

**Idaho Department of Fish and Game**  
**October - December 2006**

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**Kootenai River Fisheries Recovery Investigations**

Quarterly Progress Report and Summary of Activities

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Project Personnel:

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**Field Work Completed or in Progress and Summary of Results**

**Nutrient restoration**

Following Phosphorus additions in late September, the first week of October was spent performing intense clean up of the tanks, and winterizing sensitive flow equipment (Figure 1). Approximately 1,000 gallons of phosphate and 2,500 gallons of nitrate were left secured on site for winter storage.

This quarter, documents were prepared for the DEQ and EPA which explained in detail our management and quality control at the nutrient site and the testing that occurs on the river. Best Management Plan and Quality Assurance Plan for the nutrient project were prepared and finalized during November.

On December 12, the IKERT subcommittee held a meeting at the Kootenai River Inn to discuss year end results and formulate plans for improvements for the following application season. During this meeting it was agreed upon that we will wait until algal taxonomy data are analyzed before deciding the level of phosphate for the 2007 field season.

The majority of December was spent preparing a manuscript on the survey of zooplankton in Canadian lakes with sustained burbot populations. Additionally, fish biomonitoring data analysis and report writing have filled in most of the time this quarter.



Figure 1. Breaking down sensitive flow equipment at the nutrient restoration site near Leonia, MT. 2006.

### **White sturgeon**

Field activities during this quarter were limited to adult white sturgeon sampling. In October, we tagged four stage 4 female white sturgeon with Vemco sonic transmitters to monitor spawning movements and migrations in 2007. To date, 53 adult white sturgeon have been tagged with Vemco transmitters and all transmitters should still be active. Other activities during this quarter included equipment maintenance, report writing, and manuscript preparation in cooperation with British

Columbia Ministry of Environment. Manuscript preparation includes analysis of data pertaining to hatchery white sturgeon stocking rates and locations and adult white sturgeon movements to Bonners Ferry in response to physical habitat conditions. Other activities included providing data summaries and presentations to Kootenai River White Sturgeon Recovery Team members.

**Rainbow and Bull Trout**

Bull trout redd counts were completed in October on Boulder Creek and North and South Callahan creeks. A total of 29 redds were observed in North Callahan Creek, the 2<sup>nd</sup> highest count for that stream since surveys began there in 2002 (Table 1). Data from the Kootenai River basin stream surveys has been entered into the Idaho Fish and Game Standard Stream Survey database

and summarization began. Kootenai River electrofishing data has also been entered for 2006. We also processed and read trout and whitefish otoliths we have collected since 2002. We will continue work on refining our otolith preparation and aging techniques. A draft of the 2005 annual report for salmonid work was completed and sent out for review. Reviewers' comments are currently being incorporated into the next draft.

Table 1. Number of bull trout redds counted on index streams in the Idaho section of the Kootenai River drainage, 2000 through 2006.

<b>Stream</b>	<b>Year</b>	<b>Transect start point description</b>	<b>Transect end point description</b>	<b>Number of bull trout redds</b>
Boulder Cr.	2000	mouth	waterfalls 1.9 km upstr.	0
Boulder Cr.	2001	mouth	waterfalls 1.9 km upstr.	2
Boulder Cr.	2002	mouth	waterfalls 1.9 km upstr.	2
Boulder Cr.	2003	mouth	waterfalls 1.9 km upstr.	0
Boulder Cr.	2004	mouth	waterfalls 1.9 km upstr.	0
Boulder Cr.	2005	mouth	waterfalls 1.9 km upstr.	1
Boulder Cr.	2006	mouth	waterfalls 1.9 km upstr.	0
N. Callahan Cr.	2002	100 m downstr. of Smith Cr.	Waterfalls barrier	13
N. Callahan Cr.	2003	Jill Cr., Montana	Waterfalls barrier	32
N. Callahan Cr.	2004	Jill Cr., Montana	Waterfalls barrier	17
N. Callahan Cr.	2005	Jill Cr., Montana	Waterfalls barrier	10
N. Callahan Cr.	2006	Jill Cr., Montana	Waterfalls barrier	29
S. Callahan Cr.	2002	bridge on forest rd. 4554	Forest Rd. 414 bridge (trailhead #154)	3
S. Callahan Cr.	2003	bridge on forest rd. 4554	Forest Rd. 414 bridge (trailhead #154)	10
S. Callahan Cr.	2004	bridge on forest rd. 4554	Forest Rd. 414 bridge (trailhead #154)	8
S. Callahan Cr.	2005	bridge on forest rd. 4554	Forest Rd. 414 bridge (trailhead #154)	5
S. Callahan Cr.	2006	bridge on forest rd. 4554	Forest Rd. 414 bridge (trailhead #154)	4

