

**TUTKA BAY LAGOON HATCHERY ANNUAL MANAGEMENT PLAN
CALENDAR YEAR 2006**

1. Executive Summary

1.1 New This Year (production, harvest management, culture techniques, etc.)

The Cook Inlet Aquaculture Association (CIAA) Board of Directors elected to suspend year-round operations at Tutka Bay Lagoon Hatchery in 2004. CIAA does not expect to resume year-round operations of the facility in 2006; however, CIAA is seasonally rearing sockeye salmon at this site, under a permit issued to the Trail Lakes Hatchery. These seasonal operations include a sockeye salmon smolt release, sockeye brood-stock and egg collection, and sockeye salmon cost recovery. Details of the sockeye project can be found in the Trail Lakes Hatchery Annual Management Plan, calendar year 2006.

1.2 FTPs or Amendments Needed This Year

No new FTPs or amendments to existing FTPs are needed this year for the release of fish from the Tutka Bay Lagoon Hatchery.

1.3 Expected Return

To project adult pink returns, CIAA normally uses a green egg-to-fry survival rate of 82.5% and an average fry-to-adult even year ocean survival rate of 1.9% (1.4 to 2.5% C.I._{α=95%}) or an average fry-to-adult odd year ocean survival rate of 2.1% (1.3 to 3.0% C.I._{α=95%}).

To project adult sockeye returns, CIAA normally uses a green egg-to-fry survival rate of 85%, a fry-to-smolt survival rate of 60%, a smolt-to-adult survival rate of 10% and a 2-ocean to 3-ocean age composition ratio of 60:40.

The 2006 expected adult returns are:

Species	Return Site	Common Property Harvest	Other ^a	Total Return	Egg Take Goal (Green Eggs)
Pink	Tutka Bay Lagoon	0	0	0	0
Sockeye	Tutka Bay Lagoon	0	0	0	0

^a Other pink salmon includes cost recovery and escapement. Other sockeye salmon includes cost recovery and fish caught incidental to the harvest of pink salmon brood-stock.

1.4 Production Summary

Pink Stock & Permit No.	current year																																					
	2005					2006					2007					2008																						
	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Tutka Cr. 00A-0073																																						

Sockeye Stock & Permit No.	current year																																					
	2005					2006					2007					2008																						
	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J

1.5 Permitted Capacity

The Tutka Bay Lagoon Hatchery permitted capacity (PNP Permit No. 32) is 125,000,000 pink eggs and 660,000 sockeye eggs.

The following table summarizes the current FTPs issued to CIAA for the Tutka Bay Lagoon Hatchery.

FTP Number	Expiration Date	Purpose
Pink 00A -0073	12/31/10	Allows the egg take of 125,000,000 green pink eggs, the incubation and release of the resultant fry to Tutka Bay Lagoon (20%) and Tutka Bay within 1 mile of Tutka Bay Lagoon (80%).
Sockeye		

1.6 Evaluation

No marking programs or special studies will be conducted for pink or sockeye salmon in 2006. CIAA and ADF&G personnel will cooperatively monitor adult returns to assess abundance.

2. Tutka Bay Lagoon Pink Salmon Project

ADF&G initiated this project in 1975; CIAA assumed operation of the project in 1991.

The purpose of the project is enhancement of the pink salmon return to Tutka Bay Lagoon for the common property fishery and cost recovery harvest.

The Cook Inlet Aquaculture Association (CIAA) Board of Directors elected to suspend year-round operations at Tutka Bay Lagoon Hatchery in 2004. Pink salmon brood-stock and eggs will not be collected in 2006.

2.1 2005 Egg Take Performance and 2006 Releases

CIAA did not collect eggs from pink salmon returning to Tutka Bay Lagoon in 2005.

2.2 2006 Adult Return Management, Escapement and Brood-stock Availability

Pink salmon returns to Tutka Bay Lagoon contribute to commercial seine, setnet and recreational fisheries in the Southern District.

Management strategy seeks to obtain 1) Tutka Creek spawning escapement, 2) fish sale revenue goals, and 3) common property harvest.

