOR

October 22, 1998

IDAHO WATER RESOURCE BOARD
ATTN JOHN BEAL
P O BOX 83720
BOISE ID 83720-0098

PROOF ACKNOWLEDGMENT LETTER

RE: PERMIT NO. 91-07122

Dear Permit Holder:

The department acknowledges receipt of the proof of beneficial use form submitted for the above referenced permit.

The next step in the process of recommending a minimum stream flow is for the department to review the information submitted and make a recommendation.

Sincerely,

JULIE L. YARBROUGH

Senior Secretary, Water Allocation Bureau

c: IDWR - Northern Region

MICROFILMED

OCT 28 1998

MEMORANDUM

To: Glen Saxton
Water Right Files 96-08730, 91-07122 and 92-07200

From: John Beal *John Beal*

Date: April 17, 1998

Re: Minimum Stream Flow Water Rights presented to the 1998 Legislature

The minimum stream flow water rights for the Pend Oreille, St. Joe and St. Maries rivers were sent to the Idaho legislature this year. Bill Graham gave a presentation before the Senate Resource and Environment Committee early in the session. It does not appear that a joint resolution was prepared for approval of these flows.

In accordance with Idaho Code 42-1503, if the Legislature does not act on the minimum stream flow application prior to the end of the legislative session, the application shall be considered approved.

Permits have been issued for these Water rights. I plan to submit proofs for them this year.

MICROFILMED

OCT 28 1998

Water Allocation Bureau
Department of Water Resources
1301 N. Orchard St.
Boise, ID 83706

Julie

Indicate type of mail
☐ Registered
☐ Insured
☒ COD
☐ Certified
☐ Express Mail

Check appropriate block for
☐ Registered Mail:
☐ With Postal Insurance
☐ Without Postal Insurance

Affix stamp here if issued as
 certificate of mailing or for
 additional copies of this bill.

POSTMARK AND DATE OF RECEIPT

Line	Number of Article	Name of Addressee, Street, and Post-Office Address	Postage	Fee	Handling Charge (if Regis.)	Act. Value	Insured Value	Due Sender If C.O.D.	R. Fee	S. D. Fee	S. H. Fee	Rest. Del. Fee	Remarks
1	590062315	CINDY ROBERTSON FISH AND GAME PO BOX 25 BOISE ID 83707											91-07122 42-07200
2	590062316	MARTI BRIDGES ID RIVERS UNITED PO BOX 633 BOISE ID 83701											
3	590062317	BOB SCHLOSS CORPS OF ENGINEERS 2376 E HWY 2 OLDTOWN ID 83822											
4	590062318	BOB DUNNAGAN TROUT UNLIMITED 361 EVERGREEN RD SANDPOINT ID 83862											
5	590062319	STEVEN A FRY WASHINGTON WATER POWER PO BOX 4727 SPOKANE WA 99220-3727											
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
Total Number of Pieces Listed by Sender		Total Number of Pieces Received at Post Office		POSTMASTER, PER (Name of receiving employee)		The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for nonnegotiable documents under Express Mail document reconstruction insurance is \$50,000 per piece subject to a limit of \$500,000 per occurrence. The maximum indemnity payable on Express Mail merchandise insurance is \$500. The maximum indemnity payable is \$25,000 for Registered Mail, \$500 for COD and \$500 for Insured Mail. Special handling charges apply only to Third- and Fourth-Class parcels. Special delivery service also includes special handling service.							

MICROFILMED
 APR 08 1998



State of Idaho

DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, P.O. BOX 83720, Boise, Idaho 83720-0098

Phone: (208) 327-7900 FAX: (208) 327-7866

PHILIP E. BATT
GOVERNOR

KARL J. DREHER
DIRECTOR

January 12, 1998

The Honorable Michael K. Simpson
Speaker of the House
Statehouse Mail
Boise, ID 83720

RE: APPLICATION FOR PERMIT NOS. 91-07122, 92-07200 AND 96-08730 TO
ESTABLISH MINIMUM STREAM FLOWS ON THE ST. JOE RIVER, ST.
MARIES RIVER AND PEND OREILLE RIVER

Dear Mr. Simpson:

Enclosed for your consideration are copies of the above referenced applications for permit along with the final order which concludes the administrative processing of the applications. As you are aware, Section 42-1503, Idaho Code, requires that the applications be reviewed by the legislature. As defined by statute, each application "(i) shall not become finally effective until affirmatively acted upon by concurrent resolution of the Idaho Legislature; or (ii) except that if the legislature fails to act prior to the end of the regular session to which the application was submitted, the application shall be considered approved."

At the hearings I am required to conduct, there was no opposition to the establishment of these minimum stream flows.

This letter with its enclosures constitutes submittal of the applications to the legislature for approval. Please advise if you would like further information or presentation on the nature of the applications.

Sincerely,

KARL J. DREHER
Director

Enclosures

c: Mike Nugent

MICROFILMED

APR 09 1998



State of Idaho

DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, P.O. BOX 83720, Boise, Idaho 83720-0098

Phone: (208) 327-7900 FAX: (208) 327-7866

PHILIP E. BATT
GOVERNOR

KARL J. DREHER
DIRECTOR

January 12, 1998

The Honorable Jerry Twiggs
Senator Pro Tem
Statehouse Mail
Boise, ID 83720

**RE: APPLICATION FOR PERMIT NOS. 91-07122, 92-07200 AND 96-08730 TO
ESTABLISH MINIMUM STREAM FLOWS ON THE ST. JOE RIVER, ST.
MARIES RIVER AND PEND OREILLE RIVER**

Dear Senator Twiggs:

Enclosed for your consideration are copies of the above referenced applications for permit along with the final order which concludes the administrative processing of the applications. As you are aware, Section 42-1503, Idaho Code, requires that the applications be reviewed by the legislature. As defined by statute, each application "(i) shall not become finally effective until affirmatively acted upon by concurrent resolution of the Idaho Legislature; or (ii) except that if the legislature fails to act prior to the end of the regular session to which the application was submitted, the application shall be considered approved."

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Sincerely,

KARL J. DREHER
Director

Enclosures

c: Mike Nugent

MICROFILMED

APR 09 1998



State of Idaho

DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, P.O. BOX 83720, Boise, Idaho 83720-0098

Phone: (208) 327-7900 FAX: (208) 327-7866

PHILIP E. BATT
GOVERNOR

KARL J. DREHER
DIRECTOR

December 12, 1997

RE: In the Matter of Applications for Permit Nos. 91-07122
and 92-07200 in the name of the Idaho Water Resource
Board

Dear Interested Party:

The accompanying order is a "final order" issued by the
department pursuant to section 67-5246 or 67-5247, Idaho Code.

Section 67-5246 provides as follows:

(1) If the presiding officer is the agency head, the
presiding officer shall issue a final order.

(2) If the presiding officer issued a recommended order, the
agency head shall issue a final order following review of that
recommended order.

(3) If the presiding officer issued a preliminary order, that
order becomes a final order unless it is reviewed as required in
section 67-5245, Idaho Code. If the preliminary order is reviewed,
the agency head shall issue a final order.

(4) Unless otherwise provided by statute or rule, any party
may file a petition for reconsideration of any order issued by the
agency head within fourteen (14) days of the issuance of that
order. The agency head shall issue a written order disposing of
the petition. The petition is deemed denied if the agency head
does not dispose of it within twenty-one (21) days after the filing
of the petition.

(5) Unless a different date is stated in a final order, the
order is effective fourteen (14) days after its issuance if a party
has not filed a petition for reconsideration. If a party has filed
a petition for reconsideration with the agency head, the final
order becomes effective when:

MICROFILMED

APR 09 1998

- (a) the petition for reconsideration is disposed of; or
- (b) the petition is deemed denied because the agency head did not dispose of the petition within twenty-one (21) days.

(6) A party may not be required to comply with a final order unless the party has been served with or has actual knowledge of the order. If the order is mailed to the last known address of a party, the service is deemed to be sufficient.

(7) A non-party shall not be required to comply with a final order unless the agency has made the order available for public inspection or the nonparty has actual knowledge of the order.

(8) The provisions of this section do not preclude an agency from taking immediate action to protect the public interest in accordance with the provisions of section 67-5247, Idaho Code.

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a final order within fourteen (14) days of the service date of this order. The department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See section 67-5246(4) Idaho Code.

APPEAL OF FINAL ORDER TO DISTRICT COURT

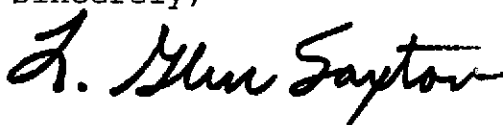
Pursuant to sections 67-5270 and 67-5272, Idaho Code, any party aggrieved by a final order or orders previously issued in a matter before the department may appeal the final order and all previously issued orders in the matter to district court by filing a petition in the district court of the county in which:

- i. A hearing was held,
- ii. The final agency action was taken,
- iii. The party seeking review of the order resides, or
- iv. The real property or personal property that was the subject of the agency action is located.

MICROFILMED
APR 09 1968

The appeal must be filed within twenty-eight (28) days a) of the service date of the final order, b) of an order denying petition for reconsideration, or c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration, whichever is later. See section 67-5273, Idaho Code. The filing of an appeal to district court does not in itself stay the effectiveness or enforcement of the order under appeal.

Sincerely,

A handwritten signature in cursive script, reading "L. Glen Saxton".

L. GLEN SAXTON, Chief
Water Allocation Bureau

Enclosure

c: IDWR - Region

MICROFILMED

APR 03 1968



State of Idaho

DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, P.O. BOX 83720, Boise, Idaho 83720-0098

Phone: (208) 327-7900 FAX: (208) 327-7866

August 28, 1997

PHILIP E. BATT
GOVERNOR

KARL J. DREHER
DIRECTOR

RE: In the matter of Application for Permit Nos. 91-07122 and 92-07200 in the name of the Idaho Water Resource Board

Dear Interested Party:

The accompanying order is a "**recommended order**" issued by the department pursuant to Section 67-5243, Idaho Code. The provisions of this order will not become effective until the Director issues a final order in this matter.

Each party to these proceedings who appeared at the hearing may file a petition for reconsideration, briefs and exceptions to the recommended order and may request oral argument before the Director of the department as further described below:

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a recommended order with the hearing officer issuing the order within fourteen (14) days of the service date of the order. The hearing officer will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See Section 67-5243(3), Idaho Code.

EXCEPTIONS AND BRIEFS

Within twenty-one (21) days after (a) the service date of this recommended order, (b) the service date of a denial of a petition for reconsideration from this recommended order, or (c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration from this recommended order, any party may in writing support or take exceptions to any part of a recommended order and may file briefs in support of the party's position on any issue in the proceeding. Written briefs in support of or taking exceptions to the recommended order shall be filed with the Director. Opposing parties shall have twenty-one (21) days to respond.

ORAL ARGUMENT

The Director may schedule oral argument in the matter before issuing a final order. Oral argument on exceptions to a recommended order shall be heard at the discretion of the Director. If oral arguments are to be heard, the Director will, within a reasonable time, notify each party of the place, date and hour for the argument of the case. Unless the Director orders otherwise, all oral arguments will be heard in Boise, Idaho.

CERTIFICATE OF SERVICE

All exceptions, briefs, requests for oral argument and any other matters filed with the Director in connection with the recommended order shall be served on all other parties to these proceedings in accordance with Rules of Procedure 302 and 303.

FINAL ORDER

The Director will issue a final order within fifty-six (56) days of receipt of the written briefs, oral argument or response to briefs, whichever is later, unless waived by the parties or for good cause shown. The agency may remand the matter for further evidentiary hearings if further factual development of the record is necessary before issuing a final order. The department will serve a copy of the final order on all parties of record.

APPEAL OF FINAL ORDER TO DISTRICT COURT

A party aggrieved by a final order of the Director is entitled to judicial review in compliance with sections 67-5271 through 67-5279, Idaho Code.

Sincerely,



L. GLEN SAXTON, Chief
Water Allocation Bureau

Enclosure

C: IDWR - Northern Region

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IDAHO DEPARTMENT OF WATER RESOURCES

SUMMARY HYDROGRAPH DATA

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ST. JOE RIVER AT CALDER (1921-90)

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***** MONTHLY FLOW DATA *****									
MONTH	YEAR	MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	COUNT	MAXIMUM	DAY
OCT	1920	1560.	4	870.	27	1245.	31		
NOV	1920	3490.	20	630.	10	1436.	30		
DEC	1920	7150.	30	655.	27	1327.	31		
JAN	1921	3460.	3	930.	31	1616.	31		
FEB	1921	5150.	13	703.	7	2144.	28		
MAR	1921	11500.	18	1910.	16	4042.	31		
APR	1921	10900.	21	3010.	10	5898.	30		
MAY	1921	16800.	8	6150.	1	12463.	31		
JUN	1921	9400.	3	2030.	29	5038.	30		
JUL	1921	2030.	1	601.	31	1154.	31		
AUG	1921	685.	2	420.	29	535.	31		
SEP	1921	691.	21	440.	7	518.	30	16800.	8 MAY
OCT	1921	730.	21	430.	2	479.	31		
NOV	1921	1580.	30	310.	20	559.	30		
DEC	1921	9380.	13	615.	9	1999.	31		
JAN	1922	900.	1	350.	14	481.	31		
FEB	1922	520.	10	410.	20	456.	28		
MAR	1922	1360.	22	520.	1	689.	31		
APR	1922	6220.	27	1260.	16	3166.	30		
MAY	1922	16600.	18	5980.	10	9446.	31		
JUN	1922	11700.	5	2040.	29	5854.	30		
JUL	1922	1940.	1	750.	31	1201.	31		
AUG	1922	780.	1	430.	26	596.	31		
SEP	1922	640.	8	340.	16	401.	30	16600.	18 MAY
OCT	1922	468.	5	276.	18	334.	31		
NOV	1922	967.	17	202.	15	374.	30		
DEC	1922	1640.	25	240.	1	516.	31		
JAN	1923	4540.	8	350.	31	1259.	31		
FEB	1923	798.	25	450.	1	539.	28		
MAR	1923	5950.	31	580.	14	1241.	31		
APR	1923	11400.	18	2960.	8	6200.	30		
MAY	1923	13000.	9	4380.	3	8265.	31		
JUN	1923	8310.	10	2700.	30	5437.	30		
JUL	1923	2620.	1	892.	31	1512.	31		
AUG	1923	932.	21	526.	29	682.	31		
SEP	1923	558.	9	375.	28	453.	30	13000.	9 MAY
OCT	1923	978.	17	323.	30	460.	31		
NOV	1923	1640.	24	311.	18	551.	30		
DEC	1923	1280.	7	254.	31	600.	31		
JAN	1924	700.	21	400.	1	539.	31		
FEB	1924	4740.	14	1350.	27	2181.	29		
MAR	1924	1700.	4	943.	31	1125.	31		
APR	1924	9170.	30	957.	1	4104.	30		
MAY	1924	12500.	13	2760.	31	7684.	31		
JUN	1924	2740.	2	1080.	30	1828.	30		
JUL	1924	1090.	1	500.	31	761.	31		
AUG	1924	565.	20	360.	31	447.	31		
SEP	1924	480.	19	360.	1	397.	30	12500.	13 MAY
OCT	1924	590.	29	345.	18	414.	31		
NOV	1924	2330.	22	540.	18	995.	30		
								254.	31 DEC
								1731.	
								366	

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ST. JOE RIVER AT CALDER (1921-90)

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***** MONTHLY FLOW DATA *****									
MONTH	YEAR	MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	COUNT	MAXIMUM	DAY
DEC	1924	6300.	14	590.	9	1618.	31		
JAN	1925	2500.	21	800.	11	1435.	31		
FEB	1925	16200.	4	1390.	18	4046.	28		
MAR	1925	5060.	29	1390.	18	2644.	31		
APR	1925	16600.	12	5800.	1	10529.	30		
MAY	1925	13200.	7	6270.	31	10467.	31		
JUN	1925	5690.	1	2130.	30	3698.	30		
JUL	1925	2060.	1	766.	31	1198.	31		
AUG	1925	921.	15	512.	31	632.	31		
SEP	1925	612.	9	440.	28	490.	30		
OCT	1925	560.	27	345.	5	390.	31		
NOV	1925	524.	12	275.	7	381.	30		
DEC	1925	2030.	24	450.	9	792.	31		
JAN	1926	780.	6	420.	26	509.	31		
FEB	1926	2560.	8	492.	1	1111.	28		
MAR	1926	3770.	24	1350.	1	2275.	31		
APR	1926	10800.	19	1470.	6	5264.	30		
MAY	1926	7300.	1	1750.	31	3591.	31		
JUN	1926	1680.	1	722.	30	1154.	30		
JUL	1926	923.	1	395.	31	554.	31		
AUG	1926	786.	31	321.	29	405.	31		
SEP	1926	1230.	23	395.	5	549.	30		
OCT	1926	1950.	17	534.	1	1100.	31		
NOV	1926	7240.	30	865.	5	2026.	30		
DEC	1926	9600.	2	1250.	28	2947.	31		
JAN	1927	2070.	3	842.	21	1376.	31		
FEB	1927	3110.	21	984.	14	1394.	28		
MAR	1927	2840.	31	1240.	12	1673.	31		
APR	1927	17000.	27	2150.	6	5131.	30		
MAY	1927	17300.	16	6270.	8	9721.	31		
JUN	1927	13400.	8	3540.	30	8396.	30		
JUL	1927	3270.	1	1110.	30	1828.	31		
AUG	1927	1070.	2	573.	27	773.	31		
SEP	1927	1340.	11	538.	3	798.	30		
OCT	1927	2800.	4	1050.	2	1621.	31		
NOV	1927	12400.	26	1380.	1	6025.	30		
DEC	1927	9720.	3	2000.	24	3535.	31		
JAN	1928	5260.	14	1700.	28	2672.	31		
FEB	1928	2060.	6	1140.	23	1542.	29		
MAR	1928	7270.	23	1190.	1	3376.	31		
APR	1928	11800.	28	2360.	11	4477.	30		
MAY	1928	16300.	8	6560.	31	12201.	31		
JUN	1928	6020.	1	1950.	30	3410.	30		
JUL	1928	1760.	1	746.	31	1133.	31		
AUG	1928	734.	2	433.	23	550.	31		
SEP	1928	456.	13	333.	29	381.	30		
OCT	1928	890.	8	305.	31	413.	31		
NOV	1928	800.	10	263.	3	373.	30		
DEC	1928	728.	8	147.	5	291.	31		
JAN	1929	281.	1	180.	19	204.	31		

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***** MONTHLY FLOW DATA *****									
MONTH	YEAR	MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	COUNT	MAXIMUM	DAY
FEB	1929	280.	26	200.	6	239.	28	8510.	22 MAY
MAR	1929	3120.	29	350.	1	986.	31	147.	5 DEC
APR	1929	7450.	29	956.	10	2824.	30	1355.	365
MAY	1929	8510.	22	3840.	30	5849.	31		
JUN	1929	4500.	9	1690.	30	3113.	30		
JUL	1929	1630.	1	691.	31	1024.	31		
AUG	1929	659.	1	411.	31	519.	31		
SEP	1929	415.	10	321.	28	363.	30		
OCT	1929	592.	28	222.	26	323.	31		
NOV	1929	338.	17	175.	22	258.	30		
DEC	1929	2160.	15	230.	4	590.	31		
JAN	1930	472.	1	200.	17	290.	28		
FEB	1930	3510.	20	300.	3	992.	31		
MAR	1930	3920.	29	719.	11	1581.	30		
APR	1930	8240.	15	3510.	1	5848.	31		
MAY	1930	5790.	3	2980.	27	3771.	31		
JUN	1930	3200.	3	1210.	30	2111.	30		
JUL	1930	1210.	10	521.	31	820.	31		
AUG	1930	526.	5	387.	30	466.	31		
SEP	1930	510.	23	316.	21	373.	30	8240.	15 APR
OCT	1930	760.	8	338.	5	464.	31	175.	22 NOV
NOV	1930	1600.	13	375.	27	535.	30	1448.	
DEC	1930	420.	3	290.	27	349.	31		
JAN	1931	1600.	28	290.	1	613.	31		
FEB	1931	990.	19	498.	13	673.	28		
MAR	1931	4460.	22	582.	1	1620.	31		
APR	1931	6710.	30	2510.	4	4106.	30		
MAY	1931	8510.	3	2580.	31	5416.	31		
JUN	1931	2450.	1	826.	29	1393.	30		
JUL	1931	795.	1	460.	29	594.	31		
AUG	1931	521.	1	281.	31	379.	31		
SEP	1931	498.	10	261.	6	337.	30	8510.	3 MAY
OCT	1931	477.	29	264.	15	333.	31	261.	6 SEP
NOV	1931	760.	8	250.	23	391.	30		
DEC	1931	480.	21	320.	11	389.	31		
JAN	1932	1060.	12	330.	30	437.	31		
FEB	1932	6240.	27	320.	11	934.	29		
MAR	1932	5570.	19	878.	12	2104.	31		
APR	1932	13400.	14	3590.	9	7469.	30		
MAY	1932	16600.	13	6240.	31	12028.	31		
JUN	1932	6950.	2	2200.	30	4771.	30		
JUL	1932	2140.	1	763.	31	1259.	31		
AUG	1932	757.	1	477.	27	598.	31		
SEP	1932	515.	22	376.	30	435.	30	16600.	13 MAY
OCT	1932	707.	15	366.	4	463.	31	250.	23 NOV
NOV	1932	3430.	18	502.	1	1471.	30	2598.	366
DEC	1932	5570.	3	550.	13	1481.	31		
JAN	1933	2600.	9	550.	28	952.	31		
FEB	1933	600.	21	450.	11	525.	28		
MAR	1933	2270.	29	592.	1	1170.	31		

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IDAHO DEPARTMENT OF WATER RESOURCES
ST. JOE RIVER AT CALDER (1921-90)

SUMMARY HYDROGRAPH DATA
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MONTH	YEAR	***** MONTHLY FLOW DATA *****				COUNT	***** YEARLY FLOW DATA *****				COUNT
		MAXIMUM	DAY	MINIMUM	DAY		MAXIMUM	DAY	MINIMUM	DAY	
APR	1933	15200.	28	1640.	13	30					
MAY	1933	14100.	31	5260.	10	31					
JUN	1933	18400.	9	3670.	30	30					
JUL	1933	3350.	1	857.	31	31					
AUG	1933	956.	5	516.	29	31					
SEP	1933	697.	23	456.	14	30	18400.	9 JUN	366.	4 OCT	365
OCT	1933	6950.	29	443.	11	31					
NOV	1933	11800.	23	1330.	30	31					
DEC	1933	40000.	23	3050.	5	31					
JAN	1934	11500.	4	2390.	26	31					
FEB	1934	4370.	9	2580.	1	30					
MAR	1934	18600.	29	6710.	6	30					
APR	1934	12800.	1	2510.	31	31					
MAY	1934	6710.	1	890.	30	30					
JUN	1934	2390.	1	464.	31	31					
JUL	1934	857.	1	302.	31	31					
AUG	1934	481.	4	287.	7	30					
SEP	1934	472.	11	317.	11	31	40000.	23 DEC	287.	7 SEP	3733.
OCT	1934	3070.	26	807.	1	30					
NOV	1934	2310.	9	644.	10	31					
DEC	1934	3340.	22	450.	21	31					
JAN	1935	2500.	26	958.	16	31					
FEB	1935	1450.	5	939.	10	31					
MAR	1935	5100.	14	1560.	7	30					
APR	1935	10400.	21	7040.	12	31					
MAY	1935	12900.	23	1950.	28	30					
JUN	1935	7510.	1	701.	31	31					
JUL	1935	1990.	1	393.	30	31					
AUG	1935	742.	2	325.	30	30					
SEP	1935	472.	16	301.	10	31	12900.	23 MAY	317.	11 OCT	2341.
OCT	1935	490.	20	264.	19	30					
NOV	1935	393.	9	264.	3	31					
DEC	1935	449.	12	212.	26	29					
JAN	1936	753.	13	270.	3	31					
FEB	1936	1000.	29	535.	31	31					
MAR	1936	2300.	9	568.	1	30					
APR	1936	17500.	18	4410.	31	31					
MAY	1936	13000.	4	1350.	30	30					
JUN	1936	4750.	8	584.	31	31					
JUL	1936	1310.	1	379.	30	31					
AUG	1936	601.	3	304.	27	30					
SEP	1936	472.	15	278.	29	31	17500.	18 APR	212.	3 DEC	2056.
OCT	1936	376.	15	198.	3	30					
NOV	1936	382.	18	260.	13	31					
DEC	1936	717.	24	210.	6	28					
JAN	1937	270.	14	300.	1	31					
FEB	1937	320.	25	1010.	7	30					
MAR	1937	1230.	31	725.	31	31					
APR	1937	7390.	15	3630.	1	31					
MAY	1937	11700.	4								

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MONTH	YEAR	***** MONTHLY FLOW DATA *****					COUNT	***** YEARLY FLOW DATA *****					COUNT
		MAXIMUM	DAY	MINIMUM	DAY	AVERAGE		MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	
JUN	1937	5470.	3	1830.	30	3180.	30						
JUL	1937	1740.	1	634.	31	1027.	31						
AUG	1937	795.	2	400.	31	531.	31						
SEP	1937	462.	6	326.	23	360.	30	11700.	4 MAY	198.	3 NOV	1536.	
OCT	1937	458.	17	310.	28	354.	31					365	
NOV	1937	1650.	26	316.	4	672.	30						
DEC	1937	2130.	12	358.	9	1017.	31						
JAN	1938	2000.	15	500.	10	992.	31						
FEB	1938	1010.	28	584.	16	778.	28						
MAR	1938	4170.	17	1230.	1	2072.	31						
APR	1938	39400.	18	1650.	1	9079.	30						
MAY	1938	13400.	1	5470.	8	8458.	31						
JUN	1938	6700.	1	1830.	30	3778.	30						
JUL	1938	1740.	1	729.	31	1149.	31						
AUG	1938	795.	4	420.	31	576.	31	39400.	18 APR	310.	28 OCT	2447.	
SEP	1938	765.	9	342.	27	407.	30					365	
OCT	1938	729.	12	358.	9	438.	31						
NOV	1938	855.	17	310.	27	457.	30						
DEC	1938	1390.	8	375.	27	597.	31						
JAN	1939	855.	3	412.	22	553.	31						
FEB	1939	520.	14	300.	9	410.	28						
MAR	1939	5660.	26	382.	1	1749.	31						
APR	1939	13000.	30	3780.	14	6632.	30						
MAY	1939	12700.	3	3560.	31	6739.	31						
JUN	1939	3200.	1	1310.	30	2040.	30						
JUL	1939	1270.	1	606.	30	893.	31						
AUG	1939	579.	1	348.	31	446.	31						
SEP	1939	520.	14	298.	27	345.	30	13000.	30 APR	298.	27 SEP	1780.	
OCT	1939	500.	29	295.	14	336.	31					365	
NOV	1939	490.	8	232.	17	302.	30						
DEC	1939	2350.	17	275.	5	757.	31						
JAN	1940	650.	1	400.	18	535.	31						
FEB	1940	1400.	1	1400.	1	1400.	29						
MAR	1940	5860.	27	1600.	14	3322.	31						
APR	1940	6700.	15	3700.	7	5236.	30						
MAY	1940	7880.	11	3340.	31	5251.	31						
JUN	1940	3200.	1	945.	30	1772.	30						
JUL	1940	978.	1	440.	25	638.	31						
AUG	1940	449.	1	307.	31	356.	31						
SEP	1940	530.	28	298.	2	357.	30	7880.	11 MAY	232.	17 NOV	1688.	
OCT	1940	644.	4	308.	20	395.	31					366	
NOV	1940	1500.	30	315.	23	479.	30						
DEC	1940	1350.	21	370.	16	958.	31						
JAN	1941	940.	27	500.	11	703.	31						
FEB	1941	831.	12	620.	23	722.	28						
MAR	1941	2300.	31	1040.	1	1523.	31						
APR	1941	2800.	2	2000.	16	2174.	30						
MAY	1941	5200.	18	2580.	29	3285.	31						
JUN	1941	3200.	1	1300.	27	2047.	30						
JUL	1941	1300.	1	562.	31	811.	31						

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***** MONTHLY FLOW DATA *****									
MONTH	YEAR	MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	COUNT	MAXIMUM	DAY
AUG	1941	552.	1	394.	20	455.	31		
SEP	1941	890.	15	390.	30	515.	30		
OCT	1941	1080.	9	426.	1	726.	31		
NOV	1941	3270.	16	632.	2	1323.	30		
DEC	1941	8670.	3	1160.	1	2983.	31		
JAN	1942	1400.	2	750.	21	1100.	31		
FEB	1942	1380.	5	668.	18	1007.	28		
MAR	1942	2700.	10	730.	7	1201.	31		
APR	1942	9220.	14	2000.	1	5487.	30		
MAY	1942	5100.	26	3200.	6	3960.	31		
JUN	1942	3410.	1	2350.	14	2875.	30		
JUL	1942	2700.	1	845.	31	1510.	31		
AUG	1942	838.	1	500.	25	618.	31		
SEP	1942	505.	1	358.	30	422.	30		
OCT	1942	674.	31	329.	25	378.	31		
NOV	1942	4750.	24	350.	13	1081.	30		
DEC	1942	1120.	18	644.	12	851.	31		
JAN	1943	1080.	1	500.	10	731.	31		
FEB	1943	1380.	22	596.	5	827.	28		
MAR	1943	6480.	30	579.	18	1652.	31		
APR	1943	14100.	16	5280.	5	8310.	30		
MAY	1943	12400.	23	4410.	16	7976.	31		
JUN	1943	9220.	1	4920.	30	6649.	30		
JUL	1943	5100.	1	1080.	31	2435.	31		
AUG	1943	1040.	1	540.	29	735.	30		
SEP	1943	608.	2	378.	27	450.	31		
OCT	1943	890.	12	370.	4	468.	31		
NOV	1943	668.	5	207.	27	404.	30		
DEC	1943	2840.	3	350.	11	656.	31		
JAN	1944	490.	17	300.	8	378.	31		
FEB	1944	1300.	7	354.	29	469.	29		
MAR	1944	1200.	10	340.	7	616.	31		
APR	1944	4750.	30	850.	1	2788.	30		
MAY	1944	5280.	15	2460.	26	3833.	31		
JUN	1944	2760.	1	1000.	30	1652.	30		
JUL	1944	968.	1	450.	31	672.	31		
AUG	1944	602.	14	318.	31	402.	31		
SEP	1944	596.	21	282.	13	359.	30		
OCT	1944	495.	6	275.	28	317.	31		
NOV	1944	490.	2	198.	18	346.	30		
DEC	1944	810.	7	180.	24	332.	31		
JAN	1945	4270.	13	318.	31	1146.	31		
FEB	1945	3680.	9	650.	25	1142.	28		
MAR	1945	2220.	31	455.	5	1208.	31		
APR	1945	5550.	30	1570.	14	2730.	30		
MAY	1945	14600.	5	5940.	22	8823.	31		
JUN	1945	6460.	1	1910.	30	3333.	30		
JUL	1945	1750.	1	614.	31	1030.	31		
AUG	1945	596.	1	378.	31	470.	31		
SEP	1945	789.	26	346.	15	453.	30		
***** YEARLY FLOW DATA *****									
		MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	COUNT		
		5200.	18 MAY	308.	20 OCT	1175.	365		
		9220.	14 APR	358.	30 SEP	1936.	365		
		14100.	16 APR	329.	25 OCT	2672.	365		
		5280.	15 MAY	207.	27 NOV	1059.	366		
		14600.	5 MAY	180.	24 DEC	1763.	365		

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***** MONTHLY FLOW DATA *****

***** YEARLY FLOW DATA *****

MONTH	YEAR	MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	COUNT	MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	COUNT		
OCT	1945	680.	26	326.	16	393.	31								
NOV	1945	1970.	29	426.	22	778.	30								
DEC	1945	5230.	29	380.	20	998.	31								
JAN	1946	2020.	1	632.	30	1030.	31								
FEB	1946	1160.	28	562.	19	689.	28								
MAR	1946	3840.	30	956.	5	1714.	31								
APR	1946	14600.	26	2510.	4	6665.	30								
MAY	1946	14200.	5	6020.	31	9341.	31								
JUN	1946	6060.	6	1990.	30	3644.	30								
JUL	1946	1920.	2	740.	30	1228.	31								
AUG	1946	752.	1	445.	30	557.	31								
SEP	1946	656.	6	366.	30	441.	30	14600.	26	APR	326.	16	OCT	2296.	365
OCT	1946	2650.	26	342.	17	694.	31								
NOV	1946	4430.	19	465.	13	1566.	30								
DEC	1946	20700.	15	1650.	30	4309.	31								
JAN	1947	3800.	24	900.	15	1604.	31								
FEB	1947	3510.	16	1300.	10	2233.	28								
MAR	1947	5300.	22	1490.	9	2812.	31								
APR	1947	12100.	30	2860.	12	5849.	30								
MAY	1947	16500.	8	4310.	30	8664.	31								
JUN	1947	5510.	10	1950.	30	3530.	30								
JUL	1947	1920.	1	740.	31	1142.	31								
AUG	1947	728.	1	460.	29	578.	31								
SEP	1947	835.	17	386.	30	477.	30	20700.	15	DEC	342.	17	OCT	2792.	365
OCT	1947	2630.	19	382.	1	1143.	31								
NOV	1947	2380.	27	900.	22	1358.	30								
DEC	1947	1800.	21	868.	31	1255.	31								
JAN	1948	6700.	8	900.	27	1921.	31								
FEB	1948	2890.	26	710.	11	1298.	29								
MAR	1948	2080.	29	880.	10	1215.	31								
APR	1948	15000.	22	1750.	13	5603.	30								
MAY	1948	22600.	28	6270.	3	13495.	31								
JUN	1948	14700.	1	2720.	30	7120.	30								
JUL	1948	2590.	1	1120.	26	1703.	31								
AUG	1948	1590.	2	638.	31	946.	31								
SEP	1948	626.	1	475.	21	537.	30	22600.	28	MAY	382.	1	OCT	3137.	366
OCT	1948	790.	5	435.	21	491.	31								
NOV	1948	1120.	24	412.	9	611.	30								
DEC	1948	596.	2	320.	24	480.	31								
JAN	1949	520.	1	340.	20	391.	31								
FEB	1949	2000.	24	350.	1	731.	28								
MAR	1949	3450.	20	1110.	15	1803.	31								
APR	1949	13400.	29	1720.	1	7215.	30								
MAY	1949	18400.	12	5880.	31	11035.	31								
JUN	1949	5450.	1	1710.	28	3192.	30								
JUL	1949	1530.	1	656.	31	976.	31								
AUG	1949	638.	1	386.	31	510.	31								
SEP	1949	900.	17	330.	28	433.	30	18400.	12	MAY	320.	24	DEC	2329.	365
OCT	1949	963.	29	330.	20	437.	31								
NOV	1949	2900.	28	370.	7	846.	30								

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MONTH	YEAR	MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	COUNT	MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	COUNT
DEC	1949	1520.	1	620.	21	884.	31						
JAN	1950	3500.	23	515.	15	1090.	31						
FEB	1950	6000.	25	1300.	1	2062.	28						
MAR	1950	6400.	5	1700.	15	2791.	31						
APR	1950	9590.	22	3540.	10	5855.	30						
MAY	1950	17600.	14	4180.	7	10374.	31						
JUN	1950	14300.	5	7280.	28	10854.	30						
JUL	1950	7420.	1	1580.	31	3251.	31						
AUG	1950	1440.	1	634.	31	953.	31						
SEP	1950	735.	27	444.	24	531.	30	17600.	14 MAY	330.	20 OCT	3325.	365
OCT	1950	3260.	30	454.	2	889.	31						
NOV	1950	2780.	25	1000.	20	1761.	30						
DEC	1950	7440.	24	1590.	9	2822.	31						
JAN	1951	2750.	1	1000.	29	1756.	31						
FEB	1951	14800.	11	1200.	1	3826.	28						
MAR	1951	2550.	30	1360.	11	1766.	31						
APR	1951	8980.	14	2770.	1	6491.	30						
MAY	1951	10400.	7	4910.	31	7656.	31						
JUN	1951	4520.	1	2200.	30	3610.	30						
JUL	1951	2200.	4	777.	31	1377.	31						
AUG	1951	749.	1	469.	27	587.	31						
SEP	1951	777.	26	380.	17	442.	30	14800.	11 FEB	380.	17 SEP	2736.	365
OCT	1951	1730.	24	459.	10	919.	31						
NOV	1951	1450.	30	628.	25	881.	30						
DEC	1951	3060.	2	470.	24	1090.	31						
JAN	1952	700.	7	540.	3	605.	31						
FEB	1952	1650.	5	540.	24	889.	29						
MAR	1952	2290.	28	526.	7	871.	31						
APR	1952	15600.	27	1330.	2	6991.	30						
MAY	1952	10900.	14	5050.	31	8040.	31						
JUN	1952	4800.	1	2180.	28	3213.	30						
JUL	1952	2390.	1	805.	31	1378.	31						
AUG	1952	812.	11	460.	31	612.	31						
SEP	1952	499.	13	346.	30	420.	30	15600.	27 APR	346.	30 SEP	2158.	366
OCT	1952	354.	31	287.	29	312.	31						
NOV	1952	371.	13	100.	27	259.	30						
DEC	1952	440.	13	160.	25	288.	31						
JAN	1953	3290.	13	260.	6	1393.	31						
FEB	1953	5270.	1	784.	24	1853.	28						
MAR	1953	2210.	31	716.	7	1283.	31						
APR	1953	12900.	28	1220.	15	4200.	30						
MAY	1953	11000.	7	4850.	3	7293.	31						
JUN	1953	10200.	2	2880.	30	5927.	30						
JUL	1953	2830.	1	763.	31	1587.	31						
AUG	1953	819.	4	499.	14	599.	31						
SEP	1953	531.	3	362.	19	433.	30	12900.	28 APR	100.	27 NOV	2115.	365
OCT	1953	430.	2	302.	13	327.	31						
NOV	1953	1270.	17	325.	5	491.	30						
DEC	1953	2470.	8	411.	31	702.	31						
JAN	1954	1080.	8	370.	20	661.	31						

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MONTH	YEAR	MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	COUNT	MAXIMUM	DAY
FEB	1954	2930.	13	805.	5	1511.	28		
MAR	1954	4620.	10	1120.	5	1837.	31		
APR	1954	12400.	18	1280.	2	5641.	30		
MAY	1954	19600.	19	4080.	2	11645.	31		
JUN	1954	7530.	13	4130.	30	6074.	30		
JUL	1954	4290.	1	1020.	31	2214.	31		
AUG	1954	1010.	21	604.	30	810.	31		
SEP	1954	1340.	18	504.	14	617.	30	19600.	19 MAY
OCT	1954	1450.	22	515.	9	687.	31		
NOV	1954	1760.	19	582.	5	1042.	30		
DEC	1954	1220.	3	640.	18	951.	31		
JAN	1955	1120.	1	600.	29	720.	31		
FEB	1955	2000.	8	411.	20	758.	28		
MAR	1955	1100.	30	390.	5	646.	31		
APR	1955	5290.	10	998.	5	2530.	30		
MAY	1955	17500.	21	4310.	1	8550.	31		
JUN	1955	12600.	11	3560.	30	7467.	30		
JUL	1955	4380.	7	1400.	31	2663.	31		
AUG	1955	1320.	1	559.	30	819.	31		
SEP	1955	770.	15	444.	13	535.	30	17500.	21 MAY
OCT	1955	2510.	10	505.	2	919.	31		
NOV	1955	3890.	10	942.	3	1901.	30		
DEC	1955	15100.	22	1050.	10	3545.	31		
JAN	1956	3000.	1	925.	31	1919.	31		
FEB	1956	1300.	5	750.	2	1006.	29		
MAR	1956	4870.	26	780.	15	1769.	31		
APR	1956	17700.	22	2850.	3	9413.	30		
MAY	1956	20000.	20	7470.	5	13168.	31		
JUN	1956	13100.	1	2570.	30	5457.	30		
JUL	1956	2800.	3	877.	31	1530.	31		
AUG	1956	1060.	27	548.	21	714.	31		
SEP	1956	770.	30	398.	26	480.	30	20000.	20 MAY
OCT	1956	735.	1	372.	7	513.	31		
NOV	1956	1280.	13	400.	29	611.	30		
DEC	1956	2780.	16	380.	6	1078.	31		
JAN	1957	694.	1	230.	17	484.	31		
FEB	1957	4900.	27	380.	21	875.	28		
MAR	1957	3500.	31	1710.	18	2274.	31		
APR	1957	11700.	30	3570.	2	5351.	30		
MAY	1957	16000.	6	8180.	31	12203.	31		
JUN	1957	8130.	2	1820.	30	4143.	30		
JUL	1957	1770.	1	785.	31	1182.	31		
AUG	1957	838.	7	434.	31	579.	31		
SEP	1957	434.	1	332.	27	373.	30	16000.	6 MAY
OCT	1957	688.	3	335.	1	431.	31		
NOV	1957	639.	14	279.	21	387.	30		
DEC	1957	718.	21	290.	11	455.	31		
JAN	1958	682.	30	240.	1	447.	31		
FEB	1958	4670.	25	510.	5	1631.	28		
MAR	1958	2940.	25	688.	20	1414.	31		

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MONTH	YEAR	MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	COUNT	MAXIMUM	DAY
APR	1958	10200.	20	2190.	1	4768.	30		
MAY	1958	13200.	12	4900.	1	9760.	31		
JUN	1958	5350.	1	1420.	30	2885.	30		
JUL	1958	1400.	1	639.	28	942.	31		
AUG	1958	615.	1	387.	27	485.	31		
SEP	1958	560.	26	347.	12	427.	30	13200.	12 MAY
OCT	1958	1130.	20	351.	6	512.	31		
NOV	1958	5750.	23	411.	1	2202.	30		
DEC	1958	5210.	3	1870.	1	2754.	31		
JAN	1959	5580.	25	1810.	8	3049.	31		
FEB	1959	2340.	1	1120.	27	1504.	28		
MAR	1959	2480.	26	1280.	11	1713.	31		
APR	1959	13700.	30	3320.	1	6527.	30		
MAY	1959	14600.	1	6220.	7	8823.	31		
JUN	1959	12400.	6	3160.	30	7119.	30		
JUL	1959	2940.	1	885.	31	1666.	31		
AUG	1959	909.	1	530.	30	684.	31		
SEP	1959	1290.	28	510.	12	734.	30	14600.	1 MAY
OCT	1959	3160.	12	734.	6	1572.	31		
NOV	1959	8220.	25	1090.	16	2845.	30		
DEC	1959	2600.	1	1150.	29	1690.	31		
JAN	1960	1650.	31	700.	19	1055.	31		
FEB	1960	2450.	8	700.	27	1310.	29		
MAR	1960	7570.	28	750.	2	2547.	31		
APR	1960	13100.	9	3340.	27	6100.	30		
MAY	1960	12400.	12	4530.	1	7080.	31		
JUN	1960	9070.	3	2380.	30	4947.	30		
JUL	1960	2330.	1	756.	30	1284.	31		
AUG	1960	1350.	2	474.	22	604.	31		
SEP	1960	588.	5	381.	18	432.	30	13100.	9 APR
OCT	1960	699.	8	402.	20	477.	31		
NOV	1960	1970.	25	356.	9	691.	30		
DEC	1960	652.	3	270.	7	460.	31		
JAN	1961	1800.	17	280.	4	722.	31		
FEB	1961	12200.	22	1310.	6	3678.	28		
MAR	1961	3560.	31	1400.	12	2548.	31		
APR	1961	10700.	4	3510.	16	5026.	30		
MAY	1961	14700.	26	5830.	8	9821.	31		
JUN	1961	11600.	2	1810.	30	5724.	30		
JUL	1961	1720.	1	384.	19	1047.	31		
AUG	1961	625.	1	442.	23	504.	31		
SEP	1961	730.	1	368.	17	435.	30	14700.	26 MAY
OCT	1961	738.	11	364.	5	449.	31		
NOV	1961	503.	2	190.	17	398.	30		
DEC	1961	929.	31	190.	10	557.	31		
JAN	1962	2610.	8	350.	22	803.	31		
FEB	1962	1660.	15	500.	26	1096.	28		
MAR	1962	3550.	27	450.	14	971.	31		
APR	1962	14600.	7	2360.	1	7497.	30		
MAY	1962	11500.	10	4930.	1	8460.	31		

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MONTH	YEAR	MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	COUNT	MAXIMUM	DAY
JUN	1962	7240.	3	2210.	30	4561.	30		
JUL	1962	2120.	1	682.	31	1191.	31		
AUG	1962	730.	4	451.	26	564.	31		
SEP	1962	891.	11	381.	26	472.	30	14600.	7 APR
OCT	1962	1790.	13	410.	6	780.	31		
NOV	1962	3890.	26	552.	4	1505.	30		
DEC	1962	3130.	18	1430.	13	1928.	31		
JAN	1963	1720.	5	660.	11	1085.	31		
FEB	1963	7200.	5	1150.	1	3338.	28		
MAR	1963	5450.	31	1520.	19	2354.	30		
APR	1963	4890.	30	3020.	22	3807.	30		
MAY	1963	6790.	24	4280.	5	5525.	31		
JUN	1963	4720.	1	1370.	28	2695.	30		
JUL	1963	1320.	1	588.	31	865.	31		
AUG	1963	578.	1	377.	31	474.	31		
SEP	1963	532.	14	341.	12	399.	30	7200.	5 FEB
OCT	1963	630.	25	318.	17	370.	31		
NOV	1963	861.	27	329.	1	485.	30		
DEC	1963	600.	6	250.	11	369.	31		
JAN	1964	513.	2	350.	8	407.	31		
FEB	1964	390.	1	310.	21	348.	29		
MAR	1964	1970.	31	350.	8	539.	31		
APR	1964	5530.	16	1950.	6	3211.	30		
MAY	1964	17300.	20	2820.	7	9148.	31		
JUN	1964	17100.	9	3560.	30	9309.	30		
JUL	1964	3370.	1	1000.	29	1867.	31		
AUG	1964	1100.	2	593.	25	789.	31		
SEP	1964	1000.	3	505.	28	624.	30	17300.	20 MAY
OCT	1964	740.	1	525.	9	609.	31		
NOV	1964	4610.	25	505.	22	973.	30		
DEC	1964	24800.	23	727.	17	3728.	31		
JAN	1965	5040.	29	1470.	26	2043.	31		
FEB	1965	3370.	1	1540.	15	2074.	28		
MAR	1965	3160.	11	1350.	29	2129.	31		
APR	1965	20000.	21	1710.	1	7796.	30		
MAY	1965	14100.	1	5380.	8	8493.	31		
JUN	1965	7530.	1	2550.	30	5458.	30		
JUL	1965	2420.	1	827.	31	1472.	31		
AUG	1965	972.	20	575.	31	721.	31		
SEP	1965	1190.	15	461.	30	561.	30	24800.	23 DEC
OCT	1965	548.	16	402.	31	452.	31		
NOV	1965	1170.	22	390.	3	632.	30		
DEC	1965	755.	5	382.	15	598.	31		
JAN	1966	1550.	7	452.	3	774.	31		
FEB	1966	602.	28	448.	15	537.	28		
MAR	1966	5800.	31	400.	4	1725.	31		
APR	1966	8200.	9	3340.	23	5376.	30		
MAY	1966	14000.	6	3980.	1	7084.	30		
JUN	1966	5480.	1	1750.	30	3305.	30		
JUL	1966	1660.	1	632.	31	1013.	31		

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MONTH	YEAR	MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	COUNT	MAXIMUM	DAY
OCT	1970	726.	24	410.	4	483.	31		
NOV	1970	3450.	25	392.	3	883.	30		
DEC	1970	1930.	8	550.	24	850.	31		
JAN	1971	9600.	31	530.	5	1891.	31		
FEB	1971	7980.	1	1890.	28	3385.	28		
MAR	1971	2970.	27	1230.	18	1709.	31		
APR	1971	6990.	27	2290.	3	4822.	30		
MAY	1971	22200.	13	6990.	22	13895.	31		
JUN	1971	10100.	2	4720.	27	7040.	30		
JUL	1971	4620.	1	1250.	31	2651.	31		
AUG	1971	1220.	3	606.	30	833.	31		
SEP	1971	1040.	2	472.	24	588.	30	22200.	13 MAY
OCT	1971	782.	20	336.	29	491.	31		
NOV	1971	580.	13	425.	23	489.	30		
DEC	1971	616.	23	316.	2	488.	31		
JAN	1972	5900.	21	320.	14	998.	31		
FEB	1972	8900.	29	660.	11	1783.	29		
MAR	1972	12200.	18	2790.	5	6258.	31		
APR	1972	7960.	7	2990.	19	4633.	30		
MAY	1972	20600.	31	5380.	1	13278.	31		
JUN	1972	20400.	1	3910.	28	9225.	30		
JUL	1972	4100.	1	1060.	31	2276.	31		
AUG	1972	1030.	1	505.	31	710.	31		
SEP	1972	1000.	25	490.	10	596.	30	20600.	31 MAY
OCT	1972	724.	11	378.	31	461.	31		
NOV	1972	773.	5	287.	23	441.	30		
DEC	1972	3970.	22	210.	6	1005.	31		
JAN	1973	4750.	17	570.	8	1439.	31		
FEB	1973	857.	28	557.	21	671.	28		
MAR	1973	1580.	26	836.	8	1071.	31		
APR	1973	3560.	28	984.	3	2217.	30		
MAY	1973	6270.	17	2820.	1	3915.	31		
JUN	1973	2940.	1	1190.	30	2031.	30		
JUL	1973	1140.	1	513.	31	742.	31		
AUG	1973	508.	1	359.	31	424.	31		
SEP	1973	704.	25	315.	13	403.	30		
OCT	1973	624.	29	320.	22	390.	31		
NOV	1973	4540.	12	282.	4	1347.	30		
DEC	1973	3660.	18	1020.	6	1858.	31		
JAN	1974	28900.	16	940.	7	5292.	31		
FEB	1974	3220.	1	1350.	24	1951.	28		
MAR	1974	6660.	31	1270.	9	2652.	31		
APR	1974	15100.	25	3670.	5	6734.	30		
MAY	1974	15800.	8	5180.	18	10112.	31		
JUN	1974	17500.	5	5920.	30	13041.	30		
JUL	1974	5720.	1	1220.	31	2796.	31		
AUG	1974	1170.	1	547.	31	800.	31		
SEP	1974	673.	11	397.	30	474.	30	28900.	16 JAN
OCT	1974	397.	5	330.	30	358.	31		
NOV	1974	912.	22	243.	30	427.	30		
							365	365	
							316.	2	DEC
							3441.	366	
							210.	6	DEC
							1239.	365	

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ST. JOE RIVER AT CALDER (1921-90)

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MONTH	YEAR	***** MONTHLY FLOW DATA *****					COUNT	***** YEARLY FLOW DATA *****				
		MAXIMUM	DAY	MINIMUM	DAY	AVERAGE		MAXIMUM	DAY	MINIMUM	DAY	AVERAGE
DEC	1974	540.	22	243.	1	382.	31					
JAN	1975	1500.	20	195.	11	511.	31					
FEB	1975	965.	14	315.	5	538.	28					
MAR	1975	2440.	3	582.	28	1017.	31					
APR	1975	3770.	27	568.	2	2073.	30					
MAY	1975	16000.	15	3250.	1	8707.	31					
JUN	1975	15500.	2	3400.	30	7995.	30					
JUL	1975	3100.	1	1200.	31	2060.	31					
AUG	1975	1720.	24	673.	22	878.	31					
SEP	1975	763.	1	397.	30	504.	30	16000.	15 MAY	195.	11 JAN	2127.
OCT	1975	992.	31	391.	1	581.	31					365
NOV	1975	2240.	3	779.	2	1186.	30					
DEC	1975	13900.	4	1850.	23	4014.	31					
JAN	1976	4340.	16	1400.	2	2165.	31					
FEB	1976	1840.	13	900.	5	1371.	29					
MAR	1976	2030.	19	820.	5	1341.	31					
APR	1976	10400.	12	1900.	3	5450.	30					
MAY	1976	20200.	11	7180.	31	11527.	31					
JUN	1976	7000.	10	3080.	28	5023.	30					
JUL	1976	3130.	1	950.	30	1735.	31					
AUG	1976	1110.	16	600.	31	827.	31					
SEP	1976	757.	24	447.	30	530.	30	20200.	11 MAY	391.	1 OCT	2987.
OCT	1976	540.	3	368.	24	413.	31					366
NOV	1976	746.	25	238.	14	421.	30					
DEC	1976	550.	28	240.	20	374.	31					
JAN	1977	670.	20	220.	4	333.	31					
FEB	1977	820.	22	290.	1	538.	28					
MAR	1977	1150.	8	462.	20	640.	31					
APR	1977	6240.	26	626.	3	2864.	30					
MAY	1977	6490.	3	2760.	31	4029.	31					
JUN	1977	3070.	8	974.	30	1909.	30					
JUL	1977	965.	18	541.	31	745.	31					
AUG	1977	666.	31	375.	21	469.	31					
SEP	1977	819.	30	346.	15	488.	30					
OCT	1977	974.	31	404.	23	534.	31	6490.	3 MAY	220.	4 JAN	1103.
NOV	1977	3250.	26	400.	21	1158.	30					
DEC	1977	14400.	3	1500.	31	4283.	31					
JAN	1978	3000.	6	1130.	31	1602.	31					
FEB	1978	2100.	9	1140.	1	1426.	28					
MAR	1978	10100.	31	1210.	3	3643.	31					
APR	1978	10500.	1	3890.	19	5554.	30					
MAY	1978	8530.	22	4670.	31	6371.	31					
JUN	1978	7410.	6	2400.	30	4340.	30					
JUL	1978	2260.	1	811.	31	1425.	31					
AUG	1978	844.	13	530.	28	666.	31					
SEP	1978	650.	8	415.	27	504.	30	14400.	3 DEC	400.	21 NOV	2633.
OCT	1978	455.	1	335.	27	382.	31					365
NOV	1978	557.	4	250.	10	346.	30					
DEC	1978	388.	4	160.	31	298.	31					
JAN	1979	310.	22	170.	1	256.	31					

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IDAHO DEPARTMENT OF WATER RESOURCES

SUMMARY HYDROGRAPH DATA

ST. JOE RIVER AT CALDER (1921-90)

12414500

***** MONTHLY FLOW DATA *****									
MONTH	YEAR	MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	COUNT	MAXIMUM	DAY
FEB	1979	2230.	14	220.	1	795.	28		
MAR	1979	3610.	8	490.	4	1913.	31		
APR	1979	11100.	30	1270.	4	4014.	30		
MAY	1979	20100.	6	5540.	31	10302.	31		
JUN	1979	6190.	5	1780.	30	3664.	30		
JUL	1979	1900.	1	631.	31	1045.	31		
AUG	1979	617.	16	451.	30	532.	31		
SEP	1979	555.	1	299.	30	373.	30	20100.	6 MAY
OCT	1979	752.	26	280.	9	387.	31		
NOV	1979	541.	18	154.	14	293.	30		
DEC	1979	1320.	5	364.	30	723.	31		
JAN	1980	2490.	15	330.	8	778.	31		
FEB	1980	2550.	29	600.	16	1087.	29		
MAR	1980	2550.	1	971.	28	1364.	31		
APR	1980	12400.	29	998.	1	5542.	30		
MAY	1980	9920.	6	4920.	24	6845.	31		
JUN	1980	6260.	2	2120.	30	4246.	30		
JUL	1980	2010.	1	792.	31	1346.	31		
AUG	1980	893.	18	492.	30	627.	31		
SEP	1980	896.	3	422.	30	538.	30		
OCT	1980	477.	15	343.	31	389.	31		
NOV	1980	1820.	8	348.	1	722.	30		
DEC	1980	20800.	26	596.	2	3690.	31		
JAN	1981	5600.	1	1690.	21	2456.	31		
FEB	1981	8500.	17	1400.	10	3139.	28		
MAR	1981	2550.	1	1880.	10	2112.	31		
APR	1981	9040.	24	2030.	14	3934.	30		
MAY	1981	10300.	1	3830.	13	5436.	31		
JUN	1981	5270.	10	2860.	30	4436.	30		
JUL	1981	2790.	1	925.	31	1629.	31		
AUG	1981	872.	2	554.	29	688.	31		
SEP	1981	736.	28	443.	18	506.	30	20800.	26 DEC
OCT	1981	619.	9	358.	23	459.	31		
NOV	1981	1390.	18	307.	10	568.	30		
DEC	1981	2230.	6	487.	1	950.	31		
JAN	1982	3240.	26	390.	6	794.	31		
FEB	1982	21300.	21	550.	5	4373.	28		
MAR	1982	6370.	11	2230.	23	3466.	31		
APR	1982	8310.	14	1770.	10	4464.	30		
MAY	1982	14500.	26	6450.	11	9211.	31		
JUN	1982	9420.	16	4250.	30	6976.	30		
JUL	1982	4250.	1	1040.	30	2110.	31		
AUG	1982	999.	3	610.	28	774.	31		
SEP	1982	680.	12	490.	21	578.	30	21300.	21 FEB
OCT	1982	744.	24	420.	16	552.	31		
NOV	1982	1230.	19	364.	15	692.	30		
DEC	1982	2310.	4	420.	31	1004.	31		
JAN	1983	4330.	8	390.	2	1836.	31		
FEB	1983	5040.	19	1130.	11	2299.	28		
MAR	1983	6130.	11	2320.	29	3973.	31		
***** YEARLY FLOW DATA *****									
						AVERAGE	COUNT		
						154.	14	1979.	366
						160.	31	2002.	365
						307.	10	2879.	365

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IDAHO DEPARTMENT OF WATER RESOURCES
ST. JOE RIVER AT CALDER (1921-90)

SUMMARY HYDROGRAPH DATA
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MONTH	YEAR	***** MONTHLY FLOW DATA *****				COUNT	***** YEARLY FLOW DATA *****				COUNT
		MAXIMUM	DAY	MINIMUM	DAY		MAXIMUM	DAY	MINIMUM	DAY	
APR	1983	7960.	25	2100.	14	30	11900.	30 MAY	364.	15 NOV	365
MAY	1983	11900.	30	4580.	17	31					
JUN	1983	8700.	1	2580.	26	30					
JUL	1983	3040.	3	1100.	31	31					
AUG	1983	1150.	12	527.	31	31					
SEP	1983	1030.	11	426.	30	30					
OCT	1983	682.	23	405.	8	31					
NOV	1983	2080.	12	475.	1	30					
DEC	1983	1200.	10	440.	23	31					
JAN	1984	4900.	26	540.	2	31					
FEB	1984	2490.	1	1130.	27	29					
MAR	1984	4600.	22	1190.	1	31					
APR	1984	7460.	17	2220.	1	30					
MAY	1984	13100.	31	3310.	1	31					
JUN	1984	9560.	1	3710.	30	30					
JUL	1984	3360.	1	917.	31	31					
AUG	1984	1010.	5	487.	28	31					
SEP	1984	863.	1	418.	19	30					
OCT	1984	998.	26	346.	21	31	13100.	31 MAY	405.	8 OCT	366
NOV	1984	1760.	14	406.	1	30					
DEC	1984	1130.	26	370.	4	31					
JAN	1985	580.	10	350.	31	31					
FEB	1985	872.	26	325.	2	28					
MAR	1985	1990.	20	711.	6	31					
APR	1985	11500.	16	1320.	1	30					
MAY	1985	13700.	3	5760.	13	31					
JUN	1985	12600.	8	2090.	30	30					
JUL	1985	1990.	1	656.	31	31					
AUG	1985	935.	2	406.	31	31					
SEP	1985	1380.	17	404.	4	30					
OCT	1985	2840.	25	373.	9	31	13700.	3 MAY	325.	2 FEB	365
NOV	1985	3830.	5	640.	26	30					
DEC	1985	880.	8	670.	1	31					
JAN	1986	2500.	31	670.	1	31					
FEB	1986	11200.	25	1140.	14	28					
MAR	1986	10600.	8	3300.	20	31					
APR	1986	8120.	1	3520.	20	30					
MAY	1986	7660.	28	3400.	1	31					
JUN	1986	5850.	1	1160.	30	30					
JUL	1986	1270.	5	554.	31	31					
AUG	1986	619.	31	343.	28	31					
SEP	1986	970.	30	346.	7	30					
OCT	1986	751.	1	347.	25	31	11200.	25 FEB	343.	28 AUG	2293.
NOV	1986	2770.	24	312.	10	30					
DEC	1986	1180.	1	440.	31	31					
JAN	1987	566.	31	334.	10	31					
FEB	1987	1430.	2	549.	27	28					
MAR	1987	4690.	7	594.	1	31					
APR	1987	10900.	30	1640.	1	30					
MAY	1987	12400.	1	2040.	30	31					

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ST. JOE RIVER AT CALDER (1921-90)

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***** MONTHLY FLOW DATA *****									
MONTH	YEAR	MAXIMUM	DAY	MINIMUM	DAY	AVERAGE	COUNT	MAXIMUM	DAY
JUN	1987	2480.	1	816.	30	1398.	30		
JUL	1987	990.	23	510.	31	693.	31		
AUG	1987	540.	16	357.	31	432.	31		
SEP	1987	353.	1	290.	25	316.	30	12400.	1 MAY
OCT	1987	289.	1	257.	30	273.	31		
NOV	1987	418.	14	159.	30	274.	30		
DEC	1987	1060.	10	227.	21	394.	31		
JAN	1988	1200.	16	210.	9	443.	31		
FEB	1988	880.	29	390.	7	500.	29		
MAR	1988	6850.	27	703.	17	1568.	31		
APR	1988	11800.	17	1590.	1	5456.	30		
MAY	1988	6970.	13	3430.	31	4554.	31		
JUN	1988	3420.	2	1300.	30	2279.	30		
JUL	1988	1300.	14	560.	31	865.	31		
AUG	1988	567.	3	345.	31	442.	31		
SEP	1988	485.	28	304.	16	335.	30	11800.	17 APR
OCT	1988	1110.	17	278.	13	379.	31		
NOV	1988	1440.	23	306.	1	762.	30		
DEC	1988	1400.	14	415.	4	629.	31		
JAN	1989	936.	19	510.	25	619.	31		
FEB	1989	777.	24	280.	3	527.	28		
MAR	1989	3880.	12	560.	3	2025.	31		
APR	1989	13600.	21	1840.	4	7248.	30		
MAY	1989	13400.	8	4550.	27	7173.	31		
JUN	1989	6380.	3	1830.	30	4085.	30		
JUL	1989	1830.	1	690.	31	1106.	31		
AUG	1989	871.	25	493.	19	624.	31		
SEP	1989	648.	3	373.	29	452.	30		
OCT	1989	834.	22	350.	19	455.	31	13600.	21 APR
NOV	1989	3800.	13	391.	2	1560.	30		
DEC	1989	9470.	5	1050.	31	2328.	31		
JAN	1990	7420.	10	967.	3	2132.	31		
FEB	1990	3270.	11	1020.	7	1554.	28		
MAR	1990	3890.	22	1680.	16	2466.	30		
APR	1990	9770.	18	4610.	1	7751.	30		
MAY	1990	9820.	30	4570.	19	6044.	31		
JUN	1990	10800.	2	3200.	30	6086.	30		
JUL	1990	3030.	1	1330.	17	2047.	17		
							365		
							366		
							365		

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ST. JOE RIVER AT CALDER (1921-90)

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***** MEAN DAILY FLOW BY MONTH *****

MONTH	MAXIMUM	YEAR DAY	MINIMUM	YEAR DAY	AVERAGE	COUNT
OCT	6950.	1933	29	222.	1929	26
NOV	12400.	1927	26	100.	1952	27
DEC	40000.	1933	23	147.	1928	5
JAN	28900.	1974	16	170.	1979	1
FEB	21300.	1982	21	200.	1929	6
MAR	18600.	1934	29	300.	1937	1
APR	39400.	1938	18	568.	1936	1
MAY	22600.	1948	28	1750.	1926	31
JUN	20400.	1972	1	722.	1926	30
JUL	7420.	1950	1	384.	1961	19
AUG	1720.	1975	24	281.	1931	31
SEP	1990.	1968	18	261.	1931	6
						470.
						2070

