

## STANLEY BASIN SOCKEYE TECHNICAL OVERSIGHT COMMITTEE

### MEETING SUMMARY

November 30, 2006

9:00 a.m. to 12:00 p.m.

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

#### List of Those in Attendance

<b>Name</b>	<b>Affiliation</b>	<b>Phone</b>
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
Andy Kohler	Shoshone-Bannock Tribes	(208)239-4566
Doug Taki	Shoshone-Bannock Tribes	(208)239-4568
Bob Griswold	Sho-Ban Tribes (Biolines)	(208)481-1900
Jo Myers	Sho-Ban Tribes (Biolines)	(970)903-7935
Matt Powell	University of Idaho – ARI	(208)837-9096

**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  
November 30, 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.**

**Mike Peterson, Chris Kozfkay, Dan Baker and Paul Kline** presented information on current sockeye research activities, genetic monitoring, and provided inventory updates for the Idaho program.

**Shoshone-Bannock Tribes Update.**

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

**University of Idaho Genetics Update:**

**Matt Powell** provided an update on Hagerman facilities and summarized current sockeye genetic evaluations.

**NOAA Fisheries Update.**

**Debbie Frost** provided updates for sockeye in culture at the Manchester and Burley Creek facilities.

**Bonneville Power Administration Update.**

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

**The next SBSTOC meeting was set for the morning of Thursday, February 8 at the 911 Federal Building (BPA Headquarters) in Portland, Oregon.**

**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 minutes were improved, then approved.

### **3. IDFG Update.**

**Dan Baker** provided general hatchery inventory information for sockeye in culture at IDFG Eagle and Sawtooth facilities (from **handout**):

#### **Eagle Fish Hatchery November 30, 2006 Sockeye Inventory**

##### **BY02 BROODSTOCK INVENTORY:**

Broodstock eggs were selected by maximizing the representation of individual female and male spawners. A total of 420 eggs representing 79 females and 106 males were selected from specific spawn crosses to create this broodstock group. A replicate group of 420 eyed-eggs was shipped to NOAA Manchester Hatchery.

- **EAGLE BY02 BROODSTOCK -** **0 Fish**
  - 2 males matured and used in spawn crosses. (ELISA Negative)
  - 1 maturing female culled (unproductive).
  - 4 immature males culled (unproductive).

##### **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 -** **8 Fish**
  - Ultrasounded BY03 group on 8/8/06.
    - 357 fish maturing / 9 immature.
    - 183 females / 174 males.
  - BY03 Spawner Summary:
    - Spawn Dates: 10/5 – 11/2/06. (11 Lots)
    - 178 Females spawned (3 prespawn mortality / 2 green females).
    - 166 males used (5 prespawn mortality / 3 unproductive)
  - No Pathogens detected (ELISA negative, 347 tested).

##### **BY04 BROODSTOCK:**

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 -** **463 Fish**
  - Initial eyed-egg number: 507.
  - Total number ponded: 499
  - Five mortality since 8.2.06 TOC.
  - Sample count on 10/02/06: 261.46 grams/fish.
  - Nine males matured and used in spawn crosses (ELISA negative).

##### **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 -** **739 Fish**
  - Initial eyed-egg number: 808.
  - Total number ponded: 794 (98.3% survival to pond).
  - 8 mortality since 8/2/2006.
  - PIT tagged broodstock 11/8 and 11/9/2006.
  - Sample count on 11/01/06: 13.2 grams/fish
  - ?? Release 339 fish as smolts in May, 2007 ??
    - Expansion at Eagle FH will not be completed allowing Eagle FH to hold additional Broodstock for spawning in 2008. (2010 smolt production)
  
- **BY05 SAWTOOTH PRODUCTION -** **47,021 Fish**
  - Initial eyed-egg number transferred to SFH: 177,243
    - Eagle Hatchery transferred to SFH: 128,457.
    - Burley Creek Hatchery transferred to SFH: 48,786.
  - BY05 group was marked in mid-September.
    - 100% Ad clipped.
    - Overwinter smolt group received CWT # 10-82-77.
  - Presmolts released October 2 and 3, 2006.
    - Alturas Lake: 26,994 @ 6.32 grams/fish (FL: 86.19mm)
    - Pettit Lake: 18,494 @ 6.18 grams/fish (FL: 83.50mm)
    - Redfish Lake: 61,804 @ 6.18 grams/fish (FL: 84.42mm)
  - Inventory as of 11/1/2006: 47,021 @ 13.8 grams/fish.
  
- **BY05 ODFW: OXBOW PRODUCTION-** **55,085 Fish**
  - Initial eyed-egg number transferred to Oxbow: 58,279
    - Burley Creek Hatchery supplied all eyed-eggs to Oxbow.
  - Completed a 21-day aquamycin treatment in May.
  - BY05 group was marked 8/8 – 8/15/06.
    - 100% AD/CWT/RV (CWT #: 07-44-48)
  - Inventory as of 11/1/2006: 55,085 @ 12.68 grams/fish.

*(ALL INVENTORY DATA CURRENT AS OF 11/01/06)*

**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.

<u>2006 Eyed-egg Distribution:</u>	<u>Goal</u>	<u>Current</u>	<u>Transfers</u>
Eagle Captive Broodstock:	800	626	
NOAA Captive Broodstock:		400	313
NOAA Fisheries Adult Release:	500	399	
Oxbow Hatchery:	60,000	80,052	
Sawtooth Fish Hatchery:	175,000	141,504 (estimated)	
Pettit Lake Egg Boxes:	50,000	47,851	
Alturas Lake Egg Boxes:	100,000	57,039 (estimated)	

**2006 ANADROMOUS RETURNS:**

- Three anadromous returning sockeye trapped at Sawtooth Fish Hatchery trap.

- Two females / one male.
- Zero anadromous sockeye trapped at Redfish Lake Creek trap.
- All three anadromous sockeye were transferred to Eagle FH and incorporated into the 2006 spawning matrix.

**2006 CAPTIVE SOCKEYE ADULT RELEASES:**

- Captive reared adult sockeye were released to Redfish Lake on September 8, 2006.
  - 49 BY02 sockeye were released.
  - 391 BY03 sockeye were released.
  - 24 BY04 sockeye were released.
- All released adults were reared by NOAA Fisheries.
- There were six transport mortalities.

**Upcoming Activities:**

Finish BY06 eyed egg transfers.  
Start 2006 BPA / NOAA Reports

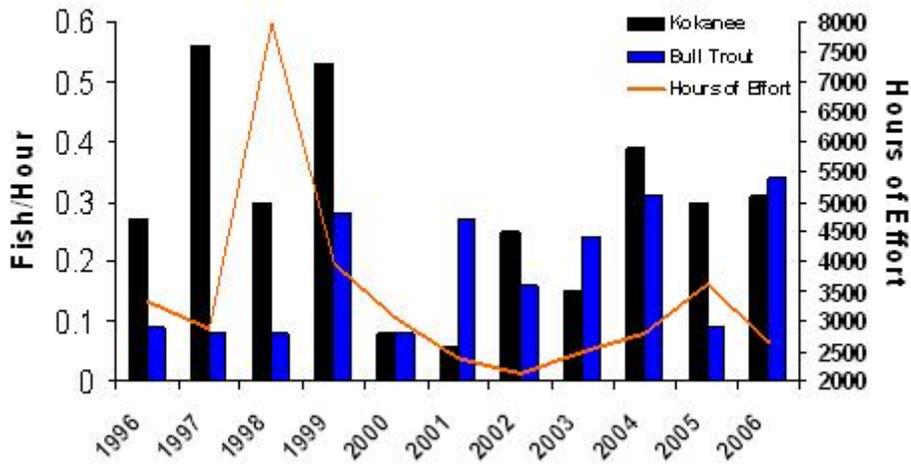
Next, **Mike Peterson** provided Sawtooth Basin creel, trawl and adult spawn survey information for the 2006 season (from **handout**):

