

2019 ANNUAL MANAGEMENT PLAN
Tutka Bay Lagoon Hatchery
Cook Inlet Aquaculture Association

1.0 Executive Summary

1.1 Introduction

This Annual Management Plan (AMP) plan is prepared to fulfill the requirements of 5 AAC 40.840. This plan must organize and guide the hatchery's operations, for each calendar year, regarding production goals, broodstock development, and harvest management of hatchery returns. Egg take through release details are included in planning for succeeding calendar years. Inseason assessments and project alterations by Cook Inlet Aquaculture Association (CIAA) or Alaska Department of Fish and Game (ADF&G) may result in changes to this AMP in order to reach or maintain program objectives. CIAA will notify the ADF&G private nonprofit (PNP) hatchery program coordinator in a timely manner of any departure from the AMP. The ADF&G PNP coordinator will advise as to whether an amendment, exception report, or other action is warranted. No variation or deviation will be implemented until an AMP amendment has been approved or waived by both the department and CIAA. This policy applies to all hatchery operations covered under the AMP.

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

1.2.1 Facility Changes

No major modifications to the facility are anticipated this year.

1.2.2 Production Changes

All pink salmon fry will be reared and released in Tutka Bay Lagoon.

1.2.3 Fish Culture Changes

- No disease screening is required in 2019.
- Incubator loading at green will be 80 kg/incubator. Incubator loading at eyed will be 40 kg/incubator.
- BY18 fry rearing will occur in one location, Tutka Bay Lagoon.

1.2.4 Projected Return and Cost-recovery Changes

- At a 3% fry-to-adult survival rate, CIAA is expecting approximately 1,501,200 adult pink salmon to return to Tutka Bay Lagoon Hatchery. An

1.3 Fish Transport Permits or Amendments Needed This Year

1.4 Expected Return

The 2019 projected adult production from TBLH enhancement projects are:

Species	Stock	Return Site	Brood Year	Total Return	Enhanced Return	Natural Return	Cost Recovery	Broodstock Escapement	Common Property Harvest
Pinks	Tutka	Tutka Bay Lagoon	2017	1,531,750	1,520,000	11,750	835,000	172,464	500,000
	Combined Age Classes			1,531,750	1,520,000	11,750	835,000	172,464	510,000
	% of Total				99%	1%	55%	11%	33%

1.5 Production Summary

Tutka Bay Lagoon Hatchery																																							
Pink																																							
		current year																																					
		2018												2019												2020													
Stock & Permit No.		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 11A-0060		■■■												→ 90 M fry release @ Tutka Bay Lagoon																									
														■■■ Up to 125 M egg take @ Tutka Creek												→ Up to 20 M fry release @ Tutka Bay Lagoon													
																										→ Up to 80 M fry release @ Head of Tutka Bay													
																										■■■ Up to 125 M egg take @ Tutka Bay Creek													

1.6 Permitted Capacity

TBLH operates under PNP Hatchery Permit #32 issued in 1994 and has a permitted capacity of 125,000,000 pink salmon green eggs and 660,000 sockeye salmon green eggs. The FTPs under which CIAA operates TBLH programs are as follows:

FTP Number	Stock	Action	Expiration Date	Purpose
00A-0073	Tutka	Egg take, rearing, release	12/31/2021	Allows egg take 125 million eggs from Tutka Creek, incubation, short-term rearing and release into Tutka Bay Lagoon and Tutka Bay.
11A-0060	Tutka	Egg take, release	6/30/2019	Allows for the initial collection of broodstock (up to 150,000 adults) from Tutka Bay/Lagoon, egg take of 125 million eggs, incubation of eggs and short term rearing and release into Tutka Bay. Hatchery returns are now sufficient to provide broodstock (see FTP 00A-0073(3)). FTP 11A-0060 will be allowed to expire.
11A-0056	Port Dick	Egg take, transfer, release	6/30/2019	Allows for the collection and transport of up to 150,000 adults from Port Dick to Tutka Bay Lagoon net pens. Egg take of 120 million eggs, incubation, transport and short term rearing and release at Halibut Cove
11A-0057	Port Dick	Egg take, release	6/30/2019	Allows for the egg take of up to 120 million eggs from Port Dick to Tutka Bay Lagoon Hatchery for incubation and net pen rearing at Halibut Cove
12A-0114	Bruin Bay	Broodstock Transfer	6/30/2022	Allows the collection and transport of up to 4,714 adults from Bruin Bay to net pens at Tutka Bay Lagoon.

	New Permit in 2019
	To Be Renewed in 2019
	Expire in 2019

1.7 Project Evaluation

Fish tickets submitted to ADFG as well as counts during egg take and escapement will be used to enumerate returns to Tutka Bay Lagoon Hatchery.

All fish will be thermally marked.

2.0 **Paint River Stocking Program**

2.1 Purpose and History

The Paint River system, which enters Akjemguiga Cove in Kamishak Bay over a forty-foot waterfall at tidewater, has never had a self-sustaining run of salmon, but has long been recognized by both ADF&G and CIAA as having significant salmon production potential. A fish ladder was completed in 1991. The next phase of this project is to develop salmon runs to Paint River.

