

Idaho Department of Fish and Game
January – March, 2006

Kootenai River Fisheries Recovery Investigations

Quarterly Progress Report and Summary of Activities

Project Personnel:

Vaughn L. Paragamian, *Principal Fisheries Research Biologist*
Jody Walters, *Senior Fisheries Research Biologist*
Ryan Hardy, *Senior Fisheries Research Biologist*
Pete Rust, *Senior Fisheries Research Biologist*
Diane Wakkinen, *Temporary Senior Fisheries Technician*
Dorothy Kedish, *Temporary Senior Fisheries Technician*

Field Work Completed or in Progress and Summary of Results

White Sturgeon

Field sampling for the 2006 white sturgeon component of the Kootenai River Fisheries Recovery Investigations began the week of February 27 with adult white sturgeon sampling and sonic telemetry. Adult sampling included length and weight enumeration, sex determination from biopsies, PIT tagging, and implanting Vemco sonic transmitters.

From February 27 through March 30, 63 adult white sturgeon were collected by set lining and angling. Twenty-eight of these individuals were males, 10 were females, and sex was not determined for 25 individuals. Of the 63 white sturgeon sampled, 4 (6%) were unmarked and not sampled previously. With sexes combined, total length ranged from 118 to 247 cm and weights ranged from 8 to 80 kilograms. Five adult white sturgeon were tagged with Vemco sonic transmitters. Figure 1 illustrates a healing scar from surgery performed during transmitter implantation.

Two female white sturgeon thought to be spawning in 2006 were moved to the

Kootenai Tribal hatchery facility for further analysis of gonad development. Similar to 2005, excess eggs not needed for hatchery production will be stripped at the Kootenai Tribe of Idaho hatchery facility, transferred to one of four sites upstream of Bonners Ferry with gravel and cobble substrates, and fertilized and released on site. The purpose of this research is to determine the combination of velocities and substrate types that lead to successful recruitment of Kootenai River white sturgeon. If successful recruitment is documented, this research may be useful in designing specific habitat criteria for future habitat enhancement projects.

Telemetry activities during the quarter included downloading, replacing batteries, and installing new Vemco VR2 receivers in the existing array from Montana to Copeland, Idaho (Figure 2). As of March 30, few individuals had moved into the staging reaches between rkm 205 and rkm 225.



Figure 1. Healing scar from surgery preformed during Vemco transmitter implantation.

Burbot

Hoop Net Effort

Adult burbot sampling was accomplished with baited hoop nets. Four nets were deployed at Ambush Rock, two nets were deployed in the Nick's Island reach, one near the mouth of Corn Creek (RKM 150), two just downstream of the Creston boat ramp (RKM 150.5), and two nets were set downstream of the Goat River (RKM 152.7). Two nets were set in the Goat River and two in Boundary Creek from January until March 6 when nets were removed for the season.

Eight baited hoop net burbot captures occurred from January 3 to March 21, 2006 (Figure 3). Three of the captures were at Ambush Rock (RKM 244.5), two were near Nick's Island (RKM 151.1), two were caught near the mouth of the Goat River (RKM 152.7), and the eighth burbot was captured in a hoop net just downstream

from Corn Creek (RKM 150.3). Of the burbot captured, six were new, one untagged fish was rescued from a net stuck below Corn Creek, and one burbot escaped from the net overnight. No burbot were captured in the tributaries.

Vemco tags were implanted in four of the eight captured burbot, with two near Ambush Rock (RKM 244.5) and the other two near the mouth of the Goat River (RKM 152.7).

Divers were deployed on March 21, 2006 to attempt retrieval of three hoop nets stuck near Creston. All three hoop nets were recovered. A burbot was found captured in the second net, brought to the surface, and released in good condition.

Total hoop net effort was 1017 days, 10 hours and 48 minutes. Burbot CPUE for the first quarter of 2006 was 0.007862 burbot/day, based on one net fished for a 24 hour day as one unit of effort.



Figure 3. One of the smaller burbot captured at Ambush Rock.

Larval Burbot Tow Effort

Larval tows took place twice, once on March 23 and again on March 29. Two paired ½ Meter nets were towed downstream at approximately 1000 rpm for an average time of 20 minutes and 26 seconds. Total towing time was 2 hours 2 minutes and 33 seconds. The nets filtered 7,216.11 m³. No larval burbot were captured.

Light Trap Effort

Light traps were set at Ambush Rock between March 19 and March 30 (Figure 4). Traps were set two to three nights per week. Total trapping time was 430 hours and 18 minutes. No larval burbot were captured. A new style of light trap was devised to help avoid larval escapement when retrieved. This is experimental and since we have never captured a larval burbot in any light trap, (including the Quatrefoil), it will be difficult to evaluate in one season.



Figure 4. Single cylinder experimental light trap; note light stick inside cylinder.

Rainbow and Bull Trout

The Kootenai River creel survey was completed the end of March 2006. The creel data has been entered into the new IDFG creel survey software application. However, final estimates of effort, harvest, and catch rates are on hold until some software errors are fixed. Analysis of 2005 data was started, including a summary of rainbow trout population statistics based on the autumn electrofishing catch (Table 1). Analysis of

the westslope cutthroat trout genetics samples was started by IDFG genetics lab personnel, but not all samples have been completed. An outline of the 2005 annual report for trout work was started.