## Redfish Lake Creel 2006 May 28-August 5, 2006 (Final)

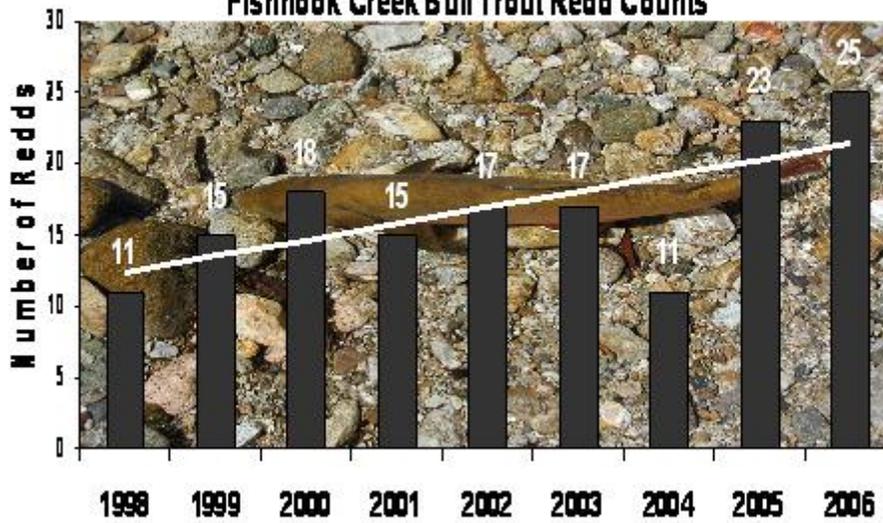
Pressure estimates (95% CI)			
Boat	Bank	Tube	Total for season
<b>1,888</b> <b>(254)</b>	<b>754</b> <b>(169)</b>	<b>0 (0)</b>	<b>2,642 (311)</b>

Harvest (95% CI) and [Catch Rate] Summary												
KOK		BLT		WCT		MWF		LSS		Lake Total		
Kept	Reisd	Kept	Reisd	Kept	Reisd	Kept	Reisd	Kept	Reisd	Kept	Reisd	Caught
194	739	0	980	13	114	0	9	0	50	207	1,993	2,200
(21)	(77)	[0]	(194)	[0]	(53)	[0]	(8)	[0]	(8)	(47)	(399)	(415)
[0.07]	[0.24]		[0.34]		[0.03]		[0.01]		[0.02]	[0.07]	[0.66]	[0.73]

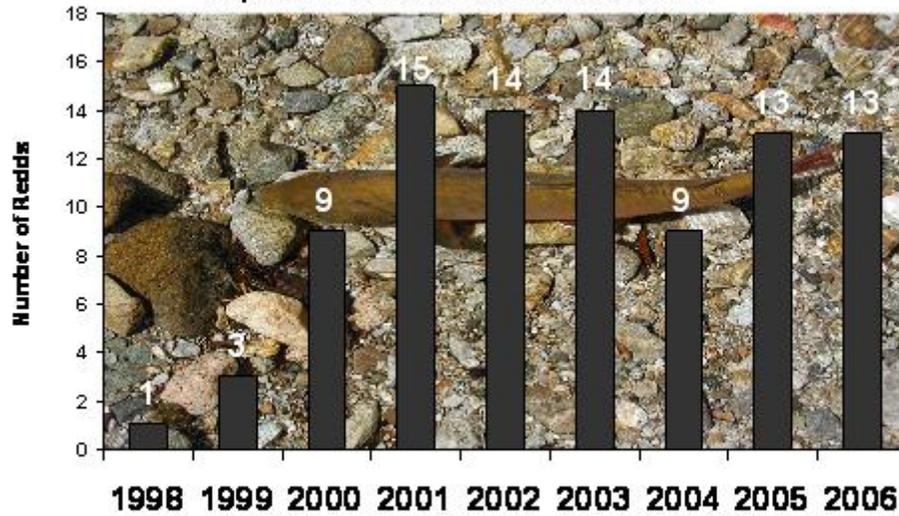
### Kokanee and Bull Trout Catch Rates and Effort



### Fishhook Creek Bull Trout Redd Counts



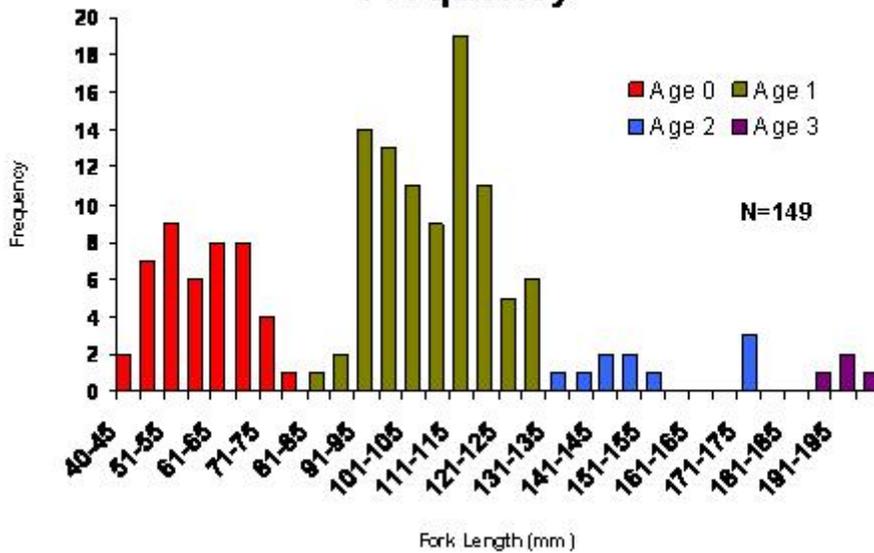
### Alpine Creek Bull Trout Redd Counts



## Preliminary Trawl Estimates Alturas Lake

	Age 0	Age 1	Age 2	Age 3	Age 4	Total
<b>Population Estimate</b>	29,719	59,238	7,153	3,274	0	99,384
<b>Conf. Int. ±</b>	32,279	13,883	5,874	5,924	0	47,969
<b>Mean Density (kokanee/ha)</b>	140.18	279.43	33.74	15.44	0.00	468.79
<b>Biomass Estimates (kg)</b>	51.69	622.85	212.16	227.27	0.00	1,113.97

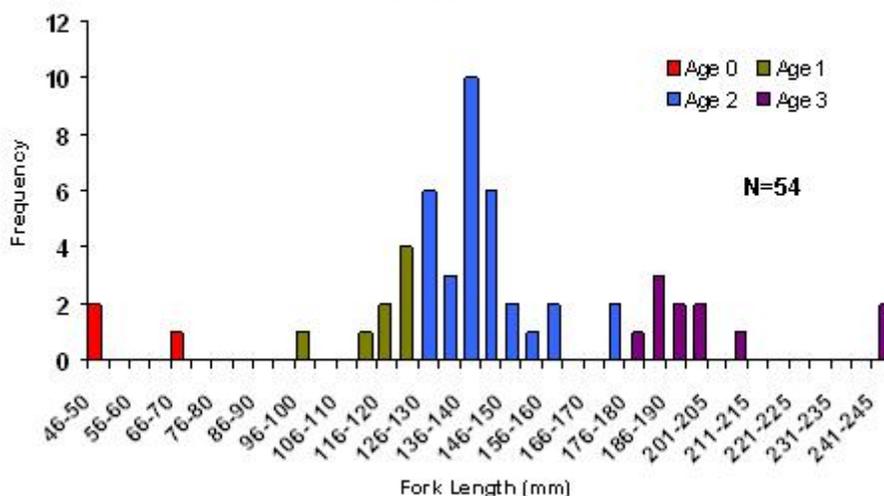
## Preliminary Alturas Lake Trawl Length Frequency



## Preliminary Trawl Estimates Pettit Lake

	Age 0	Age 1	Age 2	Age 3	Age 4	Total
<b>Population Estimate</b>	1,657	5,109	15,869	7,191	0	29,826
<b>Conf. Int. ±</b>	2,908	4,627	5,679	4,092	0	11,207
<b>Mean Density (kokanee/ha)</b>	14.41	44.43	137.99	62.53	0.00	259.36
<b>Biomass Estimates (kg)</b>	2.65	90.91	459.47	514.78	0.00	1,067.81

