**CHINOOK SALMON CAPTIVE PROPAGATION
TECHNICAL OVERSIGHT COMMITTEE**

MEETING SUMMARY

November 29, 2006

1:00 p.m. to 5:00 p.m.

**Hagerman Fish Culture Experiment Station & Collaborative Fish Research Center
Hagerman, Idaho**

List of Those in Attendance

Name	Affiliation	Phone
Greg Baesler	Bonneville Power Administration	(503)230-7637
Dan Baker	Idaho Department of Fish and Game	(208)939-4114
Matt Campbell	Idaho Department of Fish and Game	(208)939-6713
Joshua Gable	Idaho Department of Fish and Game	(208)465-8404
Jeff Heindel	Idaho Department of Fish and Game	(208)939-4114
Paul Kline	Idaho Department of Fish and Game	(208)939-4114
Christine Kozfkay	Idaho Department of Fish and Game	(208)939-6713
Ben Moore	Idaho Department of Fish and Game	(208)465-8404
Mike Peterson	Idaho Department of Fish and Game	(208)465-8404
Dmitri Vidergar	Idaho Department of Fish and Game	(208)465-8404
Melissa Baird	NOAA Fisheries	(206)302-2430
Tom Flagg	NOAA Fisheries	(360)871-8306
Debbie Frost	NOAA Fisheries	(360)895-7757
Des Maynard	NOAA Fisheries	(360)871-8313
Carlin McAuley	NOAA Fisheries	(360)871-8314
Herb Pollard	NOAA Fisheries	(208)378-5614
Michael Wastel	NOAA Fisheries	(360)871-8323
Tim Hoffnagle	Oregon Department of Fish & Wildlife	(541)962-3884
Lytle Denny	Shoshone-Bannock Tribes	(208)239-4560
Andy Kohler	Shoshone-Bannock Tribes	(208)239-4566
Carlos Lopez	Shoshone-Bannock Tribes	(208)239-4551
Kurt Tardy	Shoshone-Bannock Tribes	(208)239-4567
Matt Powell	University of Idaho – ARI	(208)837-9096

NOTE: The meetings of the Chinook Salmon Captive Propagation Technical Oversight Committee (CSCPTOC) are intended to serve as a forum for open discussion of technical issues and technical recommendations to the Bonneville Power Administration. The opinions expressed by CSCPTOC members and other meeting participants do not necessarily reflect the policies or views of their employers.

**Chinook Salmon Captive Propagation Technical Oversight Committee Meeting
November 29, 2006 – Hagerman, Idaho
Executive Summary**

Introduction.

Bonneville Power Administration's **Greg Baesler** thanked everyone for coming, and opened the meeting with a review of the agenda, then the minutes from last meeting. The notes amended and approved, he continued down the agenda to the following updates:

Idaho Department of Fish and Game Update.

Dan Baker, Dmitri Vidergar, Joshua Gable, Ben Moore and Paul Kline briefed the group on current captive Chinook inventories at Eagle and discussed hatchery and research activities.

NOAA Fisheries Update.

Carlin McAuley briefed the group on the current inventory of Idaho and Oregon captive Chinook stocks on station at Manchester. **Melissa Baird** followed with an overview of current genetic evaluations involving northeast Oregon Chinook stocks.

Hagerman Fish Culture Experiment Station & Collaborative Fish Research Center Tour.

Ron Hardy and Matt Powell provided a full facility tour of the Hagerman Fish Culture Experiment Station and Collaborative Fish Research Center.

Shoshone Bannock Tribes Update.

Lytle Denny briefed the group on current Tribal research activities.

Oregon Department of Fish and Wildlife Update.

Tim Hoffnagle presented inventory information for Oregon captive stocks and discussed program activities relating to juvenile and adult captives.

Bonneville Power Administration Update.

Greg Baesler provided updates on current/upcoming activities and program-specific needs.

The next CSCPTOC meeting was set for the afternoon of Wednesday, February 7 at the 911 Federal Building in Portland, Oregon.

1. Greetings and Introductions.

BPA's **Greg Baesler** welcomed everyone to today's meeting and led a review of today's agenda.

2. Approval of August TOC Meeting Notes.

The minutes were improved, then approved.

