2024 ANNUAL MANAGEMENT PLAN
PILLAR CREEK HATCHERY

Kodiak Regional Aquaculture Association

This Annual Management Plan (AMP) is prepared to fulfill the requirements of 5 AAC 40.840. This plan must organize and guide the hatchery's operations regarding production goals, broodstock management, and harvest management of hatchery returns. The plan must be developed with consideration of the hatchery's production cycle. The production cycle begins with adult returns, that lead to egg takes and end 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 Kodiak Regional Aquaculture Association (KRAA) or Alaska Department of Fish and Game (ADF&G) may result in changes to this AMP in order to reach or maintain program objectives. KRAA 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 KRAA. This policy applies to all hatchery operations covered under the AMP.

INTRODUCTION

Pillar Creek Hatchery (PCH) was constructed in 1990 as a cooperative project between ADF&G and KRAA. PCH is owned by the State of Alaska and is located on Kodiak Island Borough land that is leased to the State of Alaska. KRAA operates the facility under an agreement with the State. PCH is operated in accordance with Alaska statutes and regulations, ADF&G Private Nonprofit Salmon Hatchery Permit Number 41, the PCH Basic Management Plan (BMP), this AMP, and is further delimited by Fish Transport Permits.

PCH was designed to produce juvenile sockeye salmon for stocking barren-lake systems to enhance adult salmon production and for stocking anadromous lakes to rehabilitate weak sockeye salmon stocks. These stocking projects were developed to increase sockeye salmon harvest opportunities in the Kodiak Management Area (KMA) for common property fisheries, available to all Kodiak commercial, subsistence, personal use, and sport fishermen. PCH was designed as a central incubation facility where salmon eggs needed for production are collected from brood sources located at sites remote from PCH and transported to the facility for incubation, hatching, and rearing of resulting juvenile fish. Most juvenile fish are then transported to and released at stocking sites remote from PCH.

Today, PCH continues to produce juvenile sockeye salmon for lake stocking projects and has started saltwater net pen projects while continuing to work cooperatively with the ADF&G Division of Sport Fish to produce coho salmon, king salmon, and rainbow trout to enhance fishing opportunities on the Kodiak road system.

The purpose of this AMP is to describe the proposed stocking, rearing, and egg-take activities to be undertaken by PCH in 2024, the anticipated 2024 salmon runs resulting from PCH projects,

and management of PCH salmon in Kodiak waters. Appendix A contains maps showing the location of PCH and various projects, Appendix B contains some PCH salmon production records, Appendix C shows data and methodology used for return and harvest estimates, and Appendix D lists all relevant PCH Fish Transport Permits (FTP).

1.0 OPERATIONAL PLANS FOR 2024

1.1 EGG-TAKE LIMITS AND BROODSTOCK SOURCES, BY SPECIES

Private Nonprofit Salmon Hatchery Permit Number 41, approved permit alterations, and the PCH BMP specify the maximum green egg capacity of PCH:

Species	Permitted Level	Ancestral Stock	Maximum Egg Take Number	Release Site
Sockeye Salmon	20,000,000	Afognak or Malina lake (early)	Varies	Hidden Lake
			Varies	Little Waterfall Lake
			Varies	Big Waterfall Lake
			Varies	Crescent Lake
			300,000	Sorg Lake
		Malina Lakes	Varies	Malina Lakes
		Laura Lake	Varies	Laura Lake
		Saltery Lake (late)	Varies	Spiridon Lake
			Varies	Anton Larsen Bay
			Varies	Telrod Cove
			Varies	Ruth Lake
			Varies	Ouzinkie
			Varies	Upper Jennifer Lake
			Varies	Lower Jennifer Lake
Coho Salmon	500,000	Buskin River	110,000[a]	Pillar Creek
			110,000[a]	Monashka Creek
			30,000[b]	Island Lake
			20,000[b]	Mission Lake
			15,000[b]	Dark Lake
			19,000[b]	Potato Patch Lake
			4,200[b]	Pony Lake
			7,000[b]	Southern Lake
			13,000[b]	Mayflower Lake
		Big Kitoi Creek	40,000	Katmai Lake
King Salmon	450,000	Karluk River	60,000	Monashka Creek
			60,000	Olds River[c]

Species	Permitted Level	Ancestral Stock	Maximum Egg Take Number	Release Site
			60,000	American River[c]
			60,000	Salonie Creek[c]
Rainbow Trout	200,000	Swanson River	N/A	Varies

[a] Annual releases into Pillar and Monashka Creeks will be no more than 350,000 in combination.

[b] Maximum annual stocking number.

[c] Release site authorized under the Statewide Stocking Plan (not under the PCH PNP permit).

Hatchery broodstock and projects are similarly authorized and are further delimited by fish transport permits (Appendix D). Run strength and escapement levels, PCH incubation and rearing space, and PCH water availability limit egg-take numbers. For sockeye salmon, annual limnologic analysis and assessment of each stocked lake's zooplankton population and subsequent juvenile stocking recommendations also influence egg-take goals.

Pillar Creek Hatchery is primarily a central incubation facility; all sockeye and king salmon eggs are collected at remote sites and transported to the facility for incubation and juvenile rearing (Appendix A1). Most juveniles are transported and released at stocking sites remote from PCH.

1.1.1 Early-run Sockeye Salmon

Afognak Lake sockeye salmon is an approved PCH early-run broodstock, and up to 4,100,000 early-run sockeye salmon eggs may be taken for PCH stocking projects. Actual broodstock collection and egg-take goals will be based on ADF&G recommended juvenile release numbers for each lake-stocking project, to be determined in July or August. The Afognak Lake sockeye salmon escapement may determine the number of broodstock available for egg take.

The 2024 early-run sockeye salmon egg-take goal is anticipated to fall within a range of 350,000 to 1,937,500 green eggs, requiring approximately 290 to 1,605 adult sockeye salmon broodstock. Based on recent four-year averages of fecundity, green egg to eyed-egg survival, recommended stocking levels (2019–2022), and an assumed holding mortality rate of 15%, the early-run sockeye salmon broodstock and egg take may require approximately 525 adults for 628,000 eggs.

