

PRINCE WILLIAM SOUND AQUACULTURE CORP
PRODUCTION PLANNING COMMITTEE
Regular Meeting
Friday, January 9, 2009
APPROVED MINUTES

I hereby certify the accuracy of the attached
Minutes of Prince Wm Sound Aquaculture
Corp.

Date: February 23, 2009
Hap Symmonds
Hap Symmonds, Secretary

The foregoing instrument was acknowledged before
me this 23 day of February, 2009,
By Hap Symmonds
Kathleen M Jager
Notary Public, 3rd Judicial District, State of Alaska

CALL TO ORDER: Chairman George Covell called the meeting to order at
2:00 pm.

ROLL CALL:

Present: Steve Aberle, Guido Casciano, Megan Corazza, Vic Jones, George Covell

Absent: Scott Seaton

A quorum was established.

Other Board Members Present: Dave Clemens, Tim Moore, and Mike Glasen

PWSAC Staff Present: General Manager, Dave Reggiani; Sales Manager, Ray Cesarini;
Administrative Assistant, Kate Jager; Sr. Accountant/Controller, Margie Udani-
Calaustro; Hatchery Support Manager, Christine Mitchell; and Gulkana Hatchery
Manager, Gary Martinek.

Public Present: None

Recorder/Transcriber: Kate Jager

All handouts are numbered and available in the meeting file

APPROVE THE MINUTES:

Motion, Casciano; Second, Aberle to approve the minutes of February 29, 2008
meeting of the Production Planning Committee.

Motion passed unanimously.

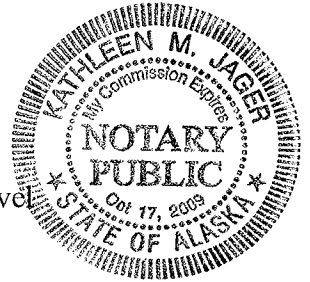
APPROVE THE DRAFT AGENDA:

Motion, Aberle; Second, Casciano to approve the draft agenda for January 9, 2009
regular meeting of the Production Planning Committee.

Motion passed unanimously.

PUBLIC COMMENTS: None

UNFINISHED BUSINESS: None



NEW BUSINESS:

Reggiani reported that he had been working with the Chenega Corporation and the Alaska Department of Fish and Game with the idea of stocking chinook salmon at Chenega. Reggiani said the Alaska Department of Fish and Game was very willing and excited to help out with this project. The chinook eggs will come from their Fort Richardson Hatchery. They will be transferred at the eyed egg stage of development through Whittier, where they will be loaded onto our supply barge for Wally Noerenberg Hatchery (WNH). Rob Unger, WNH Manager, has been working on the incubation and rearing details. It is a relatively small amount of fish (50,000) and will not displace any of our existing production. Chenega Corporation has offered funds to assist on any infrastructure improvements that may be necessary (rearing tanks, etc). If the permits are approved, the egg-take will happen in July and the chinook eggs should be ready for transfer in the early fall. After a year of rearing at the hatchery, the first smolt release would occur in May 2011. We will be looking for the first adults in the summer of 2013.

a) Gulkana Hatchery Production Review

Handout #1 - PWSAC Historic Production Summary – Gulkana Hatchery - Reggiani directed the committee members to handout 1; the chart represents an update and continued review of the Gulkana Hatchery sockeye salmon program production summary. There are now five complete brood years at Gulkana with the strontium chloride mark that will give us a precise data set to review and evaluate the enhancement program to determine if we meeting our expectations. Table 1 of the handout shows the brood year, release, and total return of sockeye from 1973 through brood year 2007.

The strontium chloride marking began in 1999 with approximately 22.3 million sockeye salmon fry being released with only 77,421 adults returning. This may have been caused by a system problem during the first year of the marking program, specifically with high total dissolved gasses in the rearing units.