3. IDFG Update on Captive Propagation and Research.

Dan Baker led with inventory information and fish culture updates for Chinook stocks at the Eagle facility (from **handout**):

EAGLE FISH HATCHERY

November 29, 2006 CHINOOK INVENTORY

BY05 CAPTIVE REARING INVENTORY:

- **EAGLE East Fork S.R. Natural Egg-** **304 Fry**
 - Progeny from five EFSR redds collected in 2005.
 - 327 eyed-eggs collected on 9/29.
 - 304 fry ponded (93.0% survival to pond).
 - 0 mortality since 8/3/06 TOC.
 - Group sample counted 11/01/06 w/group mean 11.59 g/f.

- **EAGLE West Fork Yankee Fork Natural Egg-** **306 Fry**
 - Progeny from three WFYF redds collected in 2005.
 - 336 eyed-eggs collected on 9/19 and 10/19/05.
 - 308 fry ponded (91.7% survival to pond).
 - 0 mortality since 8/3/06 TOC.
 - Group sample counted 11/01/06 w/group mean 11.16 g/f.

2006 NATURAL and CAPTIVE REDD SAMPLING:

NOTE: These fish will be lethally sampled for genetic analysis after swim-up.

- **EAGLE East Fork S.R. Natural Egg-**
 - Natural Redds: 3 redds; 120 eyed-eggs to Eagle FH.
 - Captive Redds: 12 redds; 415 eyed-eggs to Eagle FH.
- **EAGLE West Fork Yankee Fork Natural Egg-**
 - Natural Redds: 2 redds; 68 eyed-eggs to Eagle FH.
 - Captive Redds: 1 redd; 31 eyed-eggs to Eagle FH.

Dmitri Vidergar and **Joshua Gable** followed with trapping summaries and post-release updates for captive Chinook adults released to both the West Fork Yankee Fork Salmon River and the East Fork Salmon River (from **handout**):

IDFG Captive Chinook Research TOC Notes, November 2006—

EFSR Trap summary:

- Trap operated from June 21 through September (no fish trapped after 9/14)
- 80* adult Chinook trapped (63 and 152 trapped in 2005 and 2004, respectively) 12 recaptures. 81 genetic samples taken. *(excluding one precocial male Chinook)
- 263 bull trout trapped (205 and 169 trapped in 2005 and 2004, respectively). 229 genetic samples taken.
- Approx. 176 mountain whitefish trapped (178 in 2005). 58 genetic samples taken.
- 1 Westslope cutthroat trapped (5 in 2005). One genetic sample taken.

- Pool downstream of weir was snorkeled periodically from 7/21 to 8/22. Bull trout, rainbow trout, cutthroat trout, mtn whitefish observed regularly. One Chinook observed on 8/13—likely same fish trapped on 8/14.

picket weir into the study section—spawned with at least one Captive Chinook female. Natural Chinook redd construction located in downstream areas ranged from 8/17 to 8/29.

- Captive Chinook behavior data was recorded on the EFSR. The study section was walked every 1 to 3 days, noting disc tag numbers/colors (way point recorded if number was identified), behavior exhibited and habitat being utilized. Any fish engaged in spawning activity were subject of focal observations, with all behaviors recorded in 10 minute intervals.
- Eight radio tagged BY02 females in the EF were tracked regularly, but remained within the 1.5 kilometer reach between the release site and picket weir.
- Forty-two Captive Chinook carcasses recovered in the study section: 23 females—most pre-spawn, though eggs typically looked to be in decent overall condition; 11 known mortalities to predation; 1 immature female. Twelve known males; 4 mortalities to predation. Seven unknown sex Captive Chinook (little remains) due to predation.

WFYF:

- Eight completed Captive Chinook redds observed (51 BY02 females—from ultrasounding at Manchester Research Station prior to release). Poor resolution of redd origin dates due to forest fire activity and access issues during spawning. Four natural Chinook redds found on 8/30, and eight Captive redds identified between 9/15 and 9/25.
- Seven radio tagged fish (5 BY02 females/2 BY03 males) were released into the WFYF and tracked regularly. Within two weeks of the 7/13 release, 4 radio tagged Captives (3 females/1 male) moved out of the WF and into the main Yankee Fork. Two of the females continued downstream into the main Salmon R and left the area. The three remaining radio-tagged Captives remained in the WF until our access was limited by fire activity. One of the tagged females was responsible for the construction of a redd.