**Burbot**

Sampling for burbot with baited hoopnets began this period at Ambush Rock, Creston boat ramp/Corn Creek, Nick's Island, Goat River, Summit and Boundary creeks. After hundreds of hours of sampling no burbot have been caught. This is an important issue since we have expressed concern for 14 years that if effective measures for improving burbot migration, spawning, and rearing were not implemented the stock status of this population would be imperiled. This situation further promotes the need to

improve habitat and measures that would include the use of a donor stock to rehabilitate burbot. Furthermore, sampling at Ambush Rock, the most productive sampling site in Idaho, had to be discontinued because trees, dropped by the USACE during summer 2006, were carried in by the 2006 flood event and are now submerged throughout the pool. This has made it impossible to sample because the hoopnets snag on the submerged trees located in 8 to 20 m of water and the nets are impossible to retrieve.

Preliminary genetic analysis using mtDNA suggests the Moyie Lake burbot are most closely related burbot population to the

Kootenai River stock (Figure 2). Further analysis is in progress.

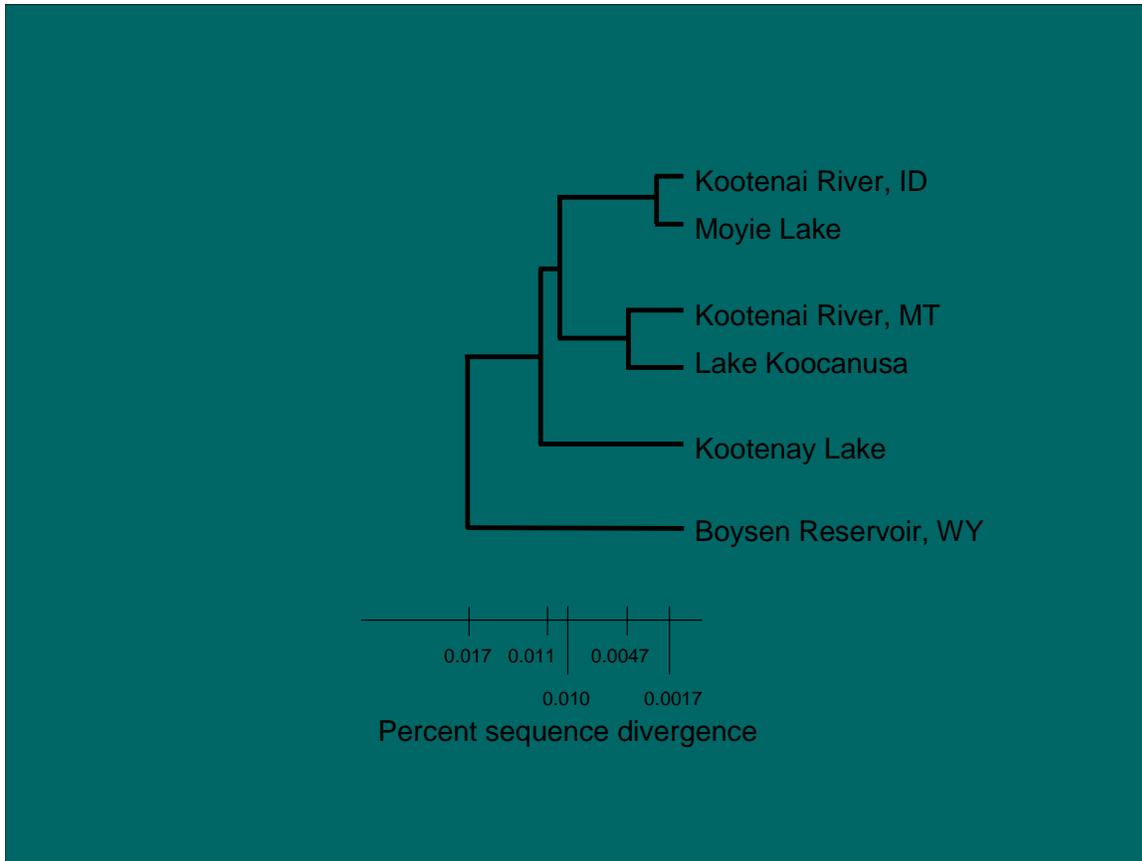


Figure 2. Neighbor joining dendrogram of Kootenai River burbot, based on Cytochrome B sequences, and some western burbot populations, personal communication Dr. Mathew Powell, University of Idaho.

***Meetings Held/Attended, Communication, and Accomplishments for the Quarter:***

- Ryan co-chaired the IKERT subcommittee meeting at the Kootenai River Inn December 12, 2006.
- Ryan met on multiple occasions with Charlie Holderman of KTOI and Peter Ward (Canadian engineering contractor) on nutrient site management.
- Finishing up on data analysis and annual reports for the next IKERT meeting to be held in May 2007.
- Sent 2005 annual report out for review
- Pete met with BCMOE biologists to discuss data analysis and manuscript preparation
- Vaughn attended an USACE meeting regarding the flood event in 2006
