Montana Fish, Wildlife & Parks

Fisheries Division
Federal Aid Job Progress Report

Montana Statewide Fisheries Management

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Project Title: Montana Statewide Fisheries Management

Job Title: (3140 Kootenai River Drainage Fisheries Management)

Abstract:
We issued fewest permits for Koocanusa for all years and also noted a decrease in both the number and percent of anglers that said they actually fished at Koocanusa for the fourth consecutive season. The number of days anglers fished at Koocanusa (7.0) was the highest on record and indicated we successfully targeted large fish anglers.

We estimated that 1,250 bull trout were caught at Lake Koocanusa during the 2014 season which continued a positive trend since 2011. Anglers that used two poles 50 percent of the time or more accounted for a portion of the caught bull trout (89.0) similar to other years. The mean length of bull trout (20.6"; range 10"- 31") caught during the 2014 season was similar to other seasons. There were no violations for Lake Koocanusa catch cards during the 2014 season.

We used SPSS© General Linear Model (GLM) to evaluate if bull trout redd counts in the Wigwam River and Grave Creek differed through time by comparing periods with similar angling regulations. We included year as a covariate in each model to account for the significant temporal trend in redd counts. We found no evidence that redd counts were lower during periods that allowed legal harvest of bull trout under the USFWS experimental fisheries, however, it should be noted that the power of these tests was low. Our results suggest that factors in addition to angling on the Montana portion of Lake Koocanusa (environmental, angling other than in the US portion of Lake Koocanusa) may have exerted additional pressure on the population. It also appears that Wigwam River redd counts overwhelm Grave Creek redd counts when combined.

Cumulative pressures in addition to angling on Lake Koocanusa are affecting bull trout spawning in Grave Creek. These pressures likely include decrease in quality spawning habitat over the last several years due to drought and fry entrainment through the Glen Lake Irrigation diversion downstream of the spawning areas. In addition, angling pressure (Grave Creek open to angling, kokanee snagging on Tobacco River during a portion of the spawning run, year round angling at the confluence of the Tobacco River and Lake Koocanusa) may influence returning spawners.

Over the years, we developed a management strategy for the Lake Koocanusa bull trout recreational fishery that is more conservative than the limits of the Authority statutes set by USFWS sub permit TE-07753 for this population. As a result, regulations have been modified from 2 bull trout per year to catch and release based on the gathered information.

Based on information available, we believe a return to a limited bull trout harvest (one per year) is warranted. We will continue require a catch card and survey catch card holders as we have in the past. We expect that allowing a conservative harvest at the outset will help provide additional opportunity to follow redd count numbers during an upward trend.

Angler Survey of Experimental Recreational Bull Trout Fishery for Lake Koocanusa, Montana 2014 Season.

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SUMMARY

In 2004, the U.S. Fish and Wildlife Service authorized limited sport fishing for bull trout *Salvelinus confluentus* at Hungry Horse Reservoir, South Fork Flathead River and Lake Koocanusa as requested by Montana Fish, Wildlife & Parks after those fisheries were deemed to have reached recovery goals. A portion of the permit conditions called for a bull trout permit and catch card system, angler survey and development of educational information pertaining to these new fisheries.

This was the eleventh year of the surveys. Like 2013, because harvest was eliminated from the Koocanusa fishery, not surprisingly, only 69 anglers obtained permit/catch cards. Once again, we determined to use the previous year's validations to generate a survey that included (minus undeliverable surveys) mailings to 819 potential anglers. By July 1, 2015 we had received a total of 574 responses (70.4% returned) for both mailings and returned catch cards. Nearly 84 percent of the anglers that said they fished at least one day were from Montana. We issued fewest permits for Koocanusa for all years and also noted a decrease in both the number and percent of anglers that said they actually fished at Koocanusa for the fourth consecutive season. The mean number of days anglers fished at Koocanusa (7.0) was the highest on record and indicated the survey successfully targeted large fish anglers.

We estimated that 1,250 bull trout were caught at Lake Koocanusa during the 2014 season which continued a positive trend since 2011. Anglers that used two poles 50 percent of the time or more accounted for 89% of the bull trout caught, which was similar to other years.

The mean length of bull trout (21.9"; range 8.0"- 34.0") caught during the 2014 season was similar to other seasons. There were no violations for Lake Koocanusa catch cards during the 2014 season.

We used SPSS© General Linear Model (GLM) to evaluate if bull trout redd counts differed through time by comparing periods with similar angling regulations. For this analysis, we included year as a covariate in the GLM, and as expected, Year was significant in the angling vs. redd counts model indicating there was a trend. We tested three hypotheses using this method:

H_0: Wigwam River redd counts do not differ by angling period
H_A: Wigwam River redd counts do differ by angling period
Failed to reject H_0 ($P = 0.128$) Power of test (0.406)

H_0: Wigwam River + Grave Creek redd counts do not differ by angling period
H_A: Wigwam River + Grave Creek redd counts do differ by angling period
Failed to reject H_0 ($P = 0.103$) Power of test (0.448)

H_0: Grave Creek redd counts do not differ by angling period
H_A: Grave Creek redd counts do differ by angling period
Reject H_0 ($P < 0.05$) Power of test (0.717)
Mean redd counts during
Period 3 (closed to fishing) > Period 5 (catch and release)
Period 4 (1 daily 2 per year) > Period 5 (catch and release)

Redd counts in the Wigwam River and the Wigwam River plus Grave Creek did not differ significantly between periods. The results suggest that factors in addition to angling on the Montana portion of Lake Koocanusa (environmental, angling other than in the US portion of Lake Koocanusa) may have exerted additional pressure on the population. However, it should be noted that the power of these tests was low. It also appears that Wigwam River redd counts overwhelm Grave Creek redd counts when combined, in these analyses.