***** YEARLY FLOW DATA *****

MAXIMUM	YEAR	MINIMUM	YEAR	AVERAGE	COUNT
40000.	1933	100.	1952	2353.	25491

***** MEAN MONTHLY FLOW DATA *****

MONTH	MAXIMUM	YEAR	MINIMUM	YEAR
OCT	1621.	1927	273.	1987
NOV	6025.	1927	258.	1929
DEC	8887.	1933	288.	1952
JAN	5442.	1934	204.	1929
FEB	4373.	1982	239.	1929
MAR	6414.	1934	539.	1964
APR	10529.	1925	2073.	1975
MAY	13895.	1971	3285.	1941
JUN	13041.	1974	1154.	1926
JUL	3251.	1950	554.	1926
AUG	953.	1950	356.	1940
SEP	839.	1968	316.	1987

***** MEAN ANNUAL FLOW DATA *****

MAXIMUM	YEAR	MINIMUM	YEAR
3955.	1974	1059.	1944

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FLOW DURATION TABLE FOR STATION 12414500

FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +
15000.	0.79	14000.	1.11	13000.	1.60	12000.	2.22	11000.	3.00
9000.	5.21	8000.	6.76	7000.	8.83	6000.	11.53	5500.	12.92
4500.	16.60	4000.	18.60	3500.	21.00	3000.	23.85	2500.	27.38
1500.	39.25	1000.	50.14	980.	50.69	960.	51.18	940.	51.85
900.	53.06	880.	53.67	860.	54.20	840.	54.87	820.	55.60
780.	57.29	760.	58.19	740.	59.26	720.	60.22	700.	61.42
660.	63.54	640.	65.00	620.	66.20	600.	67.60	580.	69.14
540.	72.24	520.	74.14	500.	76.19	480.	78.09	460.	79.88
420.	84.09	400.	86.56	390.	87.83	380.	88.99	370.	90.41
350.	92.70	340.	93.65	330.	94.64	320.	95.48	310.	96.22
290.	97.49	280.	97.94	270.	98.33	260.	98.66	250.	98.93
230.	99.32	220.	99.53	210.	99.69	200.	99.82	240.	99.18

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FLOW DURATION TABLE FOR STATION 12414500 FROM 1 OCT TO 31 OCT

FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +
15000.	0.00	14000.	0.00	13000.	0.00	12000.	0.00	11000.	0.00
9000.	0.00	8000.	0.00	7000.	0.00	6000.	0.05	5000.	0.09
4500.	0.09	4000.	0.14	3500.	0.14	3000.	0.28	2000.	1.66
1500.	4.29	1000.	9.26	980.	9.54	960.	9.91	940.	10.37
900.	10.55	880.	11.11	860.	11.43	840.	11.84	820.	12.58
780.	13.13	760.	13.73	740.	14.65	720.	15.58	700.	16.22
660.	18.53	640.	19.49	620.	20.78	600.	22.35	580.	24.15
540.	28.57	520.	31.15	500.	33.87	480.	37.37	460.	41.38
420.	53.82	400.	59.86	390.	62.72	380.	65.90	370.	71.57
350.	79.26	340.	82.53	330.	85.67	320.	88.53	310.	91.24
290.	96.08	280.	97.88	270.	99.22	260.	99.82	250.	99.95
230.	99.95	220.	100.00	210.	100.00	200.	100.00	240.	99.95

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FLOW DURATION TABLE FOR STATION 12414500 FROM 1 NOV TO 30 NOV

FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +
15000.	0.00	14000.	0.00	13000.	0.00	12000.	0.10	11000.	0.14
9000.	0.24	8000.	0.43	7000.	0.67	6000.	0.90	5500.	1.14
4500.	2.05	4000.	2.29	3500.	3.24	3000.	4.29	2500.	6.14
1500.	16.43	1000.	28.62	980.	29.29	960.	30.10	940.	30.76
900.	32.14	880.	33.14	860.	33.76	840.	34.43	820.	35.48
780.	37.76	760.	39.00	740.	39.95	720.	40.90	700.	41.67
660.	44.10	640.	46.24	620.	47.67	600.	49.33	580.	51.33
540.	54.57	520.	56.38	500.	58.29	480.	60.52	460.	63.24
420.	68.52	400.	72.29	390.	75.10	380.	76.48	370.	78.33
350.	82.14	340.	83.62	330.	85.71	320.	87.62	310.	89.10
290.	91.76	280.	93.14	270.	94.33	260.	95.52	250.	96.76
230.	97.71	220.	98.43	210.	98.90	200.	99.19		
								10000.	0.19
								5000.	1.43
								2000.	9.62
								920.	31.38
								800.	36.57
								680.	42.90
								560.	52.67
								440.	65.71
								360.	79.81
								300.	90.48
								240.	97.38

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FLOW DURATION TABLE FOR STATION 12414500 FROM 1 DEC TO 31 DEC

FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +
15000.	0.51	14000.	0.60	13000.	0.65	12000.	0.83	11000.	1.06
9000.	1.38	8000.	1.75	7000.	2.26	6000.	3.04	5500.	3.55
4500.	4.88	4000.	5.62	3500.	6.73	3000.	8.62	2500.	11.15
1500.	24.10	1000.	37.37	980.	37.88	960.	38.11	940.	38.85
900.	40.37	880.	41.15	860.	42.26	840.	43.13	820.	44.52
780.	46.91	760.	48.57	740.	50.55	720.	52.12	700.	53.92
660.	56.77	640.	58.57	620.	59.54	600.	60.92	580.	62.67
540.	66.68	520.	69.03	500.	71.38	480.	73.36	460.	74.79
420.	78.34	400.	80.83	390.	81.71	380.	83.00	370.	83.96
350.	86.54	340.	87.65	330.	88.71	320.	89.68	310.	90.74
290.	92.76	280.	93.55	270.	94.70	260.	95.44	250.	96.31
230.	98.29	220.	98.76	210.	99.26	200.	99.45		

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APR 0 9 1938

FLOW DURATION TABLE FOR STATION 12414500 FROM 1 JAN TO 31 JAN

FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +
15000.	0.09	14000.	0.14	13000.	0.14	12000.	0.14	11000.	0.28
9000.	0.46	8000.	0.60	7000.	0.74	6000.	1.06	5500.	1.34
4500.	2.21	4000.	3.27	3500.	4.61	3000.	6.64	2500.	9.63
1500.	24.29	1000.	38.66	980.	39.31	960.	39.95	940.	40.83
900.	43.46	880.	43.96	860.	44.24	840.	45.25	820.	45.62
780.	48.16	760.	49.31	740.	50.88	720.	51.61	700.	54.19
660.	56.87	640.	59.26	620.	60.65	600.	62.26	580.	64.38
540.	68.20	520.	69.82	500.	72.90	480.	74.29	460.	75.94
420.	79.26	400.	82.81	390.	83.92	380.	85.16	370.	86.31
350.	89.22	340.	89.77	330.	90.23	320.	90.92	310.	91.47
290.	93.04	280.	93.55	270.	94.15	260.	94.84	250.	95.35
230.	96.73	220.	97.88	210.	98.66	200.	99.22		
								10000.	0.32
								5000.	1.75
								2000.	13.87
								920.	41.47
								800.	47.56
								680.	55.85
								560.	65.90
								440.	77.83
								360.	87.37
								300.	92.21
								240.	95.94

MICROFILMED
APR 09 1998

FLOW DURATION TABLE FOR STATION 12414500 FROM 1 FEB TO 28 FEB

FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +
15000.	0.10	14000.	0.15	13000.	0.35	12000.	0.46	11000.	0.66
9000.	1.01	8000.	1.37	7000.	1.92	6000.	2.48	5500.	2.78
4500.	4.00	4000.	4.91	3500.	6.42	3000.	8.95	2500.	12.59
1500.	29.49	1000.	51.14	980.	51.95	960.	52.76	940.	53.92
900.	55.99	880.	56.35	860.	57.06	840.	57.97	820.	59.03
780.	61.00	760.	62.01	740.	63.18	720.	64.44	700.	66.36
660.	69.09	640.	70.97	620.	72.53	600.	74.51	580.	76.23
540.	79.01	520.	80.73	500.	82.40	480.	83.41	460.	83.97
420.	86.85	400.	88.37	390.	89.18	380.	89.83	370.	90.79
350.	92.16	340.	92.77	330.	93.68	320.	95.19	310.	95.75
290.	96.97	280.	97.42	270.	97.67	260.	98.38	250.	98.79
230.	99.19	220.	99.34	210.	99.49	200.	100.00	240.	98.99

MICROFILMED

APR 09 1938

FLOW DURATION TABLE FOR STATION 12414500 FROM 1 MAR TO 31 MAR

FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +
15000.	0.09	14000.	0.14	13000.	0.14	12000.	0.18	11000.	0.23
9000.	0.74	8000.	1.06	7000.	1.52	6000.	2.86	5500.	4.15
4500.	7.33	4000.	9.82	3500.	13.74	3000.	18.63	2500.	25.22
1500.	53.39	1000.	74.04	980.	75.01	960.	75.89	940.	77.04
900.	78.79	880.	79.62	860.	80.13	840.	80.77	820.	81.79
780.	83.73	760.	84.60	740.	85.62	720.	86.12	700.	87.32
660.	89.26	640.	91.29	620.	91.89	600.	92.95	580.	93.91
540.	95.07	520.	96.13	500.	96.73	480.	97.33	460.	97.74
420.	97.93	400.	98.11	390.	98.57	380.	98.94	370.	99.35
350.	99.82	340.	99.91	330.	99.91	320.	99.91	310.	99.95
290.	100.00	280.	100.00	270.	100.00	260.	100.00	250.	100.00
230.	100.00	220.	100.00	210.	100.00	200.	100.00	240.	100.00

MICROFILMED

APR 9 1938

FLOW DURATION TABLE FOR STATION 12414500 FROM 1 APR TO 30 APR

FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +
15000.	1.62	14000.	2.10	13000.	3.38	12000.	4.67	11000.	6.48
9000.	13.81	8000.	18.43	7000.	24.76	6000.	34.48	5000.	44.43
4500.	51.19	4000.	58.38	3500.	66.19	3000.	73.57	2000.	90.19
1500.	95.14	1000.	98.43	800.	98.76	960.	98.76	920.	98.95
900.	98.95	880.	98.95	860.	98.95	840.	99.00	800.	99.00
780.	99.05	760.	99.05	740.	99.10	720.	99.19	700.	99.24
660.	99.33	640.	99.43	620.	99.57	600.	99.76	580.	99.90
540.	100.00	520.	100.00	500.	100.00	480.	100.00	460.	100.00
420.	100.00	400.	100.00	390.	100.00	380.	100.00	370.	100.00
350.	100.00	340.	100.00	330.	100.00	320.	100.00	310.	100.00
290.	100.00	280.	100.00	270.	100.00	260.	100.00	250.	100.00
230.	100.00	220.	100.00	210.	100.00	200.	100.00		

MICROFILMED

APR 9 9 1998

FLOW DURATION TABLE FOR STATION 12414500 FROM 1 MAY TO 31 MAY

FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +
15000.	5.99	14000.	8.20	13000.	11.57	12000.	15.58	11000.	21.11
9000.	34.88	8000.	44.79	7000.	56.22	6000.	67.60	5500.	72.35
4500.	84.52	4000.	88.66	3500.	92.95	3000.	96.91	2500.	99.22
1500.	100.00	1000.	100.00	980.	100.00	960.	100.00	940.	100.00
900.	100.00	880.	100.00	860.	100.00	840.	100.00	820.	100.00
780.	100.00	760.	100.00	740.	100.00	720.	100.00	700.	100.00
660.	100.00	640.	100.00	620.	100.00	600.	100.00	580.	100.00
540.	100.00	520.	100.00	500.	100.00	480.	100.00	460.	100.00
420.	100.00	400.	100.00	390.	100.00	380.	100.00	370.	100.00
350.	100.00	340.	100.00	330.	100.00	320.	100.00	310.	100.00
290.	100.00	280.	100.00	270.	100.00	260.	100.00	250.	100.00
230.	100.00	220.	100.00	210.	100.00	200.	100.00		
								10000.	26.96
								5000.	78.43
								2000.	99.86
								920.	100.00
								800.	100.00
								680.	100.00
								560.	100.00
								440.	100.00
								360.	100.00
								300.	100.00
								240.	100.00

MICROFILMED
APR 09 1998

IDAHO DEPARTMENT OF WATER RESOURCES
ST. JOE RIVER AT CALDER (1921-90)

SUMMARY HYDROGRAPH DATA
12414500

PAGE 28

FLOW DURATION TABLE FOR STATION 12414500 FROM 1 JUN TO 30 JUN

FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +
15000.	1.00	14000.	1.90	13000.	2.86	12000.	4.48	11000.	5.81
9000.	9.48	8000.	12.14	7000.	17.19	6000.	24.95	5500.	29.95
4500.	41.48	4000.	48.00	3500.	54.86	3000.	63.10	2500.	73.67
1500.	91.62	1000.	98.57	980.	98.76	960.	98.90	940.	99.05
900.	99.24	880.	99.38	860.	99.43	840.	99.67	820.	99.71
780.	99.86	760.	99.86	740.	99.95	720.	100.00	700.	100.00
660.	100.00	640.	100.00	620.	100.00	600.	100.00	580.	100.00
540.	100.00	520.	100.00	500.	100.00	480.	100.00	460.	100.00
420.	100.00	400.	100.00	390.	100.00	380.	100.00	370.	100.00
350.	100.00	340.	100.00	330.	100.00	320.	100.00	310.	100.00
290.	100.00	280.	100.00	270.	100.00	260.	100.00	250.	100.00
230.	100.00	220.	100.00	210.	100.00	200.	100.00	240.	100.00
								10000.	7.29
								5000.	35.57
								2000.	83.62
								920.	99.19
								800.	99.81
								680.	100.00
								560.	100.00
								440.	100.00
								360.	100.00
								300.	100.00
								240.	100.00

MICROFILMED
APR 09 1998

FLOW DURATION TABLE FOR STATION 12414500 FROM 1 JUL TO 31 JUL

FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +
15000.	0.00	14000.	0.00	13000.	0.00	12000.	0.00	11000.	0.00
9000.	0.00	8000.	0.00	7000.	0.05	6000.	0.14	5500.	0.28
4500.	0.65	4000.	1.35	3500.	2.37	3000.	4.59	2500.	8.35
1500.	31.49	1000.	60.30	980.	61.87	960.	63.36	940.	65.40
900.	68.46	880.	70.32	860.	71.61	840.	73.65	820.	75.46
780.	79.59	760.	81.68	740.	83.53	720.	84.97	700.	87.29
660.	89.89	640.	91.47	620.	92.76	600.	94.20	580.	95.22
540.	96.94	520.	98.19	500.	98.65	480.	98.84	460.	99.21
420.	99.81	400.	99.91	390.	99.95	380.	100.00	370.	100.00
350.	100.00	340.	100.00	330.	100.00	320.	100.00	310.	100.00
290.	100.00	280.	100.00	270.	100.00	260.	100.00	250.	100.00
230.	100.00	220.	100.00	210.	100.00	200.	100.00		
								10000.	0.00
								5000.	0.42
								2000.	15.91
								920.	66.70
								800.	77.18
								680.	88.54
								560.	96.24
								440.	99.54
								360.	100.00
								300.	100.00
								240.	100.00

MICROFILMED
APR 09 1988

FLOW DURATION TABLE FOR STATION 12414500 FROM 1 AUG TO 31 AUG

FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +
15000.	0.00	14000.	0.00	13000.	0.00	12000.	0.00	11000.	0.00
9000.	0.00	8000.	0.00	7000.	0.00	6000.	0.00	5500.	0.00
4500.	0.00	4000.	0.00	3500.	0.00	3000.	0.00	2500.	0.00
1500.	0.09	1000.	3.41	980.	4.02	960.	4.44	940.	5.14
900.	6.36	880.	7.34	860.	8.65	840.	9.68	820.	11.13
780.	14.54	760.	16.04	740.	18.70	720.	22.07	700.	24.78
660.	31.23	640.	34.74	620.	39.08	600.	42.73	580.	47.45
540.	56.62	520.	61.62	500.	67.27	480.	73.26	460.	77.79
420.	87.14	400.	90.88	390.	92.94	380.	94.48	370.	95.84
350.	97.66	340.	98.18	330.	98.74	320.	99.11	310.	99.44
290.	99.95	280.	100.00	270.	100.00	260.	100.00	250.	100.00
230.	100.00	220.	100.00	210.	100.00	200.	100.00	240.	100.00

MICROFILMED
APR 8 9 1988

IDAHO DEPARTMENT OF WATER RESOURCES
ST. JOE RIVER AT CALDER (1921-90)

SUMMARY HYDROGRAPH DATA
12414500

PAGE 31

FLOW DURATION TABLE FOR STATION 12414500 FROM 1 SEP TO 30 SEP

FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +	FLOW	PERCENT = / +
15000.	0.00	14000.	0.00	13000.	0.00	12000.	0.00	11000.	0.00
9000.	0.00	8000.	0.00	7000.	0.00	6000.	0.00	5500.	0.00
4500.	0.00	4000.	0.00	3500.	0.00	3000.	0.00	2500.	0.00
1500.	0.10	1000.	1.50	980.	1.55	960.	1.69	940.	1.79
900.	2.08	880.	2.27	860.	2.51	840.	2.66	820.	2.85
780.	3.29	760.	3.86	740.	4.35	720.	4.98	700.	5.36
660.	6.71	640.	7.83	620.	9.18	600.	11.55	580.	13.82
540.	20.63	520.	26.09	500.	32.32	480.	38.31	460.	44.06
420.	57.10	400.	65.36	390.	69.66	380.	73.96	370.	78.60
350.	85.51	340.	89.28	330.	93.04	320.	94.93	310.	97.05
290.	99.32	280.	99.76	270.	99.95	260.	100.00	250.	100.00
230.	100.00	220.	100.00	210.	100.00	200.	100.00	240.	100.00

MICROFILMED
APR 09 1992

STATION ST. JOE RIVER AT CALDER (1921-90) 12414500
 FLOW DURATION TABLE

					***** DAILY FLOW DATA *****							
MON	DAY	MINIMUM	YEAR	MAXIMUM	YEAR	AVERAGE	COUNT					
JAN	1	170.	1979	8240.	1934	1067.		0.90		EXCEEDANCE FREQUENCY		
JAN	2	210.	1979	7450.	1934	1013.			0.75			
JAN	3	210.	1937	10200.	1934	1041.						
JAN	4	210.	1937	11500.	1934	1041.						
JAN	5	195.	1929	9650.	1934	1059.						
JAN	6	200.	1937	7710.	1934	1136.						
JAN	7	200.	1937	6470.	1934	1244.						
JAN	8	200.	1929	6700.	1948	1340.						
JAN	9	200.	1929	5050.	1934	1216.						
JAN	10	200.	1929	7420.	1990	1175.						
JAN	11	195.	1975	5350.	1990	1095.						
JAN	12	195.	1975	4200.	1928	1102.						
JAN	13	200.	1975	5520.	1959	1138.						
JAN	14	220.	1975	5260.	1928	1170.						
JAN	15	220.	1929	11000.	1974	1258.						
JAN	16	208.	1930	28900.	1974	1518.						
JAN	17	200.	1930	22400.	1974	1406.						
JAN	18	210.	1930	14600.	1974	1248.						
JAN	19	180.	1929	11200.	1974	1183.						
JAN	20	180.	1929	8790.	1974	1200.						
JAN	21	180.	1929	6840.	1974	1193.						
JAN	22	180.	1929	5740.	1974	1144.						
JAN	23	180.	1929	9940.	1934	1245.						
JAN	24	180.	1929	8510.	1934	1247.						
JAN	25	180.	1929	6240.	1934	1241.						
JAN	26	180.	1929	5150.	1934	1227.						
JAN	27	180.	1929	4560.	1934	1139.						
JAN	28	180.	1929	4100.	1934	1123.						
JAN	29	180.	1929	5040.	1965	1130.						
JAN	30	180.	1929	4210.	1965	1131.						
JAN	31	180.	1929	9600.	1971	1214.						

MICROFILMED
 APR 09 1998

STATION ST. JOE RIVER AT CALDER (1921-90) 12414500
FLOW DURATION TABLE

***** DAILY FLOW DATA *****											
		AVERAGE		COUNT		EXCEEDANCE FREQUENCY					
MON	DAY	MINIMUM	YEAR	MAXIMUM	YEAR	0.90	0.75	0.50	0.25	0.10	
FEB	1	220.	1979	13000.	1925	340.	548.	922.	1560.	3000.	
FEB	2	230.	1979	13000.	1925	331.	510.	894.	1520.	2860.	
FEB	3	240.	1979	13000.	1925	325.	500.	915.	1700.	2540.	
FEB	4	230.	1937	16200.	1925	325.	520.	869.	1510.	2330.	
FEB	5	220.	1937	7670.	1925	320.	510.	900.	1650.	2600.	
FEB	6	200.	1929	6800.	1963	350.	520.	825.	1560.	2310.	
FEB	7	200.	1929	6050.	1963	350.	540.	953.	1550.	2200.	
FEB	8	200.	1929	5180.	1963	360.	538.	1020.	1700.	2450.	
FEB	9	200.	1929	5000.	1951	370.	533.	1070.	1650.	2250.	
FEB	10	200.	1929	13000.	1951	380.	570.	1050.	1610.	2210.	
FEB	11	200.	1929	14800.	1951	380.	596.	1000.	1560.	2850.	
FEB	12	200.	1929	11800.	1951	450.	590.	1120.	1590.	2810.	
FEB	13	200.	1929	7420.	1951	450.	620.	1040.	1650.	2930.	
FEB	14	200.	1929	5560.	1951	435.	626.	1140.	1750.	3430.	
FEB	15	200.	1929	8700.	1982	448.	626.	1080.	1670.	3230.	
FEB	16	260.	1937	7160.	1982	450.	600.	1040.	1700.	3350.	
FEB	17	260.	1937	9080.	1982	450.	619.	1070.	1660.	3350.	
FEB	18	260.	1929	7220.	1982	450.	627.	1100.	1740.	3100.	
FEB	19	260.	1929	8090.	1968	425.	634.	990.	1790.	2950.	
FEB	20	260.	1929	11700.	1968	411.	652.	984.	1990.	3050.	
FEB	21	260.	1929	21300.	1982	410.	628.	1080.	1950.	3050.	
FEB	22	260.	1929	12700.	1982	410.	649.	1050.	1740.	2760.	
FEB	23	260.	1929	8280.	1968	410.	656.	1140.	1830.	2700.	
FEB	24	260.	1929	9900.	1986	412.	620.	1150.	1910.	3080.	
FEB	25	260.	1929	11200.	1986	500.	642.	1080.	1700.	3560.	
FEB	26	280.	1929	9550.	1986	490.	670.	1110.	2030.	3370.	
FEB	27	280.	1929	8830.	1972	520.	700.	1120.	2080.	3460.	
FEB	28	350.	1964	8900.	1972	599.	900.	1290.	2550.	3240.	
FEB	29									8900.	

MICROFILMED

APR 09 1998

STATION ST. JOE RIVER AT CALDER (1921-90) 12414500
FLOW DURATION TABLE

		***** DAILY FLOW DATA *****		EXCEEDANCE FREQUENCY				
MON	DAY	MINIMUM	YEAR	MAXIMUM	YEAR	AVERAGE	COUNT	
MAR	1	300.	1937	6680.	1986	1587.	572.	0.90
MAR	2	310.	1937	6330.	1986	1606.	520.	0.75
MAR	3	340.	1937	6280.	1986	1596.	505.	0.50
MAR	4	350.	1929	5940.	1986	1594.	482.	0.25
MAR	5	350.	1929	6400.	1950	1635.	460.	0.10
MAR	6	360.	1944	5700.	1950	1655.	520.	
MAR	7	340.	1944	7070.	1986	1659.	565.	
MAR	8	350.	1964	10600.	1986	1722.	600.	
MAR	9	370.	1964	9460.	1986	1714.	614.	
MAR	10	360.	1964	7800.	1986	1788.	708.	
MAR	11	370.	1964	6540.	1986	1795.	690.	
MAR	12	400.	1964	8150.	1972	1799.	700.	
MAR	13	390.	1964	8330.	1972	1827.	662.	
MAR	14	390.	1964	10200.	1972	1857.	650.	
MAR	15	415.	1964	8180.	1972	1782.	650.	
MAR	16	460.	1964	8200.	1972	1791.	650.	
MAR	17	489.	1964	10300.	1972	1917.	650.	
MAR	18	504.	1977	12200.	1972	2041.	696.	
MAR	19	507.	1977	10500.	1972	2031.	683.	
MAR	20	462.	1977	9130.	1972	2076.	789.	
MAR	21	469.	1977	8060.	1972	2188.	818.	
MAR	22	471.	1977	7540.	1972	2249.	811.	
MAR	23	550.	1964	9280.	1972	2266.	830.	
MAR	24	521.	1955	6480.	1972	2306.	830.	
MAR	25	522.	1964	6520.	1988	2484.	855.	
MAR	26	498.	1964	9070.	1934	2645.	971.	
MAR	27	503.	1964	18600.	1934	2885.	944.	
MAR	28	640.	1922	16300.	1934	2964.	1030.	
MAR	29	634.	1936	14500.	1934	3075.	1020.	
MAR	30	535.	1936					
MAR	31							

MICROFILMED

APR 09 1988

STATION ST. JOE RIVER AT CALDER (1921-90) 12414500
FLOW DURATION TABLE

				***** DAILY FLOW DATA *****			
MON	DAY	MINIMUM	YEAR	MAXIMUM	YEAR	AVERAGE	COUNT
APR	1	568.	1936	12800.	1934	3254.	1050.
APR	2	568.	1975	10800.	1934	3367.	1200.
APR	3	606.	1936	8790.	1934	3386.	1300.
APR	4	582.	1975	10700.	1961	3438.	1270.
APR	5	596.	1975	9350.	1925	3435.	1310.
APR	6	631.	1975	10800.	1925	3756.	1570.
APR	7	680.	1975	14600.	1962	4119.	1560.
APR	8	748.	1975	12100.	1925	4201.	1780.
APR	9	733.	1975	13100.	1925	4184.	1860.
APR	10	733.	1975	14100.	1925	4158.	1830.
APR	11	956.	1975	15200.	1925	4351.	1980.
APR	12	990.	1929	16600.	1925	4671.	1810.
APR	13	990.	1929	15800.	1925	4993.	2120.
APR	14	1170.	1929	13800.	1925	5432.	2030.
APR	15	1220.	1953	13800.	1943	5684.	2170.
APR	16	1260.	1922	14100.	1943	5839.	2280.
APR	17	1360.	1922	17100.	1938	6135.	2350.
APR	18	1360.	1922	39400.	1938	6592.	2410.
APR	19	1360.	1922	30000.	1938	6411.	2390.
APR	20	1900.	1977	19000.	1938	6425.	2350.
APR	21	1890.	1977	20000.	1965	6409.	2310.
APR	22	2000.	1941	17700.	1956	6330.	2530.
APR	23	2000.	1941	17400.	1956	6378.	2910.
APR	24	2000.	1941	16700.	1956	6603.	3070.
APR	25	2000.	1941	15600.	1936	6603.	3190.
APR	26	2000.	1941	15300.	1927	6669.	3370.
APR	27	2000.	1941	17000.	1927	6747.	3370.
APR	28	2000.	1941	17000.	1927	6914.	3520.
APR	29	2000.	1941	15000.	1927	7064.	3630.
APR	30	2000.	1941	14600.	1965	7095.	3390.

0.90

0.75

0.50

0.25

0.10

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APR 09 1988

STATION ST. JOE RIVER AT CALDER (1921-90) 12414500
 FLOW DURATION TABLE

MON	DAY	MINIMUM	YEAR	MAXIMUM	YEAR	***** DAILY FLOW DATA *****		EXCEEDANCE FREQUENCY				
						AVERAGE	COUNT	0.90	0.75	0.50	0.25	0.10
MAY	1	2410.	1970	14600.	1959	7211.	3630.	4870.	6830.	9060.	11900.	
MAY	2	2700.	1967	15100.	1957	7371.	3840.	5280.	7130.	10200.	11400.	
MAY	3	2880.	1967	15400.	1971	7544.	4100.	5140.	7070.	9800.	11400.	
MAY	4	2900.	1941	18900.	1971	7706.	3910.	5360.	7710.	9270.	12400.	
MAY	5	2900.	1941	19600.	1971	7997.	4170.	5760.	7300.	10400.	14200.	
MAY	6	2900.	1964	20100.	1979	8087.	4370.	5220.	7310.	10000.	14000.	
MAY	7	2820.	1964	15700.	1921	8218.	4020.	5540.	7630.	11200.	14400.	
MAY	8	3140.	1941	16800.	1921	8360.	4020.	5380.	7550.	11300.	14400.	
MAY	9	2880.	1941	17000.	1971	8426.	4150.	5470.	7630.	11300.	15400.	
MAY	10	2760.	1941	17800.	1976	8491.	4410.	5630.	7760.	11200.	15300.	
MAY	11	2760.	1941	20200.	1976	8479.	4490.	5360.	7880.	10500.	14800.	
MAY	12	3070.	1941	20000.	1971	8434.	4250.	5790.	7880.	11000.	14200.	
MAY	13	3190.	1973	22200.	1971	8501.	4250.	5700.	7900.	10900.	13900.	
MAY	14	3350.	1930	19600.	1971	8625.	4280.	5730.	8170.	11200.	13700.	
MAY	15	3250.	1926	19700.	1972	8601.	4470.	5510.	7940.	10900.	14200.	
MAY	16	3020.	1926	19600.	1972	8686.	4410.	5500.	7940.	11500.	15100.	
MAY	17	3080.	1926	19900.	1972	8839.	4220.	5420.	8400.	11500.	15400.	
MAY	18	3350.	1930	18500.	1972	8780.	4190.	5430.	8630.	11900.	14800.	
MAY	19	3200.	1930	19600.	1954	8529.	4210.	5660.	8480.	11400.	14000.	
MAY	20	3160.	1987	20000.	1956	8641.	4010.	5480.	7940.	11300.	13700.	
MAY	21	2900.	1987	19800.	1956	8643.	4010.	5770.	7860.	11000.	15200.	
MAY	22	2690.	1987	21100.	1948	8533.	3700.	5970.	7880.	11100.	14500.	
MAY	23	2530.	1987	19000.	1948	8324.	3540.	5630.	8170.	11600.	13000.	
MAY	24	2420.	1987	19300.	1948	8224.	3590.	5100.	8190.	11200.	12800.	
MAY	25	2360.	1926	20700.	1948	8097.	3670.	5080.	7970.	10600.	12400.	
MAY	26	2210.	1926	21100.	1948	8102.	3510.	5490.	7710.	10400.	13300.	
MAY	27	2150.	1926	21900.	1948	7945.	3220.	5510.	7680.	9430.	13300.	
MAY	28	2030.	1926	22600.	1948	7650.	3060.	5290.	7560.	9650.	11700.	
MAY	29	1930.	1926	20600.	1948	7426.	3050.	5180.	7120.	8970.	12100.	
MAY	30	1890.	1926	19200.	1972	7311.	2880.	5140.	6860.	9260.	12100.	
MAY	31	1750.	1926	20600.	1972	7104.	2880.	4830.	6560.	9100.	12400.	

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STATION ST. JOE RIVER AT CALDER (1921-90) 12414500
 FLOW DURATION TABLE

MON	DAY	MINIMUM	YEAR	MAXIMUM	YEAR	***** DAILY FLOW DATA *****		EXCEEDANCE FREQUENCY				
						AVERAGE	COUNT	0.90	0.75	0.50	0.25	0.10
JUN	1	1680.	1926	20400.	1972	6895.		2940.	4610.	6460.	8700.	12200.
JUN	2	1660.	1926	18500.	1972	6883.		2940.	4280.	6260.	9100.	12100.
JUN	3	1590.	1926	16500.	1972	6782.		2770.	4160.	6380.	9400.	12300.
JUN	4	1560.	1926	16200.	1974	6598.		2640.	4120.	6270.	9000.	12600.
JUN	5	1520.	1926	17500.	1974	6423.		2520.	3950.	6060.	8340.	12000.
JUN	6	1470.	1926	17400.	1974	6334.		2400.	3930.	5860.	7720.	12400.
JUN	7	1400.	1926	15800.	1974	6203.		2460.	3840.	5570.	8200.	11500.
JUN	8	1370.	1926	15800.	1964	5998.		2300.	3800.	5540.	8030.	12200.
JUN	9	1300.	1926	18400.	1933	5891.		2240.	3730.	5370.	7370.	10400.
JUN	10	1220.	1926	18100.	1933	5649.		2180.	3700.	5270.	7040.	9090.
JUN	11	1160.	1926	15200.	1933	5387.		2080.	3450.	4780.	6860.	9970.
JUN	12	1130.	1926	15600.	1974	5220.		2030.	3280.	4600.	6700.	9850.
JUN	13	1070.	1926	16800.	1974	5107.		1970.	3050.	4360.	6480.	9570.
JUN	14	1130.	1926	16200.	1974	4906.		1920.	2950.	4210.	6290.	9230.
JUN	15	1210.	1931	15900.	1974	4715.		1860.	2820.	4030.	6560.	8000.
JUN	16	1150.	1926	16000.	1974	4574.		1750.	2760.	3870.	5940.	7780.
JUN	17	1090.	1926	15500.	1974	4382.		1680.	2590.	3710.	5800.	7480.
JUN	18	1050.	1926	14500.	1974	4167.		1690.	2510.	3460.	5560.	7350.
JUN	19	1100.	1926	14000.	1974	3968.		1640.	2460.	3390.	5300.	6770.
JUN	20	1100.	1934	13200.	1974	3802.		1590.	2360.	3340.	5120.	6300.
JUN	21	1060.	1934	12500.	1974	3654.		1480.	2250.	3150.	4950.	6150.
JUN	22	982.	1926	11600.	1974	3505.		1470.	2160.	3020.	4750.	5970.
JUN	23	940.	1926	11200.	1974	3334.		1360.	2190.	2880.	4780.	5440.
JUN	24	888.	1926	11000.	1974	3190.		1340.	2280.	2760.	4400.	5600.
JUN	25	858.	1926	10200.	1974	3028.		1300.	2170.	2660.	4250.	5360.
JUN	26	819.	1926	9230.	1974	2868.		1260.	2080.	2500.	4000.	5060.
JUN	27	782.	1926	7800.	1974	2725.		1290.	1970.	2400.	3720.	4730.
JUN	28	748.	1926	7280.	1950	2624.		1180.	1870.	2270.	3550.	4270.
JUN	29	743.	1926	7420.	1950	2518.		1190.	1810.	2190.	3360.	4080.
JUN	30	722.	1926	7570.	1950	2413.		1080.	1710.	2120.	3200.	4130.

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STATION ST. JOE RIVER AT CALDER (1921-90) 12414500
 FLOW DURATION TABLE

MON	DAY	MINIMUM	YEAR	MAXIMUM	YEAR	***** DAILY FLOW DATA *****		EXCEEDANCE FREQUENCY				
						AVERAGE	COUNT	0.90	0.75	0.50	0.25	0.10
JUL	1	795.	1931	7420.	1950	2318.		1090.	1630.	2010.	3030.	4100.
JUL	2	760.	1931	6920.	1950	2205.		1050.	1560.	1950.	2860.	3830.
JUL	3	726.	1926	6300.	1950	2113.		1040.	1500.	1870.	2800.	3590.
JUL	4	694.	1926	5900.	1950	2028.		992.	1440.	1770.	2600.	3390.
JUL	5	660.	1926	5520.	1950	1940.		960.	1320.	1690.	2470.	3290.
JUL	6	668.	1926	5140.	1950	1861.		928.	1330.	1640.	2360.	3160.
JUL	7	681.	1926	4710.	1950	1803.		913.	1250.	1560.	2250.	3290.
JUL	8	664.	1926	4260.	1950	1721.		878.	1230.	1480.	2220.	3080.
JUL	9	640.	1926	3920.	1950	1644.		819.	1160.	1420.	2060.	2910.
JUL	10	606.	1926	3920.	1950	1587.		822.	1150.	1360.	1930.	2750.
JUL	11	572.	1926	3670.	1955	1526.		794.	1070.	1350.	1880.	2570.
JUL	12	565.	1926	3580.	1955	1452.		760.	1030.	1270.	1790.	2380.
JUL	13	592.	1931	3300.	1955	1400.		752.	1020.	1240.	1690.	2260.
JUL	14	530.	1931	3090.	1955	1361.		731.	1020.	1240.	1640.	2300.
JUL	15	530.	1931	2870.	1955	1301.		700.	986.	1190.	1560.	2120.
JUL	16	539.	1931	2630.	1955	1260.		697.	930.	1120.	1510.	2050.
JUL	17	530.	1931	2440.	1955	1214.		678.	913.	1100.	1470.	1970.
JUL	18	521.	1931	2340.	1955	1165.		700.	881.	1030.	1400.	1890.
JUL	19	384.	1961	2430.	1950	1129.		686.	853.	1020.	1340.	1860.
JUL	20	474.	1926	2360.	1950	1105.		686.	836.	990.	1300.	1860.
JUL	21	442.	1926	2120.	1950	1059.		659.	795.	945.	1250.	1800.
JUL	22	442.	1926	2000.	1950	1019.		644.	776.	915.	1190.	1650.
JUL	23	434.	1926	1910.	1950	988.		626.	756.	920.	1150.	1570.
JUL	24	430.	1926	1910.	1955	955.		620.	736.	887.	1130.	1480.
JUL	25	423.	1926	1740.	1955	928.		614.	723.	860.	1100.	1430.
JUL	26	423.	1926	1700.	1950	905.		587.	706.	847.	1070.	1380.
JUL	27	420.	1926	1630.	1950	877.		570.	681.	832.	1030.	1300.
JUL	28	420.	1926	1980.	1948	862.		560.	666.	795.	978.	1280.
JUL	29	412.	1926	2150.	1948	848.		540.	662.	806.	962.	1310.
JUL	30	402.	1926	1830.	1950	819.		525.	652.	765.	945.	1270.
JUL	31	395.	1926	1580.	1950	789.		521.	631.	750.	917.	1200.

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STATION ST. JOE RIVER AT CALDER (1921-90) 12414500
 FLOW DURATION TABLE

						***** DAILY FLOW DATA *****					
				AVERAGE		COUNT					
MON	DAY	MINIMUM	YEAR	MAXIMUM	YEAR			0.90		EXCEEDANCE FREQUENCY	
								0.75	0.50	0.25	0.10
AUG	1	364.	1926	1460.	1948	777.	510.	615.	749.	909.	1170.
AUG	2	409.	1926	1590.	1948	775.	500.	596.	735.	935.	1130.
AUG	3	370.	1926	1400.	1948	748.	491.	589.	716.	872.	1070.
AUG	4	367.	1926	1280.	1950	728.	486.	572.	709.	863.	1020.
AUG	5	374.	1926	1310.	1950	711.	475.	557.	687.	880.	1010.
AUG	6	370.	1926	1250.	1950	686.	485.	550.	658.	845.	970.
AUG	7	360.	1926	1200.	1950	668.	478.	534.	638.	810.	974.
AUG	8	386.	1940	1120.	1950	648.	469.	521.	638.	769.	922.
AUG	9	376.	1940	1090.	1950	641.	458.	527.	634.	736.	899.
AUG	10	368.	1940	1060.	1950	632.	452.	520.	630.	736.	880.
AUG	11	365.	1940	1180.	1948	626.	442.	505.	612.	727.	864.
AUG	12	362.	1940	1150.	1983	614.	442.	495.	598.	713.	842.
AUG	13	358.	1940	966.	1950	614.	428.	498.	590.	730.	844.
AUG	14	355.	1940	942.	1950	601.	439.	499.	587.	705.	803.
AUG	15	352.	1940	928.	1950	594.	444.	498.	592.	695.	790.
AUG	16	348.	1940	1110.	1976	585.	434.	495.	559.	673.	782.
AUG	17	345.	1940	925.	1976	564.	417.	480.	537.	664.	747.
AUG	18	339.	1940	893.	1980	556.	412.	475.	535.	640.	740.
AUG	19	335.	1940	805.	1950	550.	399.	472.	535.	634.	749.
AUG	20	329.	1940	982.	1954	554.	394.	456.	529.	630.	784.
AUG	21	305.	1931	1010.	1954	542.	394.	448.	525.	630.	735.
AUG	22	302.	1931	758.	1948	533.	388.	442.	526.	660.	722.
AUG	23	296.	1931	956.	1975	540.	387.	433.	516.	625.	816.
AUG	24	299.	1931	1720.	1975	542.	379.	435.	510.	606.	751.
AUG	25	299.	1931	1110.	1975	530.	379.	439.	499.	603.	749.
AUG	26	302.	1931	845.	1956	520.	375.	435.	495.	584.	764.
AUG	27	316.	1940	1060.	1956	523.	379.	435.	495.	608.	722.
AUG	28	329.	1940	1100.	1964	517.	372.	416.	489.	582.	692.
AUG	29	302.	1931	925.	1964	500.	358.	410.	487.	582.	664.
AUG	30	293.	1931	830.	1956	495.	363.	405.	492.	559.	652.
AUG	31	281.	1931	786.	1926	504.	359.	411.	505.	597.	666.

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STATION ST. JOE RIVER AT CALDER (1921-90) 12414500
FLOW DURATION TABLE

MON	DAY	MINIMUM	YEAR	MAXIMUM	YEAR	***** DAILY FLOW DATA *****			EXCEEDANCE FREQUENCY		
						AVERAGE	COUNT		0.75	0.50	0.25
SEP	1	278.	1931	1060.	1927	509.	360.	412.	503.	582.	718.
SEP	2	275.	1931	1040.	1971	499.	370.	408.	477.	571.	695.
SEP	3	278.	1931	1000.	1964	485.	358.	407.	460.	548.	645.
SEP	4	293.	1931	824.	1964	473.	355.	399.	485.	543.	601.
SEP	5	287.	1931	870.	1959	475.	355.	398.	484.	537.	610.
SEP	6	261.	1931	1250.	1959	484.	353.	394.	472.	554.	627.
SEP	7	278.	1931	941.	1959	478.	346.	390.	467.	540.	631.
SEP	8	287.	1934	771.	1970	468.	348.	390.	470.	547.	606.
SEP	9	296.	1944	765.	1938	463.	358.	385.	459.	539.	600.
SEP	10	289.	1944	668.	1947	454.	355.	381.	451.	522.	576.
SEP	11	289.	1944	1340.	1927	473.	348.	375.	458.	508.	627.
SEP	12	286.	1944	1210.	1927	465.	340.	379.	445.	515.	636.
SEP	13	282.	1944	1190.	1927	459.	341.	375.	456.	508.	600.
SEP	14	286.	1944	1210.	1927	459.	342.	393.	438.	510.	610.
SEP	15	307.	1987	1190.	1965	469.	339.	390.	433.	508.	696.
SEP	16	304.	1988	988.	1965	465.	340.	386.	434.	501.	716.
SEP	17	304.	1988	1380.	1985	475.	338.	380.	435.	512.	757.
SEP	18	315.	1987	1990.	1968	485.	340.	375.	425.	510.	608.
SEP	19	311.	1987	1760.	1968	470.	340.	374.	424.	515.	675.
SEP	20	306.	1987	1230.	1968	465.	345.	381.	460.	526.	653.
SEP	21	304.	1987	1230.	1968	472.	351.	377.	448.	526.	653.
SEP	22	300.	1987	1200.	1968	476.	341.	382.	450.	527.	667.
SEP	23	296.	1987	1230.	1926	478.	338.	376.	443.	533.	676.
SEP	24	292.	1987	1140.	1968	463.	329.	373.	427.	540.	632.
SEP	25	290.	1987	1040.	1968	455.	332.	370.	421.	504.	638.
SEP	26	293.	1987	1030.	1959	458.	332.	360.	420.	531.	642.
SEP	27	293.	1931	1190.	1959	454.	330.	364.	420.	510.	606.
SEP	28	290.	1931	1290.	1959	455.	330.	366.	417.	530.	620.
SEP	29	290.	1931	1230.	1927	460.	330.	366.	403.	510.	752.
SEP	30	287.	1931	1180.	1927	459.	325.	358.	408.	485.	774.

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STATION ST. JOE RIVER AT CALDER (1921-90) 12414500
 FLOW DURATION TABLE

***** DAILY FLOW DATA *****											
MON	DAY	MINIMUM	YEAR	MAXIMUM	YEAR	AVERAGE		EXCEEDANCE FREQUENCY			
						COUNT	0.90	0.75	0.50	0.25	0.10
OCT	1	281.	1931	1100.	1927	464.	318.	366.	412.	510.	740.
OCT	2	278.	1931	1170.	1920	464.	316.	370.	426.	498.	682.
OCT	3	272.	1931	1460.	1920	487.	315.	370.	426.	540.	714.
OCT	4	278.	1987	2800.	1927	503.	318.	366.	420.	520.	693.
OCT	5	277.	1987	2400.	1927	495.	338.	370.	425.	510.	740.
OCT	6	276.	1987	2100.	1927	486.	342.	376.	412.	522.	709.
OCT	7	278.	1987	1790.	1927	479.	325.	372.	415.	521.	692.
OCT	8	276.	1987	1620.	1927	495.	321.	360.	415.	575.	796.
OCT	9	270.	1987	1620.	1959	515.	312.	358.	400.	562.	901.
OCT	10	267.	1987	2510.	1955	531.	306.	354.	412.	541.	839.
OCT	11	269.	1987	1990.	1955	539.	306.	360.	424.	585.	973.
OCT	12	271.	1987	3160.	1959	581.	306.	363.	430.	585.	973.
OCT	13	270.	1987	2880.	1959	563.	303.	362.	440.	557.	1120.
OCT	14	268.	1987	2370.	1959	553.	303.	358.	440.	545.	1030.
OCT	15	264.	1931	2020.	1927	543.	310.	360.	424.	533.	1150.
OCT	16	266.	1931	1990.	1927	541.	310.	360.	424.	548.	935.
OCT	17	275.	1931	1950.	1926	557.	310.	356.	420.	526.	1110.
OCT	18	276.	1922	2390.	1947	547.	313.	346.	408.	590.	861.
OCT	19	275.	1931	2630.	1947	548.	312.	350.	406.	564.	1100.
OCT	20	275.	1931	2600.	1947	570.	308.	355.	415.	597.	1310.
OCT	21	272.	1987	2260.	1947	567.	326.	355.	416.	598.	1260.
OCT	22	272.	1987	2200.	1968	579.	320.	353.	429.	666.	1170.
OCT	23	265.	1987	2510.	1933	615.	318.	350.	439.	661.	1210.
OCT	24	264.	1987	2580.	1933	601.	312.	364.	451.	664.	1030.
OCT	25	258.	1929	2840.	1985	657.	320.	370.	470.	611.	1420.
OCT	26	222.	1929	3070.	1934	685.	320.	379.	470.	680.	1360.
OCT	27	262.	1987	1890.	1933	622.	330.	386.	500.	728.	1220.
OCT	28	261.	1987	2580.	1933	624.	317.	400.	490.	656.	1140.
OCT	29	260.	1987	6950.	1933	702.	326.	390.	460.	698.	1180.
OCT	30	257.	1987	5150.	1933	668.	323.	394.	445.	650.	1240.
OCT	31	258.	1987	4190.	1933	652.	326.	379.	464.	697.	1200.

MICROFILMED

APR 09 1988

STATION ST. JOE RIVER AT CALDER (1921-90) 12414500
FLOW DURATION TABLE

***** DAILY FLOW DATA *****						EXCEEDANCE FREQUENCY						
MON	DAY	MINIMUM	YEAR	MAXIMUM	YEAR	AVERAGE	COUNT	0.90	0.75	0.50	0.25	0.10
NOV	1	261.	1987	3670.	1933	633.		329.	382.	465.	781.	1160.
NOV	2	230.	1936	3920.	1933	663.		318.	391.	485.	752.	1150.
NOV	3	198.	1936	11800.	1933	839.		301.	376.	470.	880.	1690.
NOV	4	262.	1987	8790.	1933	891.		310.	360.	520.	948.	1420.
NOV	5	252.	1922	8060.	1927	903.		314.	375.	517.	878.	1610.
NOV	6	256.	1987	9160.	1927	903.		315.	376.	530.	1010.	1760.
NOV	7	227.	1922	10000.	1927	922.		329.	382.	527.	899.	1860.
NOV	8	210.	1936	7530.	1927	864.		328.	394.	497.	820.	1980.
NOV	9	210.	1936	6290.	1927	827.		300.	400.	556.	810.	1890.
NOV	10	208.	1936	5420.	1927	857.		312.	387.	532.	920.	1790.
NOV	11	250.	1978	4700.	1927	870.		308.	408.	561.	1060.	2030.
NOV	12	230.	1929	4540.	1973	900.		330.	394.	546.	1120.	2080.
NOV	13	192.	1979	4020.	1927	940.		298.	392.	580.	1300.	2050.
NOV	14	154.	1979	4210.	1927	910.		320.	409.	598.	1210.	2000.
NOV	15	167.	1979	4800.	1927	891.		323.	381.	632.	1260.	1890.
NOV	16	225.	1979	4700.	1927	889.		293.	415.	643.	1220.	1690.
NOV	17	200.	1961	5100.	1927	915.		338.	431.	662.	1200.	1740.
NOV	18	198.	1944	5840.	1927	938.		328.	450.	690.	1210.	1700.
NOV	19	222.	1944	5840.	1927	947.		301.	419.	674.	1220.	1760.
NOV	20	217.	1929	6060.	1927	963.		310.	409.	591.	1220.	1980.
NOV	21	194.	1929	6060.	1927	981.		309.	389.	608.	1270.	2090.
NOV	22	175.	1979	5420.	1927	967.		323.	386.	650.	1290.	2330.
NOV	23	150.	1952	6520.	1959	1063.		296.	387.	685.	1310.	2020.
NOV	24	208.	1952	7390.	1959	1187.		308.	390.	777.	1500.	2770.
NOV	25	210.	1936	12100.	1927	1390.		303.	415.	746.	1460.	3450.
NOV	26	140.	1952	12400.	1927	1312.		275.	430.	762.	1570.	2780.
NOV	27	100.	1952	8880.	1927	1194.		281.	375.	736.	1560.	2710.
NOV	28	120.	1952	7790.	1927	1148.		272.	380.	739.	1510.	2520.
NOV	29	130.	1952	7020.	1927	1111.		272.	404.	744.	1400.	2370.
NOV	30	159.	1987	7240.	1926	1099.		275.	415.	729.	1500.	2130.

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APR 09 1988

STATION ST. JOE RIVER AT CALDER (1921-90) 12414500
 FLOW DURATION TABLE

***** DAILY FLOW DATA *****					
		AVERAGE		COUNT	
MON	DAY	MINIMUM	YEAR	MAXIMUM	YEAR
DEC	1	230.	1952	6040.	1926
DEC	2	232.	1935	11400.	1977
DEC	3	212.	1935	14400.	1977
DEC	4	181.	1928	13900.	1975
DEC	5	147.	1928	12500.	1975
DEC	6	169.	1928	7330.	1975
DEC	7	183.	1928	5630.	1975
DEC	8	210.	1972	4940.	1975
DEC	9	220.	1972	4900.	1975
DEC	10	190.	1961	15900.	1933
DEC	11	190.	1961	14500.	1933
DEC	12	240.	1922	12100.	1933
DEC	13	215.	1944	11200.	1933
DEC	14	200.	1944	12700.	1946
DEC	15	187.	1928	20700.	1946
DEC	16	200.	1944	12400.	1946
DEC	17	210.	1944	7730.	1946
DEC	18	215.	1928	5700.	1946
DEC	19	222.	1928	5050.	1933
DEC	20	240.	1987	6240.	1933
DEC	21	227.	1987	11800.	1933
DEC	22	260.	1928	38000.	1933
DEC	23	250.	1944	40000.	1933
DEC	24	180.	1944	16900.	1933
DEC	25	160.	1952	11800.	1933
DEC	26	200.	1944	20800.	1980
DEC	27	240.	1987	17500.	1980
DEC	28	245.	1987	11700.	1980
DEC	29	230.	1978	7840.	1980
DEC	30	175.	1978	7200.	1933
DEC	31	160.	1978	8790.	1933

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 APR 09 1988

- ROSTER OF ATTENDANCE -

Place: Washington Water Power Office
528 College Avenue
St. Maries, Idaho

[illegible]

State of Idaho
Department of Water Resources

- ROSTER OF ATTENDANCE -

Pg. ____

RE: PUBLIC HEARING - IN THE MATTER OF APPLICATION FOR PERMIT
NOS. 96-08730 and 96-08718

Date: July 16, 1997, 10:00 a.m.

Place: NRCS Federal Building
1500 Highway 2
Sandpoint, Idaho

Name and Address	Representing	Do you wish to testify as a Full party (show "FP") or Public witness (show "PW") or Not testify (Leave blank)
1. Bob Wathen P.O. Box 160 Clark Fork ID. Steve Fry	Washington Water Power	—
2. P.O. Box 3727 Spokane WA. Marti Bridges	Washington Water Power	FP - will submit written comments
3. P.O. Box 633, Boise, ID	Idaho Rivers United	FP
4. 361 Evergreen Rd. Sandpoint ID. Bob Dunham	Trout Unlimited T. U. Inc.	yes! F.P.
5. John Bentley 53115 Millsap Loop Rd. Post Falls, ID 83854	—	FP PW
6. Burrell Hollister		PW
7. Bob Schloss	Corps of Engineers	F.P.
8.		
9.		
MICROFILMED APR 09 1998		

**Testimony of Idaho Rivers United
Regarding Minimum Streamflow Water Rights
Numbers 96-08718, 96-08730, 91-07122 and 92-07200
Submitted by Marti L. Bridges, Water Policy Director
July 16-17, 1997**

Idaho Rivers United is a statewide river conservation group with over 1600 members who use and enjoy the Clark Fork, Pend Oreille, St. Joe and St. Maries Rivers. Our members fish, hike, raft, canoe, kayak, photograph, swim, view wildlife and pursue contemplative recreational activities along these rivers. In some cases, these rivers provide domestic water supplies to our members.

Each of these rivers possesses unique qualities, both biologically and recreationally, that must be protected. Securing minimum streamflow water rights aids in this protection. A river without water is not a river at all.

Clark Fork River - No. 96-08718

The Clark Fork River feeds Lake Pend Oreille. This river is home to white sturgeon, a threatened species. It is a river altered by fluctuating peaking flows for hydropower generation at Cabinet Gorge Dam. The Hungry Horse Dam in Montana also controls flows. It is a river increasingly polluted by mine runoff, agricultural, and logging practices. It is a river where maintenance of minimum streamflows is critical to sturgeon spawning, maintenance of fishery spawning and rearing habitats, and dilution of polluted runoff. While Idaho Rivers United does not advocate that dilution to pollution is the solution, adequate streamflow (water quantity) is inextricably intertwined with water quality. It is a river needing additional flows for recreation.

IRU supports the requested 9,335 cubic feet per second year round minimum streamflow on 8.4 miles starting at Cabinet Gorge Dam running downstream to Lake Pend Oreille. The request is based on the Tennant method (a.k.a. Montana method) which we feel adequately addresses minimum biological needs. However, Tennant Method does not adequately address recreational float boating requirements. Nor does Tennant take into account fluctuating flows. We recommend the Idaho Water Resource Board apply immediately for an additional minimum streamflow rights in the amount 10,000 cfs from April 15 through July 15 for recreational floatboating.

We recommend that the IWRB and hearing officer postpone final hearing recommendations until negotiations between Washington Water Power, the Tribes, states and interested publics are completed. The Water Board should become actively involved in Washington Water Powers relicensing effort at the Cabinet Gorge Dam to ensure the Idaho statutory minimum flow is considered in their FERC license agreement. This Idaho statutory minimum is the barest minimum for short term survival of fishery resources and is not the desirable minimum that Washington Water Power should be providing in its FERC license.

Pend Oreille River - No. 96-08730

Idaho Rivers United supports the Boards requested year round minimum streamflow of 10,655 cfs year round on a 2.4 mile reach from Albeni Falls Dam downstream to the Idaho state line. This flow will help protect fish and wildlife, water quality and recreational uses of the river.

St. Joe River - No. 91-07122

The St. Joe River is one of North Idaho's jewels. It is nationally recognized as a superb trout stream and draws anglers from many locations. It is the highest navigable stream in the US and perhaps the world. It is nationally significant and has been designated under the federal Wild and Scenic Rivers Act. It provides outstanding opportunities for flatwater canoeing on its lower reaches and incredible Class III and IV whitewater kayaking and rafting on its upper reaches. The "shadowy St. Joe" is where I personally spent much of my time during the three years I lived and worked around St. Maries for the Soil Conservation Service.

Idaho Rivers United supports the request for 942 cfs from November 1 to July 31 and 470 cfs from Aug. 1 to Oct. 31 on the 36 mile segment which starts at the confluence of the St. Joe and Marble Creek, ending at the confluence of the St. Joe and St. Maries rivers. We also recommend the Board immediately file for an additional minimum streamflow water right in the amount of 1000 cfs from April 15 through June 15 to protect recreational boating. The current request is insufficient to meet basic safe boating flows. A total of 1900 cfs will provide the minimum flow necessary for unimpaired and safe boating and will more closely mimic the natural hydrograph. The additional 1000 cfs is not an optimal boating flow, but rather a minimum safe boating flow. My request for additional flows is based on personal experience both kayaking, rafting and canoeing all reaches clear to Avery. Additionally, information was obtained from Idaho Whitewater, the Complete River Guide, by Don McClaran and Greg Moore, 1989.

St. Maries River - No. 92-07211

The St. Maries River is not particularly well known beyond the bound of the local area. Folks from Santa, Fernwood, Emida, and St. Maries seem to be the historic users. In the mid-1980's to the present, more and more kayakers from Coeur d'Alene, Spokane, and Moscow have found out what a great early season whitewater run this can be. I know, I was one of the ones who went exploring it my first spring living in Santa in 1984.

This river corridor has an abundance of fish and wildlife. It is common to see elk, deer, osprey and numerous waterfowl on any given trip. The river corridor is relatively intact, save some grazing and logging activity.

Idaho Rivers United supports the requested 141 cfs from December 1 to July 31 and 65 cfs from August 1 to November 30. The 25 mile reach starts at the confluence of the West and Middle Forks of the St. Maries downstream to the confluence with John Creek. We further request the board immediately file for an additional minimum streamflow water right in the amount of 650 cfs from April 1 to May 31 to protect safe recreational boating. The stream reach for the subsequent flow would be from the confluence of John Creek to the confluence with the St. Joe River. This appropriation begins where the original minimum streamflow application terminates. 650 cfs is 200 cfs less than the average flow of 850 cfs in April and May.

We appreciate the opportunity to provide testimony on these important streamflows. We would also like to note for the record that these flow requests are a direct result of suggestions by a bi-partisan Governor's Task Force. The Task Force felt it was important to protect flows for all Idahoans and to prevent these flows from being appropriated by out-of-state interests. We concur with the Task Force recommendations for streams to be protected in North Idaho and applaud the Idaho Water Resource Board for moving forward with these water right applications.

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APR 09 1992

North Idaho Minimum Streamflows for Recreation

St. Joe, St. Maries, and Clark Fork Rivers

Executive Summary

The Idaho Water Resource Board applied in June, 1992 to appropriate the waters of the state on several stream segments in North Idaho. Idaho Rivers United and numerous other individuals and agencies testified or submitted comments in support of the requested minimum flows for the Priest, Moyie, Lochsa, Selway, Pack and Middle Fork Clearwater Rivers. The St. Joe, St. Maries, Pend Oreille and Clark Fork Rivers go to public hearings on July 16 and 17, 1997 and the Priest River will be the subject of a public meeting on July 23, 1997. Previously, the Priest River was denied a minimum streamflow water right.

These requested flows are intended to protect fishery and wildlife habitat, water quality, and aesthetics. They should also protect recreational float boating where applicable. All of the requests for Minimum Streamflows in North Idaho show a conspicuous absence of adequate minimum flows for recreational kayaking, canoeing or floatboating. The North Idaho Minimum Streamflow requests were based on the Tennant Method (aka Montana method). Tennant Method has been successfully used to determine minimum flow regimes for fisheries. However, Tennant Method does not adequately address recreational float boating requirements because Tennant Method only relates to biological criteria.

To that end, Idaho Rivers United recommends the Idaho Water Resource Board make application immediately for those supplemental Minimum Streamflows needed for river floating recreation activities i.e. canoeing, kayaking, rafting. We recognize these additional flows will be junior to the original application. However, we believe this "error of omission" can be adequately remedied by applying for these supplemental flows, if done so immediately.

We recommend the Idaho Water Resource Board make application to appropriate the following additional flows:

St. Joe River - from the confluence with Marble Creek to the confluence with the St. Maries River.

The IWRB should appropriate an additional 1000 cfs from April 15 through June 15 to protect recreational boating purposes. This would provide a minimum of about 1900 cfs which will provide the minimum flow necessary for unimpaired and safe boating. This is one of the most beautiful rivers in the northern part of the state. Reaches upstream from Marble Creek are commercially rafted and the river is very popular with kayakers and canoeists. In addition, this river is nationally and regionally significant as a component of the federal Wild and Scenic River system. This request is based in part on information obtained from "Idaho Whitewater, the Complete River Guide," by Don McClaran and Greg Moore, 1989.

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APR 09 1998

St. Maries River - the confluence of John Creek to the confluence with the St. Joe River. This appropriation begins where the original minimum streamflow application terminates, in order to protect recreational floating opportunities in the downstream river reach.

The IWRB should appropriate 650 cfs from April 1 through May 31 to protect recreational boating. The St. Maries river has gained in popularity as a spring runoff kayak run amongst regional river runners. People come from Spokane, Coeur d'Alene, and Moscow to enjoy this primarily roadless (the railroad is adjacent to the river) Class III run. In the three years I lived in North Idaho I ran this reach as early as February 15 and as late as the first week of June. The river is extremely rocky and becomes hazardous at flows under 400 cfs. The minimum safe level for most intermediate level kayakers is about 650 cfs. This request is based on information obtained from "Idaho - The Whitewater State," by Grant Amaral and personal experience.

Clark Fork River - from the Cabinet Gorge Dam downstream to Lake Pend Oreille.

The IWRB should appropriate an additional 10,000 cfs from April 15 through July 15 for recreational floatboating.

The requested additional minimum flows are the minimum to safely float the river, not the ideal or optimum flows.

River	Additional Flow Requested	Time Frame
St. Joe	1000 cfs	April 15 to June 15
St. Maries	650 cfs	April 1 to May 31
Clark Fork	10,000 cfs	April 15 to July 15

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APR 09 1998

7/13/97

Glen Saxton
Idaho Water Resources Board
PO Box 83720
Boise, ID 83720

Dear Mr. Saxton,

I am in support of the requested minimums flows for the Clark Fork, Pend Oreille, St. Joe and St. Maries Rivers. The levels of flows are as follows:

St. Joe River- 941 cubic feet per second (cfs) from November 1 to July 31 and 470 cfs from August 1 to October 31. The 36 mile segment starts at the confluence of the St. Joe and Marble Creek, ending at the confluence of the St. Joe and the St. Maries Rivers.

Clark Fork River- 9,335 cfs year round on 8.4 miles starting at Cabinet Gorge Dam running down stream to Lake Pend Oreille.

St. Maries River- 141 cfs from December 1 to July 31 and 65 cfs from August 1 to November 30. The 26 mile reach starts at the confluence of the West and Middle Forks of the St. Maries downstream to the confluence with John Creek.

Pend Oreille River- 10,665 cfs year round on a 2.4 mile reach from Albeni Falls Dam downstream to the Idaho state line.

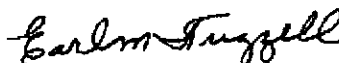
I am very concerned about the St. Joe River. I fish and raft the river and believe it is one of the last healthy fisheries for West Slope Cutthroat and Bull trout. The minimum flow will protect this fishery wildlife habitat, water quality and aesthetics.

My use of the Clark Fork, St. Maries, and Pend Oreille rivers is limited in Idaho. I float and fish the Clark Fork in Montana on a regular basis. Again these rivers need to have a minimum flow to protect these fisheries, wildlife habitat, water quality and aesthetics.

Having a lesser water right status for minimum flow rights should be corrected by efforts through the Water Resource Board (IWRB). If minimum streamflow laws are to have meaning to protect fish and wildlife values, water quality, and aesthetics these rights should not be subordinate to all other rights. I am asking the IWRB to work toward changing this portion of the law so water rights today will be secure in the future.

I wish to thank the IWRB for there work in protecting the public interest in instream uses of water and continue by make minimum flow rights equal to other water right holders.

