

STANLEY BASIN SOCKEYE TECHNICAL OVERSIGHT COMMITTEE

MEETING SUMMARY

August 27, 2008
1:00 p.m. to 5:00 p.m.
USFS Meeting Room
Ketchum, Idaho

List of Those in Attendance

Name	Affiliation	Phone
Greg Baesler	Bonneville Power Administration	(503)230-7637
Jeff Gislason	Bonneville Power Administration	(503)230-3494
Jeff Heindel	Idaho Department of Fish and Game	(208)939-4114
Christine Kozfkay	Idaho Department of Fish and Game	(208)939-6713
Mike Peterson	Idaho Department of Fish and Game	(208)465-8404
Travis Brown	Idaho Department of Fish and Game	(208)939-4114
Debbie Frost	NOAA Fisheries	(360)895-7757
Carlin McAuley	NOAA Fisheries	(360)871-8314
Ewann Berntson	NOAA Fisheries	(360)871-8333
Mike Wastel	NOAA Fisheries	(360)871-8323
Tom Flagg	NOAA Fisheries	(360)871-8506
Des Maynard	NOAA Fisheries	(360)871-8313
Doug Taki	Shoshone-Bannock Tribes	(208)239-4568
Andy Kohler	Shoshone-Bannock Tribes	(208)239-4566
Bob Griswold	Shoshone-Bannock Tribes (Bielines)	(208)481-1900
Matt Powell	University of Idaho – ARI	(208)837-9096
Tom Stuart	Stanley Chamber	(208)343-3017

NOTE: The meetings of the Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) 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 SBSTOC members and other meeting participants do not necessarily reflect the policies or views of their employers.

**Stanley Basin Sockeye Technical Oversight Committee Meeting
August 27, 2008 – Ketchum, 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.

Christine Kozfkay, Mike Peterson, Travis Brown, and Jeff Heindel presented information on current sockeye research activities, genetic monitoring, and provided inventory updates for the Idaho program.

Shoshone-Bannock Tribes Update.

Doug Taki, Andy Kohler and Bob Griswold provided updates on Tribal research activities and lake limnology evaluations.

NOAA Fisheries Update.

Carlin McAuley and Debbie Frost provided an update for sockeye in culture at the Manchester and Burley Creek facilities.

University of Idaho

Matt Powell presented PowerPoint on Micro-Array.

Bonneville Power Administration Update.

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

The next SBSTOC meeting was set for the afternoon of Wednesday, November 19th at the Hagerman Fish Culture Experiment Station.

1. Greetings and Introductions.

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

2. Approval of August TOC Meeting Notes.

The notes were amended and approved.

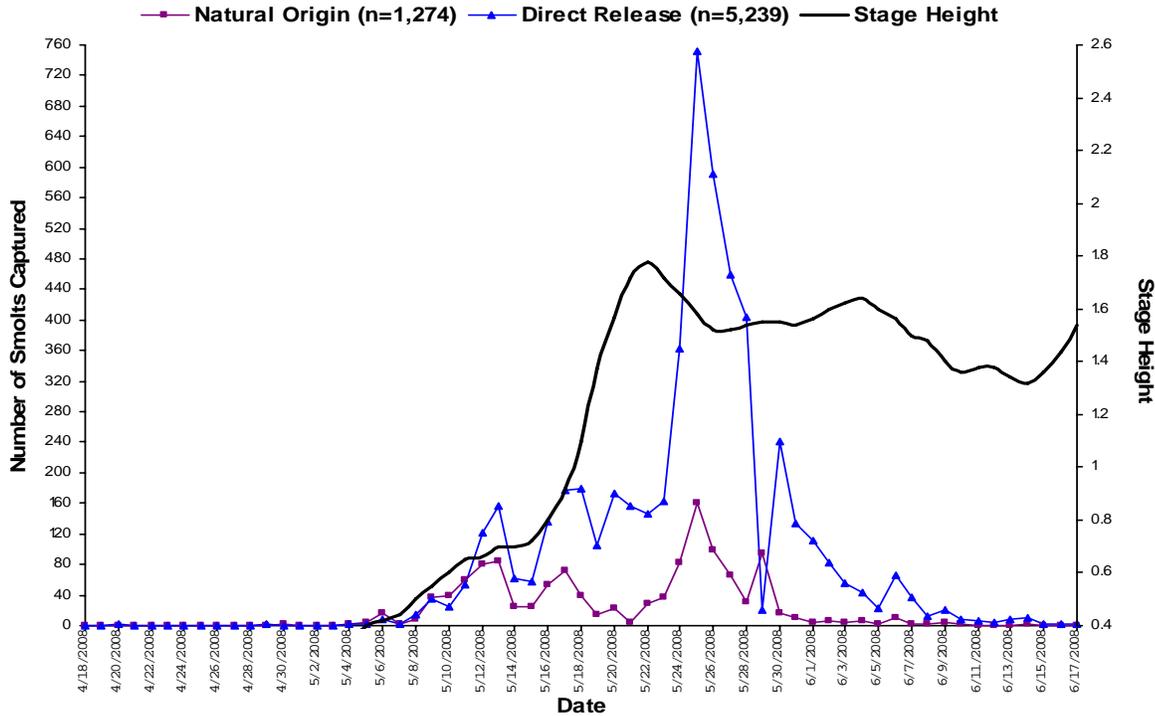
3. IDFG Update.

Mike Peterson led with an update of the research project and resulting data to date. Key points included: Trap data, Creel catch rates, upcoming activities. (From **handout**).