Cumulative pressures in addition to angling on Lake Koocanusa are affecting bull trout spawning in Grave Creek. These pressures likely include decrease in quality spawning habitat over the last several years due to drought and fry entrainment through the Glen Lake Irrigation diversion downstream of the spawning areas. In addition, angling pressure (Grave Creek open to angling, kokanee snagging on Tobacco River during a portion of the spawning run, year round angling at the confluence of the Tobacco River and Lake Koocanusa) may influence returning spawners.

Over the years, we developed a management strategy for the Lake Koocanusa bull trout recreational fishery that is more conservative than the limits of the Authority statutes set by USFWS sub permit TE-07753 for this population. As a result, regulations have been modified from 2 bull trout per year to catch and release based on the gathered information.

Based on information available, we believe a return to a limited bull trout harvest (one per year) is warranted. We will continue require a catch card and survey catch card holders as we have in the past. We expect that allowing a conservative harvest at the outset will help provide additional opportunity to follow redd count numbers during an upward trend.

INTRODUCTION

In 2012, Montana Fish, Wildlife & Parks (MFWP) personnel conducted the eighth annual angler mail survey for the recreational bull trout (***Salvelinus confluentus***) fishery on Lake Koocanusa initiated in 2004. Because bull trout were listed as a "threatened species" under the Endangered Species Act in 1998, this fishery was authorized under special permit by the U.S. Fish and Wildlife Service (USFWS). In 2012, Montana Fish Wildlife & Parks decreased bull trout harvest from one per angler per year to catch and release for several reasons: 1) decreasing mean lengths of bull trout caught and harvested; 2) an unstable trend of redd numbers in the Wigwam River (the major spawning tributary in the BC portion Lake Koocanusa bull trout) and Grave Creek (the major spawning tributary in the US portion of Lake Koocanusa); 3) unknown amount of angler harvest in the mainstem and tributaries of the BC portion of Lake Koocanusa. We believed this to be the prudent course of action even though the USFWS sub permit TE-077533 allowed for harvest of 1,140 bull trout.

BACKGROUND

Bull trout were listed as "threatened" under the Endangered Species Act in 1998. At the time of listing, sport fishing for bull trout had already been discontinued in Montana and was under review, except in Swan Lake which was considered to have a stable population.

The USFWS authorized an experimental sport fishery for bull trout at Lake Koocanusa because this fishery was deemed to have reached recovery levels. This activity was intended to benefit the species by researching the effects of restoring recreational fishing. In addition, allowing angling for bull trout likely increases public support for management of stable bull trout populations in the identified water bodies. We also believe the action will continue to garner additional support for restoration of bull trout habitats and other management activities that will improve bull trout populations throughout the state.

METHODS

Conditions of the USFWS special permit (TE-077533) for a new bull trout fisheries contained s items agreed upon by both USFWS and MFWP (Hensler and Benson 2005). One condition called for the development and use of a catch card. Also required was a formal survey of anglers participating in these experimental bull trout fisheries. Educational materials were also developed to explain catch card use, bull trout identification, seasons, limits, and regulations pertinent to each fishery and bull trout conservation measures.

The first step in developing a catch card authorization involved creating an application for anglers interested in angling for bull trout. We made the form available through the Region 1 MFWP office and over MFWP's web site. The application required the angler's name, address, automated licensing system (ALS) number and permit area (waters) where they chose to fish. Anglers were not given duplicate catch cards during the season if the original was lost. To ensure consistent, high-quality information to and from participating anglers, we required that all applications be submitted to the Region One FWP office in Kalispell. There continued to be no charge for the permit/catch card.

After a completed application was processed, a permit and numbered catch card was issued to each angler. The catch cards provided general instructions for anglers fishing for bull trout on Lake Koocanusa and the request to keep the card until a survey was sent. The cards requested entry of the catch zone, fish length, month and day of catch for each fish harvested from Lake Koocanusa. Additionally, we requested supplemental information: total number of days fished for bull trout, total number of bull trout caught and released, and a catch and release log that included zone, length, month, and day. Because of potential incidental catch associated with large rainbow trout angling, we asked that anglers also provide the same information for rainbow trout greater than 22 inches. We also asked the percent of time each angler fished with two lines.