Juvenile Chinook genetic collections:

- EFSR: 100 samples collected from cooperation with Shoshone-Bannock screw trap tenders. Juvenile trap located approx. 300m downstream of EF weir.
- WFYF: 46 samples collected from cooperation with Shoshone-Bannock screw trap tenders. Juvenile trap located near confluence with Yankee Fork.
- All 2006 genetic samples will be transferred to Eagle Genetics Lab for analysis, and will be used for DNA pedigree analysis.

4. NOAA Fisheries Update on Manchester Captive Propagation.

Carlin McAuley began with current inventory information for **Idaho** captive Chinook in culture at Manchester (from **handout**):

MANCHESTER RESEARCH STATION SALMON RIVER SPRING CHINOOK UPDATE CSCPTOC – Nov 29, 2006

BY02 CAPTIVE BROOD:

- **West Fork Yankee Fork NE** **N = 15**
0 mortality. Administered erythromycin injection (30mg/kg) and relocated to 13.5' pool on Sept 25.
67.7% survival
- **East Fork NE** **N = 10**
2 mortalities (Aug 21 & 30). Administered erythromycin injection (30mg/kg) and relocated to 13.5' pool on Sept 25.
82.3% survival.

BY03 CAPTIVE BROOD:

- **West Fork Yankee Fork NE** **N = 171**
8 mortalities. BKD ELISA levels ranged from 0.068 – 0.074

Administered erythromycin injection (30 mg/kg) on Aug 24.
90.0% survival

- **East Fork NE** **N = 162**
3 mortalities. BKD ELISA levels ranged from 0.069 – 0.077
Administered erythromycin injection (30 mg/kg) on Aug 15.
95.0% survival

BY04 CAPTIVE BROOD:

- **West Fork Yankee Fork NE** **N = 193**
2 mortalities. BKD ELISA levels were 0.072 & 0.076
98.5% survival
- **East Fork NE** **N = 259**
1 mortality. BKD ELISA level was 0.094
62.7% survival

Reminder: Of the current 37% mortality, 36% occurred during May 19 mortality event.

Mortality reporting period is July 29 – Nov 22, 2006

McAuley continued with inventory data for *Oregon* stocks in culture at Manchester (from **handout**):

**MANCHESTER RESEARCH STATION
GRANDE RONDE BASIN SPRING CHINOOK UPDATE
CSCPTOC – Nov 29, 2006**

BY02 CAPTIVE BROOD:

- **Catherine Creek** **N = 15**
2 mortalities. Relocated remaining adults to 13.5' pool on Sept 25.
Administered erythromycin injection (30mg/kg) during quarterly sampling on Nov 27.
92.3% survival
- **Lostine River** **N = 2**
4 mortalities. 1 with clinical signs of BKD. Relocated remaining adults to 13.5' pool on Sept 25.
Administered erythromycin injection (30mg/kg) during quarterly sampling on Nov 27.
72.3% survival
- **Grande Ronde** **N = 2**
0 mortality.
Administered erythromycin injection (30mg/kg) during quarterly sampling on Nov 27.
27.5% survival

BY03 CAPTIVE BROOD:

- **Catherine Creek** **N = 88**
5 mortalities. 1 with low level BKD symptoms.
Received 28 day erythromycin feeding Oct 24 – Nov 20.
64.2% survival
- **Lostine River** **N = 103**
3 mortalities. 1 with low level BKD symptoms.
Received 28 day erythromycin feeding Oct 24 – Nov 20.
86.1% survival
- **Grande Ronde** **N = 105**
5 mortalities. 1 with low level BKD symptoms.
Received 28 day erythromycin feeding Oct 24 – Nov 20.
84.4% survival

BY04 CAPTIVE BROOD:

- **Lostine River** **N = 208**
0 mortality.

Received 28 day erythromycin feeding Oct 24 – Nov 20.
80.9% survival

- **Grande Ronde**

N = 139

0 mortality.

Received 28 day erythromycin feeding Oct 24 – Nov 20.
100% survival

Mortality reporting period is July 29 – Nov 22, 2006

Melissa Baird followed with a summary of genetic investigations (pedigree, parent-progeny studies) utilizing northeast Oregon Chinook stocks (Lostine River, Catherine Creek, Upper Grande Ronde) to determine reproductive success in naturally-spawning populations.

5. U of I Hagerman Fish Culture Experiment Station Facility Tour.

Matt Powell and **Ron Hardy** provided a full facility tour of the university's new biotechnology aquaculture laboratory and office complex. Facility collaborators include Native American Tribes, the U.S. Department of Agriculture's Agricultural Research Service (ARS), and National Oceanic and Atmospheric Administration Fisheries (NOAA).