Malina Lakes is an approved PCH early-run broodstock source and has been identified as an alternate brood source to be utilized in the event that Afognak Lake escapement is insufficient to meet egg-take goals. Broodstock collections from both brood sources can be combined to meet egg-take goals, if necessary.

1.1.2 Late-run Sockeye Salmon

Up to a maximum of 11,000,000 late-run sockeye salmon eggs, in combination from

Saltery Lake or Little Kitoi Lake (back up) are permitted (PCH BMP) to be collected as required to meet annual PCH stocking project goals as described in the AMP and delimited by current plankton abundance in the receiving systems.

Actual late-run sockeye salmon broodstock collection and egg-take goals will be based on ADF&G recommended juvenile release numbers for PCH lake-stocking projects and net-pen project needs to be determined in August. Sockeye salmon escapement levels in 2024 to Little Kitoi and Saltery lakes may limit the number of broodstock available for egg takes.

The 2024 late-run sockeye salmon egg-take goal is anticipated to fall within a range of 1,850,000 to 9,865,400 green eggs, requiring approximately 1,530 to 8,155 adult sockeye salmon broodstock. Based on recent four-year averages of fecundity, green egg to eyed-egg survival, recommended stocking levels (2019–2022), and an assumed holding mortality rate of 15%, the late-run sockeye salmon broodstock collection and egg take may require 2,930 adults and 3,616,400 eggs.

1.1.3 Coho Salmon

Pillar Creek or Buskin River coho salmon are the approved PCH brood stocks. Up to 500,000 eggs may be taken at Pillar Creek (primary) or up to 75 spawning pairs of Buskin River (secondary) coho salmon for an estimated 265,000 eggs that may be taken for PCH stocking projects (Appendix A2). To meet founding broodstock permit conditions, if Buskin Lake escapement goals are met, then 29 pairs of Buskin River coho salmon will be spawned with remaining brood coming from Pillar Creek. The 2024 coho salmon egg-take goal is approximately 270,000 green eggs, which will require approximately 200 coho salmon brood to be collected.

1.1.4 King Salmon

King salmon runs (Karluk River ancestral stock) have been developed in four Kodiak road-system streams: Monashka Creek, Salonie Creek, and the American and Olds Rivers (Appendix A2). The Monashka Creek king salmon run was intended to serve as the brood source for PCH king salmon stocking projects; however, this release location was abandoned due to poor performance. The 2024 king salmon egg-take goal is 240,000 green eggs, which will require approximately 80 king salmon brood. King salmon broodstock will be collected at the American River, the Olds River, Salonie Creek, and/or other Women's Bay streams and transported to the Monashka Creek raceways. Up to 240,000 king salmon eggs will be taken at Monashka Creek.

1.1.5 Rainbow Trout

For Kodiak road system lake-stocking projects (Appendix A3), Swanson River stock rainbow trout eggs will be taken by ADF&G at the William Jack Hernandez Sport Fish Hatchery (WJHSFH) from captive broodstock. Eggs are treated to induce triploidy, a condition that precludes production of functional gametes and prevents natural spawning of resulting adults. Enough fry will be transferred from WJHSFH to Kodiak for stocking as fingerlings to meet the 72,000 stocking goal for Kodiak lakes.

1.2 Capture, Egg take, and Transport of Gametes

Pillar Creek Hatchery is a central incubation facility; no egg takes typically occur at PCH. However, since 2017, coho salmon broodstock is collected at Pillar Creek. All other salmon broodstock are collected in donor systems following escapement into the system.

1.2.1 Sockeye Salmon

PCH collects brood for early-run sockeye salmon stocking projects in late July and early August (Appendices B.1 and B.6) and for late-run sockeye salmon stocking projects in late August and September (Appendices B.2 and B.3). When mature adults school at the mouths of spawning tributaries, they are captured by beach seine, sorted by sex, and placed in floating net pens until fully ripe. At remote broodstock collection and egg-take sites, it is understood that environmental conditions may affect the ability of hatchery staff to successfully capture and retain broodstock. Water temperature, weather conditions, and lake level should be taken into account when holding broodstock. In an attempt to reduce the potential for a high mortality event from occurring to wild stock spawning populations being used for broodstock purposes, ADF&G recommends that fish not be collected and retained for broodstock purposes unless the water temperature is below 17°C. If average temperatures exceed 17°C, broodstock collection efforts should be delayed until conditions become more favorable or modify standard operating procedures that decrease broodstock stress. KRAA will also continue employing strategies to mitigate broodstock stress and egg survival such as holding fewer brood in pens and using ice to cool process water. Moreover, if conditions don't improve, egg takes will be delayed until better conditions arise.

PCH follows sockeye salmon egg-take procedures described in ADF&G Special Publication Number 6: *Alaska Sockeye Salmon Culture Manual*. Individual clutches of fertilized, water-hardened eggs are pooled in bags (typically 20–30 clutches per bag), which are sealed, placed in coolers with ice, and transported from the egg-take site to PCH via floatplane and truck.

1.2.2 Coho Salmon

PCH and ADF&G Division of Sport Fish have worked cooperatively to collect Buskin/Pillar Creek coho salmon broodstock (Appendix B4) for Kodiak road-system stocking projects in late October and early November. Mature adults are captured by beach seine and placed in pens until fully ripe. Since regular coho salmon releases were removed from the ADF&G COOP-20-018, PCH began collecting Buskin Lake coho salmon eggs to develop a KRAA coho salmon program and a coho salmon brood source at Pillar Creek. The current cooperative agreement will expire on June 30, 2024 and a new agreement is being negotiated between KRAA and ADF&G. Coho salmon egg takes are expected to continue under the terms of the new agreement. In 2024, KRAA plans to collect eggs from 29 pairs of Buskin River coho salmon to meet permit conditions and remaining eggs will be collected from coho salmon returning to Pillar Creek. Brood may be transferred from Buskin River to PCH, which will require applying for an FTP.