Sincerely,



Earl M. Frizzell
Conservation Chairman
North Idaho Fly Casters
2205 Monte Vista
Coeur d'Alene, ID 83814

MICROFILMED
APR 09 1998

Mon. 7/14/97

To: ID. Water Resource Board
 attn: Glen Saxton (fax 208-327-7866)

Thanks for the opportunity to submit written testimony regarding minimum streamflow requests, which in itself lends credibility to IWRB efforts to protect the overall public interest regarding this important topic before us today. When I lived in St. Maries in the 80's, I started kayaking. Along the St. Joe River, in late afternoons, I saw a lot of wildlife coming down to get water, while I quietly floated by. My comments reflect two key river quality issues to me, the outstanding recreational local kayaking and protecting wildlife qualities in the Parkhandle area.

The St. Joe River is part of the Wild and Scenic River system, and has national recognition already. Surge appropriations of M. S. F. to include an additional 1000 cfs from April 15 - Jun. 15, plus the 941 cfs from 11/1 - 7/31 and 470 cfs from 8/1 - 10/31. Trout fishing is another important consideration for this particular river. These flows would provide minimum flow necessary for safe boating and protection of wildlife habitat.

The St. Maries kayak river run was the first section of class III paddling I did when there was still snow on the ground. Since it's particularly rocky and such an early run, I urge the IWRB to support proposed flows of 141 cfs from 12/1 - 7/31 and 65 cfs 8/1 - 11/30, while appropriating an additional 650 cfs 4/1 - 5/31 for the early season run.

The Clark Fork would be sustained as early as April with additional 10,000 cfs 4/15 - 7/15, while supporting proposed flows of 9,335 cfs year round starting at the Cabinet Gorge dam downstream into Lt. Pend Oreille. Regarding this stretch, I urge IWRB to firm up its approach to set limits with WWP thru relicensure regulations to assure compliance with these streamflow requests! Lastly, Pend Oreille River should be allocated year round to 10,655 cfs from Albeni Falls down to its convenience. These rivers are accessible to me, so out of those flows do not necessarily mean OPTIMAL flows desired.

APR 19 1999

1624 Fairmont Lp.

Dear Idaho Water Resource Board members, July 14, 1997

I am writing to encourage you to set appropriate minimum stream flows on all four of the North Idaho rivers being considered. There is ever increasing pressure on our water resources. If we do not act responsibly now while we have the chance then our few remaining healthy rivers will quickly lose their ability to stay healthy. The way we use water will have to change soon.

Please don't back down on the 9,335 cubic feet per second flow request for the Clarks Fork River, with an additional 10000 cfs 4/15- 7/15. WWP should be operating the Cabinet Gorge Dam by Water Board standards with the needs of the river in mind ahead of any company priorities. I enjoy canoeing the Clark Fork Delta which is a flourishing nesting ground for all local duck species. They need your vote to keep those riparian zones in tact.

I have Kayaked and canoed many sections of the St. Joe and the St. Maries rivers. The spring runs are typically early and short. I urge you to support proposed flows; 941 cfs 11/ 1 - 7-31 and 470 cfs from 8/1- 10/31 with an additional 1000 cfs from 4/15-7/15 on the St. Joe. The St. Maries River needs supported flows of 141 cfs from 12/1-7/31 and 65 cfs from 8/1- 11/30, with an additional 650 cfs from 4/1-5/31. Any diversion of these waters would have a big impact on the rivers health and it's recreational viability. The bull trout are already in serious trouble. Other fish species will be threatened if we don't shut the door on water resource abuse.

The proposed streamflows for the Pend Oreille River should be 10655 cfs year round from Albeni Falls Dam downstream to the Id. border . I realize these flows could be improved upon for my particular interest, but I would be satisfied with these MINIMUM flow levels to sustain quality values. Thank you for taking the time to consider my input. I truly believe that healthy water sheds are priceless and therefore should not be for sale.

Sincerely,



Patrick T. Behm

1624 Fairmont Lp.

Coeur d'Alene, ID 83814

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APR 09 1998



RECEIVED

JUL 08 1997

Department of Water Resources

IDAHO FISH & GAME

600 South Walnut / Box 25
Boise, Idaho 83707-0025

Philip E. Batt, Governor
Stephen P. Mealey, Director

July 7, 1997

Mr. Glen Saxton
Idaho Department of Water Resources
1301 North Orchard Street
Boise, ID 83706

RE: Notice of Appearance for instream flow hearings on the Clark Fork, Pend Oreille,
St. Maries, St. Joe rivers

Dear Mr. Saxton:

The Department of Fish and Game (Department) requests permission to appear as a formal witness at the above referenced hearings scheduled for July 16th and 17th, in Sandpoint and St. Maries, ID. Department personnel will present testimony in favor of the four proposed instream flow applications. Thank you for consideration of our request.

Sincerely,

Cindy Robertson

Cindy Robertson
Staff Fishery Biologist

MICROFILMED

APR 09 1998



June 30, 1997

Glen Saxton
Hearing Officer
Idaho Dept of Water Resources
1301 N. Orchard
Boise, ID 83706

RECEIVED

JUL 02 1997

Department of Water Resources

Dear Mr. Saxton:

This letter serves as notice of my intent to formally appear at the minimum streamflow hearings scheduled in North Idaho at Sandpoint on July 16 and St. Maries on July 17. I will be representing Idaho Rivers United and our 1600 members.

Thank you.

Sincerely,

Marti L. Bridges

Marti L. Bridges
Water Policy Director

EXECUTIVE DIRECTOR
Wendy L. Wilson
Boise

BOARD OF DIRECTORS
Gail Ater
Gooding

Diane Bilyeu
Pocatello

Bill Davidson
Pocatello

Maria Eschen, Ph.D.
Boise

Amy Haak
Boise

M. Keene Hueltle, Ed.D.
Pocatello

Bruce Johnstone
Boise

Jerry Myers
Salmon

Dr. Stephen Pauley
Ketchum

Dr. Charles Pezeshki
Troy

Gerald Sehlke
Idaho Falls

Tom Stuart

Wahle Szczepanowski

Curtis Webb
Twin Falls

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APR 09 1998



State of Idaho

DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, P.O. BOX 83720, Boise, Idaho 83720-0098

Phone: (208) 327-7900 FAX: (208) 327-7866

**PHILIP E. BATT
GOVERNOR**

**KARL J. DREHER
DIRECTOR**

June 27, 1997

Mr. Terrance W. Cundy, Ph.D.
Resource Hydrologist
Potlatch Corporation
P.O. Box 1016
Lewiston, ID 83501-1016

Dear Mr. Cundy:

Your letter to the Director and Mr. Saxton was referred to me. Enclosed with this letter are copies of the water right applications, hydrographs and a copy of the 1975 Tennant Report. The requested flows are based on the Tennant Report with the high flows being 40% of the average annual flow. The low flows are the average monthly flow of the lowest month.

If you have any questions about the applications prior to the July 17 hearing, please call me. I plan to be at the hearing.

Sincerely,

A handwritten signature in cursive script that reads "John Beal".

John Beal, Manager
Water Planning Section

enc

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APR 09 1998

Potlatch

Potlatch Corporation

P.O. Box 1016
Lewiston, Idaho 83501-1016
Telephone (208) 799-0123

RECEIVED

JUN 25 1997

Department of Water Resources

June 23, 1997

Director of IDWR
Statehouse Mail
Boise, ID 83720
Attn: L. Glen Saxton

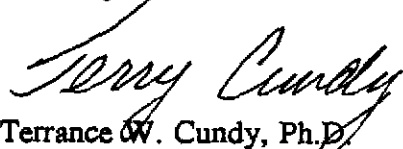
Dear Mr. Saxton,

I recently received a copy of the IDWR notice for in-stream flow claims proposed by IDWR on the St. Maries and St. Joe Rivers in northern Idaho (96-08718, 96-08730).

Will you please send me any information on the basis of these claims? For example, a description (or copy) of the methods and data used to arrive at the flow claims.

Thank you for your time and consideration.

Sincerely,



Terrance W. Cundy, Ph.D.
Resource Hydrologist

208-799-4135
FAX: 208-799-1707
email: twcundy@lewiston.com

MICROFILMED
APR 09 1998



State of Idaho

DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720-9000

Phone: (208) 327-7900 FAX: (208) 327-7866

PHILIP E. BATT
GOVERNOR

KARL J. DREHER
DIRECTOR

June 11, 1997

**RE: APPLICATIONS FOR MINIMUM STREAM FLOW NOS. 96-08730, 96-08718,
91-07122 and 92-07200**

Dear Interested Parties:

Enclosed is a copy of a legal notice, which announces planned public hearings in connection with the above referenced applications to establish minimum stream flows. The information contained in the notice should be clear and will provide sufficient information for you. Copies of the applications are on file and available for review at the department's Northern Regional Office in Coeur d'Alene, and at the state office in Boise.

You may contact either office if you have questions or require additional information. My direct phone number in Boise is (208) 327-7955. You can contact the Northern Regional Office at (208) 769-1450.

Sincerely,

L. GLEN SAXTON, Chief
Water Allocation Bureau

C: See attached distribution list

MICROFILMED
APR 09 1998

CLARENCE PARR
IWRB
1009 S RIVER DR
HEYBURN ID 83336

ERVAL RAINEY
IWRB
1319 MATHISON DR
SANDPOINT ID 83864

BOB GRAHAM
IWRB
6808 MARX CT
BONNERS FERRY ID 83805

TERRY T UHLING
IWRB
JR SIMPLOT CO
999 MAIN ST STE 1300
BOISE ID 83707

SEN SHAWN KEOUGH
523 HUMMINGBIRD
SANDPOINT ID 83864

REP JOHN L CAMPBELL
1509 CEDAR ST
SANDPOINT ID 83864

REP JIM STOICHEFF
615 LAKEVIEW
SANDPOINT ID 83864

SEN CLYDE BOATRIGHT
N 17520 WRANGLER RD
RATHDRUM ID 83858

REP HILDE KELLOGG
PO BOX 1479
POST FALLS ID 83854-1479

REP WAYNE R MEYER
E 100 LANCASTER
RATHDRUM ID 83858

SEN GORDON F CROW
10282 HILLVIEW DR
HAYDEN ID 83835-9236

REP JIM CLARK
8665 N CLARKVIEW PL
HAYDEN ID 83835

REP JEFF ALLTUS
2465 UPPER HAYDEN LAKE RD
HAYDEN ID 83835

SEN JACK RIGGS
801 S 11TH
COEUR D ALENE ID 83814

REP LARRY WATSON
59988 SILVER VALLEY RD
WALLACE ID 83874

REP DON PISCHNER
PO BOX 7
COEUR D ALENE ID 83816

SEN LAIRD NOH
3442 ADDISON AVE E
KIMBERLY ID 83341

REP GOLDEN C LINFORD
2120 W 4200 S
REXBURG ID 83440

KOOTENAI TRIBE OF IDAHO
PO BOX 1269
BONNERS FERRY ID 83805

COEUR D ALENE TRIBE OF IDAHO
PO BOX 408
PLUMMER ID 83851

MICROFILMED
APR 09 1998

NOTICE OF HEARINGS FOR MINIMUM STREAM FLOW APPLICATIONS

Notice is hereby given that on June 15, 1992, the Idaho Water Resource Board filed four (4) applications for permit with the Department of Water Resources (IDWR) to preserve minimum streamflows for the protection of fish and wildlife habitat, aquatic life and recreational values as follows:

Application No. 96-08718

Source: Clark Fork River tributary to Pend Oreille Lake
Reach: 8.4 miles beginning at Cabinet Gorge Dam in the NWSE Section 27, T55N, R3E, B.M. downstream to Lake Pend Oreille in SW1/4 Section 3, T55N, R2E, B.M.
Rate of flow: 9,335 cubic feet per second (cfs) year-round

Application No. 96-08730

Source: Pend Oreille River tributary to Columbia River
Reach: 2.4 miles beginning at Albeni Falls Dam in the NWNW Section 29, T56N, R5W, B.M. downstream to the state line on the west side of Sections 13 and 24, T56N, R6W, B.M.
Rate of flow: 10,655 cfs year-round

Application No. 91-07122

Source: St. Joe River tributary to Coeur d'Alene Lake
Reach: 36 miles beginning at a point in NENENW Sec. 13, T45N, R3E, B.M. at the confluence of the St. Joe River with Marble Creek and ending at the confluence of St. Joe River with the St. Maries River in SENESW Sec. 23, T46N, R2W, B.M.
Rate of flow: 941 cfs from Nov. 1 to July 31, and
470 cfs from August 1 to October 31

Application No. 92-07200

Source: St. Maries River tributary to St. Joe River
Reach: 26 miles beginning at a point in the SWSWNE Section 6, T42N, R2E, B.M. at the confluence of the West and Middle Forks of the St. Maries River downstream to the confluence with John Creek in the SENENW Section 33, T45N, R2W, B.M.
Rate of flow: 141 cfs from December 1 to July 31
65 cfs from August 1 to November 30

MICROFILMED

APR 09 1998

IDWR will hold public hearings as required in Section 42-1503, Idaho Code, for the purpose of receiving evidence and testimony in regard to the applications as follows:

Applications: 96-08718 and 96-08730
Date and time: July 16, 1997, at 10:00 a.m.
Place: NRCS Federal Building
1500 Hwy 2
Sandpoint, Idaho

Applications: 91-07122 and 92-07200
Date and time: July 17, 1997 at 10:00 a.m.
Place: Washington Water Power
528 College Ave.
St. Maries, Idaho

Any party who wishes to formally appear in the hearings for the purpose of presenting evidence and testimony or cross-examining witnesses should file a notice of appearance with the Director of IDWR, Statehouse Mail, Boise, Idaho 83720, Attn: L. Glen Saxton, five (5) days prior to the hearing. Other parties may informally present their views and comments without filing a notice of appearance. Informal written views and comments may also be submitted to IDWR prior to the hearing.

The hearings will be conducted in a facility which meets the accessibility requirements of the Americans with Disabilities Act. If you require special accommodations in order to attend, participate in or understand the hearing, please advise IDWR at least (10) days prior to the hearing. The hearing will be conducted by L. Glen Saxton, IDWR, Statehouse Mail, Boise, ID 83720, telephone (208)327-7900

If issued, these permits will be subject to all prior water rights.

Karl J. Dreher
Director, IDWR

MICROFILMED

APR 09 1998

5/20/93 - Sandpoint (1)
5/24/93 - CdA/oe (9)
5/25/93 - Moscow (8)

7/20/93 - S + Merid (5)

7/17/93 = Kernal (6)
7/17/93 - Lewiston (1)

North Idaho
Min 5 Floors.

Water Board
Public Meetings

MICROFILMED

APR 09 1998

AFFIDAVIT OF PUBLICATION

State of Idaho

ss.

County of Bonner,

Linda Ramsey
 being duly sworn, says that he is the General Manager
 the **PRIEST RIVER TIMES**, a weekly newspaper printed and
 published at Priest River, Bonner County, Idaho, and has been con-
 tinuously and uninterruptedly published in said County during a period
 of 78 consecutive weeks prior to the first publication of the annexed
 notice for publication, is a newspaper of general circulation made up of
 at least eight pages of at least six columns each, printed from typemat-
 er or stereotyped forms of at least nineteen and three-fourths inches
 depth, has at least 1250 bona fide subscribers living within said Bonner
 County, and is published at regular weekly intervals. That the annexed
 is a true copy of the notice for publication in the case of

#1437 - Public Information Meeting

as it was published in the regular and entire issue of the
 said paper for a period of 2 consecutive weeks,
 commencing on 12th day of May, 1993
 and ending on the 19th day of May, 1993
 and that said notice was published in said newspaper.

On this 3rd day of June in the year
 of 1993, before me, a Notary Public, personally
 appeared _____,

known or identified to me to be the person whose name
 subscribed to the within instrument, and being by me first
 duly sworn, declared that the statements therein are true,
 and acknowledged to me that he executed the same.

Don Ramsey
 Notary Public for Idaho

Residing at Priest River

My commission expires: 12/24/98

PUBLIC INFORMATION MEETING

MINIMUM STREAMFLOWS

The Idaho Water Resource Board will hold public information meetings on May 24 in the Community Room at the Kootenai County Extension Office, 106 E. Dalton Ave. Coeur d'Alene; and on May 25 in the Gold room at the Student Union Building, University of Idaho, Moscow. Both meetings will begin at 7:00 p.m.

These are part of a series of information meetings to be held in north Idaho addressing minimum streamflow applications filed by the Water Board on the Kootenai, Moyie, Priest, Pack, Pend Oreille, Clark Fork, Spokane, Coeur d'Alene, St. Joe, St. Maries, Clearwater, Selway, and Lochsa Rivers.

Individuals who may need special assistance due to a disability should contact Frank Sherman at the Idaho Department of Water Resources, Statehouse, Boise 83720 at least five days in advance so arrangements can be made.

#1437 PRT May 12, 19, 1993

RECEIVED

JUN 07 1993

NORTHERN REGION
 I D W R

MICROFILMED

APR 09 1998

AFFIDAVIT OF PUBLICATION

State of Idaho

ss.

County of Bonner,

Barlene Bennett

being duly sworn, says that he is the Advertising Rep.

the **PRIEST RIVER TIMES**, a weekly newspaper printed and published at Priest River, Bonner County, Idaho, and has been continuously and uninterruptedly published in said County during a period of 78 consecutive weeks prior to the first publication of the annexed notice for publication, is a newspaper of general circulation made up of at least eight pages of at least six columns each, printed from typewritten or stereotyped forms of at least nineteen and three-fourths inches in length, has at least 1250 bona fide subscribers living within said Bonner County, and is published at regular weekly intervals. That the annexed is a true copy of the notice for publication in the case of

#1434 - Public Information Meeting

as it was published in the regular and entire issue of the said paper for a period of 2 consecutive weeks, commencing on 5th day of May, 1993 and ending on the 12th day of May, 1993 and that said notice was published in said newspaper.

On this 25th day of May in the year of 1993, before me, a Notary Public, personally appeared Barlene Bennett,

known or identified to me to be the person whose name subscribed to the within instrument, and being by me first duly sworn, declared that the statements therein are true, and acknowledged to me that he executed the same.

Notary Public for Idaho

Residing at

MICROFILMED

My commission expires:

APR 09 1998

NOTICE OF IDAHO WATER RESOURCE BOARD PUBLIC INFORMATION MEETING

The Idaho Water Resource Board will hold a public information meeting at 7:30 p.m. at the Edgewater Inn, 56 Bridge St., Sandpoint on May 20, 1993.

This will be the first in a series of public information meetings in the region addressing minimum stream-flow applications filed by the Water Board on streams in northern Idaho. Of particular interest to residents of the Sandpoint area are minimum flow applications filed on the Pend Oreille, Pack, Clark Fork, Priest, Moyie, and Kootenai rivers. Individuals who may need special assistance due to a disability should contact Frank Sherman at the Idaho Department of Water Resources, Statehouse, Boise 83720 at least five days in advance so arrangements can be made.

#1434 PRT May 5, 12, 1993

RECEIVED

JUN 07 1993

NORTHERN REGION
IDWR

Affidavit of Publication

STATE OF IDAHO

County of Benewah, ss.

Cynthia Ann Hammes, being first duly sworn on oath, deposes and says that she is vice president of The Corporation, owner of the St. Maries Gazette Record, a weekly newspaper printed and published at St. Maries, Benewah County, State of Idaho; the St. Maries Gazette Record is a newspaper having general circulation in Benewah County, State of Idaho, and has been continuously and uninterruptedly published in Benewah County, State of Idaho, during a period of more than seventy-eight consecutive weeks prior to the first publication of the notice of advertisement hereon.

That the notice, of which the one hereto attached is a true copy, was published in said newspaper for a period of 2 issues, the first publication being on the 15th day of May, 1993 and the last on the 19th day of May, 1993.

That said newspaper was regularly distributed to its subscribers during the time of the same period; that said notice was published in the regular and entire issue of said paper.

Dated this 28th day of May, 1993

Cynthia Ann Hammes

STATE OF IDAHO }
COUNTY OF BENEWAH }

On this 28th day of May, in the year of 1993, before me, a Notary Public, personally appeared Cynthia Ann Hammes, known or identified to me to be the person whose name subscribed to the within instrument, and being by me first duly sworn, declared that the statements therein are true, and acknowledged to me that she executed the same.

Sharon D. Blackburn
Notary Public for Idaho
Residing at St. Maries, Id.
My commission expires: Nov. 4, 1998

Idaho Water Resource
board sets May 24 meet

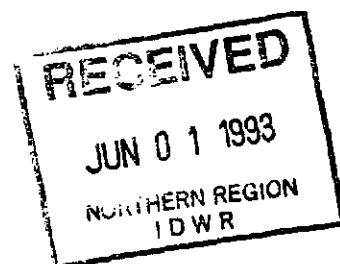
PUBLIC INFORMATION
MEETING

MINIMUM STREAMFLOWS

The Idaho Water Resource Board will hold public information meetings on May 24 in the Community Room at Kootenai County Extension Office, 106 E. Dalton Ave., Coeur d'Alene; and on May 25 in the Gold room at the Student Union Building, University of Idaho, Moscow. Both meetings will begin at 7:00 p.m.

These are part of a series of information meetings to be held in north Idaho addressing minimum streamflow applications filed by the Water Board on the Kootenai, Moyie, Priest, Pack, Pend Oreille, Clark Fork, Spokane, Coeur d'Alene, St. Joe, St. Maries, Clearwater, Selway and Lochsa Rivers.

Individuals who may need special assistance due to a disability should contact Frank Sherman at the Idaho Department of Water Resources, Statehouse, Boise 83720 at least five days in advance so arrangements can be made.
No. 2078 --- May 12-19.



MICROFILMED

APR 8 9 1996

AFFIDAVIT OF PUBLICATION

State of Idaho

ss.

County of Boundary,

BOB MILLER being first duly sworn on oath
deposes and says that he/she is MANAGER
of the Bonners Ferry Herald, a newspaper printed and
published at Bonners Ferry, Boundary County, Idaho; that
the said newspaper has been continuously and
uninterruptedly published in said Boundary County during
a period of 12 months prior to the first publication of the
hereto attached notice of publication in the case of:

LEGAL# 2476

as it was published in the regular and entire issue of the
said paper for a period of 2 consecutive weeks,
commencing on 5 day of May, 1993
and ending on the 12 day of May, 1993
and that said notice was published in said newspaper.

Dated: 5/13/93

Bob Miller
Subscribed and sworn to before me this 14 day
of May, 1993.

Kimberly M. Haworth
Notary Public for Idaho

Residing at BONNERS FERRY

My Commission expires: 11/08/97

**NOTICE OF IDAHO
WATER RESOURCE BOARD
PUBLIC INFORMATION
MEETING**

The Idaho Water Resource Board
will hold a public information meet-
ing at 7:30 p.m. at the Edgewater
Inn, 56 Bridge St., Sandpoint on May
20, 1993.

This will be the first in a series of
public information meetings in the
region addressing minimum stream-
flow applications filed by the Water
Board on streams in northern Idaho.

Of particular interest to residents of
the Sandpoint area are minimum
flow applications filed on the Pend
Oreille, Pack, Clark Fork, Priest,
Moyie, and Kootenai rivers.

Individuals who may need special
assistance due to a disability should
contact Frank Sherman at the Idaho
Department of Water Resources,
Statehouse, Boise 83720 at least five
days in advance so arrangements
can be made.

BFH#2476 May 5, 12, 1993

RECEIVED

JUN 04 1993

**NORTHERN REGION
IDWR**

MICROFILMED

APR 09 1994

AFFIDAVIT OF PUBLICATION

State of Idaho

ss.

County of Bonner,

Mike Burns being first duly sworn on oath
deposes and says that he/she is Bookkeeper
of the Bonner County Daily Bee, a newspaper printed and
published at Sandpoint, Bonner County, Idaho; that the
said newspaper has been continuously and uninterruptedly
published in said Bonner County during a period of 12
months prior to the first publication of the hereto attached
notice of publication in the case of:

Legal Notice

as it was published in the regular and entire issue of the
said paper for a period of 2 consecutive weeks,
commencing on 6 day of May, 1993
and ending on the 13 day of May, 1993
and that said notice was published in said newspaper.

On this 14 day of May in the year
of 1993, before me, a Notary Public, personally
appeared Mike Burns,

known or identified to me to be the person whose name
subscribed to the within instrument, and being by me first
duly sworn, declared that the statements therein are true,
and acknowledged to me that he executed the same.

Karel Meeler
Notary Public for Idaho

Residing at

Sandpoint

MICROFILMED
My commission expires: 5-3-99

NOTICE OF IDAHO WATER RESOURCE BOARD PUBLIC INFORMATION MEETING
The Idaho Water Resource Board will hold a public information meeting at the Edgewater Inn, 56 Bridge St., Sandpoint on May 20, 1993. This will be the first in a series of public information meetings in the region addressing minimum stream flow applications filed by the Water Board on streams in northern Idaho. Of particular interest to residents of the Sandpoint area are minimum flow applications filed on the Pend Oreille, Pack, Clark Fork, Priest, Moyie, and Kootenai rivers. Individuals who may need special assistance due to a disability should contact Frank Sherman at the Idaho Department of Water Resources, Statehouse, Boise 83720 at least five days in advance, so arrangements can be made. SNP#5393 May 6, 13, 1993

TRIBUNE PUBLISHING COMPANY, INC.
The Lewiston Morning Tribune
505 C St., P.O. Box 957
Lewiston, Idaho 83501
(208) 743-9411

Date 052093 INVOICE No. 800369609

Account No. 964770 STREAMFLOW

Description 69609PUBLI

Times 2 Lines 20

Tab Lines _____

\$ 31.50

**LEGAL ADVERTISING
INVOICE**

SOLD TO:

WATER RESOURCES
1301 N. ORCHARD ST.
BOISE
-10 83720

NOTICE: This is an invoice of Purchase made by you. Statement will be rendered the first of the month.
Please Retain This Invoice as Your Statement Will Refer To Invoice by No. Only.

AFFIDAVIT OF PUBLICATION

STATE OF IDAHO, ss.
County of Nez Perce

Karen J. Lewis, being duly sworn,

deposes and says, I am the Legal Clerk
of the Tribune Publishing Company, a corporation organized and existing
under and by virtue of the laws of the State of Idaho, publishers of the
LEWISTON MORNING TRIBUNE, a newspaper of general circulation
published at Lewiston, Nez Perce County, Idaho; That the said Lewiston
Morning Tribune is an established paper and has been published regular-
ly and issued regularly at least once a day for more than 21 consecutive
years next immediately preceding the first publication of this notice, and
has been so published uninterrupted for said period; that the

**PUBLIC INFORMATION MEETING
MINIMUM STREAMFLOWS**

The Idaho Water Resource Board
will hold public information meet-
ings on May 24 in the Community
Room at the Kootenai County Exten-
sion Office, 106 E. Dalton Ave., Co-
eur d'Alene and on May 25 in the
Gold room at the Student Union
Building, University of Idaho, Mos-
cow. Both meetings will begin at
7:00 p.m.

These are part of a series of infor-
mation meetings to be held in north
Idaho addressing minimum streamf-
low applications filed by the Water
Board on the Kootenai, Moyie,
Priest, Pack, Pend Oreille, Clark
Fork, Spokane, Coeur d'Alene, St.
Joe, St. Maries, Clearwater, Selway,
and Lochsa Rivers.

Individuals who may need special
assistance due to a disability should
contact Frank Sherman at the Idaho
Department of Water Resources,
Statehouse, Boise 83720 at least five
days in advance so arrangements
can be made.

PUBLIC INFORMATION MEETING

attached hereto and which is made a part of this affidavit was published in
the said Lewiston Morning Tribune, 2 time(s). Publication be-
ing on 051393

WEEK for 2 consecutive WEEKS, or once a
publication thereof being on the 051393, and the last pub-
lication thereof being on the 052093, and said

PUBLIC INFORMATION MEETING

was so published in the regular and entire issue of said newspaper and
not in a supplement thereof and was so published in every issue and
number of the said paper, during the period and times of publication as
set forth above.

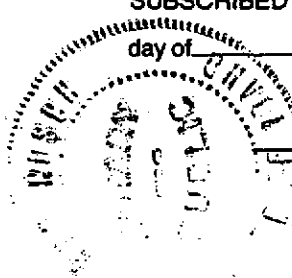
Karen J. Lewis

SUBSCRIBED AND SWORN BEFORE ME THIS THE 20

day of MAY 1993

MICROFILMED

APR 09 1998



Ray Reed
Notary Public in and for the State of Idaho,
residing at Lewiston, therein.

RECEIVED

MAY 26 1993

Affidavit of Publication

STATE OF IDAHO
County of Latah

ss.

Lorraine Hudson
Legal Clerk

being first duly sworn, on oath,
deposes and says:

That she is the printer of
Moscow-Pullman Daily News, a
newspaper of general circulation,
printed and published daily except
Sunday at Moscow, Latah County,
Idaho, in compliance with Sections
60-106, 60-107, and 60-108 of the
Idaho Code and the amendments
thereto; that the notice of which the
annexed is a full, true and correct
printed copy was published in the
regular and entire issues of said
newspaper and not in a supplement
thereto, upon the following dates:

May 13, 20,
1993

the same being the dates designated
for the publication of said notice.

On this 24 day of May
in the year of 1993, before me, a Notary

Public, personally appeared

Lorraine Hudson

known or identified to me to be the person whose
name subscribed to the within instrument, and
being by me first duly sworn, declared that the
statements therein are true, and acknowledged to
me that he executed the same.

Ann Marie Eble
Notary Public for Idaho

Residing at Moscow ID

My commission expires: 5/1/98

MICROFILMED

APR 09 1998

PUBLIC INFORMATION MEETING MINIMUM STREAMFLOWS

The Idaho Water Resource Board
will hold public information meet-
ings on May 24 in the Community
Room at the Kootenai County Extension
Office, 106 E. Dalton Ave., Co-
eur d'Alene; and on May 25 in the
Gold room at the Student Union
Building, University of Idaho, Mos-
cow. Both meetings will begin at
7:00 p.m.

These are part of a series of infor-
mation meetings to be held in north
Idaho addressing minimum stream-
flow applications filed by the Water
Board on the Kootenai, Moyie,
Priest, Pack, Pend Oreille, Clark
Fork, Spokane, Coeur d'Alene, St.
Joe, St. Maries, Clearwater, Selway,
and Lochsa Rivers.

Individuals who may need special
assistance due to a disability should
contact Frank Sherman at the Idaho
Department of Water Resources,
Statehouse, Boise 83720 at least five
days in advance so arrangements
can be made.

May 13, 20, 1993

AFFIDAVIT OF PUBLICATION

STATE OF IDAHO, }
County of Kootenai, } ss.

Keri Alexander

..... being first duly sworn
upon oath deposes and says:

1. I am now and at all times hereinafter mentioned was a citizen of the United States, resident of the State of Idaho, over the age of twenty-one years and not a party of the above entitled action.

2. I am now and at all times hereinafter mentioned was the printer (principal clerk) of the "Coeur d'Alene Press," a newspaper printed and published daily except Sunday in Coeur d'Alene, Kootenai County, Idaho, and having a general circulation in said county.

3. The *legal notice*

of which the annexed is a printed copy, was published in the regular *Thurs.*
issue of said newspaper for *2* consecutive *weeks*
commencing on the *13th* day of *May*, 19*93*, and
ending on the *20th* day of *May*, 19*93*, and such
publication was made as often during said period as said *daily*
newspaper was regularly issued.

4. That said newspaper has been continuously and uninterruptedly published in said Kootenai County, during a period of more than seventy-eight consecutive weeks immediately prior to the first publication of said notice.

Keri Alexander

Subscribed and sworn to before me this *20th* day of *May*,
19*93*.

Roberta Manley
Notary Public for the State of Idaho,
residing at Coeur d'Alene, Idaho.

MICROFILMED

APR 09 1998

ROBERTA MANLEY *2-5-99*
My commission expires

PUBLIC INFORMATION MEETING MINIMUM STREAMFLOWS

The Idaho Water Resource Board will hold public information meetings on May 24 in the Community Room at the Kootenai County Extension Office, 106 E. Dalton Ave., Coeur d'Alene; and on May 25 in the Gold Room at the Student Union Building, University of Idaho, Moscow. Both meetings will begin at 7:00 p.m.

These are part of a series of information meetings to be held in north Idaho addressing minimum streamflow applications filed by the Water Board on the Kootenai, Moyie, Priest, Pack, Pend Oreille, Clark Fork, Spokane, Coeur d'Alene, St. Joe, St. Maries, Clearwater, Selway, and Lochsa Rivers.

Individuals who may need special assistance due to a disability should contact Frank Sherman at the Idaho Department of Water Resources, Statehouse, Boise 83720 at least five days in advance so arrangements can be made.

Legal 329
May 13, 20, 1993

RECEIVED

MAY 26 1993

AFFIDAVIT OF PUBLICATION

STATE OF IDAHO, }
County of Kootenai, } ss.

Keri Alexander

being first duly sworn

upon oath deposes and says:

1. I am now and at all times hereinafter mentioned was a citizen of the United States, resident of the State of Idaho, over the age of twenty-one years and not a party of the above entitled action.

2. I am now and at all times hereinafter mentioned was the printer (principal clerk) of the "Coeur d'Alene Press," a newspaper printed and published daily except Sunday in Coeur d'Alene, Kootenai County, Idaho, and having a general circulation in said county.

3. The

legal notice

of which the annexed is a printed copy, was published in the regular *Thurs.* issue of said newspaper for *2* consecutive *weeks* commencing on the *6th* day of *May*, 19 *93*, and ending on the *13th* day of *May*, 19 *93*, and such publication was made as often during said period as said *daily* newspaper was regularly issued.

4. That said newspaper has been continuously and uninterruptedly published in said Kootenai County, during a period of more than seventy-eight consecutive weeks immediately prior to the first publication of said notice.

Keri Alexander

Subscribed and sworn to before me this *13th* day of *May*, 19 *93*.

Roberta Stanley
Notary Public for the State of Idaho,
residing at Coeur d'Alene, Idaho.

ROBERTA STANLEY *2-5-99*

NOTICE OF
IDAHO WATER RESOURCE BOARD
PUBLIC INFORMATION MEETING
The Idaho Water Resource Board will hold a public information meeting at 7:30 p.m. at the Edgewater Inn, 56 Bridge St., Sandpoint on May 20, 1993.
This will be the first in a series of public information meetings in the region addressing minimum streamflow applications filed by the Water Board on streams in northern Idaho. Of particular interest to residents of the Sandpoint area are minimum flow applications filed on the Pend Oreille, Pack, Clark Fork, Priest, Moyie, and Kootenai rivers.
Individuals who may need special assistance due to a disability should contact Frank Sherman at the Idaho Department of Water Resources, Statehouse, Boise 83720 at least five days in advance so arrangements can be made.
Legal 276
May 6, 13, 1993

RECEIVED

MAY 17 1993

AFFIDAVIT OF PUBLICATION

APR 09 1993

STATE OF IDAHO)
) ss.
County of Clearwater)

Bonnie M. Bessent

being first duly sworn, on oath, deposes and says:

That I am and at all times herein mentioned have been a citizen of the United States and of the State of Idaho, over 21 years of age, and that I am not a party to nor interested in the above entitled proceeding; that I am and at all times herein mentioned have been the Editor, Foreman, of THE CLEARWATER TRIBUNE: that said Clearwater Tribune is a newspaper of general circulation, printed and published weekly at Orofino, in the County of Clearwater and State of Idaho; that the Clearwater Tribune has been continuously and uninterruptedly published in Clearwater County, Idaho, during the period of seventy-eight consecutive weeks prior to the first publication of attached copy of:

Public Information Meeting

That said Minimum Steamflow

of which the annexed is a full, true and correct printed copy, was published in the regular and entire issue of said newspaper, and not in any supplement thereof, for a full period of one consecutive issues commencing on the 8th day of July 1993 and ending on the 8th day of July 1993

Bonnie M. Bessent

STATE OF IDAHO)
)
COUNTY OF CLEARWATER)

On this 15th day of July in the year of 1993, before me, a Notary Public, personally appeared

Bonnie M. Bessent
known or identified to me to be the person whose name subscribed to the within instrument, and being by me duly sworn, declared that the statements therein are true, and acknowledged to me that he executed the same.

Janice A. Finke

Notary Public for Idaho
Resident at Orofino, Idaho
My commission expires: _____

PUBLIC INFORMATION MEETING

MINIMUM STREAMFLOWS

The Idaho Water Resource Board will hold public information meetings on July 13 in the library of the Kamiah High School, 711 9th Street, Kamiah; on July 14 in the first floor conference room of the State office building, 1118 F. Street, Lewiston; and on July 20 at the Benewah County Courthouse, St. Maries. All three meetings will begin at 7:00 p.m.

These are the final meetings of a series of information meetings being held in north Idaho addressing minimum streamflow applications filed by the Water Board on the Kootenai, Moyie, Priest, Pack, Pend Oreille, Clark Fork, Spokane, Coeur d'Alene, St. Joe, St. Maries, Clearwater, Selway, and Lochsa Rivers.

Individuals who may need special assistance due to a disability should contact John Beal at the Idaho Department of Water Resources, Statehouse, Boise 83720 at least five days in advance so arrangements can be made.

7-8, 93c

MICROFILMED

APR 09 1993

NEWS RELEASE

Statehouse Mail, Boise, Idaho 83720

Release 93-52

MINIMUM STREAM FLOWS PROPOSED FOR 13 NORTH IDAHO RIVERS

For Immediate Release

Boise, Idaho - May 6, 1993

For More Information:

Dick Larsen, 327-7933

The Idaho Water Resource Board wants to guarantee minimum stream flows in sections of 13 North Idaho rivers and they want to know what residents think about the idea.

The Board has set a series of special public information meetings in the last half of May to outline the proposals and hear from the public.

The Board has filed applications for minimum stream flows in sections of the Kootenai, Moyie, Priest, Pack, Pend Oreille, Clark Fork, Spokane, Coeur d'Alene, St. Joe, St. Maries, Clearwater, Selway, and Lochsa rivers.

The Board feels minimum stream flows are necessary to preserve fisheries, recreation, and aesthetic values on the 13 rivers. If the Board decides to continue the approval process, the Idaho Department of Water Resources will schedule public hearings on the proposals later this year. Minimum stream flows also must be approved by the state legislature before they can go into effect.

-more-more-

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APR 08 1998

Minimum Stream Flows - Page 2

The first public information meeting is set for May 20 at 7:30 at the Edgewater Inn in Sandpoint. A second meeting will be held May 24 at 7 p.m. in the Kootenai County Extension Office, 106 E. Dalton Ave, in Coeur d'Alene. A third meeting will be held May 25 at 7 p.m. in the Student Union Building on the University of Idaho campus in Moscow.

Minimum stream flows are ones in which water is not diverted and used but must remain in the river channel. Minimum stream flows apply to unappropriated water, i.e., water not used by an established water right. Existing prior water rights or permits with an earlier priority date must be satisfied before minimum stream flows are honored.

Individuals who want to attend the meeting and who may need special assistance due to a disability should contact Frank Sherman, Idaho Department of Water Resources in Boise, at least five days in advance so arrangements can be made. Sherman's phone number is 327-7985.

-30-30-30-

MICROFILMED
APR 08 1998



EMAIL iru@iru.desktop.org
<http://www.desktop.org/iru>

EXECUTIVE DIRECTOR

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Boise

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Tom Stuart
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Whele Szczepanowski
McCall

Curtis Webb
Twin Falls

September 3, 1997

RECEIVED

SEP 04 1997

Department of Water Resources

L. Glen Saxton, Chief
Water Allocation Bureau
Idaho Dept. of Water Resources
1301 N. Orchard
Boise, ID 83706

Dear Mr. Saxton:

I recently received copies of the hearing officer's recommended order regarding minimum streamflow water right applications 91-07122, 92-07200 and 96-08730 in the name of the Idaho Water Resource Board. In both documents regarding the hearing report I have found an error.

On Page 1 of both orders in paragraph 4, it describes and names the parties appearing in a formal capacity at the hearings. I bring to your attention that Marti Bridges for Idaho Rivers United has been omitted as a formal witness. I testified and attended both hearings and submitted written comments regarding the water right applications for the St. Joe, St. Maries, and Pend Oreille rivers. I request you make correction to hearing record and recommended orders to reflect this reality.

Please provide me and other formal parties a corrected copy of the order when complete. Thank you.

Sincerely,

Marti L. Bridges

Marti L. Bridges
Water Policy Director

MEMORANDUM

To: Wayne Haas

From: L. Glen Saxton

RE: MINIMUM STREAM FLOW APPLICATION - CLARK FORK RIVER

Date:

On July 16 and 17, 1997, I conducted water right hearings in Sandpoint and St. Maries in connection with four (4) applications for permit in the name of the Idaho Water Resource Board seeking the establishment of minimum streamflows on the Pend Oreille River, the Clark Fork River, the St. Maries River and the St. Joe River.

At the hearing on July 16th in Sandpoint, the Board's representative requested that the Director continue the hearing on the Clark Fork River to allow further discussions and negotiations of minimum streamflows associated with FERC's re-licensing of Cabinet Gorge hydropower facility. I granted the request to continue the hearing.

Hence, at this point, I have not taken testimony in connection with the Clark Fork River application and do not have the information to write a decision until the hearing is resumed in the future. The Board does not need to amend or withdraw the application at this point, but could amend the application in the future to make it consistent with any agreed upon minimum stream flow associated with the relicensing of Cabinet Gorge Dam if the Board chose to do so.

Wayne —
- I prepare this
draft memo
at Brown's
request.
- Is this memo
sufficient to
prevent you
from having
to further
pursue the
app w/ the
Board. Yler
8-27-97

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APR 09 1998

Nancy -

ok with me - if it
works for you in
response to letter.

Wyn

Glenn -

Looks good. Please
final + send a copy to
those interested jg

Memo

To: Norm
From: Wayne T. Haas 
Date: August 20, 1997
Re: Minimum Stream Flow Request for Clark Fork River

The IDWR Hearing on Clark Fork was held on July 16-17 in conjunction with Hearings on the St. Joe, St. Maries and Pend Oreille. Glen Saxton was the Hearing Officer.

My understanding is that the Clark Fork Hearing was Tabled with the understanding it would be rescheduled no later than the year 2000. This was to allow time for the environmental type studies being done as part of the re-licensing for the Cabinet Gorge Project to proceed. The parties in attendance at the Hearing were in agreement with this decision. I assume this decision will be reflected in the Hearing Officer's report on the Clark Fork.

The Board indicated at the July 25 meeting in Sandpoint they were willing to wait until 2000 for the Hearing Officer's decision on the Clark Fork. If there is a need for the Board to amend or withdraw their application I will bring it to the Board for a decision. At this time I am not aware of such a need.

IDAHO DEPARTMENT OF WATER RESOURCES

MEMO-REPLY	Date <u>7/29</u>
-------------------	------------------

To Bill Graham 83
→ Norma Wynne

From Wynne

☐ Take Appropriate Action ☐ Draft A Reply ☐ Action Required By _____ ☐ See Me ☐ Call Me ☐ Return To Me	☒ For Your Information ☐ For Your Approval ☐ For Your Comments ☐ As You Requested ☐ Copy (____ Copies) ☐ File
---	---

Comments

Route to Norm ~~that~~
 (leg)

Reply The hearing was not held on this filing at John Beals request. Will you be asking the Board to withdraw or amend as requested?

(leg)

Signed _____ Date _____

Washington Water Power
1411 East Mission
P.O. Box 3727
Spokane, Washington 99220-3727
1 800-727-9170
509 489-0500 Telephone



Washington Water Power

RECEIVED

JUL 23 1997

Department of Water Resources

July 15, 1997

Mr. Karl J. Dreher, Director
Idaho Department of Water Resources
P.O. Box 83720
Boise, ID 83720-0098

Subject: Idaho Water Resources Board Application for a Minimum Flow of 9,335 cfs on the Clark Fork River

Dear Mr. Dreher:

Washington Water Power is an investor-owned utility based in Spokane, Washington since 1889. The Washington Water Power Company constructed the Noxon Rapids and Cabinet Gorge Hydroelectric Projects in the 1950's. Both these hydroelectric projects are located on the lower Clark Fork River with Noxon Rapids dam and reservoir located in Montana and the Cabinet Gorge dam located in Idaho with the reservoir mainly in Montana. Approximately 47% of the company's peak generating capacity (790 MW) is provided by these two projects. Washington Water Power serves electric customers in Washington and Idaho.

In conjunction with the operation of Cabinet Gorge, Washington Water Power has three license and certificate of water rights documents. Two water rights have the priority date of September 7, 1950, while the third has a priority date of November 3, 1961. These water rights authorize the use of 25,000, 10,000, and 700 cubic feet per second, respectively, for a total of 35,700 cfs. These water rights reflect the approximate total hydraulic capacity of the four hydroelectric units at the Cabinet Gorge Project.

Flows in the Clark Fork River vary substantially throughout the year. Peak flows occur during spring runoff in May and June, and flows are typically lowest in August and September with occasional very low flows during extreme cold spells during the winter. For example, the USGS station at Whitehorse Rapids recorded a flow of 1,400 cfs on January 12, 1936, and an average flow of only 3,527 cfs for the month of January 1937. Historic flows for the period of record at Whitehorse Rapids indicate that 9,335 cfs (minimum flows requested in the Idaho Water Resources Board application for permit) can not always be met with natural flows. The difference would have to be supplied with water from storage.

The timing of runoff in the lower Clark Fork River system has been significantly altered by the construction and operation of the Hungry Horse and Kerr Projects located in Montana and completed in 1953 and 1939, respectively. Both projects reduce the high flows during runoff and substantially increase the base flows above natural conditions at most times of the year. The flows reviewed in the minimum flow application for permit are from 1953 to 1990 and are reflective of the operations at the Hungry Horse and Kerr Projects. Indications are that these operations may change in the near future, thus affecting flows in the lower Clark Fork River, where Cabinet Gorge is located.

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APR 6 8 1998

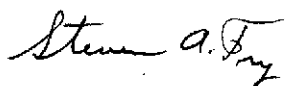
In 1973, the Idaho Department of Fish & Game and Washington Water Power evaluated the river below Cabinet Gorge Dam at several different discharges. Considering the relative benefits of various flows, and based on evaluation of historic low-flow information, Washington Water Power voluntarily agreed to maintain at least a 3,000 cfs minimum flow release from the Cabinet Gorge Project. This minimum flow has been maintained to date with flows falling below this amount only on rare occasions. These instances were related to maintenance or inspection of the project's facilities or the in-river spawning channel. Washington Water Power also has water rights within the State of Montana for the operations associated with the Noxon Rapids Project and for storage within the Cabinet Gorge Reservoir.

Washington Water Power is currently in the process of relicensing both the Cabinet Gorge and Noxon Rapids Projects. For the purposes of relicensing, a collaborative approach involving all stakeholders in a consensus based consultation process has been adopted. This collaborative process involves 40 organizations and over 100 individuals working in technical working groups and a large plenary group to create a living license based on the principles of adapted management.

This process allows for determining the resource needs of the reach of river that is being considered for minimum flow by the Idaho Water Resources Board. A lot of time and effort have gone into this process. A large amount of information has been provided and is still being reviewed. Also, scoping continues for information to address resource needs. The participants in this process are working hard so that the resource needs and issues can be resolved effectively.

The parties named as being consulted in the minimum flow application for permit by the Idaho Water Resources Board (Division of Environmental Quality, Department of Fish & Game, and Department of Parks & Recreation) are also participants of the Cabinet Gorge and Noxon Rapids relicensing process. For this reason, Washington Water Power feels that the needs of the resources will be adequately addressed during the relicensing process and therefore requests that the minimum flow application for permit be withdrawn or changed to reflect the 3,000 cfs voluntary minimum flow except for maintenance and inspections.

Sincerely,



Steven A. Fry
Hydro Safety & License Administrator
(509) 482-4084

cc: Marti Bridges, Idaho River United
Bob Dunnagan, Trout Unlimited
Cindy Robertson, Idaho Department of Fish & Game
Bob Schloss, U.S. Corps of Engineers
Clark Fork Relicensing Team

MICROFILMED
APR 9 9 1978

NOTES

Man to flow hearing
Chalmers - 7-16+17-97

Public witness

John Bentley

- Buell
Hollister

Full Parties

-
- ✓ Marti Bridges
 - ✓ Cindy Robertson
 - ✓ Bob Schloss (Gloss) Corps of Eng
 - ✓ Bob Dunnagan Trout Unlimited
 - ✓ Steve Fry

- Beal Direct
- X - Beal

John Bentley - Public witness

- Clark Fork River
- St. Joe River - supports
- St. Marys - "

Buell Hollister

- Clark Fork - wants flow moved
- Pend Oreille - leave as is.
- St. Joe - inc to 1900s

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APR 09 1998

- Robertson
- Bridges
- Gloss
- Dunnagan
- Fry

170.5 Cindy Robertson direct

216 Marti Bridges
Pond O'Neill - support

St. Joe River
- supports
- But wants more,
St. Maries

228 Mr. Dunnagan direct.

286. Mr. Fry direct (Wash. Wtr Power).

- * Fry will supply an Exhibit, & ^{send other parties}
- * Marti Bridges will provide some exhibits.
- Record left open thru end July 97.

NOTES

96-08741 - Canyon Mineral, Inc.

- Scheduled for hearing, but Dept used wrong address for the applicant.
- Reschedule for hearing?

98-07675 - ^{Filed in 1990} Milt Hiddle & Violet Wyman

- 4 cfs - fish propog.
- Protested by F & G.
- Source = Dodge Cr Trib Deep. Cr.
- Conference was held.

~~Do not appear to be protested~~

87-07174 William Hicklin - ^{attys Charles Graham}
Protestant - Lucian Burns

^{attys Roy E. Mosman}

- The "water easement" signed by protestant appears to grant to the applicant the ~~what~~ same as sought by the water application.

~~(Suggest sending Preliminary Order to protestant to show why protest should not be set aside since it)~~

- Hicklin has priority of use up to 1/2 ac.

MICROFILMED
APR 09 1998

continuing
int letter
if no response or
unsatisfactory response,
reschedule for hearing

send cont. int
letter

Washington Water Power
1411 East Mission
P.O. Box 3727
Spokane, Washington 99220-3727
1 800-727-9170
509 489-0500 Telephone



Washington Water Power

RECEIVED

JUL 23 1997

Department of Water Resources

July 15, 1997

Mr. Karl J. Dreher, Director
Idaho Department of Water Resources
P.O. Box 83720
Boise, ID 83720-0098

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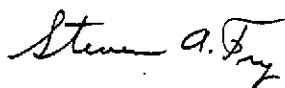
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Sincerely,



Steven A. Fry
Hydro Safety & License Administrator
(509) 482-4084

cc: Marti Bridges, Idaho River United
Bob Dunnagan, Trout Unlimited
Cindy Robertson, Idaho Department of Fish & Game
Bob Schloss, U.S. Corps of Engineers
Clark Fork Relicensing Team

MICROFILMED

APR 6 8 1988

FISHERY RESEARCH



FISH HABITAT ASSOCIATIONS OF THE PEND OREILLE RIVER, IDAHO

**Project F-73-R-15
Subproject VI, Study VII**

*Fisheries info for
Pend Oreille River
Instream Flow
application.*

by

David H. Bennett

and

Joseph M. DuPont

September 1993

*Glen: 7/25
Mik The Box Canyon reach
of the Pend Oreille R.
AP would be similar to the
reach within Idaho.
I'm still attempting to
get copies of other
reports. Cindy*

Objective 5. To determine the effects of drawdown on fish populations in the Pend Oreille River, Idaho.

INTRODUCTION

Comparisons of fish communities were made between the Pend Oreille River, Idaho and the Pend Oreille River, Washington (Box Canyon Reservoir) located immediately downstream of Albeni Falls Dam. The limnology of Box Canyon Reservoir is similar to the Pend Oreille River, Idaho. However, Box Canyon Reservoir is not drawn down every winter so differences in fish community structure between the two areas can generally be explained as an effect of drawdown. Dense aquatic macrophyte communities exist in Box Canyon Reservoir, probably a result of the lack of drawdown that occurs in this system.

METHODS

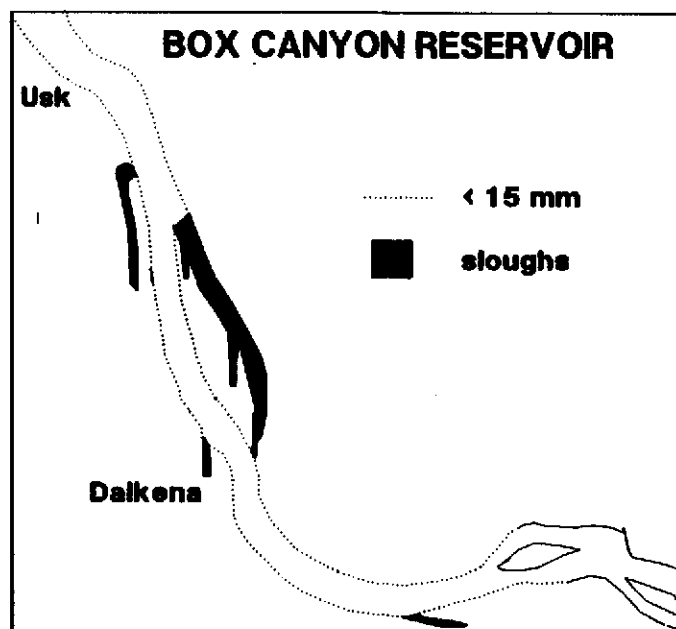
Comparisons of fish communities were made between Pend Oreille River and Box Canyon Reservoir by gill netting and electrofishing similar habitat types during 1992 (Figure 30). Comparisons were made between fishes sampled in littoral habitats with substrate sizes < 15 mm and from sloughs. Each habitat was divided into 0.5 km sections and were randomly sampled during each stage of drawdown (Table 7). Two sites were sampled in sloughs and along the main river channel from the Pend Oreille River, Idaho, whereas one site was sampled in sloughs and along the main river channel from Box Canyon Reservoir.

Gill nets were set overnight and sampling was repeated for two nights at each station. Sets were perpendicular to shore with the smallest mesh size alternated towards and away from shore. Groups of six nets were fished overnight at each site. Each group was composed of one floating and five sinking experimental gill nets. Two sinking nets were multifilament with five, 14.63 x 1.83 m (48 x 6 ft) panels with mesh size (stretch) ranging from 38.1 (1.5 in) to 139.7 mm (5.5 in). Two other sinking nets were monofilament with five, 9.14 x 1.83 m (30 x 6 ft) panels with mesh size ranging from 38.1 to 139.7 mm. One sinking net was multifilament with seven, 7.62 x 1.83 m (25 x 6 ft) panels with mesh size ranging from 51 (2 in) to 203 mm (8 in). The floating experimental gill nets were multifilament and had five, 14.63 x 1.83 m (48 x 6 ft) panels with mesh size (stretch) ranging from 138.1 to 139.7 mm. The floating gill net was submerged to the bottom in areas of heavy boat traffic.

Nighttime electrofishing consisted of 10 minutes of continuous shocking effort at each littoral sampling station. Electrofishing was conducted by paralleling the shoreline in waters generally < 1.3 m deep with a constant output of approximately 400 volts and 3.5 amps. Electrofishing was repeated at each station for three nights during refill and highpool and for two nights during drawdown and lowpool to minimize night to night variation.

Catch rates were determined for each species at each habitat type for Pend Oreille River, Idaho and Box Canyon Reservoir. Differences in catch rates between the two systems are assumed to be attributed to drawdown. Largemouth bass, black crappie and pumpkinseed were combined into one guild (centrarchids) and catch rates were analyzed during each stage of drawdown.

Geographic Information System (GIS) was used to determine changes in available habitat as a result of drawdown. Specific habitat requirements (velocity, substrate, vegetation and depth) of fishes affected by drawdown were overlaid through G.I.S. to determine the amount of habitat available in the Pend Oreille River during summer and winter months. Habitat availability under a hypothetical 2 m (6.5 ft) drawdown was also evaluated.



STUDY AREAS

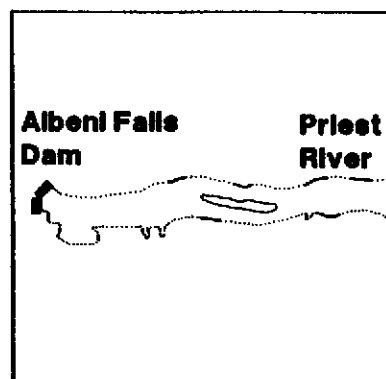
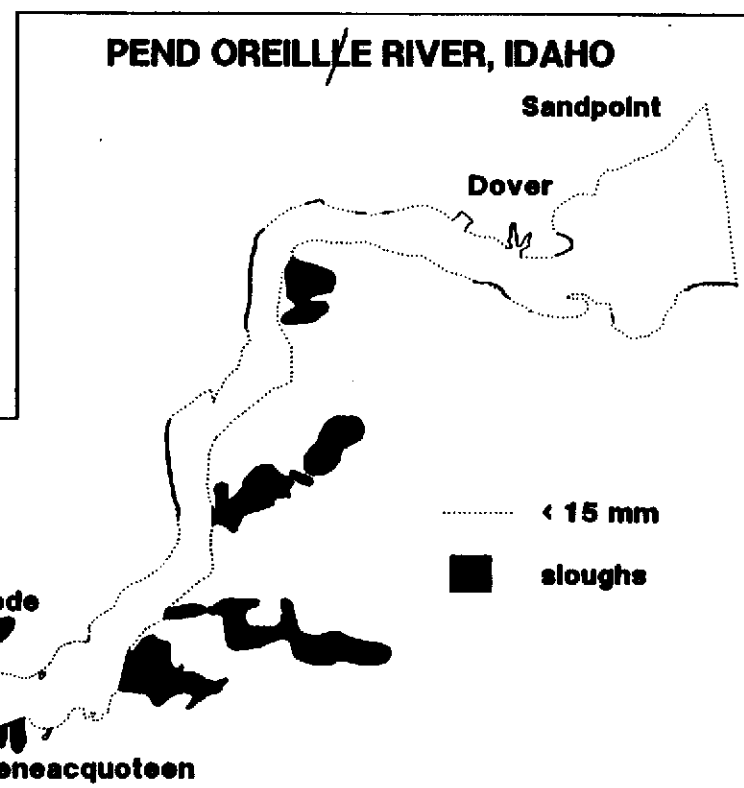


Figure 30. Study areas in Pend Oreille River, Idaho and Box Canyon Reservoir where fishes were sampled. Comparisons of fish communities were made between sloughs and along the main river channel where the average substrate size is < 15 mm.

RESULTS

Comparison of Fish Communities

Over 4,400 net hours of gill netting and 730 minutes of electrofishing were used to compare the fish communities in the Pend Oreille River, Idaho and Box Canyon Reservoir and 15,964 fish were sampled representing 22 species (Table 25). Catch rates of mountain whitefish, peamouth, northern squawfish, redbside shiner, largescale sucker, Catostomus macrocheilus and brown bullhead were higher in Idaho than in Box Canyon Reservoir for both gill netting and electrofishing (Figure 31). However, catch rates of tench Tinca tinca, longnose sucker C. catostomus, pumpkinseed, largemouth bass and black crappie were higher in Box Canyon Reservoir than in Pend Oreille River, Idaho for both gill netting and electrofishing. Collectively, these fishes represented > 98% of the catch. All trout species combined represented < 1% of the catch in both Idaho and Washington. Largemouth bass, black crappie and pumpkinseed are the predominant game fishes that experienced lower catch rates in Pend Oreille River, Idaho than in Box Canyon Reservoir.

During refill, sampling results from electrofishing and gill netting showed higher catch rates of centrarchids in Box Canyon Reservoir than Pend Oreille River, Idaho for both the main river channel and the sloughs (Figure 32). All catch rates were significantly ($P < 0.1$) higher in Box Canyon Reservoir than in Pend Oreille River, Idaho except in comparison of the main river channel. Although comparisons of the main river channel are not significantly different, catch rates in Box Canyon Reservoir were at least 4.5 times higher than any of the catch rates experienced in Pend Oreille River, Idaho.

During highpool, higher catch rates were experienced along the main river channel in Box Canyon Reservoir (Figure 33). Catch rates from sloughs were similar between Pend Oreille River and Box Canyon Reservoir for gill netting and electrofishing. Wide confidence intervals in Box Canyon Reservoir were a result of the difficulty in sampling dense weed beds.

During highpool, most centrarchids sampled were smaller fish (Figure 34). The length frequency distribution of largemouth bass indicate 96% of the fish sampled from the Pend Oreille River, Idaho were < 210 mm (age-0 and 1), whereas 77% from Box Canyon Reservoir were < 210 mm.

During drawdown, average catch rates of centrarchids were higher in Box Canyon Reservoir than in Pend Oreille River, Idaho (Figure 35). Catch rates in Box Canyon Reservoir during drawdown were highly variable and confidence intervals show no statistical differences ($P > 0.10$).

During lowpool, few centrarchids were sampled in Pend Oreille River, Idaho which resulted in the lowest catch rates of the year (Figure 36). Average catch rates sampled by gill netting were higher in Box Canyon Reservoir in all areas except the main river channel. No statistical differences were found. Average catch rates by gill netting along the main river channel during lowpool were higher in Pend Oreille River, Idaho than in Box Canyon Reservoir. Gill netting catch rates were 26 times higher in sloughs than along the main river channel during lowpool for Box Canyon Reservoir. Gill netting catch rates were higher along the main river channel than the sloughs for Pend Oreille River, Idaho (Figure 36).

Table 25. Number of fishes sampled by gill netting and electrofishing on Pend Oreille River, Idaho (Idaho) and Box Canyon Reservoir, Washington (BCR) during 1992.