In spring 2011, the fish ladder was opened to allow migration of adult salmon to the system and natural colonization of the watershed. The first anadromous fish (coho salmon) were documented in the system in 2014. In 2015, chum salmon were also documented in and above the ladder.

No stocking programs planned for 2019. The fish ladder will be open from early June through September to allow natural colonization of this extensive watershed. A video camera will be installed to document fish passage through the fish ladder.

22 Operational Plan

2.2.1 Egg-take Goal/Brood Sources

CIAA will not collect eggs from pink salmon returning to Bruin River in 2019.

2.2.2 Egg Take; Transport of Eggs

CIAA will not collect eggs from pink salmon returning to Bruin River in 2019.

2.2.3 Incubation Plans

CIAA will not collect eggs from pink salmon returning to Bruin River in 2019 and no incubation of Bruin Bay stock will take place at TBLH in 2019. This part of the project occurs under *Port Graham Hatchery's Annual Management Plan*.

2.2.4 Rearing and Release Plans

CIAA will not collect eggs from pink salmon returning to Bruin River in 2019 and no rearing or release of Bruin Bay stock will take place at TBLH in 2019. This part of the project occurs under *Port Graham Hatchery's Annual Management Plan*.

23 Donor Stock Management

2.3.1 Management Strategies

CIAA will not collect eggs from pink salmon returning to Bruin River in 2019.

2.3.2 Escapement Requirements

CIAA will not collect eggs from pink salmon returning to Bruin River in 2019.

24 Evaluation Plans

CIAA will not collect eggs from pink salmon returning to Bruin River in 2019.

No TBLH hatchery incubated pink salmon are expected to return in 2019. Depending on the return and completion of a cabin at Paint River, CIAA may collect otolith samples from pink salmon returning in 2019.

A video camera will be installed to document all adult returns through the fish ladder at Paint River.

3.0 **Tutka Pink Salmon**

3.1 Purpose and History

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.

In 2004, CIAA suspended the Tutka Bay Lagoon pink salmon project and year-round operations at TBLH. In 2009, after reviewing options for improving hatchery operations, CIAA elected to resume pink salmon production at the facility. In 2011, natural returns to Tutka Creek were sufficient to allow the use of adult fish for broodstock and hatchery operations resumed.

3.2 Operational Plan

3.2.1 Egg-take Goal/Brood Sources

Primarily hatchery-produced pink salmon returning to Tutka Bay Lagoon Hatchery will be used as the brood source. Sufficient adult pink salmon returns are expected in 2019 to meet full permitted production of 125 million green eggs. The actual number of eggs collected will be dependent on egg size and based on the loading of 239 incubators at up to 100 kg per incubator.

Fish Required to meet Egg-Take Goal		
Stock		Tutka
Species		Pinks
# Green Egg Goal		125,000,000
Fecundity		1,400
Female to Male Ratio		1:1
	Female	89,285
	Male	89,285

	Total Broodstock	178,570
Inviabile	7%	12,499
Excess Males/Roe Recovery	10%	17,857
Mortalities	3%	5,300
	Grand Total	214,226

3.2.2 Egg Take; Transport of Eggs

BY19 pink salmon broodstock will be collected from Tutka Creek. A weir will be constructed to restrict access above the pump house to those fish required for escapement (6,500 - 17,000) under approved fish transport and habitat permits. Egg takes will occur at the creek side and eggs will be fertilized immediately at a 1:1 female to male ratio and placed into NOPAD incubators. Two-thirds of the 359 incubators will be loaded with green eggs at a loading rate of up to 100 kg per incubator.

3.2.3 Incubation Plans

Once BY19 eggs have reached the eyed stage, they will be shocked, picked, and inventoried before being placed back into the incubators until emergence. Incubators will be loaded with eyed eggs at a loading rate of up to 40 kg per incubator. The resulting progeny will be thermal marked.

3.2.4 Rearing and Release Plans

All pink salmon fry will non-volitionally migrate from the incubators to net pens located in Tutka Bay Lagoon for short-term rearing before release. Loading will be such that the final density at release will be up to 8 kg/m³.

The table below describes anticipated releases for 2019 from eggs collected in 2018.

Species	Pink		Stock	Tutka			
Brood Year	Life Stage	Release Site	Released	Year Stocked	Migration Year	Estimated Adult Return	Return Years
2018	Fry	Tutka Lagoon	90,000,000	2019	2019	2,700,000	2020

3.3 Donor Stock Management

3.3.1 Management Strategies

Cost recovery and common property harvest efforts will be managed to allow sufficient escapement into Tutka Creek for both broodstock harvest as well as natural escapement.

Broodstock will be collected directly from the creek below the weir and egg take will occur at the creek. CIAA will work with department staff to spread broodstock selection throughout the run based on historic run timing.

Any mortality problems associated with collection and holding of adults, and/or transportation of gametes will be immediately reported to the ADF&G Homer office.