PCH employs dry spawning egg-take methods, and eggs are water hardened in buckets prior to transport from the egg-take site to the hatchery via truck.

1.2.3 King Salmon

ADF&G Division of Sport Fish Kodiak personnel are responsible for collecting king salmon broodstock (Appendix B5) for the road-system stocking project, from mid-June through late July. Adult king salmon are collected from Salonie Creek, other Women's Bay streams, and the American or Olds Rivers and transported by truck to the raceways near the Monashka reservoir.

The king salmon egg take will be conducted by PCH and ADF&G Division of Sport Fish using egg-take procedures modeled after those in ADF&G Special Publication Number 6: *Alaska Sockeye Salmon Culture Manual*. Individual clutches of eggs are fertilized and water-hardened prior to transport to PCH via truck.

1.2.4 Rainbow Trout

The ADF&G WJHSFH rear captive rainbow trout broodstock for Southcentral and Interior Alaska stocking projects, including those on the Kodiak road system. Eggs are taken in December. Eyed eggs were historically loaded into a cooler and transported to PCH via commercial airfreight and truck. For 2024 and the foreseeable future, fingerlings from egg takes at WJHSFH will be transported directly to Kodiak under the Statewide Stocking Plan and reported by WJHSFH.

1.3 Carcass Disposal

Pillar Creek Hatchery is a central incubation facility, and most egg takes are not conducted at the hatchery site. Carcasses from remote egg takes remain in their natal systems. When coho salmon returning to Pillar Creek are utilized for broodstock, carcasses from these fish are donated or returned to Pillar Creek.

1.4 Incubation Plans

Eggs and alevin of all species cultured at PCH are incubated from the date of egg take until ponding (with the exception of Saltery sockeye salmon eggs that may be taken for KBH stocking projects). Ponding is non-volitional and typically prompted by aggressive swim-up activity of developing fry. PCH water temperatures exhibit high inter-annual variability, the effects of which are evident in varying year-to-year rates of egg and alevin development and a wide range of ponding dates. The hatchery building has four incubation rooms (modules), two of which are dedicated exclusively to sockeye salmon. PCH uses Kitoi box incubators for sockeye and coho salmon eggs, and Heath stack incubators for king salmon and rainbow trout eggs.

1.4.1 Sockeye Salmon

Incubators are loaded with early-run green eggs in early August, typically in the range of 110,000 to 210,000 eggs per incubator, depending upon total egg inventory. Early-run sockeye salmon eyed-egg processing typically occurs during September, with hatch in late

September/October. Early-run sockeye salmon fry may be ponded the first week of January and as late as mid-April.

Incubators are loaded with late-run sockeye salmon green eggs in late August and September, typically in the range of 110,000 to 250,000 eggs per incubator depending upon the total egg inventory. Eyed-egg processing occurs between late September and early December, with hatch as early as November and as late as March. Late-run sockeye salmon fry may be ponded mid-April and as late as mid-June.

1.4.2 Coho Salmon

Incubators are loaded with Buskin River/Pillar Creek coho salmon green eggs in early November, typically in the range of 50,000 to 150,000 eggs per incubator depending upon the total egg inventory. Eyed-egg processing generally occurs in February or March, at which time incubator loading is reduced to a portion of the initial green-egg load. Coho salmon fry may be ponded mid-May and as late as early July.

1.4.3 King Salmon

Incubators are loaded with king salmon green eggs in August, one clutch per tray, and single-family tracking is practiced to identify bacterial kidney disease (BKD) and other potential pathogens, so that affected eggs may be culled from the brood year (BY) inventory. Eyed-egg processing is typically complete by the end of September, with hatch in October to November. King salmon fry may be ponded mid-January and as late as the end of May.

1.4.4 Rainbow Trout

The WJHSFH incubates rainbow trout eggs in Heath tray incubators loaded at 10,000 eyed eggs per incubator. Eyed-egg processing occurs in mid- to late January. Rainbow trout will be ponded based on the timing of yolk depletion.

1.5 Rearing and Release Plans, 2023

1.5.1 Early-Run Sockeye Salmon

Approximately 320,000 brood year 2023 (BY23) early-run sockeye salmon will be reared to 0.5 gram (g) fry. When target weight is attained (estimated to be in June 2024), approximately 300,000 fry will be stocked into Hidden Lake.

Approximately 80,000 BY23 early-run sockeye salmon will be reared to 0.5 gram (g) fry. When target weight is attained (estimated to be in June 2024), approximately 80,000 fry will be stocked into Crescent Lake.

Approximately 50,000 BY23 early-run sockeye salmon will be reared to 0.7 gram (g) fry. When target weight is attained (estimated to be in June 2024), approximately 50,000 fry will be stocked into Big Waterfall Lake.

Approximately 50,000 BY23 early-run sockeye salmon will be reared to 0.7 gram (g) fry. When target weight is attained (estimated to be in June 2024), approximately 50,000 fry will be stocked into Little Waterfall Lake.

1.5.2 Late-Run Sockeye Salmon

Approximately 503,000 BY22 late-run sockeye salmon fingerlings (marked 4,3,2,H) are being held at PCH overwinter and will be transported as spring presmolt to saltwater net pens in Telrod Cove for smolting, imprinting, and release in April/May/June. Target release weight is 15.0 g.

Approximately 2,500,000 BY23 late-run sockeye salmon will be reared to 0.4 g fry (marked 3,3,3,H) and will be stocked into Spiridon Lake when target weight is attained (June/July).

Approximately 14,000 BY23 late-run sockeye salmon will be reared to 0.7 g fry (marked 3,3,3,H) and will be stocked into Ruth Lake when target weight is attained (June/July).

Approximately 33,000 BY23 late-run sockeye salmon will be reared to 0.7 g fry (marked 3,3,3,H) and will be stocked into Upper Jennifer Lake when target weight is attained (June/July).