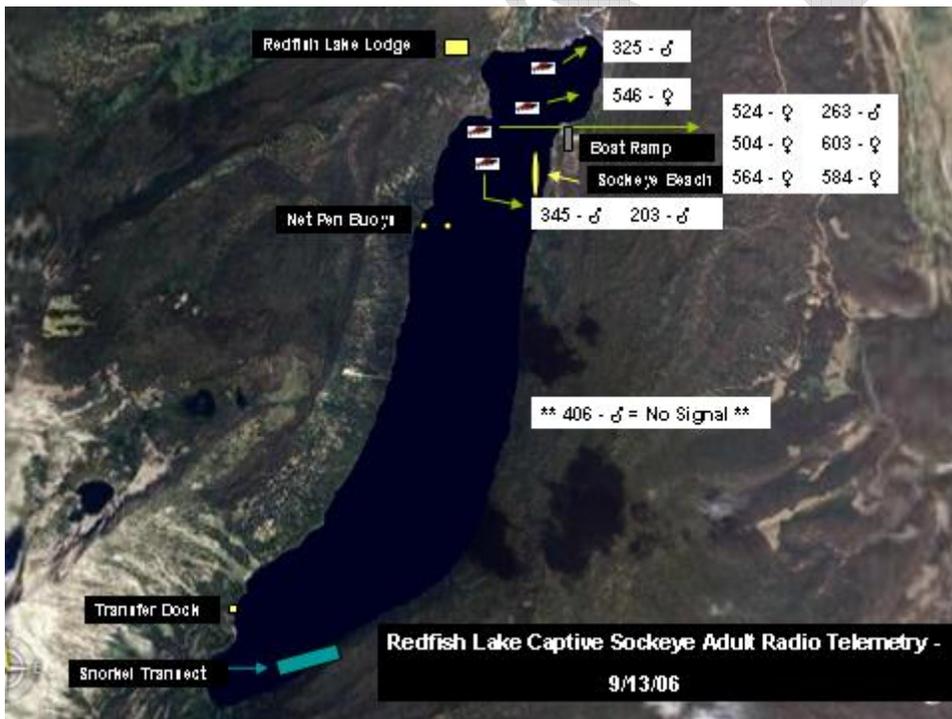
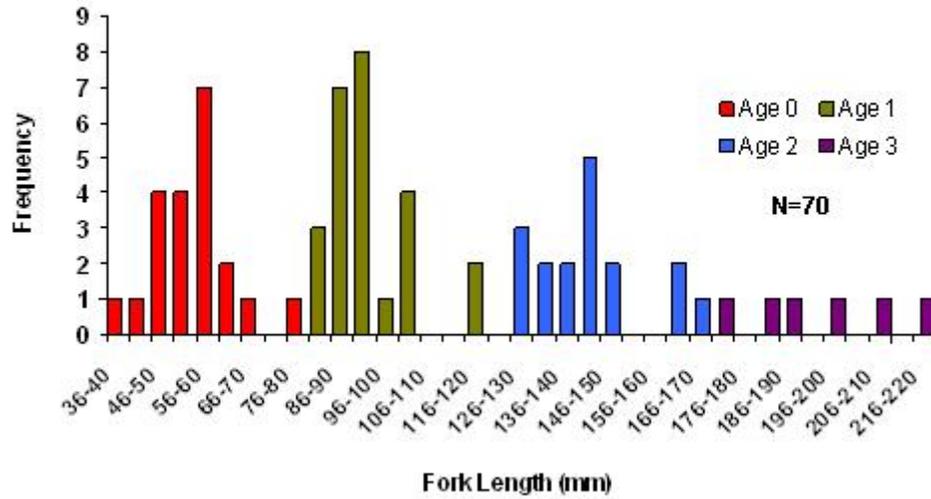
## Preliminary Pettit Lake Trawl Length Frequency

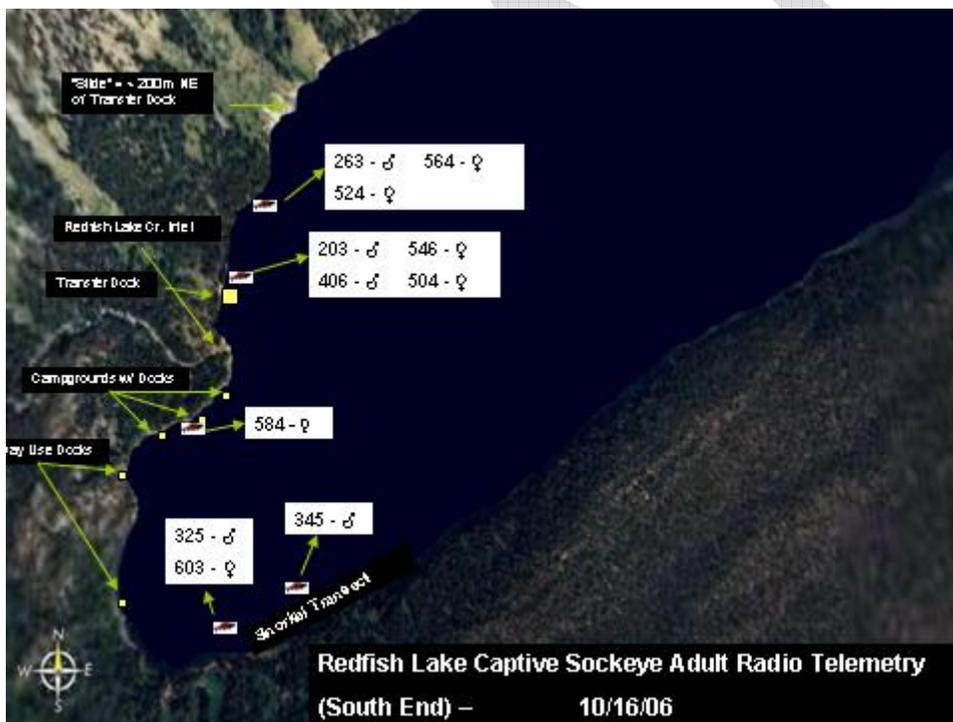
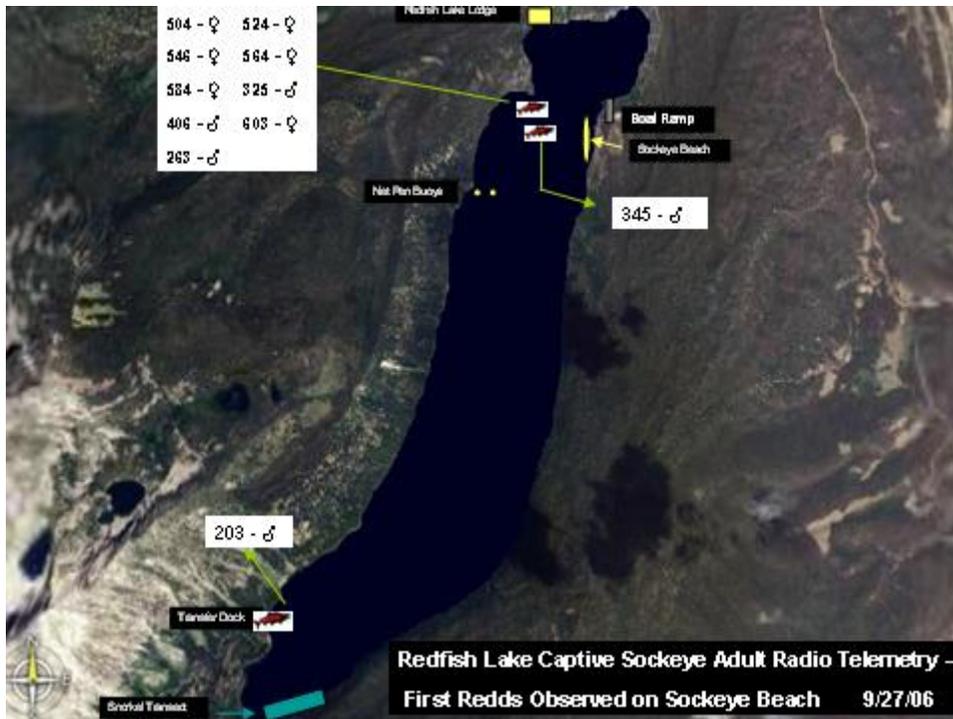