3.3.2 Escapement Requirements

A weir will be established on Tutka Creek in early to mid-July just below the pump house. CIAA will work with department staff to manage freshwater spawning escapement in a manner that mimics historic run timing and distribution (both above and below the weir), while ensuring a final stream-wide escapement by mid-August within the SEG range of 6,500 - 17,000 fish.

3.4 Evaluation Plans

CIAA and ADF&G personnel will cooperatively monitor the adult pink salmon return to assess abundance.

All BY19 eggs will be thermally marked.

CIAA will collect otoliths from adult pink salmon used as broodstock.

4.0 Harvest Management

4.1 Cost-recovery Plan

Cost recovery for sockeye salmon will be done under the Trail Lakes Hatchery (TLH) program and is detailed in the *Trail Lakes Hatchery 2019 Annual Management Plan*.

CIAA funds the cost of operating TLH, TBLH, PGH, and Eklutna Salmon Hatchery (ESH) and associated field projects by licensing for harvest a portion of the fish returning to the hatchery's release sites. CIAA will begin cost recovery in Resurrection Bay/Bear Lake followed by, Tutka Bay Lagoon sockeye and pink salmon, and if needed Port Graham Bay until the cost recovery goal is met.

The Division of Commercial Fisheries Area Management Biologist (AMB), in consultation with the hatchery operator, will employ management strategies within waters of the Tutka

Bay SHA, as well as other hatchery subdistricts listed in 5 AAC 21.372 *Tutka Bay Lagoon Salmon Hatchery Management Plan* that ensure achievement of broodstock and cost recovery licensing goals for CIAA, as well as to allow for an orderly common property fishery opportunity to harvest fish surplus to hatchery needs. Some reduction in the common property fishery opportunity in hatchery subdistricts may be necessary to ensure broodstock and cost recovery licensing objectives are met in a timely and orderly fashion. CIAA will submit written hatchery subdistrict management recommendations to the AMB with clear justifications as to how the recommendations support achieving cost recovery and/or broodstock collection goals. Recommendations will be submitted in the form of a brief email and will include, but not be limited to, current cost recovery and brood harvest data, SHA estimates of fish in the water, as well as actual and anticipated run entry, and actual and anticipated cost recovery and brood harvest progress. SHA estimates may also include the number of fish within Tutka Lagoon outside of holding pens as well as in the creek.

4.2 Special Harvest Areas

4.2.1 Tutka Bay Special Harvest Area

4.2.1.1 Area Definition

The Tutka Bay SHA is defined in 5 AAC 21.372 *Tutka Bay Lagoon Salmon Hatchery Management Plan* as the marine waters of Tutka Bay Subdistrict in the Southern District southeast and shoreward of a line from 59°30.23'N lat, 151°28.23'W long to 59°28.63'N lat, 151°30.37'W long, including Tutka Bay Lagoon (Figure 1).

4.2.1.2 Fishery Management

CIAA anticipates there will be a small commercial common property seine fishery for pink salmon in the Tutka Bay SHA to assist with clean-up operations at the end of the return.

The common property fishery will be managed to achieve the established pink salmon sustainable escapement goal (SEG) for Tutka Creek. In addition, an appropriate number of pink salmon will be allowed to escape the common property fishery to meet broodstock and cost recovery licensing needs. Pink salmon returning to Tutka Bay Lagoon are expected to be intermingled with English Bay Lakes sockeye salmon stock that will be harvested for cost recovery licensing and/or broodstock. To avoid capturing the pink salmon multiple times during collection efforts for sockeye salmon, CIAA will place captured pink salmon in net pens. Once the sockeye salmon broodstock capture is complete, the pink salmon being held in net pens will be released, or sold for cost recovery. These numbers will be reported to ADF&G Homer office via fish tickets if sold for cost recovery.

Depending on the strength of the pink salmon return to Tutka Creek, ADF&G may require CIAA to release some or all of the penned pink salmon to meet the SEG. CIAA's first priority is to ensure sufficient escapement to Tutka Creek followed by meeting the broodstock goal. If CIAA's cost recovery licensing goal has been met at other SHAs, the fish that are surplus to escapement and broodstock licensing requirements will be harvested in the common property fishery. Any unharvested fish at the end of the season will be harvested and sold by CIAA as part of clean-up operations. Pending ADEC permitting, CIAA may also sell broodstock carcasses.

Sport fisheries will be managed in accordance with regulations as provided in 5 AAC 47–5 AAC 75. Emergency orders may be issued to liberalize or restrict sport fisheries based on achievement of broodstock goals (5 AAC 21.372).

4.2.2 *Port Graham Special Harvest Area*

4.2.2.1 Area Definition

As described in 5AAC 21.377 *Port Graham Salmon Hatchery Management Plan*, the PGH SHA consists of the marine waters of Port Graham Subdistrict east of 151°53.08' W. long, 59° 22.00' N. lat. to a point off shore at 59°21.45' N. lat, 151°50.05' W. long, to a point on shore at 59°20.83' N. lat, 151°48.53' W. long (Figure 2).

4.2.2.2 Fishery Management

Management of pink salmon returning to the Port Graham SHA is described Under the Port Graham Hatchery AMP.