Approximately 12,000 BY23 late-run sockeye salmon will be reared to 0.7 g fry (marked 3,3,3,H) and will be stocked into Lower Jennifer Lake when target weight is attained (June/July).

Approximately 450,000 BY23 late-run sockeye salmon will be reared to smolt size (marked 4,4,H) and released at Telrod Cove in the spring of 2025.

1.5.3 Coho Salmon

Approximately 198,000 BY22 coho salmon fry (unmarked) will be reared to 15.0 g smolt to stock Kodiak road-system waters. The majority of the smolt stocking will occur in Pillar and Monashka Creeks (COOP-20-018). KRAA will also seek to stock a minimal amount of smolt at Island and Mission lakes with presmolt for imprinting in the spring, as indicated in the ADF&G Division of Sport Fish *Statewide Stocking Plan for Recreational Fisheries, 2023*. This year, KRAA will raise approximately 250,000 BY23 coho to smolt size (marked 5H) at Pillar Creek Hatchery. The subsequent release of the smolt in 2025 would fulfill the cooperative agreement for stocking of coho on the Kodiak road system to supplement the shortfall of BY23 king salmon eggs.

1.5.4 King Salmon

Approximately 3,800 BY22 king salmon fingerlings (unmarked) are being held at Pillar Creek Hatchery for release as spring smolt into Salonie Creek in May or June. The American and Olds Rivers will not be stocked due to the low number of smolt available. The target release weight is 15.0 g. This year, KRAA will raise approximately 86,000 BY23 king salmon to smolt (unmarked) at Pillar Creek Hatchery.

1.5.5 Rainbow Trout

Rainbow trout eggs were taken from captive brood at WJHSFH and will be reared at WJHSFH. Transport to Kodiak will occur at the fingerling stage. All juvenile rainbow trout

will be stocked into Kodiak road-system lakes (landlocked or with intermittent outlet), as described in the ADF&G Division of Sport Fish *Statewide Stocking Plan for Recreational Fisheries, 2024*, in the summer of 2024. Possible lakes to be stocked include Abercrombie, Aurel, Big (Lilly), Bull, Caroline, Cicely, Dark, Dragonfly, Dolgoi, Heitman, Horseshoe, Island, Lee, Lilly, Long, Tanignak, and Twin Lakes.

2.0 WILD DONOR STOCK MANAGEMENT

2.1 COMMON PROPERTY FISHERIES

ADF&G has established salmon escapement goals for many natural spawning salmon stocks in the Kodiak Area. These are analyzed and updated every three years and reviewed by the Alaska Board of Fisheries at tri-annual meetings.

Harvest of salmon by sport anglers 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.

Harvest of salmon by subsistence and commercial fishermen is managed by the ADF&G Division of Commercial Fisheries through permitting, preseason development of regulatory management plans and annual harvest strategies, inseason management actions by EO establishing fishing time and area (within guidelines in management plans), based on harvest strategies and inseason salmon escapements, and/or other conservation considerations.

KRAA has no authority to manage common property fisheries. However, KRAA staff work closely with the Kodiak ADF&G Area Management Biologists for commercial and sport fisheries to assure that they have all information that KRAA can provide to better the success of associated fisheries. KRAA is involved in cooperative projects with ADF&G and assists in the management of donor stocks by providing funding and personnel to gather data necessary for management of sustainable Kodiak salmon populations. Such data includes adult salmon escapement counts (via weir and aerial counts), salmon nursery lake limnology sampling and analysis, and emigrating smolt counts and condition. Further, KRAA staff share openly with ADF&G salmon management staff any inseason observations on salmon runs or fishery issues.

2.1.1 Early-Run Sockeye Salmon

Afognak Lake

Sockeye salmon escapement into Afognak Lake is enumerated through a weir operated by the ADF&G Division of Commercial Fisheries. Common property commercial salmon fisheries in the Southeast Afognak Section of the Afognak District (Appendix A4) are managed by the ADF&G Division of Commercial Fisheries under the Eastside Afognak Salmon Management Plan (5 AAC 18.365).

Specific to sockeye salmon: “The Southeast Afognak Section shall be managed based on sockeye salmon returning to Afognak Lake from June 1 through July 5.” The sport fishery in Afognak Lake and adjacent waters is managed by the ADF&G Division

of Sport Fish 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.

No change in ADF&G common property fishery management will be requested in 2024 to assist completion of KRAA projects, including early-run sockeye salmon egg takes planned for Afognak Lake sockeye salmon.

Malina Lake

Malina Lake is permitted as an alternate egg source for early-run sockeye salmon projects. No egg takes or other KRAA projects are planned for Malina Lake sockeye salmon.

2.1.2 Late-Run Sockeye Salmon: Saltery Lake

Sockeye salmon escapement into Saltery Lake is enumerated through a weir operated by the ADF&G Division of Commercial Fisheries, funded and partially staffed by KRAA. Saltery Lake sockeye salmon common property fisheries are managed by ADF&G based on escapement into Saltery Lake. The Inner Ugak Bay Section of the Eastside Kodiak District is managed by the ADF&G Division of Commercial Fisheries under the Eastside Kodiak Salmon Management Plan (5 AAC 18.367). Specific to sockeye salmon: "from June 22 through July 5, fishing opportunities shall be based on sockeye salmon bound to Saltery Lake; from July 6 through July 31, fishing opportunities shall be based on the abundance of local pink, chum, and Saltery Lake sockeye salmon."

The sport fishery in Saltery Lake and adjacent waters is managed by the ADF&G Division of Sport Fish in accordance with regulations as provided in 5 AAC 47– 5 AAC 75.

No change in ADF&G common property fishery management will be requested in 2024 to assist completion of KRAA projects, including late-run sockeye salmon egg takes planned for Saltery Lake sockeye.