Species	Main River Channel substrate < 15 mm		Sloughs		Total		Overall % Composition	
	Idaho	BCR	Idaho	BCR	Idaho	BCR	Idaho	BCR
kokanee salmon	1				1		0.0	0.0
cutthroat trout	10		7		17		0.2	0.0
cutthroat (hatchery)	3		1		4		0.0	0.0
rainbow trout	13	4			13	4	0.1	0.1
rainbow (hatchery)				1	0	1	< 0.1	0.0
brown trout	12	8	8		20	8	0.2	0.2
brook trout			1		1		< 0.1	0.0
bull trout	1				1		< 0.1	0.0
lake trout	2				2		< 0.1	0.0
lake whitefish	35		3		38		0.4	0.0
mountain whitefish	401	20	22	9	423	29	3.9	0.6
peamouth	695	56	601	59	1296	115	12.0	2.2
northern squawfish	789	148	383	79	1172	227	10.9	4.4
redside shiner	272		15	2	287	2	2.7	0.0
tench	305	391	599	836	904	1227	8.4	23.8
longnose sucker	104	71	157	103	261	174	2.4	3.4
largescale sucker	269	49	124	34	393	83	3.6	1.6
brown bullhead	160	27	720	109	880	136	8.1	2.6
pumpkinseed	159	450	955	579	1114	1029	10.3	19.9
largemouth bass	81	233	472	275	553	508	5.1	9.8
black crapple	47	165	167	133	214	298	2.0	5.8
yellow perch	1330	760	1872	565	3202	1325	29.7	25.6
slimy sculpin	2				2		< 0.1	0.0
TOTAL	4691	2382	6107	2784	10798	5166	100	100

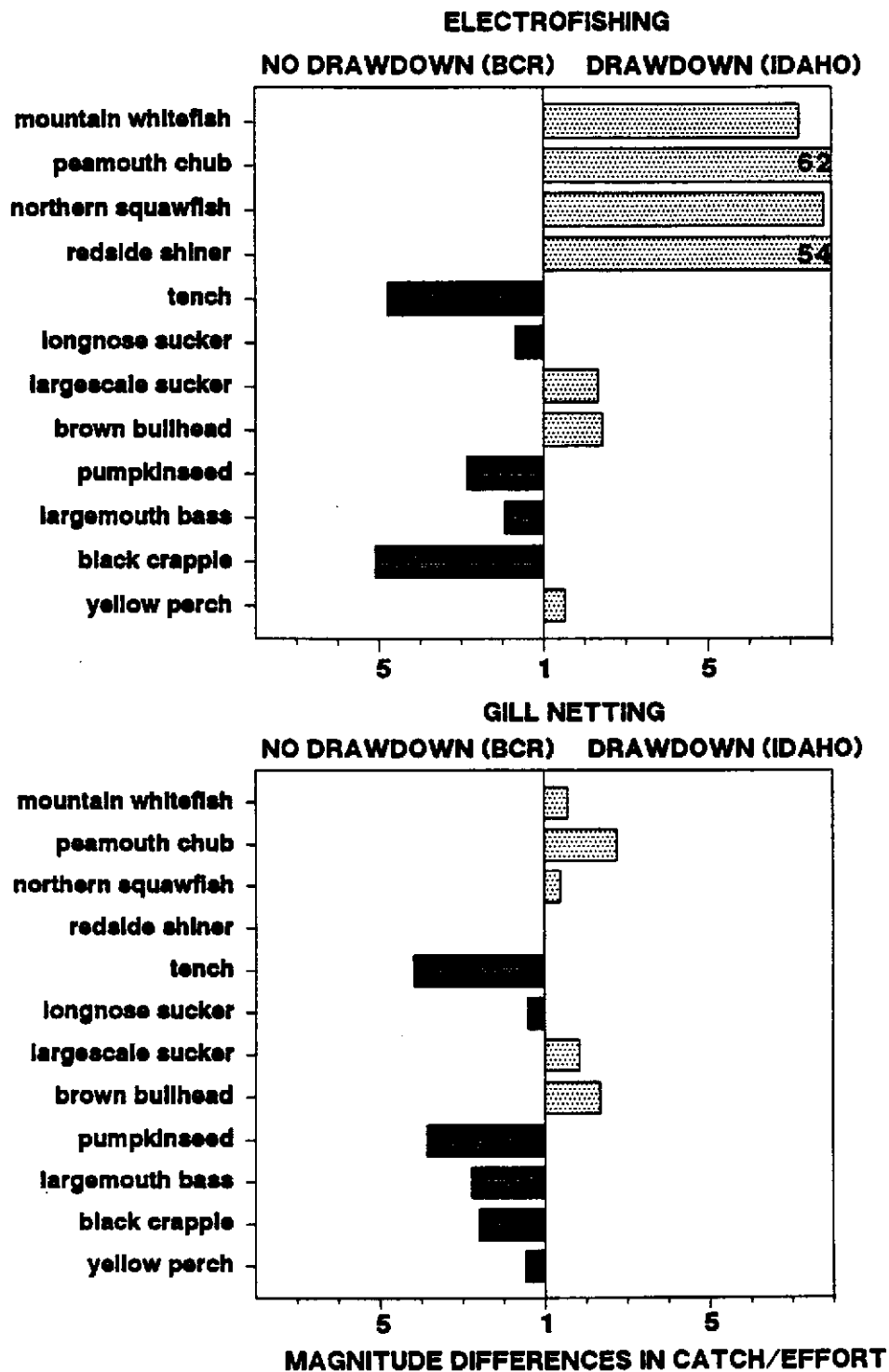


Figure 31. The magnitude of difference in catch rates of fishes sampled between Box Canyon Reservoir (BCR) and the Pend Oreille River, Idaho (Idaho)

REFILL

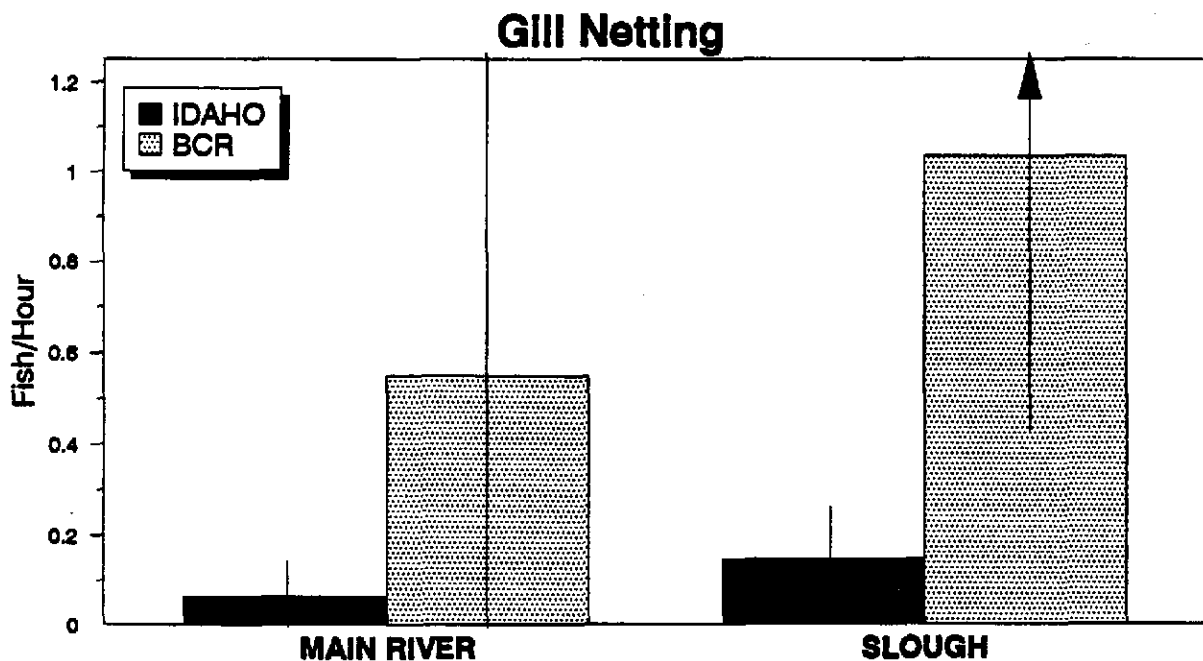
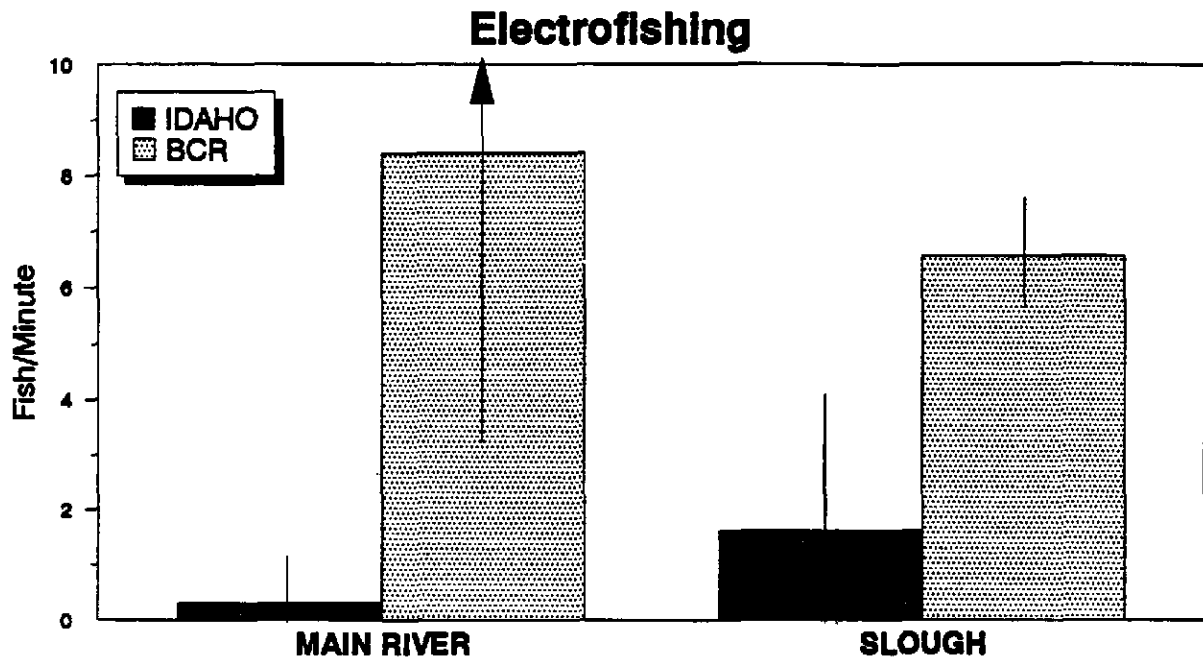
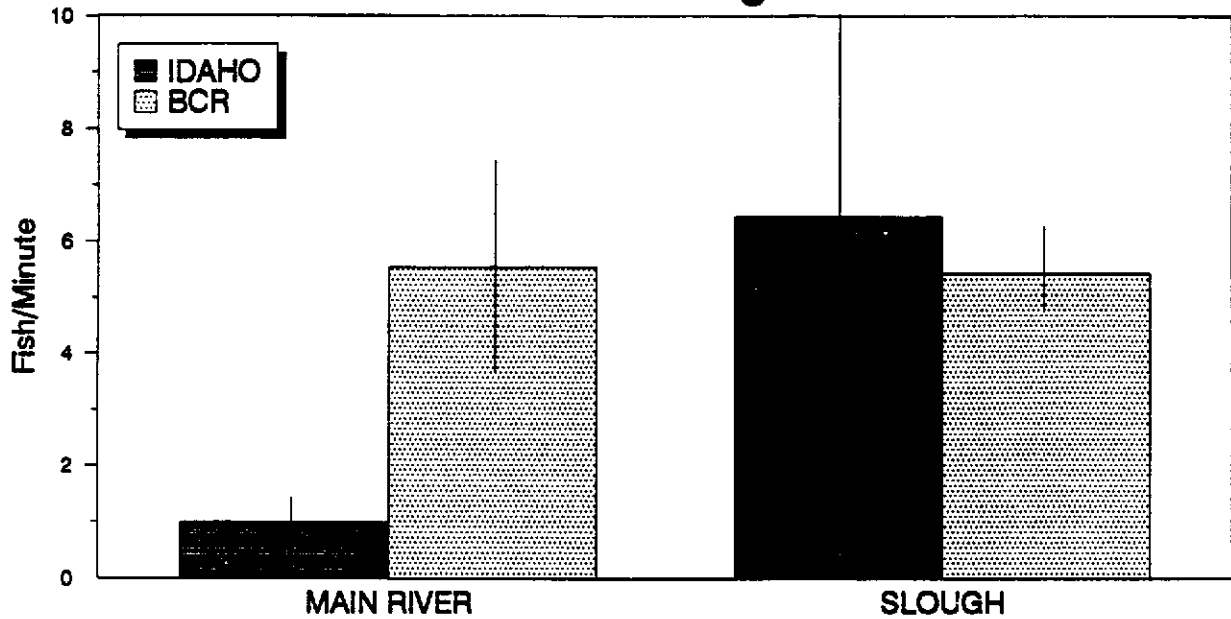


Figure 32. Comparison of electrofishing and gill netting catch rates from centrarchids (largemouth bass, black crapple and pumpkinseed) sampled along the main river channel (average substrate size < 15 mm) and sloughs from Pend Oreille River, Idaho (Idaho) and Box Canyon Reservoir (BCR) during refill 1992. Vertical bars indicate 90% confidence intervals.

MICROFILMED

HIGHPOOL

Electrofishing



Gill Netting

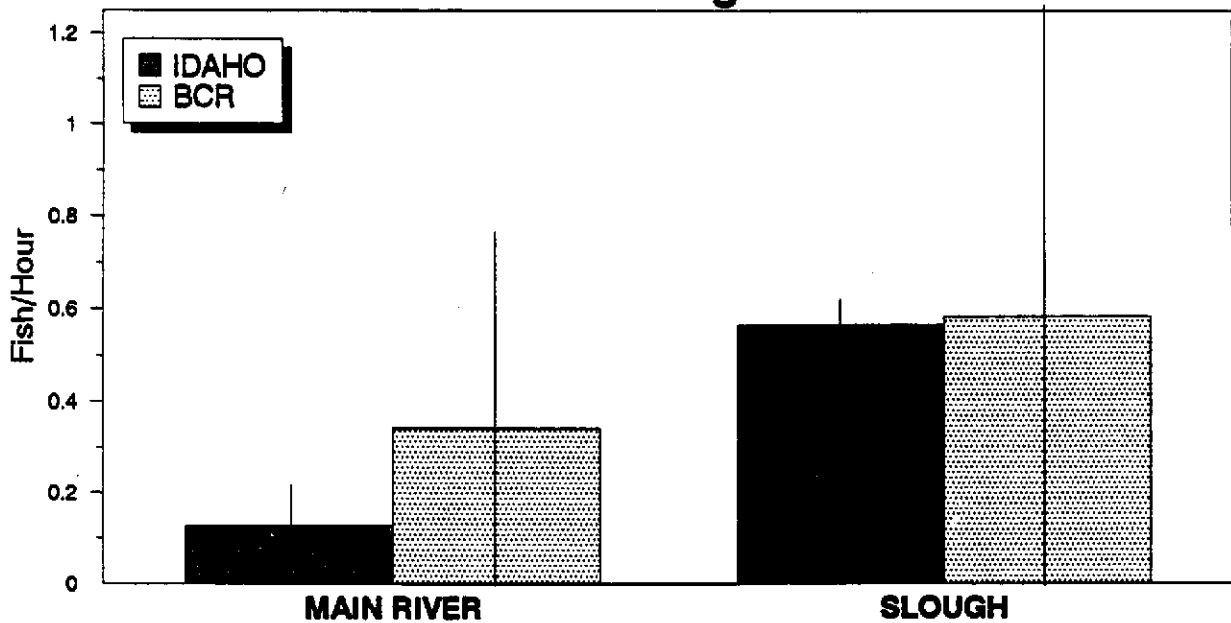


Figure 33. Comparison of electrofishing and gill netting catch rates from centrarchids (largemouth bass, black crapple and pumpkinseed) sampled along the main river channel (average substrate size < 15 mm) and sloughs from Pend Oreille River, Idaho (Idaho) and Box Canyon Reservoir (BCR) during highpool 1992. Vertical bars indicate 90% confidence intervals.

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APR 09 1998

LENGTH FREQUENCY FOR LARGEMOUTH BASS

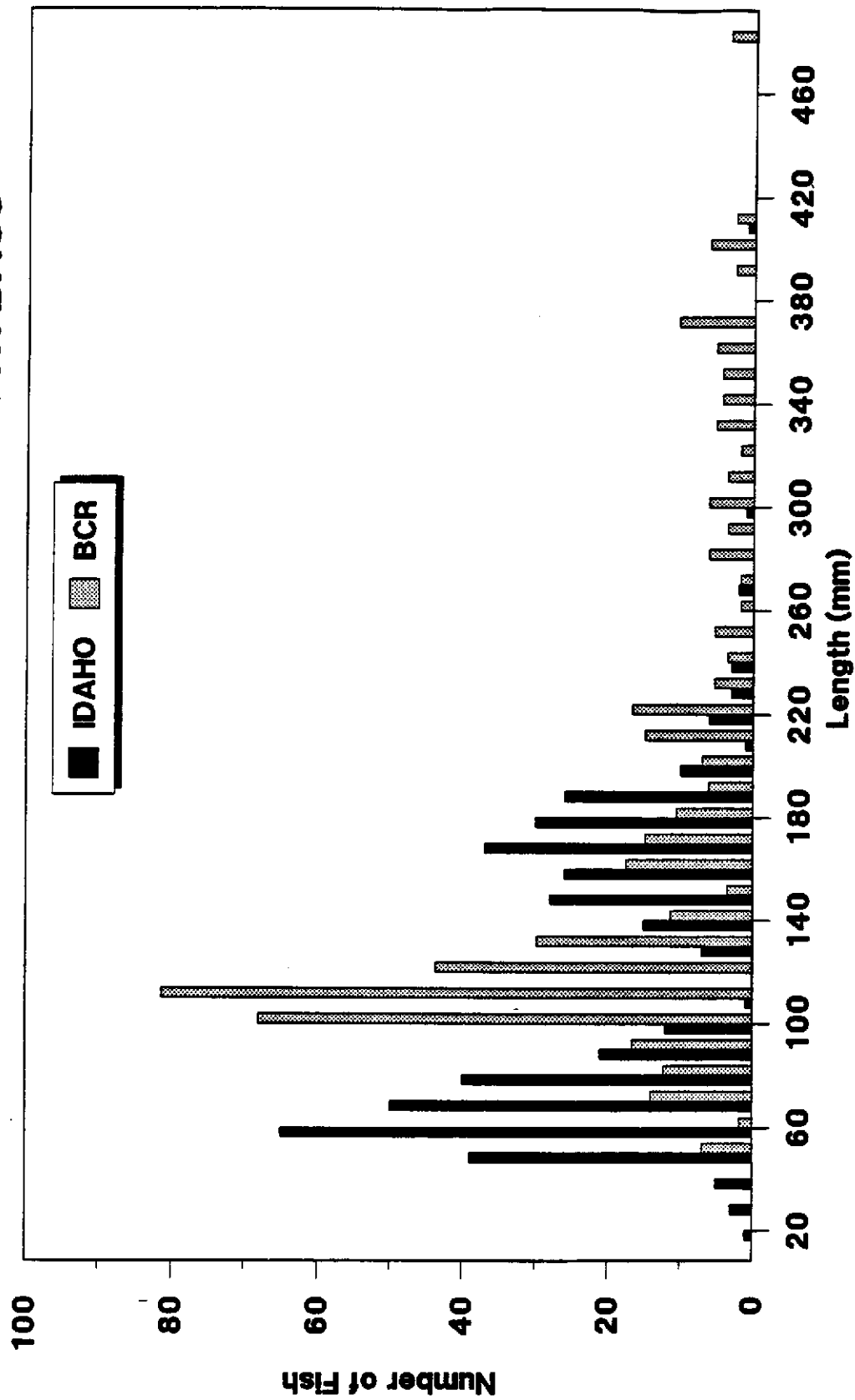
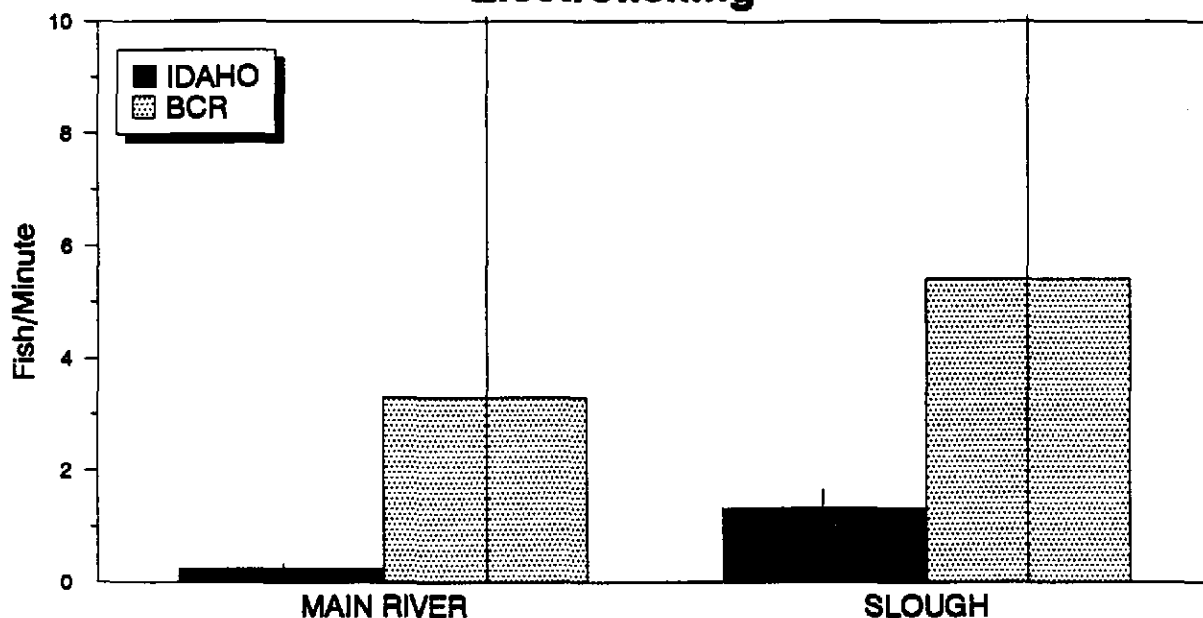


Figure 34. Length (mm) frequency diagram of largemouth bass sampled during July and August of 1992 from Pend Oreille River, Idaho (Idaho) and Box Canyon Reservoir (BCR).

MICROFILMED
APR 09 1998

DRAWDOWN

Electrofishing



Gill Netting

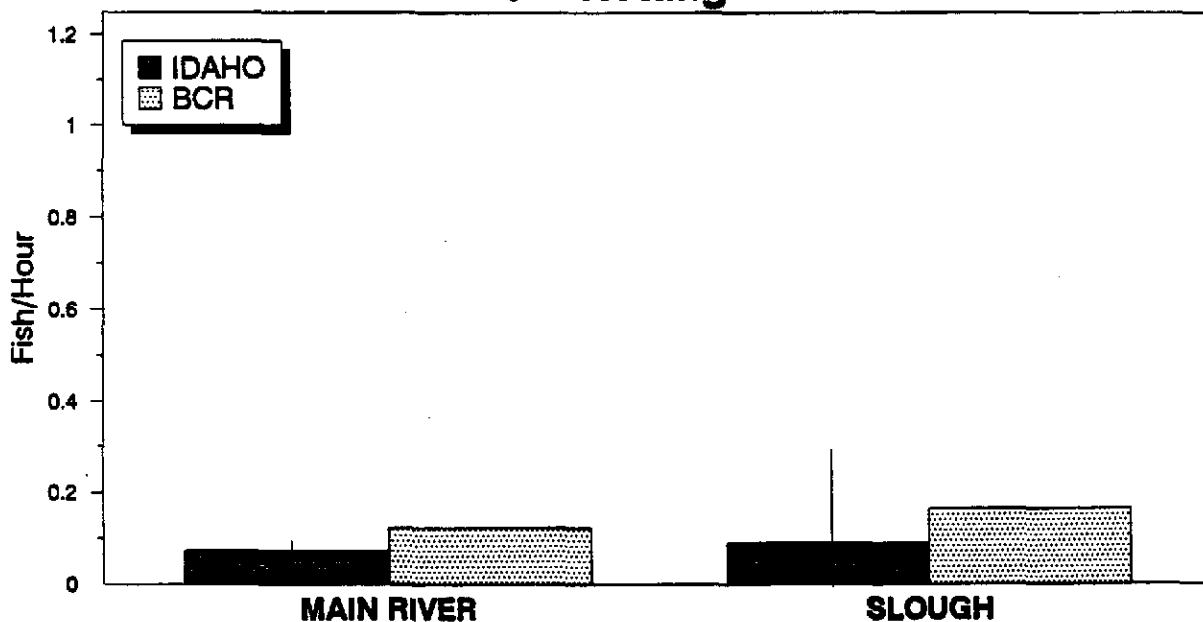


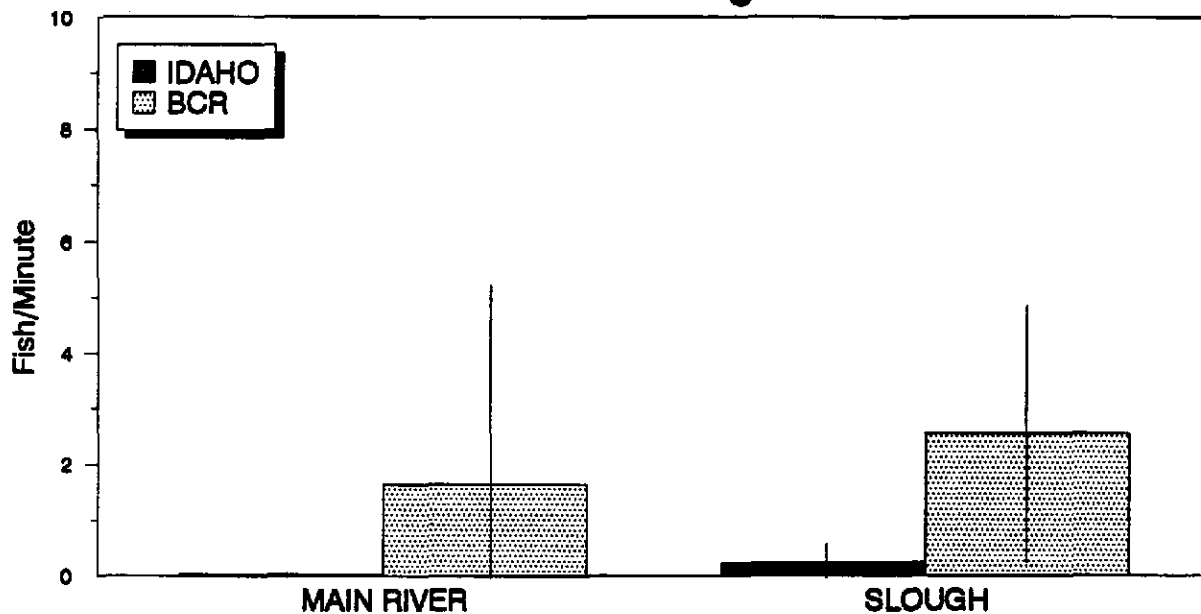
Figure 35. Comparison of electrofishing and gill netting catch rates from centrarchids (largemouth bass, black crapple and pumpkinseed) sampled along the main river channel (average substrate size < 15 mm) and sloughs from Pend Oreille River, Idaho (Idaho) and Box Canyon Reservoir (BCR) during drawdown 1992. Vertical bars indicate 90% confidence intervals.

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APR 09 1998

LOWPOOL

Electrofishing



Gill Netting

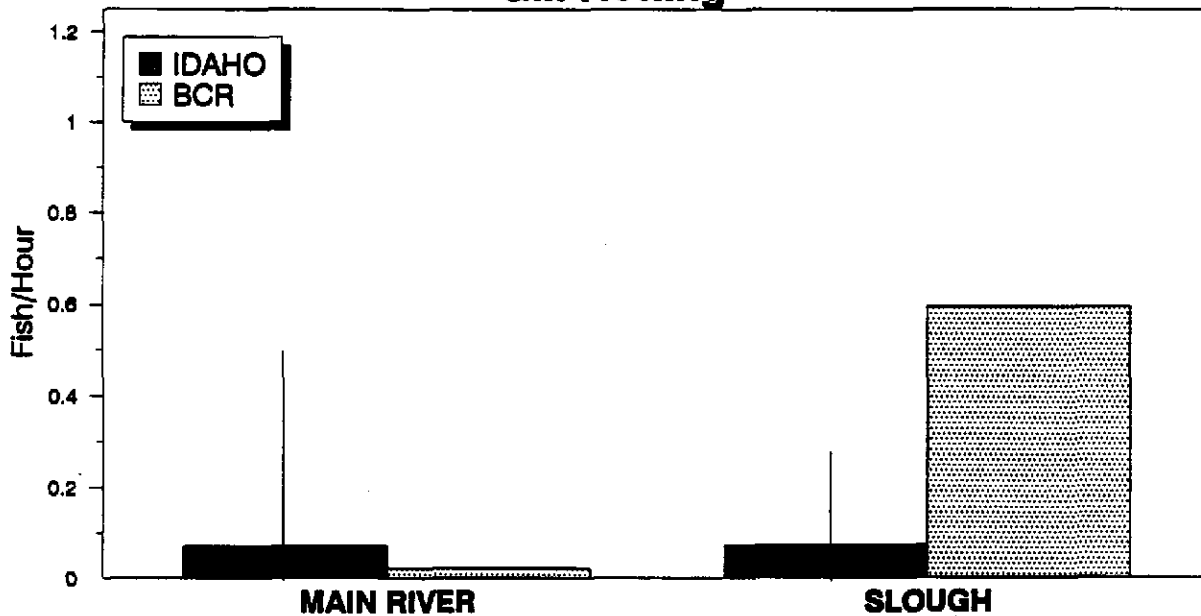


Figure 36. Comparison of electrofishing and gill netting catch rates from centrarchids (largemouth bass, black crapple and pumpkinseed) sampled along the main river channel (average substrate size < 15 mm) and sloughs from Pend Oreille River, Idaho (Idaho) and Box Canyon Reservoir (BCR) during lowpool 1992. Vertical bars indicate 90% confidence intervals.

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Largemouth Bass Summer Habitat

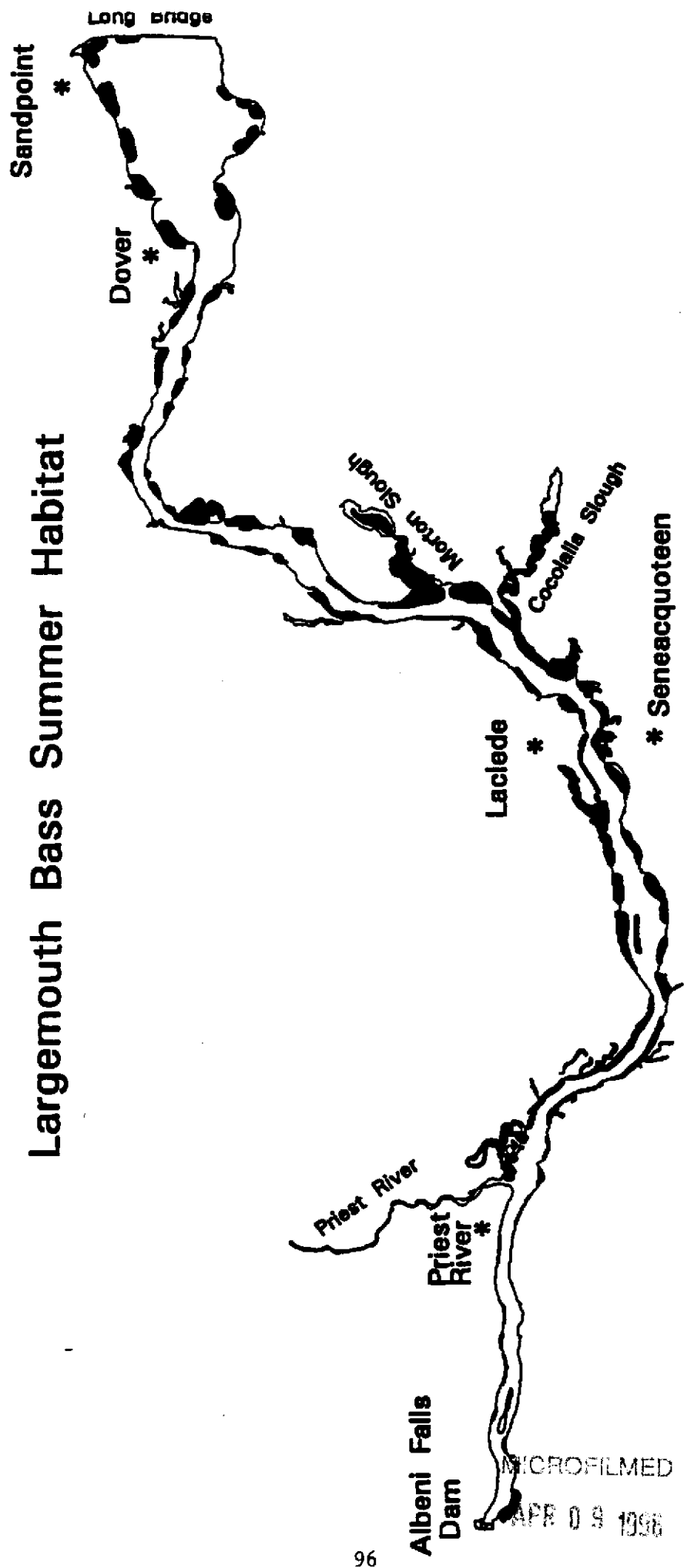


Figure 37. Suitable largemouth bass habitat during highpool on Pend Oreille River, Idaho. Black shading represents suitable habitat.

Habitat Availability

Suitable summer habitat for largemouth bass include vegetation, wood structures and open water bordering the structures with velocities < 6 cm/s (Ashe and Scholz 1992; Pitlo 1992). Our analysis of habitat conditions indicate about 1,000 ha is available of suitable summer largemouth bass habitat in the Pend Oreille River, Idaho which is approximately 25% of the total surface area (Figure 37).

During winter, Pend Oreille River, Idaho is drawn down 3.5 m which decreases the total area of the river generally from 3,900 ha to about 3,150 ha. Approximately 750 ha (19%) of the river bottom is exposed during drawdown; most dewatered areas are sloughs and shallow bays (Figure 38).

Winter habitat requirements for largemouth bass and similar centrarchids (black crappie and pumpkinseed) include zero velocities and depths > 1.2 m (Sheehan et al. 1990; Ashe and Scholz 1992; Carlson 1992; Pitlo 1992). About 45 ha of suitable winter largemouth bass habitat exist in the Pend Oreille River, Idaho under present drawdown levels (lake elevation 2,051.5 m) which is about 4% of the suitable summer habitat (Figure 39).

If the annual drawdown were limited to 2.0 m, approximately 520 ha would be exposed increasing the surface area of the river by about 230 ha (31% gain) over the surface area of the 3.5 m drawdown. If the 2.0 m drawdown were implemented, the amount of suitable winter habitat for largemouth bass would increase to 325 ha, 7.5 fold over the current winter habitat (Figure 40).

DISCUSSION

Lower catch rates of tench, longnose sucker, pumpkinseed, largemouth bass and black crappie were found in Pend Oreille River, Idaho than Box Canyon Reservoir, Washington. We interpret the lower catch rates as the effects of drawdown on these fishes.

Largemouth bass, black crappie and pumpkinseed were consistently sampled at lower catch rates from Pend Oreille River, Idaho than Box Canyon Reservoir in all stages of drawdown, except from sloughs during highpool and along the main river channel during lowpool. Higher catch rates sampled from sloughs in Pend Oreille River, Idaho during highpool were a result of large numbers of age-0 and 1 fish. High numbers of age 1 fish in Pend Oreille River, Idaho may have resulted from the mild 1991-1992 winter. Large numbers of age-0 fish indicate spawning success is high on the Pend Oreille River, Idaho. During spawning, the Pend Oreille River is usually at fullpool and experiences minimal water-level fluctuations. These conditions are considered favorable for successful spawning of largemouth bass (Mitchell 1982). However, year-class strength in northern waters is generally based on over-winter survival of age-0 fish (Bowles 1985; Rieman 1987).

During winter, higher gill netting catch rates of centrarchids were experienced along the main river channel than in sloughs of the Pend Oreille River, Idaho. However, gill netting catch rates were 26 times greater in the sloughs in Box Canyon Reservoir than along the main river channel. These data indicate that drawdown, which decreases slough depths to < 1 m Pend Oreille River, Idaho, forces centrarchids from the sloughs into the main river. In Box Canyon Reservoir, slough depths often exceed > 2 m which are more suitable for centrarchids (> 1.5 m) and may explain why they were sampled at substantially higher catch rates. Sloughs > 1.5 m in depth have favorable conditions for centrarchids during winter as temperatures are generally 2-4°C warmer than the main river, and dissolved oxygen levels are usually adequate for survival (> 2

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APR 03 1998

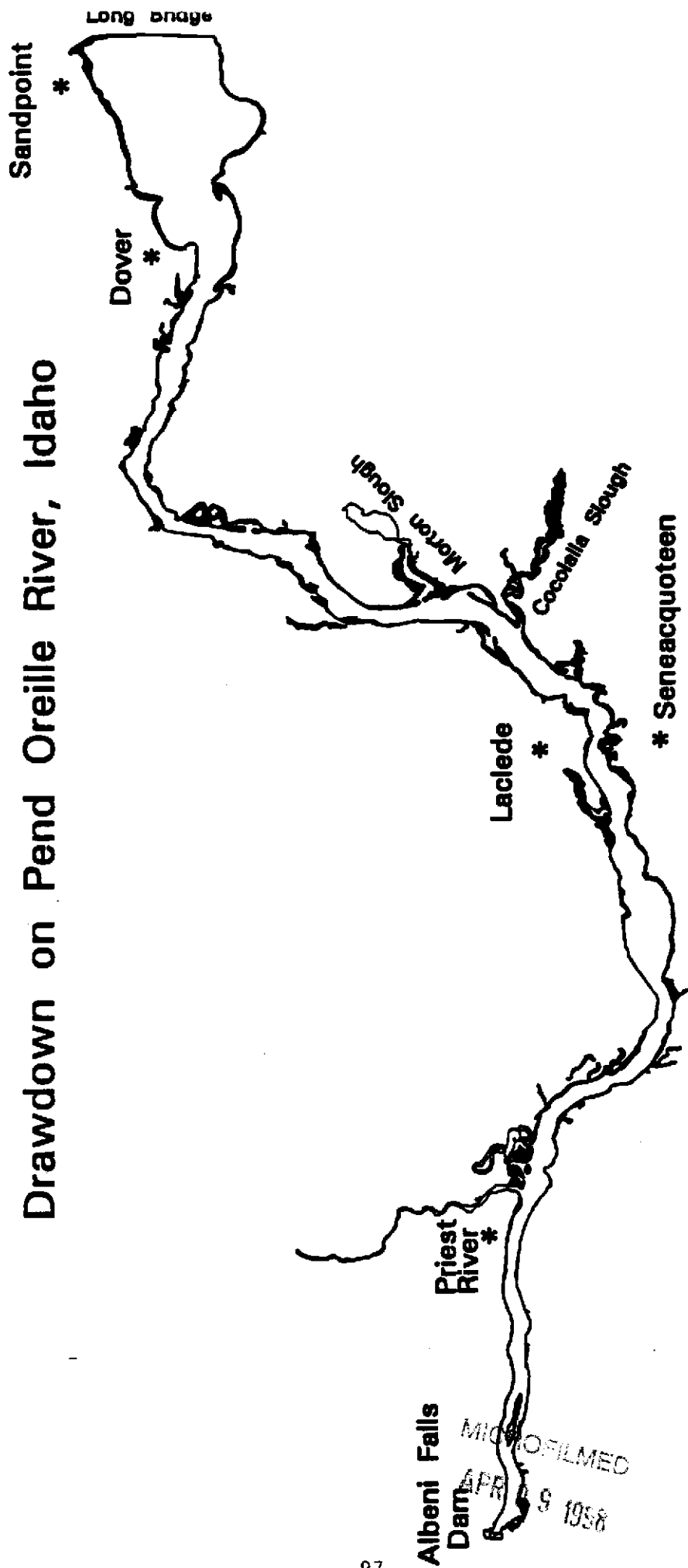


Figure 38. Pend Oreille River, Idaho during a 3.5 m drawdown (lake elevation 2051).
 Black shading represents areas that are dewatered during drawdown.

Largemouth Bass Winter Habitat

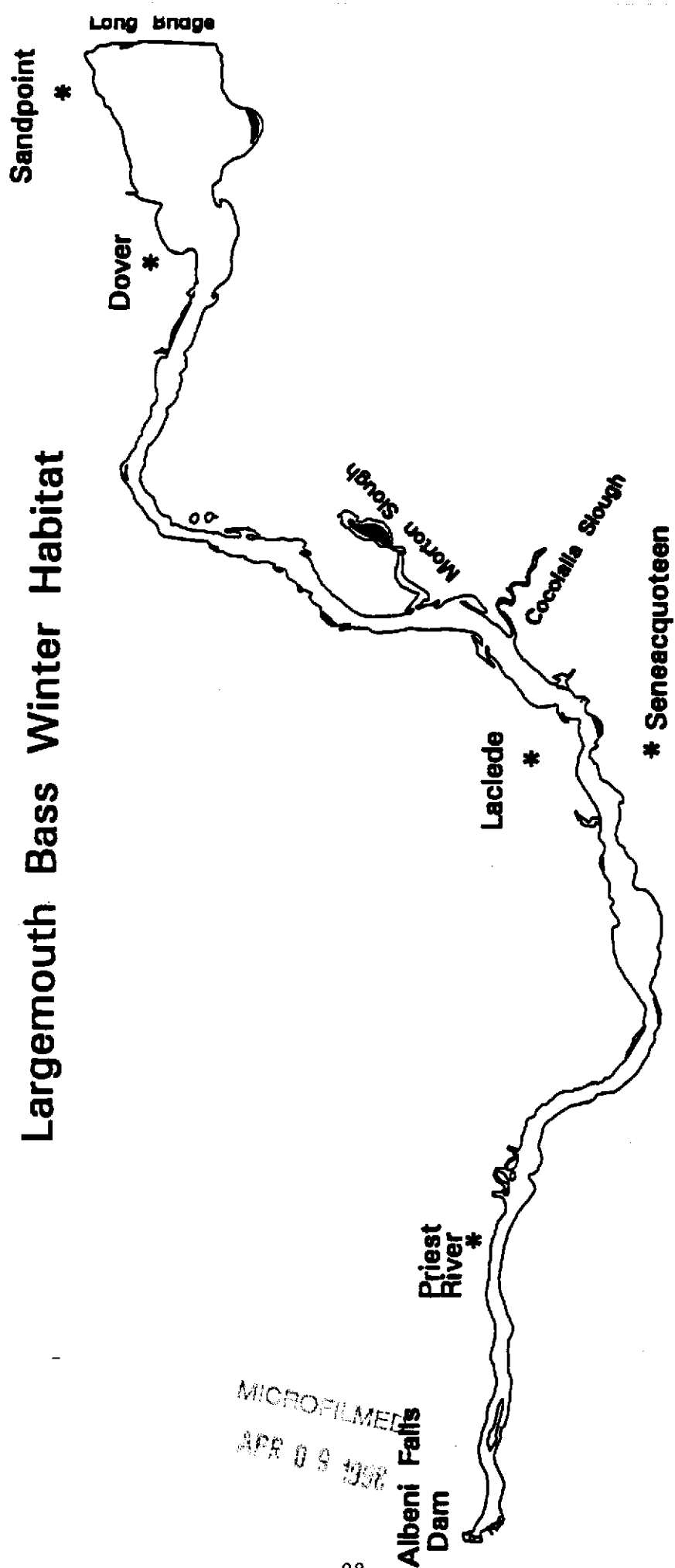


Figure 39. Suitable largemouth bass habitat during lowpool on Pend Oreille River, Idaho. Black shading represents suitable habitat.

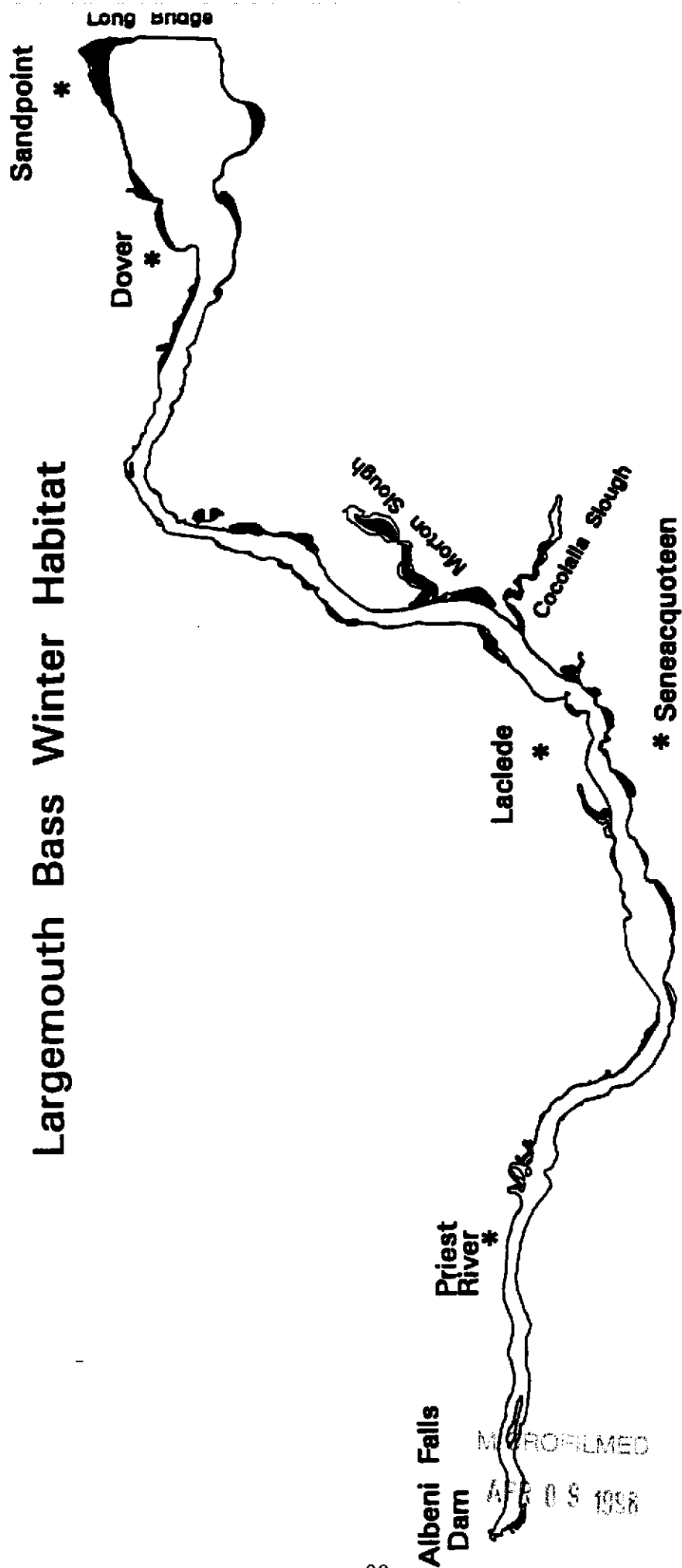


Figure 40. Suitable largemouth bass habitat on Pend Oreille River, Idaho if drawdown was limited to 2 m (lake elevation 2056). Black shading represents suitable habitat.

ppm) (Sheehan 1990; Pitlo 1992). Temperatures in the main river channel of Pend Oreille River often drop to 0°C during winter for extended periods of time. Under controlled conditions, Sheehan et al. (1990) found that when temperatures dropped to 0°C age-0 centrarchids often experienced mortalities of 50%. Pitlo (1992) found that shallow (average depth < 1.2 m) backwater areas often experienced low dissolved oxygen concentrations that resulted in extensive winter kills of centrarchids. Zero velocities found in the sloughs are also important as centrarchids exposed to temperatures < 2°C show little ability to negotiate current (Sheehan et al. 1990). Thus centrarchids forced into the main river channel must find suitable habitat for survival. Low quantities of suitable overwintering habitat probably contribute to the low annual survival rates of centrarchids in the Pend Oreille River, Idaho (Objective 4).

Habitat analysis of Pend Oreille River, Idaho indicates adequate summer habitat is available to support substantial largemouth bass and black crappie populations. Large numbers of age-0 fish sampled during 1991 and 1992 indicate spawning success is high. However, based on our overwintering calculations, overwintering habitat is limited to about 45 ha or 4% of the amount of suitable summer habitat. Typically, backwater areas or sloughs provide the habitat requirements needed for overwintering centrarchids (Sheehan et al. 1990; Carlson 1992; Pitlo 1992). Drawdown in Pend Oreille River, Idaho decreases average slough depths to < 1 m which is unfavorable for overwintering centrarchids (Sheehan et al. 1990; Pitlo 1992). If drawdown in Pend Oreille River were limited to 2 m, a 7.5 fold increase in the amount of overwintering habitat would result and presumably translate into an increase in the sports fishery.

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APR 8 9 1998

NOTICE OF HEARINGS FOR MINIMUM STREAM FLOW APPLICATIONS

Notice is hereby given that on June 15, 1992, the Idaho Water Resource Board filed four (4) applications for permit with the Department of Water Resources (IDWR) to preserve minimum streamflows for the protection of fish and wildlife habitat, aquatic life and recreational values as follows:

Application No. 96-08718

Source: Clark Fork River tributary to Pend Oreille Lake
Reach: 8.4 miles beginning at Cabinet Gorge Dam in the NWSE Section 27, T55N, R3E, B.M. downstream to Lake Pend Oreille in SW1/4 Section 3, T55N, R2E, B.M.
Rate of flow: 9,335 cubic feet per second (cfs) year-round

Application No. 96-08730

Source: Pend Oreille River tributary to Columbia River
Reach: 2.4 miles beginning at Albeni Falls Dam in the NWNW Section 29, T56N, R5W, B.M. downstream to the state line on the west side of Sections 13 and 24, T56N, R6W, B.M.
Rate of flow: 10,655 cfs year-round

Application No. 91-07122

Source: St. Joe River tributary to Coeur d'Alene Lake
Reach: 36 miles beginning at a point in NENENW Sec. 13, T45N, R3E, B.M. at the confluence of the St. Joe River with Marble Creek and ending at the confluence of St. Joe River with the St. Maries River in SENESW Sec. 23, T46N, R2W, B.M.
Rate of flow: 941 cfs from Nov. 1 to July 31, and
470 cfs from August 1 to October 31

Application No. 92-07200

Source: St. Maries River tributary to St. Joe River
Reach: 26 miles beginning at a point in the SWSWNE Section 6, T42N, R2E, B.M. at the confluence of the West and Middle Forks of the St. Maries River downstream to the confluence with John Creek in the SENENW Section 33, T45N, R2W, B.M.
Rate of flow: 141 cfs from December 1 to July 31
65 cfs from August 1 to November 30

IDWR will hold public hearings as required in Section 42-1503, Idaho Code, for the purpose of receiving evidence and testimony in regard to the applications as follows:

Applications: 96-08718 and 96-08730
Date and time: July 16, 1997, at 10:00 a.m.
Place: NRCS Federal Building

MICROFILMED
APR 03 1998

1500 Hwy 2
Sandpoint, Idaho

Applications: 91-07122 and 92-07200
Date and time: July 17, 1997 at 10:00 a.m.
Place: Washington Water Power
528 College Ave.
St. Maries, Idaho

Any party who wishes to formally appear in the hearings for the purpose of presenting evidence and testimony or cross-examining witnesses should file a notice of appearance with the Director of IDWR, Statehouse Mail, Boise, Idaho 83720, Attn: L. Glen Saxton, five (5) days prior to the hearing. Other parties may informally present their views and comments without filing a notice of appearance. Informal written views and comments may also be submitted to IDWR prior to the hearing.

The hearings will be conducted in a facility which meets the accessibility requirements of the Americans with Disabilities Act. If you require special accommodations in order to attend, participate in or understand the hearing, please advise IDWR at least (10) days prior to the hearing. The hearing will be conducted by L. Glen Saxton, IDWR, Statehouse Mail, Boise, ID 83720, telephone (208)327-7900

If issued, these permits will be subject to all prior water rights.

Karl J. Dreher
Director, IDWR

MICROFILMED
APR 09 1998

June 11, 1997

Bonner County Daily Bee
Legal Notices
P O Box 159
Sandpoint ID 83864

Re: Notice of Hearings for Minimum Stream Flow Applications
96-08718, 96-08730, 91-07122 and 92-07200

Gentlemen:

Enclosed you will find a legal Notice of Hearings for Minimum Stream Flow Applications, which we wish to have published on June 19 and 26 (once a week for two consecutive weekly issues) in your newspaper. If you cannot publish the notice on the proposed dates, please contact us immediately.

Please send the Affidavit of Publication, and the bill, to this office before July 7, 1997.

Thank you.

Sincerely,

Dianne Ball
Senior Secretary

Enclosure

Copy

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APR 09 1998

AFFIDAVIT OF PUBLICATION

State of Idaho

ss.

County of Bonner,

Sherry Plunk being first duly sworn on oath
deposes and says that he/she is Bookkeeper

of the Bonner County Daily Bee, a newspaper printed and
published at Sandpoint, Bonner County, Idaho; that the
said newspaper has been continuously and uninterruptedly
published in said Bonner County during a period of 12
months prior to the first publication of the hereto attached
notice of publication in the case of:

Notice of Hearing

as it was published in the regular and entire issue of the
said paper for a period of 2 consecutive weeks,
commencing on 19 day of June, 1997
and ending on the 26 day of June, 1997
and that said notice was published in said newspaper.

On this 26 day of June in the year
of 1997, before me, a Notary Public, personally
appeared Sherry Plunk,
known or identified to me to be the person whose name
subscribed to the within instrument, and being by me first
duly sworn, declared that the statements therein are true,
and acknowledged to me that he executed the same.

Carolyn L. Inge
Notary Public for Idaho

Residing at Sandpoint

My commission expires: 6/00

NOTICE OF HEARINGS
FOR MINIMUM STREAM FLOW
APPLICATIONS

Notice is hereby given that on
June 15, 1992, the Idaho Water
Resource Board filed four (4) appli-
cations for permit with the
Department of Water Resources
(IDWR) to preserve minimum
streamflows for the protection of fish
and wildlife habitat, aquatic life and
recreational values as follows:

Application No. 96-08718
Source: Clark Fork River tributary
to Pend Oreille Lake

Reach: 8.4 miles beginning at
Cabinet Gorge Dam in the NWSE
Section 27, T55N, R3E, B.M. down-
stream to Lake Pend Oreille in
SW1/4 Section 3, T55N, R2E, B.M.

Rate of flow: 9,335 cubic feet per
second (cfs) year-round

Application No. 96-08730
Source: Pend Oreille River tribu-
tary to Columbia River

Reach: 2.4 miles beginning at
Albeni Falls Dam in the NWNW
Section 29, T56N, R5W, B.M. down-
stream to the state line on the west
side of Sections 13 and 24, T56N,
R6W, B.M.

Rate of flow: 10,655 cfs year-round
Application No. 91-07122

Source: St. Joe River tributary to
Coeur d'Alene Lake

Reach: 36 miles beginning at a
point in NENENW Sec. 13, T45N,
R3E, B.M. at the confluence of the St.
Joe River with Marble Creek and
ending at the confluence of St. Joe
River with the St. Maries River in
SENESEW Sec. 23, T46N, R2W, B.M.

Rate of flow: 941 cfs from Nov. 1 to
July 31, and 470 cfs from August 1 to
October 31

Application No. 92-07200
Source: St. Maries River tributary to
St. Joe River

Reach: 26 miles beginning at a
point in the SWSWNE Section 6,
T42N, R2E, B.M. at the confluence of
the West and Middle Forks of the St.
Maries River downstream to the con-
fluence with John Creek in the
SENESEW Section 33, T45N, R2W,
B.M.

Rate of flow: 141 cfs from
December 1 to July 31; 65 cfs from

August 1 to November 30

IDWR will hold public hearings as
required in Section 42-1503, Idaho
Code, for the purpose of receiving
evidence and testimony in regard to
the applications as follows:

Applications: 98-08718 and 96-
08730

Date and time: July 16, 1997, at
10:00 a.m.

Place: NRCS Federal Building,
1500 Hwy 2, Sandpoint, Idaho

Applications: 91-07122 and 92-
07200

Date and time: July 17, 1997 at
10:00 a.m.

Place: Washington Water Power,
528 College Ave., St. Maries, Idaho

Any party who wishes to formally
appear in the hearings for the pur-
pose of presenting evidence and tes-
timony or cross-examining witnesses
should file a notice of appearance
with the Director of IDWR,
Statehouse Mail, Boise, Idaho 83720,
Attn: L. Glen Saxton, five (5) days
prior to the hearing. Other parties
may informally present their views
and comments without filing a notice
of appearance. Informal written
views and comments may also be
submitted to IDWR prior to the hear-
ing.

The hearings will be conducted in
a facility which meets the accessibili-
ty requirements of the Americans
with Disabilities Act. If you require
special accommodations in order to
attend, participate in or understand
the hearing, please advise IDWR at
least (10) days prior to the hearing.
The hearing will be conducted by L.
Glen Saxton, I DWR, Statehouse
Mail, Boise, ID 83720, telephone
(208)327-7900

If issued, these permits will be sub-
ject to all prior water rights.

Karl J. Dreher Director, IDWR
SNP#8446 Jun 19, 26, 1997

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NORTHERN REGION
IDWR

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APR 09 1998

June 11, 1997

Legal Notices Department
Shoshone County News Press
P O Box 149
Kellogg ID 83837

Re: Notice of Hearings for Minimum Stream Flow Applications
96-08718, 96-08730, 91-07122 and 92-07200

Gentlemen:

Enclosed you will find a legal Notice of Hearings for Minimum Stream Flow Applications, which we wish to have published on June 19 and 26 (once a week for two consecutive weekly issues) in your newspaper. If you cannot publish the notice on the proposed dates, please contact us immediately.

Please send the Affidavit of Publication, and the bill, to this office before July 7, 1997.

Thank you.

Sincerely,

Dianne Ball
Senior Secretary

Enclosure

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APR 09 1998

NOTICE OF HEARINGS FOR MINIMUM STREAM FLOW APPLICATIONS

Notice is hereby given that on June 15, 1993, the Idaho Water Resource Board filed four (4) applications for permit with the Department of Water Resources (IDWR) to preserve minimum streamflows for the protection of fish and wildlife habitat, aquatic life and recreational values as follows:

Application No. 96-08718

Source: Clark Fork River tributary to Pend Oreille Lake

Reach: 8.4 miles beginning at Cabinet Gorge Dam in the NWSE Section 27, T55N, R3E, B.M. downstream to Lake Pend Oreille in SW1/4 Section 3, T55N, R2E, B.M.

Rate of flow: 9,335 cubic feet per second (cfs) year-round

Application No. 96-08730

Source: Pend Oreille River tributary to Columbia River

Reach: 2.4 miles beginning at Albeni Falls Dam in the NWNW Section 29, T56N, R5W, B.M. downstream to the state line on the west side of Sections 13 and 24, T56N, R6W, B.M.

Rate of flow: 10,655 cfs year-round

Application No. 91-07122

Source: St. Joe River tributary to Coeur d'Alene Lake

Reach: 36 miles beginning at a point in NENENW Sec. 13, T45N, R3E, B.M. at the confluence of the St. Joe River with Marble Creek and ending at the confluence of St. Joe River with the St. Maries River in SENESW Sec. 23, T46N, R2W, B.M.

Rate of flow: 941 cfs from Nov. 1 to July 31, and 470 cfs from August 1 to October 31

Application No. 92-07200

Source: St. Maries River tributary to St. Joe River

Reach: 26 miles beginning at a point in the SWSWNE Section 6, T42N, R2E, B.M. at the confluence of the West and Middle

Forks of the St. Maries River downstream to the confluence with John Creek in the SENENW Section 33, T45N, R2W, B.M.

Rate of flow: 141 cfs from December 1 to July 31 and 65 cfs from August 1 to November 30

IDWR will hold public hearings as required in Section 42-1503, Idaho Code, for the purpose of receiving evidence and testimony in regard to the applications as follows:

Applications: 96-08718 and 96-08730

Date and time: July 16, 1997, at 10:00 a.m.

Place: NRCS Federal Building, 1500 Hwy 2, Sandpoint, Idaho

Applications: 91-07122 and 92-07200

Date and time: July 17, 1997 at 10:00 a.m.

Place: Washington Water Power, 528 College Ave., St. Maries, Idaho

Any party who wishes to formally appear in the hearings for the purpose of presenting evidence and testimony or cross-examining witnesses should file a notice of appearance with the Director of IDWR, Statehouse Mail, Boise, Idaho 83720, Attn: L. Glen Saxton, five (5) days prior to the hearing. Other parties may informally present their views and comments without filing a notice of appearance. Informal written views and comments may also be submitted to IDWR prior to the hearing.

The hearings will be conducted in a facility which meets the accessibility requirements of the Americans with Disabilities Act. If you require special accommodations in order to attend, participate in, or understand the hearing, please advise IDWR at least (10) days prior to the hearing. The hearing will be conducted by L. Glen Saxton, IDWR, Statehouse Mail, Boise, ID 83720, telephone (208)327-7900

If issued, these permits will be subject to all prior water rights.

Karl J. Dreher

Director, IDWR

Legal #SHO 921

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NORTHERN REGION
IDWR

sworn deposes and says:
newspaper of general circulation in said
log, in the County of Shoshone and
been published continuously in said
mediately prior to the publication of this
at the

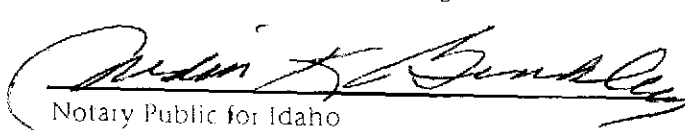
LEGAL NOTICE

, was published in each regular
r, and not in supplement thereto, for
consecutive weeks/days, the first
ue dated 6/19/97, 6/26/97



COUNTY OF

On this 27th day of June in the year of 1997,
before me a Notary Public, personally appeared Daniel C. Drewry known or
identified to me to be the person whose name subscribed to the within
instrument, and being by me first duly sworn, declared that the statements
therein are true, and acknowledged to me that he executed the same.


Notary Public for Idaho
Residing in Kellogg, Idaho
My Commission expires:
10/17/2000

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556-1551

F) Idaho Dept. of Water Resources
Northern Region, Suite 210
1910 Northwest Blvd.
) Coeur d' Alene, ID 83814-2615

s/ Daniel C. Drewry, being first duly sworn deposes and says:
SHOSHONE NEWS-PRESS, a daily newspaper of general circulation in said
county, published in the city of Kellogg, in the County of Shoshone and
the State of Idaho, and which has been published continuously in said
county for a period of 78 weeks immediately prior to the publication of this
notice hereinafter described, and that the

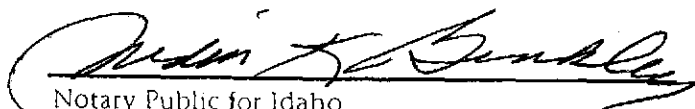
LEGAL NOTICE

Al of which the annexed is a true copy, was published in each regular
As weekly/daily issue of said newspaper, and not in supplement thereto, for
Ba a period of two (2) consecutive weeks/days, the first
Ba publication thereof being in the issue dated 6/19/97, 6/26/97
Bo
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STATE OF IDAHO

COUNTY OF

On this 27th day of June in the year of 1997,
before me a Notary Public, personally appeared Daniel C. Drewry known or
identified to me to be the person whose name subscribed to the within
instrument, and being by me first duly sworn, declared that the statements
therein are true, and acknowledged to me that he executed the same.


Notary Public for Idaho
Residing in Kellogg, Idaho
My Commission expires:
10/17/2000

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APR 9 9 1998

June 11, 1997

✓ Legal Notices Department
Priest River Times
P O Box 10
Priest River ID 83856

Post-it® Fax Note 7671		Date 6/9	# of pages 3
To	Sharla Curtis		From Dianne Ball
Co./Dept.	IDWR-SO		Co. IDWR N
Phone #	See this		Phone # look OK?
Fax #	Sharla - Same letter to on		Fax #
paper - w/ correct dates for publ.			

Re: Notice of Hearings for Minimum Stream Flow Applications
96-08718, 96-08730, 91-07122 and 92-07200

Gentlemen:

Enclosed you will find a legal Notice of Hearings for Minimum Stream Flow Applications, which we wish to have published on June 18 and 25 (once a week for two consecutive weekly issues) in your newspaper. If you cannot publish the notice on the proposed dates, please contact us immediately.

Please send the Affidavit of Publication, and the bill, to this office before July 7, 1997.

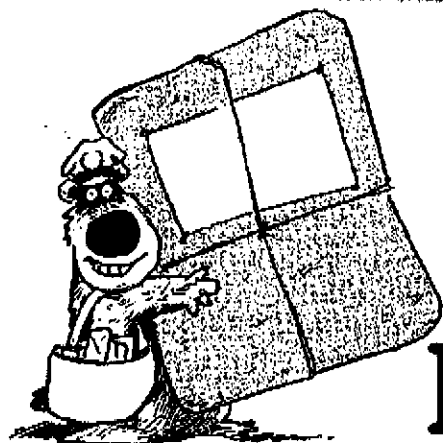
Thank you.

Sincerely,

Dianne Ball
Senior Secretary

Enclosure

MICROFILMED
APR 09 1998



SPECIAL **FAX** DELIVERY

DATE

6/12/97

TO

Dianne Ball

FROM

Linda Jordan

PAGES

1

MESSAGE

Min. Stream Flow App. legal

has been processed to run 4/18 & 6/1



P.O. BOX 10 - PRIEST RIVER, IDAHO 83856 - (208) 448-2431 - FAX (208) 448-2938

MICROFILMED

AFFIDAVIT OF PUBLICATION

State of Idaho

ss.

County of Bonner, Carolyn L. Russell

being duly sworn, says that he is the office clerk
of the **PRIEST RIVER TIMES**, a weekly newspaper printed and
published at Priest River, Bonner County, Idaho, and has been con-
tinuously and uninterruptedly published in said County during a period
of 78 consecutive weeks prior to the first publication of the annexed
notice for publication, in a newspaper of general circulation made up of
at least eight pages of at least six columns each, printed from typemat-
er or stereotyped forms of at least nineteen and three-fourths inches
depth, has at least 1250 bona fide subscribers living within said Bonner
County, and is published at regular weekly intervals. That the annexed

a true copy of the notice for publication in the case of

#2235

as it was published in the regular and entire issue of the
said paper for a period of 2 consecutive weeks,
commencing on 18 day of June, 1997
and ending on the 25 day of June, 1997
and that said notice was published in said newspaper.

