2025 ANNUAL MANAGEMENT PLAN

TRAIL LAKES HATCHERY

Cook Inlet Aquaculture Association

This Annual Management Plan (AMP) is prepared to fulfill the requirements of 5 AAC 40.840. This plan is prepared to guide hatchery operations in accordance with the hatchery permit. The plan must be developed with consideration of the hatchery's production cycle and must organize and guide the hatchery's operations regarding production goals, broodstock management, and harvest management of hatchery-produced salmon. The production cycle begins with adult returns that lead to egg takes and ends with fish releases. Action may be taken outside of the management plan if allowed under the hatchery permit or modified by emergency order. Inseason assessments and project alterations by Cook Inlet Aquaculture Association (CIAA) or Alaska Department of Fish and Game (ADF&G or department) 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.

1.0 Executive Summary

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

1.1.1 Facility Changes

There are no changes to the facility planned for 2025.

1.1.2 Production Changes

- Bear Lake Sockeye Salmon
    - BY2024 resulted in enough broodstock to obtain sufficient eggs for the 2026 smolt program.

- Lower Cook Inlet Lakes Sockeye Salmon (English Bay Lakes (EBL) stock).
    - Pending approval of an amendment to FTP 23A-0008, this fall's egg-take goal for release at Tutka Bay Lagoon will increase by 980,000 eggs (from 1,961,000 eggs to 2,941,000 eggs), resulting in an overall increased sockeye salmon egg-take goal.

- English Bay Lakes Sockeye Salmon (Second Lake)
    - CIAA is not planning to collect eggs from the English Bay Lakes system.

- Bear Lake Coho Salmon
    - CIAA may keep fry in excess of the 450,000 stocking goal to rear to the smolt stage for release to Bear Creek.
    - , CIAA may transfer up to 600 adults from the Seward Lagoon area to the Bear Creek Weir for use as broodstock (FTP 24A-0022)
    - The ADF&G William Jack Hernandez Sportfish Hatchery transferred 28,000 eyed eggs to TLH (FTP 24A-0026) for rearing and release as smolt into Bear Lake in 2026.

- Shell Lake Sockeye Salmon
    - No production changes.

1.1.3 Fish Culture Changes

Eggs collected for the LCI sockeye program will be fertilized and water hardened at the egg-take site prior to transport. The mating cross will be 3 females to 2 males for all programs. This will maintain reduced broodstock density in the lensing bag.

1.1.4 Evaluation Changes

No evaluation changes planned in 2025.

1.1.5 Projected Return and Cost-recovery (CR) Changes

- Bear Lake, Kachemak, Kamishak, & Tutka Sockeye Salmon
    - To meet the 2025 cost recovery goal, CIAA anticipates a significant cost recovery harvest in Resurrection Bay/Bear Lake, Kachemak, Kamishak, and Tutka.

1.2 PNP Permit Alteration Requests (PARs) submitted and Fish Transport Permits (FTPs) or amendments needed this year

- No PARs were submitted for amending the Trail Lakes Hatchery (TLH) PNP permit.

- New TLH FTPs needed in 2025:
    - Amend FTP 23A-0008 for transferring from up to 1,000,000 to up to 1,500,000 English Bay Lake ancestral stock, Tutka Bay Hatchery donor stock sockeye smolts from TLH to Tutka Bay Lagoon and release.

- CIAA plans to apply to renew the following FTPs that expire in 2025:
    - 23A-0009, which allows for the transfer and release of 1,250,000 Tutka Bay Hatchery sockeye fed fry from TLH to Hazel Lake.
    - 23A-0010, which allows for the transfer and release of 250,000 Tutka Bay Hatchery sockeye fed fry from TLH to Kirschner Lake.
    - 23A-0011, which allows for the transfer and release of 2,000,000 Tutka Bay Hatchery sockeye fed fry from TLH to Leisure Lake (a.k.a China Poot Lake).
    - 08A-0113, which allows for the transfer and release of 450,000 Bear Lake sockeye fed fry from TLH to Bear Lake.

- CIAA does not plan to renew the following FTPs:
    - 11A-0051, which allows for the transfer and release of 1,000,000 English Bay Lake sockeye smolt from TLH to Tutka Bay Lagoon.
    - 11A-0052, which allows for the transfer and release of 1,250,000 English Bay Lake sockeye fed fry from TLH to Hazel Lake.
    - 11A-0053, which allows for the transfer of 250,000 English Bay Lake sockeye fed fry from TLH to Kirschner Lake.
    - 11A-0054, which allows the transfer and release of 2,000,000 English Bay Lake sockeye fed fry from TLH to Leisure Lake (a.k.a China Poot Lake) 15A-0069, which allows for the transfer of 6,000 adult sockeye from Tutka Bay Lagoon Hatchery to Port Graham Hatchery.

- 15A-0077, which allows for the egg take, transfer, and release of 2,500 adults from Kirschner Lake to Port Graham Hatchery to TLH.

1.3 Expected Returns

Species	Release location	Cost recovery/Common property/other	Broodstock/ escapement	Total return
Sockeye	Bear Lk/Cr	71,430	12,200	83,630
	Leisure/HazeI Lk	25,400	0	25,400
	Kirschner Lk	27,700	0	27,700
	Tutka Lagoon	82930	5,270	88200
Coho	Bear Lk/Cr	1350	850	2,200

1.4 Production Summary

Species	Brood year	Release location	Release Date	Target release	Life stage
Sockeye	2023	Bear Cr	April 2025	508,000	Smolt
	2023	Tuka Lagoon	May 2025	102,000	Smolt
	2024	Bear Lk	June 2025	440,000	Fry
	2024	Hazel Lk	June 2025	1,390,000	Fry
	2024	Leisure Lk	June 2025	1,300,000	Fry
	2024	Kirschner Lk	June 2025	430,000	Fry
Coho	2023	Bear Cr	May 2025	7,000	Smolt
	2024	Bear Lk	June 2025	95,000	Fry

1.5 Egg takes

Species	Donor stock	Permitted level	Egg-take goal	Total egg take	Release site	Release goal
Sockeye	Bear Lk	6,000,000	1,518,000	3,500,000	Bear Lk	1,200,000
			1,929,000		Bear Cr	1,000,000
	Tutka Bay*	6,520,000	1,690,000	6,320,000	Hazel Lk	1,250,000
			1,352,000		Leisure Lk	1,000,000
			338,000		Kirschner Lk	250,000
			2,941,000 (see note)		Tutka Bay	1,500,000 (see note)
Coho	Bear Lk	1,122,500	499,000**	565,000	Bear Lk	450,000
			66,000		Bear Cr	50,000

* English Bay ancestral stock.

**Includes anticipated culls of Bacterial Kidney Disease (BKD) positive fish

Note: Currently, CIAA can take up to 5,370,000 English Bay Lakes ancestral stock sockeye salmon eggs from returns to Tutka Bay Lagoon for release at Tutka Bay Lagoon. An FTP is approved for 1,000,000 smolts (23A-0008). CIAA will need an approved FTP amendment to increase the release to 1,500,000 smolts (23A-0008).

1.6 Permitted Capacity

TLH operates under Private Nonprofit Permit #27 issued in 1988 and has a permitted capacity of 30.0 million sockeye salmon eggs, 6.0 million coho salmon eggs, and 4.0 million king salmon eggs. The FTPs under which CIAA operates TLH programs can be found in section 10.4.

2.0 Resurrection Bay and Bear Lake Sockeye Salmon

2.1 Purpose and History

The purpose of the sockeye salmon project was to create and maintain a commercial sockeye salmon fishery without decreasing coho salmon production from Bear Lake or conflicting with the Resurrection Bay recreational fishery. In 1993, CIAA added a sockeye smolt program for the purpose of providing sockeye salmon returns for cost-recovery harvest.

2.2 Operational Plan

2.2.1 Egg-take Goal/Brood sources

Broodstock and eggs for the Resurrection Bay and Bear Lake sockeye salmon stocking projects are collected from escapement at Bear Lake.

For 2025, CIAA's target egg collection goal is 3.5 million green sockeye eggs. The goal provides enough eggs to produce 1.2 million spring fry for release into Bear Lake in 2026 and 1 million smolt for release into Bear Creek (Resurrection Bay) in 2027. A total of 3,100 adult sockeye (1,550 females and 1,550 males) are required to meet this target. The SEG range for this system is 600–8,600 fish. This year, 12,000 fish (6,000 females and 6,000 males) may be passed into Bear Lake. Therefore, CIAA will pass an additional 300 fish (150 females and 150 males), and 3,400 fish to meet the broodstock total, to ensure brood needs are met while attempting to not exceed the upper end of the SEG (see table in section 2.3.2).

2.2.2 Egg Take, Transport of Eggs

Egg collection typically occurs between July 25th and August 15th. Broodstock will be captured prior to egg take between a temporary double picket weir and at the lake shore with a beach seine when necessary. Captured broodstock will be placed into holding pens when ripe. Carcasses (both males and female) will be discarded back into Bear Lake's nutrient enrichment zone and documented on the CIAA carcass disposal log. Standard sockeye salmon egg-take procedures will be used during egg take. Eggs may be fertilized and water hardened in an iodophor solution for one hour prior to transfer back to TLH for incubation or gametes may remain separate in iced coolers until transfer to TLH. All eggs will be fertilized at a 3:2 female to male ratio regardless of fertilization location.

2.2.3 Incubation Plans

Eggs not fertilized prior to transport will be fertilized and allowed to sit in an iodophor solution for 1 hour for water hardening before being placed into modified Kitoi boxes. Eggs fertilized prior to transport will be disinfected and acclimated before being placed into modified Kitoi boxes. At the eyed egg stage, eggs will be shocked, picked, and inventoried. Live eyed eggs will be placed back into the modified Kitoi boxes for otolith marking and will remain there until emergence.

2.2.4 Rearing and Release Plans

The table below describes the anticipated releases in 2025 from eggs collected in 2023 and 2024.

Brood year	Life stage	Release location	Target release	Mark type	Percent marked	Hatch code
2023	Smolt	Bear Cr (Res. Bay)	508,000	Otolith	100%	3,3H
2024	Fry	Bear Lk	440,000	Otolith	100%	4,2H

Previous brood years that will remain in culture during the entire calendar year:

Program name	Brood year	Number live (Jan. 2025)	Release goal	Release date
Bear Cr (Res. Bay)	2024	802,000	721,800	Spring 2026

2.3 Donor Stock Management

2.3.1 Management Strategies

Bear Lake sockeye salmon traditionally return from late-May to early-July with most escapement occurring mid-June. Sockeye salmon returns to Bear Lake are harvested primarily in the Resurrection Bay purse seine and cost-recovery fisheries and secondarily in the Resurrection Bay recreational fishery. Specific management actions are guided by language in 5AAC 21.376 Resurrection Bay Salmon Management Plan.

2.3.2 Escapement Requirements

Management of sockeye salmon passage by sex to Bear Lake is noted in the table below.

Sockeye passage	Females	Males	Total
Brood goal	1,550	1,550	3,100
Additional fish to help meet the brood goal	150	150	300
Escapement (upper end of SEG)	4,300	4,300	8,600
Total	6,000	6,000	12,000

Sockeye salmon will be passed into the lake throughout the course of the run using historic run timing as provided by ADF&G. The total passage is irrespective of the number of males passed or the number of females passed.

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3.0 Lower Cook Inlet Sockeye Salmon (English Bay Lakes stock)

3.1 Purpose and History

In December 2003, the Tustumena Lake sockeye salmon enhancement project was terminated and the egg source for the LCI lakes sockeye salmon enhancement project was eliminated. Eggs were collected from Hidden Lake as an interim measure in order to continue the LCI lakes enhancement project. To develop a future brood source, a remote smolt release project was initiated at Tutka Bay Lagoon in 2005.

Although sockeye salmon returns to Tutka Bay Lagoon achieved numerical expectations, Hidden Lake stock was not a good choice for release to Tutka Bay Lagoon for broodstock or cost-recovery harvest purposes. While the fish cultured well in the hatchery and returns slightly exceeded projections, they have not served well as broodstock because the spawning time of Hidden Lake stock returning to Tutka Bay Lagoon was delayed by two to four weeks, the fish have been smaller than expected, and the value of the cost-recovery harvests have not met expectations.

For this reason, CIAA collected English Bay Lakes (EBL) stock to develop a return of this stock at Tutka Bay Lagoon to supply the broodstock necessary to maintain the Hazel/Leisure/Kirschner lakes stocking program and cost-recovery/common property harvests at Tutka Bay.

Adult sockeye salmon returns of the EBL stock to Tutka Bay Lagoon are expected to provide sufficient broodstock to meet the permitted egg capacity (6,520,000 green eggs) for the stocking programs at Tutka Bay Lagoon, and the Lower Cook Inlet lakes (Hazel, Leisure, Kirschner).

Adult sockeye will be captured from Tutka Bay Lagoon and placed in lensing bags for ripening. Staff from TBLH will perform the egg takes and ship the gametes via aircraft or boat and truck to TLH for fertilization, incubation, and rearing.