We offered to provide bull trout anglers a copy of the current bull trout fishing regulations and an informational pamphlet with each catch card issued. Pamphlets specifically outlined seasons, limits, restrictions, catch card use, catch-and-release fishing techniques and bull trout identification for all waters open to bull trout fishing. Special license procedures, regulations and conservation measures for bull trout were also itemized in the 2014 and 2015 Montana Fishing Regulations booklets. As was previously described, anglers were not allowed to harvest bull trout during the 2014 season. Upon landing a bull trout, anglers were required to immediately release the fish.

Completed catch cards helped to provide information on bull trout harvest, catch date, size and location for the 2014 season. We still do not charge a fee for catch cards or assess a penalty for failure to return cards as specified. We requested that anglers retain their catch card until surveyed and return the 2014 catch card with the survey to improve the reliability of information.

A total of 69 catch cards were distributed to anglers for the 2014 season. So to obtain the best and most thorough and accurate estimates of angling effort and catch rates, MFWP also conducted a mail survey of anglers that acquired catch cards from previous seasons. The survey asked for the same information as requested on the catch cards. Surveys were initially mailed to both groups on April 10, 2015. A follow up mailing was conducted on May 13, 2015 to anglers who had not returned surveys. Anglers were also reminded to return their catch cards with the surveys.

For this report, we were primarily concerned with estimates of bull trout catch for Lake Koocanusa. We used the survey in combination with catch card returns to estimate the total number of bull trout caught and released. All estimates and graphs were generated in Microsoft Excel. We conducted statistical analysis using Excel and SPSS to a level of significance at 0.05 unless otherwise noted.

RESULTS

Bull Trout Catch Card Returns

Catch card instructions requested that anglers return the catch cards after their license expired with the survey. Some anglers did return catch cards but not surveys; some returned both; some returned only surveys. There was no longer a harvest fishery for bull trout so it wasn't surprising that we issued only 69 catch cards for the 2014 season. By August 1, 2015, we received 55 catch cards/catch card surveys (79.7%) from anglers that had a catch card.

Bull Trout Angler Mail Survey

On April 10, 2014, we mailed the initial survey to 746 Koocanusa anglers from previous years. We conducted a second mailing to non-respondents to increase our level of returns. We removed non-deliverable surveys from the survey which made 1129 total mailings to 815 anglers. By August 1, 2013 we had received 574 responses (70.4%) for both mailings and returned catch cards and ended the survey due to declining returns.

Angler Demographics

The vast majority of surveyed anglers that fished at Lake Koocanusa were Montana residents (83.8%). This was similar to most other years. Anglers from only 3 other states and provinces (6 in 2014, 10 in 2012, 13 in 2011, 13 in 2010, 13 in 2009, and 22 in 2008) were issued a catch card for Lake Koocanusa. Non-resident anglers were from the states of Washington (5.2%), Idaho (10.5%) and province of Alberta (one angler).

Fishing Pressure Estimates

After the season, 574 (70.4%) of the 815 surveyed either returned catch cards or responded to the mail survey. We found that 223 of the respondents (38.9%) indicated that they did fish for bull trout. Both number and percent that fished continued a downward trend since 2009 (Figure 1).

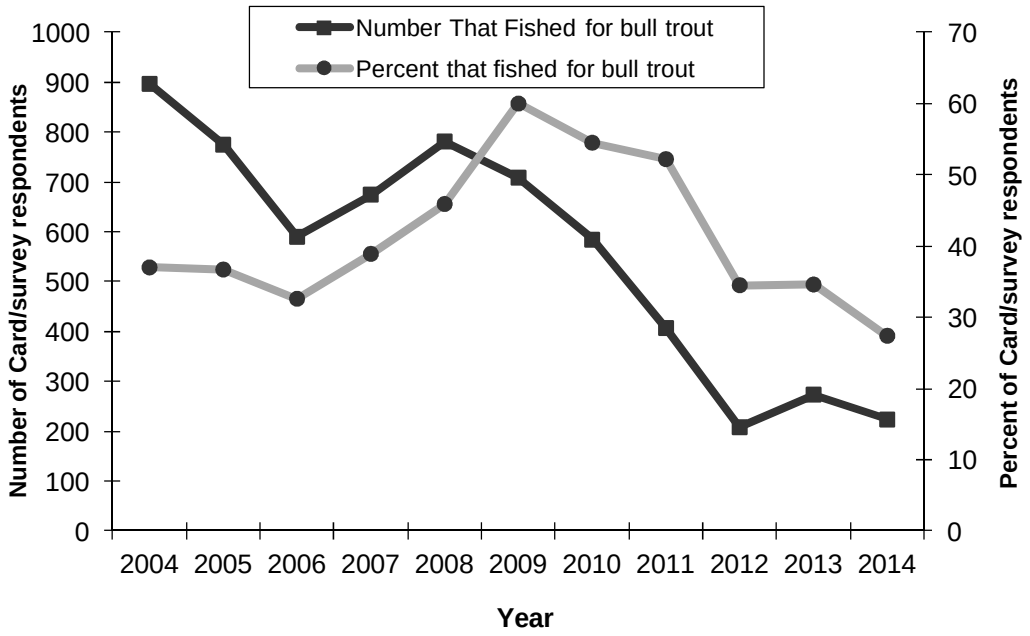

Figure 1. Estimated number of catch card holders and percent of total catch card holders that fished for bull trout at Lake Koocanusa, Montana through the 2014 season.