4.2.3 *Paint River Special Harvest Area*

4.2.3.1 Area Definition

The Paint River SHA is defined in 5AAC 21.372 *Tutka Bay Lagoon Salmon Hatchery Management Plan* as the marine waters of Akjemguiga Cove west of a line from 59°09.50' N. lat, 154°12.83' W. long to 59°10' N. lat, 154°12.5' W. long, including the lagoon at Paint River mouth and intertidal fish ladder (Figure 3).

4.2.3.2 Fishery Management

Approximately 9,150 adult Port Graham Hatchery pink salmon are expected to return to Paint River in 2019. ADF&G will be responsible for fishery management as it relates to the SEG for Paint River and the common property fishery.

The SHA shall be opened and closed to commercial fishing by EO. Sport fisheries will be managed in accordance with regulations as provided in 5 AAC 47–5 AAC 75. Emergency orders may be issued to liberalize or restrict sport fisheries based on achievement of broodstock goals (5 AAC 21.372).

4.2.4 Halibut Cove Special Harvest Area

4.2.4.1 Area Definition

The Halibut Cove SHA is defined in 5AAC 21.372 *Tutka Bay Lagoon Salmon Hatchery Management Plan* as the marine waters of the Halibut Cove Subdistrict east of 151°11.9'W long, including all marine waters of Halibut Cove Lagoon (Figure 4).

4.2.4.2 Fishery Management

No CIAA hatchery-produced fish are expected to return to Halibut Cove SHA in 2019.

5.0 Attachments

5.1 Tutka Bay Lagoon Hatchery Production

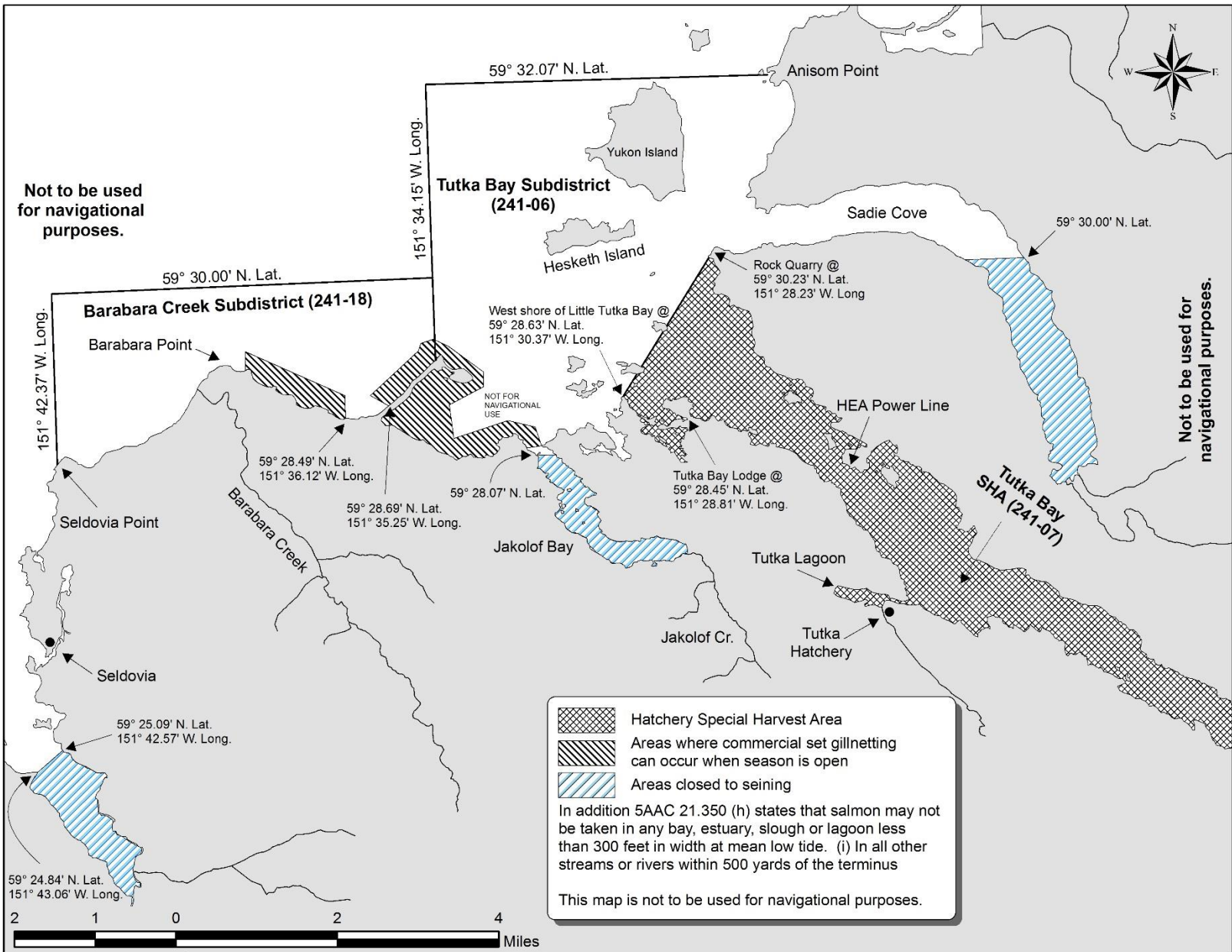
Pink Salmon							
Brood Year	Green Eggs	Fry Released	Egg to Fry Survival	Adult Return	Fry to Adult Survival	Egg to Adult Survival	Comments
1975	3,000,000	250,000	8.33%	undetermined			Net pen accident resulted in the loss of more than 2.9 million fry.
1976	10,400,000	4,229,100	40.66%	151,968	3.59%	1.46%	
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%	501,956 fry stocked remotely. Makes egg-to-fry survival 80.20% - No data on adult returns.
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%	
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%	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. 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. 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.
1986	31,492,000	23,535,000	74.73%	919,629	3.91%	2.92%	
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%	
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%	Large size pink (4.5 lb) Bruin Bay stock for Paint River. Video weir was not working during the return of pink salmon to the ladder. Issues with broodstock survival in the lagoon and high fungus Issues with high fall sediment loads in water supply
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%	Port Graham stock. 95% of broodstock lost before spawning. Large size pink (4.5 lb) Bruin Bay stock for Paint River. Video weir was not working during the return of pink salmon to the ladder. Issues with broodstock survival in the lagoon and high fungus Issues with high fall sediment loads in water supply
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%	Windy Bay stock Port Graham Stock Port Graham stock. 95% of broodstock lost before spawning. Large size pink (4.5 lb) Bruin Bay stock for Paint River. Video weir was not working during the return of pink salmon to the ladder. Issues with broodstock survival in the lagoon and high fungus Issues with high fall sediment loads in water supply
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%	
2011	10,308,000	8,100,399	78.58%	215,840	2.66%	2.09%	
2011	4,300,000	3,146,000	73.16%	19,415	0.62%	0.45%	Windy Bay stock Port Graham Stock Port Graham stock. 95% of broodstock lost before spawning. Large size pink (4.5 lb) Bruin Bay stock for Paint River. Video weir was not working during the return of pink salmon to the ladder. Issues with broodstock survival in the lagoon and high fungus Issues with high fall sediment loads in water supply
2012	5,330,700	4,300,000	80.66%	56,552	1.32%	1.06%	
2012	16,439,000	14,250,000	86.68%	1,700	0.01%	0.01%	
2013	80,000,000	51,100,000	63.88%	2,472,394	4.84%	3.09%	
2013	373,000	188,000	50.40%	0	0.00%	0.00%	
2014	13,495,000	11,249,250	83.36%	261,126	2.32%	1.93%	Windy Bay stock Port Graham Stock Port Graham stock. 95% of broodstock lost before spawning. Large size pink (4.5 lb) Bruin Bay stock for Paint River. Video weir was not working during the return of pink salmon to the ladder. Issues with broodstock survival in the lagoon and high fungus Issues with high fall sediment loads in water supply
2014	1,367,000	1,025,000	74.98%	na	na	na	
2015	29,126,000	11,433,500	39.26%	523,293	4.58%	1.80%	
2016	66,003,000	54,245,400	82.19%				
2017	118,095,000	50,040,000	42.37%				
2018	122,114,500	90,000,000	73.70%				Issues with high fall sediment loads in water supply
Total Avg.	2,162,713,459	1,495,271,342	68.78%	28,499,280	2.83%	1.93%	