6. Shoshone-Bannock Tribes Update.

Lytle Denny provided a brief update on Tribal efforts to develop a Monitoring and Evaluation plan for Upper Salmon River anadromous stocks.

7. ODFW Update on Captive Propagation and Research.

Tim Hoffnagle continued with a summary of activities from the Grande Ronde Basin Chinook Salmon Captive Broodstock Program (from **handout**):

Oregon Department of Fish and Wildlife

Grande Ronde Basin Chinook Salmon Captive Broodstock Program

TOC Update - 29 November 2006

- There were more fish to spawn this year than last year but still not a good year.
 - Grande Ronde River salmon suffered from high BKD in the 2001 and 2002 brood years. The 2003 and 2004 brood years are looking more promising.
- We have begun shocking and picking BY 2006 F₁ generation. We will cull (from production) Catherine Creek and Grande Ronde River eggs at ELISA OD ≥ 0.8 and Lostine River eggs at ELISA OD ≥ 0.4 .
- There were fewer redds in the upper Grande Ronde River (18 in 2006; down from 90 in 2005 and 185 in 2004, due to returns of Captive Broodstock progeny) and in the Lostine River (118 in 2006; down from 148 in 2005 and 189 in 2004, due to low wild returns) but up in Catherine Creek (117 in 2006; up from 74 in 2005 and 96 in 2004).
- Pit-tagging was conducted on 13-15 November for the 2005 cohort at Wallowa Fish Hatchery.

Table 1. Summary of mature fish from Catherine Creek, Grande Ronde River and Lostine River during the 2006 spawn.

Stock, brood year	Gametes collected				Killed not spawned		
	Females	Males spawned	Males cryoed	Total spawned	Females	Males	Total mature
<u>Catherine Creek</u>							
2001	4	3		7	1	1	9
2002	81	23		104	1	1	106
2003		110		110			110
2004		<u>12</u>		<u>12</u>			<u>12</u>
Total	85	148	0	233	2	2	237
<u>Grande Ronde River</u>							
2001	1			1	1		2
2002	4			4			4
2003	1	10	113	124		7	131
2004		<u>4</u>	<u>9</u>	<u>13</u>			<u>13</u>
Total	5	14	122	141	0	7	148
<u>Lostine River</u>							
2001	1			1			1
2002	61	2	5	68	2		70
2003	3	119	3	125		3	128
2004		<u>26</u>		<u>26</u>			<u>26</u>
Total	<u>65</u>	<u>147</u>	<u>8</u>	<u>220</u>	<u>2</u>	<u>3</u>	<u>225</u>
Total	137	311	38	486	1	19	506

Table 2. Number of Chinook salmon eggs collected during the 2006 spawn from each stock and treatment and within each maternal BKD segregation group, number of eggs retained to be reared and the estimated number of eyed eggs, fry and smolts that will be produced from those eggs. Note: eggs in shaded areas were culled for BKD prevention.

Table 3. Number of each cohort and stock of Captive Broodstock chinook salmon alive as of 15 November 2006 and number of mortalities from 1 August -15 November 2006 at Bonneville Fish Hatchery and Manchester Marine Laboratory (2001 - 2004 brood years) and Wallowa Fish Hatchery (2005 and 2006 brood years).

Stock, brood year, treatment	Wallowa Fish Hatchery					Bonneville Fish Hatchery					Manchester Research Station				
	Mortalities					Mortalities					Mortalities				
	Alive	BKD	Opera- tional	Un- known	Total morts	Alive	BKD	Opera- tional	Un- known	Total morts	Alive	BKD	Opera- tional	Un- known	Total morts
<u>Catherine Creek</u>															
2002															
Acc						2			1	1	8				0
Nat						<u>0</u>				<u>0</u>	<u>5</u>			<u>2</u>	<u>2</u>
Total						2	0	0	1	1	13	0	0	2	2
2003															
Acc						54			4	4	36			1	1
Nat						<u>41</u>			<u>3</u>	<u>3</u>	<u>53</u>			<u>3</u>	<u>3</u>
Total						95	0	0	7	7	89	0	0	4	4
2004															
Drug						130			1	1					
Vacc						<u>119</u>				<u>0</u>					
Total						249	0	0	1	1					
2005															
XX	<u>300</u>				<u>0</u>										
Total	300	0	0	0	0										
	300	0	0	0	0					10					
<u>Grande Ronde River</u>															
2002															
Acc						0				0	1				0
Nat						<u>0</u>				<u>0</u>	<u>1</u>				<u>0</u>
Total						0	0	0	0	0	2	0	0	0	0