2.1.3 Coho Salmon: Pillar Creek or Buskin Lake

Coho salmon escapement into Pillar Creek is not monitored with a weir. Creek surveys are conducted every year by ADF&G Division of Sport Fish and/or KRAA. The Monashka-Mill Bay Section of the Northeast Kodiak District is managed by the ADF&G Division of Commercial Fisheries under the Eastside Kodiak Salmon Management Plan (5 AAC 18.367). Specific to coho salmon: "from August 25 through September 5, fishing opportunities shall be based on the abundance of local pink and coho salmon; after September 5, fishing opportunities shall be based on the abundance of local coho salmon" (ADF&G 2011). The sport fishery in Monashka Bay and adjacent waters is managed by the ADF&G Division of Sport Fish 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. No change

in ADF&G common property fishery management is anticipated in 2024 to assist completion of KRAA projects.

Coho salmon escapement into Buskin Lake is enumerated through a weir operated by the ADF&G Division of Sport Fish. The Buskin River Section of the Northeast Kodiak District is managed by the ADF&G Division of Commercial Fisheries under the Eastside Kodiak Salmon Management Plan (5 AAC 18.367). Specific to coho salmon: "from August 25 through September 5, fishing opportunities shall be based on the abundance of local pink and coho salmon; after September 5, fishing opportunities shall be based on the abundance of local coho salmon" (ADF&G 2011). The sport fishery in Buskin Lake and adjacent waters is managed by the ADF&G Division of Sport Fish 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 escapement goals.

KRAA plans to collect eggs from Buskin Lake coho salmon in 2024 to address permit conditions to add more Buskin Lake stock to the Pillar Creek broodstock founded with Buskin Lake fish. Broodstock collection goals are 58 individuals (29 pair) in 2024 and 2026, and 148 individuals (74 pair) in 2025 when the founding broodstock had unknown representation from Buskin Lake fish. These broodstock collection goals assuming equal sex ratios and that Buskin River escapement goals are met. Buskin Lake is currently an option as a backup egg source. However, no change in ADF&G common property fishery management will be requested in 2024 to assist completion of KRAA projects, including coho salmon egg takes should KRAA need to utilize Buskin Lake coho salmon.

2.2 ESCAPEMENT REQUIREMENTS

ADF&G has established escapement goals for PCH broodstock donor systems:

Wild Donor Stock	Escapement Goal
Afognak Lake Sockeye Salmon	20,000 to 50,000
Malina Lake Sockeye Salmon	1,000 to 10,000
Saltery Lake Sockeye Salmon	15,000 to 35,000
Buskin River Coho Salmon	4,700 to 9,600

DONOR STOCK COLLECTION PROCEDURES

In salmon broodstock donor systems for which an escapement goal has been established:

1) Salmon escapement must exceed the lower bound of the escapement goal range; and,
2) Salmon escapement in excess of the lower bound of the escapement goal will be available for broodstock collection.
3) Should escapements be expected to fall below established goals, KRAA and ADF&G will meet in season to determine a suitable course of action.
4) If broodstock collection reduces escapements to the lower bound for two consecutive years, then KRAA and ADF&G will meet to determine a suitable course of action.

3.0 HATCHERY RETURN MANAGEMENT

3.1 HATCHERY RETURNS

Pillar Creek Hatchery is located approximately 1 mile upriver from Monashka Bay, within the Monashka/Mill Bay Section of the Northeast Kodiak District. These are within the Road Zone for sport fisheries. The Monashka/Mill Bay Section is managed by the ADF&G Division of Commercial Fisheries under the *Eastside Kodiak Salmon Management Plan* (5 AAC 18.367). Specific to coho salmon, from August 25 through September 5, commercial fishing opportunities shall be based on the abundance of local pink and coho salmon; after September 5, fishing opportunities shall be based on the abundance of local coho salmon.

There is no special harvest area (SHA) in Monashka Bay relative to the stream terminus for Pillar Creek, and there are no cost-recovery fisheries planned for 2024. KRAA plans to collect coho salmon broodstock at Pillar Creek in 2024. No closure of common property fisheries is anticipated.

Projected returns to remote release sites are described in Section 3.3 below.

3.2 RETURNS TO COMMON PROPERTY FISHERIES

All salmon returning as a result of PCH stocking projects are intended to be harvested primarily in common property fisheries. Some PCH king salmon returning to road-system stocking locations will be required for broodstock. Some PCH sockeye salmon returning to the Spiridon Lake stocking project will be required for cost recovery.

3.3 RETURNS TO REMOTE RELEASE SITES

3.3.1 Early-run Sockeye Salmon

Foul Bay/Hidden Lake, Waterfall Bays, and Settler Cove/Crescent Lake

The 2024 forecast for Foul Bay/Hidden Lake is based on historic release to return survival rates and average adult age composition (Appendix C1). The forecast point estimate is 5,000 with a range of 4,000 to 6,000 (Appendix C2).

The 2024 forecast for Waterfall Lakes is based on historic release to return survival rates and average adult age composition for Waterfall Lakes (Appendix C1). The forecast point estimate is 0 with a range of 0 to 100.

The 2024 forecast for Settler Cove/Crescent Lake is based on historic release to return survival rates and average adult age composition for Foul Bay/Hidden Lake (Appendix C1). The forecast point estimate is 133 with a range of 0 to 400.

Run timing of PCH early-run sockeye salmon production should be similar to the timing of Afognak Lake sockeye salmon (the brood source) escapement, with runs beginning in late May, peaking in early June, and declining substantially by early July.

The intent of the Hidden Lake and Waterfall lakes early-run sockeye salmon projects is

for the harvest of returning salmon to occur in the associated SHAs (Foul Bay and Waterfall Bay SHAs). For the Crescent Lake projects, the intent is for harvest to occur in the Settler Cove SHA and also in the adjacent management section, the Central Section, during openings directed at harvesting other salmon stocks.

3.3.2 Late-run Sockeye Salmon

Telrod Cove/Spiridon Lake

The 2024 Spiridon Lake salmon forecast is based on simple linear regression models utilizing smolt migration data to adult return relationships for multiple age classes (Appendix C1). The Spiridon Lake/Telrod Cove sockeye salmon run is forecasted to be 184,000 fish, with a range of 26,000 to 342,000 fish (Appendix C2). A total of 99,000 fish are forecasted to return from lake-released juveniles that are a part of the traditional Spiridon Lake sockeye salmon enhancement project, and 85,000 fish are forecasted to return from the Telrod Cove net pen sockeye salmon enhancement project.