SBSTOC Meeting

IDFG Sockeye Research Ketchum, ID (8-27-08)

2008 Out-migration at RFLC Trap (Unexpanded)



2008 RLCTRP Final Outmigration Estimates

Natural fish

Period	Date	#Captured	#Marked	#Recaptured	Efficiency	Estimate	95% CI	
							Lower	Upper
Three Period Estimate								
1	04/18/2008-05/08/2008	42	31	9	0.29	134	75	240
2	05/09/2008-06/6/2008	1,215	457	91	0.20	6,049	5,056	7,364
3	06/7/2008-06/17/2008	16	16	4	0.25	54	21	119
Total						6,237	5,210	7,624

Source of age-1 smolts:

464 full-term hatchery adults (464 reared at NOAA) released for volitional spawning in 2006.

Source of age-2 smolts:

173 full-term hatchery adults (173 reared at NOAA) released for volitional spawning in 2005.

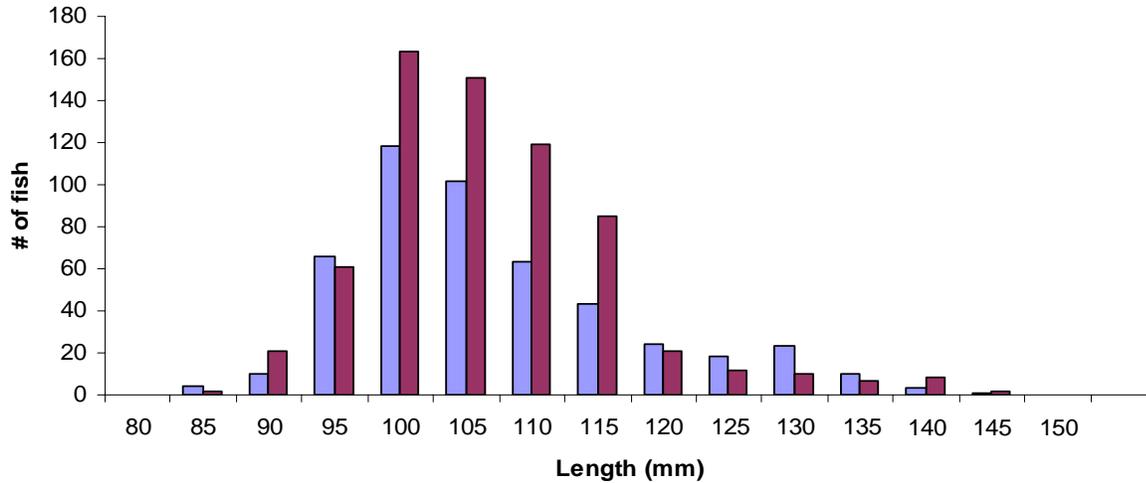
2007 Fall Direct (Sawtooth-reared) Ad only

Period	Date	#Captured	#Marked	#Recaptured	Efficiency	Estimate	95% CI	
							Lower	Upper
Four Period Estimate								
1	04/18/2008-05/08/2008	36	25	5	0.20	156	69	303
2	05/09/2008-05/22/2008	1,584	285	85	0.30	5,268	4,387	6,327
3	05/23/2008-05/29/2008	2,750	144	43	0.30	9,063	7,044	11,737
4	05/30/2008-06/17/2008	869	257	87	0.34	2,548	2,164	3,037
Total						17,034	14,902	20,293

62,015 BY06 presmolts released fall 2007.

Length Frequency for Natural and Hatchery Origin Sockeye Salmon smolts at Redfish Lake Creek trap 2008

■ Natural Origin smolts (n=486) ■ Hatchery Origin smolts (n=664)



Redfish Lake Creek Trap 2007 General Length/Weight Statistics

Pre-smolt pre-release Statistics		
	Length (mm)	Weight (g)
Mean	87.3	7.0
SE	0.28	0.06
Maximum	106	14.4
Minimum	58	2.4
N = 1,012		



Pre-smolts @ RFLC Trap Statistics		
	Length (mm)	Weight (g)
Mean	104.6	8.6
SE	0.36	0.13
Maximum	144	46.7
Minimum	83	4.5
N = 662		

We recaptured 70 of the original 1,012 PIT-tagged pre-smolt at the trap during the 2008 spring out-migration trapping season.

Natural Origin Out-migrant Statistics		
	Length (mm)	Weight (g)
Mean	105	9.0
SE	.49	.15
Maximum	141	20.7
Minimum	82	4.5
N = 485		

2008 Preliminary Estimated Survival to LGR

Release Strategy (Rearing Location)	Total Released ^a	Number tagged prior to release	PIT tags detected at trap	Smolt out-migration estimate	Number tagged at trap	Estimated SURPH survival at LGR	SURPH 95% CI (±)	Estimated no. at LGR
Redfish Lake								
Natural origin smolt	NA	NA	NA	6,237	504	38.00%	12.00%	2,370
FDR presmolt (SFH)	62,015	988	70	17,034	711	49.00%	12.00%	8,347
Alturas Lake^b								
Natural origin smolt	NA	NA	NA			63.00%	22.00%	0
FDR presmolt (SFH)	9,977	1,005				59.00%	16.00%	0
Pettit Lake^b								
Natural origin smolt	NA	NA	NA			22.00%	18.00%	0
FDR presmolt (SFH)	10,113	993				8.00%	6.00%	0
Salmon River								
Hatchery origin smolt (SFH)	73,808	979	NA	73,808	NA	47.00%	8.00%	34,690
Redfish Lake Creek								
Hatchery origin smolt (OFH)	76,587	988	NA	76,587	NA	46.00%	14.00%	35,230
Total Smolts Estimated at LGR=								80637