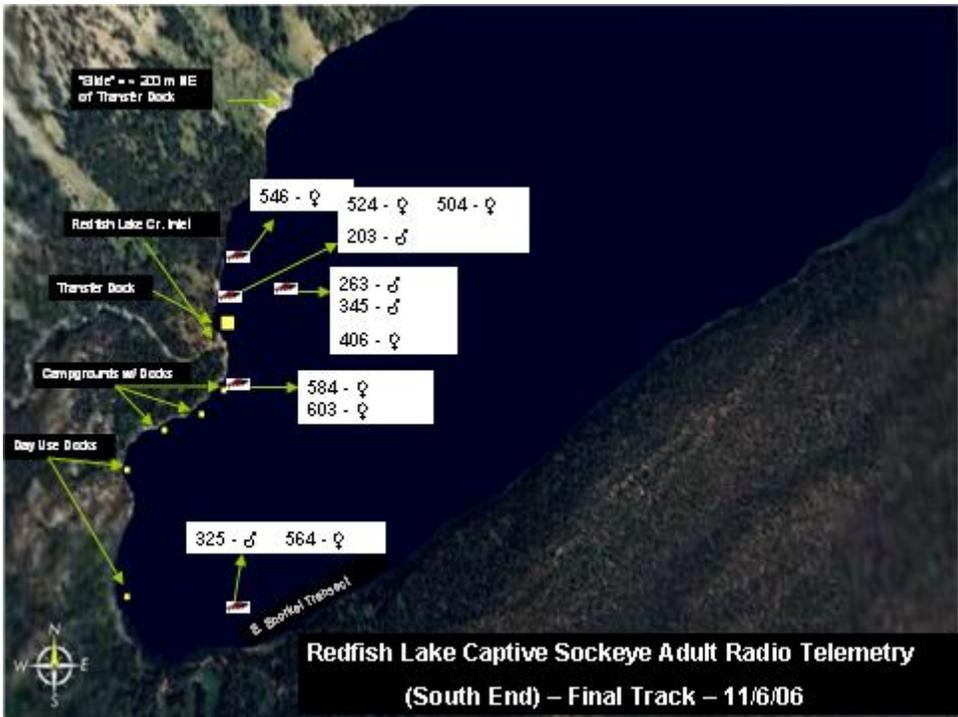
## Preliminary Trawl Estimates Redfish Lake

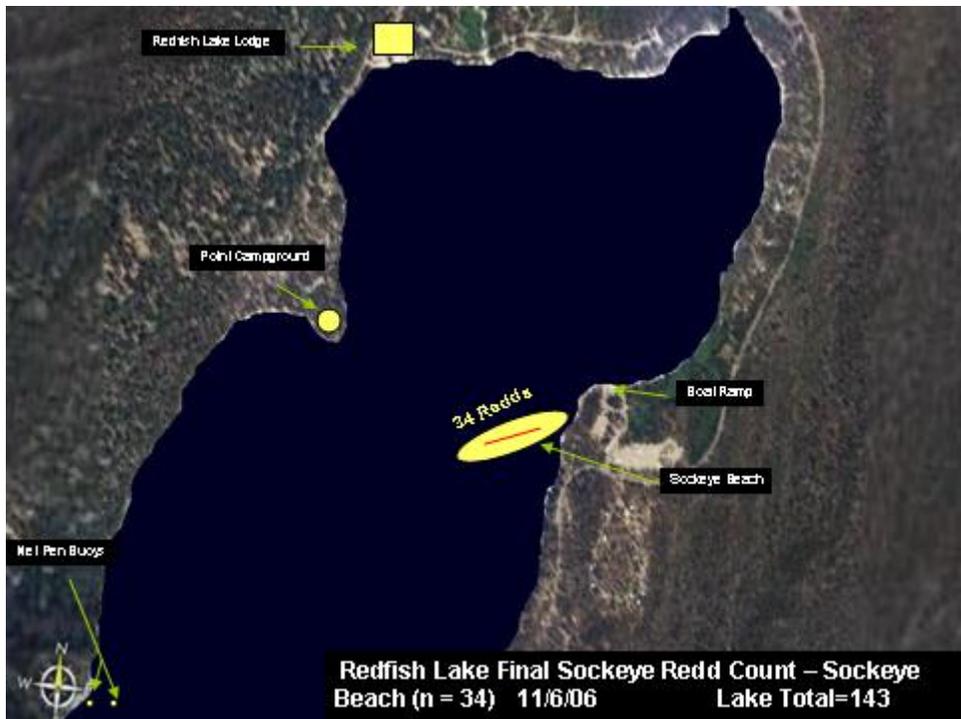
	Age 0	Age 1	Age 2	Age 3	Age 4	Total
<b>Population Estimate</b>	21,816	29,429	17,485	7,625	0	76,354
<b>Conf. Int. ±</b>	11,107	30,207	12,507	7,550	0	43,892
<b>Mean Density (kokanee/ha)</b>	52.95	71.43	42.44	18.51	0.00	185.33
<b>Biomass Estimates (kg)</b>	29.78	231.26	528.97	554.36	0.00	1,344.37

## Preliminary Redfish Lake Trawl Length Frequency









## Other Associated Research Tasks

### Pit tagged Pre-smolt @ Sawtooth Fish Hatchery

collected lengths and weights from all PIT Tagged fish

Pettit Lake = 1,021 (Mean Length =83.5 mm, weight=6.2 g)

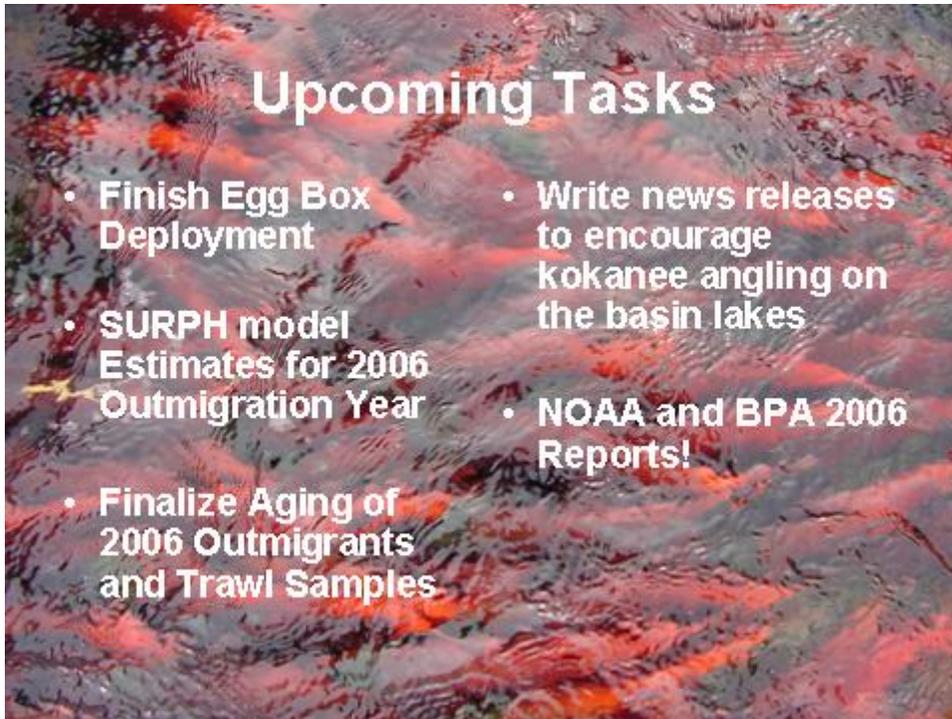
Alturas Lake = 1,016 (Mean Length =86.2 mm, weight=6.3 g)