To estimate total number of angler-days of pressure on bull trout, we used the number of days anglers reported from catch cards and survey respondents who fished for bull trout. We assumed anglers not responding to the survey angled for bull trout with the same effort. The total angler-days reported (1,099) and estimated angler-days (1,842) for the 2014 season were lowest on record. Conversely, the days per angler were by far highest on record (Table 1) and indicated that our survey successfully targeted the large fish anglers.

Table 1. Bull trout season angling pressure estimates calculated from catch card and survey results for Lake Koocanusa through the 2014 season.

Number Angler-Days Fishing Pressure											
Season	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Number of Respondents	897	774	590	569	609	691	497	598	603	449	574
Angler-Days from survey	1,685	3,285	2,639	2,963	3,917	3,686	3,154	1,933	1,456	1,673	1,099
Estimated Angler-Days	3,483	4,874	3,390	3,595	4,607	4,537	3,720	2,521	1,850	2,370	1,842
Days per angler	1.4	2.3	1.9	2.1	2.7	3.8	3.5	3.2	2.4	2.3	7.0

Harvest and Catch Estimates

Since there was no harvest for the 2014 season, only catch estimates were calculated. To estimate total catch at Lake Koocanusa for the 2014 season, we calculated the mean catch rate (4.7) for anglers who returned catch cards and surveys and did not indicate that they fished for kokanee or had no interest in angling at Koocanusa. That catch rate is very high and reflects the

survey targeted motivated large fish anglers. The estimated total catch calculated from all surveyed anglers was 1,250 bull trout (Table 3). This was the highest number of bull trout caught since 2011 season and continued an upward trend.

Table 2. Estimated bull trout harvest (known harvest) and catch (known catch) for Lake Koocanusa through the 2014 season.

Season	Bull Trout Harvested	Lower Bound	Upper Bound	Bull Trout Caught	Lower Bound	Upper Bound	Percent Released
2004	650 (259)	259	652	2,399 (698)	*	*	72.1
2005	371 (216)	216	373	3,595 (2,171)	2,171	3,611	89.7
2006	180 (140)	140	181	1349 (909)	909	1,353	86.6
2007	267 (220)	220	268	1,484 (997)	997	1,488	82.0
2008	295 (249)	249	296	1,897 (1,358)	1,358	1,900	84.4
2009	256(206)	206	257	1,810 (1,247)	1,247	1,815	85.8
2010	163(138)	138	164	1,568 (1,328)	1,328	1,573	89.6
2011	107(82)	82	108	1,318 (925)	925	1,323	91.9
2012	No harvest			742 (608)	738	747	100
2013	No harvest			965 (728)	951	981	100
2014	No harvest			1,250 (746)	1,219	1,283	100

*Point estimate expanded from caught vs. released bull trout from catch cards with no variance calculated

We asked anglers to estimate the percent of time they fished with two lines to assess the potential impact of the legislated regulation change to bull trout catch and catch rates. During the 2014 season, 50.7 percent of anglers said they angled with two lines all the time, 80.0 percent responded that they angled with two lines at least some of the time, both substantial increases over the previous year (Table 3).

Table 3. Percent of anglers that used two lines to fish for bull trout in Lake Koocanusa through the 2014 season.

Season	Total Number of Respondents	Percent That Fished with Two Lines at Least Some of The Time	Percent That Fished with Two Lines all of the Time	Known bull trout caught by all methods	Percent of bull trout caught by anglers using 2 lines at least 50 percent of the time
2006	One line	0	0	909	*
2007	None*	--	--	997	*
2008	430	59.1	33.7	1,358	53.4
2009	511	64.0	38.0	1,247	87.4
2010	469	65.8	41.2	1,328	76.1
2011	295	60.1	46.1	925	90.1
2012	208	79.3	51.4	608	90.1
2013	236	73.3	45.8	728	90.1
2014	144	80.0	50.7	746	89.0

*The regulation was put into effect after the start of the 2007 season

We analyzed catch rates for anglers for all years. Anglers that used two poles 50 percent or more of the time accounted for 89.0 percent of the bull trout caught. During the 2014 season, anglers captured the highest number of bull trout since the 2011 season. The lower number of bull trout caught during 2011, 2012 and 2013 may to be due to decreasing numbers of anglers fishing for bull trout/rainbow trout (Figure 1) as regulations decreased from limit of two bull trout to one to no harvest in the three consecutive years. In addition, kokanee size was substantially greater in those years compared to the previous several years.

Table 4. Bull trout caught and bull trout per angler day for anglers fishing for bull trout in Lake Koocanusa through the 2014 season.

Season	Bull Trout Caught	Angler days per bull trout caught
2004	2,399 (698)	
2005	3,595 (2,171)	1.4
2006	1349 (909)	2.5
2007	1,484 (997)	2.4
2008	1,897 (1,358)	2.4
2009	1,810 (1,247)	2.5
2010	1,568 (1,328)	2.1
2011	1,318 (925)	2.1
2012	742 (608)	2.4
2013	965 (728)	2.3
2014	1,250 (746)	1.5

Anglers were asked to estimate and record lengths of bull trout they caught and released. For the 2014 season, the mean length of caught bull trout (20.6”; range 10”- 31”) was similar to 2013. As was typical for all years, anglers caught and released bull trout from all of the size classes (Figure 3). Lengths of the majority of bull trout caught were between 20 and 30 inches. The spike in the 26 inch length class was similar to but more pronounced than those from previous years.