3.2 Operational Plan

3.2.1 Egg-take Goal/Brood Sources

Adult sockeye salmon returns of the EBL stock to Tutka Bay Lagoon are expected to provide sufficient broodstock to meet the target goals for the stocking programs at Tutka Bay Lagoon and Lower Cook Inlet lakes (Hazel, Leisure, Kirschner). For 2025, CIAA's target egg collection goal is 6.32 million green sockeye salmon eggs. The goal provides enough eggs to produce 2.5 million spring fry for release into Lower Cook Inlet lakes (Hazel, Leisure, Kirschner) in 2026 and 1.5 million smolt for release into Tutka Bay Lagoon in 2027. A total of 5,270 adult sockeye (3,160 females and 2,110 males) are required to meet this target.

3.2.2 Egg Take, Transport of Eggs

Egg collection typically occurs between September 15th and October 10th. Adult sockeye salmon will be captured from Tutka Bay Lagoon and placed into a freshwater lensing bag until ripe. Carcasses, both male and female, will be disposed of in the Alaska Department of Environmental Conservation (ADEC) approved Carcass Disposal Zone from permit AKG130002 and documented on the CIAA carcass disposal log. Standard sockeye salmon egg-take procedures will be used during egg take. Eggs may be fertilized and water hardened in an iodophor solution for one hour prior to transfer back to TLH for incubation or gametes may remain separate in iced coolers until

transfer to TLH. Eggs may be transported via boat and truck or aircraft. All eggs will be fertilized at a 3:2 female to male ratio regardless of fertilization location.

3.2.3 Incubation Plans

Eggs not fertilized prior to transport will be fertilized and allowed to sit in an iodophor solution for 1 hour for water hardening before being placed into modified Kitoi boxes. Eggs fertilized prior to transport will be disinfected and acclimated before being placed into modified Kitoi boxes. At the eyed egg stage, eggs will be shocked, picked, and inventoried. Live eyed eggs will be placed back into the modified Kitoi boxes for otolith marking and will remain there until emergence.

3.2.4 Rearing and Release Plans

The table below describes the anticipated releases for 2025 from eggs collected in 2023 and 2024.

Brood year	Life stage	Release location	Target Release	Mark type	Parent marked	Hatch code
2023	Smolt	Tutka Bay	102,000	Otolith	100%	4,2H
2024	Fry	Hazel Lk	1,390,000	Otolith	100%	7,2H
2024	Fry	Leisure Lk	1,300,000	Otolith	100%	3,6H
2024	Fry	Kirscher Lk	430,000	Otolith	100%	4,2,2H

Previous brood years that will remain in culture during the entire calendar year:

Program name	Brood year	Number live (Jan 2025)	Release goal	Release date
Tutka smolts	2024	731,000	584,000	Spring 2026

3.3 Donor Stock Management

3.3.1 Management Strategies

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 and other hatchery subdistricts listed in 5 AAC 21.373 Trail Lakes Hatchery Salmon Management Plan to ensure achievement of broodstock goals for TLH, as well as allow for an orderly common property opportunity to harvest fish surplus to hatchery requirements. Sport fisheries will be managed in accordance with regulations as provided in 5 AAC 47–5 AAC 75. Emergency orders (EOs) may be issued to liberalize or restrict sport fisheries based on achievement of broodstock goals.

3.3.2 Escapement Requirements

Not required.

4.0 Bear Lake Coho Salmon

4.1 Purpose and History

The coho salmon enhancement project was initiated at Bear Lake near Seward in 1962; CIAA assumed operation of the project in 1989 and expanded it to include stocking of sockeye salmon in 1990.

The primary intent of the enhancement programs at Bear Lake is, through lake fertilization and stocking of both coho and sockeye salmon, to maximize sockeye salmon production without causing a net loss of historical coho salmon smolt production. A secondary intent of the Bear Lake enhancement program is to produce sufficient coho salmon eggs to service other enhancement projects.

Historically, CIAA has provided additional coho salmon smolt for release to Bear Creek (Resurrection Bay), Kachemak Bay at the Nick Dudiak Enhancement Lagoon on the Homer Spit, Seward Lagoon, Alaska Sealife Center, and Seldovia. Currently the coho salmon smolt program has been scaled down to the occasional release at Bear Creek and/or Seward Lagoon if excess fry are available from the fry program or through a contract with the Seward Chamber of Commerce.

4.2 Operational Plan

4.2.1 Egg-take Goal/Brood Sources

Broodstock and eggs are collected from Bear Creek weir to support CIAA's Bear Lake coho salmon program. CIAA also assists with the collection of broodstock and eggs for ADF&G coho salmon projects. The ADF&G coho salmon program is described in the William Jack Hernandez Sport Fish Hatchery AMP.

CIAA's 2025 egg-take goal is 565,000 coho salmon green eggs to achieve a 450,000 spring fry stocking goal at Bear Lake in 2026 and a 50,000 smolt stocking goal at Bear Creek in 2027. In addition to CIAA's goal, ADF&G has an egg collection goal of approximately 330,000 eggs.

Broodstock requirements for CIAA's egg target goal are 170 females and 170 males (340 adult coho salmon). In addition to CIAA's requirements, broodstock requirements for ADF&G egg target goal are 100 females and 100 males (200 adult coho salmon) for a combined total broodstock goal of 540 adult coho salmon.

4.2.2 Egg Take, Transport of Eggs

Coho salmon broodstock will be collected at the Bear Creek weir and placed into raceways until spawning. Egg collection typically occurs between October 1st and 15th. Carcasses, both male and female, may be donated or discarded into the Bear Lake nutrient enrichment zone and documented on the CIAA carcass disposal log. All egg clutches will remain separate for BKD family tracking. Eggs may be fertilized and water hardened in an iodophor solution for one hour prior to transfer back to TLH for incubation or gametes may remain separate in iced coolers until transfer to TLH. All eggs will be fertilized at a 1:1 female to male ratio regardless of fertilization location.

4.2.3 Incubation Plans

Eggs not fertilized prior to transport will be fertilized and allowed to sit in an iodophor solution for 1-2 hours for water hardening before being placed into vertical Heath stacks until they reach the eyed stage. Eggs fertilized prior to transport will be disinfected and acclimated before being placed into vertical Heath stacks until they reach the eyed stage. Any BKD positive eggs will be culled. Eggs will be shocked, picked, and inventoried. Live eyed eggs will be placed into the modified Kitoi boxes for otolith marking and will remain there until emergence.

4.2.4 Rearing and Release Plans

This year's anticipated releases from eggs collected in 2023 and 2024.

Brood year	Life stage	Release location	Target release	Mark type	Percent marked	Hatch code
2023	Smolt	Bear Cr	7,000	Otolith	100%	4,4H
2024	Fry	Bear Lk	95,000	Otolith	100%	5,3H

Previous brood years that will remain in culture during the entire calendar year:

Program name	Brood year	Number live (Jan 2025)	Release goal	Release date
Bear Cr smolt	2024	105,900	85,000	Spring 2026

4.3 Donor Stock Management

4.3.1 Management Strategies

In 2013, the Alaska Board of Fish established 5 AAC 21.373 Trail Lakes Salmon Hatchery Management Plan. This plan sets in regulation the Bear Lake Special Harvest Area. In addition, 5 AAC 21.376 Resurrection Bay Salmon Management Plan also provides guidance to ADF&G with regards to fisheries management in the Resurrection Bay North Subdistrict.

4.3.2 Escapement Requirements

All returning Bear Lake coho salmon in excess of the minimum inriver return may be used for broodstock. There are no management strategies created in this plan specifically designed to utilize surplus hatchery-produced fish returning to Bear Lake for cost-recovery harvest.

The minimum inriver return for Bear Lake is:

	Females	Males	Total
Total fish	150	150	300

5.0 Shell Lake Sockeye Salmon

5.1 Purpose and History

From 2006 through 2011, CIAA monitored sockeye salmon returns to Shell Lake. Similarly, CIAA monitored sockeye salmon smolt migration from Shell Lake starting in 2007. Over this time period, the number of fish returning and migrating from the lake has decreased substantially, with only 17 sockeye salmon smolt being recorded in 2011. In 2007, CIAA conducted sampling to determine the average fecundity and reproductive potential of the sockeye salmon returning to Shell Lake. Based on this information, the highest egg-to-smolt survival was in BY07 when 0.09% of the potential eggs migrated out as smolt (2009/2010).

While the actual reasons for the decline in both adult return and smolt migration numbers are still being investigated, it was apparent in 2011 that if something was not done immediately to conserve the sockeye salmon, there is a risk of multiple year class failures at Shell Lake, which could lead to extirpation of sockeye salmon from that system. For that reason, CIAA undertook a rehabilitation project in 2012, which aggressively removed northern pike and collected gametes from returning adult sockeye in order to conserve the genetic lineage. Additionally, disease screening revealed the presence of two microsporidian parasites which may be negatively impacting the sockeye salmon population at Shell Lake. In 2014, 80,000 sockeye salmon smolt were released into Shell Lake as part of the rehabilitation effort. In 2018 46,000 smolt were stocked into Shell Lake, 32,606 sockeye salmon smolt were enumerated passing through the smolt trap in 2018.

CIAA will continue the smolt migration counts in 2025, as well as enumerate the returning sockeye salmon. CIAA will also continue to harvest northern pike from the system.

5.2 Operational Plan

5.2.1 Egg-take Goal/Brood Sources

No egg take planned in 2025.

5.3 Donor Stock Management

5.3.1 Management Strategies

The number of returning adult salmon to Shell Lake may be estimated using aerial counts.

6.0 Packers Lake Sockeye Salmon

6.1 Purpose and History

ADF&G initiated this project in 1973; CIAA assumed operation of the project in 1980 and expanded it to include nutrient enrichment in 1983 and stocking in 1988. The Packers Lake fry release and nutrient enrichment portions of the project were suspended in April 1998.

6.2 Operational Plan

6.2.1 Egg-take Goal/Brood Sources

CIAA will maintain a flow control structure at the lake's outlet to assist the migration of adult sockeye salmon into the lake.

7.0 Project Evaluation

7.1 Resurrection Bay and Bear Lake Sockeye Salmon

- CIAA will operate a smolt trap in Bear Creek to enumerate and describe smolt outmigration from Bear Lake. A weir in Bear Creek will be used to enumerate and describe adult escapement to the creek and lake.
- CIAA will collect smolt scale samples to determine age at outmigration
- CIAA will collect up to 1,000 heads for otolith dissection from the processing plant to analyze the returns contributing to the harvest from the fry and smolt releases. CIAA will focus efforts on collecting otoliths during stat weeks 22-27, when historically the greatest fishing pressure is exhibited.
- CIAA and ADF&G will determine total return to Resurrection Bay through broodstock enumeration and commercial/cost recovery harvests as supplied by fish tickets.
- Kidney samples will be taken to collect BKD data.
- CIAA will collect limnology samples during the open water season.
- The lake fertilization project at Bear Lake is suspended for 2025.
- All fish stocked will be otolith marked.

7.2 Lower Cook Inlet Sockeye Salmon (EBL stock)

- CIAA and ADF&G will determine total return to Tutka Bay through broodstock enumeration and commercial/cost recovery harvests as supplied by fish tickets.
- Adult fish returns to Hazel, Leisure, and Kirschner will be estimated through commercial harvest reporting as well as the sport fish statewide harvest survey and ADF&G aerial surveys.
- CIAA will collect up to 400 otoliths from the cost recovery or common property harvests to determine age characteristics and commercial contributions.
- All fish will be otolith marked.
- The fertilization program at Leisure Lake will be suspended in 2025.
- CIAA will assist ADF&G in the analysis of adult sockeye salmon otoliths collected from Kamishak and Kachemak Bay area fisheries.

7.3 Bear Lake Coho Salmon

- CIAA will operate a smolt trap in Bear Creek to enumerate and describe smolt outmigration from Bear Lake. A weir in Bear Creek will be used to enumerate and describe adult escapement to the creek and lake.
- CIAA will collect smolt scale samples to determine age at outmigration
- CIAA will collect limnology samples during the open water season.
- The lake fertilization project at Bear Lake is suspended for 2025.
- All fish stocked will be otolith marked.
- Those fish used for egg collection will be family tracked for BKD disease screening.
- CIAA may collect heads for otolith dissection from the processing plant to analyze the returns contributing to the Seward Chamber of Commerce derby harvest.

7.4 Shell Lake Sockeye Salmon

- CIAA will perform smolt counts on migrating salmon via fyke net.

- CIAA will enumerate adult escapement with a video weir, and may estimate the number of returning adults with aerial surveys
- CIAA will actively remove northern pike from Shell Lake using hook and line and gillnetting between mid-May and mid-September.