Redfish Lake = 1,021 (Mean Length =84.4 mm, weight=6.2 g)

Research also assisted the SBT with Night Snorkeling

We assisted EFH with Spawning activities @ Eagle FH

We are currently deploying egg boxes into Basin Lakes



**Chris (Cegelski) Kozfkay** followed with an update of genetic investigations at the Eagle Fish Genetics Lab (from **handout**):

IDFG Eagle Fish Genetics Lab  
SBSTOC 11/29/06 Hagerman  
C. Cegelski

**Accomplishments to Date:**

- We optimized 11 microsatellite loci (7 of which were used by UI Lab in 2004 and 2005)
- We extracted DNA from 362 eggs in 2005 and used the known parents and offspring pairs to standardize allele scores with UI, so we are currently standardized with UI and can make comparisons to 2005 data.
- We produced the 2006 spawning matrix for both NOAA and Eagle using 11 microsatellite loci

I. Eagle: 405 fish amplified - 30 morts. – 8 immatures = 367 in matrix

358 BY03, 9 BY04 / 150M, 156F

A. Level of Completeness in Genotyping

- i. 11 loci = 328 fish (88%)
- ii. 10 loci = 33 fish (9%)
- iii. 9 loci = 6 fish (2%)
- iv. 0 loci = 4 fish (1%; no fin clip was attained)

II. NOAA – 421 fish amplified – 36 morts. – 6 immatures – 73 adult release = 306 in matrix

283 BY03, 17 BY04 / 183M, 184F

A. Level of Completeness in Genotyping

- i. 11 loci = 267 fish (87%)
- ii. 10 loci = 30 fish (10%)
- iii. 9 loci = 9 fish (3%)
- iv. 0 loci = 2 fish (<1%; no fin clip was attained)

- We were also able to generate info. regarding relatedness of BY05 eggs and cut-off values (to not go above) for spawning and recommended not to exceed an allele-sharing score of 0.25. We also validated that the allele-sharing estimator was an appropriate estimator and that Queller and Goodnight’s estimator is also appropriate in distinguishing full-sibs and half-sibs from less related pairs

Allele-Sharing Estimator – only uses sharing of alleles to assess relatedness

Queller & Goodnight Estimator – takes into account sharing of alleles and allele frequencies in assessing relatedness

- The relatedness data was presented in the “Fish Culture for Species in Crisis” symposium at the National American Fisheries Society Conference this September.
- We extracted DNA from 250 eyed-eggs (BY06) from the Eagle Fish Hatchery and plan on using them to determine our ability to assign offspring to known parents and determine changes in allele-sharing estimates (inbreeding) over time

**Objective:**

Compare Genetic Diversity from Spawn Year 2005 to Spawn Year 2006 to see if different brood years maintain different levels of genetic diversity and if NOAA and Eagle hatcheries maintain different levels of diversity.

**Number of Alleles per Locus:**

	<b>Eagle '05</b>	<b>Eagle '06</b>	<b>NOAA '05</b>	<b>NOAA '06</b>
One111	9	10	12	10
One103	17	21	15	20
One104	7	8	7	8
One108	7	8	8	8
One112	7	8	8	8
One114	7	9	7	10
One115	5	7	5	6
One106	n/a	9	n/a	9
One110	n/a	5	n/a	5
Omy77	n/a	4	n/a	4
Ots103	n/a	7	n/a	7

More alleles are actually present in '06 than '05 fish (One103, One114)

Average - 7 loci      8.43      10.14      8.86      10.00

Averages are statistically different

### Observed Heterozygosity:

	<b>Eagle '05</b>	<b>Eagle '06</b>	<b>NOAA '05</b>	<b>NOAA '06</b>
One111	0.80	0.85	0.81	0.85
One103	0.88	0.90	0.87	0.90
One104	0.68	0.76	0.68	0.76
One108	0.71	0.74	0.70	0.76
One112	0.74	0.82	0.72	0.82
One114	0.72	0.80	0.78	0.81
One115	0.76	0.76	0.77	0.74
One106	n/a	0.79	n/a	0.81
One110	n/a	0.66	n/a	0.64
Omy77	n/a	0.65	n/a	0.66
Ots103	n/a	0.77	n/a	0.76
Average at 7 loci	0.76	0.81	0.76	0.82

$H_o$  is more uniform but is still higher in '06 compared to '05

### Analysis of Molecular Variance (AMOVA): ~ANOVA for genetics.

	% of Variation
Among Groups (Eagle, NOAA)	0.13%
Among Years within groups (05, 06)	0.33%
Within Group	99.53%

**Conclusion:** Different Brood-years may maintain some unique alleles not present in other brood-years...Continuing to spawn precocial fish will help ensure that brood years do not diverge. The Eagle Fish and NOAA fish have not diverged a lot from one another and the 06 are not very different from 05 fish (despite having a few more alleles).

We will continue to report this kind of data following spawning so that we can keep track of genetic diversity and track the rate of loss of diversity and divergence. At this point, we cannot track whether there has been a loss of diversity in the broodstock because we do not know what alleles were passed onto the next generation.

### Future Objectives:

Assuming Full Funding from BPA:

- We plan on multiplexing the 11 microsatellites (finding combinations to run together to save time and money)
- We will begin extracting BY04 adults this spring
- We plan on amplifying 11 microsatellite loci on the BY06 eggs and determine the appropriate analysis for parentage. This is important for classifying returning adults based upon their release strategy (egg boxes, adult release) as well as determining which ones should be spawned in the captive broodstock (e.g. may not spawn all of the returning adults if they are from the same two adults)
- We plan on preparing the relatedness study for publication this spring.
- Need to determine if there is any additional time/money to run additional brood-years for parental assignment, changes in genetic diversity and divergence across generations (and brood years), and rate of inbreeding in the population.

#### 4. Shoshone-Bannock Tribes Update.

Next, **Bob Griswold (Bielines)** followed with lake limnology/fertilization updates and provided information on beaver relocations for Alturas Lake Creek to assist with kokanee spawner escapement (from **handout**):

##### **Beaver Update**

**Brian Reeves IDFG Conservation Officer, Stanley reported that no beavers were relocated to Alturas Lake Creek in 2006. He has traps ready and has communicated with the USFS that any nuisance beavers live trapped in the Sawtooth Valley should be released in Alturas Lake Creek, above Alturas Lake. Brian stated that one beaver was live trapped and removed from the Fishhook Creek natural area by the USFS during summer 2006.**

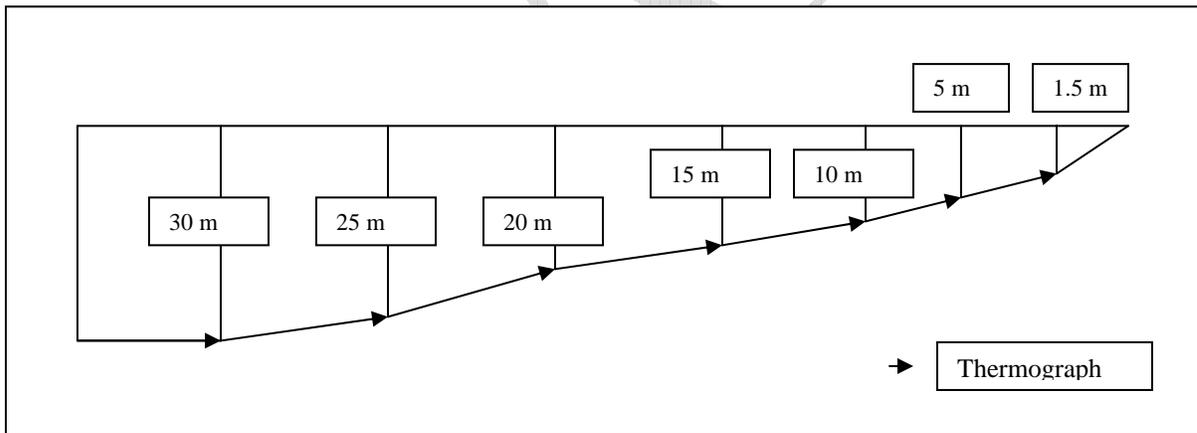
##### **Pettit Lake temperature monitoring**

Thermographs were placed in Pettit Lake on 8 November 2006 to allow estimation of emergence time of late spawning kokanee at various depths.