The brood from 1999 to 2003 is complete with fish released and fish back. The actual survival percentage column represents the estimated number of fish returning compared to the number of fish released. In 1991, based on coded wire tag recovery data, we estimated that 396,340 fish came back at an average survival rate of 1.46%.

BY00 – 03 Summary BMP Adult Return Range – Reggiani explained the chart compares the adult return based on the goal of the Gulkana Hatcher Basic Management Plan (BMP). The production goal range is between 250,000 to 300,000 adults. The fry to adult survival for 2000, 2001, 2002, and 2003 were 0.99%, 1.50%, 0.67%, and 0.74%, respectively. The average fry to smolt survival for these four years is 0.97%. As the table indicates, the adult return goal was barely meet at just over 200,000 fish (the low end of the range).

The permitted stocking level of the three nursery lakes was reduced to 22 million in 2006 by ADF&G. With the reduced levels along with the strontium chloride otolith recovery

numbers, it looks like we fall significantly below the BMP goals. Forecasting the three released brood years of 2005, 2006, and 2007, we expect only approximately 200,000 adults

Handout 1 page 2 – Gulkana Hatchery Production Planning – Adult Goal: 65,000
Reggiani directed committee members to page 2 of handout 1; the intent of the worksheet is to see what it would take to make an additional 65,000 fish in the nursery lakes. As indicated in the first table, it is apparent that we would need to take a multiple lake approach in order to produce an additional 65,000 fish. Martinek and Reggiani recommend increasing Paxson by 1.7 million; Crosswind by 2 million; Summit by 2 million; Ten Mile Lake stock at 1.5 million, and Monsoon Lake with 1 million. The cumulative release summary table summarizes the total amount of fish stocked into each lake with Paxson at 9 million; Crosswind at 12 million; Summit at 8 million; Ten Mile Lake at 1.5 million and Monsoon Lake at 1 million.

Covel asked Martinek why they were not putting the fish in Crosswind only. Martinek indicated that while in the past the ADF&G limnology lab suggested an optimal stocking level for Crosswind Lake at 18 million, he was not comfortable with that level. He prefers a more conservative approach with smaller increases.

Casciano asked why Summit Lake is not considered a good producer. Martinek explained that Summit Lake was originally a glacial lake with a short growth period for juvenile sockeye and does not produce as much zooplankton as Paxson or Crosswind lakes. Primarily, it is used as a back up broodstock location.

Martinek said in 1995 he approached the limnology lab about the possibilities of fertilizing Summit Lake, similar to how Coghill Lake was fertilized. The difference in these three nursery lakes, besides the altitude and the break up time, is the very critical water residency time. What makes Crosswinds so good is the fact that it is a very big lake, twice the size of Paxson Lake, but the outlet is very small, making the water residency time longer. Summit Lake on the other hand, has a short water residency time, or in other words, a high flushing rate. Therefore, if we were to fertilize, it would need to be site specific (the inlet end of the lake) and the use of a temperature sensitive fertilizer would be preferred.

Martinek went on to describe the area around Gulkana for the committee members. Dog Creek is the outlet of Crosswinds Lake, where the sockeye pass through. Monsoon Lake was originally chosen for the Chinook program for rich zooplankton population and no wild Chinook or sockeye salmon stocks. We could release 1.0 million sockeye to Monsoon Lake by trucking them up the Denali Highway to Tangles Lake and then fly them into Monsoon.

Aberle asked if ADF&G would have a problem with the permitting. Reggiani said they might but the data from the otolith recovery program is compelling.

Reggiani said he would move forward and submit a Permit Alteration request by February 15th; this will give us a place holder and put it on the agenda for the Regional Planning Team (RPT) that meets in April. Covell summarized that based on the information collected, we now understand that we have lower survival rates and we need to raise the level of stocking to achieve the hatchery goals.

