



Montana Fish, Wildlife & Parks

NEWS

490 N. Meridian Road, Kalispell, MT. 59901

CONTACT: John Fraley 406-751-4564 (office)

EMAIL: jfraley@mt.gov

REGION ONE

FOR IMMEDIATE RELEASE: November 14, 2011

BULL TROUT COUNTS STEADY IN THE FLATHEAD, UP IN THE SOUTH FORK, DOWN IN THE SWAN

Biologists have completed counts of bull trout redds (nests) in the eight standard stream index sections for the Flathead Lake population. Bull trout spawn in the fall, building nests in tributaries during September and October. These counts serve as an index of how many migratory adult bull trout successfully spawn. Crews also conducted surveys for both the Hungry Horse Reservoir/South Fork of the Flathead Population, and the Swan River Population. The same stream sections are surveyed annually and represent a known portion of the total bull trout spawning runs in each drainage.

The Flathead count is an index of spawners migrating upstream from Flathead Lake. This partial count (8 Middle and North Fork tributaries combined) was 189 redds, which is average for the past decade.

The South Fork total (basin-wide) count (610 redds), was well above average. This count reflects bull trout migrating upstream from Hungry Horse Reservoir, and includes reservoir tributaries and upper South Fork tributaries.

The Swan bull trout redd count (312 redds) was 52 percent below average. This reflects bull trout migrating upstream from Swan Lake. The decline in bull trout redds in the Swan Drainage over the past several years led biologists to suggest a change in angling regulations. Swan Lake has been managed with a one bull trout per day fishing regulation and annual harvest has averaged about 180 bull trout. A shift to catch-and-release regulations (no harvest) was approved by the Montana Fish, Wildlife & Parks Commission at their meeting on November 10.

More detailed information and analysis follows:

Field crews completed the 2011 bull trout spawning surveys between September 26 and October 28. Overall, conditions were optimal for accurate counts this year.

Flathead Lake Population: This was the 32nd consecutive year of index counts for the Flathead Lake population (Table 1). These fish spawn in tributaries to the North and Middle forks of the Flathead River. The 2011 index count of 189 redds in the eight standard stream sections, is about

equal to the average (186 redds) over the last decade and one less than last year's count of 190. These eight index reaches account for 45% of the total spawning run out of Flathead Lake.

The Middle Fork index counts of 136 last year and 124 this year are much greater than the average of 86 over the previous 12 years (highest since 1989), while counts in the North Fork index reaches (54 and 65 in 2010 and 2011) are considerably below the previous 12 year average of 107 redds. There are no clear reasons why there appears to have been a shift in the distribution of spawning to the Middle Fork index reaches, but biologists are sensitive to the possibility of increased research work and handling of juvenile bull trout in the North Fork drainage.

This year's spawning cohort was largely progeny of the year classes which spawned in 2003, 2004 and 2005. These were some of the lowest counts on record in Big and Coal creeks, so the low numbers this year were not entirely unexpected. In addition to the annual index sections in these drainages, crews also surveyed Hallowat Creek, a Big Creek tributary and the South Fork of Coal Creek, observing 13 and 2 redds respectively. Including these additional counts, crews documented a total of 22 redds in the Big Creek Drainage and 8 in the Coal Creek Drainage. North Coal and Mathias creeks were not surveyed, so the Coal Drainage total of 8 redds may be low.

Trail Creek redds numbers declined from approximately 50 in 2007 and 2008 to 19 in 2009, 11 last year and 8 this year. We only observed 14 redds here in 2003, the progeny of which would have returned as six year old spawners in 2010, so low numbers were expected last year. However, fish spawning this year were generally progeny from considerably stronger year classes. All spawning in the Trail Creek Drainage gets quantified annually.

Crews counted portions of the mainstem North Fork in British Columbia documenting 143 redds, which is the highest count recorded for the river in Canada. However, without a complete survey of all spawning reaches (basin-wide count), it is not possible to determine the overall significance of this count. A complete basin-wide count for the Flathead Lake population is planned for 2012.