On this 25 day of June in the year
of 1997, before me, a Notary Public, personally
appeared Carolyn L. Russell
known or identified to me to be the person whose name
subscribed to the within instrument, and being by me first
duly sworn, declared that the statements therein are true
and acknowledged to me that he executed the same.

London Jordan
Notary Public for Idaho

Residing at Priest River, Id

My commission expires: 1999

Applications: 96-08718 and
96-08730
Date and time: July 16, 1997,
at 10:00 a.m.
Place: NRCS Federal Building
1500 Hwy 2
Sandpoint, Idaho
Applications: 91-07122 and
92-07200
Date and time: July 17, 1997 at
10:00 a.m.
Place: Washington Water Power
528 College Ave.
St. Maries, Idaho

Any party who wishes to formally
appear in the hearings for the pur-
pose of presenting evidence and tes-
timony or cross-examining witness-
es should file a notice of appearance
with the Director of IDWR, State-
house Mail, Boise, Idaho 83720,
Attn: L. Glen Saxton, five (5) days
prior to the hearing. Other parties
may informally present their views
and comments without filing a notice
of appearance. Informal written
views and comments may also be
submitted to IDWR prior to the hear-
ing.

The hearings will be conducted in a
facility which meets the accessibility
requirements of the Americans with
Disabilities Act. If you require spe-
cial accommodations in order to
attend, participate in or understand
the hearing, please advise IDWR at
least (10) days prior to the hearing.
The hearing will be conducted by L.
Glen Saxton, IDWR, Statehouse
Mail, Boise, ID 83720, telephone
(208) 327-7900

If issued, these permits will be sub-
ject to all prior water rights.
#2235 PRT June 18, 25, 1997

NOTICE OF HEARINGS FOR MINIMUM STREAM FLOW

Notice is hereby given that on June
15, 1992, the Idaho Water Resource
Board filed four (4) applications for
permit with the Department of
Water Resources (IDWR) to pre-
serve minimum streamflows for the
protection of fish and wildlife habi-
tat, aquatic life and recreational val-
ues as follows:

Application No. 96-08718

Source: Clark Fork River tributary to
Pend Oreille Lake

Reach: 8.4 miles beginning at Cabi-
net Gorge Dam in the NWSE Sec-
tion 27, T55N, R3E, B.M. down-
stream to Lake Pend Oreille in SW
1/4 Section 3, T55N, R2E, B.M.

Rate of flow: 9,335 cubic feet per sec-
ond (cfs) year-round

Application No. 96-08730

Source: Pend Oreille River tributary
to Columbia River

Reach: 2.4 miles beginning at Albeni
Falls Dam in the NWNW Section 29,
T56N, R5W, B.M. downstream to the
state line on the west side of Sec-
tions 13 and 24, T56N, R6W, B.M.

Rate of flow: 10,655 cfs year-round

Application No. 91-07122

Source: St. Joe River tributary to
Coeur d'Alene Lake

Reach: 36 miles beginning at a point
in NENENW Sec. 13, T45N, R3E,
B.M. at the confluence of the St. Joe
River with Marble Creek and ending
at the confluence of St. Joe River
with the St. Maries river in SENESW
Sec. 23, T46N, R2W, B.M.

Rate of flow: 941 cfs from Nov. 1 to
July 31, and 470 cfs from August 1 to
October 31

Application No. 92-07200

Source: St. Maries River tributary to
St. Joe River

Reach: 26 miles beginning at a point
in the SWSWNE Section 6, T42N,
R2E, B.M. at the confluence of the
West and Middle Forks of the St.
Maries River downstream to the con-
fluence with John Creek in the
SENENW Section 33, T45N, R2W,
B.M.

Rate of flow: 141 cfs from December
1 to July 31, and 65 cfs from August
1 to November 30

IDWR will hold public hearings as
required in Section 42-1503, Idaho
Code, for the purpose of receiving
evidence and testimony in regard to
the applications as follows:

RECEIVED

JUL 02 1997

NORTHERN REGION
IDWR

MICROFILMED

APR 03 1998

June 11, 1997

Legal Notices Department
St Maries Gazette Record
127 7th Street
St Maries ID 83861

Re: Notice of Hearings for Minimum Stream Flow Applications
96-08718, 96-08730, 91-07122 and 92-07200

Gentlemen:

Enclosed you will find a legal Notice of Hearings for Minimum Stream Flow Applications, which we wish to have published on June 18 and 25 (once a week for two consecutive weekly issues) in your newspaper. If you cannot publish the notice on the proposed dates, please contact us immediately.

Please send the Affidavit of Publication, and the bill, to this office before July 7, 1997.

Thank you.

Sincerely,

Dianne Ball
Senior Secretary

Enclosure

MICROFILMED
APR 09 1998

ST. MARIES
*Gazette Record***FAX COMMUNICATION**From: Gazette Record - Sharon - LegalsTo: Deanne Ball - Id. Dept - Water Res.Location: cda

Phone: _____

Date: 6/12/97 Time: _____ (Pacific Time)Comments: Legal to run June 18 and
June 25

Transmitting: _____ sheet(s) including cover sheet.

FAX 245-4011

APR 09 1998

LEGAL NOTICE

JUNE 18-25

RUN 2XS

Notice of hearing
NOTICE OF HEARING
FOR MINIMUM STREAM
FLOW APPLICATIONS

Notice is hereby given that on June 15, 1992, the Idaho Water Resource Board filed four (4) applications for permit with the Department of Water Resources (IDWR) to preserve minimum streamflows for the protection of fish and wildlife habitat, aquatic life and recreational values as follows:

APPLICATION NO. 98-08718

Source: Clark Fork River tributary to Pend Oreille Lake
 Reach: 8.4 miles beginning at Cabinet Gorge Dam in the NWSE Section 27, T55N, R3E, B.M. downstream to Lake Pend Oreille in SW1/4 Section 3, T55N, R2E, B.M. *ok*

Rate of flow: 9,395 cubic feet per second (cfs) year-round

APPLICATION NO. 98-08730

Source: Pend Oreille River tributary to Columbia River

Reach: 2.4 miles beginning at Albeni Falls Dam in the NWNW Section 29, T56N, R5W, B.M. downstream to the state line on the west side of Sections 13 and 24, T56N, R5W, B.M. *ok*

Rate of flow: 10,655 cfs year-round

APPLICATION NO. 91-07122

Source: St. Joe tributary to Coeur d'Alene Lake

Reach: 38 miles beginning at a point in NENENW Sec. 13, T46N, R3E, B.M. at the confluence of the St. Joe River with Marble Creek and ending at the confluence of St. Joe River with the St. Maries River in SENESW Sec. 23, T46N, R2W, B.M. *ok*

Rate of flow: 941 cfs from Nov. 1 to July 31, and 470 cfs from August 1 to October 31

APPLICATION NO. 92-07200

Source: St. Maries River tributary to St. Joe River

Reach: 26 miles beginning at a point in the SWSWNE Section 9, T42N, R2E, B.M. at the confluence of the West and Middle Forks of the St. Maries River downstream to the confluence with John Creek in the SENENW Section 33, T46N, R2W, B.M.

Rate of flow: 141 cfs from December 1 to July 31, 65 cfs from August 1 to November 30

IDWR will hold public hearings as required in Section 42-1503, Idaho Code, for the purpose of receiving evidence and testimony in

regard to the applications as follows:

Applications: 98-08718 and 98-08730

Date and time: July 18, 1997 at 10:00 a.m. Place: NRCB Federal Building, 1500 Hwy. 2, Sandpoint, Idaho

Applications: 91-07122 and 92-07200

Date and time: July 17, 1997 at 10:00 a.m.

Place: Washington Water Power, 528 College Ave., St. Maries, Idaho

Any party who wishes to formally appear in the hearings for the purpose of presenting evidence and testimony or cross-examining witnesses should file a notice of appearance with the Director of IDWR, Statehouse Mall, Boise, Idaho 83720, Attn: L. Glen Saxton, five (5) days prior to the hearing. Other parties may informally present their views and comments without filing a notice of appearance. Informal written views and comments may also be submitted to IDWR prior to the hearing.

The hearings will be conducted in a facility which meets the accessibility requirements of the Americans with Disabilities Act. If you require special accommodations in order to attend, participate in or understand the hearing, please advise IDWR at least ten (10) days prior to the hearing. The hearing will be conducted by L. Glen Saxton, IDWR, Statehouse Mall, Boise, Idaho 83720, telephone (208) 327-7900.

If issued, these permits will be subject to all prior water rights.

Karl J. Dreher
 Director, IDWR
 3034--June 18-25 *ok*

Please confirm by fax when legal has been prepared
Thanks
 769-1454

MICROFILMED

APR 03 1998

County Paper
Advertiser

Affidavit of Publication

STATE OF IDAHO
County of Benewah, ss.

Cynthia Ann Hammes, being first duly sworn on oath, deposes and says that she is vice president of The Corporation, owner of the St. Maries Gazette Record, a weekly newspaper printed and published at St. Maries, Benewah County, State of Idaho; the St. Maries Gazette Record is a newspaper having general circulation in Benewah County, State of Idaho, and has been continuously and uninterruptedly published in Benewah County, State of Idaho, during a period of more than seventy-eight consecutive weeks prior to the first publication of the notice of advertisement herein.

That the notice, of which the one hereto attached is a true copy, was published in said newspaper for a period of 2 issues, the first publication being on the 18th day of June, 1997, and the last on the 25th day of June, 1997.

That said newspaper was regularly distributed to its subscribers during the time of the same period; that said notice was published in the regular and entire issue of said paper.

Dated this 25th day of June, 1997.

Cynthia Ann Hammes

STATE OF IDAHO)
COUNTY OF BENEWAH)

On this 25th day of June, in the year of 1997 before me, a Notary Public, personally appeared Cynthia Ann Hammes, known or identified to me to be the person whose name subscribed to the within instrument, and being by me first duly sworn, declared that the statements therein are true, and acknowledged to me that she executed the same.

Sharon D. Blackburn
Notary Public for Idaho
Residing at St. Maries, Idaho
My commission expires: November 4, 1998

RECEIVED
JUN 26 1997
NORTHERN REGION
IDWR

RECORDED
JUN 28 1997

Notice of hearing

NOTICE OF HEARING FOR MINIMUM STREAM FLOW APPLICATIONS

Notice is hereby given that on June 15, 1992, the Idaho Water Resource Board filed four (4) applications for permit with the Department of Water Resources (IDWR) to preserve minimum streamflows for the protection of fish and wildlife habitat, aquatic life and recreational values as follows:

1. APPLICATION NO. 96-08718
Source: Clark Fork River tributary to Pend Oreille Lake Reach: 8.4 miles beginning at Cabinet Gorge Dam in the NWSE Section 27, T55N, R3E, B.M. downstream to Lake Pend Oreille in SW1/4 Section 3, T55N, R2E, B.M.

Rate of flow: 9,335 cubic feet per second (cfs) year-round

APPLICATION NO. 96-08730

Source: Pend Oreille River tributary to Columbia River

Reach: 2.4 miles beginning at Albeni Falls Dam in the NWNW Section 29, T56N, R5W, B.M. downstream to the state line on the west side of Sections 13 and 24, T56N, R6W, B.M.

Rate of flow: 10,655 cfs year-round

APPLICATION NO. 91-07122

Source: St. Joe tributary to Coeur d'Alene Lake

Reach: 36 miles beginning at a point in NENENW Sec. 13, T45N, R3E, B.M. at the confluence of the St. Joe River with Marble Creek and ending at the confluence of St. Joe River with the St. Maries River in SENESW Sec. 23, T46N, R2W, B.M.

Rate of flow: 941 cfs from Nov. 1 to July 31, and 470 cfs from August 1 to October 31

APPLICATION NO. 92-07200

Source: St. Maries River tributary to St. Joe River

Reach: 26 miles beginning at a point in the SWSWNE Section 6, T42N, R2E, B.M. at the confluence of the West and Middle Forks of the St. Maries River downstream to the confluence with John Creek in the SENENW Section 33, T45N, R2W, B.M.

Rate of flow: 141 cfs from December 1 to July 31, 65 cfs from August 1 to November 30

IDWR will hold public hearings as required in Section 42-1503, Idaho Code, for the purpose of receiving evidence and testimony in regard to the applications as follows:

Applications: 96-08718 and 96-08730

Date and time: July 16, 1997 at 10:00 a.m. Place: NRCS Federal Building, 1500 Hwy. 2, Sandpoint, Idaho

Applications: 91-07122 and 92-07200

Date and time: July 17, 1997 at 10:00 a.m.

Place: Washington Water Power, 528 College Ave., St. Maries, Idaho

Any party who wishes to formally appear in the hearings for the purpose of presenting evidence and testimony or cross-examining witnesses should file a notice of ap-

pearance with the Director of IDWR, Statehouse Mail, Boise, Idaho 83720, Attn: L. Glen Saxton, five (5) days prior to the hearing. Other parties may informally present their views and comments without filing a notice of appearance. Informal written views and comments may also be submitted to IDWR prior to the hearing.

The hearings will be conducted in a facility which meets the accessibility requirements of the Americans with Disabilities Act. If you require special accommodations in order to attend, participate in or understand the hearing, please advise IDWR at least ten (10) days prior to the hearing. The hearing will be conducted by L. Glen Saxton, IDWR, Statehouse Mail, Boise, Idaho 83720, telephone (208) 327-7900.

If issued, these permits will be subject to all prior water rights.

Karl J. Dreher
Director, IDWR
3634--June 18-25

June 11, 1997

✓
Legal Notices Department
Lewiston Tribune
505 C Street
Lewiston ID 83501

Re: Notice of Hearings for Minimum Stream Flow Applications
96-08718, 96-08730, 91-07122 and 92-07200

Gentlemen:

Enclosed you will find a legal Notice of Hearings for Minimum Stream Flow Applications, which we wish to have published on June 19 and 26 (once a week for two consecutive weekly issues) in your newspaper. If you cannot publish the notice on the proposed dates, please contact us immediately.

Please send the Affidavit of Publication, and the bill, to this office before July 7, 1997.

Thank you.

Sincerely,

Dianne Ball
Senior Secretary

Enclosure

MICROFILMED
APR 09 1998

146734

NOTICE OF HEARING FOR MINIMUM STREAM FLOW APPLICATIONS

Notice is hereby given that on June 15, 1992, the Idaho Water Resource Board filed four (4) applications for permit with the Department of Water Resources (IDWR) to preserve minimum streamflows for the protection of fish and wildlife habitat, aquatic life and recreational values as follows:

Application No. 96-08718

Source: Clark Fork River tributary to Pend Oreille Lake
Reach: 8.4 miles beginning at Cabinet Gorge Dam in the NWSE Section 27, T55N, R3E, B.M. downstream to Lake Pend Oreille in SW1/4 Section 3, T55N, R2E, B.M.
Rate of Flow: 9,335 cubic feet per second (cfs) year-round

Application No. 96-08730

Source: Pend Oreille River tributary to Columbia River
Reach: 2.4 miles beginning at Albeni Falls Dam in the NWNW Section 29, T56N, R5W, B.M. downstream to the state line on the west side of Sections 13 and 24, T56N, R6W, B.M.
Rate of Flow: 10,655 cfs year-round

Application No. 91-07122

Source: St. Joe River tributary to Coeur d'Alene Lake
Reach: 36 miles beginning at a point in NENENW Sec. 13, T45N, R3E, B.M. at the confluence of the St. Joe River with Marble Creek and ending with the confluence of St. Joe River with the St. Maries River in SENESW Sec. 23, T46N, R2W, B.M.
Rate of Flow: 941 cfs from Nov. 1 to July 31, and 470 cfs from August 1 to October 31

Application No. 092-07200

Source: St. Maries River tributary to St. Joe River
Reach: 26 miles beginning at a point in the SWSWNE Section 6, T42N, R2E, B.M. at the confluence of the West and Middle Forks of the St. Maries River downstream to the confluence with John Creek in the SENENW Section 33, T45N, R2W, B.M.
Rate of Flow: 141 cfs from December 1 to July 31
65 cfs from August 1 to November 30

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Applications: 96-08718 and 96-08730
Date and time: July 16, 1997, at 10:00 a.m.
Place: NRCS Federal Building
1500 Highway 2
Sandpoint, Idaho

Applications: 91-07122 and 92-07200
Date and time: July 17, 1997, at 10:00 a.m.
Place: Washington Water Power
528 College Ave.
St. Maries, Idaho

Any party who wishes to formally appear in the hearings for the purpose of presenting evidence and testimony or cross-examining witnesses should file a letter of appearance with the Director of IDWR, Statehouse, Mail, Boise, Idaho 83720, Attn. L. Glen Saxton, five (5) days prior to the hearing. Other parties may informally present their views and comments without filing a notice of appearance. Informal written views and comments may also be submitted to IDWR prior to the hearing.

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If issued, these permits will be subject to all prior water rights.
Karl J. Dreher, Director, IDWR

CUSTOMER: ID DEPT. OF WATER RESOURCES ACCOUNT: 964750

PRICE: 189.00 SIZE: 1,63.00

DATE: 06/17/97

TO: Dianne Ball
208-769-454
APR 09 1998
208-748-9600 Karen Lewis

FROM: Lewiston Tribune
208-748-9600 Karen Lewis
Ev 731

Add run dates
at bottom

TRIBUNE PUBLISHING COMPANY, INC.

The Lewiston Morning Tribune
505 C St., P.O.Box 957
Lewiston, Idaho 83501
(208) 743-9411

Date 06/26/97

INVOICE NO. 146734

Account No. 964750

Description 146734NOTICEOFHEARINGF

**LEGAL ADVERTISING
INVOICE**

Times 2

Lines 64

Tab. Lines _____

\$ 192.00

SOLD TO: ID DEPT. OF WATER RESOURCES
1910 NORTHWEST BLVD. STE 210
COEUR D'AL ID 83814

RECEIVED

JUN 27 1997

NORTHERN REGION
IDWR

NOTICE: This is an invoice of Purchase made by you. Statement will be rendered the first of the month.
Please Retain This Invoice as Your Statement Will Refer to Invoice by No. Only.

**NOTICE OF HEARING FOR
MINIMUM STREAM FLOW APPLICATIONS**

Notice is hereby given that on June 15, 1992, the Idaho Water Resource Board filed four (4) applications for permit with the Department of Water Resources (IDWR) to preserve minimum streamflows for the protection of fish and wildlife habitat, aquatic life and recreational values as follows:

Application No. 96-08718

Source: Clark Fork River tributary to Pend Oreille Lake
Reach: 8.4 miles beginning at Cabinet Gorge Dam in the NWSE Section 27, T55N, R3E, B.M. downstream to Lake Pend Oreille in SW1/4 Section 3, T55N, R2E, B.M.

Rate of Flow: 9,335 cubic feet per second (cfs) year-round

Application No. 96-08730

Source: Pend Oreille River tributary to Columbia River
Reach: 2.4 miles beginning at Albeni Falls Dam in the NWNW Section 29, T56N, R5W, B.M. downstream to the state line on the west side of Sections 13 and 24, T56N, R6W, B.M.

Rate of Flow: 10,655 cfs year-round

Application No. 91-07122

Source: St. Joe River tributary to Coeur d'Alene Lake
Reach: 36 miles beginning at a point in NENENW Sec. 13, T45N, R3E, B.M. at the confluence of the St. Joe River with Marble Creek and ending with the confluence of St. Joe River with the St. Maries River in SENESW Sec. 23, T46N, R2W, B.M.

Rate of Flow: 941 cfs from Nov. 1 to July 31, and
470 cfs from August 1 to October 31

Application No. 092-07200

Source: St. Maries River tributary to St. Joe River
Reach: 26 miles beginning at a pint in the SWSWNE Section 6, T42N, R2E, B.M. at the confluence of the West and Middle Forks of the St. Maries River downstream to the confluence with John Creek in the SENENW Section 33, T45N, R2W, B.M.

Rate of Flow: 141 cfs from December 1 to July 31
65 cfs from August 1 to November 30

IDWR will hold public hearings as required in Section 42-1503, Idaho Code, for the purpose of receiving evidence and testimony in regard to the applications as follows:

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Date and time: July 16, 1997, at 10:00 a.m.
Place: NRCS Federal Building
1500 Highway 2
Sandpoint, Idaho

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Date and time: July 17, 1997, at 10:00 a.m.
Place: Washington Water Power
528 College Ave.
St. Maries, Idaho

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If issued, these permits will be subject to all prior water rights.

Karl J. Dreher, Director, IDWR

PUBLISHED IN THE TRIBUNE PUBLISHING COMPANY, INC. 19th June 1997

FIDAVIT OF PUBLICATION

OF IDAHO, ss.
of Nez Perce

I, Karen J. Lewis, being duly sworn, deposes and says, I am
Clerk of the Tribune Publishing Company, a corporation
and existing under and by virtue of the laws of the
aho, publishers of the LEWISTON MORNING TRIBUNE,
er of general circulation published at Lewiston, Nez Perce County,
it the said Lewiston Morning Tribune is an established newspaper
een published regularly and issued regularly at least once a day
an 21 consecutive years next immediately preceding the first
of this notice, and has been so published uninterrupted for
I; that the 146734NOTICEOFH attached hereto and which is made
is affidavit was published in the said Lewiston Morning Tribune,
e(s). Publication being on 06/19, or once a WEEK
consecutive WEEK, the first publication thereof being on
97, and the last publication thereof being on
97, and said 146734NOTICEOFH was so published in the
d entire issue of said newspaper and was not in a supplement
d was so published in every issue and number of the said
ing the period and times of publication as set forth above.

SUBSCRIBED AND SWORN BEFORE ME THIS THE 26

June 1997

Notary Public in and for the State of Idaho,
residing at Lewiston, therein
Commission Expires 7/1/98

INVOICE NO. 146734

4750

34NOTICEOFHEARINGF

Lines 64

Tab. Lines _____

\$ 192.00

RECEIVED
JUN 27 1997
NORTHERN REGION
IDWR

Statement will be rendered the first of the month.
Statement Will Refer to Invoice by No. Only.

AFFIDAVIT OF PUBLICATION

STATE OF IDAHO, ss.
County of Nez Perce

Karen Lewis, being duly sworn, deposes and says, I am the Legal Clerk of the Tribune Publishing Company, a corporation organized and existing under and by virtue of the laws of the State of Idaho, publishers of the LEWISTON MORNING TRIBUNE, a newspaper of general circulation published at Lewiston, Nez Perce County, Idaho; That the said Lewiston Morning Tribune is an established newspaper and has been published regularly and issued regularly at least once a day for more than 21 consecutive years next immediately preceding the first publication of this notice, and has been so published uninterrupted for said period; that the 146734NOTICEOFH attached hereto and which is made a part of this affidavit was published in the said Lewiston Morning Tribune, 2 time(s). Publication being on 06/19, or once a WEEK for 2 consecutive WEEK, the first publication thereof being on the 06/19/97, and the last publication thereof being on the 06/26/97, and said 146734NOTICEOFH was so published in the regular and entire issue of said newspaper and was not in a supplement thereof and was so published in every issue and number of the said paper, during the period and times of publication as set forth above.

Karen J. Lewis

SUBSCRIBED AND SWORN BEFORE ME THIS THE 26

day of June 1997

Ray Reed
Notary Public in and for the State of Idaho,
residing at Lewiston, therein
Commission Expires 7/1/03

MICROFILMED

APR 09

June 11, 1997

Legal Notices Department
Times News
P O Box 548
Twin Falls, ID 83801

Re: Notice of Hearings for Minimum Stream Flow Applications
96-08718, 96-08730, 91-07122 and 92-07200

Gentlemen:

Enclosed you will find a legal Notice of Hearings for Minimum Stream Flow Applications, which we wish to have published on June 19 and 26 (once a week for two consecutive weekly issues) in your newspaper. If you cannot publish the notice on the proposed dates, please contact us immediately.

Please send the Affidavit of Publication, and the bill, to this office before July 7, 1997.

Thank you.

Sincerely,

Dianne Ball
Senior Secretary

Enclosure

MICROFILMED

APR 09 1998

06/17/1997 12:47

(208) 769 1450

DEPT OF WATER RESOURCES,

1910 NORTHWEST BLVD

SUITE NO. 210

COEUR D'ALENE ID 83814-2615

Ad taker: 5 on 06/16/1997 Changed by: 5

Profit# 4 Ad# 123906

Given By DEPT OF WATER RESOURCES TRANS PO# 10001

Cols 2 Class 0050 Misc 22222 Mail 22222 Credit Hold 22222

Pub Rate	Charge	Flat Charge	Total Cost	Tos	Start	Stop	SMTWTFSS
4 LGS	142.56	2.00	144.56	2	06/19/1997	06/26/1997	T
APRFD	2.00						

NOTICE OF HEARINGS

FOR MINIMUM STREAM FLOW APPLICATIONS

Notice is hereby given that on June 15, 1992, the Idaho Water Resource Board filed four (4) applications for permit with the Department of Water Resources (IDWR) to preserve minimum streamflows for the protection of fish and wildlife habitat, aquatic life and recreational values as follows:

Application No. 96-08718

Source: Clark Fork River tributary to Pend Oreille Lake
 Reach: 8.4 miles beginning at Cabinet Gorge Dam in the NWSE Section 27, T55N, R3E, B.M. downstream to Lake Pend Oreille in SW1/4 Section 3, T55N, R2E, B.M.
 Rate of flow: 9,335 cubic feet per second(cfs)year-round

Application No. 96-08730

Source: Pend Oreille River tributary to Columbia River
 Reach: 2.4 miles beginning at Albeni Falls Dam in the NWNW Section 29, T56N, R5W, B.M. downstream to the state line on the west side of Sections 13 and 24, T56N, R6W, B.M.
 Rate of flow: 10,655 cfs year round

Application No. 91-07122

Source: St. Joe River tributary to Coeur d'Alene Lake
 Reach: 36 miles beginning at a point in NENENW Sec. 13, T45N, R3E, B.M. at the confluence of the St. Joe River with Marble Creek and ending at the confluence of St. Joe River with the St. Maries River in SFNENW Sec. 23, T46N, R2W, B.M.
 Rate of flow: 941 cfs from Nov. 1 to July 31, and 470 cfs from August 1 to October 31

Application No. 92-07200

Source: St. Maries River tributary to St. Joe River
 Reach: 26 miles beginning at a point in the SWSWNE Section 6, T42N, R2E, B.M. at the confluence of the West and Middle Forks of the St. Maries River downstream to the confluence with John Creek in the SENENW Section 33, T45N, R2W, B.M.
 Rate of flow: 141 cfs from December 1 to July 31
 65 cfs from August 1 to November 30

IDWR will hold public hearings as required in Section 42-1503, Idaho Code, for the purpose of receiving evidence and testimony in regard to the application as follows:

Applications: 96-08718 and 96-08730
 Date and time: July 16, 1997 at 10:00 am
 Place: NRCS Federal Building
 1500 Hwy 2
 Sandpoint, Idaho

Applications: 91-07122 and 92-07200
 Date and time: July 17, 1997 at 10:00 am
 Washington Water Power
 528 College Ave.
 St. Maries, Idaho

Any party who wishes to formally appear in the hearings for the purpose of presenting evidence and testimony or cross-examining witnesses should file a notice of appearance with the Director of IDWR, Statehouse Mail, Boise, Idaho 83720, Attn: L. Glen Saxton, five (5) days prior to the hearing. Other parties may informally present their views and comments without filing a notice of appearance. Informal written views and comments may also be submitted to IDWR prior to the hearing.

The hearings will be conducted in a facility which meets the accessibility requirements of the Americans with Disabilities Act. If you require special accommodations in order to attend, participate in or understand the hearing, please advise IDWR at least (10) days prior to the hearing. The hearing will be conducted by L. Glen Sax-

Attn: Dianne Ball,

This is to confirm
 per your request that
 the legal you sent to
 be published will
 appear in The Times News
 on June 19 + 26.

The last few lines
 did not print out
 but they will be
 in the publication
 Any questions please
 call APR 09 1998
 Ruby

208-733-0931 ext 324

add minutes

NOTICE OF HEARINGS

FOR MINIMUM STREAM FLOW APPLICATIONS

Notice is hereby given that on June 15, 1992, the Idaho Water Resource Board filed four (4) applications for permit with the Department of Water Resources (IDWR) to preserve minimum streamflows for the protection of fish and wildlife habitat, aquatic life and recreational values as follows:

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Reach: 8.4 miles beginning at Cabinet Gorge Dam in the NWSE Section 27, T55N, R3E, B.M. downstream to Lake Pend Oreille in SW¼ Section 3, T55N, R2E, B.M.
Rate of flow: 9,335 cubic feet per second(cfs) year-round

Application No. 96-08730

Source: Pend Oreille River tributary to Columbia River
Reach: 2.4 miles beginning at Albeni Falls Dam in the NWNW Section 29, T56N, R5W, B.M. downstream to the state line on the west side of Sections 13 and 24, T56N, R6W, B.M.
Rate of flow: 10,655 cfs year-round

Application No. 91-07122

Source: St. Joe River tributary to Coeur d'Alene Lake
Reach: 36 miles beginning at a point in NENW Sec. 13, T45N, R3E, B.M. at the confluence of the St. Joe River with Marble Creek and ending at the confluence of St. Joe River with the St. Maries River in SENESW Sec. 23, T46N, R2W, B.M.
Rate of flow: 941 cfs from Nov. 1 to July 31, and 470 cfs from August 1 to October 31

Application No. 92-07200

Source: St. Maries River tributary to St. Joe River
Reach: 26 miles beginning at a point in the SWSWNE Section 6, T42N, R2E, B.M. at the confluence of the West and Middle Forks of the St. Maries River downstream to the confluence with John Creek in the SENENW Section 33, T45N, R2W, B.M.
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St. Maries, Idaho

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The hearings will be conducted in a facility which meets the accessibility requirements of the Americans with Disabilities Act. If you require special accommodations in order to attend, participate in or understand the hearing, please advise IDWR at least (10) days prior to the hearing. The hearing will be conducted by L. Glen Saxton, IDWR, Statehouse Mail, Boise, ID 83720, telephone (208) 327-7900.

If issued, these permits will be subject to all prior water rights.

Karl J. Dreher, Director, IDWR

PUBLISH: June 19 and 26, 1997

Notice of Publication

OF IDAHO
COUNTY OF TWIN FALLS } SS.

No 29509

Emily McKnight being first duly sworn upon oath, depose that I am Principal clerk of the TIMES-NEWS, published daily, at Twin Falls, Idaho, and do solemnly swear that a copy of the notice of advertisement, as per attached, was published in the regular and entire issue of said newspaper, and not in any part thereof, for Two consecutive weeks,

beginning with the issue dated June 19, 19 97,
ending with the issue dated June 26, 19 97.

And I do further certify that said newspaper is a consolidation, effective February 16, 1942, of the Idaho Times, published theretofore daily except Sunday, and the Twin Falls News, published theretofore daily except Sunday, both of which newspapers prior to consolidation had been published under said names in said city and county continuously and uninterruptedly during a period of more than twelve consecutive months, and said TIMES-NEWS, since consolidation, has been published as a daily newspaper except Saturday, until July 31, 1978, at which time said newspaper began daily publication under said name in said city and county continuously and uninterruptedly.

And I further certify that pursuant to Section 60-108 Idaho Code, Thursday of each week has been designated as the day on which legal notice by law or by order of any court of competent jurisdiction within the state of Idaho, to be published; and that at the head of the editorial column of said combined newspapers, and in each issue, Thursday is announced as the day on which said legal notices will be published.

IDAHO
COUNTY OF TWIN FALLS

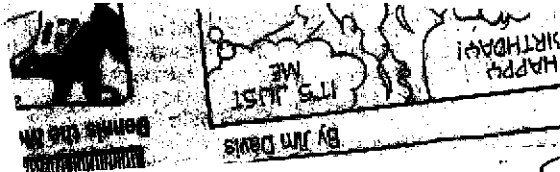
26th day of June in the year of 1997, before me,

Emily McKnight,
being personally appeared Emily McKnight,
known to me to be the person whose name subscribed to the within instrument, and being by me first duly sworn, that the statements therein are true, and acknowledged to me that he executed the same.

30 1997
Notary Public for Idaho

Residing at Twin Falls, Idaho.
My commission expires: 5/19/2000

IN REGION
WR



vit of Publication

OF IDAHO

COUNTY OF TWIN FALLS

SS.

No 29509

I, Emily McKnight being first duly sworn upon oath, depose and say that I am Principal clerk of the TIMES-NEWS, published daily, at Twin Falls, Idaho, and do solemnly swear that a copy of the notice of advertisement, as per clipping attached, was published in the regular and entire issue of said newspaper, and not in any supplement thereof, for two consecutive weeks, commencing with the issue dated June 19, 19 97, and ending with the issue dated June 26, 19 97.

And I do further certify that said newspaper is a consolidation, effective February 16, 1942, of the Idaho Evening Times, published theretofore daily except Sunday, and the Twin Falls News, published theretofore daily except Monday, both of which newspapers prior to consolidation had been published under said names in said city and county continuously and uninterruptedly during a period of more than twelve consecutive months, and said TIMES-NEWS, since such consolidation, has been published as a daily newspaper except Saturday, until July 31, 1978, at which time said newspaper began daily publication under said name in said city and county continuously and uninterruptedly.

And I further certify that pursuant to Section 60-108 Idaho Code, Thursday of each week has been designated as the day on which legal notice by law or by order of any court of competent jurisdiction within the state of Idaho, to be published weekly, will be published; and that at the head of the editorial column of said combined newspapers, and in each issue thereof, Thursday is announced as the day on which said legal notices will be published.

STATE OF IDAHO
COUNTY OF TWIN FALLS

On this 26th day of June in the year of 1997, before me,

a Notary Public, personally appeared Emily McKnight, known to me to be the person whose name subscribed to the within instrument, and being by me first duly sworn, declared that the statements therein are true, and acknowledged to me that he executed the same.

RECEIVED

JUN 30 1997

NORTHERN REGION
IDWR

Heva R. Feltman
Notary Public for Idaho

Residing at Twin Falls, Idaho.

My commission expires: 5/19/2000

RECEIVED

JUL 07 1997

The Idaho
Statesman

P.O. BOX 40, BOISE, IDAHO 83707-0040

NORTHERN REGION
IDWR

LEGAL ADVERTISING INVOICE

Amount Due

\$158.52

Account Number/Trans. #	Identification		
100631	Notice of Hearings for Minimum Stream Flow Applications		
Ordered By	P.O. Number	Rate	Run Dates
Dianne Ball		TT	June 19, 26, 1997
STATE OF IDAHO DEPT OF WATER RESOURCES Northern Region, Suite No. 210 1910 Northwest Blvd. Coeur d' Alene, ID 83814-2615		Estimated Inches	Real Inches
		# Affidavits	Legal Number
		1	7936

LEGAL NOTICE
NOTICE OF HEARINGS FOR MINIMUM
STREAM FLOW APPLICATIONS

Notice is hereby given that on June 15, 1997, the Idaho Water Resource Board filed four (4) applications for permit with the Department of Water Resources (IDWR) to preserve minimum streamflows for the protection of fish and wildlife habitat, aquatic life and recreational values as follows:

Application No. 96-08718

Source: Clark Fork River tributary to
Pend Oreille Lake
Reach: 8.4 miles beginning at Cabinet
Gorge Dam in the NWSE
Section 27, T55N, R3E, B.M.
downstream to Lake Pend
Oreille in SW1/4 Section 3,
T55N, R2E, B.M.
Rate of flow: 9,335 cubic feet per second
(cfs) year-round

Application No. 96-08730

Source: Pend Oreille River tributary
to Columbia River
Reach: 2.4 miles beginning at Albeni
Falls Dam in the NWNW
Section 29, T56N, R5W, B.M.
downstream to the stateline
on the west side of Sections
13 and 24, T56N, R6W, B.M.
Rate of flow: 10,655 cfs year-round

Application No. 91-07122

Source: St. Joe River tributary to
Coeur d'Alene Lake
Reach: 36 miles beginning at a point
in NENENW Sec. 13, T45N,
R3E, B.M. at the confluence
of the St. Joe River with Mar
ble Creek and ending at the
confluence of St. Joe River
with the St. Maries River in
SENESEW Sec. 23, T46N, R2W,
B.M.
Rate of flow: 941 cfs from Nov. 1 to July 31,
and 470 cfs from August 1 to
October 31

Application No. 92-07200

Source: St. Maries River tributary to
St. Joe River
Reach: 26 miles beginning at a point
in the SWSWNE Section 6,
T42N, R2E, B.M. at the con
fluence of the West and Mid
die Forks of the St. Maries
River downstream to the
confluence with John Creek
in the SENENW Section 33,
T45N, R2W, B.M.
Rate of flow: 141 cfs from December 1 to
July 31, 65 cfs from August 1
to November 30

IDWR will hold public hearings as required in
Section 42-1503, Idaho Code, for the purpose
of receiving evidence and testimony in regard
to the applications as follows:

Applications: 96-08718 and 96-08730
Date and time: July 16, 1997, at 10:00 a.m.
Place: NRCS Federal Building
1500 Hwy 2, Sandpoint, Idaho

Applications: 91-07122 and 92-07200
Date and time: July 17, 1997 at 10:00 a.m.
Place: Washington Water Power 528 College
Ave. St. Maries, Idaho

Any party who wishes to formally appear in
the hearings for the purpose of presenting evi
dence and testimony or cross-examining
witnesses should file a notice of appearance
with the Director of IDWR, Statehouse Mail,
Boise, Idaho 83720, Attn: L. Glen Saxton, five
(5) days prior to the hearing. Other parties
may informally present their views and com
ments without filing a notice of appearance.
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also be submitted to IDWR prior to the hear
ing.

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which meets the accessibility requirements
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ing, please advise IDWR at least (10) days
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ducted by L. Glen Saxton, IDWR, Statehouse
Mail, Boise, ID 83720, telephone (208) 327-7900.
If issued, these permits will be subject to all
prior water rights.

Karl J. Dreher
Director, IDWR

Pub. June 19, 26, 1997

7936

JANICE HILDRETH

, being duly
sworn, deposes and says: That she is the Principal Clerk of The
Idaho Statesman, a daily newspaper printed and published at Boise,
Ada County, State of Idaho, and having a general circulation therein
and which said newspaper has been continuously and uninterruptedly
published in said County during a period of twelve consecutive
months prior to the first publication of the notice, a copy of which is
attached hereto; that said notice was published in The Idaho
Statesman in conformity with Section 60-108, Idaho Code as
amended, for two

☒ consecutive weekly

single

☐ consecutive daily

odd skip

insertion(s) beginning with the issue of

June 19

1997

and ending with the issue of

June 26

1997

Janice Hildreth

STATE OF IDAHO)

ss.

COUNTY OF ADA)

On this 26th day of June in the year of
1997, before me, a Notary Public, personally appeared

JANICE HILDRETH

known or identified

to me to be the person whose name subscribed to the within instrument,
and being by me first duly sworn, declared that the statements therein
are true, and acknowledged to me that she executed the same.

Janice Madie
Notary Public for Idaho

Residing at:

Boise, Idaho

My commission expires:

5/03

MICROFILMED
APR 4 1998

*Statesman
Advertiser*

June 11, 1997

✓ Idaho Statesman
Legal Notices Department
P O Box 40
Boise ID 83707

Re: Notice of Hearings for Minimum Stream Flow Applications
96-08718, 96-08730, 91-07122 and 92-07200

Gentlemen:

Enclosed you will find a legal Notice of Hearings for Minimum Stream Flow Applications, which we wish to have published on June 19 and 26 (once a week for two consecutive weekly issues) in your newspaper. If you cannot publish the notice on the proposed dates, please contact us immediately.

Please send the Affidavit of Publication, and the bill, to this office before July 7, 1997.

Thank you.

Sincerely,

Dianne Ball
Senior Secretary

Enclosure

MICROFILMED
APR 03 1998

FAX SHEET

To: NAME Deanne Ball
 Company: Id. Water Res
 Phone _____
 FAX 769-1454

From: Janice / Legals
 Idaho Statesman
 Phone: 208/377-6303 06 →
 FAX: 208/377-6309

Message:

Please proof the attached publication, and let me know any changes by 6/18 noon

LEGAL NOTICE NOTICE OF HEARINGS FOR MINIMUM STREAM FLOW APPLICATIONS

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 downstream to Lake Pend
 Oreille in SW1/4 Section 3,
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 (cfs) year-round

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 downstream to the state line
 on the west side of Sections
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 Rate of flow: 10,655 cfs year-round

Application No. 91-07122

Source: St. Joe River tributary to
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 Reach: 36 miles beginning at a point
 in NENENW Sec. 13, T45N,
 R3E, B.M. at the confluence
 of the St. Joe River with
 Marble Creek and ending at
 the confluence of St. Joe Riv
 er with the St. Maries River
 in SENESW Sec. 23, T46N,
 R2W, B.M.
 Rate of flow: 841 cfs from Nov. 1 to July 31,
 and 470 cfs from August 1
 to October 31

Application No. 92-07200

Source: St. Maries River tributary to
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 Reach: 26 miles beginning at a point
 in the SWSWNE Section 6,
 T42N, R2E, B.M. at the con
 fluence of the West and Mid
 dle Forks of the St. Maries
 River downstream to the
 confluence with John Creek
 in the SENENW Section 33,
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 will be subject to all prior water rights.

Karl J. Dreher
 Director, IDWR
 Pub. June 19, 26, 1997

7936

Third X's
 a charm!

MICROFILMED
 APR 09 1998

Proof of Publication
The Post Register

RECEIVED
JUL 07 1997
NORTHERN REGION
IDWR

State of Idaho
County of Bonneville

I, S. Bob Bright or Robert Park, first being duly sworn, depose and say: That I am the Production Supervisor or Asst. Prod. Supervisor of The Post Company, a corporation of Idaho Falls, Bonneville County, Idaho, publishers of The Post Register, a newspaper of general circulation, published daily, except Saturday, at Idaho Falls, Idaho; said Post Register being a consolidation of the Idaho Falls Times, established in the year 1890, The Idaho Register, established in the year 1880 and the Idaho Falls Post, established in 1903, such consolidation being made on the First day of November, 1931, and each of said newspapers have been published continuously and uninterruptedly, prior to consolidation, for more than twelve consecutive months and said Post Register having been published continuously and uninterruptedly from the date of such consolidation, up to and including the last publication of notice hereinafter referred to.

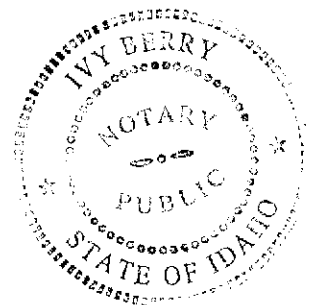
That the notice, of which a copy is hereto attached and made a part of this affidavit, was published in said Post Register for two consecutive (days) weeks, first publication having been made on the 19th day of June, 1997, last publication having been made on the 26th day of June, 1997, and that the said notice was published in the regular and entire issue of said paper on the respective dates of publication, and that such notice was published in the newspaper and not in a supplement.

S. Bob Bright

Subscribed and sworn to before me, this 2nd day of July, 1997

Ivy Berry
Notary Public

My commission expires January...6..., 2003



MICROFILMED

SEP 03 1997

**NOTICE OF HEARINGS
FOR MINIMUM STREAM
FLOW APPLICATIONS**

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Gorge Dam in the NWSE Section 27, T55N, R3E, B.M. downstream to Lake Pend Oreille in SW1/4 Section 3, T55N, R2E, B.M.

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Reach: 2.4 miles beginning at Albeni Falls Dam in the NWNW Section 29, T56N, R5W, B.M. downstream to the state line on the west side of Sections 13 and 24, T56N, R6W, B.M.

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Rate of flow: 941 cfs from Nov. 1 to July 31 and 470 cfs from August 1 to October 31

Application No. 92-07200

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528 College Ave.

St. Maries, Idaho

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If issued, these permits will be subject to all prior water rights.

Karl J. Dreher
Director, IDWR

Published: June 19, 26, 1997

June 11, 1997

✓
Post Register
Legal Notices Department
P O Box 1800
Idaho Falls ID 83401

Re: Notice of Hearings for Minimum Stream Flow Applications
96-08718, 96-08730, 91-07122 and 92-07200

Gentlemen:

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Please send the Affidavit of Publication, and the bill, to this office before July 7, 1997.

Thank you.

Sincerely,

Dianne Ball
Senior Secretary

Enclosure

MICROFILMED
APR 09 1998

Fast Register
OK

DATE 1000-FILE 00-17-37.00.40.00.

**NOTICE OF HEARINGS
FOR MINIMUM STREAM
FLOW APPLICATIONS**

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Application No. 92-07200

Source: St. Maries River tributary to St. Joe River

Reach: 26 miles beginning at a point in the SWSWNE Section 6, T42N, R2E, B.M. at the confluence of the West and Middle Forks of the St. Maries River

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APR 09 1998

Creek in the SENENW Section 33, T40N,
R2W, B.M.

Rate of flow: 141 cfs from December 1 to
July 31 65 cfs from August 1 to Novem-
ber 30

IDWR will hold public hearings as
required in Section 42-1503, Idaho Code,
for the purpose of receiving evidence and
testimony in regard to the applications as
follows:

Applications: 96-08718 and 96-08730

Date and time: July 16, 1997, at 10:00
a.m.

Place: NRCS Federal Building

1500 Hwy 2

Sandpoint, Idaho

Applications: 91-07122 and 92-07200

Date and time: July 17, 1997 at 10:00
a.m.

Place: Washington Water Power

528 College Ave.

St. Maries, Idaho

Any party who wishes to formally
appear in the hearings for the purpose of
presenting evidence and testimony or
cross-examining witnesses should file a
notice of appearance with the Director of
IDWR, Statehouse Mail, Boise, Idaho
83720, Attn: L. Glen Saxton, five (5) days
prior to the hearing. Other parties may
informally present their views and com-
ments without filing a notice of appear-
ance. Informal written views and com-
ments may also be submitted to IDWR
prior to the hearing.

The hearings will be conducted in a
facility which meets the accessibility
requirements of the Americans with
Disabilities Act. If you require special
accommodations in order to attend, partic-
ipate in or understand the hearing,
please advise IDWR at least (10) days
prior to the hearing. The hearing will be
conducted by L. Glen Saxton, IDWR,
Statehouse Mail, Boise, ID 83720, tele-
phone (208) 327-7900

If issued, these permits will be subject
to all prior water rights.

Karl J. Dreher
Director, IDWR

Attn: Dianne

Legal Notice

Running in
Post Register

June 19, 26, 1997

→ Cathy

800-235-2527

Ext 3242

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APR 09 1998

**The Post Register
333 Northgate Mile
Idaho Falls, ID 83401
(208)522-1800**

July 2, 1997

STATE OF IDAHO
DEPT. OF WATER RESOURCES
1910 NORTHWEST BLVD.
COEUR D'ALENE, IDAHO 83814

RECEIVED
JUL 07 1997
NORTHERN REGION
IDWR

Account # 06573

Published: JUNE 19TH, 26TH

Legal Notice: NOTICE OF HEARINGS FOR MINIMUM 96-08718
ETC.

Please refer to Invoice # or Ad # 276456

PO #

TOTAL COST: \$138.23

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APR 09 1998

Specific notification Letter to parties

Date

Name

Address

RE: APPLICATIONS FOR MINIMUM STREAM FLOW NOS. 96-08730, 96-08718,
91-07122 and 92-07200

Dear _____:

Enclosed is a copy of a legal notice which announces planned public hearings in connection with the above referenced applications for minimum stream flow. Hopefully the notice is self explanatory and will provide sufficient information for you, but if not, please feel free to contact IDWR.

Sincerely,

L. Glen Saxton, Chief
Water Allocation Bureau

c: See attached list

Don to handle

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APR 09 1992

NOTICE OF HEARINGS FOR MINIMUM STREAM FLOW APPLICATIONS

Notice is hereby given that on June 15, 1992, the Idaho Water Resource Board filed four (4) applications for permit with the Department of Water Resources (IDWR) to preserve minimum streamflows for the protection of fish and wildlife habitat, aquatic life and recreational values as follows:

Application No. 96-08718

Source: Clark Fork River tributary to Pend Oreille Lake
Reach: 8.4 miles beginning at Cabinet Gorge Dam in the NWSE Section 27, T55N, R3E, B.M. downstream to Lake Pend Oreille in SW1/4 Section 3, T55N, R2E, B.M.
Rate of flow: 9,335 cubic feet per second (cfs) year-round

Th 19+26
✓ Bureau
Co
CDB

Application No. 96-08730

Source: Pend Oreille River tributary to Columbia River
Reach: 2.4 miles beginning at Albeni Falls Dam in the NWNW Section 29, T56N, R5W, B.M. downstream to the state line on the west side of Sections 13 and 24, T56N, R6W, B.M.
Rate of flow: 10,655 cfs year-round

?
✓ W 18+25
Bureau
PRT

Application No. 91-07122

Source: St. Joe River tributary to Coeur d'Alene Lake
Reach: 36 miles beginning at a point in NENENW Sec. 13, T45N, R3E, B.M. at the confluence of the St. Joe River with Marble Creek and ending at the confluence of St. Joe River with the St. Maries River in SENESW Sec. 23, T46N, R2W, B.M.
Rate of flow: 941 cfs from Nov. 1 to July 31, and 470 cfs from August 1 to October 31

✓ Shoshone Co
Th 19+26
W 18+25
Bureau
St. Maries River

Application No. 92-07200

Source: St. Maries River tributary to St. Joe River
Reach: 26 miles beginning at a point in the SWSWNE Section 6, T42N, R2E, B.M. at the confluence of the West and Middle Forks of the St. Maries River downstream to the confluence with John Creek in the SENENW Section 33, T45N, R2W, B.M.
Rate of flow: 141 cfs from December 1 to July 31
65 cfs from August 1 to November 30

Shoshone Co
Bureau

IDWR will hold public hearings as required in Section 42-1503, Idaho Code, for the purpose of receiving evidence and testimony in regard to the applications as follows:

Applications: 96-08718 and 96-08730
Date and time: July 16, 1997, at 10:00 a.m.
Place: NRCS Federal Building
1500 Hwy 2
Sandpoint, Idaho

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APR 09 1998

Applications: 91-07122 and 92-07200
Date and time: July 17, 1997 at 10:00 a.m.
Place: Washington Water Power
528 College Ave.
St. Maries, Idaho

Any party who wishes to formally appear in the hearings for the purpose of presenting evidence and testimony or cross-examining witnesses should file a notice of appearance with the Director of IDWR, Statehouse Mail, Boise, Idaho 83720, Attn: L. Glen Saxton, five (5) days prior to the hearing. Other parties may informally present their views and comments without filing a notice of appearance. Informal written views and comments may also be submitted to IDWR prior to the hearing.

The hearings will be conducted in a facility which meets the accessibility requirements of the Americans with Disabilities Act. If you require special accommodations in order to attend, participate in or understand the hearing, please advise IDWR at least (10) days prior to the hearing. The hearing will be conducted by L. Glen Saxton, IDWR, Statehouse Mail, Boise, ID 83720, telephone (208)327-7900

If issued, these permits will be subject to all prior water rights.

Karl J. Dreher
Director, IDWR

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APR 09 1998

Exhibits

ST. MARIES RIVER

Department of Water Resources	
APPLICANT'S	
Exhibit	<u>WA B-1</u>
Date Admitted	<u>July 17, 1997</u>

My

WATER RIGHT NUMBER 92-07200

SOURCE: ST. MARIES RIVER

APPLICANT: IDAHO WATER RESOURCE BOARD

DATE FILED: JUNE 15, 1992

MINIMUM STREAMFLOW REACH:

**BEGINNING AT THE CONFLUENCE OF THE WEST
AND MIDDLE FORKS OF THE ST. MARIES RIVER
IN SECTION 6, T42N, R02E AND EXTENDING
DOWNSTREAM APPROXIMATELY 26 MILES TO
THE CONFLUENCE OF JOHN CREEK IN SECTION
33, T45N, R02W, B.M., BENEWAH CO.**

PERIOD OF USE: RATE OF FLOW

DECEMBER TO JULY 31: 141 CFS

AUGUST 1 TO NOVEMBER 30: 65 CFS

PURPOSE:

**INSTREAM FLOW FOR THE PROTECTION OF FISH
AND WILDLIFE HABITAT, AQUATIC LIFE, AND
RECREATIONAL VALUES.**

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WATER RIGHT SUMMARY

RIGHTS UPSTREAM OF THE MINIMUM FLOW REACH

Surface Water

2 rights - 1.56 cfs

Ground Water and Springs

3 rights - 0.19 cfs

RIGHTS TRIBUTARY TO THE MINIMUM FLOW REACH

Surface Water

54 rights - 33.6 cfs

Ground Water and Springs

47 rights - 1.95 cfs

RIGHTS IN THE MINIMUM FLOW REACH

8 rights - 3.41 cfs

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APR 09 1998

IN DEFENSE OF IDAHO'S WATER

A Report to Governor Cecil D. Andrus

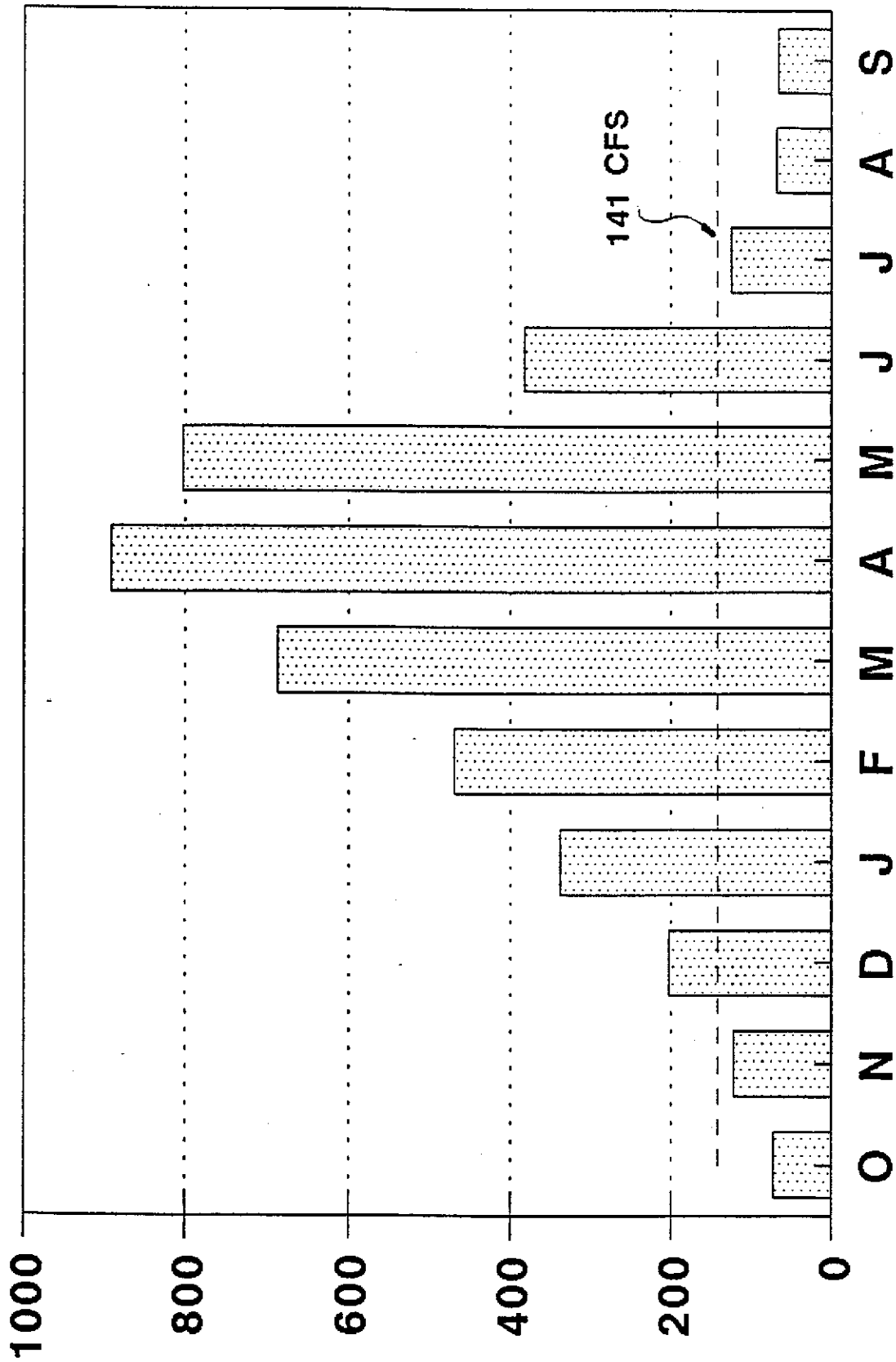
Prepared by

**Ray Rigby
John Rosholt
Scott Reed
A. Kenneth Dunn
Brian Donesley
Reed Hansen
Gene Gray
J. D. Williams
R. Keith Higginson**

September 1991

**MICROFILMED
APR 09 1998**

ST. MARIES RIVER NR SANTA (1966-90)



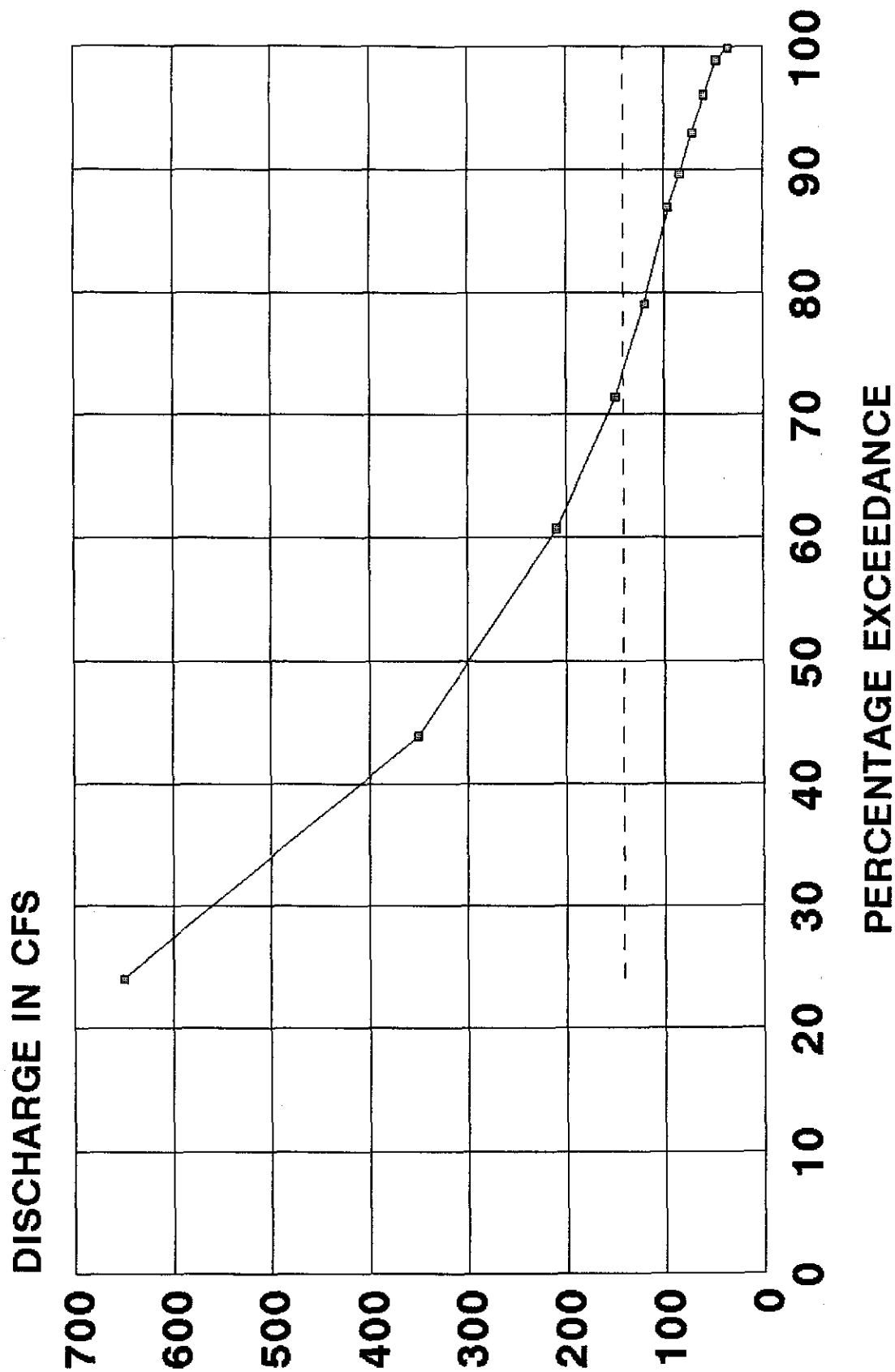
MONTH

Average Annual Flow = 353 CFS

Legend: Average Monthly Flow Instream Flow

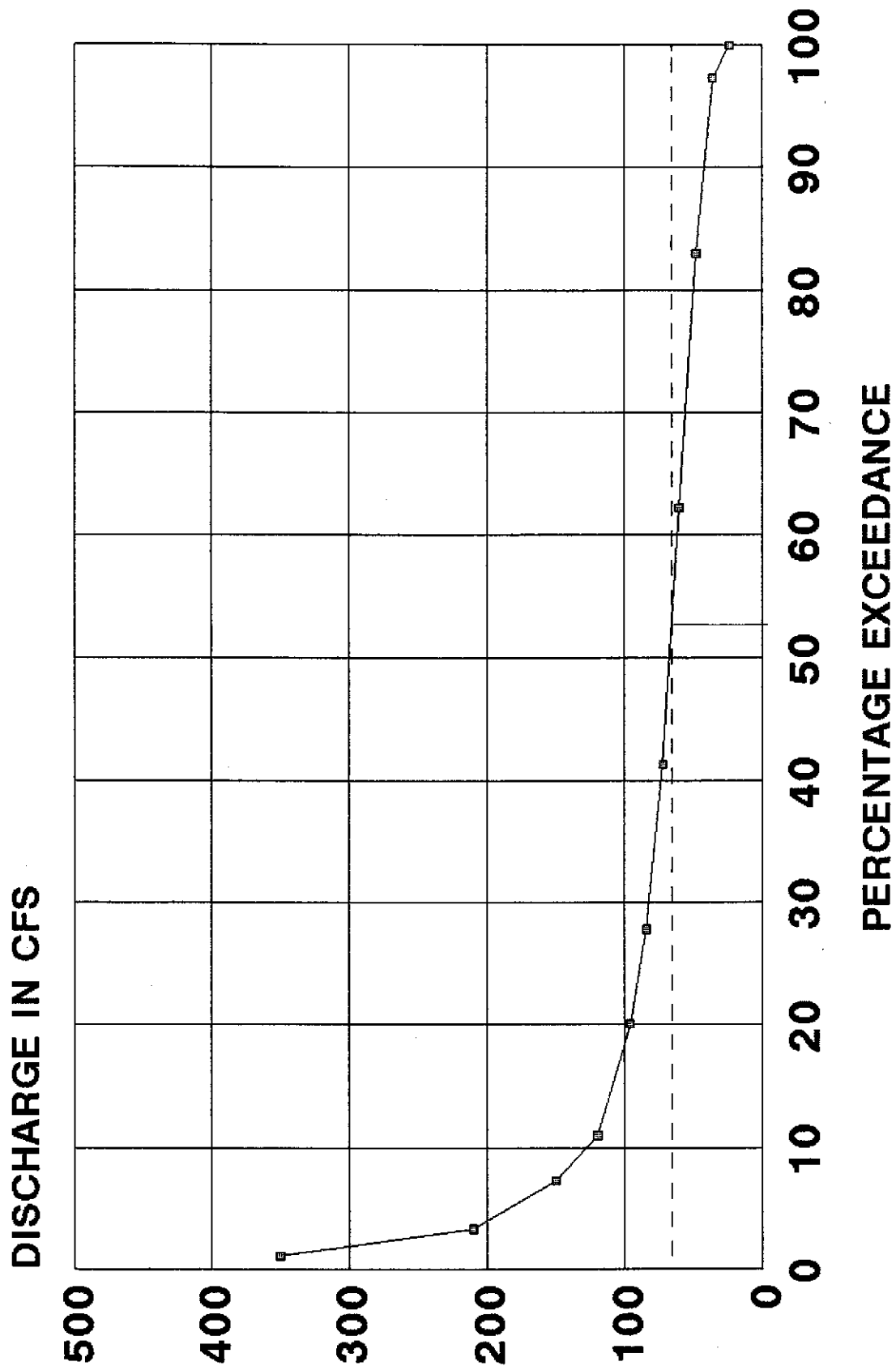
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**FLOW DURATION CURVE
ST. MARIES RIVER NEAR SANTA
DEC-JULY**