7.5 Packers Lake Sockeye Salmon

- No evaluation activities planned in 2025

8.0 Harvest Management

8.1 Cost-recovery Harvest Plan

CIAA funds the costs of operating TLH, TBLH, PGH, Eklutna Salmon Hatchery (ESH) and associated field projects by harvesting a portion of the fish returning to the hatcheries' release sites in cost recovery fisheries. CIAA will begin cost recovery in Resurrection Bay/Bear Lake followed by Leisure/Hazel Lake sockeye, Kirschner Lake sockeye, and Tutka Bay Lagoon sockeye and pink salmon, until the cost recovery goal is met. The table below describes anticipated return, broodstock need, cost recovery harvest, and common property harvest.

Species	Terminal Area	Total return	Broodstock/ escapement	Cost recovery harvest	Cost recovery percent of total return	Common property harvest
Sockeye	Resurrection Bay	83,630	12,200	64,200	77%	7,230
	Tutka Bay	88,200	5,270	74,600	85%	8,330
	China Poot/Hazel Lk	25,400	0	22,800	90%	2,600
	Kirschner Lk	27,700	0	24,900	90%	2,800
Pink	Tutka Bay	883,800	89,000	715,300	81%	79,500

The Division of Commercial Fisheries Area Management Biologist (AMB), in consultation with the hatchery operator, will employ management strategies within waters of the TLH SHAs as well as other hatchery subdistricts listed in 5AAC 21.373 *Trail Lakes Hatchery Salmon Hatchery Management Plan* that ensure achievement of hatchery escapement broodstock requirements for TLH, as well as to allow for an orderly common property fishery opportunity to harvest fish surplus to hatchery requirements. In addition to weekly updates that provide current levels of brood and cost recovery harvests to the Homer ADF&G office, CIAA will submit written hatchery sub-district management recommendations to the AMB with clear justifications as to how the recommendations support achieving cost recovery and/or broodstock collection goals. Each recommendation, in the form of a brief email, 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 include the number of fish estimated in Bear Creek, as well as number of fish within Tutka Lagoon outside of holding pens and in the creek.

8.2 Special Harvest Areas

8.2.1 Kirschner Lake SHA

8.2.1.1 Area Definition

The Kirschner Lake SHA (Figure 1) is defined in 5AAC 21.373 Trail Lakes Salmon Hatchery Management Plan as the marine waters of the Bruin Bay Subdistrict in the Kamishak Bay District northwest of a line connecting 59° 25.17′ N. lat., 153° 50.50′ W. long. and 59° 23.17′ N. lat., 153° 56.90′ W. long.

8.2.1.2 Fishery Management

The Division of Commercial Fisheries AMB, in consultation with the hatchery operator, shall manage the Kirschner Lake Section of the Bruin Bay Subdistrict including the SHA to achieve hatchery escapement goals in a timely and orderly manner.

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.

8.2.2 China Poot and Hazel Lake SHA

8.2.2.1 Area Definition

The China Poot and Hazel Lake SHA (Figure 2) is defined in 5AAC 21.373 Trail Lakes Salmon Hatchery Management Plan as the marine waters of the China Poot Bay Subdistrict in the Southern District inshore of, and enclosed by, a line connecting 59° 34.66′ N. lat., 151° 19.27′ W. long., then to 59° 35.08′ N. lat., 151° 19.77′ W. long., then to 59° 33.09′ N. lat., 151° 25.22′ W. long., and then to 59° 32.84′ N. lat., 151° 24.90′ W. long.

8.2.2.2 Fishery Management

The Division of Commercial Fisheries AMB, in consultation with the hatchery operator, shall manage the China Poot Bay Subdistrict in the Southern District including the SHAs to achieve hatchery escapement goals in a timely and orderly manner.

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

8.2.3 Tutka Bay SHA

8.2.3.1 Area Definition

The Tutka Bay SHA (Figure 3) is defined in 5AAC 21.373 Trail Lakes 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.

8.2.3.2 Fishery Management

The Division of Commercial Fisheries AMB, in consultation with the hatchery operator, shall manage the Tutka Bay Subdistrict in the Southern District including the SHAs to achieve hatchery escapement goals in a timely and orderly manner.

Common property and hatchery fisheries will be managed by ADF&G to achieve the established pink salmon SEG for Tutka Creek, as well as the established CIAA sockeye and pink salmon revenue and broodstock escapement goals. Sockeye salmon returns to Tutka Bay Lagoon will be intermingled with pink salmon returns that will be captured for cost-recovery harvest and/or broodstock. To avoid capturing the pink salmon multiple times during collection efforts for sockeye salmon, CIAA will place any caught adult pink salmon in the net pens. Management of these caught adult pink salmon is described in the Tutka Bay Lagoon Hatchery

2024 Annual Management Plan. Once in the net pens, the fish will be sorted by sex and enumerated. These numbers will be reported to ADF&G.

Per 5 AAC 21.373 Trail Lakes Hatchery Salmon Hatchery Management Plan, the Tutka Bay SHA opens on June 1 to cost recovery harvest. Portions of the SHA may open to commercial common property harvest by EO. The established commercial set gillnet fishery within the Tutka Subdistrict will not be restricted by this management plan in order to achieve hatchery objectives.

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

8.2.4 Bear Lake SHA

8.2.4.1 Area Definition

The Bear Lake SHA (Figure 4) is defined in 5AAC 21.373 Trail Lakes Salmon Hatchery Management Plan as the marine waters of Resurrection Bay in the Eastern District north of the latitude of Caines Head at approximately 59° 58.93' N. lat., and the fresh waters of Bear Creek, Salmon Creek, and Resurrection River downstream from, and including, the Bear Creek weir, excluding the freshwaters downstream from the Seward Highway and downstream from Nash Road to the ADF&G fresh/salt water boundary markers. Cost-recovery harvest will occur both in saltwater by contracted purse seine vessels and at the Bear Creek weir.

8.2.4.2 Fishery Management

CIAA is anticipating achieving the cost recovery goal generated from the sockeye returns to Resurrection Bay and Bear Lake. A commercial common property fishery should occur targeting hatchery produced sockeye salmon in the Bear Lake SHA in 2024 at the conclusion of CIAA cost recovery operations in that area.

Per 5 AAC 21.373 Trail Lakes Hatchery Salmon Hatchery Management Plan, the Bear Lake SHA opens on May 15 to cost recovery harvest. Portions of the SHA may open to commercial common property harvest by EO. Cost recovery management objectives will also include adherence to relevant portions of 5AAC 21.376 Resurrection Bay Salmon Management Plan concerning non-interference in the recreational fishery.

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

Cost-recovery, seine, and sport fisheries targeting sockeye salmon may be restricted or closed completely if inseason information suggests that an escapement within the desired inriver return range may not be achieved.

9.0 Approval

Recommendation for Approval: Trail Lakes Hatchery Annual Management Plan, 2025:

Dean Day, Executive Director, Cook Inlet Aquaculture Association 5/12/2025

Vacant, Fish and Game Coordinator, Division of Sport Fish N/A

Glenn Hollowell, Area Management Biologist, Division of Commercial Fisheries 5/29/2025

Jason Dye, Acting Regional Supervisor, Division of Sport Fish 5/21/2025

Bert Lewis, Regional Supervisor, Division of Commercial Fisheries 5/21/2025

Ethan Ford, Regional Resource Development Biologist, Division of Comm. Fisheries 5/21/2025

Lorna Wilson, PNP Program Assistant Coordinator, Division of Comm. Fisheries 5/29/2025

The 2025 Trail Lakes Hatchery Management Plan is hereby approved:

Jason Dye, Deputy Director, Division of Sport Fish 5/29/2025

Forrest Bowers, Operations Manager, Division of Commercial Fisheries 6/5/2025

10.0 Attachments

10.1 Egg Collections and Broodstock Requirements

The following assumptions are used to estimate the number of eggs to be collected in 2025

Species	Stock	Stocking Location	Stocking Goal	Eyed-to-Smolt Mortality	Eyed-to Fry Mortality	Green-to-Eyed Mortality	# of Eggs to Collect
Sockeye	Bear Lk	Bear Lk	1,200,000		7.0%	15.0%	1,518,000
		Bear Cr.	1,000,000	39.0%		15.0%	1,929,000
	*English Bay (Tutka)	Leisure Lk	1,000,000		15.0%	13.0%	1,352,000
		Hazel Lk	1,250,000		15.0%	13.0%	1,690,000
		Kirschner Lk	250,000		15.0%	13.0%	338,000
		Tutka Lagoon	1,500,000	40.0%		15.0%	2,941,000
Coho	Bear Lk	Bear Lk	450,000		5.0%	5%**	499,000
		Bear Cr.	50,000	20.0%		5%**	66,000

* English Bay (Tutka) are adult sockeye salmon returns to Tutka Bay Lagoon and not broodstock collected from Second Lake.
**Includes anticipated culls for BKD positive fish

The following assumptions are used to determine the number of broodstock needed to reach the egg collection goals.

Species	Stock	Release Loction	Eggtake Goal	Total Green Egg Goal	Fecundity	Inviability/Mortality	F:M Ratio	Females	Males	Total
Sockeye	Bear Lake	Bear Lk	1,518,000	3,500,000	2,600	15%	1:1	1,550	1,550	3,100
		Bear Cr	1,929,000							
	English Bay (Tutka)	Hazel Lk	1,352,000	6,320,000	2,400	20%	3:2	3,160	2,110	5,270
		Leiusre Lk	1,690,000							
		Kirschner Lk	338,000							
		Tutka Lagoon	2,941,000							
Coho	Bear Lake	Bear Lk	499,000	565,000	3,500	5%	1:1	170	170	340
		Bear Cr	66,000							
		ADF&G Lks	330,000	330,000	3,500	5%	1:1	100	100	200

10.2 Adult Returns

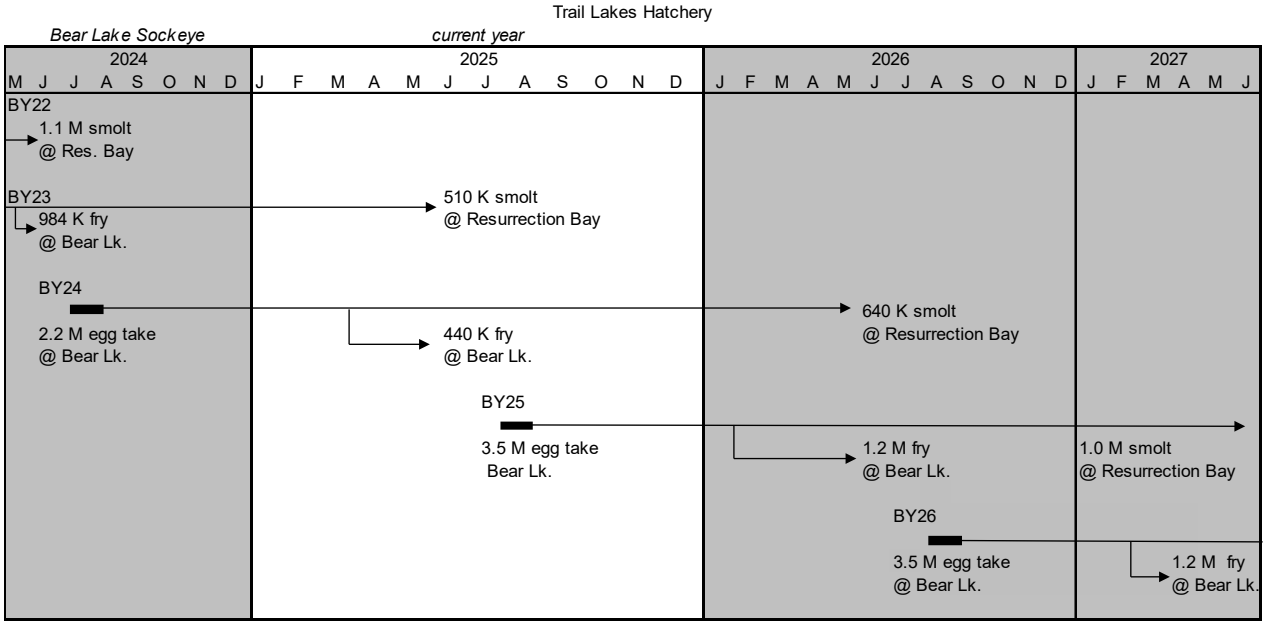
Life tables were constructed using historic sockeye stocking numbers, adult return numbers, and otolith data. Bear Lake assumptions are based on data from 1991 to 2024 and LCI Lakes are based on data from 2004 to 2024. Parent class or age class prediction were selected based on accuracy in predicting previous returns.