Hungry Horse Reservoir/South Fork Population:

This was the 19th consecutive year of index counts for the four Hungry Horse Reservoir index sections (Table 2), the 10th year for the four Wilderness sections (Table 2), and the 3rd year when a basin-wide count was completed (Table 3). A basin-wide (complete) count had been planned last year; however, the heavy mid-late September precipitation would likely have resulted in poor counts. Considering the time and expense involved in backcountry surveys, we decided to postpone the basin-wide count in the South Fork Drainage until conditions were more conducive to accurate counts, which was the case this year.

The 2011 reservoir index count of 124 redds is approximately 46% above the 18 year average of 85 redds. These four reservoir sections account for 23% of the eight stream index (n=10), or 20% of the South Fork Drainage basin-wide total (n=3). The 2011 basin-wide total of 610 is the highest basin-wide count on record; however, the reservoir index counts in 2006 and 2007 were higher.

Swan Lake Population: This is the 30th year of redd counts in the Swan Drainage (Table 4). Although Elk, Goat, Squeezer and Lion creeks comprise our annual index, assistance from the USFS and Plum Creek has allowed complete basin-wide counts annually since 1995. This year, the USFS assisted in the redd counts. The basin-wide redd count has averaged 651 during this 16 year period (1995-2010). The 2011 basin-wide count of 312 is 52% below this 16 year average.

Redd numbers in the Swan Drainage increased steadily through the 80's and 90's, peaking in 1997 and 1998 at over 800 redds. From 1999 to 2001 numbers declined by about 15%. We observed another 15% decline during the four year period from 2002 to 2005. Redd numbers rebounded in 2006 and 2007, but have steadily declined since. Mysis shrimp became well established in the 80's and along with kokanee and more conservative fishing regulations helped fuel the observed increase in the bull trout population. The peak years of 1997 and 1998 may actually have been above the carrying capacity for bull trout, which would explain the 15% declines in 1999-2001 and 2002-2005.

Lake trout were first detected in the Swan River drainage in 1998 and juvenile fish were first captured in gillnets in 2003, indicating that reproduction was occurring. A study initiated in 2006 revealed that lake trout up to 16 years old were present in Swan Lake, and confirmed that the population has been steadily increasing since the early 1990's. Although the exact mechanism causing the recent decline in bull trout redd numbers is unknown, it is likely that the increasing lake trout population could be a factor. Lake trout have lead to declines in bull trout populations in other waters similar to Swan Lake across the region. Biologists began an experimental lake trout removal in 2009 using various netting techniques. The bull trout bycatch (unintended take of bull trout) associated with this ongoing lake trout removal (netting) could also affect bull trout numbers. Based on current trends in redd numbers in the Swan Drainage, it appears that changes in fisheries management are warranted. A shift to catch-and-release regulations was approved by the Montana Fish, Wildlife & Parks Commission. Data being collected as part of the three-year removal experiment will be used to evaluate the potential effects of bycatch. Biologists will continue to monitor bull trout redd numbers to determine the effectiveness of potential changes in fisheries management.

Contact: Tom Weaver, Fisheries Biologist, 751-4551.

---fwp---

Redd count tables attached.....

Table 1. Flathead bull trout spawning site inventories from 1980 – 2011 in index stream sections monitored annually.

Drainage: Stream	Redd Numbers										
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
North Fork:											
Big	20	18	41	22	9	9	12	22	19	24	25
Coal	34	23	60	61	53	40	13	48	52	50	29
Whale	45	98	211	141	133	94	90	143	136	119	109
Trail	31 ^{a/}	78	94	56	32	25	69	64	62	51	65
Total	130	217	406	280	227	168^{b/}	184	277	269	244	228
Middle Fork:											
Morrison	75	32 ^{a/}	86	67	38	99	52	49	50	63	24
Granite	34	14 ^{a/}	34	31	47	24	37	34	32	31	21
Lodgepole	14	18	23	23	23	20	42	21	19	43	12
Ole	19	19	51	35	26	30	36	45	59	21	20
Total	142	83	194	156	134	173^{b/}	167	149	160	158	77
Flathead Drainage Monitoring Count	272^{a/}	300^{a/}	600	436	361	341^{b/}	351	426	429	402	305