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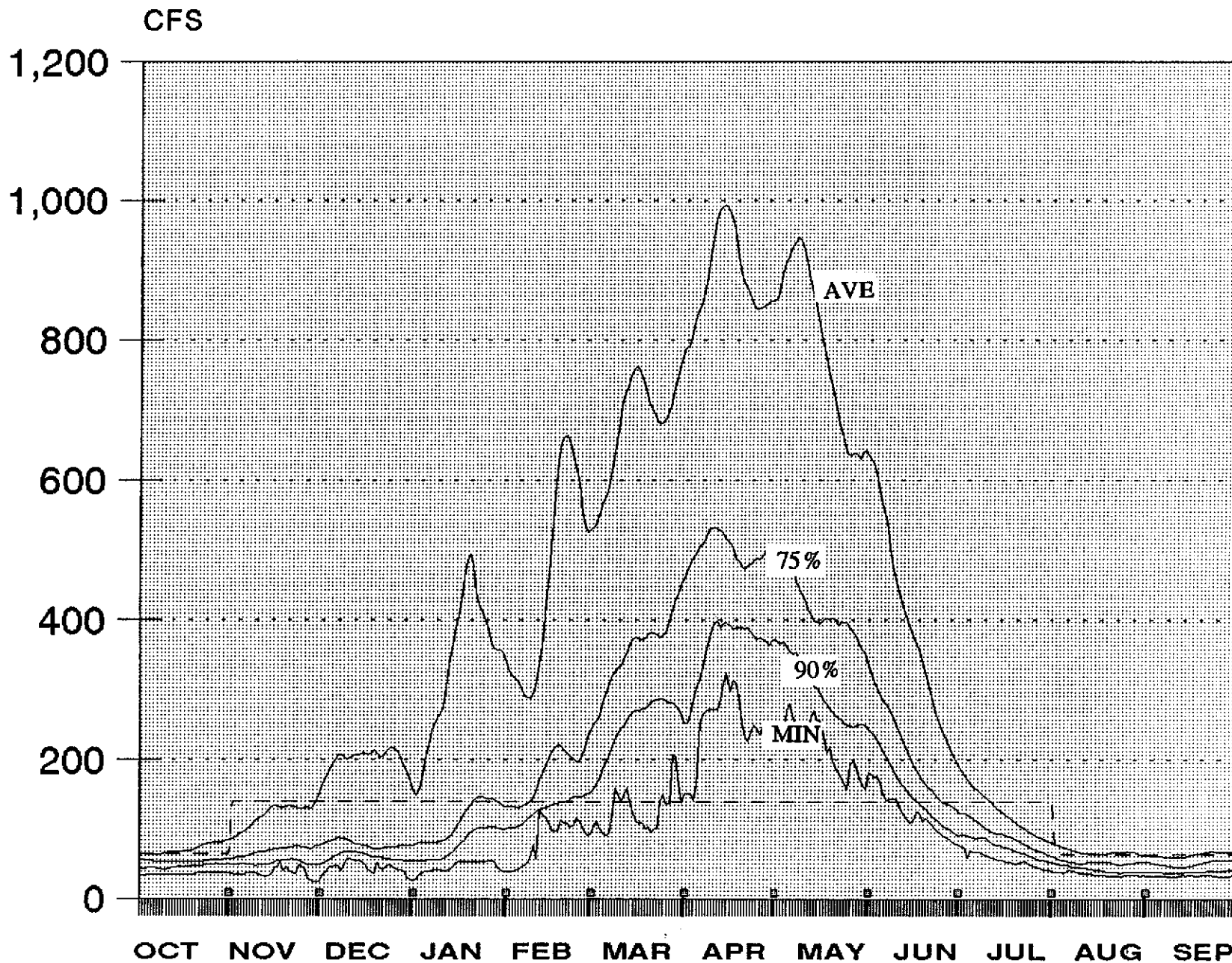
**FLOW DURATION CURVE
ST. MARIES RIVER NEAR SANTA
AUG-NOV**



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APR 09 1998

ST. MARIES RIVER NR SANTA

SUMMARY HYDROGRAPH PERIOD OF RECORD 1966-90



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APR 09 1998

Water Right Number	Priority Date	Status	Total Rate	Total Volume	Source	Tributary	TWN	RNG	Section	Use
Upstream of Minimum Stream Flow Reach										
9207043	6/28/78 L		0.56	10.2	ST. MARIES R, WEST F	ST. MARIES RIVER	42 N	2 E	7	INDUSTRIAL
9207218	5/4/95 P		1.00		ST. MARIES RIVER, WEST FORK	ST. JOE RIVER	42 N	2 E	7	INDUSTRIAL
TOTAL FOR GROUP				10.2						
Groundwater & Springs Upstream of Minimum Stream Flow Reach										
9204014	6/1/50 S		0.07		GROUNDWATER		42 N	2 E	7	DOMESTIC
9204037	6/1/36 S		0.01		SPRING		42 N	2 E	15	DOMESTIC
9207210	4/26/94 L		0.11	40.5	GROUNDWATER		42 N	2 E	7	IRRIGATION & DOMESTIC
TOTAL FOR GROUP				40.5						
Tributary to the Minimum Stream Flow Reach										
9202001	4/8/07 L		3.7		OLSON CREEK	ST. MARIES RIVER	44 N	1 E	35	MINING
9202005	5/14/10 L		0.5		CRYSTAL CREEK	ST. MARIES RIVER	44 N	1 E	31	COMMERCIAL
9202008	3/8/16 L		2		OLSON CREEK	ST. MARIES RIVER	44 N	1 E	23	INDUSTRIAL & DOMESTIC
9202012	3/26/26 L		1.1		OLSON CREEK	ST. MARIES RIVER	43 N	1 E	9	DOMESTIC & IRRIGATION
9202017	5/7/64 L		0.38	129.6	SANTA CREEK	ST. MARIES RIVER	44 N	1 W	18	IRRIGATION
9202019	11/23/53 L		1		CHARLEY CREEK	SANTA CREEK	43 N	2 W	10	DOMESTIC, IRRIGATION & STOCKWATER
9202021	10/21/59 L		0.3		UNNAMED STREAMS	ST. MARIES RIVER	42 N	1 E	1	FIRE PROTECTION & DOMESTIC
9202024	SEE BELOW									
9202026	10/2/62 L		2.3		EMERALD CREEK, EAST FORK	EMERALD CREEK	43 N	1 E	34	INDUSTRIAL
9202027	2/25/66 L		1	132	ADAMS CREEK	ST. MARIES RIVER	44 N	1 E	28	DOMESTIC
9204001	6/1/56 S		0.05		SHEEP CREEK	ST. MARIES RIVER	44 N	1 W	29	DOMESTIC, STOCKWATER, & FIRE PROTECTION
9204012	2/1/59 S		0.22	0.25	CARPENTER CREEK	ST. MARIES RIVER	43 N	1 W	22	MINING
9204013	6/1/70 S		0.06		UNNAMED STREAM	LITTLE CARPENTER CREEK	43 N	1 W	13	DOMESTIC & STOCKWATER
9204032	1/1/67 S		0.04		RENFO CREEK	ST. MARIES RIVER	44 N	1 W	22	IRRIGATION
9204039	6/1/64 S		0.01		UNNAMED STREAM	EMERALD CREEK	42 N	1 E	3	RECREATION
9204117	7/1/66 S		0.07	0.5	CHILDS CREEK	ST. MARIES RIVER	43 N	1 E	15	DOMESTIC & FIRE PROT. & INDUSTRIAL

Department of Water Resources

APPLICANT'S

Exhibit

Date Admitted

WB-2

July 17, 1997

* Priority dates thru 6/15/92

APR 09 1996

Water Right Number	Priority Date	Status	Total Rate	Total Volume	Source	Tributary	TWN	RNG	Section	Use
9204124	1/1/97 S		0.02		MAZIE CREEK	ST. MARIES RIVER, WEST FORK	42 N	1 E	24	STOCKWATER IRRIGATION, FIRE PROT & DOMESTIC
9204127	10/22/70 S		0.14	0.33	UNNAMED STREAM	CARPENTER CREEK	43 N	1 W	24	DOMESTIC
9204131	1/1/88 S		0.04		SANTA CREEK & OTHER	ST. MARIES RIVER	44 N	2 W	33, 28 & 27	STOCKWATER
9207011	8/1/72 L		0.02	1.2	BLAIR CREEK	ST. MARIES RIVER	43 N	1 E	25	DOMESTIC
9207016	10/17/73 L		0.02	0.6	SANTA CREEK, SOUTH FORK	SANTA CREEK	44 N	3 W	36	DOMESTIC
9207018	12/14/73 L		0.08		CARPENTER CREEK	ST. MARIES RIVER	43 N	1 W	24	DOMESTIC & FIRE PROT.
9207032	5/2/76 L		0.04	3.7	FENN CREEK	ST. MARIES RIVER	44 N	1 E	31	STOCKWATER & IRRIGATION
9207040	1/12/78 L		0.25	81.7	UNNAMED STREAM	LITTLE CARPENTER CREEK	43 N	1 W	13	DOMESTIC
9207047	3/1/79 L		0.04	1.2	PETERSON CREEK	SANTA CREEK	44 N	2 W	23	DOMESTIC
9207066	1/14/80 L		0.12	29.2	UNNAMED STREAM & RENFRO CREEK	RENFRO CREEK & ST. MARIES RIVER	44 N	1 W	14	IRRIGATION, STOCKWATER AND STORAGE
9207068	4/10/80 L		0.02	0.2	CREEK	CARPENTER CREEK	43 N	1 W	13	STOCKWATER
9207075	6/26/80 L		0.01	4.9	RENFRO CREEK	ST. MARIES RIVER	44 N	1 W	22	IRRIGATION
9207080	7/17/80 L		0.02	3	UNNAMED STREAM	SANTA CREEK	44 N	3 W	26	IRRIGATION
9207081	7/17/80 P		0.3		DAVIS & RENFRO CREEKS	RENFRO CREEK & ST. MARIES RIVER	44 N	1 W	14	DOMESTIC, STOCKWATER & IRRIGATION
9207082	7/21/80 L		0.02	3	SANTA CREEK	ST. MARIES RIVER	44 N	2 W	24	IRRIGATION
9207096	3/2/82 L		0.04	3.8	UNNAMED STREAM	SANTA CREEK	44 N	3 W	34	DOMESTIC, STOCKWATER & IRRIGATION
9207098	4/2/82 L		0.02	0.6	UNNAMED STREAM	LITTLE CARPENTER CREEK	43 N	1 W	11	DOMESTIC
9207101	8/11/82 L		0.02	1.6	UNNAMED STREAM	SANTA CREEK	44 N	3 W	35	IRRIGATION & STORAGE
9207104	9/1/82 L		0.02	0.2	UNNAMED STREAM	SANTA CREEK	44 N	3 W	35	STOCKWATER
9207109	12/29/82 L		0.04	1.2	UNNAMED STREAM	POKEY CREEK	44 N	1 W	11	DOMESTIC
9207111	1/17/83 L		0.02	0.2	RENFRO CREEK	ST. MARIES RIVER	44 N	1 W	22	STOCKWATER
9207112	2/26/83 L		0.03	3	UNNAMED STREAM	RENFRO CREEK	44 N	1 W	13	IRRIGATION
9207113	1/21/83 L		0.06	3.1	RENFRO CREEK	ST. MARIES RIVER	44 N	1 W	13	RECREATION & IRRIGATION
9207115	2/16/83 L		0.04	1.4	SANTA CREEK, SOUTH FORK	SANTA CREEK	43 N	3 W	2	DOMESTIC & STOCKWATER
9207136	5/31/83 L		0.02	0.7	UNNAMED STREAM	FLAT CREEK	45 N	1 W	31	STOCKWATER
9207141	6/21/83 P		0.96	48	UNNAMED STREAMS	SANTA CREEK, SOUTH FORK	44 N	3 W	35	FISH PROPOGATION & STORAGE
9207150	6/28/83 L		0.2	90.1	RENFRO CREEK	ST. MARIES RIVER	44 N	1 W	22	STORAGE, IRRIGATION FIRE PROTECTION & RECREATION
9207158	6/28/83 L		0.04	1.4	SANTA CREEK	ST. MARIES RIVER	44 N	3 W	35	DOMESTIC & STOCKWATER

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Water Right Number	Priority Date	Status	Total Rate	Total Volume	Source	Tributary	TWN	RNG	Section	Use
9207171	9/28/83	P	1.75		ADAMS CREEK	ST. MARIES RIVER	44 N	1 E	28	DOMESTIC, IRRIGATION & COMMERCIAL
9207179	8/21/87	L	0.01	1.6	UNNAMED STREAM	FLAT CREEK	45 N	1 W	20	STORAGE FOR FIRE PROT & WILDLIFE
9207193	1/17/92	L	0.01	0.3	UNNAMED STREAM	SANTA CREEK	44 N	3 W	25	DOMESTIC
9207201	5/21/93	P	0.2		UNNAMED STREAM	SANTA CREEK	44 N	3 W	35	RECREATION STORAGE
9207203	7/23/93	L		19	UNNAMED STREAM	SANTA CREEK	44 N	3 W	35	FISH PROPOGATION
9207206	1/27/94	P	0.96		UNNAMED STREAMS	SANTA CREEK	44 N	3 W	35	FISH PROPOGATION
9207207	3/8/94	A	9.8		RENFRO CREEK, WILLOW CREEK, UNNAMED STREAM & EMERALD CREEK & OTHERS	ST MARIES RIVER	44 N	1 W	14	RECREATION, IRRIGATION, POWER & MINING AND STORAGE
9207208	5/2/94	P	2.23		CARPENTER CREEK & TRIBUTARIES	SINKS, EMERALD CREEK AND ST. MARIES RIVER & OTHERS	43 N	1 E	22, 27, 28, 33, 34, & 36	MINING & IRRIGATION
9207209	4/4/94	P	2.23		UNNAMED STREAMS	SANTA CREEK	44 N	3 W	7 & 18	IRRIGATION & MINING
9207212	6/23/94	L	0.06	2.6	UNNAMED STREAM	ST. MARIES RIVER	44 N	3 W	35	DOMESTIC & RECREATION
9207215	12/19/94	L	0.97	0	UNNAMED STREAM	ST. MARIES RIVER	45 N	2 W	3	STORAGE
TOTAL FOR GROUP			33.6	570.18						IRRIGATION
Groundwater & Springs Tributary to the Minimum Stream Flow Reach										
9202025	11/25/66	L	0.02	4.2	GROUNDWATER		42 N	2 E	6	DOMESTIC
9204000	5/1/52	S	0.02		SPRING	SHEEP CREEK	44 N	1 W	28	STOCKWATER & DOMESTIC
9204015	11/30/66	S	0.04		SPRING	SOLDIER CREEK	45 N	1 W	32	DOMESTIC
9204017	11/30/66	S	0.04		SPRING	SOLDIER CREEK	45 N	1 W	32	DOMESTIC
9204027	1/1/80	S	0.04		GROUNDWATER		44 N	1 W	14	DOMESTIC
9204028	8/15/68	S	0.013		SPRING	SINKS	44 N	1 W	15	STOCKWATER
9204029	1/1/35	S	0.08		SPRING	SINKS	45 N	1 W	20	STOCKWATER & DOMESTIC

Water Right Number	Priority Date	Status	Total Rate	Total Volume	Source	Tributary	TWN	RNG	Section	Use
9204030	1/1/35 S		0.02		SPRING	SINKS	45 N	1 W	20	STOCKWATER
9204034	10/20/58 S		0.1		SPRING	SHEEP CREEK	44 N	1 W	28	STOCKWATER & DOMESTIC
9204038	6/1/62 S		0.01		GROUNDWATER		43 N	1 E	25	RECREATION
9204112	1/1/54 S		0.04		GROUNDWATER		44 N	1 W	25	DOMESTIC
9204114	11/30/66 S		0.04		SPRING	SINKS	45 N	1 W	32	DOMESTIC
9204115	6/1/55 S		0.01		GROUNDWATER		42 N	2 E	6	DOMESTIC
9204116	2/1/58 S		0.05		SPRING	SAINT MARIES RIVER	42 N	2 E	7	DOMESTIC
9204119	1/1/98 S		0.04		SPRING	FLAT CREEK	45 N	1 W	20	DOMESTIC & IRRIGATION
9204121	1/1/48 S		0.12		SPRINGS	SHEEP CREEK	44 N	1 W	27	STOCKWATER & DOMESTIC
9204129	1/1/60 S		0.06		SPRINGS	SINKS	44 N	2 W	33	DOMESTIC & STOCKWATER
9204130	8/1/70 S		0.1		SPRINGS	SANTA CREEK, SOUTH FORK				IRRIGATION, FISH PROP &
9204137	12/31/44 S		0.04		SPRING	SINKS	44 N	3 W	35	DOMESTIC
9207003	12/2/69 L		0.06	27	GROUNDWATER		44 N	1 W	14	DOMESTIC
9207005	12/30/70 L		0.07	41	GROUNDWATER		44 N	1 W	22	DOMESTIC
9207041	1/12/78 L		0.15		GROUNDWATER		44 N	2 W	33	MUNICIPAL
9207048	3/13/79 L		0.02	0.6	SPRING		44 N	1 W	15	MUNICIPAL
9207052	7/9/79 L		0.04	1.2	GROUNDWATER	ROGERS CREEK	45 N	1 W	22	DOMESTIC
9207053	7/20/79 L		0.04	1.2	GROUNDWATER		44 N	1 W	14	DOMESTIC
9207059	10/3/79 L		0.04	2.4	GROUNDWATER		45 N	1 W	20	DOMESTIC
9207067	2/20/80 L		0.04	1.2	SPRING	SANTA CREEK	44 N	1 W	20	DOMESTIC
9207083	7/21/80 L		0.02	0.7	SPRINGS	SINKS	44 N	3 W	26	DOMESTIC
9207088	5/22/81 L		0.02	1.2	SPRING	SINKS	44 N	3 W	25	DOMESTIC
9207094	12/21/81 L		0.04	1.2	SPRING	SINKS	45 N	1 W	21	DOMESTIC
9207100	6/21/82 L		0.04	1.2	GROUNDWATER		45 N	1 W	31	DOMESTIC
9207105	11/5/82 L		0.06	4	SPRING	ST. MARIES RIVER	44 N	1 W	15	DOMESTIC, STOCKWATER, RECREATION STORAGE
9207106	11/5/82 L		0.04	0.6	SPRING	ST. MARIES RIVER	44 N	1 W	15	DOMESTIC
9207118	2/18/83 L		0.06	2.4	GROUNDWATER		44 N	1 W	26	DOMESTIC
9207134	5/25/83 L		0.04	1.4	SPRING	ST. MARIES RIVER	44 N	1 W	15	DOMESTIC & STOCKWATER
9207135	6/4/83 L		0.06	1.2	SPRING	FLAT CREEK	45 N	1 W	20	DOMESTIC
9207147	6/27/83 L		0.02	0.6	GROUNDWATER		44 N	2 W	28	COMMERCIAL
9207149	6/28/83 L		0.02	0.2	SPRINGS	SINKS	44 N	1 W	24	STOCKWATER
9207163	7/1/83 L		0.02	0.6	SPRING	SINKS	45 N	1 W	29	DOMESTIC
9207169	7/21/83 L		0.05	4.9	SPRING	SANTA CREEK	44 N	3 W	34	IRRIGATION & STOCKWATER
9207177	8/22/86 L		0.04	1.2	GROUNDWATER		44 N	3 W	26	DOMESTIC
9207180	9/28/87 L			2.5	SPRING	SINKS	45 N	1 W		STOCKWATER & FIRE PROTECTION STORAGE
9207186	11/8/88 L			1.1	SPRING	SINKS	44 N	1 W	23	STOCKWATER STORAGE
9207187	11/8/88 L			0.3	SPRING	SINKS	44 N	1 W	23	STOCKWATER STORAGE
9207188	11/8/88 L			0.4	SPRING	SINKS	44 N	1 W	23	STOCKWATER STORAGE

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Water Right Number	Priority Date	Status	Total Rate	Total Volume	Source	Tributary	TWN	RNG	Section	Use
9207189	5/28/89	L	0.04	0.6	SPRING	ST. MARIES RIVER	45 N	2 W	4	DOMESTIC
9207190	6/10/91	L		0.5	SPRING	SINKS	45 N	2 W	26	WILDLIFE STORAGE
9207198	9/24/92	L	0.04	1.2	SPRING	SINKS	44 N	3 W	25	DOMESTIC
TOTAL FOR GROUP			1.953	106.8						
In the Minimum Stream Flow Reach										
9202024	8/16/61	L	0.44		ST. MARIES RIVER & OTHER	ST. JOE RIVER & OTHER	43 N	1 E	7, 15, 16 & 9	IRRIGATION
9204010	6/1/51	S	2	10	ST. MARIES RIVER	ST. JOE RIVER	44 N	1 W	25	FIRE PROTECTION
9207022	9/3/74	L	0.67		ST. MARIES RIVER	COEUR D ALENE LAKE	44 N	1 W	22	FIRE PROTECTION
9207117	2/18/83	L	0.03	3	ST. MARIES RIVER	ST. JOE RIVER	44 N	1 W	26	IRRIGATION
9207122	3/8/83	L	0.03	4.5	ST. MARIES RIVER	ST. JOE RIVER	44 N	1 W	26	IRRIGATION
9207124	3/14/83	L	0.02	1.5	ST. MARIES RIVER	ST. JOE RIVER	44 N	1 W	15	IRRIGATION
9207127	3/30/83	L	0.02	3	ST. MARIES RIVER	ST. JOE RIVER	44 N	1 W	15	IRRIGATION
9207227	10/28/96	P	0.2		ST. MARIES RIVER	COEUR D ALENE LAKE	44 N	1 W	23	IRRIGATION
TOTAL FOR GROUP			3.41	22						
MINIMUM STREAM FLOW APPLICATION										
9207200	6/15/92	A	141		ST. MARIES RIVER	ST. JOE RIVER	42 N	2 E	6	MINIMUM INSTREAM FLOW
9207200	6/15/92	A	141		ST. MARIES RIVER	ST. JOE RIVER	42 N	2 E	6	MINIMUM INSTREAM FLOW
9207200	6/15/92	A	141		ST. MARIES RIVER	ST. JOE RIVER	45 N	2 W	33	MINIMUM INSTREAM FLOW
9207200	6/15/92	A	141		ST. MARIES RIVER	ST. JOE RIVER	45 N	2 W	33	MINIMUM INSTREAM FLOW

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APR 22 1998

Table 1

Department of Water Resources
APPLICANT'SExhibit FG-1Date Admitted 7-17-97Instream Flow Regimens for Fish, Wildlife, Recreation and Related
Environmental Resources

Narrative Description of Flows ^{1/}	Fisheries Classification ^{2/}	Recommended Base Flow Regimens	
		Oct.-Mar.	: Apr.-Sept.
Flushing or Maximum	--	200% of the average flow ^{3/}	
Optimum Range	--	60%-100% of the average flow ^{4/}	
Outstanding	I	40%	60%
Excellent	II	30%	50%
Good	III	20%	40%
Fair or Degrading	IV	10%	30%
Poor or Minimum	--	10%	10%
Severe Degradation	--	10% of average flow to zero flow	

^{1/}Most appropriate description of the general condition of the streamflow for all the parameters listed in the title of this paper.

^{2/}Roman numeral ratings for Fisheries Classification Systems like those developed for the States of Idaho, Montana, West Virginia, Wyoming, and the Delaware River Basin Comprehensive Study by the U.S. Fish and Wildlife Service.^{5, 11, 14, 19, 26} The base flow regimens outlined above in columns 3 and 4 to maintain the respective designated classes, are judged to be as reliable and valid as the classification systems themselves. These recommended flows generally apply very well to both cold and warm water streams. Regimens should be reversed or altered to fit different hydrologic cycles, like the Salmonid streams on the West Coast, or to favor species like the fall spawning brown trout. Flows may be refined further by specifically matching them to vital periods of the life cycle of fishes, like migration, spawning, incubation, growth, etc. Use of the Montana Method on spring creeks or streams that have a very uniform flow year-around may provide unprecedented low-flow regimens at the minimum or base flow levels.

^{3/}The average flow will usually fill the active stream channel approximately 1/3 full or to the line of permanent terrestrial vegetation, while 3 times the average flow will often fill the active channel approximately to the point of spilling out on the first bench of the flood plain.¹⁵ Twice the average flow will produce effective depths and velocities within the stream channel for moving silt, sediment and other bed load material without doing extensive damage to the banks and riparian vegetation. Twice the average flow is a good maximum flow recommendation as well as a good flushing flow (Fig. 1).

^{4/}Optimum is a nebulous term; however, this flow range covers that definition best for all the parameters of this paper collectively.

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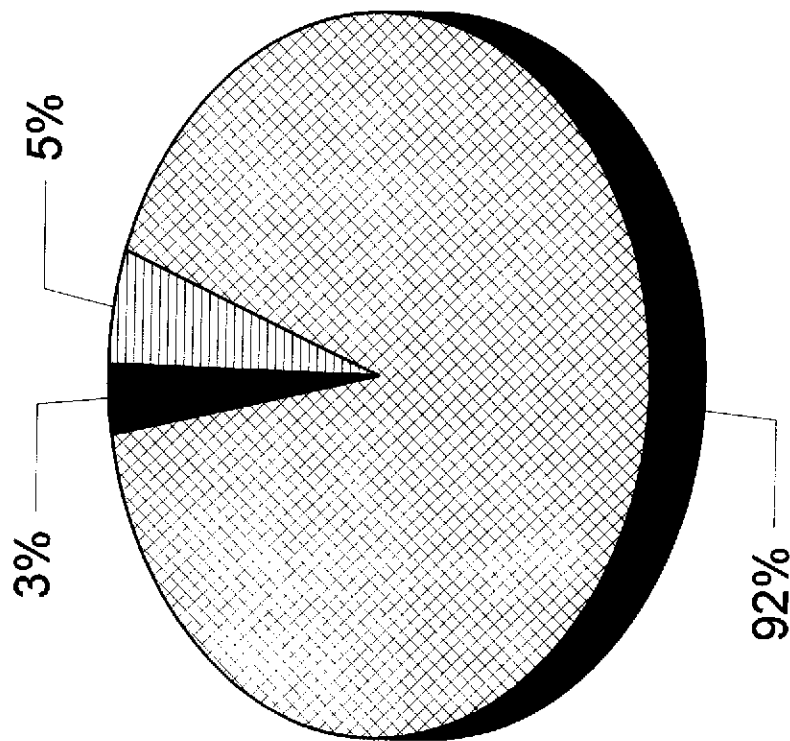
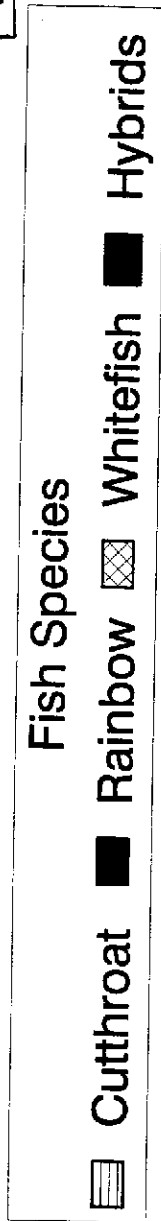
APR 09 1998

Species Composition

Electrofishing

Department of Water Resources
 APPLICANT'S
 Exhibit FE-2
 Date Admitted 7-17-92

1/2



St. Joe River

St. Maries River

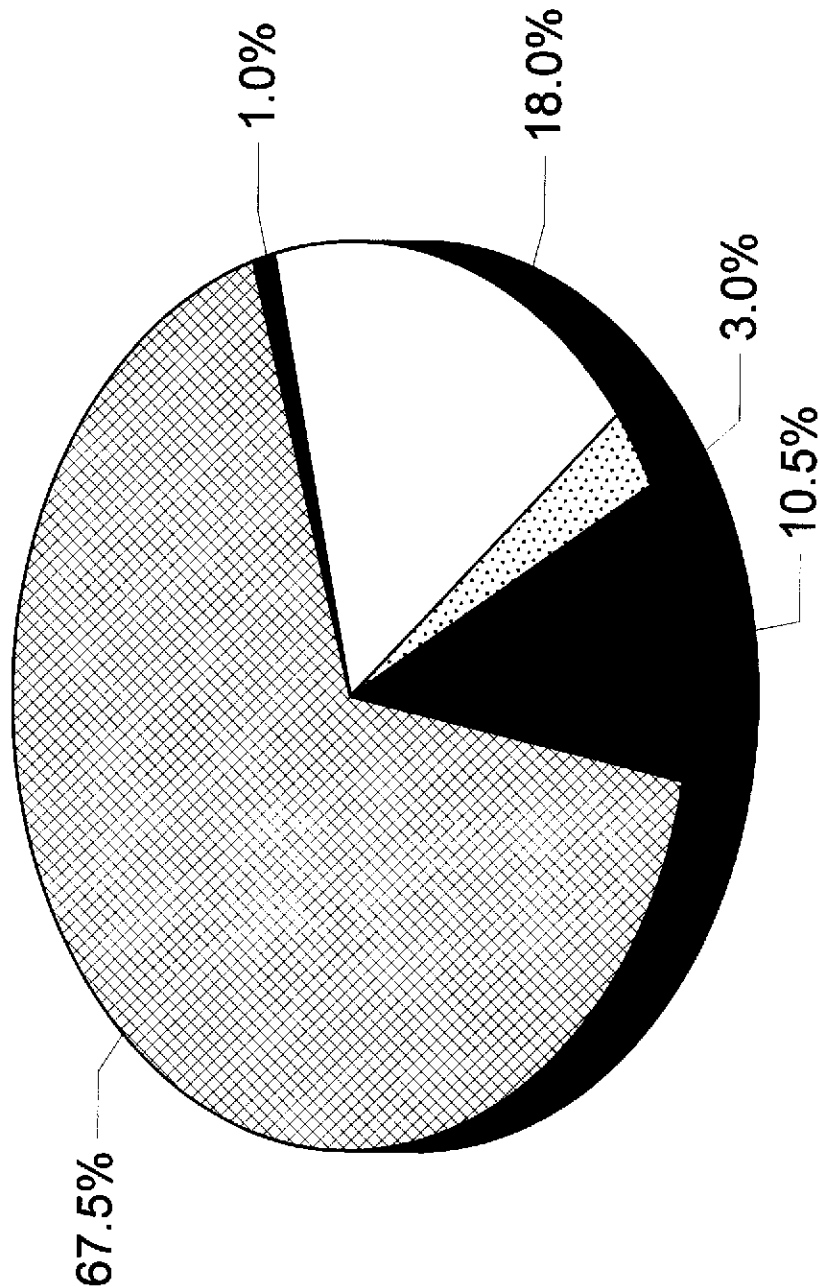
MICROFILMED
 APR 6 8 1990

Species Composition

Gillnetting

Department of Water Resources
APPLICANT'S
Exhibit **FG-3**
Date Admitted **7-17-17**

my



St Joe River

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APR 9 8 1958

St. Joe River Harvest

(Apperson et al. 1988)

Department of Water Resources

APPLICANT'S

Exhibit

FG-4

Date Admitted

7-17-97

124

May 23 to June 26, 1987

Total Effort 7,511 hours

Total Cutthroat Harvest 1,673 fish

Total Trout Harvest 2,496 fish

78% of cutthroat harvested from May 23 to June 5

MICROFILMED
APR 8 9 1988

St. Maries River Harvest

(Apperson et al. 1988)

Department of Water Resources
APPLICANT'S
Exhibit FG-5
Date Admitted 7-17-97 174

May 23 to June 26, 1987

Total Effort 2,599 hours

Total Cutthroat Harvest 447 fish

Total Trout Harvest 1,633 fish

63% of cutthroat harvested between May 23 and June 5

MICROFILMED
APR 8 9 1988

St. Joe River Management

Season

Memorial Day weekend to

Sept. 10

Limit

6 trout; 1 CTT not under

14" 10 brook trout

Closed to harvest of bull trout

(Early closing and bag limit to protect wild cutthroat trout)

Department of Water Resources APPLICANT'S	
Exhibit	FG-6
Date Admitted	7-17-97

FILED
APR 23 1998

124

St. Maries River Management

Season Memorial Day weekend to

Sept. 10

121

Department of Water Resources APPLICANT'S	
Exhibit	FG-7
Date Admitted	7-17-97

Limit

6 trout; 1 CTT not under 14"

10 brook trout

Closed to harvest of bull trout

(Early closing and bag limit to protect wild cutthroat trout)

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APR 09 1997

ST. JOE RIVER

Department of Water Resources	
APPLICANT'S	
Exhibit	<u>WB-3</u>
Date Admitted	<u>7-17-97</u>

WATER RIGHT NUMBER 91-07122

SOURCE: ST. JOE RIVER

APPLICANT: IDAHO WATER RESOURCE BOARD

DATE FILED: JUNE 15, 1992

MINIMUM STREAMFLOW REACH:

BEGINNING AT THE CONFLUENCE OF MARBLE CREEK IN SECTION 13, T45N, R03E AND EXTENDING DOWNSTREAM APPROXIMATELY 36 MILES TO THE CONFLUENCE OF THE ST. MARIES RIVER IN SECTION 23, T46N, R02W, B.M., BENEWAH CO.

PERIOD OF USE: RATE OF FLOW

NOVEMBER 1 TO JULY 31: 941 CFS

AUGUST 1 TO OCTOBER 31: 470 CFS

PURPOSE:

INSTREAM FLOW FOR THE PROTECTION OF FISH AND WILDLIFE HABITAT, AQUATIC LIFE, AND RECREATIONAL VALUES.

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APR 8 1996

WATER RIGHT SUMMARY

RIGHTS UPSTREAM OF THE MINIMUM FLOW REACH

Surface Water

12 rights - 23.1 cfs

Ground Water and Springs

4 rights - 0.08 cfs

RIGHTS TRIBUTARY TO THE MINIMUM FLOW REACH

Surface Water

40 rights - 300.7 cfs

Ground Water and Springs

22 rights - 5.7 cfs

RIGHTS IN THE MINIMUM FLOW REACH

12 rights - 2.7 cfs

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IN DEFENSE OF IDAHO'S WATER

A Report to Governor Cecil D. Andrus

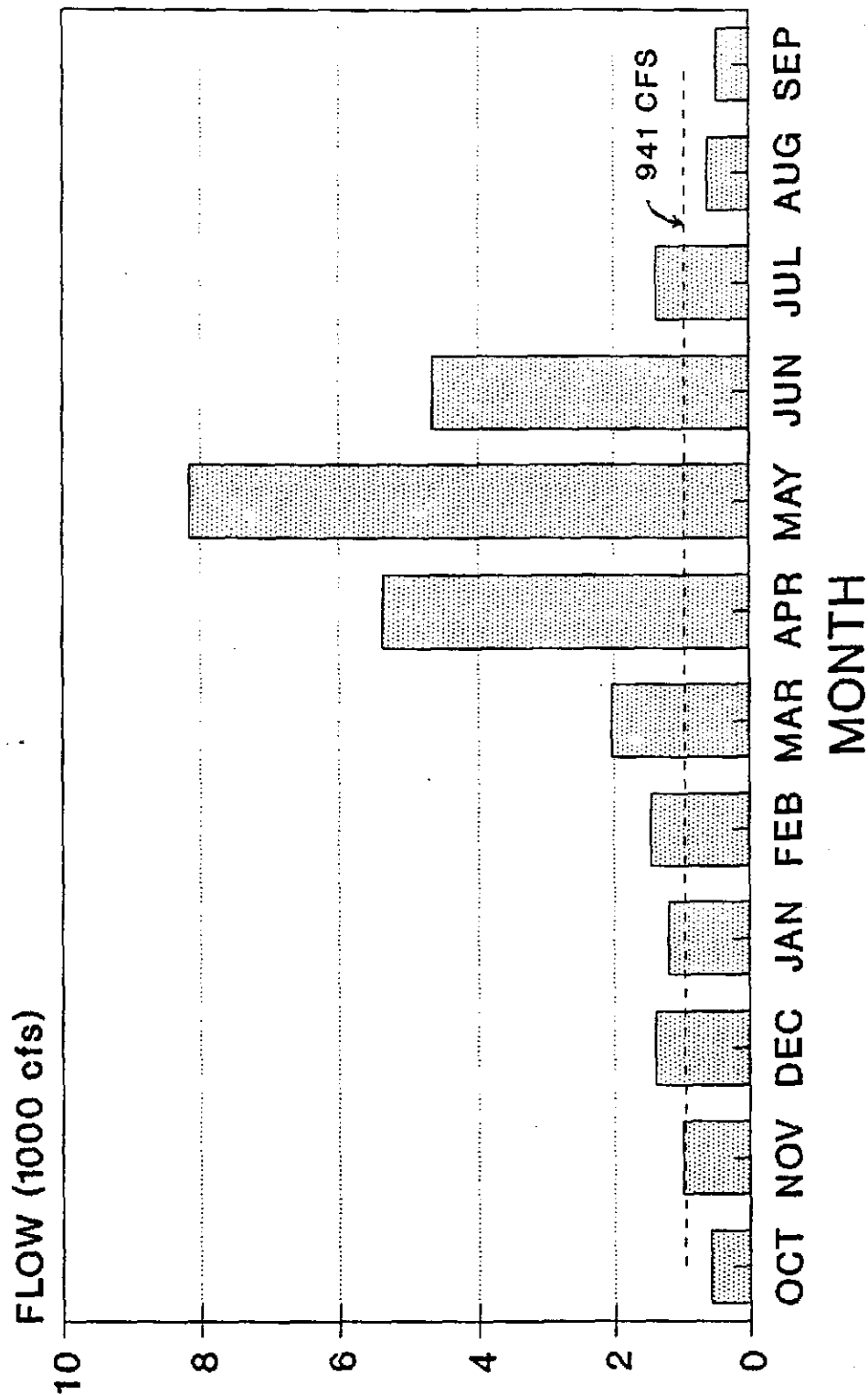
Prepared by

**Ray Rigby
John Rosholt
Scott Reed
A. Kenneth Dunn
Brian Donesley
Reed Hansen
Gene Gray
J. D. Williams
R. Keith Higginson**

September 1991

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APR 8 3 1996

ST. JOE RIVER AT CALDER (1921-90)



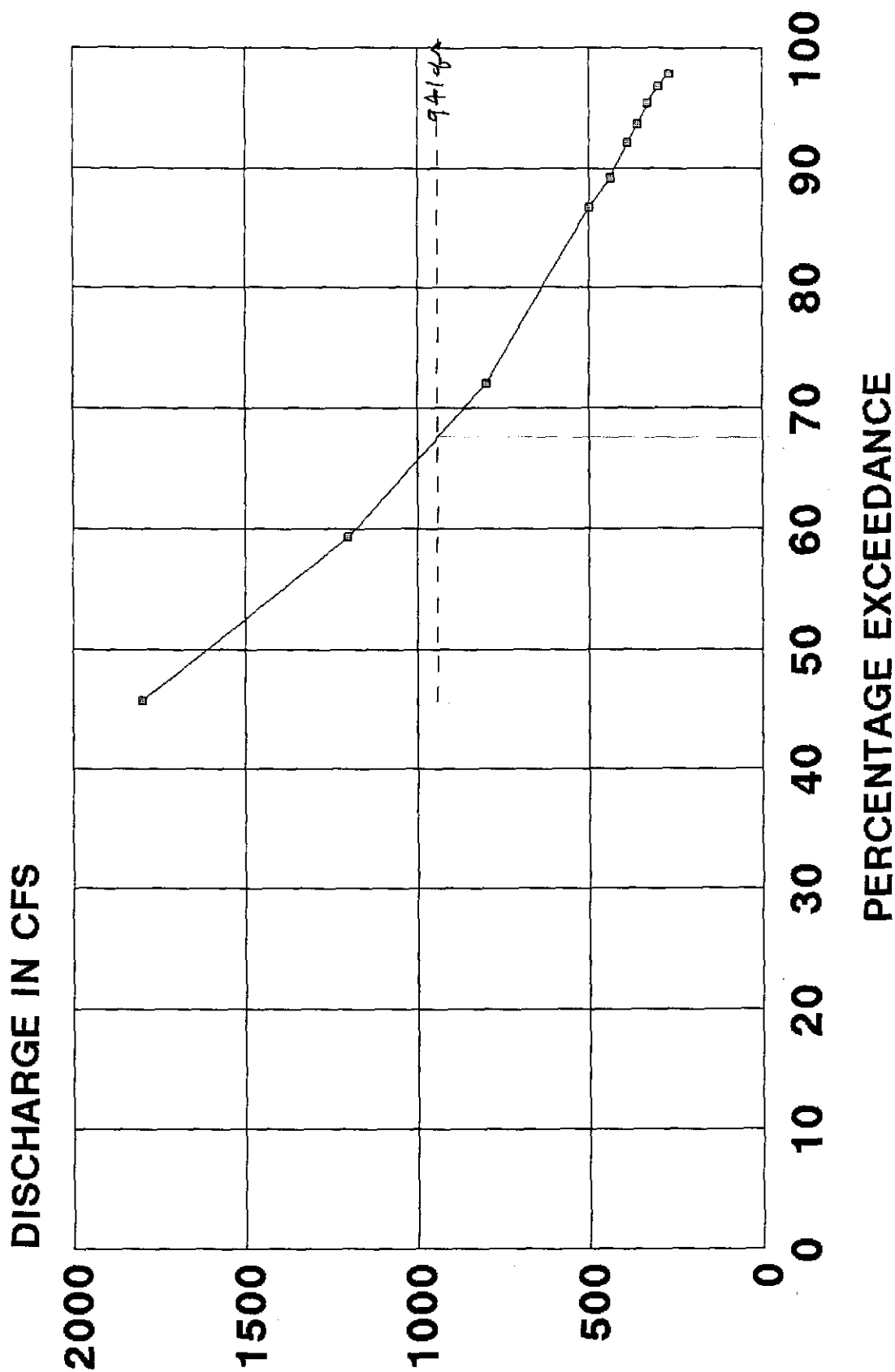
 Average Monthly Flow
  Instream Flow

Average Annual Flow = 2353 CFS

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APR 8 9 1938

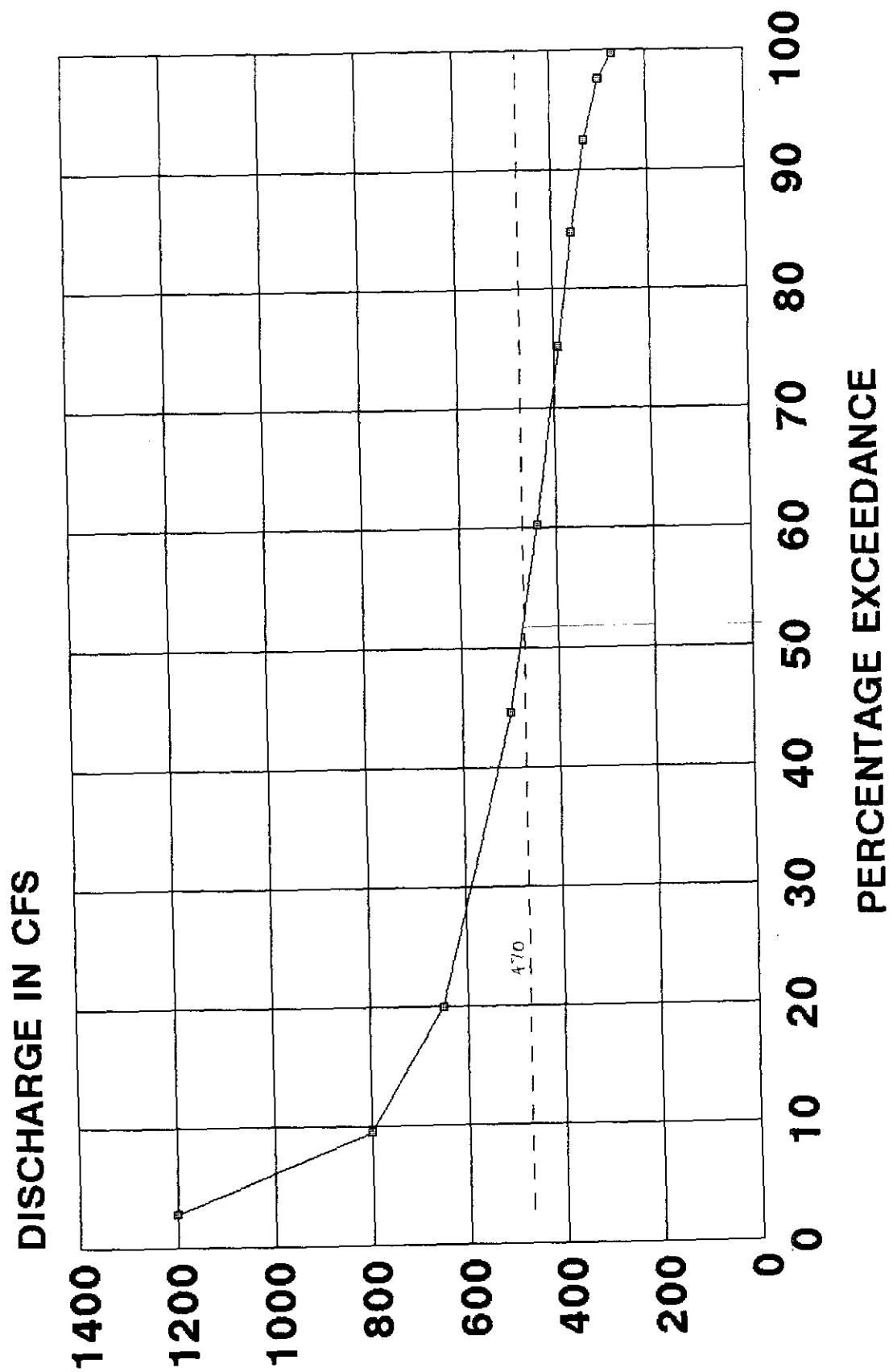
FLOW DURATION CURVE ST. JOE RIVER AT CALDER NOV-JUL



MICROFILMED
APR 6 3 1966

PERIOD 1920-90

FLOW DURATION CURVE ST. JOE RIVER AT CALDER AUG-OCT



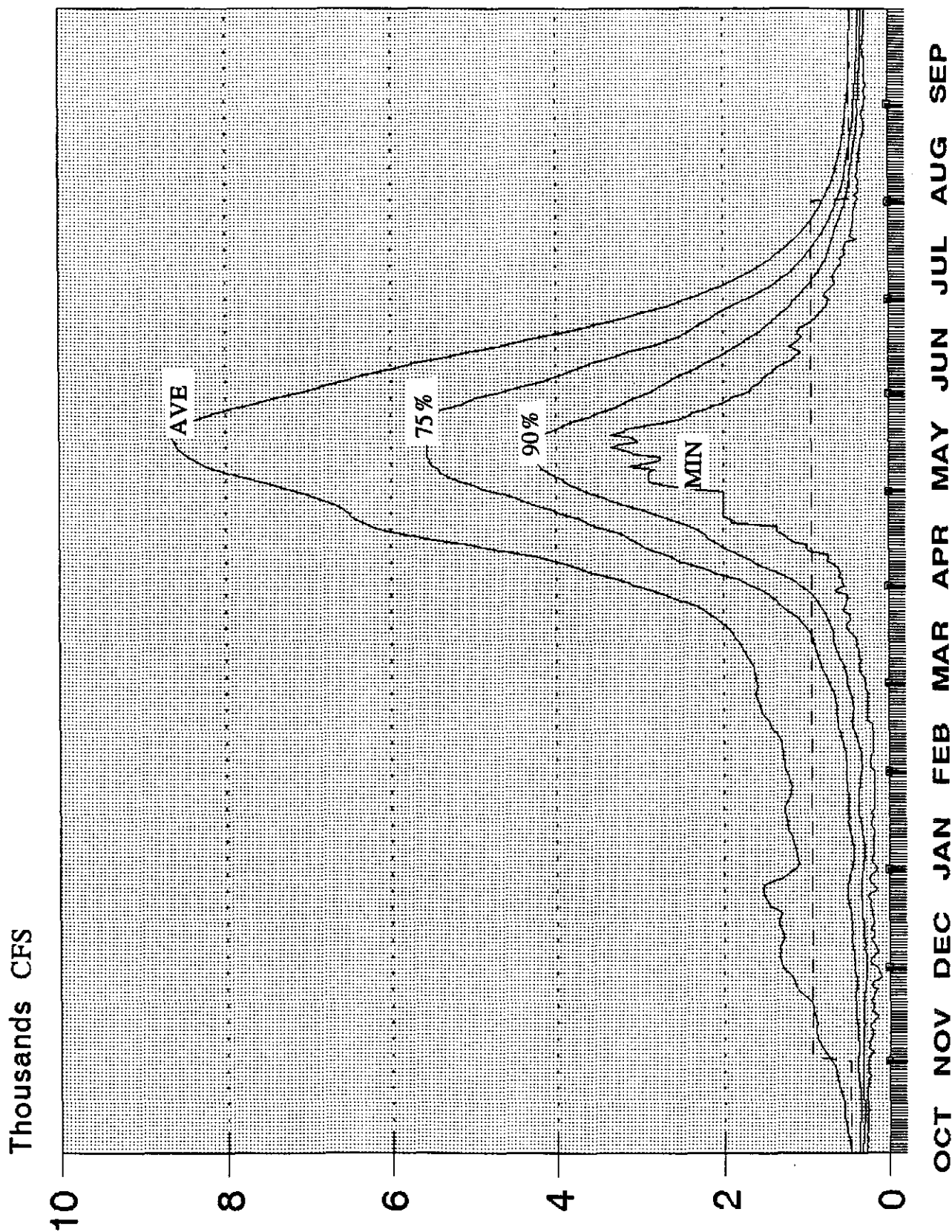
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APR 6 8 1968

PERIOD 1920-90

ST. JOE RIVER AT CALDER

SUMMARY HYDROGRAPH PERIOD OF RECORD 1920-90



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APR 8 8 1968

Priority Date Later in Time	Water Right Number	Stage	Priority Date	Total Diversion Rate	Total Diversion Volume	TWN	N S	RNG	E W	Section	Source	Tributary	Use Desc.
Upstream of Minimum Stream Flow Reach													
	9102001	L	10/15/07	1.5	0	47	N	6	E	26	CLIFF CREEK	LOOP CREEK	DOM & FIRE PROT
	9102007	L	1/16/15	5	0	46	N	7	E	8	MANHATTAN CREEK	LOOP CREEK	MINING & POWER
	9102015	L	5/14/24	5	0	46	N	6	E	19	MOZIER CREEK	SAINT JOE RIVER	POWER
	9102017	L	4/2/27	9	0	46	N	7	E	19	ST. JOE RIVER, EAST FORK	SAINT JOE RIVER	MINING
	9102020	L	9/1/30	0.01	0	45	N	4	E	12	HAMILTON GULCH	SAINT JOE RIVER	DOMESTIC
	9102023	L	12/21/53	2.1	0	43	N	9	E	21	RED IVES CREEK	SAINT JOE RIVER	DOMESTIC & POWER
	9102024	L	12/21/53	0.1	0	45	N	5	E	10	EVERY CREEK	SAINT JOE RIVER	DOMESTIC
	9102031	L	12/21/53	0.1	0	45	N	5	E	10	EVERY CREEK	SAINT JOE RIVER	DOMESTIC
	9104025	S	5/31/51	0.2	0	45	N	5	E	15	THERRAULT CREEK	SAINT JOE RIVER	DOMESTIC & IRRIGATION
	9104028	S	6/1/30	0.01	0	45	N	6	E	24	ST. JOE RIVER	COEUR D'ALENE LAKE	DOMESTIC
	9104030	S	8/1/47	0.01	0	42	N	9	E	18	UNNAMED CREEK	ST. JOE RIVER	DOMESTIC
	9104031	S	8/1/64	0.01	0	43	N	10	E	17	HELLER CREEK	ST. JOE RIVER	RECREATION
	9107058	L	8/3/82	0.06	16.3	45	N	5	E	15	GROUNDWATER		DOMESTIC & IRRIGATION
Totals for Group				23.1	16.3								
Upstream Ground Water and Springs													
	9104008	S	6/1/20	0.02	0	45	N	5	E	16	SPRING	ST. JOE RIVER	DOMESTIC
	9104009	S	6/1/46	0.04	0	45	N	2	E	12	SPRING	SINKS	DOMESTIC
	9104029	S	6/4/64	0.01	0	45	N	6	E	21	SPRING	SINKS	RECREATION
	9104032	S	6/1/68	0.01	0	43	N	7	E	6	SPRING		
Totals for Group				0.08	0								
Tributary To The Minimum Stream Flow Reach													
	9102002	L	8/25/18	50	0	46	N	1	E	15	SLAUGHTERHOUSE DRAW	SAINT JOE RIVER	IRRIG. POWER, DOM
	9102004	L	5/3/12	25	0	46	N	2	W	6	UNNAMED STREAM	SAINT JOE RIVER	INDUSTRIAL
	9102008	L	6/27/22	15	0	44	N	2	E	4	MICA CREEK	SAINT JOE RIVER	INDUSTRIAL
	9102010	L	11/29/19	200	0	48	N	1	E	11	FALLS CREEK	SAINT JOE RIVER	INDUSTRIAL
	9102018	L	3/21/21	0.15	0	45	N	2	E	3	BEAR CREEK	SAINT JOE RIVER	COMMERCIAL
	9102021	L	2/2/60	3	0	46	N	1	W	3	ROCHAT CREEK	SAINT JOE RIVER	DOMESTIC
	9102022	L	6/2/46	0.1	32.18	45	N	3	E	12	SAUGSTAD CREEK	ST. JOE RIVER	IRRIGATION & DOM
	9102029	L	12/9/35	1	0	46	N	1	E	19	UNNAMED STREAM	SAINT JOE RIVER	COMMERCIAL & DOM
	9104001	S	7/16/34	3	0	46	N	1	W	3	ROCHAT CREEK	SAINT JOE RIVER	MUNICIPAL
	9104018	S	1/1/10	0.06	0	46	N	1	E	18	REEDS CREEK	ST. JOE RIVER	STOCKWATER & DOMESTIC
	9104021	S	8/10/81	0.04	0	46	N	2	E	31	GROUNDWATER		DOMESTIC
	9104022	S	1/1/34	0.04	0.25	46	N	1	E	29	SPRING & UNNAMED STREAM	ST. JOE RIVER	DOMESTIC & STOCKWATER STORAGE
	9104104	S	6/1/68	0.06	0	46	N	1	E	19	UNNAMED STREAM	ST. JOE RIVER	IRRIGATION & DOM
	9104105	S	6/1/68	0.04	0	46	N	1	E	19	UNNAMED STREAM	SAINT JOE RIVER	DOMESTIC
	9104107	S	6/1/33	0.12	0	45	N	3	E	11	SPRING & UNNAMED STREAM	SAINT JOE RIVER	DOMESTIC
	9104114	S	1/1/48	0.08	0	46	N	1	W	9	SPRING	STREET CREEK	STOCKWATER & DOMESTIC
	9104117	S	6/20/63	0.03	0	47	N	1	W	25	SHEEP SPRINGS	ROCHAT CREEK	WILDLIFE & DOMESTIC
	9104118	S	6/20/63	0.03	0	46	N	1	W	1	TINGLEY SPRINGS	PHILLIPS DRAW	DOMESTIC & WILDLIFE
	9104119	S	10/1/65	0.01	0	46	N	1	E	8	SPRING	REEDS GULCH	WILDLIFE
	9104121	S	1/1/00	0.12	0	46	N	1	E	23	BROWNS DRAW	ST. JOE RIVER	DOMESTIC & STOCK WATER

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APR 10 1987

Department of Water Resources
 APPLICANT'S
 Exhibit July 17, 1997
 Date Admitted WB-4

122

Priority Date Later In Time	Water Right Number	Stage	Priority Date	Total Diversion Rate	Total Volume	TWN	N_S	RNG	E_W	Section	Source	Tributary	Use Desc.
	9104133	S	1/1/13	0.3	0	45	N	3	E	5	BIG CREEK	SAINT JOE RIVER	COMMERCIAL & IRRIGATION & STOCKWATER & DOMESTIC
	9104138	S	3/18/25	0.04	0	45	N	2	E	5	UNNAMED STREAM	SAINT JOE RIVER	STOCKWATER & DOMESTIC
	9107007	L	4/10/73	0.02	3	45	N	3	E	5	BIG CREEK	SAINT JOE RIVER	IRRIGATION
	9107008	L	5/21/73	0.02	3	48	N	1	E	21	SLAUGHTER HOUSE DRAW	SAINT JOE RIVER	IRRIGATION
	9107025	L	2/24/77	0.04	0.6	48	N	1	E	19	UNNAMED STREAM	SAINT JOE RIVER	DOMESTIC
	9107028	L	4/22/77	0.04	1.2	46	N	1	E	19	UNNAMED STREAM	ST. JOE RIVER	DOMESTIC
	9107031	L	8/19/77	0.04	1.2	46	N	1	W	24	UNNAMED STREAM	ST. JOE RIVER	DOMESTIC
	9107036	L	8/9/78	0.06	1.4	46	N	2	W	11	SPRING	ST. JOE RIVER	STOCKWATER & DOMESTIC
	9107047	L	7/22/80	0.04	1.2	45	N	3	E	3	BLACK PRINCE CREEK	SAINT JOE RIVER	DOMESTIC
	9107049	L	8/17/81	0.02	12.3	45	N	3	E	5	SPRINGS	BIG CREEK	STOCKWATER STORAGE
	9107066	L	2/15/83	0.06	2.4	46	N	1	E	19	UNNAMED STREAM	ST. JOE RIVER	DOMESTIC
	9107077	L	6/22/83	0.03	3	46	N	1	E	18	UNNAMED STREAM	SAINT JOE RIVER	IRRIGATION
	9107086	L	6/30/83	0.02	0.6	45	N	2	E	5	JACKS CREEK	SAINT JOE RIVER	DOMESTIC
	9107106	P	8/9/89	0.03	1	46	N	1	E	17	REEDS CREEK	ST. JOE RIVER	IRRIGATION STORAGE & IRRIGATION
	9107109	L	4/27/90	0	1.8	46	N	2	W	11	UNNAMED STREAM	ST. JOE RIVER	WILDLIFE, AESTHETIC & FIRE PROTECTION
	9107117	L	7/29/91	0.04	4.8	45	N	3	E	15	SPRING CREEK	ST. JOE RIVER	STORAGE DOMESTIC
	9107119	L	4/20/92	0	1.5	46	N	2	W	11	UNNAMED STREAM	ST. JOE RIVER	WILDLIFE, AESTHETIC & FIRE PROTECTION
**	9107126	P	10/13/93	0.06	5	46	N	1	E	17	SPRING	SINKS	REC, AESTHETIC & WILDLIFE
**	9107127	P	1/16/93	1.9	0	46	N	2	W	12	THOMAS CREEK	ST. JOE RIVER	DOM, WILDLIFE & REC STORAGE
**	9107133	L	6/13/95	0.02	1.5	46	N	1	E	29	BOND CREEK	ST. JOE RIVER	IRRIGATION
Totals for Group				300.66	77.93								
Tributary Ground Water & Springs													
	9102026	L	10/21/59	0.03	0	45	N	2	E	11	GROUNDWATER		DOMESTIC
	9102027	L	3/2/68	0.12	3.6	46	N	1	E	28	SPRING	SINKS	DOMESTIC
	9104003	S	8/1/69	0.04	0	46	N	1	E	29	SPRING	SINKS	DOMESTIC
	9104013	S	1/1/66	0.04	0	46	N	1	E	29	SPRINGS		DOMESTIC
	9104027	S	6/1/50	0.06	0	45	N	3	E	8	SPRING	ST. JOE RIVER	STOCKWATER & DOMESTIC
	9104106	S	1/1/20	0.03	0	45	N	3	E	13	GROUNDWATER		DOMESTIC
	9104108	S	6/1/62	0.08	0	44	N	3	E	16	SPRING	SINKS	DOMESTIC & RECREATION
	9104135	S	6/1/40	0.02	0	45	N	3	E	5	SPRING	SAINT JOE RIVER	STOCKWATER
	9104139	S	6/1/36	0.04	0	46	N	1	W	24	SPRING	SAINT JOE RIVER	DOMESTIC
	9107006	L	4/10/73	0.04	1.2	45	N	3	E	5	GROUNDWATER		DOMESTIC
	9107038	L	8/29/79	4.46	0	46	N	2	W	14	GROUNDWATER		MUNICIPAL
	9107059	L	7/16/82	0.02	1.2	46	N	2	W	13	GROUNDWATER		DOMESTIC
	9107073	L	3/29/83	0.04	1.2	45	N	3	E	5	GROUNDWATER		DOMESTIC
	9107078	L	6/17/83	0.04	3.7	46	N	1	E	18	GROUNDWATER		IRRIGATION, STOCKWATER & DOM.
	9107088	L	7/1/83	0.06	2.4	46	N	2	W	14	GROUNDWATER		DOMESTIC
	9107089	L	7/1/83	0.06	1.2	46	N	2	W	14	SPRING		DOMESTIC
	9107103	L	10/4/88	0.09	0.2	45	N	3	E	4	GROUNDWATER	SINKS	DOMESTIC

MICROFILMED
APR 10 1988

Water Rights in St Joe Drainage

Priority Date Later in Time	Water Right Number	Stage	Priority Date	Total Diversion Rate	Total Diversion Volume	TWN	N S	RNG	E W	Section	Source	Tributary	Use Desc.
	9107105	L	4/14/89	0.04	1.2	45	N	2	E	12	SPRING	ST JOE RIVER	DOMESTIC
	9107107	L	5/10/83	0.07	43.5	45	N	2	E	3	GROUNDWATER		DOMESTIC & COMMERCIAL
	9107111	P	6/11/80	0.23	0	46	N	2	W	12	GROUNDWATER		DOMESTIC
	9107118	L	12/11/81	0.04	5.1	46	N	2	E	31	GROUNDWATER		DOMESTIC
**	9107124	L	10/13/83	0.04	1.2	46	N	1	E	17	GROUNDWATER		DOMESTIC
Totals for Group				5.68	65.7								
In the Minimum Stream Flow Reach													
	9104002	S	4/13/69	0.1	0	45	N	3	E	14	ST. JOE RIVER	COEUR D ALENE LAKE	COMMERCIAL & FIRE PROT
	9104023	S	9/1/70	0.04	0	46	N	1	W	14	ST. JOE RIVER	COEUR D ALENE LAKE	DOMESTIC
	9104140	S	1/1/43	0.4	0	46	N	2	W	14	ST. JOE RIVER	COEUR D ALENE LAKE	IRRIGATION
	9107021	L	4/28/78	0.02	3	45	N	3	E	11	ST. JOE RIVER	COEUR D ALENE LAKE	IRRIGATION FIRE PROTECTION & IRRIGATION
	9107027	L	3/21/77	0.05	3.5	46	N	2	W	14	ST. JOE RIVER	COEUR D ALENE LAKE	IRRIGATION
	9107035	L	7/31/78	0.04	2.4	45	N	3	E	10	ST. JOE RIVER	COEUR D ALENE LAKE	DOMESTIC
	9107084	L	11/23/83	1.4	210	46	N	1	W	18	ST. JOE RIVER & UNNAMED STREAM	LAKE & ST. JOE LAKE	IRRIGATION
	9107101	L	3/14/88	0.08	12	45	N	3	E	6	ST. JOE RIVER	COEUR D ALENE LAKE	IRRIGATION
**	9107112	L	7/2/90	0.01	3	46	N	1	W	16	ST. JOE RIVER	COEUR D ALENE LAKE	IRRIGATION
**	9107129	P	9/12/84	0.03	0	46	N	1	W	16	ST. JOE RIVER	COEUR D ALENE LAKE	IRRIGATION
**	9107134	P	7/11/85	0.4	0	45	N	3	E	10	ST. JOE RIVER	COEUR D ALENE LAKE	IRRIGATION
**	9107135	P	4/17/86	0.09	0	46	N	2	W	14	ST. JOE RIVER	COEUR D ALENE LAKE	DOMESTIC & IRRIGATION
Totals for Group				2.66	233.9								
MINIMUM STREAM FLOW APPLICATION													
	9107122	A	6/15/92	941	0	45	N	3	E	13	ST. JOE RIVER	COEUR D ALENE LAKE	MINIMUM INSTREAM FLOW
	9107122	A	6/15/92	941	0	46	N	2	W	23	ST. JOE RIVER	COEUR D ALENE LAKE	MINIMUM INSTREAM FLOW
	9107122	A	6/15/92	941	0	45	N	3	E	13	ST. JOE RIVER	COEUR D ALENE LAKE	MINIMUM INSTREAM FLOW
	9107122	A	6/15/92	941	0	46	N	2	W	23	ST. JOE RIVER	COEUR D ALENE LAKE	MINIMUM INSTREAM FLOW

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FISHERY RESEARCH



Department of Water Resources

APPLICANT'S

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7-17-97

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Study Completion Report, Project F-73-R-10

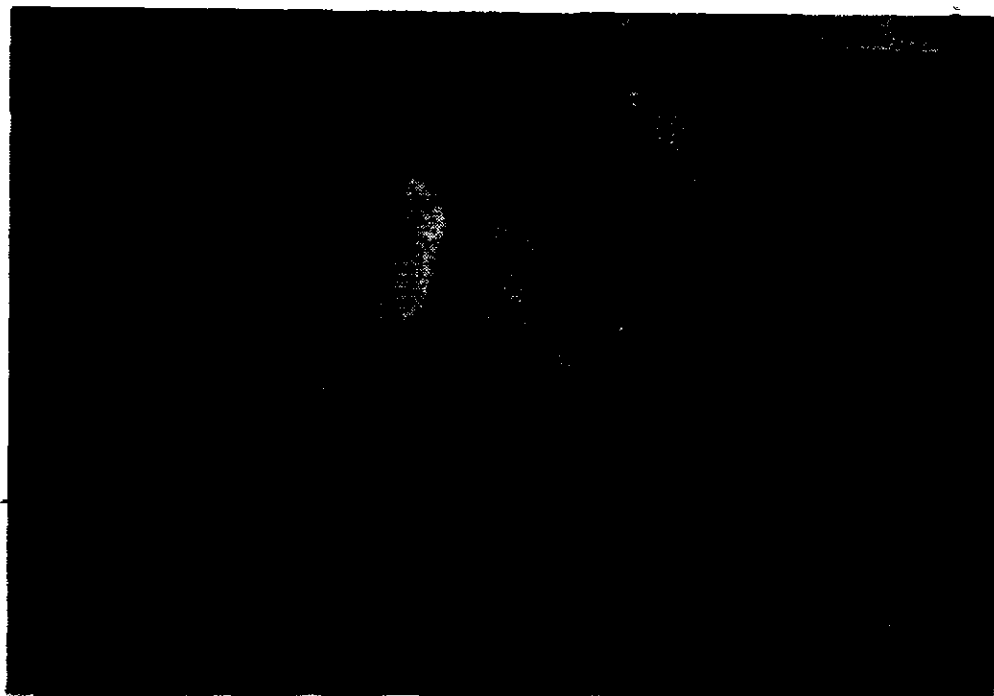
Subproject IV: RIVERS AND STREAMS INVESTIGATIONS

Study IV: North Idaho Streams Fishery Research

Job 1: Fish Population Inventory

Job 2: Fish Habitat Description

Job 3: Fish Species and Stock Evaluation



By

Kimberly A. Apperson, Fishery Research Biologist

Michael Mahan, Fishery Technician

William D. Horton, Fishery Staff Biologist

And

St. Joe and St. Maries Rivers Limnology Update - 1987

By

C. Michael Falter, Professor, Fishery Resources
MICROFILMED University of Idaho, Moscow

APR 8 9 1988

July 1988

We recommend that harvest be monitored during the first four weeks of the fishing season following regulation changes. Additional monitoring should be done on the Coeur d'Alene River to determine distribution of harvest throughout the season.