The Tutka Creek sustainable escapement goal (SEG) is 6,500 to 17,000 fish and the hatchery brood-stock goal is 0 fish. The midpoint of the SEG is 11,700 pinks. A forecast for the 2006 adult pink salmon return to Tutka Creek was not generated.

Tutka Bay SHA - The Tutka Bay Special Harvest Area (SHA) consists of all marine waters of the Tutka Bay Subdistrict southeast of the H.E.A. powerline crossing including Tutka Bay Lagoon (Figure 1). Since no hatchery produced fish are expected to return, CIAA will not conduct a cost recovery harvest in 2006. Marine waters of Tutka Bay will be managed by ADF&G to achieve the established SEG for Tutka Creek, and any identifiable surplus could be made available to the common property fishery.

2.3 2006 Egg Take Goals and Estimated Production

CIAA does not plan to collect eggs from pinks returning to Tutka Bay Lagoon in 2006.

2.4 Evaluation

No marking programs or special studies will be conducted for pink salmon in 2006. CIAA and ADF&G personnel will cooperatively monitor the adult return to assess abundance.

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3. Tutka Bay Lagoon Sockeye Smolt Project

CIAA initiated the Tutka Bay Lagoon sockeye project with a smolt release in 1994.

The purpose of this project was to provide a sockeye return to Tutka Bay Lagoon for harvest by the common property fishery. Due to problems associated with securing a disease free water supply, CIAA elected to suspend the project in 1998, and the last release of sockeye smolts (resulting from brood year 1997) occurred in 1999.

3.1 2004 and 2005 Egg Take Performance and 2006 Releases

In 2004 and 2005, green sockeye eggs were not collected for incubation and rearing at the Tutka Bay Lagoon Salmon Hatchery. The Tutka Lagoon sockeye smolt release project has been suspended. However, sockeye salmon smolts resulting from Hidden Lake egg collections, and reared at Trail Lakes Hatchery, are proposed for release into Tutka Bay Lagoon in 2006 (see 2006 Trail Lakes Hatchery Annual Management Plan). This is strictly considered a remote release and is intended to develop an adult sockeye return to Tutka Lagoon in order to provide a brood source to supply the Lower Cook Inlet lakes sockeye enhancement program and provide fish for commercial and cost recovery harvests. Unlike the original Tutka Bay Lagoon sockeye smolt project begun in 1994, eggs and juvenile fish for the remote release project will not be incubated and reared at the Tutka Hatchery facility, but rather at Trail Lakes Hatchery.

3.2 2006 Adult Return Management, Escapement and Brood-stock Availability

CIAA does not expect any sockeye salmon to return to Tutka Bay Lagoon in 2006.

3.3 2006 Egg Take Goals and Estimated Production

Eggs will not be collected in 2006 under the terms of the Tutka Bay Lagoon Hatchery Management Plan for a smolt release project at Tutka Bay Lagoon.

3.4 Evaluation

No marking programs or special studies will be conducted for sockeye salmon returning to the Tutka Bay Lagoon in 2006. The commercial sockeye harvest and the cost recovery harvest will be assessed to determine abundance.

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4. Fish Culture Techniques

4.1 Pink Salmon Culture

No pink salmon eggs will be collected for this facility in 2006.

No pink salmon fry will be reared at this facility in 2006.

4.2 Sockeye Salmon Culture

No sockeye salmon eggs will be collected for this facility in 2006.

No sockeye salmon fry will be reared at this facility under the terms of the Tutka Bay Lagoon Hatchery Management Plan in 2006.

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5. Financial Aspects of Hatchery Operations

Sufficient numbers of pink salmon should return to Tutka Bay Lagoon to provide for escapement to Tutka Creek. No surplus fish are expected to be available for cost recovery harvest in 2006.

CIAA had established cost recovery goals for the Tutka Bay Lagoon Hatchery based on projected operational expenses. However, due to less than expected returns, the Tutka Bay Lagoon Hatchery was operated at a deficit from FY00 through FY06. The total operating deficit is \$596,562.