The intent of the Spiridon Lake sockeye salmon project is for common property harvest of returning adult salmon to occur primarily in traditional commercial fishing areas of the Northwest Kodiak District, during openings directed at harvesting Karluk sockeye and Westside pink and chum salmon stocks, and in the Spiridon Bay SHA.

3.3.3 Coho Salmon Road System

Formal run forecasts are not developed for the cooperative ADF&G Division of Sport Fish/KRAA Kodiak road-system coho salmon fisheries enhancement projects. Stocking of PCH coho salmon smolt into Island and Mission Lakes, Pillar and Monashka Creeks and is estimated to produce approximately 7,700 returning adult coho salmon in 2024 (Appendix C1).

Kodiak road-system stocking locations drain into the Inner Chiniak Bay, the Buskin River, and Monashka–Mill Bay Sections of the Northeast Kodiak District. These are in the Road Zone for sport fisheries. These sections are managed by the ADF&G Division of Commercial Fisheries under the *Eastside Kodiak Salmon Management Plan* (5 AAC 18.367). Specific to coho salmon: from August 25 through September 5, fishing opportunities shall be based on the abundance of local pink and coho salmon; after September 5, fishing opportunities shall be based on the abundance of local coho salmon.

The intent of these PCH stocking projects is to create common property salmon fishing opportunities in the Northeast Kodiak District along the Kodiak road-system (Chiniak, Monashka, and Mill Bays).

3.3.4 King Salmon

Formal run forecasts are not developed for the cooperative ADF&G Division of Sport Fish / KRAA Kodiak road-system king salmon fisheries enhancement project.

It is projected that stocking of spring smolt into Salonie Creek and the American and Olds Rivers from 2019 to 2021 will produce approximately 250 returning adult king salmon in

2024 (Appendix C1).

Run timing of PCH king salmon production is slightly later compared to the timing of Karluk River king salmon (the ancestral brood) escapement, with runs beginning in late May, peaking in early July, and declining substantially by mid-August.

The American and Olds Rivers and Salonie Creek drain into the Inner Chiniak Bay Section of the Northeast Kodiak District. These are within the Road Zone for sport fisheries. These sections are managed by the ADF&G Division of Commercial Fisheries under the Eastside Kodiak Salmon Management Plan (5 AAC 18.367). Specific to expected PCH king salmon run timing, these sections remain closed to commercial fishing through July 6 and are managed based on the abundance of local and mixed Kodiak pink salmon (and chum salmon in the Inner Chiniak Bay Section) through August 24.

The intent of these PCH stocking projects is to create salmon sport fishing opportunities along the Kodiak road system, targeting supplemental king salmon.

3.4 Special Management Strategies

There are no special management strategies in place for PCH stocking projects.

3.5 Special Harvest Area Management

3.5.1 Early-run Sockeye Salmon

Foul Bay Special Harvest Area

The Foul Bay SHA (Hidden Lake) is designed to allow for the harvest of sockeye salmon produced from the Hidden Lake fisheries enhancement project and to provide for the protection of wild salmon stocks returning to, or passing through, the Northwest Afognak Section of the Afognak District (Appendix A4).

Hidden Lake sockeye salmon runs will be harvested in the Foul Bay SHA, which includes the area of Foul Bay east of 152° 47.20′ W long. (Appendix A5; 5 AAC 40.085(3)). By regulation, the only legal commercial gear types for the SHA are purse seines and beach seines. Because a harvestable surplus of hatchery-produced sockeye salmon is expected in the SHA, continuous commercial fishing periods through the duration of the sockeye salmon run may be allowed by ADF&G, as early as June 1. The fishery directed at the Hidden Lake sockeye salmon run is not expected to impact pink salmon escapement to Hidden Creek because the fishery occurs prior to the arrival of pink salmon. There is no escapement goal for sockeye salmon in Hidden Creek as the lake is inaccessible due to a large barrier falls. The commercial common property sockeye salmon harvest is expected to occur primarily in the Foul Bay SHA; however, some Hidden Lake sockeye salmon may be harvested in the Northwest Afognak Section.

ADF&G recognizes that some incidental harvest of wild stocks could occur in the Foul Bay SHA while the fishery is managed to harvest the Hidden Lake sockeye salmon run. ADF&G may adjust the size of the SHA to minimize the harvest of wild stocks and to target the Hidden Lake sockeye salmon. Age and scale pattern analyses of the commercial harvest have indicated a minimal wild stock bycatch (Schrof et al. 2000; Schrof and Honnold 2003). Therefore, a reduction in the size of the SHA is not expected.

In 2024, there are no escapement, broodstock collection, or cost-recovery fishery requirements for PCH Hidden Lake sockeye salmon. All returning supplemental sockeye salmon are to be harvested in common property fisheries.

In 2024, ADF&G and KRAA will cooperatively monitor the Hidden Lake sockeye salmon run and commercial harvest from the ADF&G R/V *K-Hi-C* during the early portions of the commercial fishery. There will be no barrier net or weir installed at Hidden Lake Creek. The crew will also collect biological samples of the commercial salmon harvest for further analysis postseason.

Waterfall Bay Special Harvest Area

The Waterfall Bay SHA was designed to allow common property harvest of all hatchery-produced sockeye salmon returning to Waterfall Bay and provide safeguards for the area's wild stock salmon escapements.

The 2024 sockeye salmon commercial harvest will occur in the Waterfall Bay SHA within the Perenosa Bay Section (Appendix A6). The Waterfall Bay SHA includes waters seaward of the stream terminus of Little (251-822) and Big (251-821) Waterfall Creeks to a straight line extending northwesterly from 58° 24.15′ N lat., 152° 28.23′ W long. to 58° 25.60′ N lat., 152° 28.23′ W long. (5 AAC 40.085(4)).