Drainage: Stream	Redd Numbers										
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
North Fork:											
Big	24	16	2	11	14	6	13	30	34	32	22
Coal	34	7	10	6	13	3	5	14	7	3	0
Whale	61	12	46	32	28	35	17	40	49	68	77
Trail	27	26	13	15	28	8	9	17	21	42	27
Total	146	61	71	64	83	52	44	101	111	145	126
Middle Fork:											
Morrison	45	17	14	21	28	9	39	35	30	44	40
Granite	20	16	9	18	25	4	12	22	37	26	18
Lodgepole	9	13	9	6	9	8	5	7	11	3	17
Ole	23	16	19	6	16	10	14	22	26	33	29
Total	97	62	51	51	78	31	70	86	104	106	104
Flathead Drainage Monitoring Count	243	123	122	115	161	83	114	187	215	251	230

Drainage: Stream	Redd Numbers									
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
North Fork:										
Big	12	12	11	15	37	40	21	23	8	9 ^{c/}
Coal	0	1	3	4	17	4	2	0	4	6
Whale	71	34	41	39	56	27	34	43	31	42
Trail	26	14	34	30	34	51	49	19	11	8
Total	109	61	89^{b/}	88^{c/}	144	122	106	85	54^{b/}	65
Middle Fork:										
Morrison	30	21	10	16	11	21	46	34	43	39
Granite	18	17	17	8	16	14	27	24	41	33
Lodgepole	12	10	6	16	19	17	4	10	20	12
Ole	21	21	14	16	31	29	42	34	32	40
Total	81	69	47^{b/}	56^{c/}	77	81	119	102	136^{b/}	124
Flathead Drainage Monitoring Count	190	130	136^{b/}	144^{c/}	221	203	225	187	190^{b/}	189^{c/}

^{a/} Counts may be low due to incomplete survey; ^{b/} High flows may have obliterated some redds; ^{c/} Minimum count due to poor conditions during survey

Table 2. South Fork Drainage bull trout spawning site inventories from 1993 – 2011 in reservoir annual index stream sections and wilderness tributaries monitored regularly.

	Reservoir Tributaries											
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Wounded Buck	22	29	34	41	14	5	3	3	9	5	10	3
Wheeler	12	10	1	3	1	4	12	23	25	12	17	15
Sullivan	25	8	--	52	50	54	55	45	51	18	45	62
Quintonkin	5	3	7	4	0 ^{b/}	11	15	15	17	21	4 ^{c/}	18
Totals	64	50	42	100	65^{b/}	74	85	86	102	56	76	98
	Wilderness Tributaries											
Youngs	40	24	34	74	43	--	85	--	61	--	--	100
Gordon	35	44	46	58	30	--	99	--	120	--	--	140
Little Salmon	56	47	43	134	100	--	138	--	111	--	--	71
White River	39	60	45	86	31	--	76	--	76	--	--	70
Total	170	175	168	353	204	--	398	--	368	--	--	381
Combined Total	234	225	210^{a/}	453	269^{b/}	74^{a/}	483	86^{a/}	470	56^{a/}	76^{ac/}	479^{b/}

	Reservoir Tributaries							
	2005	2006	2007	2008	2009	2010	2011	
Wounded Buck	5	47	40	31	14	26	28	
Wheeler	14	23	27	4	12	8	11	
Sullivan	24	56	74	27	26 ^{c/}	28 ^{b/}	54	
Quintonkin	21	48	20	12	14	33	31	
Totals	64	174	161	74	66	95^{b/}	124	
	Wilderness Tributaries							
Youngs	--	132	--	--	--	--	111	
Gordon	--	142	--	--	--	--	118	
Little Salmon	--	50 ^{a/}	--	--	--	--	99 ^{a/}	
White River	--	90	--	--	--	--	77 ^{a/}	
Total	--	414	--	--	--	--	405	
Combined Total	64^{ac/}	588^{a/}	161^{a/}	74^{a/}	66^{ab/}	95^{ab/}	529	

^{a/} Counts may be low due to incomplete survey.

^{b/} High flows may have obliterated some redds.