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 saltwater 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. Packers stock. Some fish destroyed due to IHNV. Packers stock. 500,000 eyed eggs transferred from TLH. Destroyed due to IHNV. Packers stock. Fish experienced a Trichodina outbreak after emergence.
1995	729,000	245,000	33.61%				
1996	500,000	0	0.00%				
1997	681,000	100,000	14.68%				
Total	2,532,000	422,500					
Avg.			13.46%				
2003	Fingerling Transfer	96,000					Fingerling Transfer - Temporary rearing - TLH project Fingerling Transfer - Temporary rearing - TLH project Fingerling Transfer - Temporary rearing - TLH project Fingerling Transfer - Temporary rearing - TLH project Fingerling Transfer - Temporary rearing - TLH project Fingerling Transfer - Temporary rearing - TLH project
2004	Fingerling Transfer	260,000					
2005	Fingerling Transfer	144,000					
2006	Fingerling Transfer	483,000					
2007	Fingerling Transfer	301,000					
2008	Fingerling Transfer	278,000					

CIAA Enhancement Project Summary – 2019

		Fry (F), Presmolt or Fall Fry (P) and Smolt (S) Projected Releases - 2019			
HATCHERY	PROJECT (release site) [BROODSTOCK]	COHO	SOCKEYE	PINK	Project Status
TRAIL LAKES HATCHERY	Tutka Bay Lagoon [English Bay]		435,000 (S)		518,000 in 2018
	Resurrection Bay [Bear Lake]		1,450,000 (S)		1,488,000 in 2018
	Port Graham Hatchery [English Bay Lakes]		0 (S)		0 in 2018
	Shell Lake [Shell Lake]		15,290 (S)		46,000 in 2018
	Bear Creek [Bear Lake]	65,238 (S)			70,000 in 2018
	Smolt Totals	65,238	1,900,290	0	2,122,000 in 2018
	English Bay Lakes [English Bay Lakes]		0 (P)		0 in 2018
	Presmolt Totals	0	0	0	0 in 2018
	Bear Lake [Bear Lake]		2,550,000 (F)		2,555,000 in 2018
	Leisure Lake [English Bay Lakes]		1,000,000 (F)		1,948,000 in 2018
	Hazel Lake [English Bay Lakes]		1,295,000 (F)		813,000 in 2018
	Kirschner Lake [English Bay Lakes]		258,000 (F)		244,000 in 2018
	Hidden Lake [Hidden Lake]		1,100,800 (F)		1,271,000 in 2018
	Bear Lake [Bear Lake]	461,000 (F)			438,000 in 2018
	Fry Totals	461,000	6,203,800	0	7,269,000 in 2018
	HATCHERY TOTALS	526,238	8,104,090	0	9,391,000 in 2018
		Fry (F), Presmolt or Fall Fry(P) and Smolt (S) Projected Releases - 2019			
HATCHERY	PROJECT (release site) [BROODSTOCK]	COHO	SOCKEYE	PINK	Project Status
TUTKA BAY LAGOON HATCHERY	Tutka Bay/Lagoon [Tutka Creek/Lagoon]			90,000,000 (F)	50,040,000 in 2018
	Paint River [Bruin Bay]			0 (F)	0 in 2018
	HATCHERY TOTALS	0	0	90,000,000	50,040,000 in 2018
		Fry (F), Presmolt or Fall Fry(P) and Smolt (S) Projected Releases - 2018			
HATCHERY	PROJECT (release site) [BROODSTOCK]	COHO	SOCKEYE	PINK	Project Status
PORT GRAHAM HATCHERY	Port Graham Bay [Port Graham Bay]			10,500,000 (F)	20,850,000 in 2018
	Paint River [Bruin Bay]			0 (F)	305,000 in 2018
	HATCHERY TOTALS	0	0	10,500,000	21,155,000 in 2018
CIAA	CORPORATE TOTALS	526,238	8,104,090	100,500,000	80,586,000 in 2018