By regulation, the only legal commercial gear types for the Waterfall Bay SHA are purse seines and beach seines. Because there is no escapement goal, all returning sockeye salmon will be available for harvest, and continuous commercial fishing through the duration of the sockeye salmon run may be allowed as early as June 1.

In 2024, there are no escapement, broodstock collection, or cost-recovery fishery requirements for PCH Waterfall lakes sockeye salmon. All returning supplemental sockeye salmon are to be harvested in common property fisheries.

In 2024, fewer than 8,000 sockeye salmon are expected to return to the Waterfall SHA. Therefore, KRAA will not monitor the fishery.

Settler Cove Terminal Harvest Area

The purpose of the Crescent Lake stocking project is to provide sockeye salmon for common property harvest primarily in the Settler Cove THA (Appendix A7) and in adjacent management sections without compromising wild stock escapements, primarily Barabara Lake sockeye salmon. The run timing of Crescent Lake returns should be similar to the escapement timing of Afognak Lake sockeye salmon (the brood source), with runs beginning in late May, peaking in early June, and declining substantially by early July.

The commercial harvest of Crescent Lake sockeye salmon is expected to occur during fishing periods targeting early-run sockeye salmon in the Central and North Cape Sections of the Northwest Kodiak District (Appendix A4). During 2024, the fishery could open to commercial salmon fishing in the Northwest Kodiak District as early as June 1. Additional fishing time is dependent on the run strength of early-run Karluk Lake sockeye salmon (5 AAC 18.362).

In 2024, there are no escapement, broodstock collection, or cost-recovery fishery requirements for PCH Crescent Lake/Settler Cove sockeye salmon. All returning supplemental sockeye salmon are to be harvested in common property fisheries.

In 2024, neither ADF&G nor KRAA will station personnel at Settler Cove to monitor the Crescent Lake sockeye salmon run. Residents of the nearby Village of Port Lions and Kodiak subsistence fishermen keep ADF&G and KRAA informed of run strength and any problems occurring in the fisheries.

3.5.2 Late-run Sockeye Salmon

Spiridon Bay Special Harvest Area

The intent of this stocking project is to provide for common property harvest of hatchery-produced sockeye salmon in traditional commercial fishing areas in the Northwest Kodiak District and Telrod Cove (Appendices A4 and A8). The *Spiridon Bay Sockeye Salmon Management Plan* (5 AAC 18.366) is designed to allow for the orderly harvest of hatchery-produced sockeye salmon returning to Telrod Cove from the Spiridon Lake fisheries enhancement project (Appendix A8) and to provide adequate protection for escapements of wild salmon stocks returning to streams in the area (Spiridon River pink, chum, and coho salmon; stream number 254-401). The run timing of the 2024 return to Telrod Cove should be similar to the Saltery Lake sockeye salmon (brood source) run beginning in late June and continuing into mid-August.

Harvests of Spiridon Lake sockeye salmon are expected to occur during openings targeting Karluk Lake sockeye salmon and Kodiak's west side pink and chum salmon stocks. The SHA was established to provide for an orderly harvest of hatchery-produced sockeye salmon and to allow KRAA the ability to prosecute a cost-recovery fishery. The Spiridon Bay SHA includes all waters of Telrod Cove north of a line extending from Stream Point at 57° 39.00′ N lat., 153° 38.50′ W long., to a point at 57° 38.80′ N lat., 153° 37.70′ W long. (5 AAC 40.085(2)).

There are no escapement or broodstock collection requirements for PCH Spiridon Lake/Telrod Cove sockeye salmon. However, in 2024 there are cost-recovery fisheries planned to harvest Spiridon Lake sockeye salmon.

There will be a PCH cost-recovery fishery (CRF) in Telrod Cove within the Spiridon Bay SHA. The 2024 PCH CRF goal is 250,000 lbs (50,000 sockeye salmon). The CRF is expected to begin approximately June 21, 2024, or as soon as sockeye salmon are documented to be building within Telrod Cove by KRAA or ADF&G personnel. The CRF will open by EO and will operate continuously through either the achievement of the CRF harvest goal or July 31, 2024. If the CRF goal is achieved sooner than July 31, ADF&G will close the CRF and may open the SHA to the common property commercial fishery. However, if the CRF harvest goal is not achieved by July 31, 2024, cost-recovery efforts will cease and ADF&G may close the CRF and then open the SHA to the common property commercial fishery.

The restricted size of the SHA and projected run timing of sockeye salmon returns to Telrod Cove reduce the incidental harvest of wild salmon stocks returning to Spiridon River and Telrod Creek. The SHA will be monitored by KRAA personnel beginning in mid-June and continuing until early August. The crew will monitor the commercial common property fisheries and will collect biological samples of the salmon harvest for further analysis postseason.

4.0 EVALUATION / SPECIAL STUDIES

4.1 MARKING AND TAGGING PROGRAMS / REQUIREMENTS

4.1.1 Early-run sockeye salmon

There is no marking requirement for early-run sockeye at PCH.

4.1.2 Late-run sockeye salmon

Eggs collected in 2024 (BY24) for sockeye salmon net pen projects are required to be marked prior to release.

The late-run sockeye salmon released in Telrod Cove as 2022 spring smolt (BY22) will be 100% otolith marked (4,3,2H). All the late-run sockeye production for BY22 was marked using the dry mark process.

For BY23, all late-run sockeye at PCH will be otolith marked; BY23 late-run sockeye to be stocked as fry in 2024 to Spiridon Lake at 0.4 grams are marked with (3,3,3H). BY23 cohorts that will be raised to presmolt at PCH will have the mark (4,4H).

4.1.3 Coho salmon

BY23 coho salmon were marked with a 5H otolith mark. BY24 coho salmon will be marked with mark assignment from the North Pacific Anadromous Fish Commission Mark Coordinator at the ADF&G MTA lab.

4.1.4 King salmon

There is no marking requirement for king salmon at PCH.