Table 1. Population statistics for Kootenai River, Idaho rainbow trout.

Year	Pop. estimate	Lower	Upper			PSD		Relative weights			
		95% C.L.	95% C.L.	n/ha	n/km	PSD	± 95% C.I.	QSD	201-305 mm	306-406 mm	>406 mm
1993	98	78	118	3.3	33	-	-	-	-	-	-
1994	135	114	160	4.6	45	-	-	-	-	-	-
1998	217	168	294	7.4	72	42	12	5	85	83	83
1999	217	160	332	7.4	72	47	13	3	95	86	81
2000	-	-	-	-	-	39	15	2	86	79	82
2001	-	-	-	-	-	24	22	0	83	80	-
2002	-	-	-	-	-	55	15	2	83	80	96
2003	-	-	-	-	-	55	16	6	84	85	83
2004	335	190	800	11.4	112	35	9	7	86	85	-
2005	-	-	-	-	-	29	10	4	89	83	84

Nutrient restoration

This quarter was spent primarily performing analysis of the 2005 fisheries data to determine what possible effects nutrient additions are and may potentially have on trout and whitefish populations in the upper Kootenai River.

Currently, the final permit (NPDES) from the EPA is out for public review and is scheduled to be written in May 2006. This should be in place well before nutrient additions begin late June- mid-July 2006.

Other documents being put together this quarter include the 2003-2005 annual report (sent for review March 30) and the ecosystem recovery section of the 2006 BPA statement of work (SOW).

This next quarter, we will be hosting the 8th annual IKERT meeting in Bonners Ferry, Idaho on May 25 and 26, 2006. This meeting will cover a wide variety of Kootenai Ecosystem related topics, including specifics on 2006 operations of the nutrient inputs into the river.

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

- Ryan presented a poster paper about Kootenai nutrient restoration at the Idaho Chapter AFS meeting held in Idaho Falls
- Ryan presented a talk about Kootenai nutrient restoration at the Oregon Chapter AFS meeting held in Sun River Oregon
- Ryan has had many phone meetings with Charlie Holderman of KTOI to coordinate his project
- Pete and Vaughn attended a KRWSRT meeting and two conference calls
- Vaughn had an oral presentation on KR burbot and temperature/discharge for the Idaho Chapter AFS, the KVRI Burbot Committee, and the Kootenai Valley Sportsman club
- Vaughn and Ryan attended a Population Viability Workshop
- Vaughn and Phil Cooper video taped burbot sampling in the Kootenai River and will revise the present burbot video

- Vaughn applied for and had the Second International Burbot Symposium accepted by AFS as a Symposium Series
- Vaughn attended a KR white sturgeon and bull trout Biop meeting in Bonners Ferry in March
- Jody attended the Idaho Chapter American Fisheries Society Meeting in Idaho Falls and coauthored a presentation on rainbow trout spawning habitat use and spawn timing.
- Vaughn attended a CBFWA Subbasin scoring meeting in Kalispell
- Vaughn had one news interview and one radio interview for Public Radio
- In March, Vaughn attended the KVRI anniversary meeting in Bonners Ferry
- Pete presented results of Vemco telemetry studies to Sturgeon Summit in Spokane, WA.
- Pete presented 2 posters at Idaho Chapter AFS meeting in Idaho Falls
- Pete completed 1 news release
- Pete participated in several Kootenai River Recovery Team conference calls
- Pete completed final editing of 2004 annual report.
- All attended the 2006 fisheries research training in Boise

Next Quarter Activities and Meetings:

White sturgeon

- Continue adult sampling
- Downloading and maintaining Vemco receivers
- Substrate mat sampling to index spawning events
- Releasing embryos
- Larval sampling
- Report writing and data management

Burbot

- Continue with larval tows and light traps into early April
- Revise '05 Annual Burbot Report and continue on the '05 – '06 annual report
- Continue with coordination with the University of Idaho and burbot DNA analysis

Ecosystem Rehabilitation

- Conference call with IKERT subcommittee to plan IKERT meeting in May
- IKERT meeting May 25-26, presenting 3 talks on nutrient restoration in the Kootenai

Rainbow and Bull trout

- Begin planning field sampling including stream sample design.
- Continue analyzing and summarizing 2005 data.
- Continue writing the 2005 annual report.
- Electrofish Kootenai drainage streams to estimate trout densities and distribution of other fish species.

Cc. Lee Watts & Scott Bettin (BPA)
Sue Ireland (KTOI)
Colin Spence (BC Fisheries)
Brian Marotz (MFWP, Kalispell)
Jeff Laufle & Greg Hoffman (USACE)
Bob Hallock (USFWS)
Virgil Moore, Dan Schill, Steve Yundt, Ned Horner, Chip Corsi, Greg Johnson, Fred
Partridge (IDFG)
Gary Barton (USGS)

Boundary County Commissioners