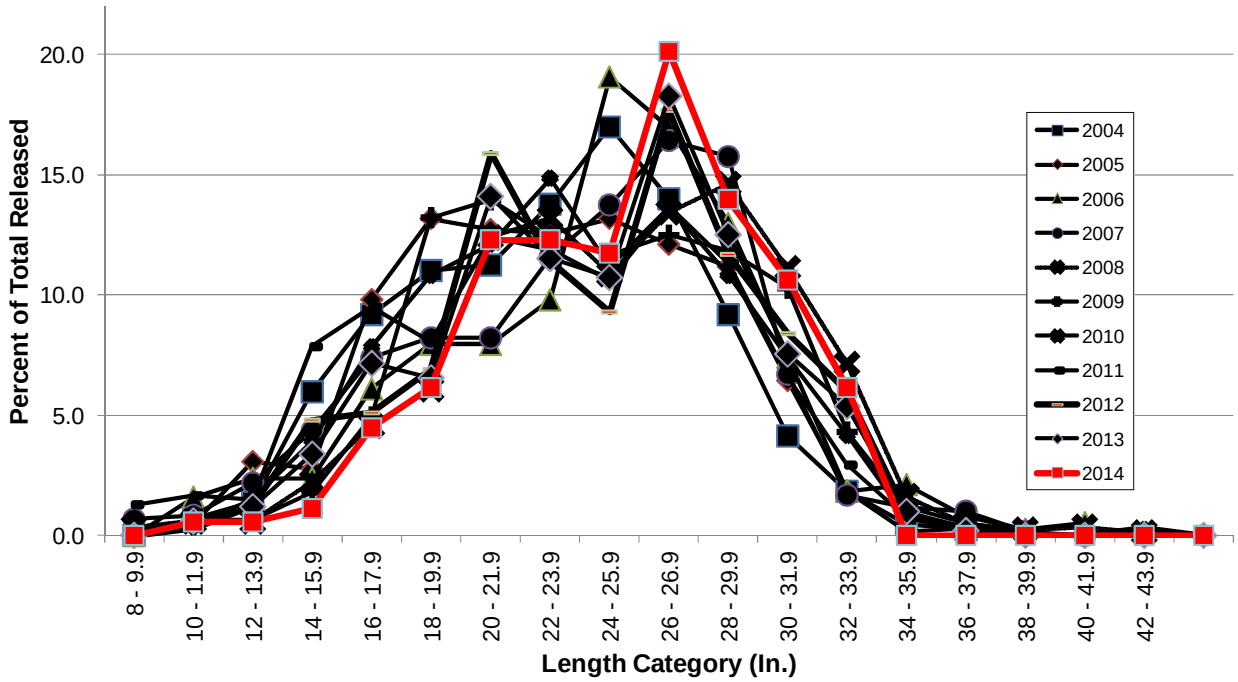

Figure 2. Lengths of bull trout caught and released through the 2014 season from Lake Koocanusa, Montana.

Catch Card Violations

By July 15, 2015 we received 55 catch cards for the 69 cards issued for the Koocanusa bull trout fishery. We found no technical violations. Hopefully this trend will continue when the harvest fishery is re-opened.

DISCUSSION

Provisions of the USFWS sub permit TE-07735 authorized in 2004 for Koocanusa provided for angler take not to exceed 1,140 bull trout per year and that redd counts not drop below 667 for Wigwam River in British Columbia or 67 in Grave Creek. Since the experimental fishery started estimated yearly harvest rates never approached permitted yearly harvest (Table 2) and even relatively liberal estimates for catch and release mortality (10.0%) only two years (2004,2005) resulted in the fishery exceeding 50 percent of the 1,140-fish take limit.

The Koocanusa bull trout population is closely monitored. Bull trout abundance is monitored through annual fall redd counts. Bull trout redds are counted in index reaches of Wigwam River and its tributaries (Figure 3) annually by BC personnel, and index reaches of Grave Creek and its tributaries (Figure 4) by MFWP personnel.