Figure 1.—Tutka Bay SHA



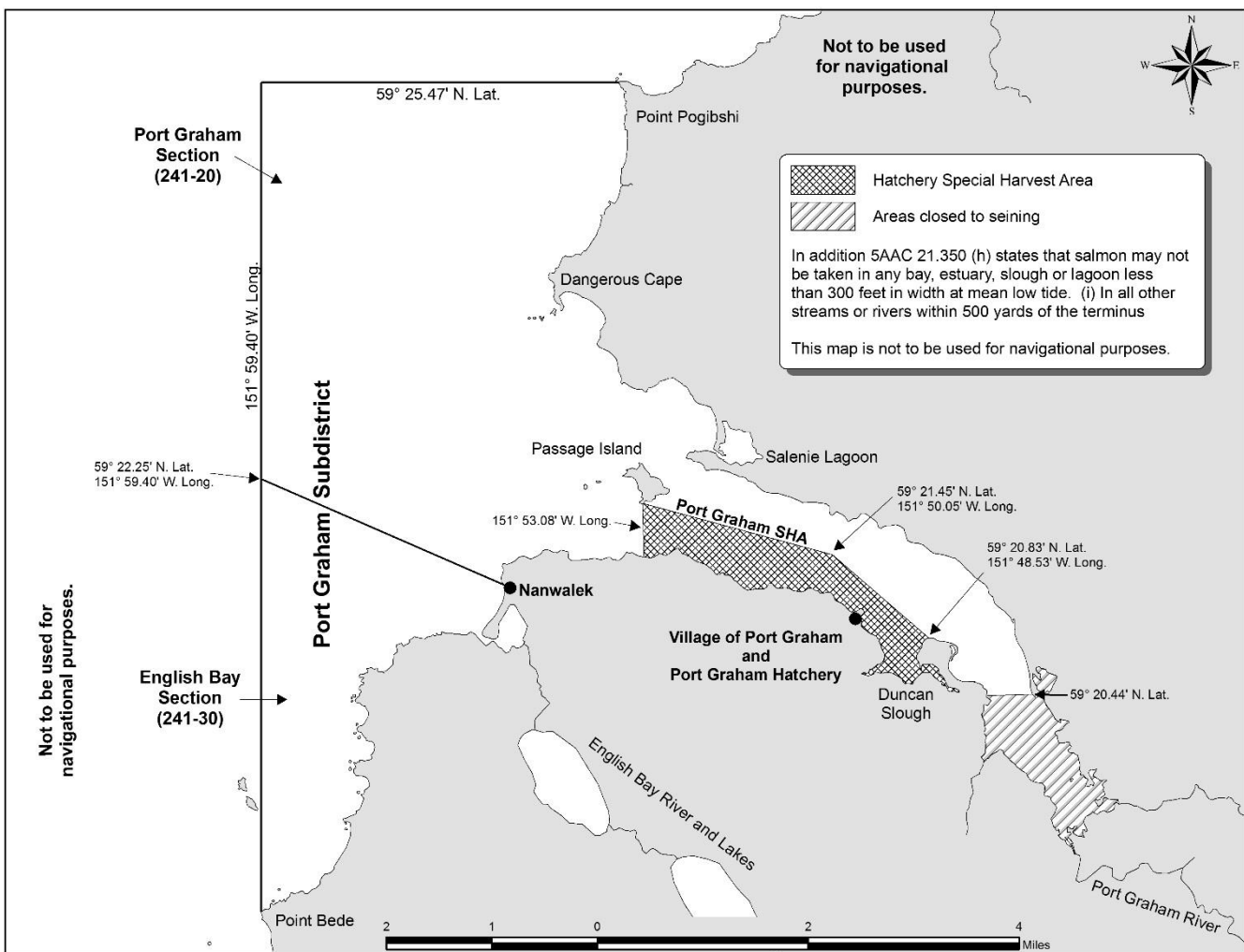


Figure 2.—Port Graham Bay SHA