2007 Estimated Survival to LGR

Release Strategy (Rearing Location)	Total Released ^a	Number tagged prior to release	PIT tags detected at trap	Smolt out-migration estimate	Number tagged at trap	Estimated SURPH survival at LGR	SURPH 95% CI (±)	Estimated no. at LGR
Redfish Lake								
Natural origin smolt	NA	NA	NA	5,280	462	31.00%	7.80%	1,637
FDR presmolt (SFH)	61,804	1,021	53	14,256	613	37.00%	7.80%	5,275
Alturas Lake^b								
Natural origin smolt	NA	NA	NA	8,994	592	46.00%	9.80%	4,137
FDR presmolt (SFH)	26,994	1,016	23	6,897	195	78.00%	33.00%	5,380
Pettit Lake^b								
Natural origin smolt	NA	NA	NA	1,749	198	57.00%	99.90%	997
FDR presmolt (SFH)	18,494	1,021	256	4,695	252	55.00%	17.60%	2,582
Salmon River								
Hatchery origin smolt (SFH)	47,094	1,354	NA	47,094	NA	78.00%	27.40%	36,733
Redfish Lake Creek								
Hatchery origin smolt (OFH)	54,582	1,019	NA	54,582	NA	58.00%	15.70%	31,658
Total Smolts Estimated at LGR=								88398

Redfish Lake Creel 2008 May 26-August 6, 2008 (Final)

Pressure estimates (95% CI)			
Boat	Bank	Tube	Total for season
1,870 (423)	554 (91)	0 (0)	2,424 (452)

Harvest (95% CI) and [Catch Rate] Summary												
KOK		BLT		WCT		MWF		LSS		Lake Total		
Kept	Relsd	Kept	Relsd	Kept	Relsd	Kept	Relsd	Kept	Relsd	Kept	Relsd	Caught
106 (92) [0.05]	60 (0) [0.04]	0 (0) [0.00]	159 (0) [0.08]	42 (17) [0.04]	126 (16) [0.03]	0 (0) [0]	0 (0) [0]	0 (0) [0]	0 (0) [0]	148 (96) [0.09]	360 (121) [0.16]	508 (155) [0.26]

Pettit Lake Creel 2008 May 26-August 6, 2008 (Final)

Pressure estimates (95% CI)			
Boat	Bank	Tube	Total for season
196 (62)	107 (34)	0 (0)	302 (67)

Harvest (95% CI) and [Catch Rate] Summary												
KOK		BLT		RBT		MWF		LSS		Lake Total		
Kept	Relsd	Kept	Relsd	Kept	Relsd	Kept	Relsd	Kept	Relsd	Kept	Relsd	Caught
37 (23) [0.19]	13 (7) [0.03]	0 (0) [0.00]	0 (0) [0.00]	213 (89) [1.03]	0 (0) [0.00]	0 (0) [0]	0 (0) [0]	0 (0) [0]	0 (0) [0]	250 (110) [1.22]	13 (7) [0.03]	263 (112) [1.25]

Upcoming Activities over the next few months

- Radio Tracking Adults (September-October)
- Trawling Basin Lakes (October 1st-3rd)
- SURPH model Estimates for 2008 Outmigration Year
- Finalize Aging of 2008 Outmigrants and Trawl Samples
- PIT tag pre-smolt (September 25th-26th)
- Pre-smolt release (week of October 6th-10th)
- Night snorkeling/Residual trapping with SBT
- SPAWNING @ EAGLE HATCHERY-October
- Place egg boxes in Pettit Lake (late November)

Jeff Heindel provided an update on Adult returns to date, fish on station at Eagle F.H., Holding space issues at Sawtooth F.H., Pre-smolt disposition, placing fish above Sawtooth F.H. and issues resulting from it, smolt rearing facilities, funding sources and capabilities. Jeff's dialogue leads to a general discussion period.

Christine Kozfkay presented a general overview of fish that have been genotyped. NOAA and Eagle's captive stock are complete. Three hundred and seventy-two anadromous fish run and typed. Fifty-six full sib pairs in the anadromous fish. Processing rank of relatedness in Eagle's captive and anadromous fish to build spawn matrix. Two fish are possible Alturus Lake kokanee. Extracted DNA out of Bjerne scales.

----- Hatchery inventory information for sockeye in culture at IDFG Eagle and Sawtooth facilities along with Oxbow numbers (from **handout**):

Eagle Fish Hatchery

August 27, 2008 Sockeye Inventory

BY03 BROODSTOCK / PRODUCTION INVENTORY:

Broodstock eggs were selected by maximizing the representation of individual female and male spawners. A total of 418 eggs representing 208 females and 140 males were selected from specific spawn crosses to create this broodstock group. A replicate group of 419 eyed-eggs was shipped to NOAA Manchester Research Station.

- **BY03 EAGLE BROODSTOCK -** **2 Fish**
- 0 mortality since 2/21/08 TOC.
 - One mortality since 6/11/08 TOC.
 - Ultrasounded on 8/13 – 8/15.
 - Sample count @ Ultrasound: 1,135 grams/fish mean.

BY04 BROODSTOCK / PRODUCTION INVENTORY:

Broodstock eggs were selected by maximizing the representation of individual female and male spawners. A total of 507 eggs representing 100 females and 87 males were selected from specific spawn crosses to create this broodstock group. Due to IHNv in the anadromous spawners at Eagle Hatchery, NOAA Fisheries selected broodstock and adult release groups from spawn crosses made at Burley Creek Hatchery.