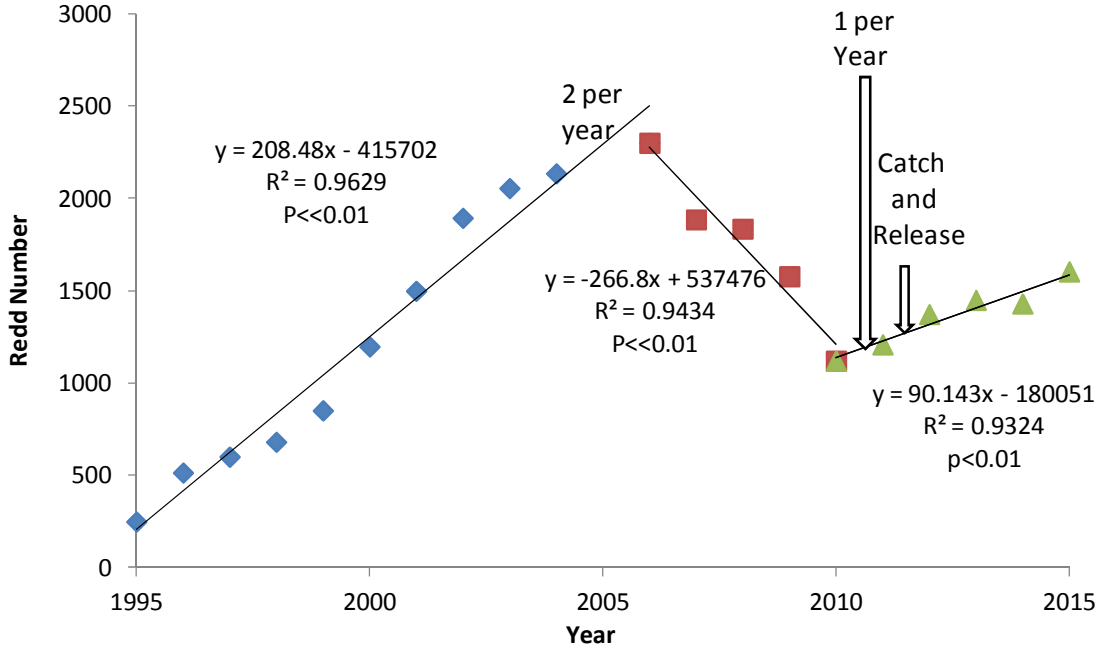

Figure 3. Bull trout redd counts through the 2014 season for Wigwam River, British Columbia, Canada.

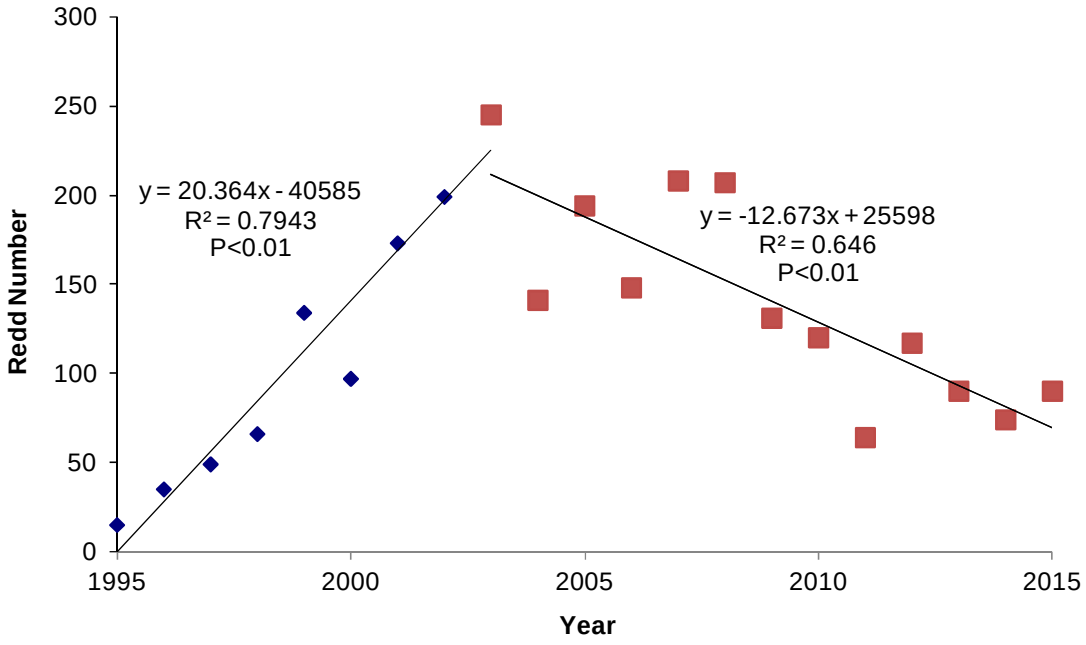

Figure 4. Bull trout redd counts through the 2014 season for Grave Creek, Montana.

In addition to redd counts, sub-adult and adult bull trout densities in Lake Koocanusa are also monitored through annual standardized spring gillnetting surveys (Figure 5). Bull trout per net from spring gillnets followed very similar trends to redd counts.