FY 06 – <i>Estimate</i> *	\$	331,603
FY 05		172,855
FY 04 (Deficit)		(431,313)
FY 03 (Deficit)		(351,713)
FY 02 (Deficit)		(167,964)
FY 01 (Deficit)		(121,508)
FY 00 (Deficit)		(28,522)
Total	\$	(596,562)

* *The FY 06 estimate was calculated as the difference between the FY 06 budget (\$83,568) and the 2005 cost recovery harvest (\$415,171).*

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6. Attachments

6.1 Tutka Bay Lagoon Hatchery Production.

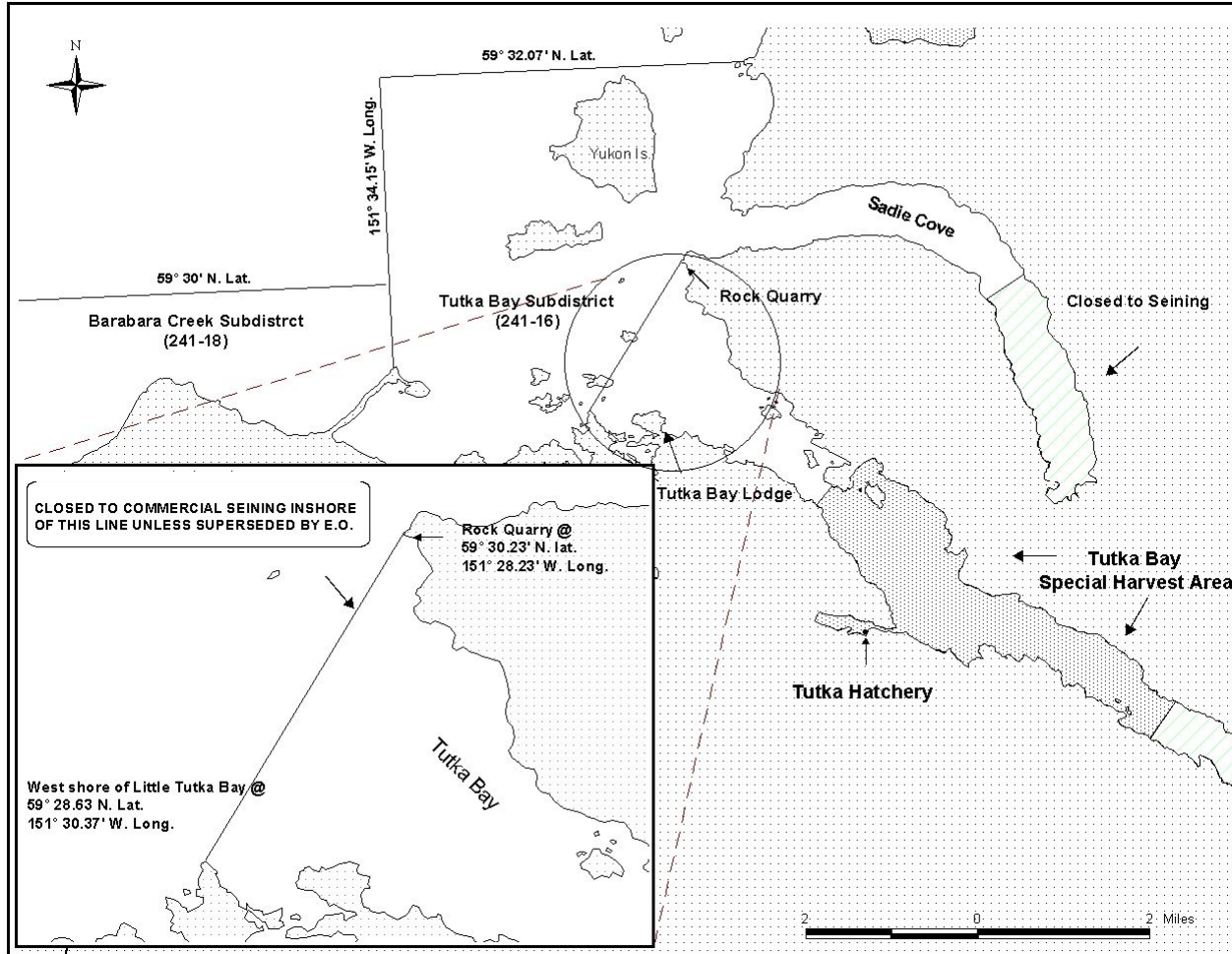
Pink Salmon							
Brood Year	Green Eggs	Fry Released	Egg to Fry Survival	Adult Return	Fry to Adult Survival	Egg to Adult Survival	Comments
1975	3,000,000	250,000	8.33%	undetermined			
1976	10,400,000	4,229,100	40.66%	151,968	3.59%	1.46%	Net pen accident resulted in the loss of more than 2.9 million fry.
1977	7,400,000	4,866,800	65.77%	368,887	7.58%	4.98%	
1978	13,033,200	9,427,586	72.34%	329,896	3.50%	2.53%	
1979	10,100,000	6,268,900	62.07%	1,016,345	16.21%	10.06%	
1980	15,800,000	9,848,200	62.33%	229,374	2.33%	1.45%	
1981	19,900,000	15,258,100	76.67%	666,517	4.37%	3.35%	
1982	18,996,533	14,733,208	77.56%	285,526	1.94%	1.50%	501,956 fry stocked remotely. Makes egg-to-fry survival 80.20% - No data on adult returns.
1983	26,775,619	19,618,325	73.27%	528,372	2.69%	1.97%	
1984	29,537,000	23,537,000	79.69%	441,323	1.88%	1.49%	
1985	32,274,000	25,091,200	77.74%	108,577	0.43%	0.34%	
1986	31,492,000	23,535,000	74.73%	919,629	3.91%	2.92%	559,000 fry stocked remotely. Makes egg-to-fry survival 76.51% - No data on adult returns. 562,991 fry stocked remotely. Makes egg-to-fry survival 79.98% - No data on adult returns.