- **BY04 EAGLE BROODSTOCK -** **7 Fish**
- Initial eyed-egg number: 507.
 - Total number ponded: 499
 - One mortality since 6/11/08 TOC.
 - Ultrasounded on 8/13 – 8/15.
 - Sample count @ Ultrasound: 938 grams/fish.

BY05 BROODSTOCK / PRODUCTION INVENTORY:

Broodstock eggs were selected by maximizing the representation of individual female and male spawners. A total of 808 (two groups of 404) eggs representing 121 females and 195 males were selected from specific spawn crosses to create the Eagle Hatchery captive broodstock group. A replicate group of 404 eyed-eggs was transferred to NOAA for their Captive Broodstock and a similar group of 496 eyed-eggs was transferred to NOAA for their Adult Release group.

- **BY05 EAGLE BROODSTOCK -** **381 Fish**
- Initial eyed-egg number: 808.
 - Total number ponded: 794 (98.3% survival to pond).
 - PIT tagged broodstock 11/8 and 11/9/2006.
 - 329 smolts released on 05/08/07 (100% ad clipped and PIT tagged).
 - 7 mortalities since 6/11/08 TOC.
 - Ultrasounded on 8/13 – 8/15.
 - Sample count at ultrasound: 1225 grams/fish

BY06 BROODSTOCK / PRODUCTION INVENTORY:

Broodstock eggs were selected by maximizing the representation of individual female and male spawners. A total of 800 (two groups of 400) eggs representing 180 females and 166 males were selected from specific spawn crosses to create the Eagle Hatchery captive broodstock group. A replicate group of 400 eyed-eggs was transferred to NOAA for their Captive Broodstock and a similar group of 500 eyed-eggs was transferred to NOAA for their Adult Release group.

- **BY06 EAGLE BROODSTOCK -** **672 Fish**
 - Initial eyed-egg number: 800.
 - Total number ponded: 698
 - One mortality since 6/11/08.
 - Group PIT tagged on 1/17/08.
 - Sample count on 7/29/08: 231.43 grams/fish.

BY07 BROODSTOCK / PRODUCTION INVENTORY:

Broodstock eggs were selected by maximizing the representation of individual female and male spawners. A total of 799 (two groups of 400) eyed-eggs representing 146 females and 148 males were selected from specific spawn crosses to create the Eagle Hatchery captive broodstock group. A replicate group of 400 eyed-eggs was transferred to NOAA for their Captive Broodstock and a similar group of 496 eyed-eggs was transferred to NOAA for their Adult Release group.

- **BY07 EAGLE BROODSTOCK -** **483 Fish**
 - Initial eyed-egg number: 799.
 - Survival to ponding 61.6% (3/12/08 inventory).
 - Two mortalities since 6/11/08.
 - Sample count on 7/29/08: 9.52 grams/fish.

- **BY07 SAWTOOTH PRODUCTION -** **190,653 Fish**
 - Initial eyed-egg number transferred to SFH: 231,786.
 - Total number ponded: 197,091
 - Sample count on 8/1/08: 2.4 grams/fish.

- **BY07 ODFW: OXBOW PRODUCTION-** **75,319 Fish**
 - Initial eyed-egg number transferred to Oxbow: 80,958.
 - Total number ponded: 79,209.
 - Sample count on 8/1/08: 5.7 grams/fish.

4. Shoshone-Bannock Tribes Update.

Doug Taki started with parr release requests 10,000 to Pettit, 20,000 to Alturis, and the rest to Redfish Lake. 10,000 into Yellowbelly???

Bob Griswold updated fertilization on Pettit and Alturis Lakes. Surface chlorophytes are up and zooplankton data is being processed. Samples look good in Pettit and Redfish lakes, Alturus Lake looks poor. Joe Myers is also leaving.

Andy Kohler updated tribal research in basin (from **handout**):

SBT SBSTOC
Augusthandout_2008

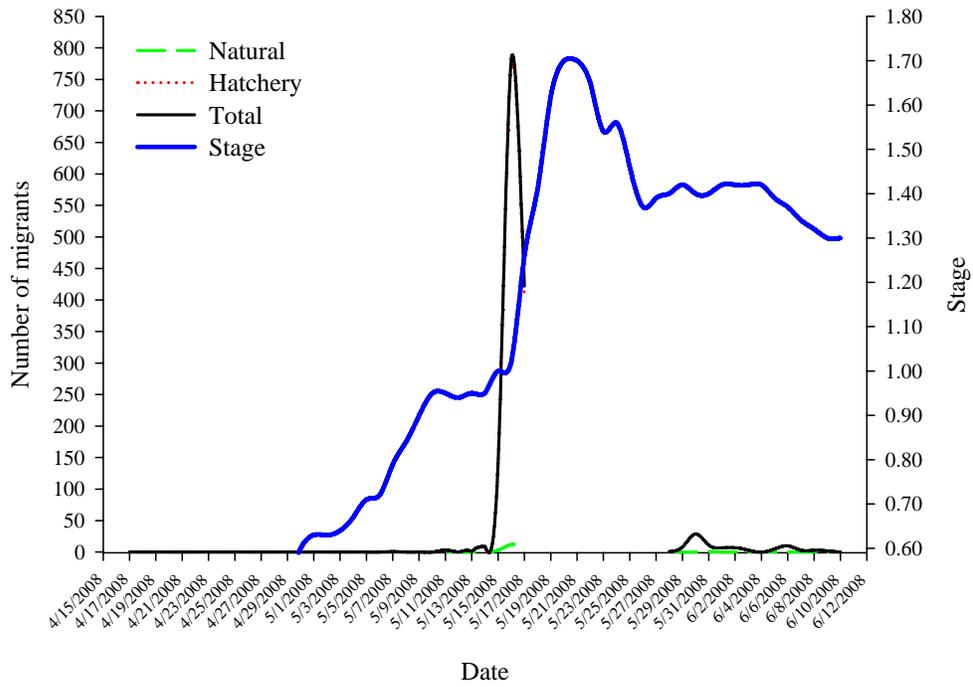


Figure 1. Pettit Lake Creek *O. nerka* smolt migrant numbers and timing_2008.