Figure 3.-Paint River SHA

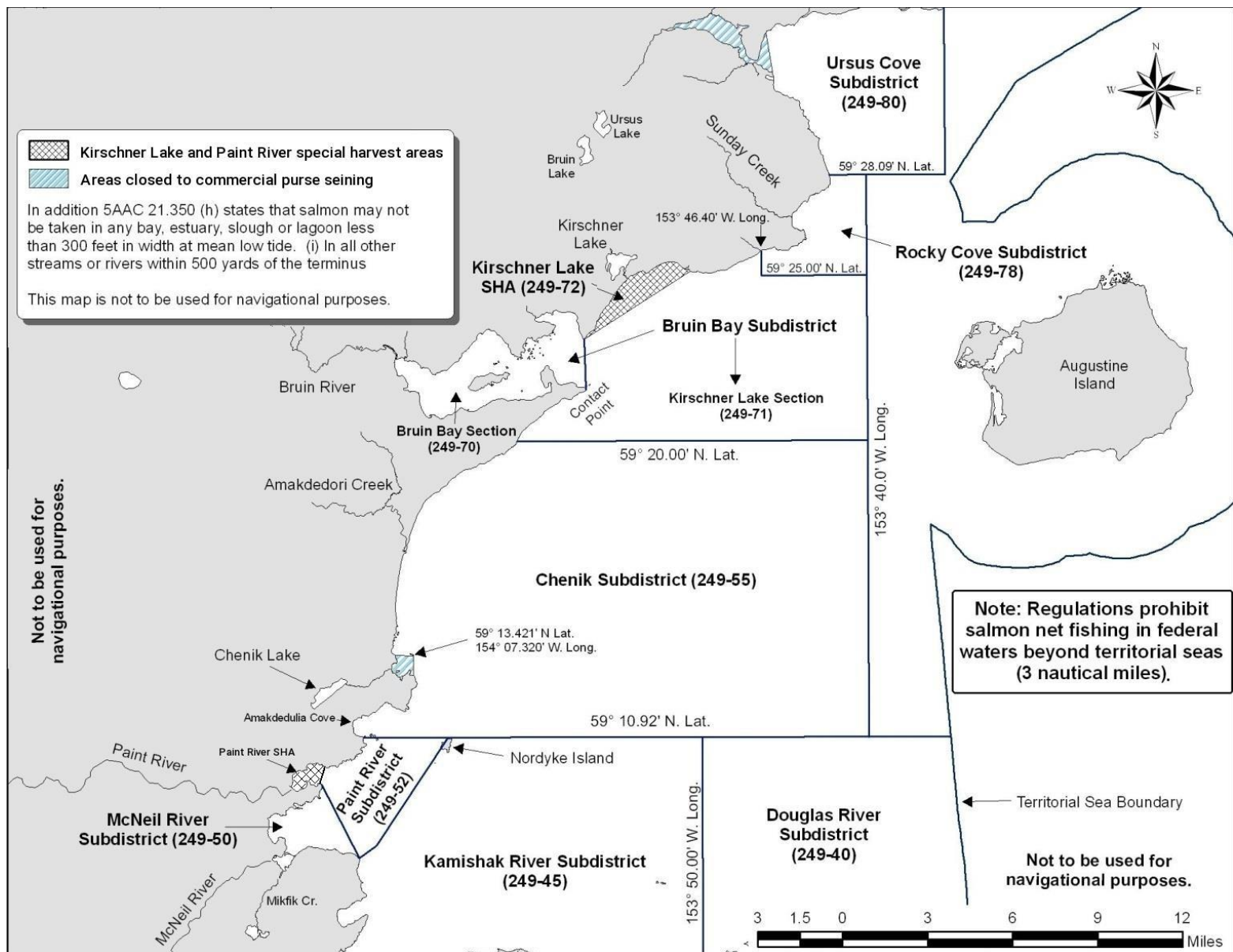
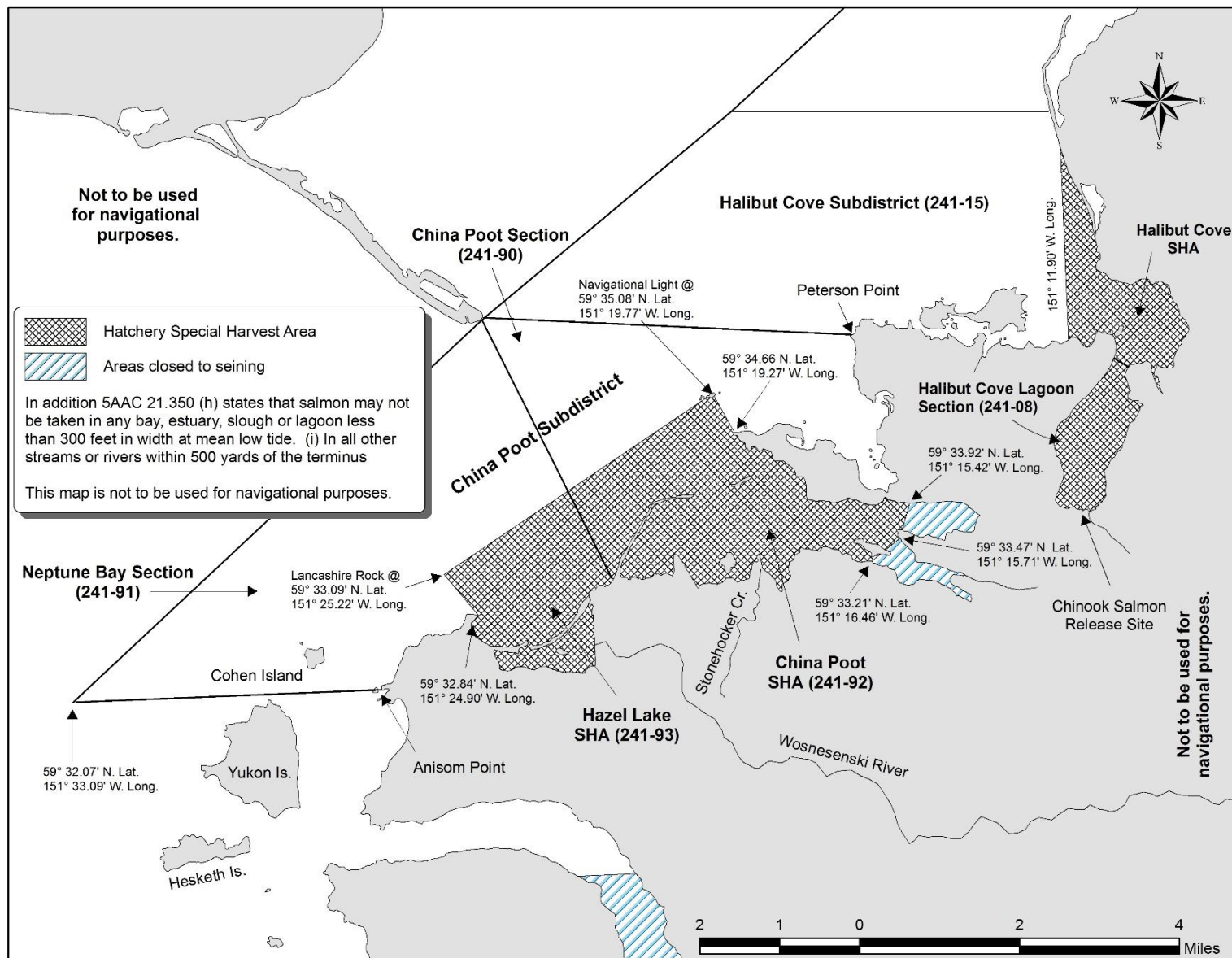