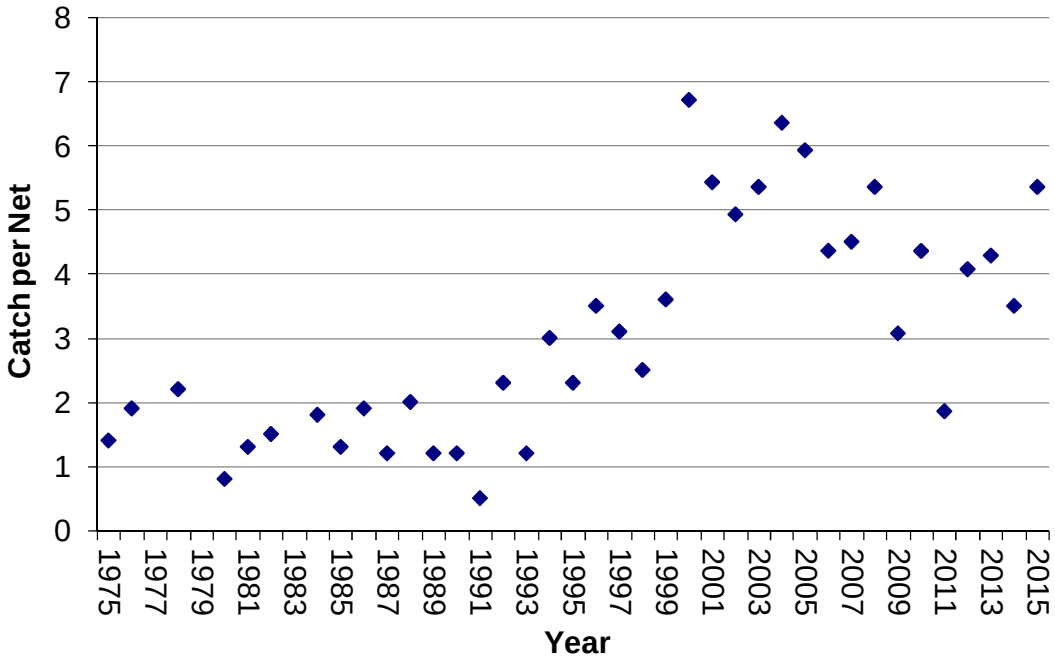

Figure 5. Bull trout catch per net in Lake Koocanusa compared to redd counts through the 2014 season for Wigwam River, British Columbia.

Spring gillnet bull trout numbers have become a very good predictor of fall redd counts (Figure 6), the slope equation including 2015 spring nets produced a redd count prediction for the Wigwam River within 2.5 percent (1,562) of the actual count (1601). This gives us two very good indices to track the bull trout population in the reservoir as we move back to a harvest fishery

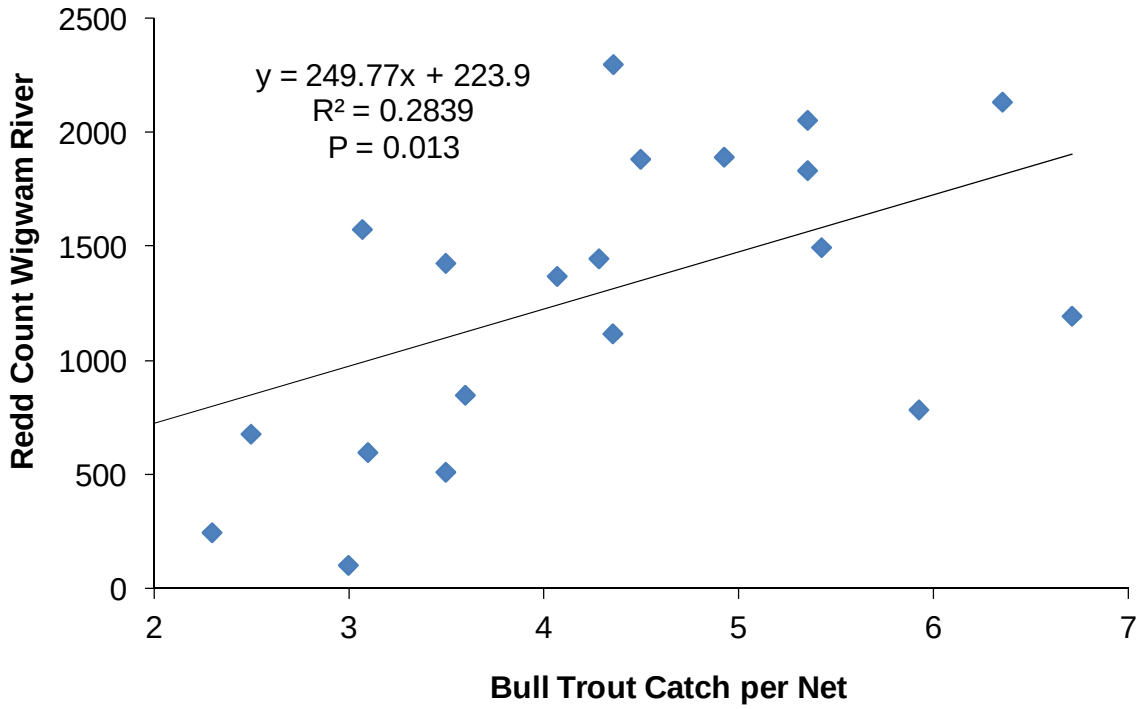

Figure 6. Bull trout catch per net in Lake Koocanusa compared to redd counts through the 2014 season for Wigwam River, British Columbia.