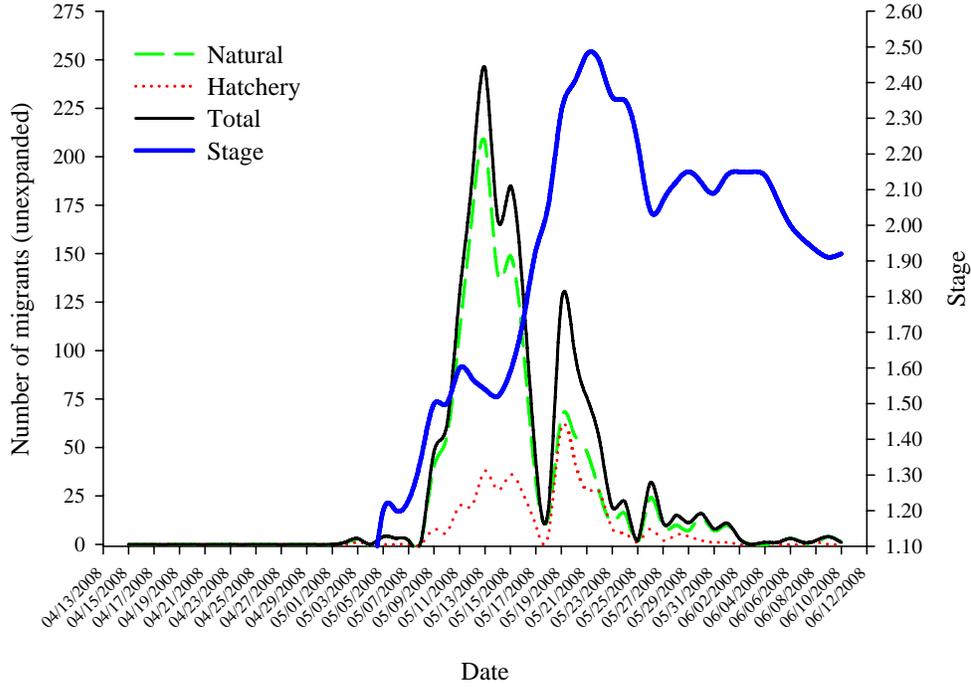


Figure 2. Alturas Lake Creek *O. nerka* smolt migrant numbers and timing_2008.

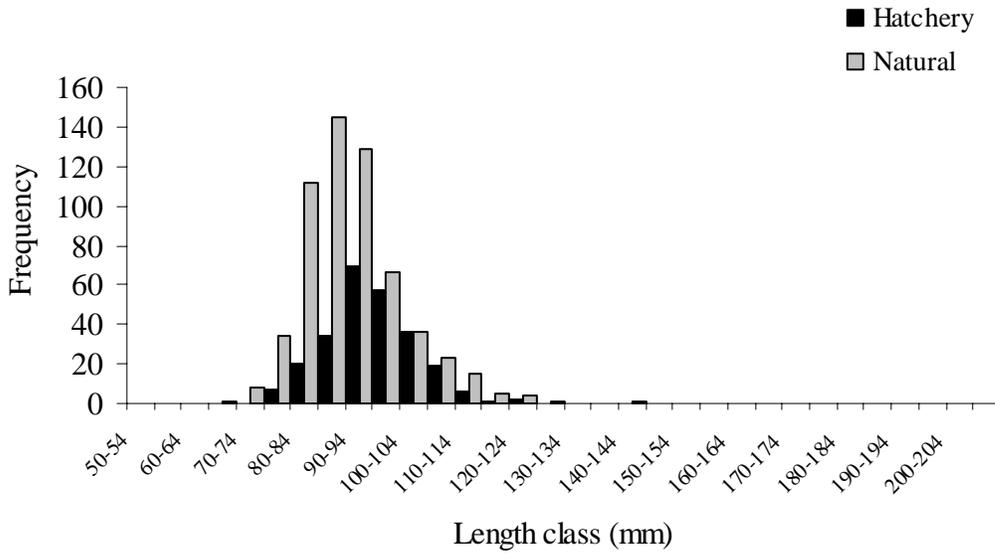


Figure 3. Alturas Lake *O. nerka* length frequency histogram_2008.