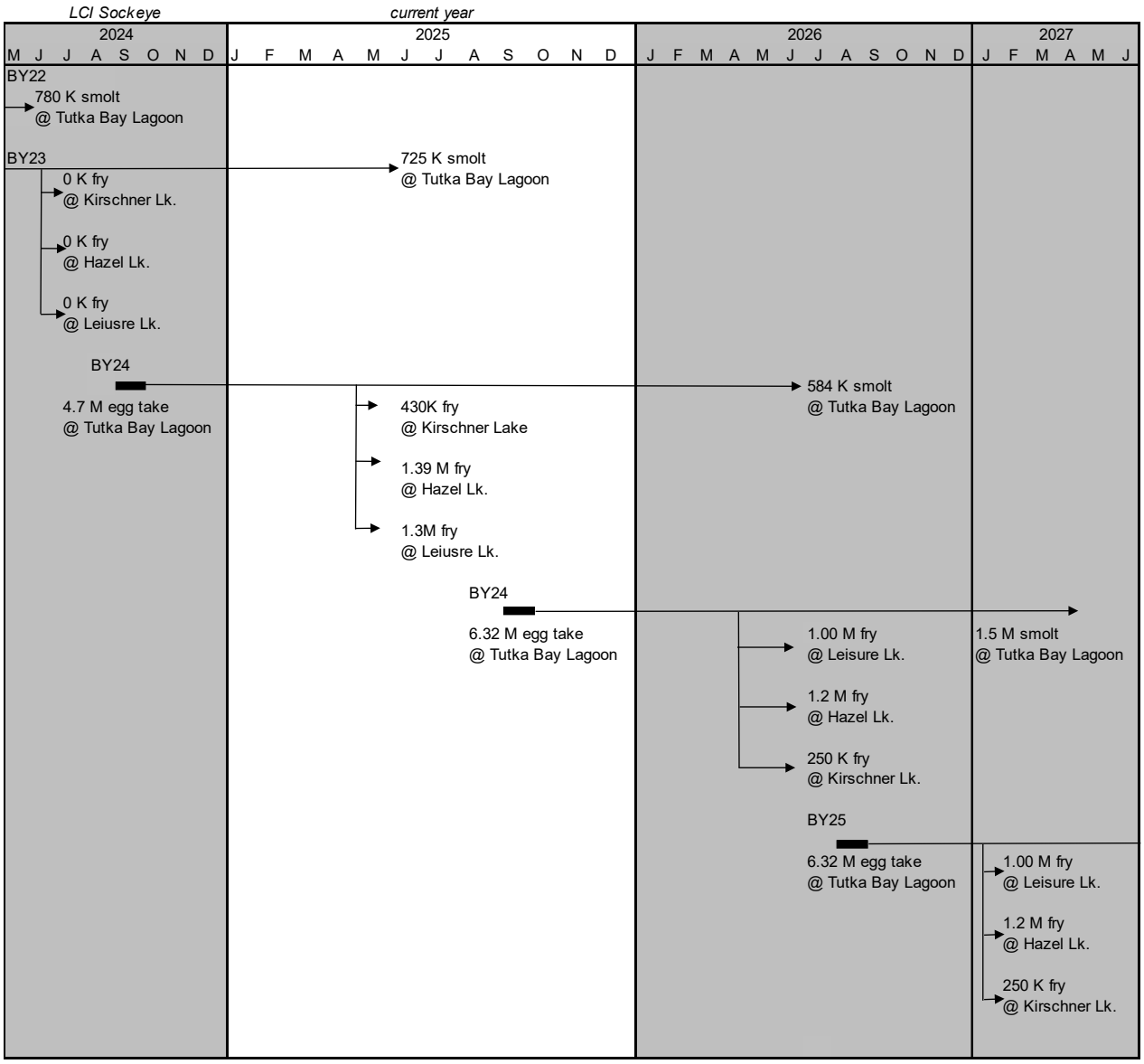
			Release/Outmigration Amount			Parent class based			Age class based			
Species	Stock	Location	2023	2022	2021	1-Ocean	2-Ocean	3-Ocean	1-Ocean	2-Ocean	3-Ocean	Total Return
Sockeye	Bear Lake	Bear Lake	833,365	1,033,238	1,023,482	47,263	33,007	3,360				83,630
	Bear Lake	Resurrection Bay	1,077,225	1,393,778	1,466,109							
	English Bay	Tutka Bay Lagoon	783,697	452,172	375,626	64,017	23,083	1,118				88,218
			2022	2021	2020							
	English Bay	Kirschner Lake	250,000	239,742	271,858				16,418	10,715	577	27,710
	English Bay	Hazel Lake	1,073,596	240,960	266,448	17,688	7,600	158				25,446
	English Bay	Leisure Lake	1,735,350	1,070,851	274,443							

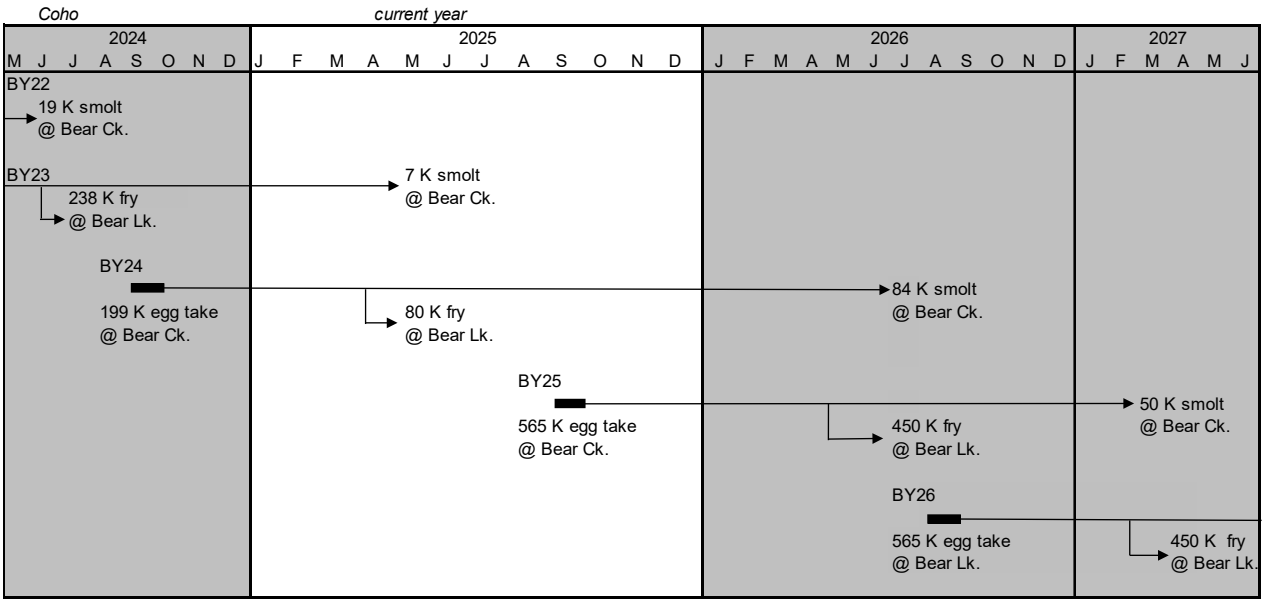
Parent class survival was determined using historic coho stocking numbers, adult return numbers, and otolith data. These assumptions are based on data from 1990 to 2024.

			Release/ Outmigration	Parent Class	Total Return
Species	**Stock**	**Location**	**2024**	**Survival**	
Coho	Bear Lake	Bear Lake	67,358	2.37%	2,060
	Bear Lake	Bear Creek	19,544		

10.3 Production Summary




LCI Sockeye
current year
2024
2025
2026
2027
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
BY22
780 K smolt
@ Tutka Bay Lagoon
BY23
725 K smolt
@ Tutka Bay Lagoon
0 K fry
@ Kirschner Lk.
0 K fry
@ Hazel Lk.
0 K fry
@ Leiusre Lk.
BY24
4.7 M egg take
@ Tutka Bay Lagoon
584 K smolt
@ Tutka Bay Lagoon
430K fry
@ Kirschner Lake
1.39 M fry
@ Hazel Lk.
1.3M fry
@ Leiusre Lk.
BY24
6.32 M egg take
@ Tutka Bay Lagoon
1.00 M fry
@ Leisure Lk.
1.2 M fry
@ Hazel Lk.
250 K fry
@ Kirschner Lk.
1.5 M smolt
@ Tutka Bay Lagoon
BY25
6.32 M egg take
@ Tutka Bay Lagoon
1.00 M fry
@ Leisure Lk.
1.2 M fry
@ Hazel Lk.
250 K fry
@ Kirschner Lk.


Coho
current year
2024
2025
2026
2027
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
BY22
19 K smolt
@ Bear Ck.
BY23
7 K smolt
@ Bear Ck.
238 K fry
@ Bear Lk.
BY24
199 K egg take
@ Bear Ck.
84 K smolt
@ Bear Ck.
80 K fry
@ Bear Lk.
BY25
565 K egg take
@ Bear Ck.
450 K fry
@ Bear Lk.
50 K smolt
@ Bear Ck.
BY26
565 K egg take
@ Bear Lk.
450 K fry
@ Bear Lk.

10.4 Fish Transport Permits

Sockeye					
FTP #	**Donor Stock/ Ancestral Stock**	**Action**	**Expiration Date**	**Maximum #, Life Stage**	**Transport from, to**
08A-0090	Bear Lk/ Upper Russian + Big R L	Egg take, incubation	12/31/2028	6,000,000 green eggs	Bear Lk to TLH
08A-0069	Bear Lk/ Upper Russian + Big R L	Transfer, release	12/31/2028	2,400,000 fed fry	TLH to Bear Lk
24A-0007	Bear Lk/ Upper Russian + Big R L	Transfer, release	12/31/2028	1,536,000 smolt	TLH to Bear Creek
10A-0153	English Bay Lk/ English Bay Lk	Egg take, incubation	12/31/2026	6,720,000 green eggs	English Bay Lk to TLH
10A-0155	TLH/ English Bay Lk	Transfer, release	12/31/2026	200,000 fed fry	TLH to English Bay Lk
18A-0031	Tutka Bay/ English Bay Lk	Egg take, incubation	12/31/2028	6,520,000 green eggs	Tutka Bay to TLH
11A-0051	English Bay Lk /English Bay Lk	Transfer, release	12/31/2025	1,000,000 smolt	TLH to Tutka Bay
11A-0052	English Bay Lk /English Bay Lk	Transfer, release	12/31/2025	1,250,000 fed fry	TLH to Hazel Lk
11A-0053	English Bay Lk /English Bay Lk	Transfer, release	12/31/2025	250,000 fed fry	TLH to Kirschner Lk
11A-0054	English Bay Lk /English Bay Lk	Transfer, release	12/31/2025	2,000,000 fed fry	TLH to Leisure Lk (a.k.a. China Poot Lake)
17A-0007	Port Graham+ EBL/ English Bay Lk	Transfer, release	12/31/2026	1,150,000 fed fry	TLH to Port Graham
15A-0069	Tutka Lagoon/ English Bay Lk	Transfer	6/30/2025	6,000 adults	Tutka Bay to Port Graham
15A-0077	Kirschner Lk/ English Bay Lk	Egg take, transfer, release	8/1/2025	2,500 adults	Kirschner Lake to PGH to TLH
23A-0008	TBLH/ English Bay Lk	Transfer, release	12/31/2025	1,000,000 smolt	TLH to Tutka Bay
23A-0009	TBLH/ English Bay Lk	Transfer, release	12/31/2025	1,250,000 fry	TLH to Hazel Lk
23A-0010	TBLH/ English Bay Lk	Transfer, release	12/31/2025	250,000 fry	TLH to Kirschner Lk
23A-0011	TBLH/ English Bay Lk	Transfer, release	12/31/2025	2,000,000 fry	TLH to Leisure Lk

Planning to renew, not planning to renew.

Coho					
FTP #	**Donor Stock/ Ancestral Stock**	**Action**	**Expiration Date**	**Maximum #, Life Stage**	**Transport from, to**
08A-0112	Bear Lk/ Bear Lk	Egg take, incubation	6/30/2027	1,122,500 green eggs	Bear Lk to TLH
08A-0113	Bear Lk/ Bear Lk	Transfer, release	12/31/2028	450,000 fed fry	TLH to Bear Lk
08A-0114	Bear Lk/ Bear Lk	Transfer, release	6/30/2026	150,000 smolt	TLH to Bear Cr
24A-0022	Bear Lk/ Bear Lk	Transfer	12/31/2028	600 adult	Resurrection Bay to Bear Cr
24A-0026	Bear Lk/ Bear Lk	Transfer, release	12/31/2028	100,000 eyed eggs	WJHSFH to TLH to Bear Cr

Planning to renew, not planning to renew.