We recommend that this report be used as a database to monitor trout population responses to changes in management and habitat.

METHODS

Creel Survey

Unstratified creel surveys were conducted during the opening weekends and regular weekends in June of 1984 and 1985 on the Coeur d'Alene River from Dudley upstream to Shoshone Creek and on the North Fork Coeur d'Alene River upstream to Laverne Creek (Figure 1). Number of anglers, residency, hours fished, species harvested and/or released, and total lengths of creeled fish were recorded. Catch rates were calculated by dividing the total catch by the total number of hours. The surveys targeted high-use days to collect baseline information on the fishery and to recover tags from fish tagged during 1984 and the spring of 1985.

A random stratified creel survey was conducted on the Coeur d'Alene River from the confluence of North Fork Coeur d'Alene River downstream to Dudley (Figure 1) between May 24 and June 30, 1986. The survey area was divided into three sections to provide comparative information. The most upstream section (1) was between the North Fork Coeur d'Alene River and the South Fork Coeur d'Alene River. Section 2 was from the South Fork downstream to Interstate 90 bridge, and Section 3 was from the bridge downstream to Dudley.

The survey included two 14-day intervals and one 10-day interval. Six weekend days and six weekdays were randomly selected for the survey. Memorial Day was surveyed and considered an additional weekend day. Three counts, consisting of a four-hour time period per count, were made on each survey day. A count consisted of counting anglers throughout all three sections then conducting angler interviews until the four-hour time period ended. Number of anglers, residency, hours fished, species harvested and/or released, and total lengths of fish were recorded. Anglers who were interviewed during the Coeur d'Alene River stratified creel survey were asked to participate in an opinion survey. Anglers were asked whether they would support or oppose management options to improve cutthroat trout fishing. Specific questions asked were: (1) would you support or oppose a reduction in the bag limit for cutthroat trout?, (2) would you support or oppose the closure of tributaries that are important for cutthroat trout production?, (3) would you support or oppose a minimum size restriction on harvested cutthroat trout?, (4) would you support or oppose a shorter fishing season?, and (5) would you support or oppose a catch-and-release regulation?

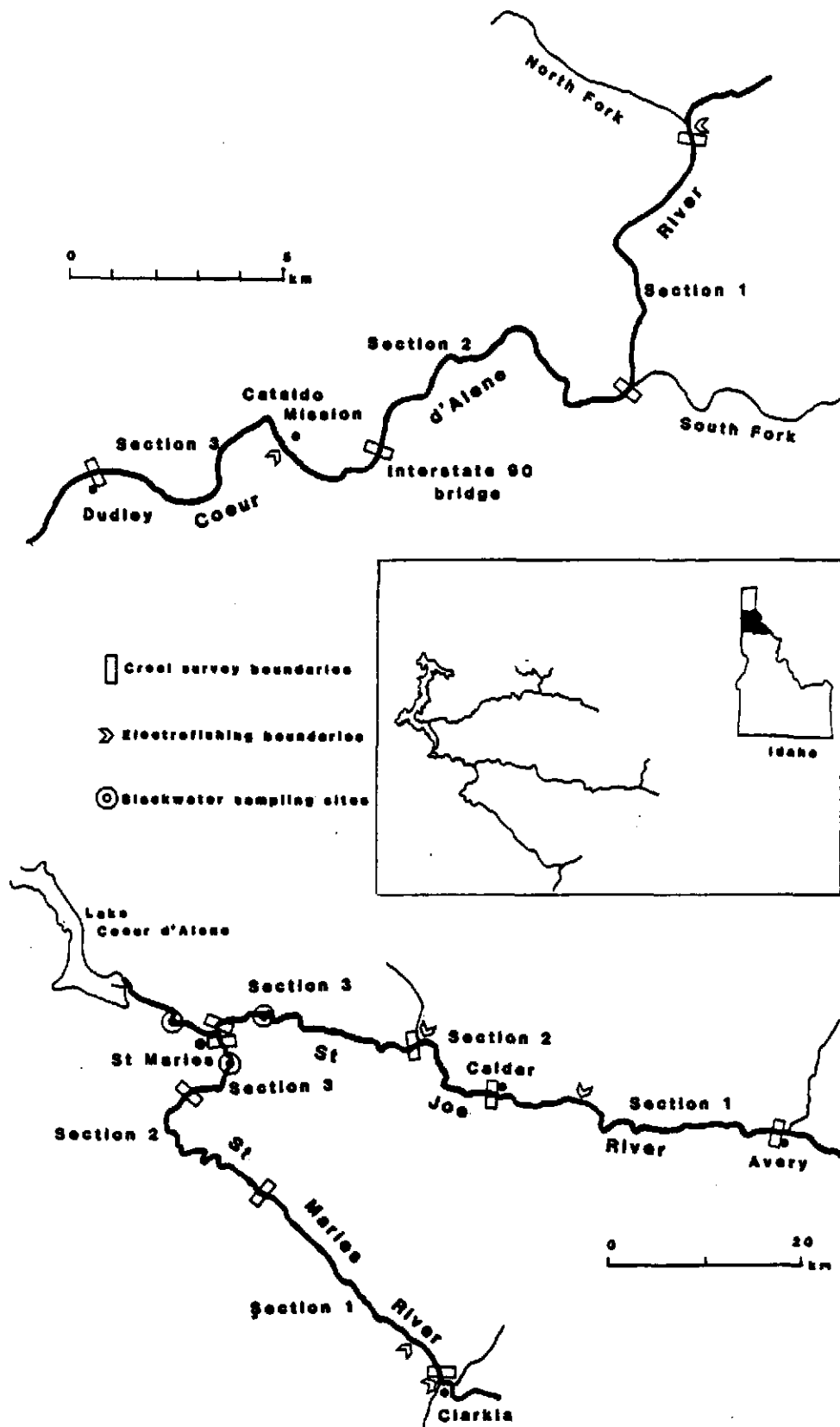


Figure 1. Location of creel survey and fish sampling areas in the Coeur d'Alene, St. Joe, and St. Maries rivers, 1984 through 1987.

A random stratified creel survey was conducted on the St. Joe River from Avery downstream to the town of St. Maries (Figure 1) and on the St. Maries River from the Merry Creek confluence downstream to St. Maries (Figure 1) between May 23 and June 26, 1987. Both rivers were divided into three sections to provide information comparable with past data. The most upstream section (1) in the St. Joe River was from Avery downstream to Calder. Section 2 was from Calder downstream to Falls Creek, and Section 3 was from Falls Creek downstream to St. Maries. Section 1 in the St. Maries River was from the confluence of Merry Creek downstream to Mashburn. Section 2 was from Mashburn downstream to Lotus crossing, and Section 3 was from Lotus crossing downstream to the St. Joe River.

The survey included two 14-day and one 7-day intervals. Six weekend days and five weekdays were randomly selected for the survey. Two creel clerks conducted the survey, with one clerk per river. A minimum of two counts, four hours per count, were made on each survey day. Limited manpower and extensive travel within the surveyed sections restricted the number of counts that could be made during a survey day. A count consisted of counting anglers throughout all three river sections followed by angler interviews until the four-hour time period ended. Number of anglers, residency, hours fished, species harvested and/or released, and total lengths of fish were recorded.

Methodology outlined by Thurow (1981) for estimating angler effort and harvest by river section and angler type (shore or boat) was used for the random stratified creel surveys, as follows:

$$X \text{ WD (H)} + X_i \text{ WE (H)} = \text{angler effort (hours)} \quad (1)$$

Where,

- X = mean number of anglers counted for all weekdays during an interval,
- X_i = mean number of anglers counted for all weekend days during an interval,
- WD = total weekdays per interval,
- WE = total weekend days per interval, and
- (H) = mean daylight hours per interval.

Angler effort (h) x c/f by interval = minimum harvest estimate/interval (2)

Where,

c/f = fish/hour.

Fish Distribution, Abundance, and Movement

All game fish captured by selected gear types in the Coeur d'Alene, St. Joe, and St. Maries river drainages, including Lake Coeur d'Alene, were anesthetized with Tricaine Methanesulfonate (MS-222), measured to the nearest millimeter total length, and released. Most cutthroat, natural rainbow, and bull trout Salvelinus confluentus that were captured were tagged to provide information on movement and exploitation. Trout between 100 mm and 250 mm were tagged with Floy FTF-69 fingerling tags, and trout longer than 250 mm were tagged with monel metal or aluminum jaw tags. A proportion of the jaw tags were five dollar reward tags and were used to estimate noncompliance of voluntary tag returns (Rieman 1984). In 1984 and 1985, Floy FTF-69 fingerling tags were sewn through the back near the anterior edge of the dorsal fin; whereas in 1986 and 1987, the tags were sewn through the back near the posterior edge of the dorsal fin. All tagged trout were adipose clipped. Surveyed tributaries are shown in Figures 2, 3, and 4.

Gillnetting

Experimental gill nets were fished overnight in slackwater areas of the St. Maries and St. Joe rivers during 1987 to determine fish use. Gill nets were fished in the lower St. Maries River on May 19, July 22, and August 28, and in the St. Joe River on those dates and on December 11. One floating and one sinking gill net were fished overnight at each location on each date (Figure 1).

Tributary Trapping

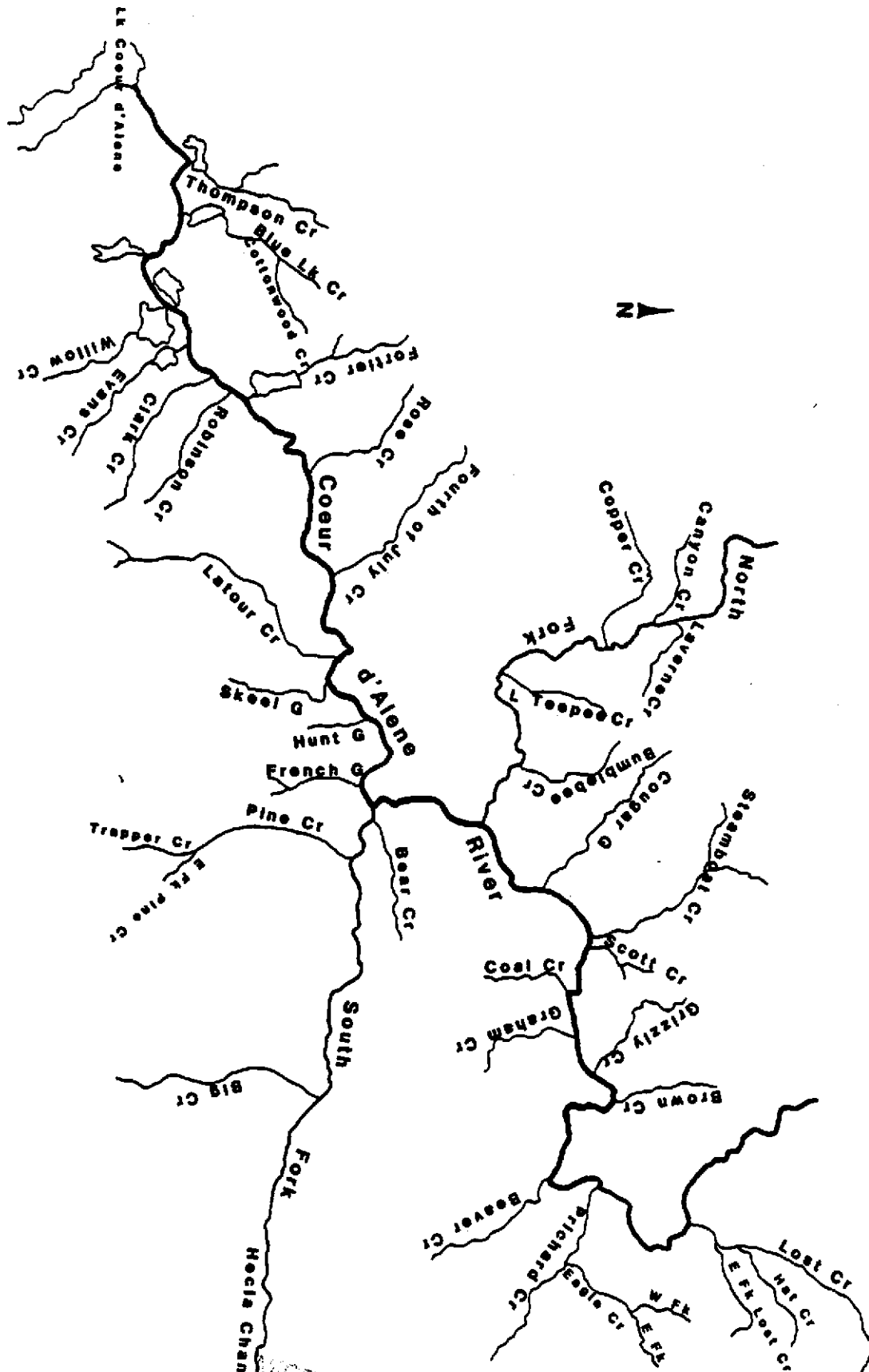
Selected tributaries to the lower Coeur d'Alene River were trapped for migrating trout from March 19 through June 3, 1985 (Table 1). Tributaries had to be small enough to be safely waded during spring runoff, accessible by vehicle for transportation of materials, and convenient for daily checks.

Weirs, constructed of galvanized conduit pickets supported by angle iron frames, were used to block migrating trout in most streams. In some streams we used a more portable system, with hardware cloth weir panels similar to those used in British Columbia streams by Conlin and Jutty (1979). Metal t-type fence posts (2 m long) were driven into the substrate downstream from the frames or panels to hold them in position.

Migrating trout passed through a pipe and were captured in either a circular metal box (Mauser 1986) (most commonly used) or a trap box constructed of plywood (65 cm x 76 cm x 61 cm outside diameter). The plywood trap box consisted of two compartments separated by a velocity reduction baffle plate, with two exit holes per compartment covered with 6.4 mm square-mesh hardware cloth. Traps were operated to effectively capture upstream and downstream migrating trout and were checked twice daily by Department personnel.

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Figure 2. Map of surveyed tributaries to the Coeur d'Alene River, 1984 through 1986.



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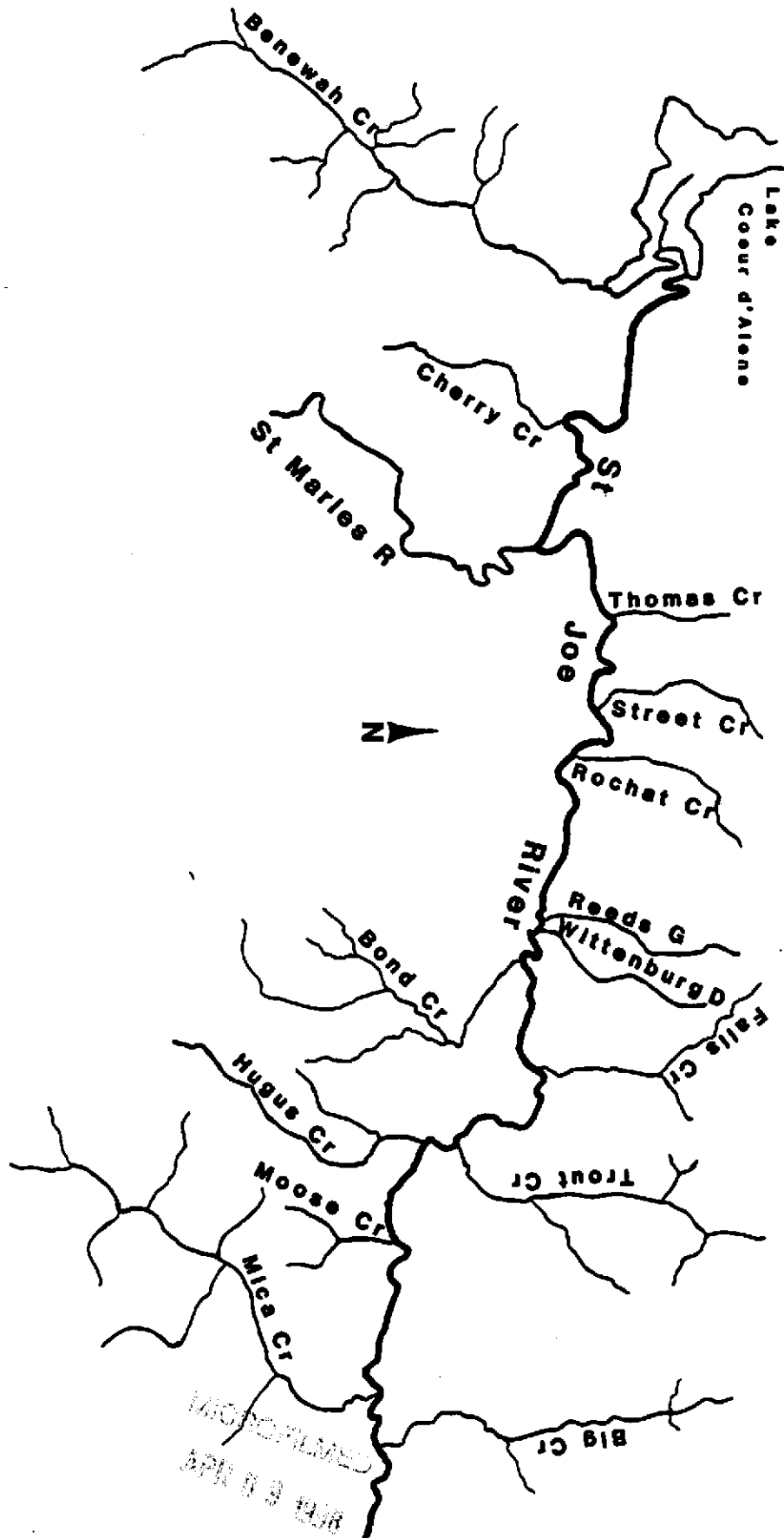


Figure 3. Map of surveyed tributaries to the St. Joe River, 1986 through 1987.

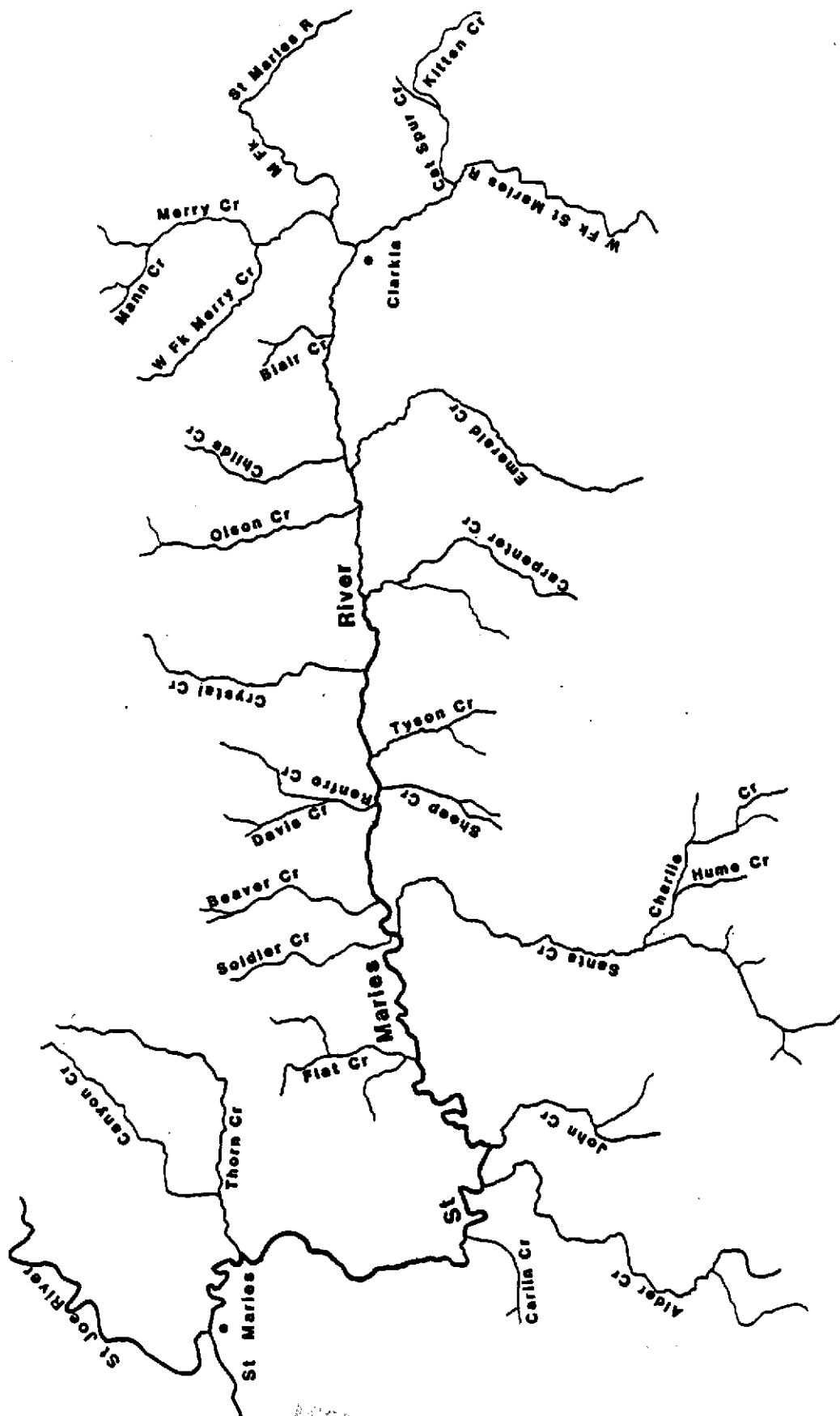


Figure 4. Map of surveyed tributaries to the St. Maries River, 1986 through 1987.

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Table 1. Operation of migratory fish traps in tributaries to the Coeur d'Alene River, 1985; to the St. Joe River, 1986; and to the St. Maries River, 1986 and 1987.

Drainage & stream	No. nights operated	Dates trapped
Coeur d'Alene River		
French Gulch	68	March 19-22, 25-31; April 1-2; April 9-June 3
Hunt Gulch	30	March 26-April 2; April 9-May 1
Cougar Gulch	22	April 1-2; April 26-May 1; May 22-June 3
Brown Creek	29	April 9; April 23-May 20
Skeel Gulch	22	April 23-May 15
Scott Creek	20	May 3-23
St. Joe River		
Benewah Creek	8	April 15, 24, 30; May 7, 13, 20, 28; June 3
Cherry Creek	2	April 16, 24
Hugus Creek	2	April 9, 17
Mica Creek	2	April 17, 29
Reeds Gulch	3	April 2, 8, 15
Street Creek	2	April 2, 9
Thomas Creek	2	April 23; May 6
Trout Creek	1	April 29
Whittenburg Draw	2	April 23; May 6
St. Maries River		
Thorn Creek	8	1986 - April 8, 16, 30; May 7, 13, 20, 28; June 3
Merry Creek	8	1987 - April 15, 22; May 4, 13, 20, 27; June 4, 10
Middle Fork	8	1987 - April 15, 22; May 4, 13, 20, 27; June 4, 10
West Fork	7	1987 - April 22; May 4, 13, 20, 27; June 4, 10

Selected tributaries to the St. Joe and St. Maries rivers were trapped in the spring of 1986 and 1987 to evaluate their use by migratory trout (Table 1). Fyke nets, in conjunction with the hardware cloth weir panels used in the Coeur d'Alene River drainage, were used so more streams could be sampled with less effort and greater mobility. Fyke nets were 4 m long reduced to a cod end diameter of 25 cm and connected to a 64 cm x 126 cm rectangle made of 2.5 cm square metal tubing. Nets were attached to 21.5 cm diameter, 2.3 m long ABS sewer pipe with a hose clamp. The pipe was connected to a plywood trap box with the same design used in the Coeur d'Alene River drainage.

Generally, the entire stream channel was fished with the trap operated to capture downstream migrating trout. Traps were fished from late afternoon through the following morning and checked at midnight and just prior to removal.

Electrofishing

Main rivers. A 5.0 m Alumaweld drift boat equipped with a pair of shocking booms, floodlights, a Coffelt variable voltage pulsator (Model VVP-2C, 2,000 watt), a Kawasaki Model 2900 generator, and a live well was used to electrofish the main rivers. The Coeur d'Alene River was electrofished from the confluence of the North Fork Coeur d'Alene River downstream to Cataldo Mission (Figure 1). One night was spent electrofishing from the confluence of the North Fork downstream to the confluence of the South Fork, and five nights were spent electrofishing from the South Fork downstream to Cataldo Mission. The St. Joe River was electrofished from Huckleberry Campground downstream to Falls Creek (Figure 1). Two nights were spent electrofishing from Huckleberry Campground to Moose Creek, and two nights were spent electrofishing from Moose Creek to Falls Creek. Two days were spent electrofishing the St. Maries River from Clarkia downstream to the Metropolitan Bridge (Figure 1). The river's relatively small size and overhanging vegetation required this section to be electrofished during the day.

Tributaries. A Smith-Root Model 11A battery-powered backpack unit was used to electrofish tributaries. Several reaches of each tributary were electrofished, when possible, to provide adequate representation of species composition, sizes, and length frequencies. We subjectively chose electrofishing sites, attempting to find the highest densities of fish. An effort was made to tag 50 cutthroat trout per tributary to provide movement information.

Slackwater. Three stations in the St. Joe River and one in the St. Maries River were sampled using a 4.3 m electrofishing boat equipped similar to the drift boat (Figure 1). Stations coincided with gillnetting locations, and sampling was done during the latter portions of June, July, and August.

Snorkeling

Estimates of relative salmonid abundance were made in the Coeur d'Alene, St. Joe, and St. Maries river tributaries using underwater observation techniques similar to those described by Rankel (1971), Thurow (1976), Johnson (1977), and Pratt (1984). Pool-riffle-run complexes were snorkeled when available, but at least one pool and a riffle or run were snorkeled per transect. Transects were a minimum of 30 m long. Stream widths were measured in several locations of the transect, averaged, and then multiplied by transect length to calculate total surface area. Snorkeling transects were representative of the stream habitat in the area. Fish densities were calculated and expressed as fish/100 m². Snorkeling was conducted in late summer and early fall at low stream discharge when minimal movement of cutthroat trout occurs (Rankel 1971).

Lake Merwin Trap

A Lake Merwin trap was fished in the Coeur d'Alene River channel immediately north of Harrison between June 24 and July 17, 1984 and under the Bull Run Lake Bridge (32 km upstream from the confluence with Lake Coeur d'Alene) from March 28 through July 31, 1985. In 1984, the trap was installed facing upstream to catch downstream migrating fish. In 1985, the trap was faced downstream to capture upstream migrating fish. The trap was fished for seven consecutive days from March 28 until water levels rose nearly 3 m and increased velocity and associated debris made it impossible to operate the trap. The trap was repositioned on July 9 facing upstream and fished through July 31.

The trap was originally designed to fish lakes and was adapted to fish the river for capturing adfluvial cutthroat trout (Horton 1985). The trap was modified by hanging weights from the corners of the pot and heart to hold the sidewalls in place against the current. One 30 m lead was used to direct fish into the trap with extensions attached to the wings. During both years, only part of the river channel was fished to allow passage of boat traffic.

Purse Seining

Lake Coeur d'Alene was sampled with purse seine gear from November 4 to November 7, 1986 in an attempt to recapture cutthroat trout tagged in the Coeur d'Alene, St. Joe, and St. Maries river drainages and to tag cutthroat trout in the lake. Locations were randomly selected throughout the lake, but most sampling was conducted in the south end.

Cutthroat Trout Growth

Growth was analyzed for cutthroat trout from the Coeur d'Alene River, Benewah Creek (St. Joe River tributary), and Thorn Creek (St. Maries River tributary). The latter two samples were combined due to similarities in growth rates.

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Table 2. Estimated effort (h), harvest (number of fish), and catch rates (fish/h) by river section and interval for boat and shore anglers from the Coeur d'Alene River creel survey, May 24 through June 30, 1986.

Date	Interval	Effort									Total
		Section 1			Section 2			Section 3			
		Boat	Shore	Combined	Boat	Shore	Combined	Boat	Shore	Combined	
5/24-6/06	1	241	1,390	1,631	98	969	1,067	1,782	1,510	3,292	5,990
6/07-6/20	2	111	1,060	1,171	142	648	790	772	678	1,450	3,411
6/21-6/30	3	149	310	459	43	331	374	54	374	428	1,261
Total		501	2,760	3,261	283	1,948	2,231	2,608	2,562	5,170	10,662

		Harvest							Total
		Cutthroat trout	CTT-RBT hybrid trout	Natural rainbow trout	Hatchery rainbow trout	Brook trout	Kokanee salmon	Bull trout	
Section 1	boat	53	5	10	51	0	0	0	119
	shore	283	28	48	306	0	0	0	665
Section 2	boat	18	10	0	0	9	78	0	115
	shore	282	55	0	0	26	202	0	565
Section 3	boat	924	18	11	11	18	214	0	1,196
	shore	207	15	32	32	15	251	0	552
Total	boat	995	33	21	62	27	292	0	1,430
	shore	772	98	80	338	41	453	0	1,782

Time period		Catch rate (harvest rate)							
		5/24-6/06		6/07-6/20		6/21-6/30		Total of	
		Interval 1		Interval 2		Interval 3		intervals	
Section 1	trout ^a	0.43	(0.27)	0.23	(0.18)	0.30	(0.25)	0.34	(0.23)
	cutthroat	0.26	(0.14)	0.10	(0.07)	0.15	(0.10)	0.18	(0.11)
Section 2	trout	0.22	(0.12)	0.29	(0.27)	0.13	(0.09)	0.23	(0.17)
	cutthroat	0.22	(0.12)	0.26	(0.24)	0.04	(0.04)	0.21	(0.15)
Section 3	trout	0.36	(0.33)	0.12	(0.12)	0.17	(0.17)	0.29	(0.25)
	cutthroat	0.35	(0.32)	0.12	(0.12)	0.06	(0.06)	0.28	(0.27)
Total of sections	trout	0.35	(0.29)	0.19	(0.17)	0.20	(0.17)	0.29	(0.24)
	cutthroat	0.32	(0.25)	0.14	(0.13)	0.08	(0.07)	0.25	(0.20)

^aTrout includes cutthroat, cutthroat-rainbow hybrid, rainbow, brook, and bull trout.

Hybrids of cutthroat and rainbow trout were caught in all three sections in relatively low numbers. Kokanee salmon Oncorhynchus nerka was the second most abundant species harvested in sections 2 and 3. Brook trout were caught in sections 2 and 3 and represented a small portion of the total harvest. Bullhead Ictalurus sp. and yellow perch Perca flavescens were caught within the slackwater portion of Section 3, but estimates were not calculated because they were a minor part of the total harvest. No bull trout were harvested during the survey. Total trout harvest during the survey was 2,467 trout.

Cutthroat trout harvest rates were highest in Section 3, followed by sections 2 and 1, respectively (Table 2). Section 3 harvest rates decreased dramatically during the survey. Harvest rates for cutthroat trout in Section 1 decreased slightly during the survey, but trout harvest rates remained relatively constant. Section 2 harvest rates increased during Interval 2, but plummeted during Interval 3. A comparison of catch rates versus harvest rates showed most trout caught in Section 3 were harvested; conversely, 60% of the trout caught in Section 1 were released.

Harvested cutthroat trout ranged from 160 mm to 400 mm, with a mean length of 317 mm (Figure 5). Of the cutthroat trout harvested, 22% were larger than 350 mm. The two largest fish measured during the survey were a 465 mm brook trout and a 446 mm cutthroat-rainbow hybrid trout. Relative species abundance in the overall harvest for all sections was: 55% cutthroat trout, 15% rainbow trout, 4% cutthroat-rainbow hybrid trout, 2% brook trout, and 23% kokanee salmon.

St. Joe River: Stratified Creel Survey

Estimated angler effort for all sections of the St. Joe River during the survey was 7,511 h. Section 1 (Figure 1) received the most angling effort followed by sections 3 and 2, respectively (Table 3). Although considerably shorter than the other river sections, Section 2 supported angler effort comparable to Section 3. Shore effort in Section 3 increased during the survey. Boat angler effort represented a small portion (9%) of the total effort in sections 1 and 2; therefore, boat and shore angler estimates were combined.

Total harvest estimated for cutthroat trout for all river sections was 1,673 fish, of which 1,311 (78%) were harvested during Interval 1 (Table 3; Appendix D). Distribution of cutthroat trout harvest was relatively even among river sections. In Section 3, 42% of the cutthroat trout harvest occurred in the slackwater portion. Cutthroat-rainbow trout hybrids were harvested in sections 1 and 2 in relatively low numbers. Rainbow trout were harvested in all sections with 80% of the harvest occurring in Section 1. Bull trout were harvested in all three river sections. Bullhead, yellow perch, and pumpkinseeds Lepomis gibbosus were harvested in the slackwater portion of Section 3 in small numbers. For the duration of the survey, total estimated trout harvest for all sections was 2,496 fish.

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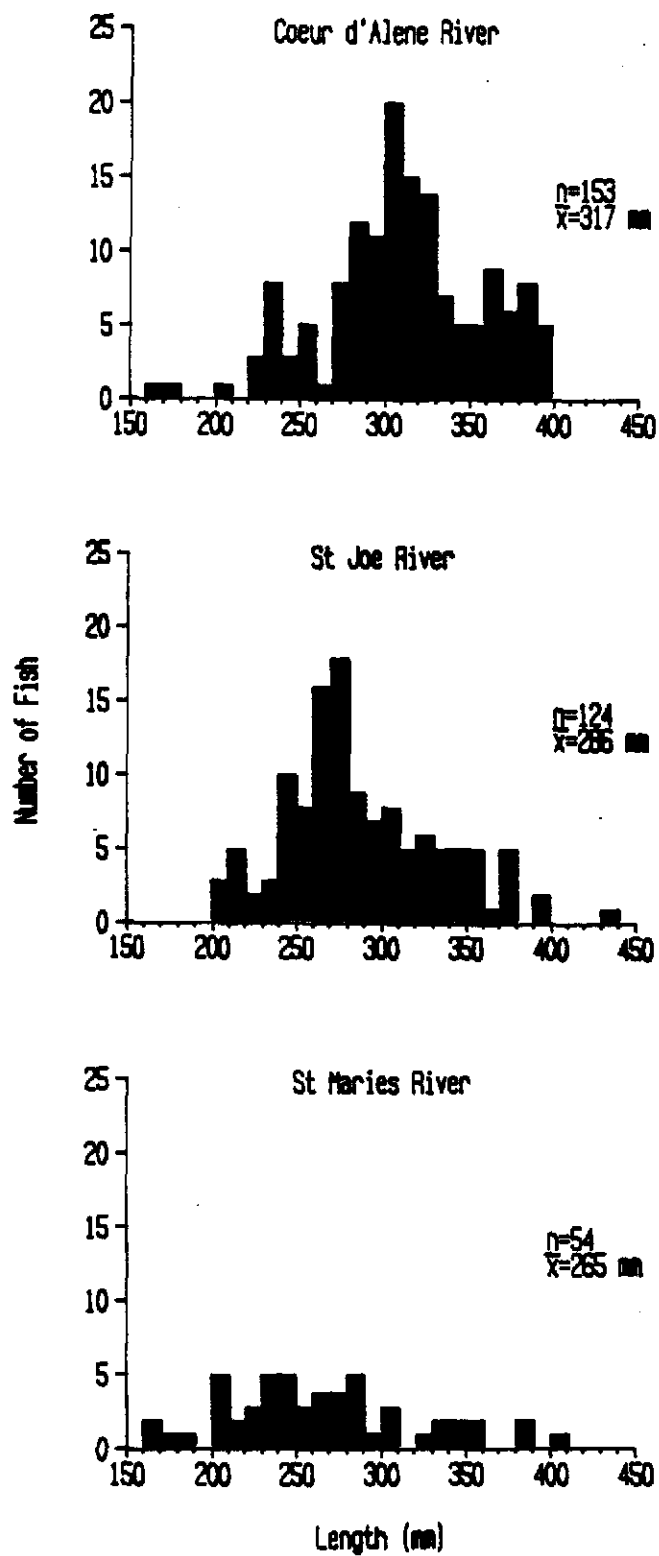


Figure 5. Length frequencies of cutthroat trout harvested by anglers from the lower Coeur d'Alene River (1986), the lower St. Joe River (1987), and the St. Maries River (1987).

Table 3. Estimated effort (h), harvest (number of fish), and catch rates (fish/h) by river section and interval for boat and shore anglers during the St. Joe River creel survey, May 23 through June 26, 1987.

Date	Interval	Effort									Total
		Section 1			Section 2			Section 3			
		Boat ^a	Shore	Combined	Boat ^a	Shore	Combined	Boat	Shore	Combined	
5/23-6/05	1	--	1,684	1,684	--	1,178	1,178	567	332	899	3,761
6/06-6/19	2	--	1,280	1,280	--	363	363	179	424	603	2,246
6/20-6/26	3	--	<u>504</u>	<u>504</u>	--	<u>232</u>	<u>232</u>	<u>32</u>	<u>736</u>	<u>768</u>	<u>1,504</u>
Total		--	3,468	3,468	--	1,773	1,773	778	1,492	2,270	7,511

		Harvest							Total
		Cutthroat trout	CTT-RBT hybrid trout	Natural rainbow trout	Hatchery rainbow trout	Brook trout	Kokanee salmon	Bull trout	
Section 1 ^a	boat ^a	--	--	--	--	--	--	--	--
	shore	677	77	171	344	11	11	28	1,319
Section 2 ^a	boat ^a	--	--	--	--	--	--	--	--
	shore	445	35	61	44	0	5	13	603
Section 3	boat	240	0	0	0	0	19	19	278
	shore	311	0	0	20	0	0	0	331
Total	boat	240	0	0	0	0	19	19	278
	shore	1,433	112	232	408	11	16	41	2,253

Time period		Catch rate (harvest rate)							
		5/23-6/05		6/06-6/19		6/20-6/26		Total of intervals	
		Interval 1		Interval 2		Interval 3			
Section 1	trout ^b	0.57	(0.44)	0.29	(0.25)	0.38	(0.38)	0.44	(0.38)
	cutthroat	0.36	(0.28)	0.13	(0.09)	0.17	(0.17)	0.25	(0.19)
Section 2	trout	0.49	(0.47)	0.10	(0.06)	0.13	(0.13)	0.35	(0.32)
	cutthroat	0.36	(0.34)	0.09	(0.04)	0.13	(0.13)	0.27	(0.24)
Section 3	trout	0.77	(0.54)	0.10	(0.10)	0.08	(0.08)	0.31	(0.23)
	cutthroat	0.74	(0.51)	0.08	(0.08)	0.08	(0.08)	0.29	(0.22)
Total of sections	trout	0.56	(0.48)	0.20	(0.17)	0.20	(0.20)	0.39	(0.33)
	cutthroat	0.40	(0.33)	0.11	(0.07)	0.12	(0.12)	0.26	(0.21)

^aBoat and shore data combined.

^bTrout includes cutthroat, cutthroat-rainbow hybrid, rainbow, brook, and bull trout.

Harvest rates for cutthroat trout were similar among river sections (Table 3). Harvest rates declined in all river sections after Interval 1, except for the consistent harvest of stocked rainbow trout in Section 1. During Interval 1, catch rates were noticeably higher than harvest rates, whereas catch and harvest rates were almost the same during intervals 2 and 3. Weekly catch rates of cutthroat trout decreased and catch rates of northern squawfish increased as the season progressed (Figure 6).

Harvested cutthroat trout ranged from 200 mm to 430 mm, with a mean length of 286 mm (Figure 5). Of the cutthroat trout harvested, 11% were longer than 350 mm. The largest fish measured during the survey was a 720 mm bull trout. Relative species abundance of the harvest for all sections was: 66% cutthroat trout, 25% rainbow trout, 4% cutthroat-rainbow hybrid trout, 0.4% brook trout, 2% bull trout, and 1% kokanee salmon.

St. Maries River: Stratified Creel Survey

Angler effort estimated for all sections during the survey was 2,599 h (Table 4). Section 1 (Figure 1) received 74% of the total angler effort. Sections 1 and 2 received the most angler effort during Interval 2. Boat anglers represented a small portion (<1%) of the total anglers in sections 1 and 2 and therefore were combined with shore angler effort.

Section 1 accounted for 92% of the total trout harvest (Table 4). Cutthroat trout comprised 22% and rainbow trout 77% of the total harvest in Section 1. Cutthroat trout were only harvested during intervals 1 and 2 (Appendix E). Cutthroat-rainbow trout hybrids were harvested in sections 1 and 2 in relatively low numbers. Bull trout were only harvested in Section 1. Bullhead was the most abundant game species caught in Section 3, followed by pumpkinseeds, yellow perch, cutthroat trout, and largemouth bass Micropterus salmoides. Total trout harvest for all sections during the survey was 1,633 trout.

Trout harvest rate was highest in Section 1 followed by sections 2 and 3, respectively (Table 4). Cutthroat trout harvest rates declined to zero in all sections by the end of the survey. A comparison of catch rates versus harvest rates showed that over 30% of the trout caught in sections 1 and 2 were released. Trout catch rate in Section 1 remained above 1.0 fish/h throughout the survey.

Harvested cutthroat trout ranged from 160 mm to 400 mm, with a mean length of 265 mm (Figure 5). Of those cutthroat trout harvested, 9% were longer than 350 mm. Relative species abundance in the harvest for all sections was: 27% cutthroat trout, 71% rainbow trout, 1% cutthroat-rainbow hybrid trout, and 1% bull trout. Weekly catch rates for northern squawfish and cutthroat trout paralleled each other throughout the survey (Figure 6).

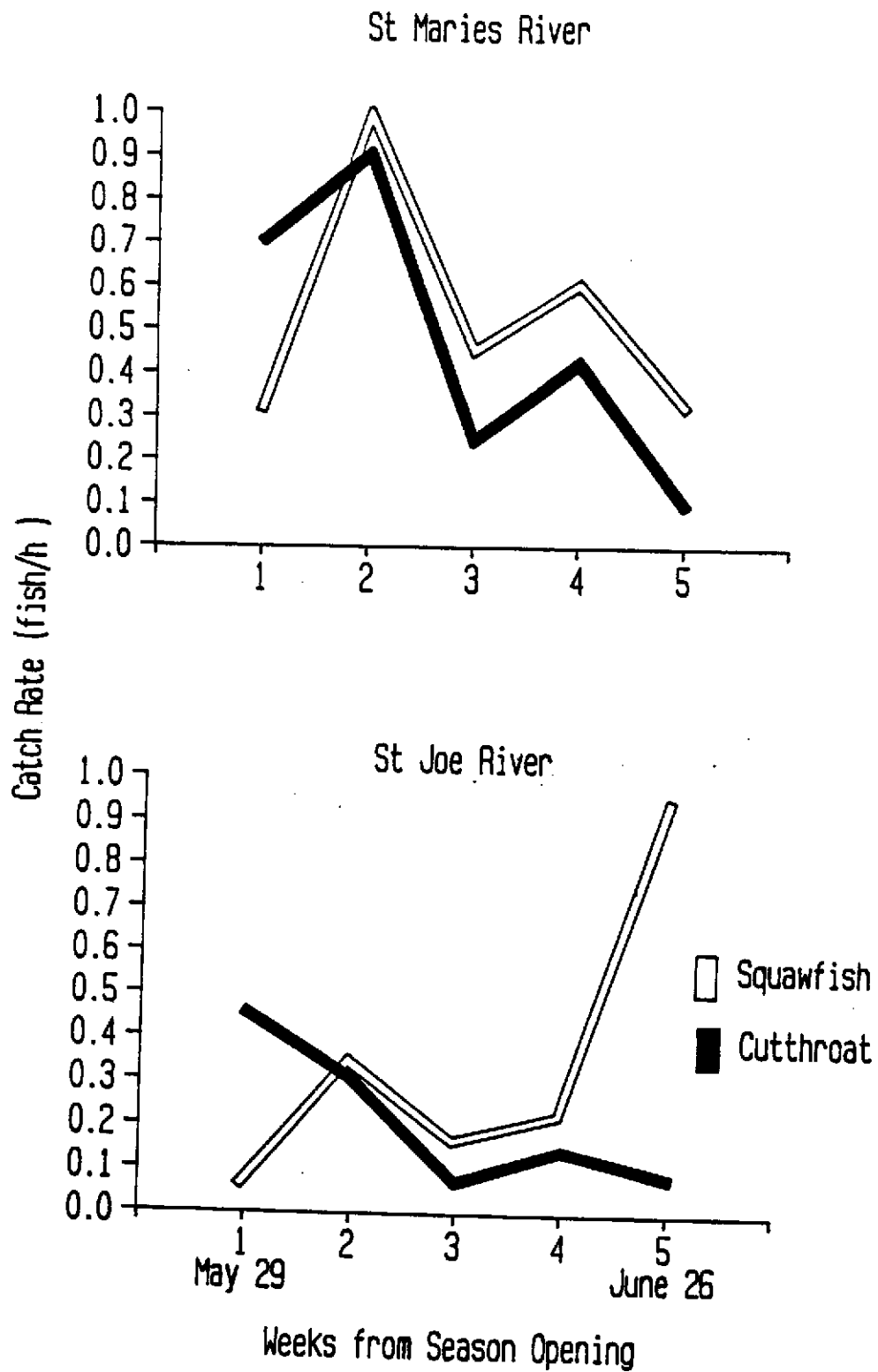


Figure 6. Weekly angler catch rates of northern squawfish and cutthroat in the St. Joe and St. Maries rivers, 1987.

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Table 4. Estimated effort (h), harvest (number of fish), and catch rates (fish/h) by river section and interval for boat and shore anglers during the St. Maries River creel survey, May 23 through June 26, 1987.

Date	Interval	Effort									Total
		Section 1			Section 2			Section 3			
		Boat	Shore	Combined	Boat	Shore	Combined	Boat	Shore	Combined	
5/23-6/05	1	--	600	600	--	112	112	16	131	147	859
6/06-6/19	2	--	976	976	--	154	154	32	90	122	1,252
6/20-6/26	3	--	360	360	--	32	32	0	96	96	488
Total		--	1,936	1,936	--	298	298	48	317	365	2,599

		Harvest							Total
		Cutthroat trout	CTT-RBT hybrid trout	Natural rainbow trout	Hatchery rainbow trout	Brook trout	Kokanee salmon	Bull trout	
Section 1 ^a	boat	--	--	--	--	--	--	--	--
	shore	327	12	12	1,146	0	0	12	1,509
Section 2 ^a	boat	--	--	--	--	--	--	--	--
	shore	98	2	0	2	0	0	0	102
Section 3	boat	0	0	0	0	0	0	0	0
	shore	22	0	0	0	0	0	0	22
Total	boat	0	0	0	0	0	0	0	0
	shore	447	14	12	1,148	0	0	12	1,633

Time period		Catch rate (harvest rate)					
		5/23-6/05 Interval 1	6/06-6/19 Interval 2	6/20-6/26 Interval 3	Total of intervals		
Section 1	trout ^b	1.16 (0.64)	1.12 (0.79)	1.07 (0.98)	1.13	(0.78)	
	cutthroat	0.76 (0.30)	0.26 (0.15)	0.03 (0)	0.35	(0.16)	
Section 2	trout	0.91 (0.74)	0.71 (0.13)	0.33 (0)	0.81	(0.54)	
	cutthroat	0.88 (0.70)	0.58 (0.13)	0.33 (0)	0.76	(0.52)	
Section 3	trout	0.17 (0.17)	0 (0)	0 (0)	0.08	(0.08)	
	cutthroat	0.17 (0.17)	0 (0)	0 (0)	0.08	(0.08)	
Total of sections	trout	0.89 (0.61)	1.02 (0.68)	0.77 (0.60)	0.92	(0.63)	
	cutthroat	0.72 (0.46)	0.28 (0.14)	0.08 (0)	0.42	(0.24)	

^aBoat and shore data combined.

^bTrout includes cutthroat, cutthroat-rainbow hybrid, rainbow, brook, and bull trout.

Coeur d'Alene River: Angler Opinion Survey

Ninety-eight percent of the anglers interviewed supported the implementation of a drainagewide management program to improve cutthroat trout fishing. Five different restrictive regulations were developed and presented to anglers willing to participate in the questionnaire (Figure 7). Most anglers favored reducing the bag limit for cutthroat trout. Most anglers favored closing some tributaries important for cutthroat trout spawning and rearing. Anglers generally opposed a shortened fishing season for cutthroat trout or drainagewide catch-and-release regulations. Anglers were evenly split over the implementation of a minimum size restriction for cutthroat trout. The majority of the anglers interviewed were local residents.

Exploitation

Voluntary tag return noncompliance was estimated to be 72% for the Coeur d'Alene River drainage, 31% for the St. Joe River drainage, and 78% for the St. Maries River drainage.

Trout were tagged in the Coeur d'Alene River during 1985 and 1986. Four cutthroat trout were tagged in 1984, but none of those have been recovered. Estimated exploitation of all trout was 26% in 1985 and 19% in 1986. Cutthroat trout exploitation was 29% in 1985 and 33% in 1986. Few tags from the St. Joe River were returned each year of the study. Trout were tagged in the St. Maries River and tributaries during 1986 and 1987, but returns were reported in 1987 only. Accurate exploitation estimates for populations in both rivers were unreliable because of unknown natural mortality and the bias of migration. Also, trout were tagged prior to and during the fishing season, violating the assumption that all tagged fish are equally vulnerable to angling. Exploitation was probably between 25 and 50% in the St. Joe River and higher than 50% in the St. Maries River.

Fish Distribution and Abundance

Main River Sampling

Coeur d'Alene River electrofishing. Mountain whitefish Prosopium williamsoni was the dominant game fish captured in the electrofishing sample from the Coeur d'Alene River in 1986. Kokanee salmon was the next most abundant salmonid caught, appearing in both electrofished sections of the river from June through October (Figure 1; Appendix F). Cutthroat trout were the most abundant of all trout sampled, followed by brook trout, rainbow trout, and cutthroat-rainbow trout hybrids. Cutthroat trout, rainbow trout, cutthroat-rainbow trout hybrids, and mountain whitefish were caught in both sections of the river on all sampling dates. Brook trout were not found in the river between the North Fork and the South Fork.

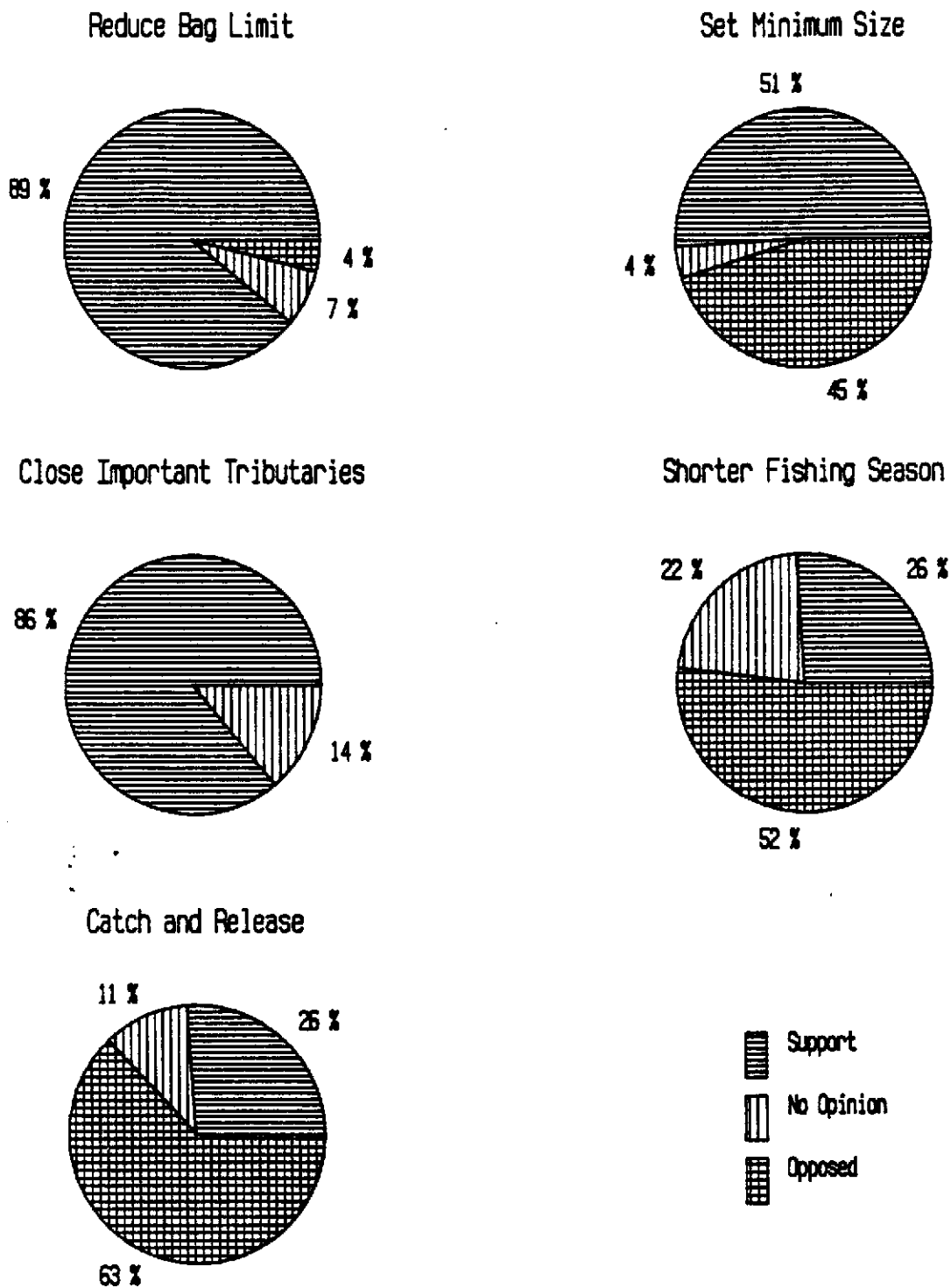


Figure 7. Support of management options by anglers interviewed during the Coeur d'Alene River creel survey, 1986.

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Cutthroat trout were evenly distributed in length, ranging from 100 to 469 mm with a mean length of 273 mm (Figure 8). Twenty-four percent of cutthroat trout sampled were larger than 350 mm. Annual mortality of 58% was estimated for cutthroat trout ages III, IV, and V from a electrofishing catch curve. Lengths of rainbow trout ranged from 100 to 529 mm, with a mean length of 262 mm. Brook trout and cutthroat-rainbow trout hybrids were generally smaller, with mean lengths of 205 and 211 mm, respectively.

Lake Merwin trapping. Bullhead and tench Tinca tinca dominated the Lake Merwin trap catch in 1984 and 1985 in the lower Coeur d'Alene River (Appendix G). Pumpkinseeds, kokanee salmon, northern squawfish, yellow perch, black crappie Pomoxis nigromaculatus, suckers Catostomus sp., largemouth bass, reidside shiners Richardsonius balteatus, and northern pike Esox lucius were caught in smaller numbers.

St. Joe River electrofishing. Mountain whitefish was the dominant game fish captured in the electrofishing sample from the St. Joe River in 1986 and was caught in both river sections on all sampling dates (Appendix F). No cutthroat trout and only three rainbow trout were caught during August sampling when water temperatures exceeded 20°C in both sections (Figure 1). Cutthroat trout and rainbow trout were caught in both sections in October. Two adult bull trout were also caught in the lower section in October. Lengths of cutthroat trout ranged from 223 to 385 mm, with a mean length of 308 mm (Figure 8). The catch of cutthroat trout was not sufficient to estimate annual mortality. Lengths of rainbow trout ranged from 213 to 429 mm, with a mean length of 319 mm.

St. Maries River electrofishing. Mountain whitefish was the dominant game fish captured in the electrofishing samples from the St. Maries River in 1987. Other salmonids captured were cutthroat trout, rainbow trout, and cutthroat-rainbow trout hybrids. Cutthroat trout lengths ranged from 137 to 345 mm, with a mean length of 230 mm (Figure 8; Appendix F). Annual mortality of 50% was estimated for cutthroat trout ages II, III, and IV from a catch curve. Rainbow trout lengths ranged from 147 to 270 mm, with a mean length of 218 mm. Lengths of cutthroat-rainbow trout hybrids ranged from 106 to 198 mm, with a mean length of 166 mm.

Suckers dominated electrofishing samples from all the rivers on all sampling dates.

Slackwater Sampling

Gillnetting. No trout were collected with gill nets from the slackwater reaches of the St. Joe and St. Maries rivers. Suckers, northern squawfish, and bullheads were the dominant species collected and comprised 36%, 30%, and 25%, respectively, of the total sample (Figure 9; Appendix H). No bullheads, however, were collected in the December sample. Mountain whitefish, yellow perch, largemouth bass, black crappie, pumpkinseeds, tench, and sculpins Cottus sp. were collected in small numbers from both rivers.

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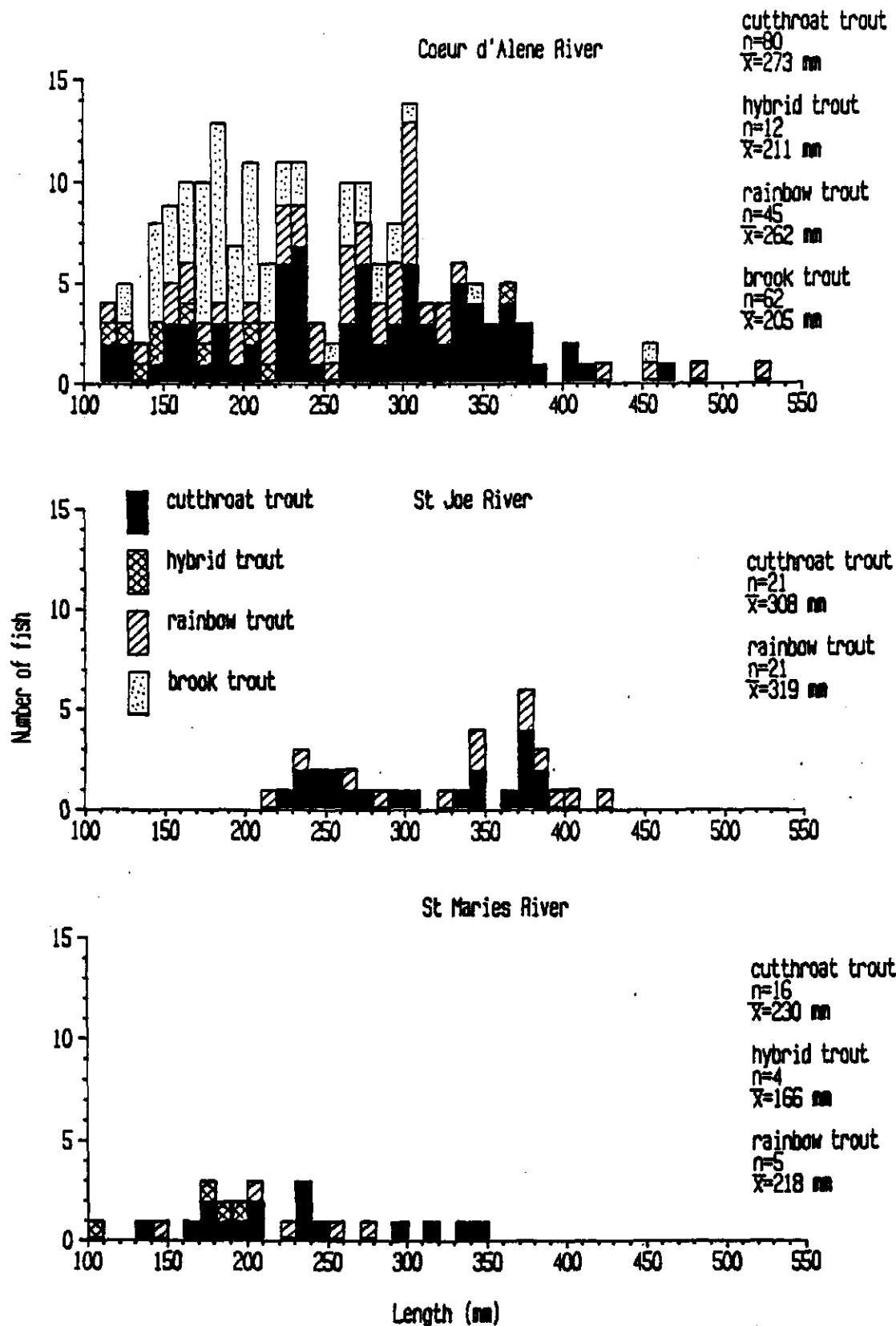
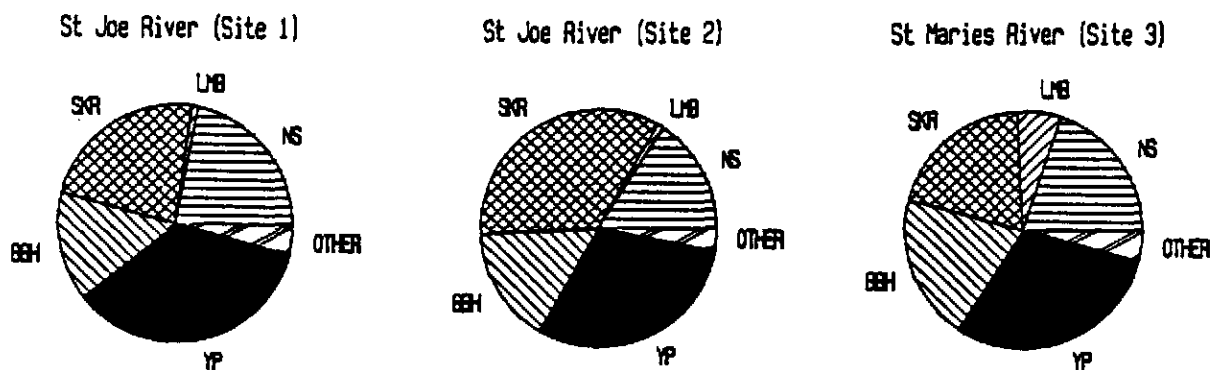


Figure 8. Length frequencies of trout sampled from the lower Coeur d'Alene, lower St. Joe, and St. Maries rivers with electrofishing gear, 1986 through 1987.