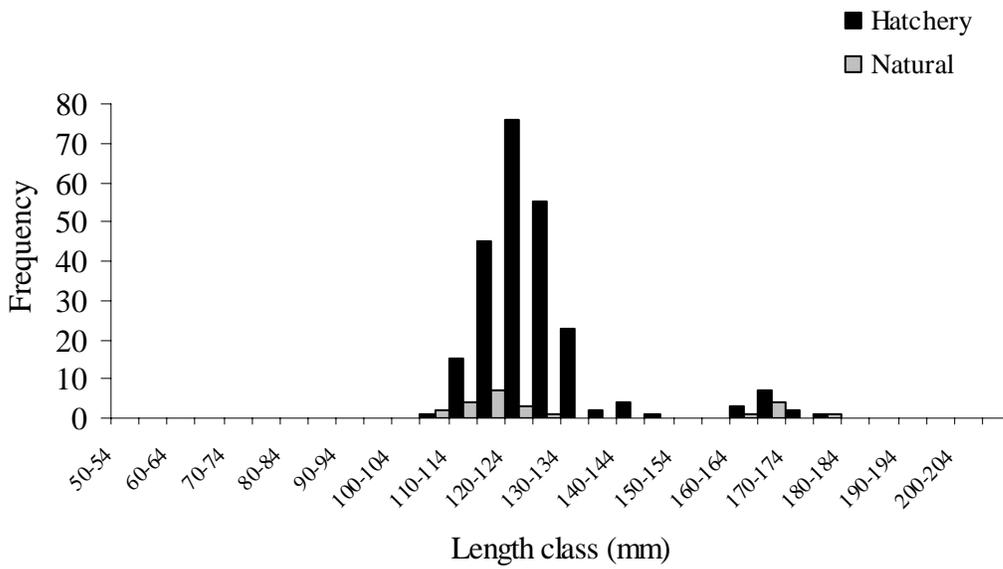


Figure 4. Pettit Lake *O. nerka* length frequency histogram_2008.

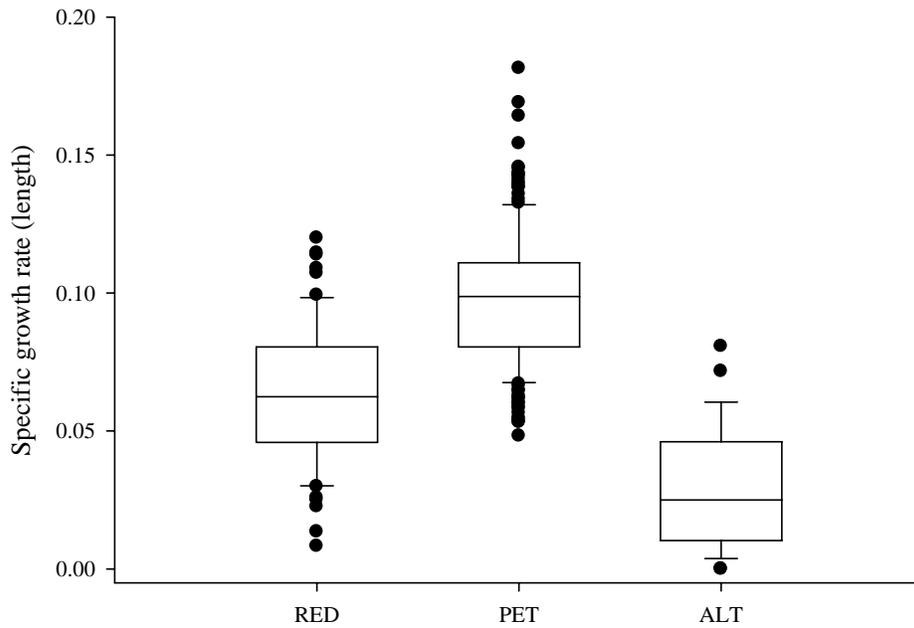


Figure 8. Redfish, Pettit, and Alturas lakes hatchery presmolt release and smolt recapture specific growth rates (L)_2008.

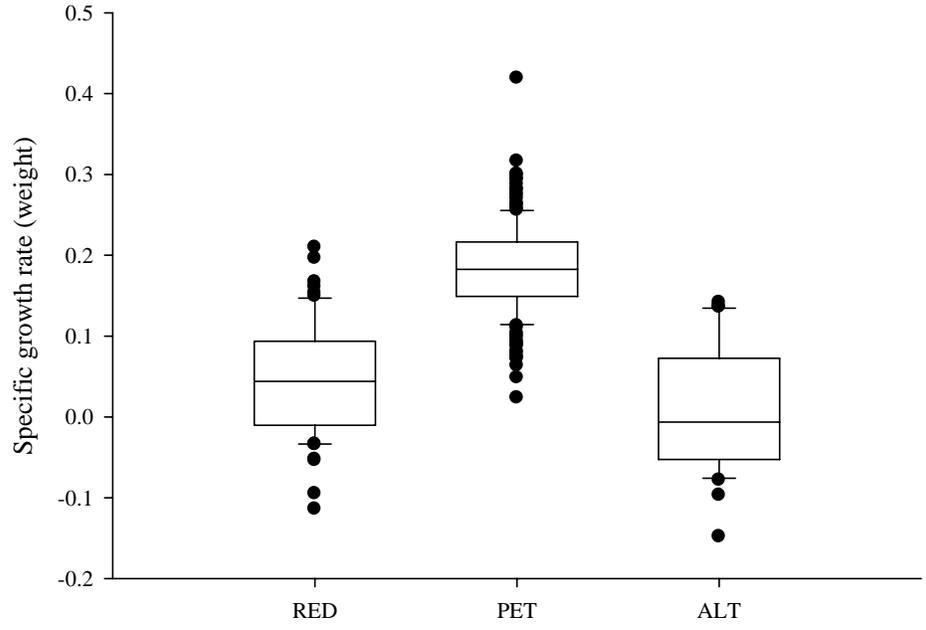


Figure 9. Redfish, Pettit, and Alturas lakes hatchery presmolt release and smolt recapture specific growth rates (W)_2008.