^{c/} Minimum count due to poor conditions during survey.

Table 3. Number of bull trout redds observed during basin-wide spawning site inventories in the South Fork of the Flathead River drainage during fall 1993, 1999 and 2011.

Reservoir Tributaries			
	1993	1999	2011
Wounded Buck	22	3	28
Wheeler	12	12	11
Sullivan	25	55	54
Quinktokin	5	15	31
Total	64	85	124
Upper Basin Tributaries			
	1993	1999	2011
Spotted Bear	13	13	13
Little Salmon	56	138	99
White River	39	76	77
Gordon	35	99	118
Youngs	40	85	111
Babcock	4	16	24
Danaher	9	7	9
Rapid	12	0	0
Main Stem	4	13	35
Total	212	447	486
Basin-Wide Total	276	532	610

Table 4. Swan bull trout spawning site inventories from 1982-2011 for tributary drainages upstream from Swan Lake.

Drainage	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Lost	11	7	19	--	--	--	--	--	13 ^{a/}	6
Soup	--	--	--	--	--	--	--	--	--	4
Woodward	--	5	--	--	--	--	--	--	--	44
Goat	33	39	31	40	56	31	46	34	27	31
Squeezer	41	57	83	24	55	64	9 ^{b/}	67	42	101
Lion	63	49	88	26	46	33	65	84	58	94
Piper	0	0	1	--	--	--	--	25	--	18
Jim	--	7	6	--	--	--	--	39	22	40
Cold	1	9	6	--	--	--	--	--	--	5
Elk	56	91	93	19 ^{b/}	53	162	201	186	136	140
Total	205^{a/}	264^{a/}	327^{a/}	109^{ab/}	210^{a/}	290^{a/}	321^{ab/}	435^{a/}	298^{a/}	483

Drainage	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Lost	--	--	--	30	28 ^{a/}	47 ^{a/}	30	24 ^{a/}	12 ^{a/}	14 ^{a/}
Soup	2	4	2	5	8	12	8	9	12	5
Woodward	8 ^{a/}	--	--	96	72 ^{a/}	72	81	53 ^{a/}	76 ^{a/}	55 ^{a/}
Goat	17	64	66	32	52	85	71	46	75	91
Squeezer	115	106	91	149	117	125	141	59 ^{b/}	105	114
Lion	100	123	141	170	181	190	141	135	120	132
Piper	--	--	--	10	29	19	9	18	6	4
Jim	45	43	53	56	65	74	71	58	69	95
Cold	--	--	--	21	20	23	18	19	25	12
Elk	143	139	195	157	176	186	259	261	219	165
Total	430^{a/}	479^{a/}	548^{a/}	726	748^{a/}	833^{a/}	829	682^{ab/}	719^{a/}	687^{a/}

Drainage	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Lost	11 ^{a/}	27 ^{a/}	10 ^{a/}	21 ^{a/}	26 ^{a/}	25 ^{a/}	14 ^{a/}	19	17 ^{a/}	37
Soup	4	2	3	10	12	11	3	5	4	3
Woodward	54 ^{a/}	116 ^{a/}	58 ^{a/}	67 ^{a/}	69 ^{a/}	114	92	58	67	42
Goat	54	80	67 ^{b/}	65	62	75	69	72	57	13
Squeezer	122	85	94 ^{b/}	103	113	123	59 ^{c/}	60	36 ^{b/}	39
Lion	102	92	117 ^{b/}	75 ^{c/}	136	136	92	100	59 ^{c/}	74 ^{c/}
Piper	4	2	9	4	3	16	6	0	4	0
Jim	35	18	74	69	51	68	80	28	13 ^{b/}	14
Cold	2	2	8	15	6	7	8	5	5	6
Elk	152	168	157 ^{b/}	159 ^{c/}	178	187	175	134	116	84
Total	540^{a/}	592^{a/}	597^{ab/}	588^{ac/}	656^{a/}	762^{a/}	598^{ac/}	481	378^{ab/}	312^{c/}

a/ Counts may be low due to incomplete survey.

b/ High flows may obliterated some redds.

c/ Minimum count due to poor conditions during survey.