10.5 Sockeye Production History

Sockeye Salmon							
Brood Year	Egg Take Number	Brood Stock	Number Released	Life Stage	Release Year	Release Site	Notes
2024	2,202,000	Bear Lk.	-	Fry	2025	Bear Lk.	
			-	Smolt	2026	Resurrection Bay	
2023	2,728,474	Bear Lk.	984,582	Fry	2024	Bear Lk.	
			-	Smolt	2025	Resurrection Bay	
2022	3,421,966	Bear Lk.	1,287,067	Fry	2023	Bear Lk.	
			1,048,366	Smolt	2024	Resurrection Bay	
2021	4,694,585	Bear Lk.	2,115,385	Fry	2022	Bear Lk.	High water temps during eggtake reduced female brood survival
			1,077,225	Smolt	2023	Resurrection Bay	
2020	6,000,672	Bear Lk.	2,543,927	Fry	2021	Bear Lk.	
			1,393,778	Smolt	2022	Resurrection Bay	
2019	5,176,809	Bear Lk.	2,446,353	Fry	2020	Bear Lk.	
			1,466,109	Smolt	2021	Resurrection Bay	
2018	2,770,000	Bear Lk.	2,427,000	Fry	2019	Bear Lk.	
			NA	Smolt	2020	Resurrection Bay	BY18 returns did not produce enough eggs for smolt program.
2017	5,122,000	Bear Lk.	2,555,000	Fry	2018	Bear Lk.	
			1,510,000	Smolt	2019	Resurrection Bay	
2016	5,007,000	Bear Lk.	2,468,000	Fry	2017	Bear Lk.	
			1,488,000	Smolt	2018	Resurrection Bay	
2015	5,148,400	Bear Lk.	2,374,000	Fry	2016	Bear Lk.	
			1,816,000	Smolt	2017	Resurrection Bay	
			356,000	Smolt	2016	Bear Ck.	Released early due to water shortage at hatchery
2014	5,292,600	Bear Lk.	2,415,000	Fry	2015	Bear Lk.	IHN detected-180,000 destroyed
			1,680,200	Smolt	2016	Resurrection Bay	
2013	5,325,000	Bear Lk.	2,405,000	Fry	2014	Bear Lk.	
			1,758,000	Smolt	2015	Resurrection Bay	
2012	6,041,114	Bear Lk.	2,548,000	Fry	2013	Bear Lk.	IHNV detected - 575,000 destroyed
			1,742,000	Smolt	2014	Resurrection Bay	
2011	5,984,132	Bear Lk.	2,490,000	Fry	2012	Bear Lk.	IHNV - 300,000 fry destroyed
			2,090,000	Smolt	2013	Resurrection Bay	
2010	5,400,000	Bear Lk.	2,488,000	Fry	2011	Bear Lk.	
			1,305,000	Smolt	2012	Resurrection Bay	
2009	5,009,000	Bear Lk.	2,200,000	Fry	2010	Bear Lk.	IHNV detected - 1,975,000 fry destroyed
2008	6,033,000	Bear Lk.	2,543,000	Fry	2009	Bear Lk.	
			1,650,000	Smolt	2010	Resurrection Bay	
2007	6,090,000	Bear Lk.	2,400,000	Fry	2008	Bear Lk.	
			1,675,000	Smolt	2009	Resurrection Bay	
2006	6,087,000	Bear Lk.	2,437,000	Fry	2007	Bear Lk.	
			1,600,000	Smolt	2008	Resurrection Bay	Temporary rearing at ESH - TLH water shortage
2005	4,002,000	Bear Lk.	2,414,000	Fry	2006	Bear Lk.	
			619,000	Smolt	2007	Bear Lk.	Temporary rearing at ESH - TLH water shortage
2004	5,661,000	Bear Lk.	2,416,000	Fry	2005	Bear Lk.	
			604,000	Fall Fry	2005	Bear Lk.	
			979,000	Smolt	2006	Bear Lk.	Temporary rearing at ESH - TLH water shortage
2003	5,000,000	Bear Lk.	2,409,000	Fry	2004	Bear Lk.	
			603,000	Fall Fry	2004	Bear Lk.	
			402,000	Smolt	2005	Bear Lk.	Temporary rearing at ESH - TLH water shortage
2002	6,004,000	Bear Lk.	1,467,000	Fry	2003	Bear Lk.	IHNV detected - 3,000,000 fry destroyed
2001	6,017,000	Bear Lk.	2,408,000	Fry	2002	Bear Lk.	
			802,000	Fall Fry	2002	Bear Lk.	
			334,000	Smolt	2003	Bear Lk.	
2000	5,093,000	Bear Lk.	145,000	Fry	2001	Bear Lk.	IHNV detected - 3,505,000 fry destroyed
1999	2,436,000	Bear Lk.	1,796,000	Fry	2000	Bear Lk.	
1998	2,645,000	Bear Lk.	1,380,000	Fry	1999	Bear Lk.	Fry lost to clogged incubator screens and fungi infections
1997	502,000	Bear Lk.	265,000	Fry	1998	Bear Lk.	
1996	1,481,000	Bear Lk.	788,000	Fry	1997	Bear Lk.	
1995	2,040,000	Bear Lk.	781,000	Fry	1996	Bear Lk.	
1994	534,000	Bear Lk.	330,000	Fry	1995	Bear Lk.	
1993	270,000	Bear Lk.	170,000	Fry	1994	Bear Lk.	
1992	45,000	Bear Lk.	44,000	Fry	1993	Bear Lk.	
1992	3,428,000	S. Fork Big R.	1,766,000	Fry	1993	Bear Lk.	IHNV detected - 538,000 presmolt destroyed
1991	2,535,000	S. Fork Big R.	878,000	Fry	1992	Bear Lk.	
			565,000	Smolt	1992	Bear Lk.	
1991	1,442,000	U. Russian Lk.	917,000	Fry	1992	Bear Lk.	
1990	128,000	S. Fork Big R.	75,000	Smolt	1991	Bear Lk.	
1990	2,602,000	U. Russian Lk.	1,530,000	Fry	1991	Bear Lk.	
1989	3,119,000	S. Fork Big R.	2,191,000	Fry	1990	Bear Lk.	
			191,000	Fry	1990	S. Fork Big R.	
			159,000	Smolt	1990	Bear Lk.	
1989	57,000	U. Russian Lk.	20,000	Fry	1990	Bear Lk.	
2014	1,093,000	English Bay Lakes	200,200	Rry	2015	English Bay Lakes	26,905 culled as Hidden Lake crosses.
			531,600	Smolt	2016	Tutka Bay Lagoon	
2013	2,120,000	English Bay Lakes	209,000	Fall Fry	2014	English Bay Lakes	
			523,500	Smolt	2015	Tutka Bay Lagoon	
			217,000	Fry	2014	Kirschner Lk.	
			725,000	Fry	2014	Hazel Lk.	
2012	432,000	English Bay Lakes	211,000	Fall Fry	2013	English Bay Lakes	
2011	2,504,876	English Bay Lakes	1,240,000	Fry	2012	Hazel Lk.	
			213,000	Fall Fry	2012	English Bay Lakes	
			511,000	Smolt	2013	Tutka Bay Lagoon	
			102,000	Smolt	2013	Port Graham Bay	
2010	1,113,000	English Bay Lakes	160,000	Fry	2011	Kirschner Lk.	
			203,300	Fall Fry	2011	English Bay Lakes	
			371,300	Smolt	2012	Tutka Bay Lagoon	
2009	307,000	English Bay Lakes	202,000	Fall Fry	2010	English Bay Lakes	
			58,200	Smolt	2011	Tutka Bay Lagoon	
2007	510,000	English Bay Lakes	246,000	Fall Fry	2008	English Bay Lakes	
			112,000	Smolt	2009	Port Graham Bay	
2004	1,562,000	English Bay Lakes	203,000	Fall Fry	2005	English Bay Lakes	575,000 fry lost during raceway overflow event
			499,000	Smolt	2006	Port Graham Bay	

Sockeye Salmon con'd

Brood Year	Egg Take Number	Brood Stock	Number Released	Life Stage	Release Year	Release Site	Notes
2023	0	-					Project Suspended
2022	1,289,603	Hidden Lk.	-	Fry	2023	Hidden Lk.	
2021	1,263,305	Hidden Lk.	1,035,000	Fry	2022	Hidden Lk.	
2020	871,317	Hidden Lk.	689,000	Fry	2021	Hidden Lk.	Low escapement numbers.
2019	1,260,921	Hidden Lk.	1,020,382	Fry	2020	Hidden Lk.	
2018	1,258,000	Hidden Lk.	1,094,000	Fry	2019	Hidden Lk.	
2017	1,258,230	Hidden Lk.	1,271,000	Fry	2018	Hidden Lk.	
2016	0	Hidden Lk.	0	Fry	2017	Hidden Lk.	Due to low escapement, eggs were not collected
2015	1,445,600	Hidden Lk.	1,231,000	Fry	2016	Hidden Lk.	
2014	1,647,600	Hidden Lk.	1,497,000	Fry	2015	Hidden Lk.	
2013	1,765,000	Hidden Lk.	1,540,000	Fry	2014	Hidden Lk.	
2012	964,148	Hidden Lk.	860,000	Fry	2013	Hidden Lk.	
2011	1,119,538	Hidden Lk.	948,000	Fry	2012	Hidden Lk.	
2010	1,241,000	Hidden Lk.	1,044,000	Fry	2011	Hidden Lk.	
2009	5,140,000	Hidden Lk.	880,000	Fry	2010	Hidden Lk.	
			255,000	Fry	2010	Kirschner Lk.	
			1,933,000	Fry	2010	Leisure Lk.	
			1,218,000	Fry	2010	Hazel Lk.	
2008	4,004,000	Hidden Lk.	911,000	Fry	2009	Hidden Lk.	
			1,225,000	Fry	2009	Leisure Lk.	
			1,186,000	Fry	2009	Hazel Lk.	
			278,000	Smolt	2010	Tutka Bay Lagoon	
2007	5,686,000	Hidden Lk.	917,000	Fry	2008	Hidden Lk.	
			300,000	Fry	2008	Kirschner Lk.	
			2,053,000	Fry	2008	Leisure Lk.	
			1,161,000	Fry	2008	Hazel Lk.	
			301,000	Smolt	2009	Tutka Bay Lagoon	
2006	5,640,000	Hidden Lk.	658,000	Fry	2007	Hidden Lk.	
			254,000	Fry	2007	Kirschner Lk.	
			2,315,000	Fry	2007	Leisure Lk.	
			1,411,000	Fry	2007	Hazel Lk.	
			480,000	Smolt	2008	Tutka Bay Lagoon	
2005	2,027,000	Hidden Lk.	582,000	Fry	2006	Hidden Lk.	
			680,000	Fry	2006	Leisure Lk.	
			144,000	Smolt	2007	Tutka Bay Lagoon	
2004	5,445,000	Hidden Lk.	573,000	Fry	2005	Hidden Lk.	
			316,000	Fry	2005	Kirschner Lk.	
			2,252,000	Fry	2005	Leisure Lk.	
			1,558,000	Fry	2005	Hazel Lk.	
			260,000	Smolt	2006	Tutka Bay Lagoon	
2003	893,000	Hidden Lk.	646,000	Fry	2004	Hidden Lk.	
			96,000	Smolt	2005	Tutka Bay Lagoon	
2002	1,118,000	Hidden Lk.	629,000	Fry	2003	Hidden Lk.	Surplus fish - 293,000 fry destroyed
2001	1,332,000	Hidden Lk.	980,000	Fry	2002	Hidden Lk.	Surplus fish - 190,000 fry destroyed
2000	1,486,000	Hidden Lk.	906,000	Fry	2001	Hidden Lk.	
1999	2,253,000	Hidden Lk.	1,242,000	Fry	2000	Hidden Lk.	
1998	2,299,000	Hidden Lk.	1,507,000	Fry	1999	Hidden Lk.	Egg lost to incubator air entrapment
1997	2,166,000	Hidden Lk.	1,035,000	Fry	1998	Hidden Lk.	
1996	2,048,000	Hidden Lk.	1,051,000	Fry	1997	Hidden Lk.	
1995	1,893,000	Hidden Lk.	1,600,000	Fry	1996	Hidden Lk.	
1994	2,156,000	Hidden Lk.	1,700,000	Fry	1995	Hidden Lk.	
1993	2,200,000	Hidden Lk.	1,800,000	Fry	1994	Hidden Lk.	
1992	2,293,000	Hidden Lk.	1,901,000	Fry	1993	Hidden Lk.	
1991	2,652,000	Hidden Lk.	1,716,000	Fry	1992	Hidden Lk.	
1990	2,189,000	Hidden Lk.	1,600,000	Fry	1991	Hidden Lk.	
1989	2,220,000	Hidden Lk.	1,748,000	Fry	1990	Hidden Lk.	
2024	4,709,015	Tutka Bay Lagoon (EBL)	-	Fry	2025	Hazel Lk.	
			-	Fry	2025	Kirschner Lk.	
			-	Fry	2025	Leisure Lk.	
			-	Smolt	2026	Tutka Bay Lagoon	
2023	142,000	Tutka Bay Lagoon (EBL)	0	Fry	2024	Hazel Lk.	No stocking in 2024 due to low eggttake numbers in 2023
			0	Fry	2024	Kirschner Lk.	No stocking in 2024 due to low eggttake numbers in 2023
			0	Fry	2024	Leisure Lk.	No stocking in 2024 due to low eggttake numbers in 2023
			-	Smolt	2025	Tutka Bay Lagoon	
2022	5,388,272	Tutka Bay Lagoon (EBL)	702,000	Fry	2023	Hazel Lk.	
			149,000	Fry	2023	Kirschner Lk.	
			990,000	Fry	2023	Leisure Lk.	
			1,274,783	Smolt	2024	Tutka Bay Lagoon	
2021	6,153,309	Tutka Bay Lagoon (EBL)	1,073,596	Fry	2022	Hazel Lk.	
			250,000	Fry	2022	Kirschner Lk.	
			1,735,350	Fry	2022	Leisure Lk.	
			784,000	Smolt	2023	Tutka Bay Lagoon	
2020	2,666,434	Tutka Bay Lagoon (EBL)	240,960	Fry	2021	Hazel Lk.	
			239,742	Fry	2021	Kirschner Lk.	
			1,070,851	Fry	2021	Leisure Lk.	
			452,172	Smolt	2022	Tutka Bay Lagoon	
2019	1,793,342	Tutka Bay Lagoon (EBL)	266,448	Fry	2020	Hazel Lk.	
			271,858	Fry	2020	Kirschner Lk.	
			274,443	Fry	2020	Leisure Lk.	
			375,626	Smolt	2021	Tutka Bay Lagoon	
2018	3,913,000	Tutka Bay Lagoon (EBL)	1,293,000	Fry	2019	Hazel Lk.	
			258,000	Fry	2019	Kirschner Lk.	
			1,085,000	Fry	2019	Leisure Lk.	
			363,072	Smolt	2020	Tutka Bay Lagoon	
2017	5,555,000	Tutka Bay Lagoon (EBL)	813,000	Fry	2018	Hazel Lk.	
			244,000	Fry	2018	Kirschner Lk.	
			1,948,000	Fry	2018	Leisure Lk.	
			427,000	Smolt	2019	Tutka Bay Lagoon	