Two gangs were placed near the SBT gill net station on the Northwest side of the lake.

Time of spawning will be estimated from SBT winter gillnet data. Hatch and emergence timing will be estimated from accumulated Temperature units.

##### **Pettit Lake**



<b>Redfish Lake redd survey</b>		<b>Boat Survey</b>			
10-Nov-06 Bob Griswold and Jo Myers		11:00 AM			
<b>Location</b>	Group Redds w/ # of Pockets	<b>Type of Red</b>		Test Digs	Adult Sockeye
		Single Redds	Total Redds		
dive rock west to inlet	2, 4, 5, 3	1	15	1	5
inlet to 300 m north of slide	6, 2, 3, 4, 6, 2, 2, 13, 2, 3 *	9	52	0	34
dive rock southeast to slide	6 ** see below	0	6	0	0
300 m north of slide	2, 3, 7, 3, 2, 4, 3, 3, 13, 3	22	65	2	35
<b>Total</b>	<b>101</b>	<b>32</b>	<b>138</b>	<b>3</b>	<b>74</b>

\* Two spawned out sockeye recovered one male ad clipped, one female adipose fin intact (Female in Sawtooth walkin Freezer)

\*\* Several suspicious diggings were also found here. A school of 10 to 12 ten-inch fish was sighted around this group red that were thought to be residual O.nerka.

no redds observed on sockeye beach on this date - lots of wind and reflection, however we did observe two redds at sockeye beach in late October

Total count does not include any redds at Sockeye beach

<b>Sawtooth lake redd survey</b>		<b>Arial Survey</b>	
14-Nov-06 Bob Griswold and Jo Myers		4:00 PM	
Little Redfish	0 redds		
Pettit Lake	southwest of inlet=10 redds, southeast of inlet = 26 redds		
Alturas Lake	0 redds		
Perkins Lake	0 redds		
Redfish Lake			
<b>Location</b>		<b>Total redds</b>	
dive rock north west to slide		19	

dive rock southeast to 300 m N of slide	16
Sockeye beach	24
Total	59

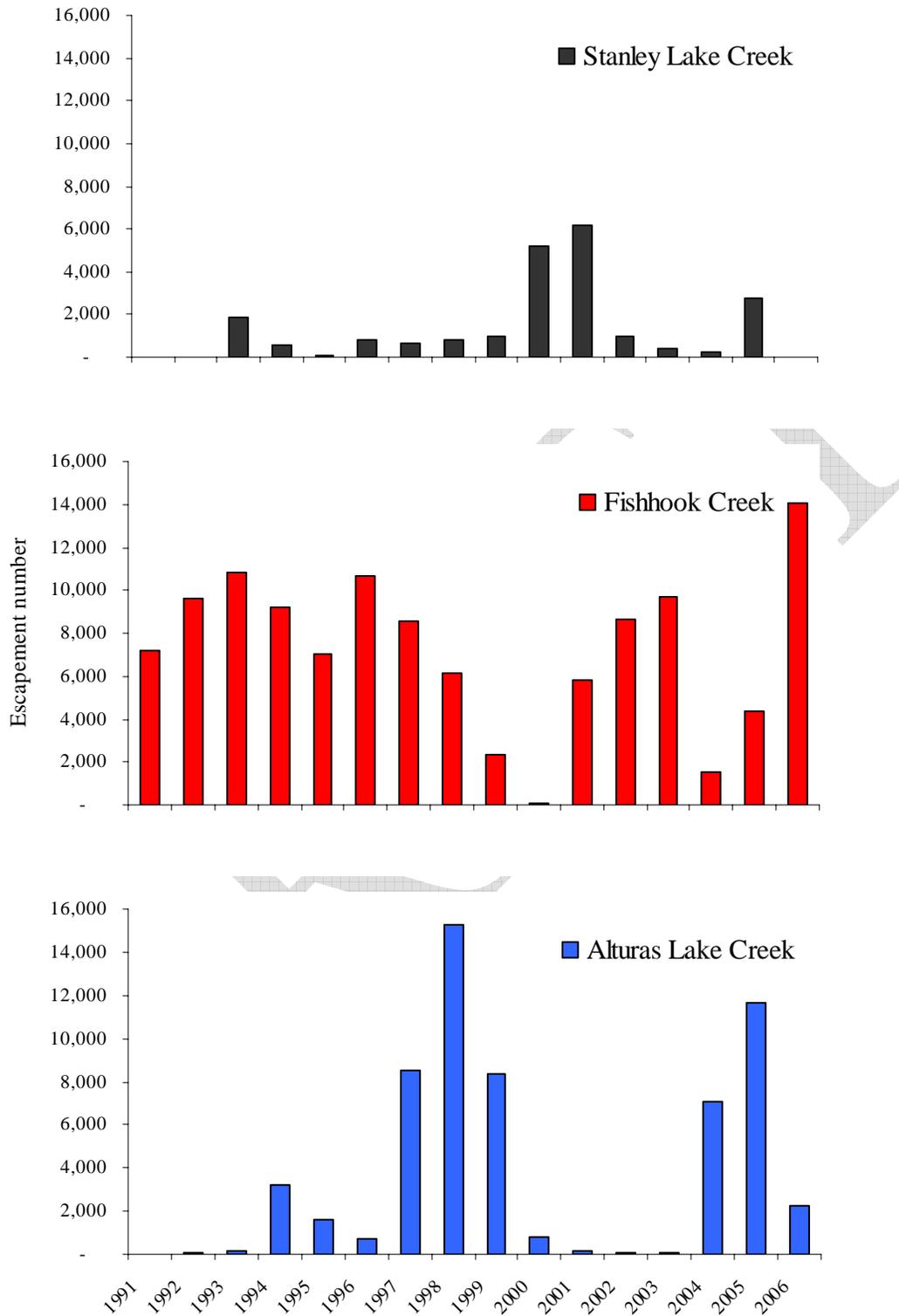
glare made observations difficult

**Doug Taki** and **Andy Kohler** followed with hydroacoustic, adult kokanee escapement, and residual spawner count data for Sawtooth Basin lakes (from **handout**):

**Hagerman SBTOC 30 November 2006**

Lake total and cohort population estimates from hydroacoustic sampling, 30 October 2006.

Size class (mm)		mean length (mm)	mean weight (g)	biomass	kg/ha
<b>Redfish Lake</b>					
Lake Total =	130,455 ± 20,499				
37-90	56,837 ± 16,224	67	3.3	187.6	0.30
91-130	34,193 ± 9,620	111	14.2	485.5	0.79
131-180	25,332 ± 8,172	150	34.9	884.1	1.44
181+	14,093 ± 9,413	189	69.8	983.7	1.60
<b>Pettit Lake</b>					
Lake Total =	53,402 ± 28,444				
30-70	4,335 ± 23,32	60	2.4	10.3	0.06
71-110	12,671 ± 6,640	92	9.5	119.9	0.74
111-160	24,366 ± 14,247	135	31.9	778.3	4.80
161+	12,031 ± 5,813	189	94.7	1138.9	7.03
<b>Alturas Lake</b>					
Lake Total =	151,373 ± 35,782				
40-70	96,453 ± 20,884	58	2.1	206.4	0.61
71-110	32,490 ± 11,908	88	8.2	264.8	0.78
111-160	16,946 ± 6,678	129	27.8	471.8	1.40
161-200	5,485 ± 2,879	186	88.7	486.7	1.44