		Wallowa Fish Hatchery					Bonneville Fish Hatchery					Manchester Research Station				
		Mortalities					Mortalities					Mortalities				
Stock, brood year, treatment	Alive	BKD	Opera- tional	Un- known	Total morts	Alive	BKD	Opera- tional	Un- known	Total morts	Alive	BKD	Opera- tional	Un- known	Total morts	
<u>Grande Ronde River (cont'd)</u>																
2003																
Acc					77			1	1	2	45			1	1	
Nat					<u>66</u>			<u>1</u>	<u>5</u>	<u>6</u>	<u>48</u>			<u>2</u>	<u>2</u>	
Total					143	0		2	6	8	93	0	0	3	3	
2004																
FW					134					2	0				0	
SW					<u>0</u>					<u>0</u>	<u>139</u>				<u>0</u>	
Total					134	0		0	0	2	139	0	0	0	0	
2005																
Eggs	150				0											
Parr	<u>150</u>				<u>0</u>											
Total	300	0	0	0	0											
2006																
Eggs	<u>186</u>				<u>0</u>											
Total	186	0	0	0	0											
<u>Lostine River</u>																
2002																
Acc					3				2	2	3				1	
Nat					<u>3</u>					<u>0</u>	<u>1</u>				<u>1</u>	
Total					6	0	0	0	2	2	4	0	0	0	2	
2003																
Acc					60					0	48			2	1	
Nat					<u>69</u>				<u>2</u>	<u>2</u>	<u>53</u>			<u>1</u>	<u>1</u>	
Total					129	0	0	0	2	2	101	0	0	3	3	

Stock, brood year, treatment	Wallowa Fish Hatchery					Bonneville Fish Hatchery					Manchester Research Station				
	Mortalities					Mortalities					Mortalities				
	Alive	BKD	Operational	Unknown	Total morts	Alive	BKD	Operational	Unknown	Total morts	Alive	BKD	Operational	Unknown	Total morts
<u>Lostine River (cont'd)</u>															
2004															
Drug					0					0					0
Vacc					0				1	1					0
Cont					<u>0</u>				<u>1</u>	<u>1</u>					<u>0</u>
Total					0	0	0	0	2	2	207	0	0	0	0
2005															
Parr	<u>292</u>			<u>11</u>	<u>11</u>										
Total	292	0	0	11	11										

8. WDFW- Tucannon River Chinook Captive Propagation Update.

Representatives from WDFW were unable to attend, but **Mike Gallinat** provided a brief update prior to the meeting via e-mail (from **handout**):

Tucannon River Spring Chinook Captive Broodstock Update **Washington Department of Fish and Wildlife** **Nov. 29, 2006**

Spawning of the captive broodstock was completed at Lyons Ferry Hatchery on October 3. Peak spawning of the captive broodstock was approximately one week after the peak of spawning for the conventional supplementation program (Figure 1).

Figure 1. Spawn timing comparison by origin for the 2006 spawning season.

The eggs from the 86 spawned females (79 BY2002 and 7 BY2001) have been picked. The estimated total eggtake was 162,736 eggs. Mean fecundity was 1,892 eggs/female based on the 86 spawned fish. A total of 63,316 dead eggs (38.9%) were removed with 99,420 live eggs remaining.

We have now used all of our captive broodstock with no adults remaining in the program. (We got through it without a single case a BKD in our adult broodstock!). We currently have 90,125 BY05 captive brood progeny on hand at Tucannon Fish Hatchery.

9. BPA Update.

Greg Baesler provided a brief update on submittal of status reports for project sponsors and discussed current PISCES modifications, problems and upgrades. **Baesler** noted that BPA is currently making funding decisions and that final funding may be available by year's end. **Baesler** finished by setting the date/time of the next CSCPTOC meeting.

10. Next TOC Meeting Date.

The next CSCPTOC meeting was set for the afternoon of Wednesday, February 7th at the 911 Federal Building (BPA Headquarters) in Portland, Oregon. Meeting summary prepared by

Jeff A. Heindel, IDFG Eagle Fish Hatchery.

DRAFT