These surveys have been conducted consecutively since 1995. The 21-year dataset showed a compelling trend with regard to the number of bull trout redds and gillnet catch timed with harvest and catch/release angling at Koocanusa. In addition, bull trout angling in British Columbia portion of the Lake Koocanusa/Kootenay River/Elk River by BC personnel accounts was a developing fishery with fairly liberal harvest limits (1 >30 cm per day Koocanusa, 1>75 cm per day Elk River). Therefore, even though the harvest and redd count numbers did not approach permit thresholds, MFWP adjusted regulations after 2011 to one per year harvest and after 2012 catch and release where it continues today.

To help gain more insight into the Lake Koocanusa bull trout fishery we used SPSS© General Linear Model (GLM) to evaluate if bull trout redd counts differed through time by comparing periods with similar regulations. For these analyses, we included year as a covariate in the GLM variables included;

Covariate: Year 1975 – 2015

Independent Variable (Angling period)
1=10 lbs and 1 fish or 10 fish (1975-1988)
2=1daily and in possession (1988-1993)
3=closed (1994-2003)
4=1 daily and possession 2 per year (2004-2011[included 1per year in 2011])
5=catch and release (2012-2015)

The dependent variables included:
Wigwam Redd Counts
Wigwam + Grave Creek Redd Counts
Grave Creek Redd Counts

We evaluated three hypotheses using this methodology, specifically testing those listed below. Year was significant in all models indicating there was a trend. So we retained year as a covariate in each model. Each final model allowed us to test for differences in redd counts between angling periods after we adjusted for the temporal trend.

H_0: Wigwam River redd counts do not differ by angling period
H_A: Wigwam River redd counts do differ by angling period
Failed to reject H_0 ($P = 0.128$) Power of test (0.406)

H_0: Wigwam River + Grave Creek redd counts do not differ by angling period
H_A: Wigwam River + Grave Creek redd counts do differ by angling period
Failed to reject H_0 ($P = 0.103$) Power of test (0.448)

H_0: Grave Creek redd counts do not differ by angling period
H_A: Grave Creek redd counts do differ by angling period
Reject H_0 ($P < 0.05$) Power of test (0.717)
Mean redd counts during
Period 3 (closed to fishing) > Period 5 (catch and release)
Period 4 (1 daily 2 per year) > Period 5 (catch and release)

Hypothesis testing is a useful tool for informing management actions but we realize that there are constraints to data collection and analyses are only as good as the data we have to input so it does have its limitations. For instance, the GLM is discrete analysis that cannot account for cumulative effects. Neither (Wigwam River) nor (Wigwam River + Grave Creek) redd counts differed by angling period, although the power of each test (0.406, 0.448, respectively) was low. This suggests that factors in addition to angling on the Montana portion of Lake Koocanusa (environmental, angling other than in the US portion of Lake Koocanusa) may have exerted

additional pressure on the population. Unfortunately, additional data for inclusion in these analyses do not exist. It also appears that Wigwam River redd counts overwhelm Grave Creek redd counts when the two are combined.

We did find that Grave Creek redd counts during angling periods three and four were significantly higher than period five (after accounting for the year trend). This suggests that cumulative effects in addition to angling on Lake Koocanusa affected bull trout spawning in Grave Creek. These pressures likely include but are not limited to decrease in quality spawning habitat over the last several years due to drought and fry entrainment through the Glen Lake Irrigation diversion downstream of the spawning areas. In addition, angling pressure (Grave Creek open to angling, kokanee snagging on Tobacco River during a portion of the spawning run, year round angling at the confluence of the Tobacco River and Lake Koocanusa) may have influenced returning spawners.

CONCLUSION

The Lake Koocanusa bull trout fishery is quite complex in that the majority of the adult population rears and matures in the Montana portion of the reservoir although major adult runs, spawning and juvenile rearing occurs in the BC portion of the drainage. Environmental and anthropogenic pressures are also complex and largely not known or measured. Over the years, we developed a management strategy for the Lake Koocanusa bull trout recreational fishery that evolved to be more conservative than the limits of the Authority statutes set by USFWS sub permit TE-07753 for this population. As a result, regulations have been modified from 2 bull trout per year to catch and release based on the gathered information.

It is problematic to identify and measure all possible variables (environmental/anthropogenic) affecting the bull trout population in Lake Koocanusa. Adding to the complication; one-half of the reservoir is across an international border with additional environmental variables and different management schemes for bull trout. Regardless, given the data (redd counts, gillnet counts, angler counts, harvest/catch and release counts) we have gathered since 2004 and analyses of these data we believe a return to limited bull trout harvest (one per year) is warranted. We will continue require a catch card and survey catch card holders and modify catch cards and surveys if improvement is necessary. We expect that allowing a conservative harvest at the outset will help provide additional opportunity to track redd count and gillnet numbers during an increasing population trajectory.

Beginning in 2016, MFWP will close angling on Grave Creek and its tributaries upstream of the highway 93 bridge from August 15 to third Saturday in May to provide additional protections for migrating adult bull trout. We will work to identify if there are negative impacts to migrating bull trout during kokanee snagging season (September 15 – November 30) and impacts that may occur at the interface between Tobacco Rive and Lake Koocanusa prior to the standard spring opening. We have very good relations with and continue to work with our counterparts in British Columbia to share data and ideas that will help inform and improve future management decisions.

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