1987	19,491,401	15,026,369	77.09%	954,047	6.35%	4.89%	
1988	46,046,220	36,300,115	78.83%	257,101	0.71%	0.56%	657,075 fry stocked remotely. Makes egg-to-fry survival 80.26% - No data on adult returns. 614,946 fry stocked remotely. Makes egg-to-fry survival 77.87% - No data on adult returns.
1989	38,983,286	29,739,716	76.29%	326,915	1.10%	0.84%	
1990	50,000,000	29,696,174	59.39%	469,290	1.58%	0.94%	303,000 fry stocked remotely. Makes egg-to-fry survival 60.00% - No data on adult returns. 302,000 fry stocked remotely. Makes egg-to-fry survival 81.98% - No data on adult returns.
1991	39,500,000	32,079,000	81.21%	772,886	2.41%	1.96%	
1992	60,000,000	48,700,000	81.17%	1,735,647	3.56%	2.89%	
1993	77,000,000	61,100,000	79.35%	2,610,615	4.27%	3.39%	
1994	89,200,000	63,000,000	70.63%	568,578	0.90%	0.64%	
1995	125,600,000	105,000,000	83.60%	2,770,686	2.64%	2.21%	
1996	116,000,000	89,000,000	76.72%	1,470,354	1.65%	1.27%	
1997	117,400,000	90,000,000	76.66%	1,262,772	1.40%	1.08%	
1998	129,000,000	60,132,000	46.61%	1,253,303	2.08%	0.97%	
1999	114,091,000	65,120,000	57.08%	715,722	1.10%	0.63%	
2000	122,314,000	99,336,000	81.21%	906,745	0.91%	0.74%	
2001	134,384,000	99,370,000	73.94%	860,005	0.87%	0.64%	
2002	124,848,000	67,967,000	54.44%	1,196,195	1.76%	0.96%	
2003	73,196,000	47,964,000	65.53%	1,771,685	3.69%	2.42%	
Total Avg.	1,695,762,259	1,196,193,793	68.65%	24,948,960	3.05%	2.11%	