**Figure. Kokanee salmon escapement in Stanley Lake Creek, Fishhook Creek, and Alturas Lake Creek, 1991-2006.**

**Table. Kokanee salmon escapement in Stanley Lake Creek, Fishhook Creek, and Alturas Lake Creek, 1991-2006.**

Kokanee escapement	Year	Stanley Lake Creek	Fishhook Creek	Alturas Lake Creek
	1991		7,200	
	1992		9,600	60
	1993	1,900	10,800	200
	1994	600	9,200	3,200
	1995	90	7,000	1,600
	1996	825	10,662	744
	1997	629	8,572	8,492
	1998	783	6,149	15,237
	1999	948	2,336	8,334
	2000	5,236	60	827
	2001	6,180	5,853	145
	2002	946	8,626	99
	2003	413	9,679	48
	2004	228	1,508	7,101
	2005	2,725	4,375	11,652
	<b>2006</b>	<b>ND</b>	<b>14,021</b>	<b>2,276</b>
mean	199x-2005	1,654	6,775	4,124
% change from mean		ND	106.95%	-44.81%
% change from 05		ND	220.48%	-80.46%

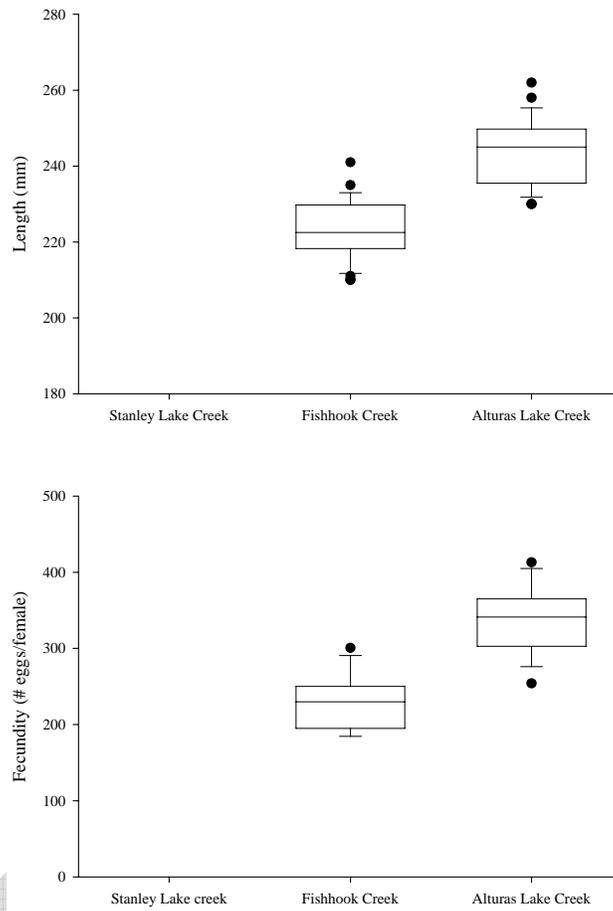
Table. Alturas Lake Creek kokanee trap net weir, 2006.

Alturas trap net weir summary\_2006

trap net weir installed 8.02.06  
 trap net weir removed 9.22.06

escapement goal 600 female spawners

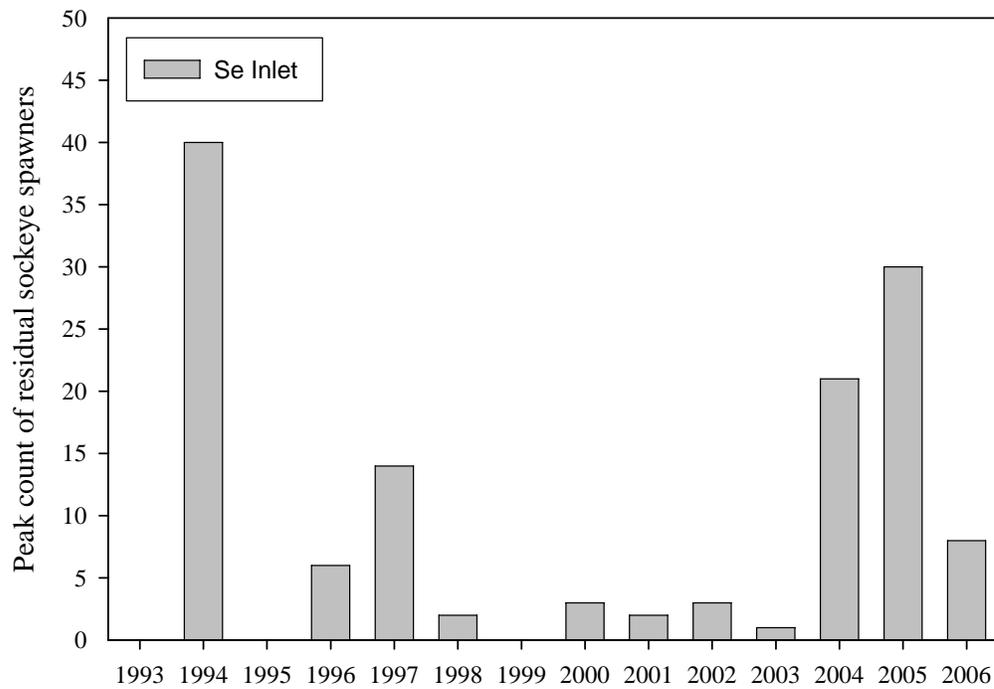
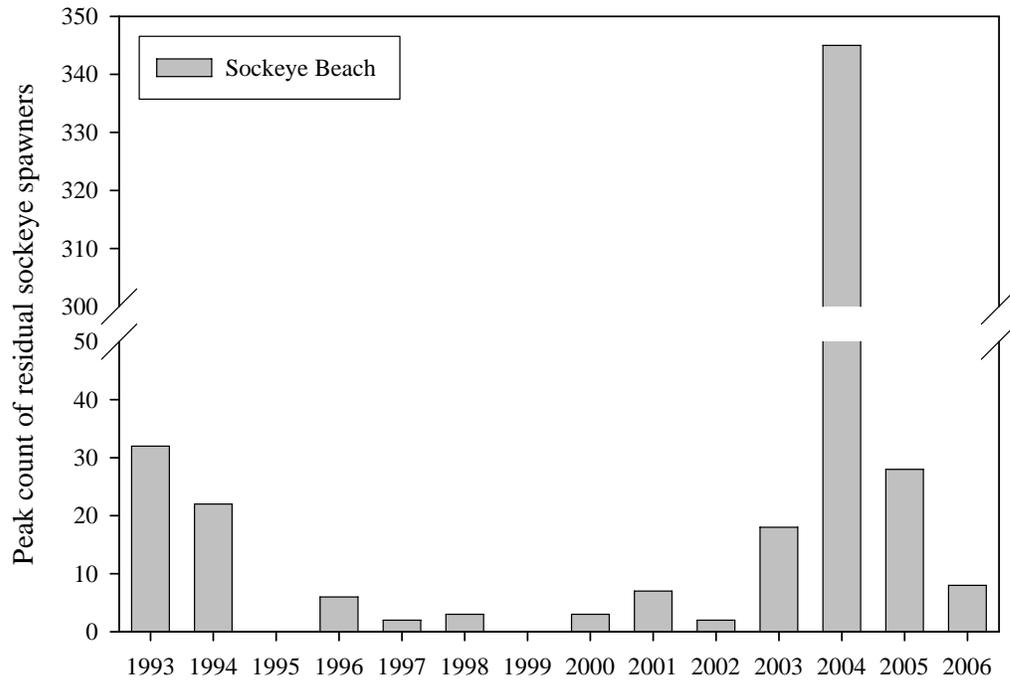
Female kokanee passed	Female kokanee culled	Male kokanee passed	Total escapement
556	838	1720	2276



**Figure. Kokanee salmon length and fecundity box plots: Stanley Lake Creek, Fishhook Creek, and Alturas Lake Creek, 2006.**