A Short Break

Off the record 2:45 pm

Back on the record 2:55 pm

b) Coho Salmon Production Update

Handout #2 – 2009 WNH Coho Salmon Update – Reggiani explained that handout 2 is a chart showing the coho salmon, their release locations, and the total for BY08. At WNH we collected 4.0 million green eggs that will produce to 3.8 million eyed eggs, 3.65 million emergent fry, and 3.5 million smolt. PWSAC will release 50,000 coho smolt in Chenega, 100,000 in Cordova, 100,000 in Whittier, and the remaining 3.3 million at WNH.

Reggiani said that he had meet with Remote Programs Manager Geoff Clark, Hatchery Support Manager, Christine Mitchell, and WNH Manager Rob Unger in December at the Anchorage Distribution Center for a mini coho workshop. The workshop centered on reviewing the biological and production criteria (density of the fish into raceways and our fresh water rearing units). It appears that we can achieve this production level with the current raceways as well as the two lensing bags we already have. We focused on smaller raceways (start tanks) for more control during start up rearing for the fry. This will give us a higher quality of fish culture during this important phase as the emergent fry start to feed. We plan to locate the start tanks in the lower level of the warehouse at WNH.

c) Identify future meeting(s) informational needs

The pink salmon, chum salmon and sockeye salmon straying issues have led us to reflect back on our broodstock. We initiated a broodstock otolith recovery monitoring program this year in which we collected the otolith samples from our chum and pink salmon brood during the egg-takes. PWSAC puts different marks on each chum salmon brood year so that we can age individuals by otolith mark. Bill Smoker will be helping with the analysis.

Covell stated he had learned that a Washington State Hatchery Reform group has developed guidelines for their hatcheries to reintegrate hatchery brood with wild stock donors. This helped to alleviate concerns with hatchery strays and wild stock if they have the same genetic information. This is a proactive way to solve the straying problem.

BOARD COMMENTS: None

SET NEXT MEETING DATE: None required

ADJOURNMENT:

Motion, Aberle; Second, Jones to adjourn the meeting.

Motion passed unanimously.

Chairman Covell gavelled the meeting to close at 3:35 pm.

PWSAC Historic Production Summary

1/7/2009

Handover

Hatchery	GH
Species	Socketeye

Brood Year	Data	
	Sum of Released	Sum of Total Return
1973	179,311	
1974	886,556	
1975	728,681	
1976	627,170	
1977	581,277	
1978	1,040,563	
1979	2,446,057	
1980	5,249,173	
1981	8,033,217	
1982	9,782,684	
1983	10,904,209	
1984	19,000,532	
1985	23,585,594	
1986	22,397,733	
1987	21,407,376	
1988	26,520,595	
1989	25,983,629	
1990	22,868,313	
1991	27,079,618	396,340
1992	14,193,534	405,426
1993	27,812,840	667,151
1994	29,737,805	414,947
1995	30,374,955	356,442
1996	31,789,686	251,867
1997	32,264,799	355,173
1998	30,727,445	360,932
1999	22,337,379	77,421
2000	13,949,515	137,724
2001	25,902,670	387,804
2002	26,244,815	175,537
2003	27,342,589	201,646
2004	7,011,360	13,087
2005	20,222,456	
2006	22,000,000	
2007	21,980,000	
2008		

Survival Percentage
1.46%
2.86%
2.40%
1.40%
1.17%
0.79%
1.10%
1.17%
0.35%
0.99%
1.50%
0.67%
0.74%
0.97%

BY00-03 Summary	
BY	Return
	250,000
	(4,063)
	137,804
	(74,463)
	(48,354)
	2,731
	1%
	(47,269)
	-16%

BY05-07 Returns	
BY	Return
	250,000
	(53,000)
	(36,000)
	(36,000)
	(41,667)
	-17%
	(91,667)
	-31%

* First year of SrCI mark.