Sockeye Salmon							
Brood Year	Green Eggs	Smolt Released	Egg to Smolt Survival	Adult Return	Smolt to Adult Survival	Egg to Adult Survival	Comments
1991	200,000	2,500	1.25%				Tustumena stock. Transferred from CCH as fry directly to salwater net pens for one-time experimental release.
1992							
1993							
1994							
1995							
1994	422,000	75,000	17.77%				Packers stock. Some fish destroyed due to IHNV.
1995	729,000	245,000	33.61%				
1996	500,000	0	0.00%				Packers stock. 500,000 eyed eggs transferred from TLH. Destroyed due to IHNV. Packers stock. Fish experienced a Trichodina outbreak after emergence.
1997	681,000	100,000	14.68%				
Total Avg.	2,532,000	422,500	13.46%				

6.2 CIAA Enhancement Project Summary - 2006

HATCHERY	PROJECT (release site)	[BROODSTOCK]	Fry (F), Presmolt or Fall Fry(P) and Smolt (S) Projected Releases - 2006			Project Status	
			COHO	SOCKEYE	PINK		
TRAIL LAKES HATCHERY	Tutka Bay Lagoon	[Hidden Lake]		250,000 (S)		96,000 in 2005	
	Bear Lake	[Bear Lake]		900,000 (S)		402,000 in 2005	
	English Bay Lakes (PGH)	[English Bay Lakes]		500,000 (S)		0 in 2005	
	Bear Creek (Seward)	[Bear Lake]	250,000 (S)			288,000 in 2005	
	Homer Spit	[Bear Lake]	100,000 (S)			95,000 in 2005	
	Alaska SeaLife Center	[Bear Lake]	200,000 (S)			200,000 in 2005	
	Seldovia	[Bear Lake]	100,000 (S)			0 in 2005	
	Smolt Totals			650,000	1,650,000	0	1,081,000 in 2005
	English Bay Lakes (PGH)	[English Bay Lakes]			0 (P)		203,000 in 2005
	Bear Lake	[Bear Lake]			600,000 (P)		604,000 in 2005
	Big Lake System	[Meadow Creek]			400,000 (P)		0 in 2005
	Presmolt Totals			0	1,000,000	0	807,000 in 2005
	Bear Lake	[Bear Lake]			2,400,000 (F)		2,416,000 in 2005
	Leisure Lake	[Hidden Lake]			700,000 (F)		2,252,000 in 2005
	Hazel Lake	[Hidden Lake]			0 (F)		1,558,000 in 2005
	Kirschner Lake	[Hidden Lake]			0 (F)		316,000 in 2005
	Big Lake System	[Meadow Creek]			400,000 (F)		1,742,000 in 2005
	Hidden Lake	[Hidden Lake]			600,000 (F)		573,000 in 2005
	Bear Lake	[Bear Lake]		405,000 (F)			406,000 in 2005
	Fry Totals			405,000	4,100,000	0	9,263,000 in 2005
HATCHERY TOTALS			1,055,000	6,750,000	0	11,151,000 in 2005	
CIAA	CORPORATE TOTALS		1,055,000	6,750,000	0	11,151,000 in 2005	

6.3 Tutka Bay Special Harvest Area



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Figure 1. Tutka Special Harvest Area for salmon hatchery cost recovery in the Southern District of Lower Cook Inlet.

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7. Approvals

7.1 Area Review

Lee Hammarstrom,
Division of Commercial Fisheries, ADF&G

Date

Nicole Szarzi,
Sport Fish Division, ADF&G

Date

Gary Fandrei, Executive Director
CIAA

Date

7.2 Regional Review

Jeff Regnart, Regional Supervisor
Division of Commercial Fisheries, ADF&G

Date

Barry Stratton, Regional Supervisor
Sport Fish Division, ADF&G

Date

Sean Palmer, Regional Research and Development Biologist
Division of Commercial Fisheries, ADF&G

Date

7.3 RPT Review

The 2006 Tutka Bay Lagoon Hatchery Annual Management Plan is hereby recommended for approval by the Cook Inlet Regional Planning Team:

Chairman

Date

7.4 Approval

The 2006 Tutka Bay Lagoon Hatchery Annual Management Plan is approved.

Deputy Commissioner

Date

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