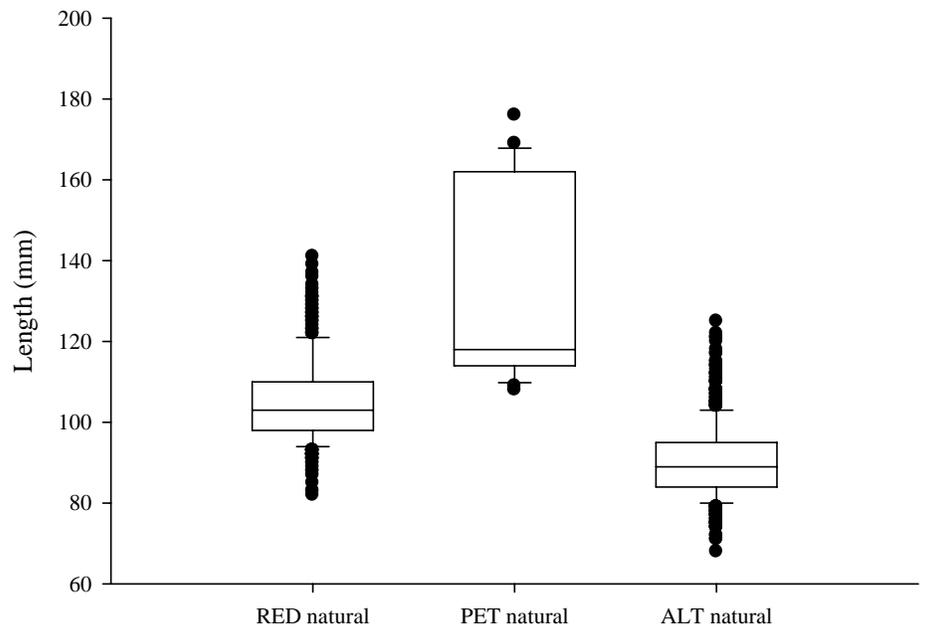


Figure 10. Redfish, Pettit, and Alturas lakes natural smolt migrant length data_2008

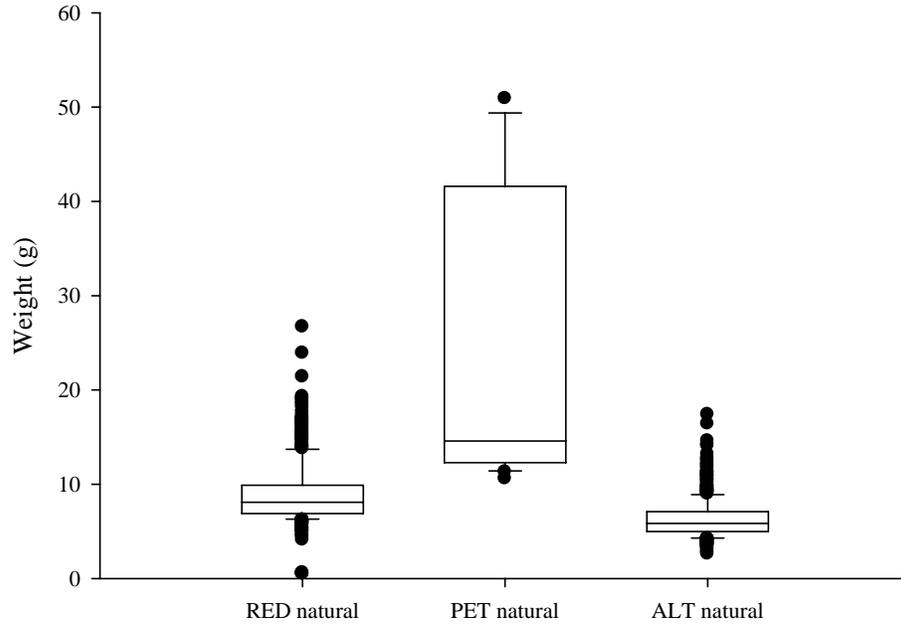


Figure 11. Redfish, Pettit, and Alturas lakes natural smolt migrant weight data_2008.

	Hatchery	Natural	Total	SURPH survival (LGD)		
# caught	1,423	26	1,449			
Expanded population estimate*	5,962	100	6,062		Hatchery	Natural
# PIT tagged	85	23	108	Lake to Dam	0.2926 (0.0454)	
# IDFG RE	139			Trap to Dam	0.3050 (0.0490)	0.2174 (0.0860)
# PIT tags for survival	217	23	240			
# presmolt release_07	10,113			Natural	Kokanee salmon spawner	
Hatchery percent migration estimate	58.95		Genetic tissue sample	n = 23	n = 6	

* Out of 183 unique downstream detections, we interrogated 31 IDFG RE's (~0.17) while operating at 100% efficiency at the PETTLC weir (4.17 to 5.16.08 and 5.28 to 6.10.08). During that period we captured 17 natural and 1,010 hatchery *O. nerka*.