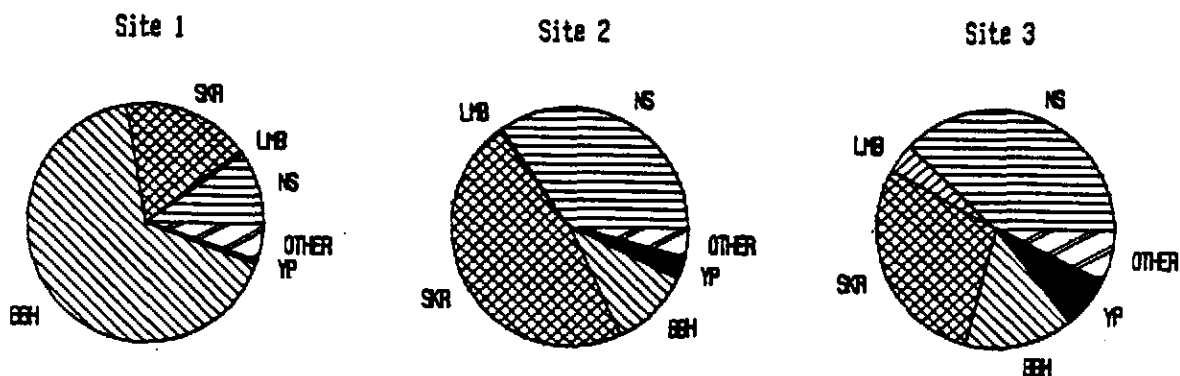
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Electrofishing (Summer)



Gillnetting (Summer)



Gillnetting (Winter)

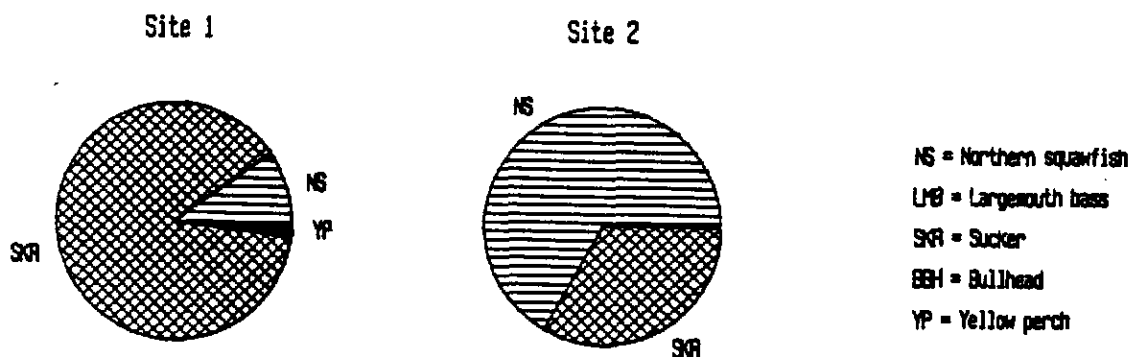


Figure 9. Relative species abundance in slackwater reaches of the St. Joe and St. Maries rivers, as determined from gill net and electrofishing samples, 1987.

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Electrofishing. Slackwater reaches of the St. Joe and St. Maries rivers were electrofished on three occasions during the summer of 1987. Suckers, northern squawfish, yellow perch, and bullheads comprised 26%, 21%, 31%, and 16%, respectively, of the total number of fish collected (Figure 9; Appendix I). Relative abundance of each species was similar for each location over all sampling dates. Species composition was the same as determined by gillnetting, with the exception of a few redbreasted shiners collected only with electrofishing gear.

Tributary Electrofishing

Table 5 shows the fish species present in tributaries to the three rivers studied. Relative abundances and length distributions of trout and char species found in the tributaries appear in Appendix J. Catch data from electrofishing efforts appear in Appendix K. Cutthroat trout were present in all surveyed tributaries to the Coeur d'Alene River except Little Tepee Creek, which had only brook trout. Fish communities in tributaries were dominated by either cutthroat or brook trout. Rainbow trout and cutthroat-rainbow trout hybrids comprised less than 25% of the salmonids in any given tributary. Small numbers of bull trout were found in Brown and Graham creeks.

Length frequencies of cutthroat trout were summarized for 31 tributaries to the Coeur d'Alene River (Figure 10). The majority of cutthroat trout found in these tributaries during summer electrofishing sampling were age I and II.

Cutthroat trout comprised 74% and rainbow trout comprised 20% of trout and char species in Hecla Channel on the South Fork Coeur d'Alene River (Figure 10; Appendix J). Brook trout, kokanee salmon, and chinook salmon *Oncorhynchus tshawytscha* were found in small numbers. Cutthroat trout were generally larger in Hecla Channel than in the tributaries.

St. Joe River tributaries were dominated by cutthroat and brook trout. Rainbow trout were found only in Mica and Trout creeks and then only at low abundance (1%) relative to other species. Low numbers of cutthroat-rainbow trout hybrids, however, were identified in five of the 12 streams surveyed. Bull trout were found in Mica, Thomas, Trout, and Cherry creeks.

Length frequencies of cutthroat trout in tributaries to the St. Joe River were summarized in two groups based on fishing regulations. Bond, Mica, Rochat, and Trout creeks have been closed to fishing since 1973; while Benewah, Cherry, Hugus, Moose, Street, and Thomas creeks were managed with general fishing regulations prior to and throughout this project. The mean length of cutthroat trout was 29 mm longer and the length distribution wider in the tributaries closed to fishing (Figure 11; Appendix J). A small proportion of age III cutthroat trout (<1%) and no age IV cutthroat trout were found in the tributaries with general fishing regulations. In the closed tributaries, 5% of cutthroat trout were age III and 1% were age IV. Proportions of age I and II cutthroat trout were similar between

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Table 5. Fish species present (+) in tributaries to the Coeur d'Alene, St. Joe, and St. Maries rivers, 1984-1987. Species presence is representative of locations sampled throughout the tributary.

Stream	Species present					
	Cutthroat trout	Rainbow trout	Hybrid RBT-CTT	Brook trout	Bull trout	Other species
Coeur d'Alene River						
Bear Cr.	+	+		+		
Blue Lake Cr.	+			+		
Cottonwood Cr.	+					
Brown Cr.	+	+	+	+	+	a
Bumblebee Cr.	+	+	+	+		
Canyon Cr.	+					a
Clark Cr.	+					
Coal Cr.	+		+			a
Copper Cr.	+	+		+		a,c
Cougar Gulch	+	+	+	+		a,b,c
Eagle Cr.	+			+		a
W. Fk. Eagle Cr.	+			+		a
E. Fk. Eagle Cr.	+			+		a
Evans Cr.	+			+		a
Fortier Cr.	+			+		a,b
Fourth of July Cr.	+			+		a,c
French Gulch	+	+	+	+		a,c
Gimlet Cr.		+		+		
Graham Cr.	+	+	+	+	+	
Grizzly Cr.	+	+	+	+		a
Hecia Channel	+	+	+	+		a,k,l
Hunt Gulch	+			+		h
Latour Cr.	+			+		a
Little Teepee Cr.				+		a
Lost Cr.	+	+	+	+		a,b
E. Fk. Lost Cr.	+	+	+	+		a
Hat Cr.	+	+	+			
N. Fk. Coeur d'Alene R.	+	+		+		a
E. Fk. Pine Cr.	+			+		a,c,d
Trapper Cr.	+			+		a
Robinson Cr.	+					
Rose Cr.	+					
Scott Cr.	+	+	+			a
Skeel Gulch	+					
Steamboat Cr.	+	+	+		+	a
Thompson Cr.	+			+		j
W. Fk. Thompson Cr.	+			+		
Willow Cr.	+					a,c

Table 9. Angler recoveries of tagged cutthroat trout within the St. Joe River drainage.

Tag no. ^a	Date & location tagged	Date & location recovered	Length	
			tagged/recovered	Movement
JT J0926	06-02-86 River @ Bond Cr.	06-11-87 River @ Hugus Cr.	257/--	11 km upstream
REW 145	10-23-86 River @ Big Eddy	08-16-87 River @ Bluff Cr.	234/279	64 km upstream
FT-G 497	07-10-86 Cherry Cr.	06-12-87 Cherry Cr.	150/152	No movement
JT J0935	10-23-86 River @ Falls Cr.	06-24-87 Hoyt Flat	260/267	24 km upstream
JT J0909	10-06-86 River @ Simmons Cr.	06-17-87 River @ Avery	233/305	42 km downstream
REW 144	10-24-86 River @ Calder	07-04-87 River @ Big Cr.	297/--	No movement
JT F0003	04-15-86 Benewah Cr.	05-28-86 Thoroughfare between Chatcolet & Coeur d'Alene lakes	345/345	19 km downstream
JT F0052	04-30-86 Benewah Cr.	06-01-86 Chatcolet Lk.	302/320	13 km downstream
JT F0082	04-30-86 River @ Hugus Cr.	06-15-86 River @ Avery	282/290	42 km upstream
JT C10726	10-23-86 River @ Moose Cr.	10-27-86 River @ Big Eddy	378/378	7 km downstream
JT F0061	06-02-86 River @ Bond Cr.	06-27-86 River @ Bond Cr.	332/332	No movement

^aREW = reward jaw tag; JT = non-reward tag; FT-G = green Floy FTF-69 fingerling tag.

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fastest movement documented was for a cutthroat trout tagged in the river at Hugus Creek in April and recovered 42 km upstream 6 weeks later. Two cutthroat trout tagged in Benewah Creek in April were recovered in Chatcolet Lake and in the thoroughfare between Chatcolet and Coeur d'Alene lakes four and six weeks later. One cutthroat-rainbow trout hybrid, tagged during the summer in Mica Creek, was recovered the following May in the river near Falls Creek, 14 km downstream. Floy FTF-69 fingerling tags were put on 540 juvenile cutthroat trout throughout the drainage. One Floy-tagged fish was recovered the next year in the same tributary.

St. Maries River

Jaw tags were put on 34 cutthroat trout in the St. Maries River drainage and 6 have been recovered by anglers (Table 10). Two of the fish had not moved from their tagging location and were caught one and five months after being tagged. Four fish had moved between six and 32 km downstream and were caught within five weeks of tagging. Floy tags were put on 407 juvenile cutthroat trout and one was recaptured 10 months after being tagged in the same tributary.

Use of Tributaries

Adult cutthroat trout were found moving into several tributaries prior to spawning and/or out of tributaries after spawning (Table 11). Adult cutthroat trout were found entering French Gulch late March through early May. Spawning adults emigrated from French Gulch throughout May. Adults emigrated from Skeel Gulch at the end of April. One adult was trapped entering Cougar Gulch on April 29. General adult emigration from tributaries was during high spring flows. Mean length of spawning cutthroat trout was 353 mm in the Coeur d'Alene River drainage (Figure 12). Several lower river tributaries were used by adult trout during summer, presumably avoiding high temperatures in the main rivers. Juvenile cutthroat trout emigrated from tributaries during high spring flows (Figure 13). Migratory cutthroat trout were trapped in French Gulch, Hunt Gulch, Cougar Gulch, Skeel Gulch, and Scott Creek in the Coeur d'Alene River drainage; in Benewah Creek, Cherry Creek, Mica Creek, Reeds Gulch, Street Creek, Thomas Creek, and Trout Creek in the St. Joe River drainage; and in Thorn Creek, Merry Creek, and the West and Middle forks of the St. Maries River drainage.

DISCUSSION

A viable trout fishery currently exists below the South Fork of the Coeur d'Alene River. This fishery exemplifies the resiliency of a system which has suffered severe perturbations. Unstratified weekend creel surveys conducted in 1984 and 1985 indicated the majority of angling effort occurred before the July Fourth holiday. This high-use, short-term fishery in the lower Coeur d'Alene River prompted a random stratified creel survey which had never been conducted prior to our evaluation.

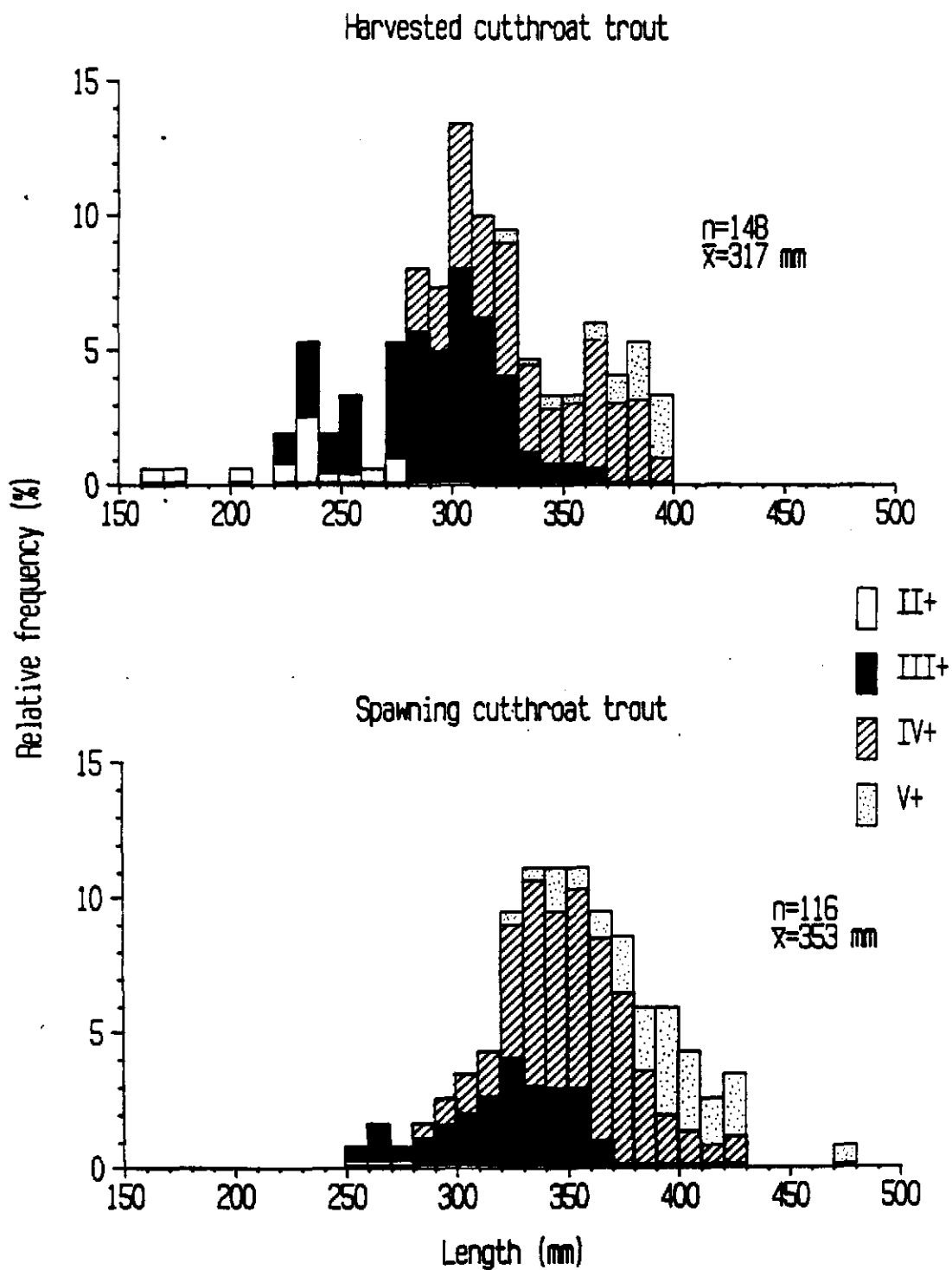


Figure 14. Age and length frequencies of harvested and spawning cutthroat trout in the Coeur d'Alene River, 1986.

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salmon was the second most abundant species caught in sections 2 and 3, but anglers indicated that numbers have decreased dramatically in recent years. No quantitative data are available, but the decline may be associated with introductions of chinook salmon into Coeur d'Alene Lake (Horner et al. 1987).

Declining cutthroat trout populations in the St. Joe River prompted numerous past investigations. Rankel (1971) stated that unless mortality rates were reduced, it seemed likely that the stock would become economically if not biologically extinct. This led to implementation of special regulations (three trout $\geq 13"$, 1973 through 1987) in the upper St. Joe River above Prospector Creek and tributary closures. The upper river has been a successful example of wild cutthroat trout management. From 1968 to 1975, cutthroat trout catch rates increased from 0.2 fish/h to 2.5 fish/h, and the percentage of fish in the catch longer than 250 mm increased from 2.5% to 18% (Mallet 1968; Thurow and Bjornn 1978).

Angler effort, catch rates, and harvest of westslope cutthroat trout on the lower river, under general regulations (six trout, only two $\geq 16"$), have increased since 1967 (Figure 15). The peak in harvest occurred in 1973, followed by a dramatic decrease in 1975 which Walch and Mauser (1976) attributed to late spring runoff, unfavorable weather conditions, and increased cost of fishing licenses.

Angler effort remained relatively constant in all sections throughout our survey on the lower river, though cutthroat trout catch and harvest rates declined dramatically. Anglers continued fishing in sections 2 and 3 despite declining catch rates. A small proportion of anglers, mostly families, continued to fish the slackwater reach in pursuit of species other than trout. By the end of the survey, cutthroat trout catch rates in Section 1 were also lower, but trout catch rates remained high relative to the other sections. Harvest of rainbow trout, stocked only in Section 1 and upstream, was responsible for the elevated catch rates. We estimated return to the creel of catchable rainbow trout was 50% for the St. Joe River in 1987.

The majority of the cutthroat trout harvest (78%) in all three sections of the St. Joe River occurred during Interval 1. The short-term nature of this fishery is a result of overexploitation and is influenced by movement of trout into and out of the upper river (governed by special regulations). Our tag recoveries and earlier work (Thurow and Bjornn 1978) indicate a distinct trend of cutthroat trout migration to the upper river (special regulation zone) during the spring to early summer and downstream migration in the fall. Consequently, the general regulation area below Avery is serving as a migrational corridor. Utilization of this area by cutthroat trout is limited by overharvest, lack of habitat (including high water temperatures), and the migratory nature of this stock. Jeppson (1960) found few "desirable game fish present in the lower St. Joe River during the summer months." His dynamite sampling from Avery downstream to St. Joe City during July produced no trout. Excluding catchable rainbow trout, trout and char comprised less than 1% of his sample in August and September.

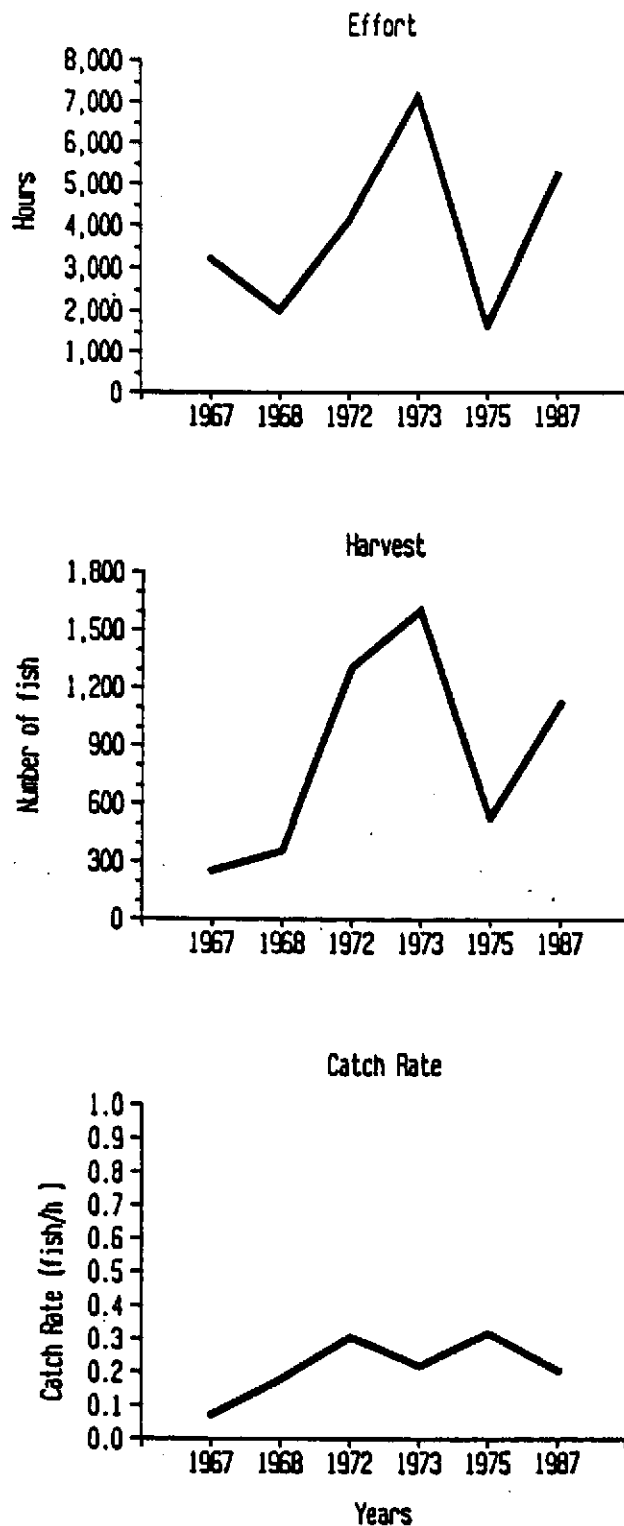


Figure 15. Estimates of angler effort, harvest of westslope cutthroat trout, and catch rate for the first five weeks of the season from Falls Creek to Avery, St. Joe River, 1967 through 1987 (Dunn 1968; Mallet 1968; Ortmann 1973; Goodnight and Mauser 1974; Walch and Mauser 1976).

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During the 1987 survey, 81% of the cutthroat trout harvested in the lower river were longer than 250 mm. This indicates that larger cutthroat trout are being harvested in the spring as they migrate upstream through the general regulation area. Therefore, the only stocks protected by special regulations may be smaller fluvial and resident stocks. In 1985, only 10% of a sample of 326 cutthroat trout (caught between Conrad Crossing and Spruce Tree Campground, in the roaded section of special regulation water) were longer than 250 mm (Horner et al. 1987).

Past creel surveys on the St. Maries River have been limited to random checks by conservation officers and a partial survey conducted by Jeppson (1960) in 1959. Habitat degradation and extremely high water temperatures have plagued cutthroat trout populations from Clarkia downstream to St. Maries for several decades.

Our creel survey showed that cutthroat trout provided a short-term fishery in the St. Maries River with harvest decreasing to zero by the end of the survey. We observed 21°C water temperatures by July 1 in several locations from Clarkia downstream to St. Maries. Tagging, harvest, and temperature data indicate that the main river serves as a migration corridor for depressed populations of cutthroat trout. Small size and easy access make the St. Maries River cutthroat trout highly susceptible to overexploitation. This was evident in Section 1 where estimated return of catchable rainbow trout to the creel was 70%. The catchable program, limited to Section 1, was extremely popular with anglers, and catch rates above 1.0 trout/h were maintained throughout the survey. Section 2 had the highest cutthroat trout catch rates, and because of limited access, was used primarily by special interest anglers. Evidence suggests that this reach may be a congregating area for migrating adult cutthroat trout and should be monitored in the future.

Comparing the three rivers, 23 km of the Coeur d'Alene River received more effort, had a larger harvest, and produced larger cutthroat trout than 81 km and 49 km of the St. Joe and St. Maries rivers, respectively. Mean size of spawning cutthroat trout or size at onset of maturity were not determined from limited trapping data obtained in the St. Joe and St. Maries river drainages. Harvest of sexually immature cutthroat trout, however, poses a problem in all three drainages. We recommend the same harvest regulations be implemented in all three drainages studied.

Currently, successful fishing for cutthroat trout is restricted to the first of the season, and extended angling opportunity is dependent upon the catchable rainbow trout programs. Though the surveys were not conducted for the entire season, we observed minimal fishing pressure in areas with no rainbow trout supplementation until the fall (when cutthroat trout, responding to colder water temperatures, moved back into the lower rivers). We recommend even distribution of catchable rainbow trout through mid-June throughout the lower St. Joe River. The St. Maries River is routinely stocked as often as is practical.

Bull trout populations are severely depressed in all three rivers. Our harvest and sampling information indicate bull trout status has remained consistent for many years (Jeppson 1960; Dunn 1968; Mallet 1968; Ortmann 1972; Goodnight and Mauser 1974; Walch and Mauser 1976). We recommend a closure on bull trout harvest throughout the three drainages.

Northern squawfish populations in the St. Joe and St. Maries rivers have been intensively researched in past years. Social influence and concerns with interspecific competition and predation prompted numerous eradication programs. These programs were discontinued following treatments in 1973 and 1975 in the St. Maries and St. Joe rivers, respectively. We found that squawfish numbers are at or near population levels prior to treatment. A cursory investigation was made of stomach contents from approximately 350 northern squawfish during electrofish and gill net sampling. Sculpins, dace, crayfish, redbreasted shiners, insects, tench, yellow perch, and pumpkinseeds were identified as dominant prey of squawfish. No trout were found in squawfish stomachs, though juvenile trout were often found in the same locations. This compares with Falter's (1969) findings of no trout in stomachs of 449 squawfish collected from the lower St. Joe River. He attributed the lack of predation on trout by squawfish to habitat segregation of the two groups.

Bullhead and yellow perch, the dominant game fish we found in slackwater of the St. Joe and St. Maries rivers, rarely exceeded 200 mm and 150 mm, respectively. Trout were physically limited from these reaches during summer by high water temperatures. One mountain whitefish was found over all sampling efforts. Evidently, species composition of the slackwater has not changed over the last 40 years. "Hoopnetting from 1948 to 1951 showed tench, suckers, squawfish, brown bullheads, yellow perch, and common sunfish to comprise over 99% of fish in the slackwater portion of the two rivers" (Jeppson 1960).

Water temperatures in the main Coeur d'Alene River were not limiting to trout at anytime during the year. Although over 4,400 fish were caught with the Lake Merwin trap, it failed to catch any trout. We know that cutthroat and rainbow trout inhabit the lower river (Bauer 1975); therefore, we believe that trout avoided capture. Cutthroat trout have been observed avoiding similar traps in Priest Lake (Gregg Mauser, Idaho Department of Fish and Game, personal communication).

The Benewah Creek drainage is a major cutthroat trout producing system in the St. Joe River drainage, yet summer trout densities in mainstem Benewah Creek were relatively low. Lower Benewah Creek is an important nursery area for largemouth bass. A sparse summer trout population may be attributed to high temperatures (17° to 19°C when snorkeling; 25°C maximum summer temperature), however cutthroat trout densities in Alder Creek (St. Maries River) and Evans Creek (Coeur d'Alene River) were higher at temperatures of 20.5 and 17.8°C, respectively. The dense overhanging cover in Alder and Evans creeks is probably effective thermal insulation by limiting the duration of extremely high water temperatures. Benewah Creek, as well as the North Fork Coeur d'Alene River and Johns Creek (St. Maries River) have sparse overhanging cover, allowing ambient air temperatures to quickly influence stream temperatures. Therefore, summer trout densities in tributary streams do not necessarily reflect total trout production if high summer temperatures force fry out of otherwise likely nursery areas. Lewensky (1986) believed that cutthroat trout fry emigrating from small tributaries reflected complete seeding of habitat, implying sufficient spawner escapement. We believe reasons for fry emigration may be more complex (i.e., due to limiting physical conditions). Unfortunately, we

trapped tributaries only during the spring. Several tributaries potentially important for cutthroat trout production were not trapped because it was logistically difficult. The downstream migrant traps in the St. Joe and St. Maries river tributaries caught mostly age I and II juvenile cutthroat trout, and movements typically peaked with freshets. Similarly, Rankel (1971) reported 68% of cutthroat trout migrated from St. Joe River tributaries at age II+, 17% at age I+, and 5% at age III+.

Contrary to what we expected, trout densities in two tributaries to the St. Joe River that had been closed to fishing for 14 years (Mica and Bond creeks) were exceptionally low. Only upper Trout Creek had higher than average cutthroat trout densities. Lower Reeds Gulch had very high brook trout densities, but no cutthroat trout. Thurow and Bjornn (1978) observed an overall increase in cutthroat trout densities during the initial years of the fishing closures on these streams. Upper Reeds Gulch remains a good producer of cutthroat trout. Mean density of age I and older cutthroat trout in the lower St. Joe tributaries was 8.3 fish per 100 m², compared to an average of 12 fish per 100 m² in upper river tributaries (Thurow and Bjornn 1978).

Cutthroat and rainbow trout densities in tributaries to the Coeur d'Alene River were comparable to densities in Pend Orielle and Priest river drainages (Pratt 1984; Cowley 1987; Irving 1987). With the exception of Trout, upper Alder, and Merry creeks, cutthroat and rainbow trout densities in tributaries to the St. Joe and St. Maries rivers were low. Only in Cougar Gulch, Brown, Willow, and Trout creeks did trout (cutthroat and rainbow) densities compare to the high densities (35 to 58 trout per 100 m²) found in Hayden Creek, Idaho (Gamblin 1987). Very low densities of cutthroat-rainbow trout hybrids, reported in all three drainages were due, in part, to the difficulty of underwater identification.

Very few trout were jaw tagged in tributaries, except those fish caught by migratory traps. Extremely small numbers of fingerling-tagged juvenile trout were recaptured, probably a result of poor tag retention (Bill Horton, Idaho Department of Fish and Game, unpublished data). Recoveries of tagged trout in the St. Joe River drainage were limited, but a pattern of cutthroat trout movement was seen. Cutthroat trout were found downstream in fall and upstream in summer. Two cutthroat trout captured leaving Benewah Creek did show definite adfluvial movement. Half of the juvenile cutthroat trout tagged in tributaries in 1974 that did migrate into the river moved downstream and half moved upstream (Thurow and Bjornn 1978). Trout that rear in the tributaries to the lower St. Joe River and then migrate into the main river must either move downstream into the lake environment, or upstream to escape high summer water temperatures. Migratory stocks that spawn in Benewah Creek are definitely adfluvial because the creek flows directly into Benewah Lake and then through a lake complex into Lake Coeur d'Alene. Averett and MacPhee (1971) distinguished adfluvial from fluvial cutthroat trout by examining circuli and annuli patterns on scales. They observed cutthroat trout with evidence of lake growth in Benewah, Rochat, Trout, and Mica creeks in the St. Joe River drainage; and in Thorn Creek, the lowest tributary to the St. Maries

River. They also observed resident stocks of cutthroat trout in these streams. All that can be concluded about cutthroat trout populations in the St. Maries River drainage from our tagging data is that fluvial stocks exist. Thurow and Bjornn (1978) found that 89% of the cutthroat trout that migrated from tributaries to the river were tagged in the lower 5 km of the tributary. Johnson and Bjornn (1978) observed very little movement by cutthroat trout in the upper St. Joe River drainage after they established summer feeding stations. Our data suggest that the majority of cutthroat trout production in the St. Joe and St. Maries river drainages occurs further than 5 km upstream in tributaries. Adults were observed far upstream in several tributaries.

Lewynsky (1986) observed cutthroat trout aggregated in large pools in the Coeur d'Alene River during winter. This information, along with our evidence that cutthroat trout remain in the area between Cataldo and Dudley for substantial lengths of time, suggests that a large fluvial stock of cutthroat trout exists in the Coeur d'Alene River. Bauer (1975) cited the presence of spawning runs of cutthroat trout in Fourth of July Creek and in tributaries to Cave and Medicine lakes as evidence for adfluvial trout in the lower river system.

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Appendix C. Angler harvest (number of fish) by section and interval for the Coeur d'Alene River creel survey, 1986.

		Interval 1 (May 24 to June 6)							Total
		Cutthroat trout	CTT-RBT hybrid trout	Natural rainbow trout	Hatchery rainbow trout	Brook trout	Kokanee salmon	Bull trout	
Section 1	boat	29	5	0	34	0	0	0	68
	shore	167	28	0	195	0	0	0	390
Section 2	boat	11	1	0	0	0	0	0	12
	shore	107	10	0	0	0	0	0	117
Section 3	boat	820	18	7	7	18	36	0	906
	shore	106	15	6	6	15	60	0	208
Total	boat	860	24	7	41	18	36	0	986
	shore	380	53	6	201	15	60	0	715

		Interval 2 (June 7 to June 20)							Total
		Cutthroat trout	CTT-RBT hybrid trout	Natural rainbow trout	Hatchery rainbow trout	Brook trout	Kokanee salmon	Bull trout	
Section 1	boat	9	0	3	10	0	0	0	22
	shore	85	0	32	95	0	0	0	212
Section 2	boat	7	7	0	0	7	54	0	75
	shore	175	32	0	0	13	13	0	233
Section 3	boat	100	0	0	0	0	178	0	278
	shore	75	0	0	0	0	191	0	266
Total	boat	116	7	3	10	7	232	0	375
	shore	335	32	32	95	13	204	0	711

		Interval 3 (June 21 to June 30)							Total
		Cutthroat trout	CTT-RBT hybrid trout	Natural rainbow trout	Hatchery rainbow trout	Brook trout	Kokanee salmon	Bull trout	
Section 1	boat	15	0	7	7	0	0	0	29
	shore	31	0	16	16	0	0	0	63
Section 2	boat	0	2	0	0	2	24	0	28
	shore	0	13	0	0	13	189	0	215
Section 3	boat	4	0	4	4	0	0	0	12
	shore	26	0	26	26	0	0	0	78
Total	boat	19	2	11	11	2	24	0	69
	shore	57	13	42	42	13	189	0	356

Appendix D. Angler harvest (number of fish) by section and interval for the St. Joe River creel survey, 1987.

		Interval 1 (May 23 to June 5)							Total
		Cutthroat trout	CTT-RBT hybrid trout	Natural rainbow trout	Hatchery rainbow trout	Brook trout	Kokanee salmon	Bull trout	
Section 1 ^a	boat	--	--	-	--	--	--	--	--
	shore	476	44	132	132	0	0	11	795
Section 2 ^a	boat	--	--	--	--	--	--	--	--
	shore	400	35	61	44	0	0	8	548
Section 3	boat	220	0	0	0	0	0	0	220
	shore	215	0	0	20	0	0	0	235
Total	boat	220	0	0	0	0	0	0	220
	shore	1,091	79	193	196	0	0	19	1,578
		Interval 2 (June 6 to June 19)							Total
		Cutthroat trout	CTT-RBT hybrid trout	Natural rainbow trout	Hatchery rainbow trout	Brook trout	Kokanee salmon	Bull trout	
Section 1 ^a	boat	--	--	--	--	--	--	--	--
	shore	115	33	22	143	11	11	0	335
Section 2 ^a	boat	--	--	--	--	--	--	--	--
	shore	15	0	0	0	0	5	5	25
Section 3	boat	20	0	0	0	0	19	19	58
	shore	29	0	0	0	0	0	0	29
Total	boat	20	0	0	0	0	19	19	58
	shore	159	33	22	143	11	16	5	389
		Interval 3 (June 20 to June 26)							Total
		Cutthroat trout	CTT-RBT hybrid trout	Natural rainbow trout	Hatchery rainbow trout	Brook trout	Kokanee salmon	Bull trout	
Section 1 ^a	boat	--	--	--	--	--	--	--	--
	shore	86	0	17	69	0	0	17	189
Section 2 ^a	boat	--	--	--	--	--	--	--	--
	shore	30	0	0	0	0	0	0	30
Section 3	boat	0	0	0	0	0	0	0	0
	shore	67	0	0	0	0	0	0	67
Total	boat	0	0	0	0	0	0	0	0
	shore	183	0	17	69	0	0	17	286

^aBoat harvest included with shore harvest.

Appendix E. Angler harvest (number of fish) by section and interval for the St. Maries River creel survey, 1987.

		Interval 1 (May 23 to June 5)							Total
		Cutthroat trout	CTT-RBT hybrid trout	Natural rainbow trout	Hatchery rainbow trout	Brook trout	Kokanee salmon	Bull trout	
Section 1 ^a	boat	--	--	--	--	--	--	--	--
	shore	180	12	12	180	0	0	0	384
Section 2 ^a	boat	--	--	--	--	--	--	--	--
	shore	78	2	0	2	0	0	0	82
Section 3	boat	0	0	0	0	0	0	0	0
	shore	22	0	0	0	0	0	0	22
Total	boat	0	0	0	0	0	0	0	0
	shore	280	14	12	182	0	0	0	488
		Interval 2 (June 6 to June 19)							Total
		Cutthroat trout	CTT-RBT hybrid trout	Natural rainbow trout	Hatchery rainbow trout	Brook trout	Kokanee salmon	Bull trout	
Section 1 ^a	boat	--	--	--	--	--	--	--	--
	shore	147	0	0	626	0	0	0	773
Section 2 ^a	boat	--	--	--	--	--	--	--	--
	shore	20	0	0	0	0	0	0	20
Section 3	boat	0	0	0	0	0	0	0	0
	shore	0	0	0	0	0	0	0	0
Total	boat	0	0	0	0	0	0	0	0
	shore	167	0	0	626	0	0	0	793
		Interval 3 (June 20 to June 26)							Total
		Cutthroat trout	CTT-RBT hybrid trout	Natural rainbow trout	Hatchery rainbow trout	Brook trout	Kokanee salmon	Bull trout	
Section 1 ^a	boat	--	--	--	--	--	--	--	--
	shore	0	0	0	340	0	0	12	352
Section 2 ^a	boat	--	--	--	--	--	--	--	--
	shore	0	0	0	0	0	0	0	0
Section 3	boat	0	0	0	0	0	0	0	0
	shore	0	0	0	0	0	0	0	0
Total	boat	0	0	0	0	0	0	0	0
	shore	0	0	0	340	0	0	12	352

^aBoat harvest included with shore harvest.

Appendix F. Number (n), mean total length (mm) ($\bar{x}$), and range of lengths () of salmonids collected by drift boat electrofishing in the Coeur d'Alene, St. Joe, and St. Maries rivers, 1986 and 1987.

Stream	Date	Temp (°C)	River section ^a	Effort (h)	CTT		RBT		HYB		BKT		BLT		MWF		KOK	
					n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$
Coeur d'Alene River	May 1, 22 1986	10.7	1	12	29	291 (118-375)	3	303 (270-335)	2	224 (120-328)	6	235 (150-451)	0	--	29	173 (115-324)	0	--
	June 17 1986	--	2	5.5	5	200 (160-295)	19	255 (107-480)	2	158 (111-204)	0	--	0	--	121	239 (142-440)	18	221 (210-258)
	June 18 1986	18	1	7	14	212 (109-415)	1	528 (135-149)	3	144 (135-149)	26	189 (148-225)	0	--	98	168 (135-249)	51	204 (112-254)
	July 1 1986	18	1	7	19	270 (152-400)	10	223 (165-309)	3	254 (166-425)	12	214 (165-340)	0	--	6	186 (154-228)	36	221 (135-255)
	October 13 1986	9.5	1	6.5	13	328 (220-464)	12	273 (214-326)	2	287 (212-362)	18	219 (120-298)	0	--	0	--	0	--
St. Joe River	August 13 1986	24	3	7	0	--	1	396 (263-402)	0	--	0	--	0	--	118	284 (101-375)	0	--
	August 20 1986	21	4	6	0	--	2	333 (263-402)	0	--	0	--	0	--	48	274 (137-386)	0	--
	October 23 1986	6	3	6.5	14	301 (223-382)	7	324 (213-420)	0	--	0	--	0	--	124	275 (132-355)	0	--
	October 24 1986	6	4	6	7	323 (244-385)	3	306 (230-347)	0	--	0	--	2	502 (476-527)	106	301 (252-357)	0	--

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Appendix F, continued.

Stream	Date	Temp (°C)	River section ^a	Effort (h)	CTT		RBT		HYB		BKT		BLT		MMF		KOK	
					n	x	n	x	n	x	n	x	n	x	n	x	n	x
St. Maries River	May 5 1987	--	5	5	4	271 (166-345)	3	212 (147-270)	2	192 (186-198)	0	--	0	--	63 (140-310)	236	0	--
	May 20 1987	6	5	5	12	217 (137-310)	2	226 (200-252)	2	141 (106-175)	0	--	0	--	58 (48-309)	232	0	--

- a1: Coeur d'Alene River from the South Fork to Cataldo Mission (12.5 km).
 2: Coeur d'Alene River from the Little North Fork to the South Fork (7.1 km).
 3: St. Joe River from Moose Creek to Falls Creek (9.7 km).
 4: St. Joe River from Huckleberry Campground to Moose Creek (9.7 km).
 5: St. Maries River from the Middle Fork, to Metropolitan Bridge (6.8 km).

Key:

CTT = cutthroat trout
 RBT = rainbow trout
 HYB = rainbow-cutthroat hybrid trout
 BKT = brook trout
 BLT = bull trout
 MMF = mountain whitefish
 KOK = kokanee salmon

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Appendix G. Fish captured in a Lake Merwin trap located near the mouth of
Coeur d'Alene River, 1984.

Date	Bullhead	Tench	Pumpkinseeds	Kokanee	Northern squawfish	Other ^a
June 29	26	17	6	6	3	4
30	32	7	32	50	1	10
July 1	125	13	10	14	1	0
2	132	5	29	8	4	3
3	436	27	39	2	4	10
4	496	36	5	0	2	6
5	383	41	13	0	4	3
6	9	36	6	0	0	2
7	253	20	18	0	9	7
8	345	25	10	0	11	6
9	94	8	7	0	3	6
10	4	8	11	0	1	2
11	23	17	12	0	0	4
12	4	14	22	0	0	12
13	23	8	9	0	0	3
14	0	7	6	0	0	5
15	43	18	14	0	8	16
16	879	32	12	2	24	8
17	<u>15</u>	<u>20</u>	<u>8</u>	<u>1</u>	<u>5</u>	<u>5</u>
Total	3,322	359	269	83	80	112
Percent	78.6	8.5	6.4	2.0	1.9	2.6

^aIncludes black crappie, yellow perch, sucker species, largemouth bass, redside shiners, and northern pike.

Appendix G-a. Fish captured in a Lake Merwin trap located in the Coeur d'Alene River at Bull Run Lake Bridge, 1985.

Date	Bullhead	Tench	Pumpkinseeds	Kokanee	Northern squawfish	Yellow perch
July 9	3	3	0	0	1	1
10	0	6	2	1	0	1
11	0	4	0	0	0	0
12	0	3	0	0	2	0
13	0	2	0	0	0	0
14	0	6	0	0	0	0
15	12	7	0	0	0	0
16	0	5	0	0	2	0
17	0	4	0	0	0	0
18	0	6	0	0	0	0
19	34	17	0	0	1	0
20	0	9	0	0	0	0
21	3	13	0	0	0	0
22	2	11	0	0	1	0
23	8	5	0	0	1	0
24	0	5	0	0	0	0
25	0	1	0	0	0	0
26	0	1	0	0	0	0
27	6	6	0	0	0	0
28	21	13	0	0	0	1
29	0	6	0	0	0	0
30	0	0	0	0	0	0
31	0	0	0	0	0	0
Total	89	133	2	1	8	3
Percent	38	56	1	1	3	1

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Appendix H. Number (n), mean total length (mm) ($\bar{x}$), and range of lengths () of fish species captured by gillnetting in the St. Joe and St. Marias rivers, 1987.

Date	Location ^a	Effort (h)	Water temp. (°C)	NS		SKR		BBH		MWF		PS		LMB		Tench		YP		BCR	
				n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$
June 19	1 ^b	12.0	16.0	2	--	9	--	41	151 (114-260)	0	--	0	--	0	--	0	--	0	--	0	--
June 19	1 ^c	12.0	16.0	7	--	0	--	7	--	0	--	2	--	0	--	0	--	0	--	0	--
June 19	2 ^b	11.0	18.0	7	--	26	--	2	191 (142-210)	0	--	0	--	0	--	0	--	1	210	0	--
June 19	2 ^c	11.0	18.0	20	--	0	--	1	--	0	--	0	--	0	--	0	--	1	--	0	--
June 19	3 ^b	16.0	21.0	17	--	32	--	4	--	0	--	0	--	0	--	0	--	2	170 (150-190)	1	--
June 19	3 ^c	16.0	21.0	24	331 (195-540) ^d	1	--	0	--	0	--	0	--	1	--	3	--	1	--	0	--
July 23	1 ^b	10.5	21	3	309 (255-390)	6	297 (215-347)	17	150 (130-210)	1	250	1	--	0	--	0	--	0	--	0	--
July 23	1 ^c	10.5	21	2	286 (285-286)	1	168	1	150 (137-160)	0	--	0	--	1	144	0	--	0	--	0	--
July 23	2 ^b	14.0	21.5	9	277 (195-350)	26	269 (182-380)	7	153 (130-178)	0	--	0	--	0	--	2	280 (260-300)	1	172	0	--
July 23	2 ^c	14.0	21.5	12	254 (186-437)	4	182 (170-200)	1	--	0	--	0	--	0	--	0	--	0	--	1	--
July 23	3 ^b	16.0	21.5	15	254	2	240 (230-249)	10	159 (144-190)	0	--	1	119	2	161 (140-182)	1	395	1	200	0	--

Appendix H, continued.

Date	Location ^a	Effort (h)	Water temp. (°C)	NS		SKR		BBH		MHF		PS		LMB		Tench		YP		BCR	
				n	x	n	x	n	x	n	x	n	x	n	x	n	x	n	x	n	x
July 23	3 ^c	16.0	21.5	11	249 (206-356)	2	241 (207-275)	5	157 (140-190)	0	--	0	--	0	--	0	--	3	161 (150-168)	1	109
Aug 28	1 ^b	10.5	20.0	2	296 (293-298)	12	314 (227-395)	33	150 (121-198)	0	--	0	--	0	--	0	--	0	--	1	115
Aug 28	1 ^c	10.5	20.0	2	271 (257-284)	3	221 (172-247)	17	148 (135-194)	0	--	2	94 (89-99)	0	--	0	--	0	--	0	--
Aug 28	2 ^b	13.5	20.0	11	291 (195-393)	36	283 (123-491)	7	176 (142-229)	0	--	2	111 (97-124)	0	--	0	--	1	144 (112-158)	2	135
Aug 28	2 ^c	13.5	20.0	8	248 (187-295)	0	--	3	152 (142-173)	0	--	0	--	0	--	0	--	2	154 (150-157)	0	--
Aug 28	3 ^b	16.0	20.0	5	362 (267-473)	27	322 (198-488)	12	156 (140-185)	0	--	3	97 (96-99)	5	276 (157-355)	2	252 (149-355)	0	--	0	--
Aug 28	3 ^c	16.0	20.0	9	350 (274-425)	1	344	0	--	0	--	1	97	0	--	0	--	10	152	0	--
Dec 11	1 ^b	19.0	3.0	1	505	6	434 (421-460)	0	--	0	--	0	--	0	--	0	--	0	--	0	--
Dec 11	1 ^c	19.0	3.0	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--
Dec 11	2 ^b	16.0	3.0	1	349	1	370	0	--	0	--	0	--	0	--	0	--	0	--	0	--
Dec 11	2 ^c	16.0	3.0	1	90	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--

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Appendix H, continued.

Date	Location ^a	Effort (h)	Water temp. (°C)	NS		SKR		BBH		MMF		PS		LMB		Tench		YP		BCR	
				n	x	n	x	n	x	n	x	n	x	n	x	n	x	n	x	n	x
Dec 11	4 ^b	16.0	3.0	3	367 (340-382)	38	397 (230-505)	0	--	0	--	0	--	0	--	0	--	1	139	0	--
Dec 11	4 ^c	16	3.0	1	260	0	--	0	--	0	--	0	--	0	--	0	--	0	--	0	--

a1: St. Joe River - 3.1 km upstream from confluence with St. Maries River.

2: St. Joe River - 6.4 km downstream from confluence with St. Maries River.

3: St. Maries River - 2.7 km upstream from confluence with St. Joe River.

4: St. Joe River - 0.3 km upstream from confluence with St. Maries River.

^bSinking net.

^cFloating net.

^dMean length and range calculated for all squawfish captured on June 19.

Key:

NS = northern squawfish
 SKR = sucker species
 BBH = bullhead species
 MMF = mountain whitefish
 PS = pumpkinseeds
 LMB = largemouth bass
 YP = yellow perch
 BCR = black crappie

Appendix I. Number (n), mean total length (mm) ($\bar{x}$), and range of lengths () of fish species captured by electrofishing in slackwater reaches of the St. Joe and St. Maries rivers, 1987.

Date	Location ^a	NS		SKR		BBH		PS		LMB		Tench		YP		BCR		RSS	
		n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$	n	$\bar{x}$
June 29	1	14	242 (104-445)	13	320 (187-524)	8	126 (98-156)	0	--	0	--	0	--	7	106 (94-114)	0	--	1	100
June 29	2	9	255 (105-469)	12	357 (194-479)	9	159 (121-268)	1	89	0	--	0	--	23	117 (79-137)	0	--	1	108
June 29	3	3	154 (110-180)	4	212 (136-253)	2	129 (125-132)	0	--	0	--	0	--	9	102 (82-123)	1	108	0	--
July 28	1	18	207 (111-370)	16	337 (142-536)	9	144 (105-174)	0	--	0	--	1	362 (82-120)	7	110 (82-120)	0	--	0	--
July 28	2	21	207 (121-339)	16	312 (171-538)	8	141 (115-166)	0	--	0	--	2	292 (284-299)	25	112 (77-154)	0	--	0	--
July 28	3	29	186 (128-287)	29	243 (130-393)	36	137 (97-179)	0	--	11	266 (64-448)	1	228	41	114 (90-150)	0	--	0	--
August 31	1	24	234 (136-420)	35	289 (179-516)	21	135 (104-178)	2	94 (92-96)	1	56	0	--	73	117 (90-149)	0	--	0	--
August 31	2	14	226 (132-380)	67	326 (155-480)	26	164 (113-263)	0	--	4	85 (58-153)	4	351 (274-395)	35	119 (98-157)	0	--	0	--
August 31	3	25	205 (122-338)	25	265 (117-421)	20	155 (128-175)	3	91 (80-112)	6	168 (70-431)	0	--	38	120 (90-164)	6	163 (124-241)	0	--

a1: St. Joe River 3.1 km upstream from confluence with St. Maries River.

2: St. Joe River 6.4 km downstream from confluence with St. Maries River.

3: St. Maries River 2.7 km upstream from confluence with St. Joe River.

Key: NS = northern squawfish
SKR = suckers

BBH = bullhead species
PS = pumpkinseeds

LMB = largemouth bass
YP = yellow perch

BCR = black crappie
RSS = reidside shiners

Appendix J. Relative abundance (%), mean total length (mm) ($\bar{x}$), and range of lengths () of trout and char captured by electrofishing in tributaries to the Coeur d'Alene, St. Joe, and St. Maries rivers, 1984 through 1987.

Stream	Cutthroat trout		Rainbow trout		Hybrid RBT-CTT		Brook trout		Bull trout	
	%	$\bar{x}$ TL	%	$\bar{x}$ TL	%	$\bar{x}$ TL	%	$\bar{x}$ TL	%	$\bar{x}$ TL
Coeur d'Alene River										
Bear Cr.	45	128 (34-214)	8	226 (173-280)	0	--	48	99 (52-221)	0	--
Blue Lake Cr.	14	104 (37-155)	0	--	0	--	86	127 (51-314)	0	--
Cottonwood Cr.	100	116 (24-236)	0	--	0	--	0	--	0	--
Brown Cr.	49	109 (30-210)	25	112 (41-178)	20	101 (33-166)	4	141 (109-195)	1	202
Bumblebee Cr.	54	102 (25-180)	12	128 (103-220)	2	117	32	113 (36-245)	0	--
Canyon Cr.	100	139 (126-155)	0	--	0	--	0	--	0	--
Clark Cr.	100	157 (43-252)	0	--	0	--	0	--	0	--
Coal Cr.	87	127 (100-148)	0	--	13	109	0	--	0	--
Copper Cr.	39	110 (81-245)	20	131 (50-235)	3	150 (110-226)	38	149 (42-323)	0	--
Cougar Gulch	48	117 (28-216)	22	71 (32-108)	24	102 (85-142)	6	88 (68-94)	0	--
Eagle Cr.	73	145 (105-185)	0	--	0	--	27	181 (131-250)	0	--
W. Fk. Eagle Cr.	77	121 (32-234)	0	--	0	--	23	134 (79-255)	0	--
E. Fk. Eagle Cr.	33	150 (92-209)	0	--	0	--	67	144 (105-205)	0	--
Evans Cr.	98	124 (35-363)	0	--	1	167	1	212	0	--

State of Idaho
Department of Water Resources

- ROSTER OF ATTENDANCE -

Pg. ____

RE: PUBLIC HEARING - IN THE MATTER OF APPLICATION FOR PERMIT
NOS. 96-08730 and 96-08718

Date: July 17, 1997, 10:00 a.m.

Place: Washington Water Power Office
528 College Avenue
St. Maries, Idaho

Name and Address	Representing	Do you wish to testify as a Full party (show "FP") or Public witness (show "PW") or Not testify (Leave blank)
------------------	--------------	--

Cindy Robertson
P.O. Box 25 Boise 83707

IDFG

FP

Marti Bridges
P.O. Box 633, Boise 83701

Idaho Rivers United

FP

JOHN M MILLER

—

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State of Idaho
Department of Water Resources

- ROSTER OF ATTENDANCE -

Pg. ____

RE: PUBLIC HEARING - IN THE MATTER OF APPLICATION FOR PERMIT
NOS. 96-08730 and 96-08718

Date: July 16, 1997, 10:00 a.m.

Place: NRCS Federal Building
1500 Highway 2
Sandpoint, Idaho

Name and Address	Representing	Do you wish to testify as a Full party (show "FP") or Public witness (show "PW") or Not testify (Leave blank)
1. Bob Wathen P.O. Box 160 Clark Fork ID. Steve Fry	Washington Water Power	—
2. P.O. Box 3727 Spokane WA. Marti Bridges	Washington Water Power	FP - will submit written comments
3. P.O. Box 633, Boise, ID	Idaho Rivers United	FP
4. 361 Evergreen Rd Sandpoint ID. Bob Dunham	Trout Unlimited T. U. Inc.	yes! F.P.
5. John Bentley 3115 Millsap Loop Rd Pest Falls, ID 83854	—	FP PW
6. Burrell Hollister	—	PW
7. Bob Schloss	Corps of Engineers	F.P.
8.	—	—
9.	—	—

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**Testimony of Idaho Rivers United
Regarding Minimum Streamflow Water Rights
Numbers 96-08718, 96-08730, 91-07122 and 92-07200
Submitted by Marti L. Bridges, Water Policy Director
July 16-17, 1997**

Idaho Rivers United is a statewide river conservation group with over 1600 members who use and enjoy the Clark Fork, Pend Oreille, St. Joe and St. Maries Rivers. Our members fish, hike, raft, canoe, kayak, photograph, swim, view wildlife and pursue contemplative recreational activities along these rivers. In some cases, these rivers provide domestic water supplies to our members.

Each of these rivers possesses unique qualities, both biologically and recreationally, that must be protected. Securing minimum streamflow water rights aids in this protection. A river without water is not a river at all.

Clark Fork River - No. 96-08718

The Clark Fork River feeds Lake Pend Oreille. This river is home to white sturgeon, a threatened species. It is a river altered by fluctuating peaking flows for hydropower generation at Cabinet Gorge Dam. The Hungry Horse Dam in Montana also controls flows. It is a river increasingly polluted by mine runoff, agricultural, and logging practices. It is a river where maintenance of minimum streamflows is critical to sturgeon spawning, maintenance of fishery spawning and rearing habitats, and dilution of polluted runoff. While Idaho Rivers United does not advocate that dilution to pollution is the solution, adequate streamflow (water quantity) is inextricably intertwined with water quality. It is a river needing additional flows for recreation.

IRU supports the requested 9,335 cubic feet per second year round minimum streamflow on 8.4 miles starting at Cabinet Gorge Dam running downstream to Lake Pend Oreille. The request is based on the Tennant method (a.k.a. Montana method) which we feel adequately addresses minimum biological needs. However, Tennant Method does not adequately address recreational float boating requirements. Nor does Tennant take into account fluctuating flows. We recommend the Idaho Water Resource Board apply immediately for an additional minimum streamflow rights in the amount 10,000 cfs from April 15 through July 15 for recreational floatboating.

We recommend that the IWRB and hearing officer postpone final hearing recommendations until negotiations between Washington Water Power, the Tribes, states and interested publics are completed. The Water Board should become actively involved in Washington Water Powers relicensing effort at the Cabinet Gorge Dam to ensure the Idaho statutory minimum flow is considered in their FERC license agreement. This Idaho statutory minimum is the barest minimum for short term survival of fishery resources and is not the desirable minimum that Washington Water Power should be providing in its FERC license.

Pend Oreille River - No. 96-08730

Idaho Rivers United supports the Boards requested year round minimum streamflow of 10,655 cfs year round on a 2.4 mile reach from Albeni Falls Dam downstream to the Idaho state line. This flow will help protect fish and wildlife, water quality and recreational uses of the river.

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St. Joe River - No. 91-07122

The St. Joe River is one of North Idaho's jewels. It is nationally recognized as a superb trout stream and draws anglers from many locations. It is the highest navigable stream in the US and perhaps the world. It is nationally significant and has been designated under the federal Wild and Scenic Rivers Act. It provides outstanding opportunities for flatwater canoeing on its lower reaches and incredible Class III and IV whitewater kayaking and rafting on its upper reaches. The "shadowy St. Joe" is where I personally spent much of my time during the three years I lived and worked around St. Maries for the Soil Conservation Service.

Idaho Rivers United supports the request for 942 cfs from November 1 to July 31 and 470 cfs from Aug. 1 to Oct. 31 on the 36 mile segment which starts at the confluence of the St. Joe and Marble Creek, ending at the confluence of the St. Joe and St. Maries rivers. We also recommend the Board immediately file for an additional minimum streamflow water right in the amount of 1000 cfs from April 15 through June 15 to protect recreational boating. The current request is insufficient to meet basic safe boating flows. A total of 1900 cfs will provide the minimum flow necessary for unimpaired and safe boating and will more closely mimic the natural hydrograph. The additional 1000 cfs is not an optimal boating flow, but rather a minimum safe boating flow. My request for additional flows is based on personal experience both kayaking, rafting and canoeing all reaches clear to Avery. Additionally, information was obtained from Idaho Whitewater, the Complete River Guide, by Don McClaran and Greg Moore, 1989.

St. Maries River - No. 92-07211

The St. Maries River is not particularly well known beyond the bound of the local area. Folks from Santa, Fernwood, Emida, and St. Maries seem to be the historic users. In the mid-1980's to the present, more and more kayakers from Coeur d'Alene, Spokane, and Moscow have found out what a great early season whitewater run this can be. I know, I was one of the ones who went exploring it my first spring living in Santa in 1984.

This river corridor has an abundance of fish and wildlife. It is common to see elk, deer, osprey and numerous waterfowl on any given trip. The river corridor is relatively intact, save some grazing and logging activity.

Idaho Rivers United supports the requested 141 cfs from December 1 to July 31 and 65 cfs from August 1 to November 30. The 25 mile reach starts at the confluence of the West and Middle Forks of the St. Maries downstream to the confluence with John Creek. We further request the board immediately file for an additional minimum streamflow water right in the amount of 650 cfs from April 1 to May 31 to protect safe recreational boating. The stream reach for the subsequent flow would be from the confluence of John Creek to the confluence with the St. Joe River. This appropriation begins where the original minimum streamflow application terminates. 650 cfs is 200 cfs less than the average flow of 850 cfs in April and May.

We appreciate the opportunity to provide testimony on these important streamflows. We would also like to note for the record that these flow requests are a direct result of suggestions by a bi-partisan Governor's Task Force. The Task Force felt it was important to protect flows for all Idahoans and to prevent these flows from being appropriated by out-of-state interests. We concur with the Task Force recommendations for streams to be protected in North Idaho and applaud the Idaho Water Resource Board for moving forward with these water right applications.

RECORDED
APR 9 9 1988

North Idaho Minimum Streamflows for Recreation

St. Joe, St. Maries, and Clark Fork Rivers

Executive Summary

The Idaho Water Resource Board applied in June, 1992 to appropriate the waters of the state on several stream segments in North Idaho. Idaho Rivers United and numerous other individuals and agencies testified or submitted comments in support of the requested minimum flows for the Priest, Moyie, Lochsa, Selway, Pack and Middle Fork Clearwater Rivers. The St. Joe, St. Maries, Pend Oreille and Clark Fork Rivers go to public hearings on July 16 and 17, 1997 and the Priest River will be the subject of a public meeting on July 23, 1997. Previously, the Priest River was denied a minimum streamflow water right.

These requested flows are intended to protect fishery and wildlife habitat, water quality, and aesthetics. They should also protect recreational float boating where applicable. All of the requests for Minimum Streamflows in North Idaho show a conspicuous absence of adequate minimum flows for recreational kayaking, canoeing or floatboating. The North Idaho Minimum Streamflow requests were based on the Tennant Method (aka Montana method). Tennant Method has been successfully used to determine minimum flow regimes for fisheries. However, Tennant Method does not adequately address recreational float boating requirements because Tennant Method only relates to biological criteria.

To that end, Idaho Rivers United recommends the Idaho Water Resource Board make application immediately for those supplemental Minimum Streamflows needed for river floating recreation activities i.e. canoeing, kayaking, rafting. We recognize these additional flows will be junior to the original application. However, we believe this "error of omission" can be adequately remedied by applying for these supplemental flows, if done so immediately.

We recommend the Idaho Water Resource Board make application to appropriate the following additional flows:

St. Joe River - from the confluence with Marble Creek to the confluence with the St. Maries River.

The IWRB should appropriate an additional 1000 cfs from April 15 through June 15 to protect recreational boating purposes. This would provide a minimum of about 1900 cfs which will provide the minimum flow necessary for unimpaired and safe boating. This is one of the most beautiful rivers in the northern part of the state. Reaches upstream from Marble Creek are commercially rafted and the river is very popular with kayakers and canoeists. In addition, this river is nationally and regionally significant as a component of the federal Wild and Scenic River system. This request is based in part on information obtained from "Idaho Whitewater, the Complete River Guide," by Don McClaran and Greg Moore, 1989.

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St. Maries River - the confluence of John Creek to the confluence with the St. Joe River. This appropriation begins where the original minimum streamflow application terminates, in order to protect recreational floating opportunities in the downstream river reach.

The IWRB should appropriate 650 cfs from April 1 through May 31 to protect recreational boating. The St. Maries river has gained in popularity as a spring runoff kayak run amongst regional river runners. People come from Spokane, Coeur d'Alene, and Moscow to enjoy this primarily roadless (the railroad is adjacent to the river) Class III run. In the three years I lived in North Idaho I ran this reach as early as February 15 and as late as the first week of June. The river is extremely rocky and becomes hazardous at flows under 400 cfs. The minimum safe level for most intermediate level kayakers is about 650 cfs. This request is based on information obtained from "Idaho - The Whitewater State," by Grant Amaral and personal experience.

Clark Fork River - from the Cabinet Gorge Dam downstream to Lake Pend Oreille.

The IWRB should appropriate an additional 10,000 cfs from April 15 through July 15 for recreational floatboating.

The requested additional minimum flows are the minimum to safely float the river, not the ideal or optimum flows.

River	Additional Flow Requested	Time Frame
St. Joe	1000 cfs	April 15 to June 15
St. Maries	650 cfs	April 1 to May 31
Clark Fork	10,000 cfs	April 15 to July 15

RECORDED
APR 6 9 1978

Hearing info for
91-7122, 92-72004
96-8730

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