Sockeye Salmon con'd

Brood Year	Egg Take Number	Brood Stock	Number Released	Life Stage	Release Year	Release Site	Notes
2016	4,273,500	Tutka Bay Lagoon (EBL)	834,000	Fry	2017	Hazel Lk.	
			260,000	Fry	2017	Kirschner Lk.	
			1,387,000	Fry	2017	Leisure Lk.	
			518,000	Smolt	2018	Tutka Bay Lagoon	
2015	1,141,683	Tutka Bay Lagoon (EBL)	185,000	Fry	2016	Kirschner	
			356,000	Smolt	2017	Tutka Bay Lagoon	
			86,000	Smolt	2017	Port Graham	
2014	3,067,700	Tutka Bay Lagoon (EBL)	237,000	Fry	2015	Kirschner Lk	618,020 culled for IHN
			621,000	Fry	2015	Hazel Lk	
			1,051,000	Fry	2015	Leisure Lk.	
2013	2,664,000	Tutka Bay Lagoon (EBL)	725,000	Fry	2014	Hazel Lk	
			1,353,000	Fry	2014	Leisure Lk.	
2012	4,326,340	Tutka Bay Lagoon (HL)	1,450,000	Fry	2013	Hazel Lk	IHNV detected - 274,000 eggs destroyed
			1,800,000	Fry	2013	Leisure Lk.	
2011	3,012,637	Tutka Bay Lagoon (HL)	2,074,000	Fry	2012	Leisure Lk.	
2010	3,347,000	Tutka Bay Lagoon	1,244,000	Fry	2011	Hazel Lk.	
			1,415,000	Fry	2011	Leisure Lk.	
2009	140,000	Tutka Bay Lagoon	26,600	Smolt	2011	Tutka Bay Lagoon	Saltwater ripening Test
2008	103,000	Tutka Bay Lagoon					Saltwater ripening Test - All resulting fry destroyed
2017	28,700	Shell Lake	15,230	Smolt	2019	Shell Lake	
2016	87,600	Shelll Lake	46,000	Smolt	2018	Shell Lake	
2012	91,300	Shelll Lake	80,000	Smolt	2014	Shell Lake	
2007	4,931,000	Big Lk.	3,610,000	Fry	2008	Big Lk.	
2006	6,483,000	Big Lk.	3,812,000	Fry	2007	Big Lk.	
			703,000	Fall Fry	2007	Big Lk.	
2005	2,185,000	Big Lk.	444,000	Fry	2006	Big Lk.	
			426,000	Fall Fry	2006	Big Lk.	
			316,000	Smolt	2007	Big Lk.	Temporary rearing at ESH - TLH water shortage
2004	2,590,000	Big Lk.	1,742,000	Fry	2005	Big Lk.	
2003	7,001,000	Big Lk.	5,004,000	Fry	2004	Big Lk.	
2002	6,342,000	Big Lk.	3,589,000	Fry	2003	Big Lk.	
2001	6,286,000	Big Lk.	4,316,000	Fry	2002	Big Lk.	
2000	3,638,000	Big Lk.	0	Fry	2001	Big Lk.	IHNV detected - 2,600,000 fry destroyed
1999	1,490,000	Big Lk.	846,000	Fry	2000	Big Lk.	
1998	5,132,000	Big Lk.	197,000	Fry	1999	Big Lk.	Fry lost to clogged incubator screens and IHNV detected
1995	1,994,000	Chelatna Lk.	1,042,000	Fry	1996	Chelatna Lk.	
1994	2,341,000	Chelatna Lk.	1,806,000	Fry	1995	Chelatna Lk.	
1993	2,480,000	Chelatna Lk.	1,330,000	Fry	1994	Chelatna Lk.	
1992	2,540,000	Chelatna Lk.	1,003,000	Fry	1993	Chelatna Lk.	IHNV detected - 948,000 fry destroyed
1991	2,084,000	Chelatna Lk.	1,138,000	Fry	1992	Chelatna Lk.	
1990	1,559,000	Chelatna Lk.	635,000	Fry	1991	Chelatna Lk.	
1989	1,008,000	Chelatna Lk.	503,000	Fry	1990	Chelatna Lk.	
1997	2,008,000	Packers Lk.	0			Grouse Lk.	IHNV detected - 800,000 presmolt destroyed
1996	2,188,000	Packers Lk.	500,000	Eggs	1996	Tutka Hatchery	
1996			247,000	Fry	1997	Packers Lk.	
1996			381,000	Fall Fry	1997	Packers Lk.	
1996			609,000	Smolt	1998	Grouse Lk.	
1995	2,958,000	Packers Lk.	246,000	Fry	1996	Packers Lk.	
1995			442,000	Fall Fry	1996	Packers Lk.	
1995			1,170,000	Smolt	1997	Grouse Lk.	
1994	3,581,000	Packers Lk.	511,000	Fry	1995	Packers Lk.	
1994			1,041,000	Fall Fry	1995	Packers Lk.	IHNV detected - 1,000,000 presmolt destroyed
1993	3,950,000	Packers Lk.	2,779,000	Fry	1994	Packers Lk.	
1993			710,000	Smolt	1995	Grouse Lk.	
1992	4,206,000	Packers Lk.	3,266,000	Fry	1993	Packers Lk.	
			570,000	Smolt	1994	Grouse Lk.	
1991	4,125,000	Packers Lk.	3,172,000	Fry	1992	Packers Lk.	
1990	4,053,000	Packers Lk.	2,505,000	Fry	1991	Packers Lk.	
2003	10,936,000	Tustumena Lk.	6,006,000	Fry	2004	Tustumena Lk.	
			251,000	Fry	2004	Kirschner Lk.	
			2,002,000	Fry	2004	Leisure Lk.	
			351,000	Fry	2004	Hazel Lk.	
2002	11,721,000	Tustumena Lk.	6,024,000	Fry	2003	Tustumena Lk.	
			298,000	Fry	2003	Kirschner Lk.	
			2,240,000	Fry	2003	Leisure Lk.	
			1,547,000	Fry	2003	Hazel Lk.	
2001	12,037,000	Tustumena Lk.	6,065,000	Fry	2002	Tustumena Lk.	Surplus fish - 212,000 fry destroyed
			302,000	Fry	2002	Kirschner Lk.	
			2,246,000	Fry	2002	Leisure Lk.	
			1,280,000	Fry	2002	Hazel Lk.	
			508,000	Fall Fry	2002	U. Paint Lk.	
2000	11,810,000	Tustumena Lk.	89,000	Fry	2001	Leisure Lk.	IHNV detected - 8,066,000 fry destroyed
1999	14,984,000	Tustumena Lk.	5,432,000	Fry	2000	Tustumena Lk.	
			249,000	Fry	2000	Kirschner Lk.	
			1,708,000	Fry	2000	Leisure Lk.	
			1,248,000	Fry	2000	Hazel Lk.	
1998	13,382,000	Tustumena Lk.	5,948,000	Fry	1999	Tustumena Lk.	Fry lost to clogged incubator screens, pin heading and improper
			173,000	Fry	1999	Kirschner Lk.	raceway stocking densities
			265,000	Fry	1999	Leisure Lk.	
			453,000	Fry	1999	Hazel Lk.	
1997	6,849,000	Tustumena Lk.	4,558,000	Fry	1998	Tustumena Lk.	
1996	8,560,000	Tustumena Lk.	6,013,000	Fry	1997	Tustumena Lk.	
			679,000	Smolt	1998	Grouse Lk.	
			507,000	Smolt	1998	Bear Ck.	
1995	1,286,000	Tustumena Lk.	796,000	Smolt	1997	Grouse Lk.	
1994	1,432,000	Tustumena Lk.				Grouse Lk. & Coal Ck.	IHNV detected - All fish destroyed
1993	350,000	Tustumena Lk.	151,000	Smolt	1995	Coal Ck.	
			83,000	Smolt	1995	Grouse Lk.	
1991		Tustumena Lk.				Coal Ck.	300,000 fry transfer. IHNV detected - 285,000 presmolt destroyed
1990		Tustumena Lk.	66,000	Smolt	1992	Coal Ck.	100,000 fry transfer.