Alturas Lake Creek screw trap population estimates and survival_2008

Hatchery

	Dates	Captured	Marked*	Recaptured*	TE	Gauss population estimate
period 1	4.16.08-5.14.08	121	271	21	0.0775	1,496 (1,052-1,727)
period 2	5.15.08-5.22.08	236	225	16	0.0711	3,137 (2,379-4,588)
period 3	5.23.08-6.10.08	40	127	7	0.0551	640 (396-668)
		397	623	44	0.0706	5,273 (3,947-6,265)

* Mark and recapture data from combined hatchery and natural *O. nerka*

# Hatchery PIT tagged = 218	# Hatchery marked for TE = 201	SURPH survival (to LGD)
# IDFG RE = 34	# Hatchery recaptured = 13	
# PIT tags for survival = 252	Hatchery TE = 0.0647	Hatchery
		0.2487
# Presmolt release_07 = 9,977		Lake to Dam
		(0.0203)
		0.5907
Hatchery percent migration estimate = 52.85		Trap to Dam
		(0.0794)

Natural

	Dates	Captured	Marked	Recaptured	TE	Gauss population estimate
period 1	4.16.08-5.14.08	735	168	17	0.1012	6,901 (5,028-9,295)
period 2	5.15.08-5.22.08	496	155	10	0.0645	7,034 (4,979-10,660)
period 3	5.23.08-6.10.08	123	127*	7*	0.0551	1,968 (1,211-2,816)
		1354	450	34	0.0756	15,903 (12,255-23,429)

* Mark and recapture data from combined hatchery and natural *O. nerka*

# Natural PIT tagged = 427	# Natural marked for TE = 422	SURPH survival (to LGD)
	# Natural recaptured = 31	
	Natural TE = 0.0735	Natural
		0.6265
		Trap to Dam
		(0.1053)
		Genetic tissue sample
		n = 318

Total (Hatchery and Natural)

	Dates	Captured	Marked*	Recaptured*	TE	Gauss population estimate
period 1	4.16.08-5.14.08	856	271	21	0.0775	10,583 (7,860-11,302)
period 2	5.15.08-5.22.08	732	225	16	0.0711	9,731 (7,523-11,558)
period 3	5.23.08-6.10.08	163	127	7	0.0551	2,608 (1,128-4,275)
		1,751	623	44	0.0706	22,923 (16,966-27,522)

* Mark and recapture data from combined hatchery and natural *O. nerka*

NOAA FISHERIES
Redfish Lake Sockeye Salmon Update
SBSTOC—August 27, 2008

ADULT RELEASE—Burley Creek Hatchery and Manchester

(current as of 8/23/08)

BY03

Initial N=498 from IDFG females. Rearing in seawater.

2 maturing fish in freshwater from Manchester	Current <u>seawater</u> inventory: 0
5 immature fish in freshwater @ BCH	% SW survival (from smolt): 88.2
Weight: 3.2 kg	SW morts since last TOC: 0

BY04

Initial N=518 from BY01 NOAA females. Rearing in freshwater and seawater.

Current <u>freshwater-reared</u> inventory: 3	Current <u>seawater</u> inventory: 0
1 Fish is non-maturing, 2 maturing.	39 maturing fish tx to BCH on 7/2/08
% FW survival (from eyed egg): 70.8	% SW survival (from smolt): 90.6
Weight: 2 kg	Weight: 2 kg
FW Morts since last TOC: 1	SW morts since last TOC: 1
	12 immature fish in freshwater @ BCH

BY05

Initial N= 494 from IDFG females. Rearing in freshwater and seawater.

Current <u>freshwater-reared</u> inventory: 135	Current <u>seawater</u> inventory: 142
% Survival (from eyed egg): 84.4	% SW survival (from smolt): 97.5
Weight: est. 1100 g	Weight: 1100
Morts since last TOC: 7	Morts since last TOC: 1
ELISA: 0.073-0.094	ELISA: 0.077
88% age-3 maturity	48% age-3 maturity

BY06

Initial N= 399* from IDFG females. Rearing in seawater.

Current inventory: 268	% Survival (from eyed egg): 67.2
Weight: 195 g	Morts since last TOC: 0
0% age-2 maturity	

*This group of fish was formerly the captive broodstock group, swapped to adult release to meet egg productions goals in the captive broodstock program.

BY07

Initial N= 493 from IDFG females. Rearing in freshwater.

Current inventory: 333	% Survival (from eyed egg): 67.5
Weight: 26 g	Morts: 1

2008 NOAA Maturing Sockeye

as of 8/23/08

ADULT RELEASE

(BY 05s have not been verified; scheduled for later this week)

Brood year	Location	N Matured
06	SW	0
05	FW	119 (51 females, 68 males)
05	SW	131 (61 females, 69 males, 1 unk)
04	FW	0
04	SW	26 (5 Females, 21 Males)
03	FW	0
03	SW	2 (2 Males)
Total:		278 (117 females, 160 males, 1 unk)

CAPTIVE BROODSTOCK

Brood year	N
06	Not sampled yet
05	306 (125 females, 181 males)
04	2 (2 males)
03	0
Total:	308 (125 females, 183 males)

Preliminary Egg Projection Estimate:

Assume 120 females spawned x 1700 eggs/female @ 70% viability = 142,800

Assume 120 females spawned x 2000 eggs/female @ 70% viability = 168,000

6. U of I Update

Matt Powell presented PowerPoint on Micro-Array (PowerPoint not in hand yet): Would like to run samples on sockeye focusing on smolts and pre-smolts. Needs funds to accomplish study using this technology.

7. BPA Update.

Updates addressed in CSCPTOC meeting.

9. General Discussion.

Main Topics: Adult Return, new smolt rearing facility, Yellowbelly, fish above Sawtooth Fish Hatchery and disease issues, fitness and diversity questions between captive and anadromous, what will Micro-Array tell us, Sockeye vs. kokanee, Lower Granite trapping, tagging fish with what type of tag and how many, most of this was a back and forth between all parties with very little structure and fewer answers.

8. Next TOC Meeting Date.

The next SBSTOC meeting was set for the afternoon of Wednesday, November 19th at the Hagerman Fish Culture Experiment Station, Hagerman, Idaho. Meeting summary prepared by Travis Brown, IDFG Eagle Fish Hatchery.