- Vaughn attended a burbot recovery committee meeting for KVRI

- Vaughn had a seminar for University of Idaho fisheries students
- Vaughn attended a IDFG Fisheries Managers meeting
- Vaughn attended a series of Performance Management workshops
- Vaughn attended two KVRI meetings
- Walters was junior author on a paper on rainbow trout spawning habitat use that was recently accepted for publication in the North American Journal of Fisheries Management.

***Next Quarter Activities and Meetings:***

***Nutrient Restoration***

- Finish manuscript on burbot and zooplankton interdependence.
- Finish the 2005-2006 annual report and start on the 06-07.

***White sturgeon***

- Continues data analysis
- Complete 2005 annual report
- Begin and complete 2007 work plan
- Download and maintain Vemco receiver array
- Order field equipment and hire staff
- Begin sampling adult white sturgeon in February or March

***Rainbow and Bull Trout***

- Begin analysis of the 2006 stream survey data.
- Continue aging rainbow trout scales and otoliths.
- Complete the final draft of the 2005 annual report.
- Begin compiling and summarizing trout telemetry data collected since 1998.
- Begin a report summarizing all of the trout telemetry data.

***Burbot***

- Continue coordinating with the BC Ministry of Environment, Kootenai Tribe of Idaho, University of Idaho and IDFG Fisheries Bureau regarding donor stock burbot and DNA extensive culture
- Vaughn has been working with Matt Powell of the University of Idaho to produce a genetics ms. that identifies which burbot in the Pacific Northwest may be the most suitable as a donor stock
- Hoopnet sampling for burbot will continue
- Work with the KVRI Burbot Committee and evaluation of the 06-07 SOR
- Larval sampling will begin in March

Cc. Lee Watts & Scott Bettin (BPA)  
 Sue Ireland (KTOI)  
 Colin Spence (BC Fisheries)  
 Brian Marotz (MFWP, Kalispell)

Gary Barton (USGS)  
Jeff Laufle (USACE)  
Steve Duke, Bob Hallock (USFWS)  
Steve Yundt, Ned Horner, Chip Corsi, Greg Johnson, Fred Partridge (IDFG)  
Boundary County Commissioners