Figure 4.-Halibut Cove SHA



7.0 Approval

Recommendation for Approval: Tutka Bay Lagoon Hatchery Annual Management Plan, 2019:

Dean Day, Executive Director, Cook Inlet Aquaculture Association 7/2/2019

Matt Miller, Fish and Game Coordinator, Division of Sport Fish 7/2/2019

Glenn Hollowell, Area Management Biologist, Division of Commercial Fisheries 6/12/2019

Tom Vania, Regional Supervisor, Division of Sport Fish 6/13/2019

Bert Lewis, Regional Supervisor, Division of Commercial Fisheries 6/13/2019

Ethan Ford, Regional Resource Development Biologist, Division of Commercial Fisheries 6/14/2019

The 2019 Tutka Bay Lagoon Hatchery Annual Management Plan is hereby recommended for approval by the Cook Inlet Regional Planning Team (RPT):

Ethan Ford, Cook Inlet RPT Chair 6/14/2019

Lorraine Vercessi, PNP Hatchery Program Coordinator, Division of Commercial Fisheries 6/12/2019

The 2019 Tutka Bay Lagoon Hatchery Management Plan is hereby approved:

Tom Taube, Deputy Director, Division of Sport Fish 7/3/2019

Peter Bangs, Assistant Director, Division of Commercial Fisheries 7/3/2019