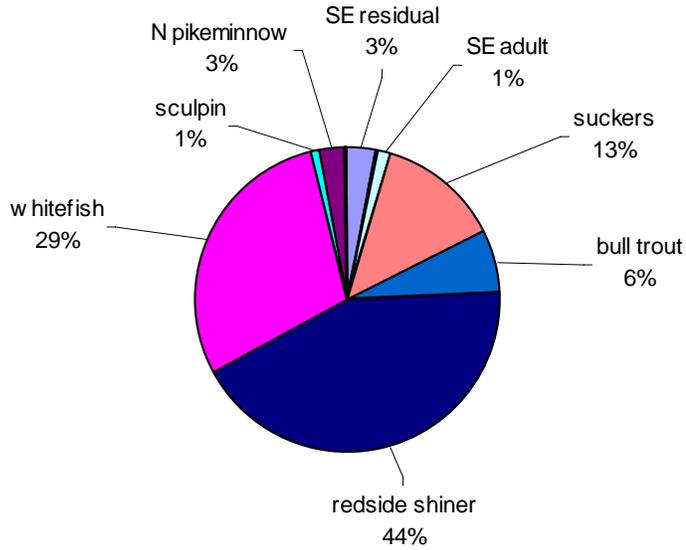
**Table. Mean length and fecundity data: Fishhook and Alturas Lake creeks, 2006.**

	<u>Fishhook Creek</u>	<u>Alturas Lake Creek</u>
<b>Mean Length</b>	<b>223</b>	<b>243</b>
min	210	230
max	241	262
stddev	7.42	8.6
stderr	1.24	1.63
n	36	28
<b>Mean Fecundity</b>	<b>230</b>	<b>339</b>
min	185	254
max	301	413
stddev	36	45.68
stderr	9.3	10.48
n	15	19

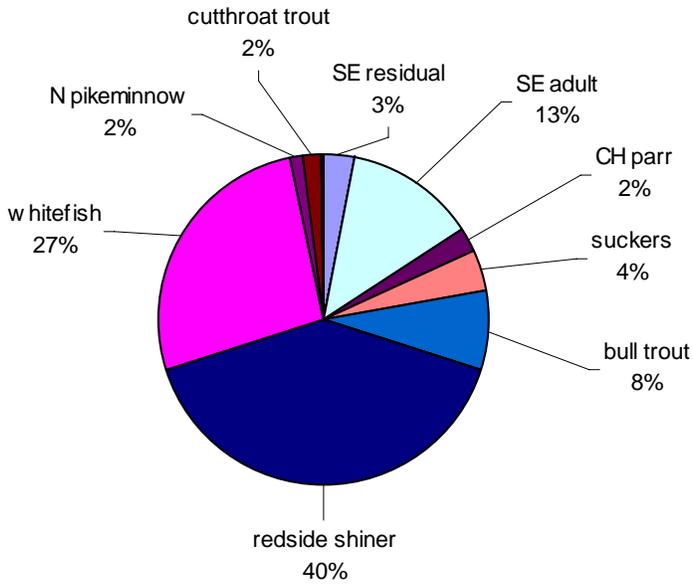


**Figure. Residual sockeye peak count at Sockeye Beach and SE Inlet, 1993-2006.**

**Redfish Lake Residual Snorkel Sockeye Beach Percent Composition\_2006**



**Redfish Lake Residual Snorkel SE Inlet Percent Composition\_2006**



**Figure. Residual sockeye snorkeling percent fish community composition at Sockeye Beach and SE Inlet, 2006.**

**Pettit Lake residual sockeye salmon redd count survey, 2006**

Survey method: Boat

Survey date: 10.31.06

Survey crew: Andy Kohler and Rob Trahant

Survey conditions: Ideal- calm and clear

**Results:**

12: large (>1m<sup>2</sup>), amorphous areas of clean gravel (~1-10 meters depth)

8: small (<1m<sup>2</sup>), individually defined redds with sorted, clean gravel (~1-10 meters depth)

3: ambiguous??. small (<1m<sup>2</sup>) areas of clean gravel (~1-10 meters depth)

**5. University of Idaho Update.**

**Matt Powell** provided an update on the transfer of sockeye genetic samples to the Eagle Genetics Lab. **Powell** finished by noting that there was no U of I request for 07-09 BPA funding to cover sockeye genetic evaluations and that the U of I program is tapering down.

**6. NOAA Fisheries Update.**

**Debbie Frost** led with the NOAA Fisheries sockeye inventory update (from **handout**):

**NOAA FISHERIES  
Redfish Lake Sockeye Salmon Update  
SBSTOC—November 2006**

**CAPTIVE BROODSTOCK—Burley Creek Hatchery**

(current as of 11/25/06)

**BY03**

Initial N=419 from IDFG females. Rearing in freshwater.

Current inventory: 5 % Survival (from eyed egg): 84.0

Morts since last TOC: 15 (side swim culls) Weight: 1,200 g

**BY04**

Initial N=414 from BY01 NOAA females. Rearing in freshwater.

Current inventory: 353 % Survival (from eyed egg): 89.6

Morts since last TOC: 3 Weight: ~800 g

Eighteen precocial males were spawned with BY03 females.

**BY05**

Initial N= 405 from IDFG females. Rearing in freshwater.

Current inventory: 355 % Survival (from eyed egg): 87.7

Morts since last TOC: 0 Weight: 22 g

**BY06**

Received N=154 eggs from IDFG on 11/16/06. These eggs were immediately chilled to 5° C.

**ADULT RELEASE—Burley Creek Hatchery**



**2006 MATURE FISH SUMMARIES**

**ADULT RELEASE**

	BY02 FW	BY02 SW	BY03 FW	BY03 SW	BY04 FW	BY04 SW	TOTALS
AR MALES	9	32	65	45	8	18	177
AR FEMALES	4	6	90	86			186
CB MALES			31				31
CB FEMALES			40				40
TOTALS	13	38	226	131	8	18	434

**CAPTIVE BROOD**

**Number spawned**

N females spawned: 147  
 N females green: 2  
 N females contributing: 145 all female's eggs divided into 2 lots  
 N males spawned: 152 all males were used at least once

SPAWN DATE	N FEMALES	N green eggs	N eyed eggs	Ave % viabil.
10/5/06	13	26,552	15,782	59.4
10/11/06	17	38,133	17,342	45.5
10/12/06	9	19,099	9,567	50.1
10/18/06	19	43,924	15,432	35.1
10/19/06	16	35,904	21,917	61.0
10/24/06	16	33,819	21,716	64.2
10/25/06	20	44,304	29,392	66.3
10/26/06	24	49,517	34,968	70.6
11/2/06	13	pending	pending	pending
Totals	147	291,253	166,117	57.0

The average fecundity is 2,219 eggs per female.

**Egg Shipments to Date:**

42,691 eyed eggs to Oxbow Hatchery on 11/15/06  
 37,352 eyed eggs to Oxbow Hatchery on 11/21/06  
 39,150 eyed eggs to Egg Box Program on 11/26/06

**Spawner sizes**

	Length (cm)	Weight (kg)
BY03 Females	48.6	1.5
BY03 Males	50.0	1.7
BY 04 Males	36.9	0.6

### Matrix Utilization

SPAWN DATE	N TIER 1	N TIER 2	N TIER 3	N TIER 4	N "BLACK"	"RANDOM"	TOTAL
10/5/06	1	7	7	10	1	0	26
10/11/06	5	9	12	4	2	2	34
10/12/06	3	6	4	3	0	0	16
10/18/06	7	5	9	11	5	1	38
10/19/06	5	8	12	6	1	0	32
10/24/06	1	3	11	14	1	2	32
10/25/06	2	7	11	18	0	2	40
10/26/06	10	12	10	10	0	6	48
11/2/06	2	4	6	10	2	0	24
<b>TOTAL N:</b>	<b>36</b>	<b>61</b>	<b>82</b>	<b>86</b>	<b>12</b>	<b>13</b>	<b>290</b>
PERCENT :	12%	21%	28%	30%	4%	4%	

"Black" = known cross in "black zone" on matrix

"Random" = unknown cross due to lost pit tags or fish not in matrix.

### Male Utilization

21 males used 1x  
125 males used 2x  
6 males used 3x

### 7. 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 SBSTOC meeting.

### 8. Next TOC Meeting Date.

The next SBSTOC meeting was set for the morning of Thursday, February 8<sup>th</sup> at the 911 Federal Building (BPA Headquarters) in Portland, Oregon. Meeting summary prepared by Jeff A. Heindel, IDFG Eagle Fish Hatchery.