10.6 Coho Production History

Coho Salmon

Brood Year	Egg Take Number	Brood Stock	Number Released	Life Stage	Release Year	Release Site	Notes
2024	199,237	Bear Lk	-	Fry	2025	Bear Lk	
			-	Smolt	2026	Bear Ck.	ADF&G WJHSFH transferred 28,000 eyed eggs for rearing and realese in 2026
2023	576,738	Bear Lk.	238,776	Fry	2024	Bear Lk	
			-	Smolt	2025	Bear Ck.	
2022	489,847	Bear Lk.	447,583	Fry	2023	Bear Lk	
			19,554	Smolt	2024	Bear Ck.	
2021	609,926	Bear Lk.	450,000	Fry	2022	Bear Lk	
			53,923	Smolt	2023	Bear Ck.	
2020	568,414	Bear Lk.	445,081	Fry	2021	Bear Lk	
			30,180	Smolt	2022	Bear Ck.	
2019	604,869	Bear Lk.	400,809	Fry	2020	Bear Lk	
			58,202	Smolt	2021	Bear Ck.	
2018	640,243	Bear Lk.	453,000	Fry	2019	Bear Lk	
			96,890	Smolt	2020	Bear Ck.	
2017	587,900	Bear Lk.	438,000	Fry	2018	Bear Lk	additional green eggs collected for ADFG
			61,800	Smolt	2019	Bear Ck.	
2016	288,700	Bear Lk.	125,000	Fry	2017	Bear Lake	Adult return low. CIAA collect all eggs available for CIAA & ADFG Stocking
			28,000	Smolt	2018	Seward Lagoon	
2015	575,000	Bear Lk.	446,600	Fry	2016	Bear Lk	An additional 351,952 green eggs collected for ADFG; 10,458 culled for BKD
			54,000	Smolt	2017	Bear Ck.	
2014	581,000	Bear Lk.	448,000	Fry	2015	Bear Lk	An additional 343,605 green eggs collected for ADFG
			100,000	Smolt	2016	Bear Ck.	
2013	635,000	Bear Lk.	468,000	Fry	2014	Bear Lk	An additional 444,576 green eggs collected for ADFG
			98,000	Smolt	2015	Bear Ck.	
2012	630,927	Bear Lk.	405,000	Fry	2013	BearLk	An additional 129,914 green eggs collected for ADFG
			55,000	Smolt	2014	Bear Ck.	
2011	577,695	Bear Lk.	222,000	Fry	2012	Bear Lk	Alarm failure in brood raceway/Water flow issues in incubator. Additional 280,676 eggs for ADFG
2010	547,000	Bear Lk.	437,000	Fry	2011	Bear Lk	An additional 488,100 green eggs collected for Ft. Richardson
			93,000	Smolt	2012	Bear Ck.	
2009	545,000	Bear Lk.	435,000	Fry	2010	Bear Lk.	An additional 406,500 green eggs collected for Ft. Richardson
2008	574,000	Bear Lk.	270,000	Fry	2009	Bear Lk.	An additional 492,000 green eggs collected for Ft. Richardson
2007	724,000	Bear Lk.	360,000	Fry	2008	Bear Lk.	An additional 336,000 green eggs collected for Ft. Richardson
			68,000	Smolt	2009	Bear Ck.	
			111,000	Smolt	2009	Homer Spit	
2006	1,084,000	Bear Lk.	521,000	Fry	2007	Bear Lk.	An additional 343,000 green eggs collected for Ft. Richardson
			142,000	Smolt	2008	Bear Ck.	
			95,000	Smolt	2008	Homer Spit	
			88,000	Smolt	2008	Seldovia	
2005	1,415,000	Bear Lk.	447,000	Fry	2006	Bear Lk.	An additional 321,000 green eggs collected for Ft. Richardson
			237,000	Smolt	2007	Bear Ck.	
			101,000	Smolt	2007	Homer Spit	
			97,000	Smolt	2007	Seldovia	
2004	1,673,000	Bear Lk.	405,000	Fry	2005	Bear Lk.	An additional 348,000 green eggs collected for Ft. Richardson
			115,000	Smolt	2006	Bear Ck.	
			324,000	Smolt	2006	Homer Spit	Temporary rearing at ESH - TLH water shortage - Treated for BKD
			114,000	Smolt	2006	Seldovia	
			146,000	Smolt	2006	Lowell Falls	Temporary rearing at ESH - TLH water shortage - Treated for BKD
2003	1,193,000	Bear Lk.	406,000	Fry	2004	Bear Lk.	An additional 831,000 green eggs collected for Ft. Richardson
			488,000	Smolt	2005	Bear Ck.	Temporary rearing at ESH - TLH water shortage
			95,000	Smolt	2005	Homer Spit	
2002	1,238,000	Bear Lk.	405,000	Fry	2003	Bear Lk.	An additional 367,000 green eggs collected for Ft. Richardson
			285,000	Smolt	2004	Bear Ck.	
			192,000	Smolt	2004	Res. Bay	
			113,000	Smolt	2004	Homer Spit	
2001	1,052,000	Bear Lk.	405,000	Fry	2002	Bear Lk.	An additional 368,300 green eggs collected for Ft. Richardson
			253,000	Smolt	2003	Bear Ck.	
			153,000	Smolt	2003	Homer Spit	
2000	972,000	Bear Lk.	311,000	Fry	2001	Bear Lk.	An additional 695,000 green eggs collected for Ft Richardson
			124,000	Smolt	2002	Bear Lk.	
1999	867,000	Bear Lk.	316,000	Fry	2000	Bear Lk.	An additional 919,000 green eggs collected for Ft. Richardson
			121,000	Smolt	2001	Bear Ck.	
1998	805,000	Bear Lk.	306,000	Fry	1999	Bear Lk.	An additional 575,000 green eggs collected for Elmendorf
			102,000	Smolt	2000	Bear Ck.	
1997	687,000	Bear Lk.	409,000	Fry	1998	Bear Lk.	An additional 584,000 green eggs collected for Elmendorf
			51,000	Smolt	1999	Bear Ck.	
1996	968,000	Bear Lk.	449,000	Fry	1997	Bear Lk.	An additional 540,000 green eggs collected for Elmendorf
			177,000	Smolt	1998	Bear Ck.	
1995	868,000	Bear Lk.	350,000	Fry	1996	Bear Lk.	An additional 1,000,000 green eggs collected for Elmendorf
			153,000	Smolt	1997	Bear Ck.	
1994	847,000	Bear Lk.	330,000	Fry	1995	Bear Lk.	An additional 796,000 green eggs collected for Elmendorf
			75,000	Smolt	1996	Bear Ck.	
1993	736,000	Bear Lk.	335,000	Fry	1994	Bear Lk.	An additional 667,000 green eggs collected for Elmendorf
			7,000	Smolt	1995	Bear Ck.	
1992	803,000	Bear Lk.	621,000	Fry	1993	Bear Lk. & Bear Ck.	An additional 794,000 green eggs collected for Elmendorf
1991	696,000	Bear Lk.	204,000	Fry	1992	Bear Ck.	An additional 807,000 green eggs collected for Elmendorf
1990	798,000	Bear Lk.	390,000	Fry	1991	Bear Lk.	
			52,000	Smolt	1992	Bear Ck.	
1989	932,000	Bear Lk.	333,000	Fry	1990	Bear Lk.	192,000 fry transferred to Elmendorf

10.7 CIAA Enhancement Project Summary

HATCHERY	PROJECT (release site)	[BROODSTOCK]	Fry (F) and Smolt (S) Projected Releases - 2025 COHO	SOCKEYE	PINK	Project Status
TRAIL LAKES HATCHERY	Tutka Bay Lagoon	[English Bay]		102,300 (S)		1,274,783 in 2024
	Resurrection Bay	[Bear Lake]		508,000 (S)		1,048,366 in 2024
	Bear Creek	[Bear Lake]	6,800 (S)			19,554 in 2024
	Smolt Totals		6,800	610,300	0	2,342,703 in 2024
	Bear Lake	[Bear Lake]		440,000 (F)		984,582 in 2024
	Leisure Lake	[English Bay Lakes]		1,300,000 (F)		0 in 2024
	Hazel Lake	[English Bay Lakes]		1,390,000 (F)		0 in 2024
	Kirschner Lake	[English Bay Lakes]		430,000 (F)		0 in 2024
	Bear Lake	[Bear Lake]	80,000 (F)			238,776 in 2024
	Fry Totals		80,000	3,560,000	0	1,223,358 in 2024
	HATCHERY TOTALS		86,800	4,170,300	0	3,566,061 in 2024

HATCHERY	PROJECT (release site)	[BROODSTOCK]	Fry (F), Presmolt or Fall Fry(P) and Smolt (S) Projected Releases - 2024 COHO	SOCKEYE	PINK	Project Status
TUTKA BAY LAGOON HATCHERY	Tutka Bay/Lagoon	[Tutka Creek/Lagoon]			486,000 (F)	8,000,000 in 2024
	HATCHERY TOTALS		0	0	486,000	8,000,000 in 2024

CIAA	CORPORATE TOTALS		86,800	4,170,300	486,000	11,566,061 in 2024

10.8 Bear Lake Coho Salmon Fisheries Enhancement Project

Summary Statistics Bear Lake Smolt Production 1962 - 1971 Prior to Coho & Sockeye Enhancement	
Mean	19,330
Standard Error	5,933
Median	14,095
Range	59,070
Minimum	1,873
Maximum	60,943
Sum	193,302
Count	10
Confidence Level (95.0%)	13,421

Summary Statistics Bear Lake Smolt Production 1989 - 2017 With Sockeye Enhancement	
Mean	78,290
Standard Error	5,399
Median	81,900
Range	133,600
Minimum	21,300
Maximum	154,900
Sum	2,270,403
Count	29
Confidence Level(95.0%)	11,058

Summary Statistics Bear Lake Smolt Production 1973 - 1988 Prior to Sockeye Enhancement	
Mean	93,791
Standard Error	5,997
Median	93,069
Range	79,840
Minimum	63,775
Maximum	143,615
Sum	1,500,649
Count	16
Confidence Level (95.0%)	12,783

Summary Statistics Total Smolt Production 1990 - 2017 With Sockeye Enhancement	
Mean	179,637
Standard Error	21,757
Median	164,965
Range	517,500
Minimum	36,200
Maximum	553,700
Sum	5,029,833
Count	28
Confidence Level(95.0%)	44,642