** Expanded adult return based on actual survival and permitted release number.

Gulkana Hatchery Production Planning

Adult Goal: 65,000

Fry to Adult			
Nursery Lake	Survival	Fry Released	Adult Return
Paxson	0.78%	8,333,333	65,000
Crosswind	1.33%	4,887,218	65,000
Summit	0.21%	30,952,381	65,000
Ten Mile Lake	0.78%	8,333,333	65,000
Monsoon Lake	1.00%	6,500,000	65,000

Multiple Lake Approach

Fry to Adult			
Nursery Lake	Survival	Fry Released	Adult Return
Paxson	0.78%	1,700,000	13,260
Crosswind	1.33%	2,000,000	26,600
Summit	0.21%	2,000,000	4,200
Ten Mile Lake	0.78%	1,500,000	11,700
Monsoon Lake	1.00%	1,000,000	10,000
Total		8,200,000	65,760

GHI & GHII Cumulative Release Summary

Fry to Adult			
Nursery Lake	Survival	Fry Released	Adult Return
Paxson	0.78%	9,000,000	70,200
Crosswind	1.33%	12,000,000	159,600
Summit	0.21%	8,000,000	16,800
Ten Mile Lake	0.78%	1,500,000	11,700
Monsoon Lake	1.00%	1,000,000	10,000
Total		31,500,000	268,300

Gulkana Hatchery Fry Release Summary

Hatchery	GH
Species	Sockeye

Sum of Released Brood Year	Release Location					Grand Total
	Paxson Lake	Ten Mile Lake	Summit Lake	Crosswind Lake	Harding Lake	
1973	79,691	99,620				179,311
1974	785,110	101,446				886,556
1975	627,081	101,600				728,681
1976	514,922	112,248				627,170
1977	477,219	104,058				581,277
1978	940,974	99,589				1,040,563
1979	1,105,397		1,340,660			2,446,057
1980	3,388,682		1,860,491			5,249,173
1981	5,985,270		2,047,947			8,033,217
1982	5,470,056		4,312,628			9,782,684
1983	6,162,450		4,741,759			10,904,209
1984	9,261,708		8,451,782	1,287,042		19,000,532
1985	8,586,509		14,999,085			23,585,594
1986	9,905,907		12,491,826			22,397,733
1987	6,389,963		12,026,642	2,487,396	503,375	21,407,376
1988	10,870,685		12,004,491	3,130,373	515,046	26,520,595
1989	14,127,308		6,445,011	4,906,005	505,305	25,983,629
1990	11,288,721		6,109,833	5,469,759		22,868,313
1991	11,610,731		7,048,536	8,420,351		27,079,618
1992	5,905,017		2,661,549	5,626,968		14,193,534
1993	11,031,449		7,637,009	9,144,382		27,812,840
1994	12,345,894		7,418,311	9,973,600		29,737,805
1995	12,241,896		8,400,148	9,732,911		30,374,955
1996	12,286,366		8,987,213	10,516,107		31,789,686
1997	11,589,845		10,162,655	10,512,299		32,264,799
1998	11,551,836		9,191,217	9,984,392		30,727,445
1999	10,705,795		3,300,504	8,331,080		22,337,379
2000	7,870,334		493,516	5,585,665		13,949,515
2001	11,922,685		5,805,231	8,174,754		25,902,670
2002	11,284,330		6,599,519	8,360,966		26,244,815
2003	12,408,512		6,574,962	8,359,115		27,342,589
2004	3,308,065		0	3,703,295		7,011,360
2005	5,523,920		4,681,325	10,017,211		20,222,456
2006	6,000,000		6,000,000	10,000,000		22,000,000
2007	6,000,000		6,000,000	9,980,000		21,980,000
2008						

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2009 WNH Coho Salmon Update

BY2008	WNH	Chenega	Cordova	Whittier	Total
Green Eggs	4,000,000				
Eyed Eggs	3,800,000				
Emergent Fry	3,650,000				
Smolt Release	3,270,000	50,000	100,000	100,000	3,520,000
		2011 Estimated Adult Return			
Low	196,000	3,000	6,000	6,000	211,000
Point	262,000	4,000	8,000	8,000	282,000
High	327,000	5,000	10,000	10,000	352,000