10.9 Figures

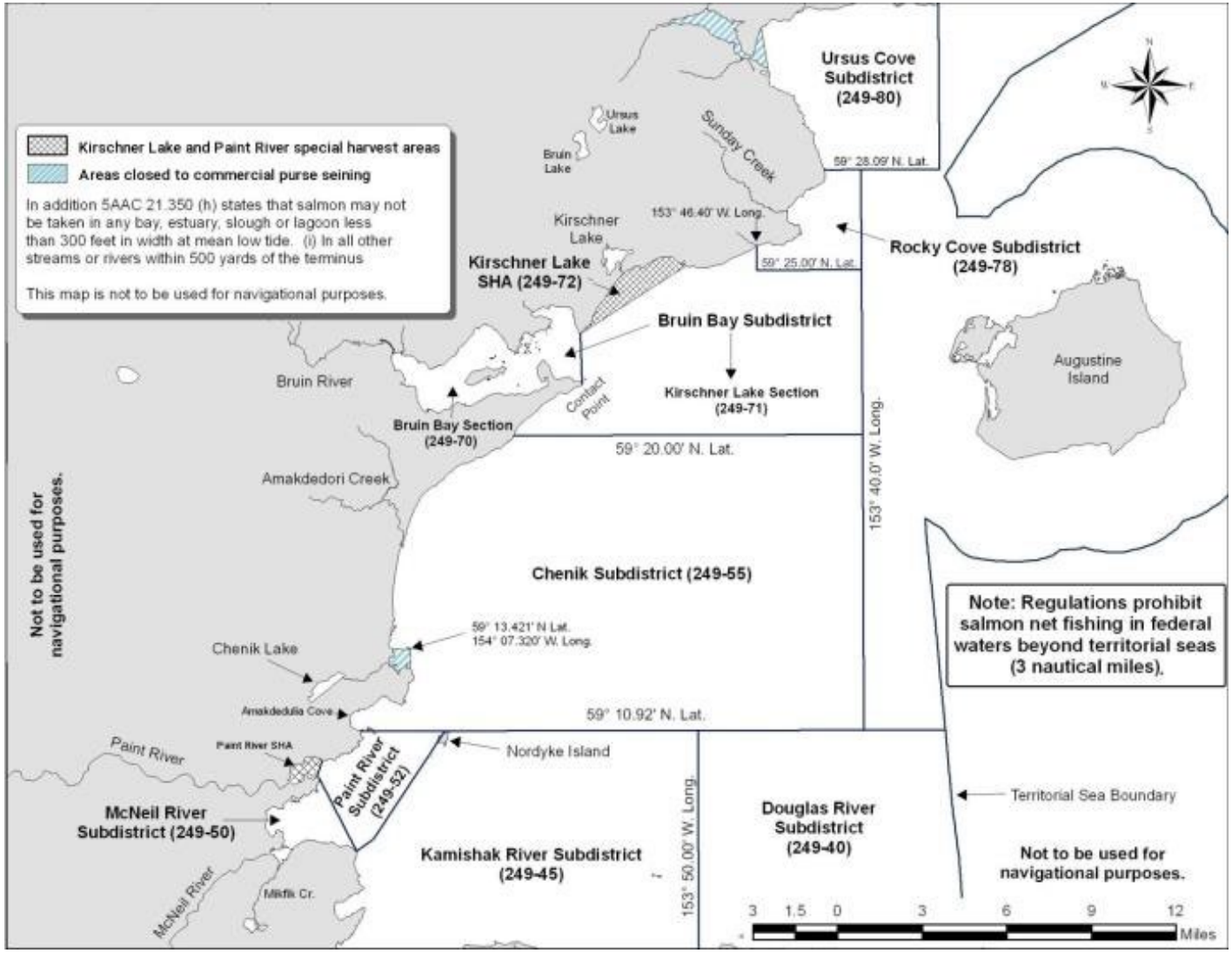


Figure 1.–Kirschner Lake Special Harvest Area

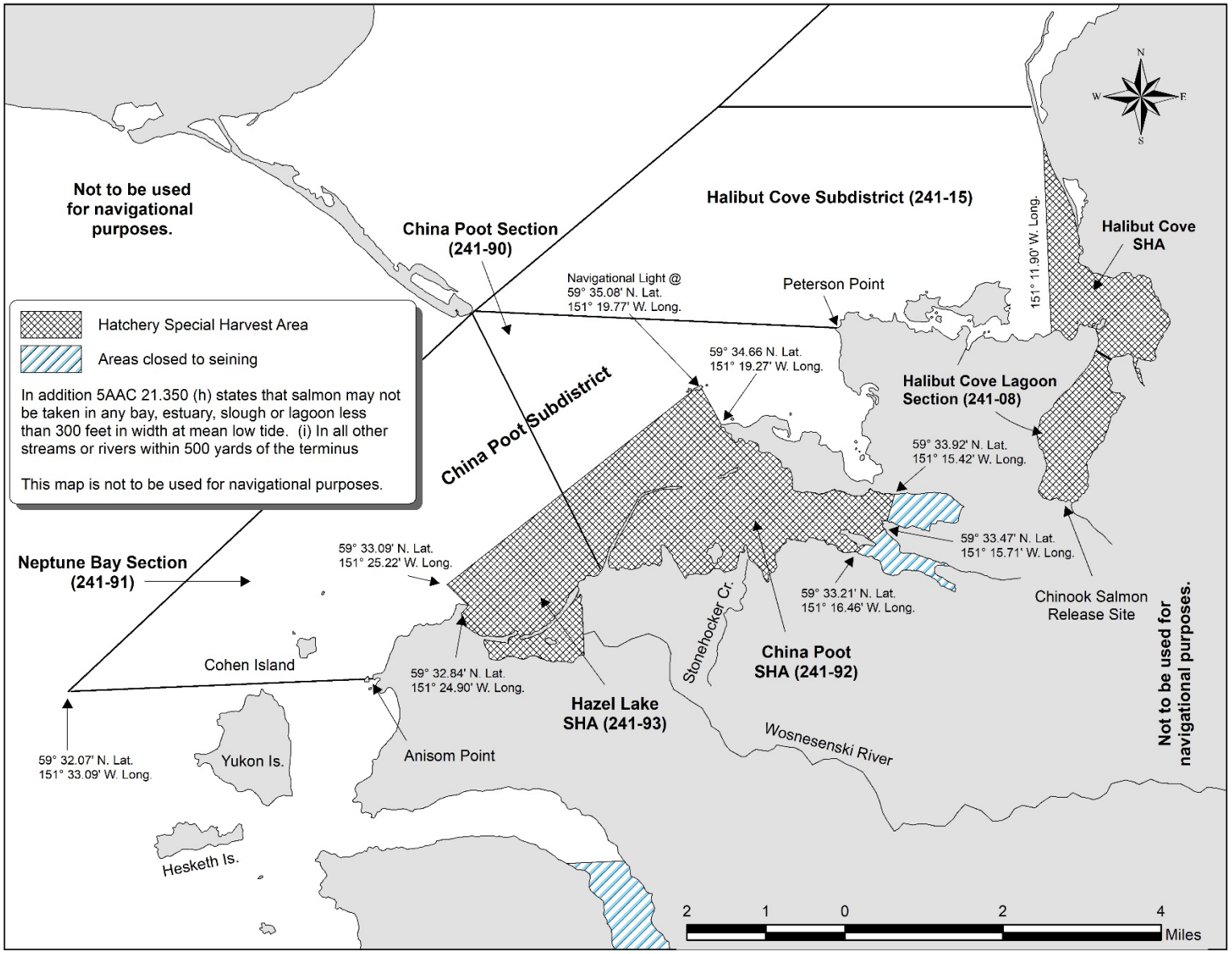


Figure 2.–China Poot/Hazel Lake Special Harvest Area

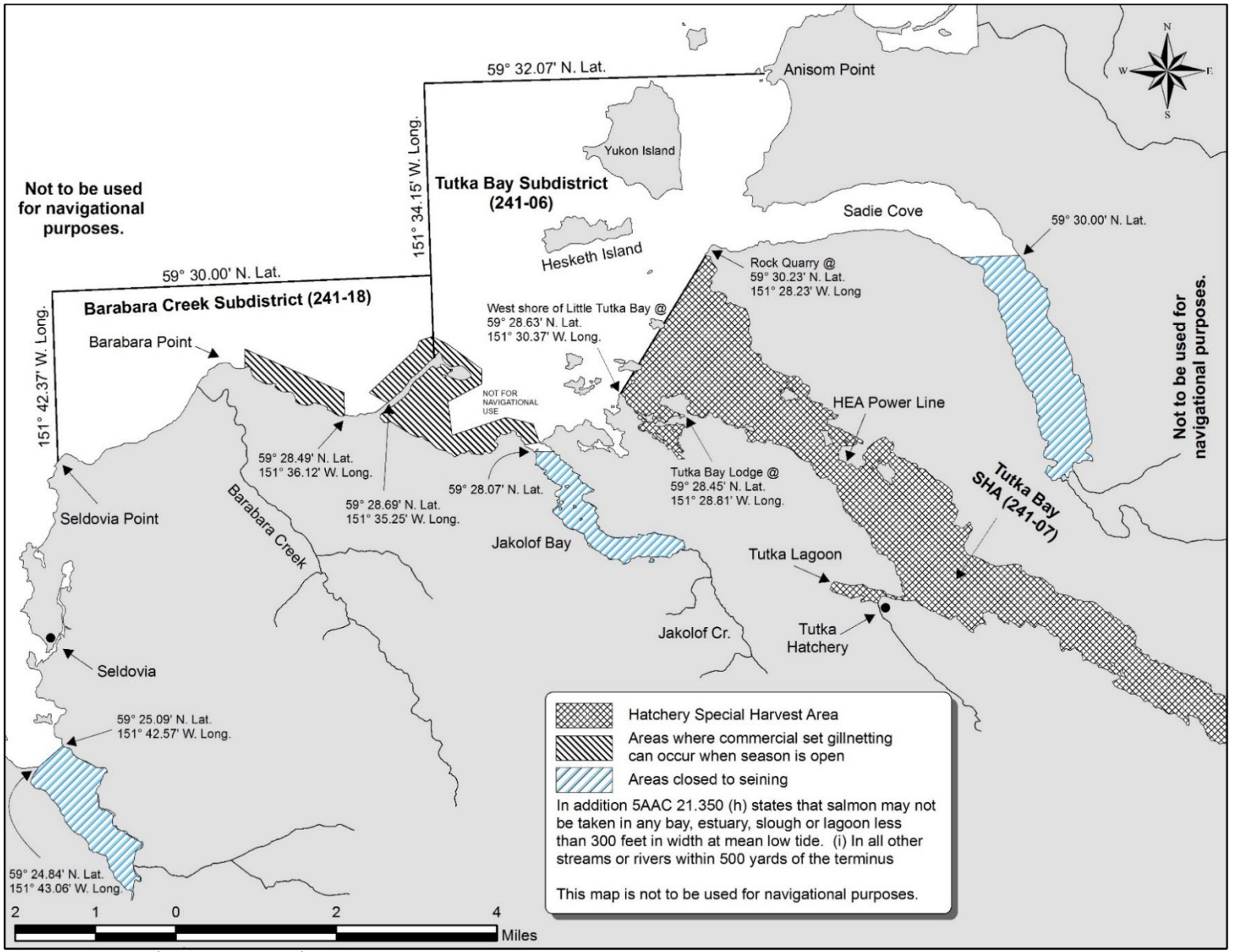


Figure 3.–Tutka Bay Special Harvest Area

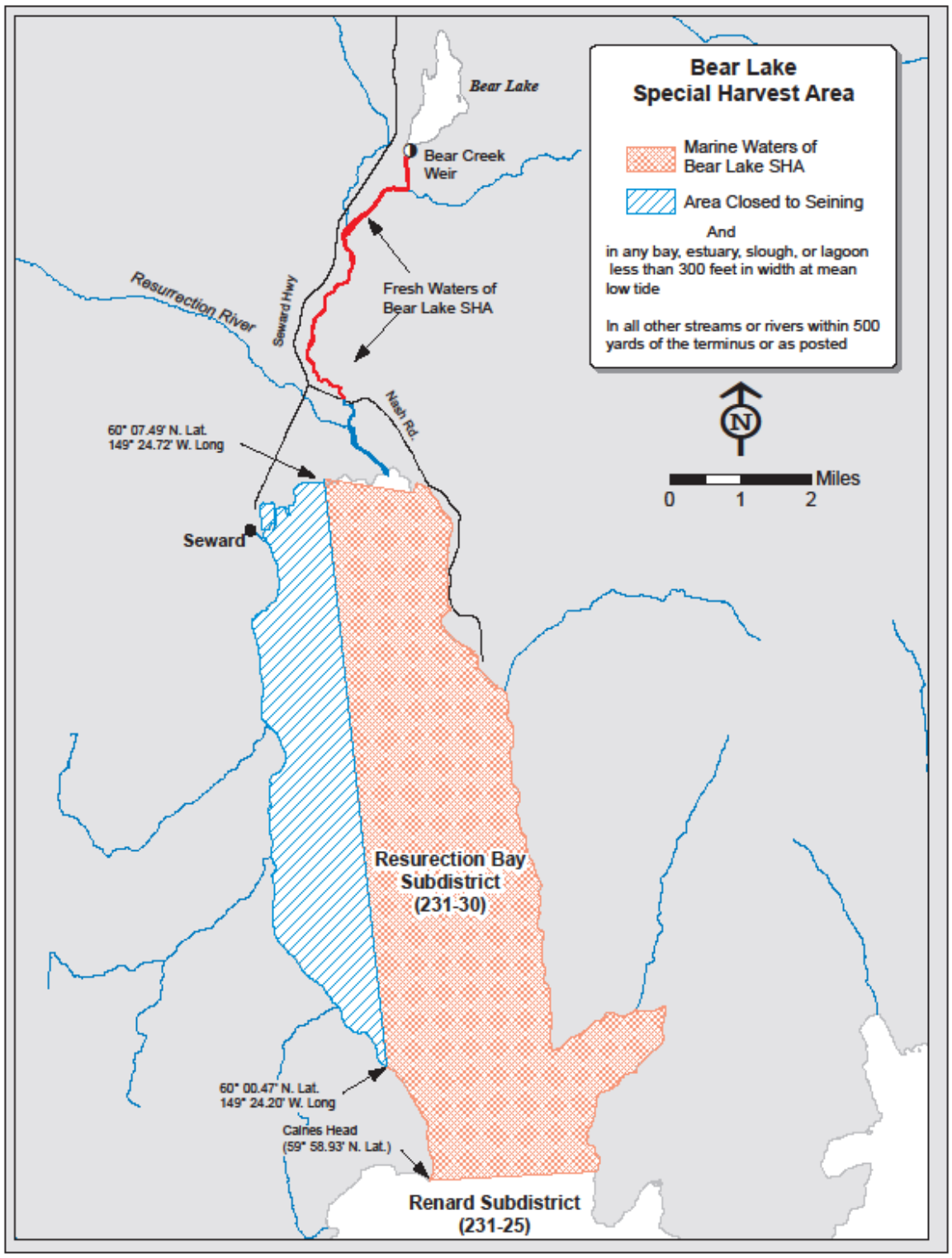


Figure 4.–Bear Lake Special Harvest Area

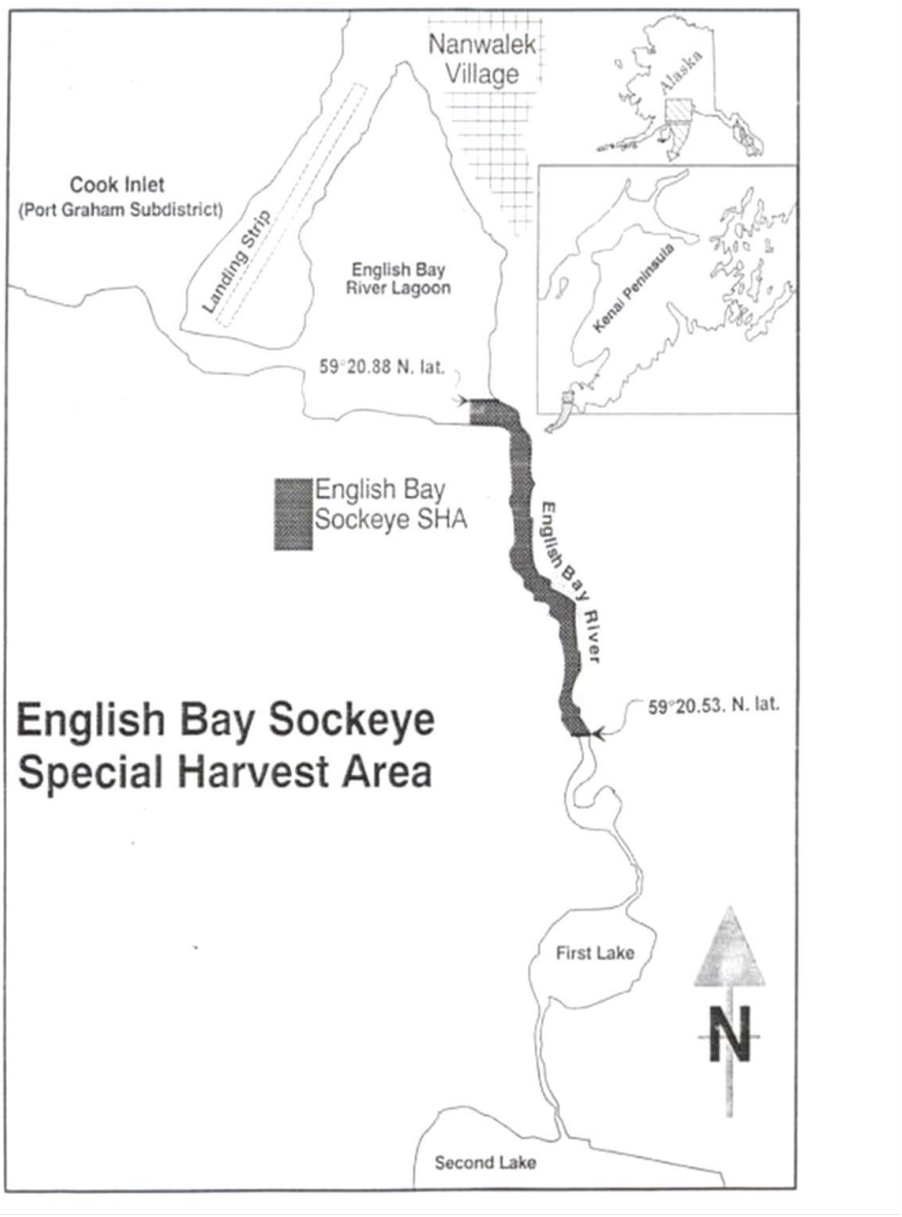


Figure 5.–English Bay Sockeye Salmon Special Harvest Area