4.2 MONITORING & EVALUATION

4.2.1 Early-run sockeye salmon

Fishery monitoring activities will take place at Foul Bay. Returning adults will be sampled for age, sex, and length. Data collected is used to evaluate ocean survivals.

4.1.2 Late-run sockeye salmon

KRAA will monitor the smolt migration at Spiridon Lake. Migrating smolt will be enumerated and sampled for age, weight, and length. Data collected is used to evaluate survivals. KRAA will also collect otoliths from fish returning to Telrod Cove. Otoliths will be analyzed for hatchery thermal marks. Data collected will be used to evaluate hatchery contribution to the common property harvest as well as contribution from net-pen reared fish.

5.0 Citations

Schrof, S. T., and S. G. Honnold. 2003. Salmon enhancement, rehabilitation, evaluation, and monitoring efforts conducted in the Kodiak Management Area through 2001. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K03-41, Kodiak. http://www.adfg.alaska.gov/FedAidPDFs/rir.4k.2003.41.pdf

Schrof, S. T., S. G. Honnold, C. J. Hick, and J. A. Wadle. 2000. A summary of salmon enhancement, rehabilitation, evaluation, and monitoring efforts conducted in the Kodiak management area through 1998. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K00-57, Kodiak. http://www.adfg.alaska.gov/FedAidpdfs/RIR.4K.2000.57.pdf

6.0 Approval

I recommend approval of the 2024 Pillar Creek Hatchery Annual Management Plan:

Tina Fairbanks: Executive Director, KRAA 5/2/2024

Tyler Polum: Area Management Biologist, Division of Sport Fish 5/1/2024

James Jackson: Area Management Biologist, Division of Commercial Fisheries 5/1/2024

Jason Dye: Regional Supervisor, Division of Sport Fish 5/1/2024

Nicholas Sagalkin: Regional Supervisor, Division of Commercial Fisheries 4/29/2024

Kevin Schaberg: Regional Research Biologist, Division of Commercial Fisheries 5/6/2024

Lorraine Vercessi: PNP Hatchery Program Coordinator, Div. of Comm. Fisheries 5/7/2024

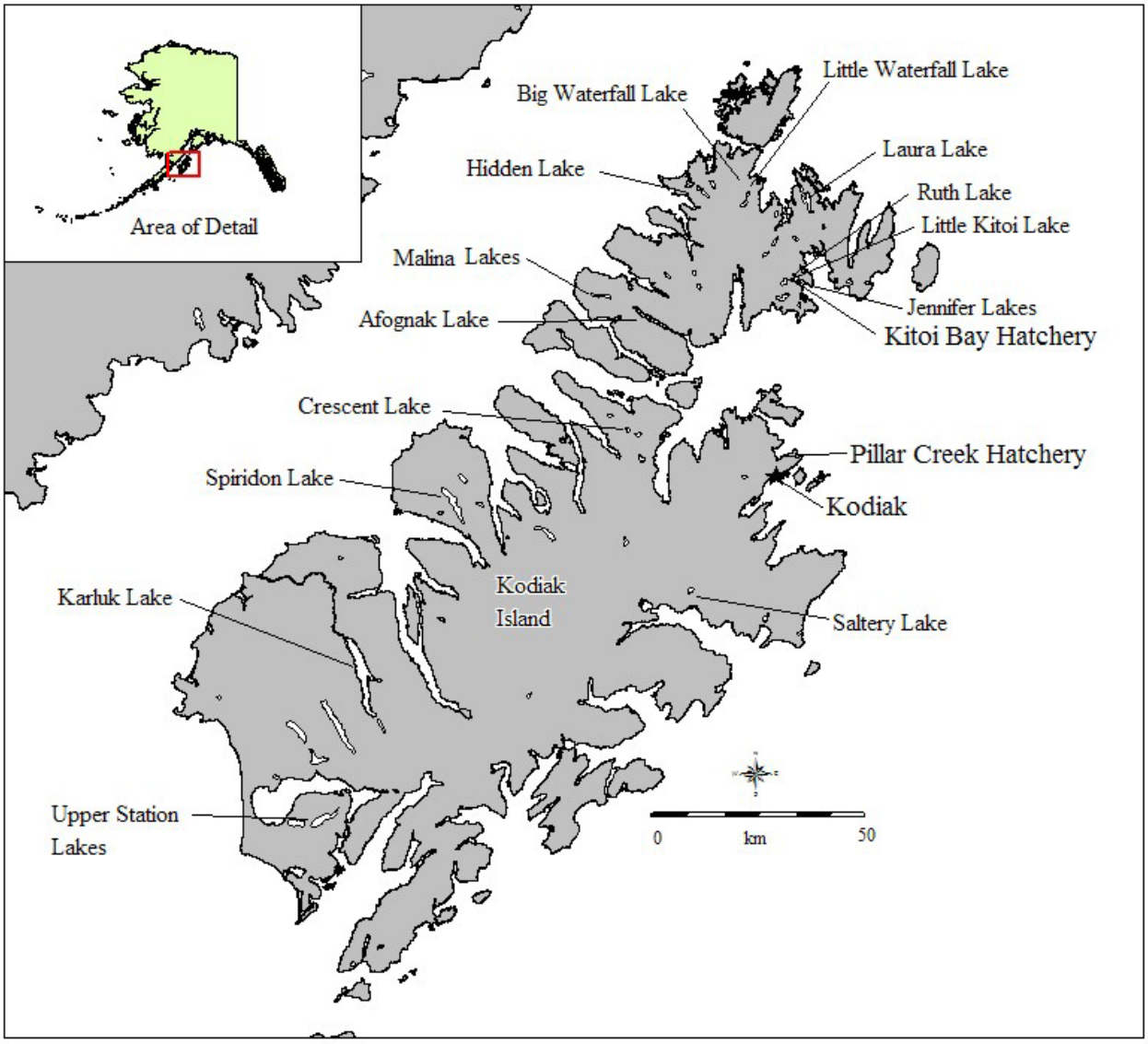
Approval:

The 2024 Pillar Creek Hatchery Annual Management Plan is hereby approved:

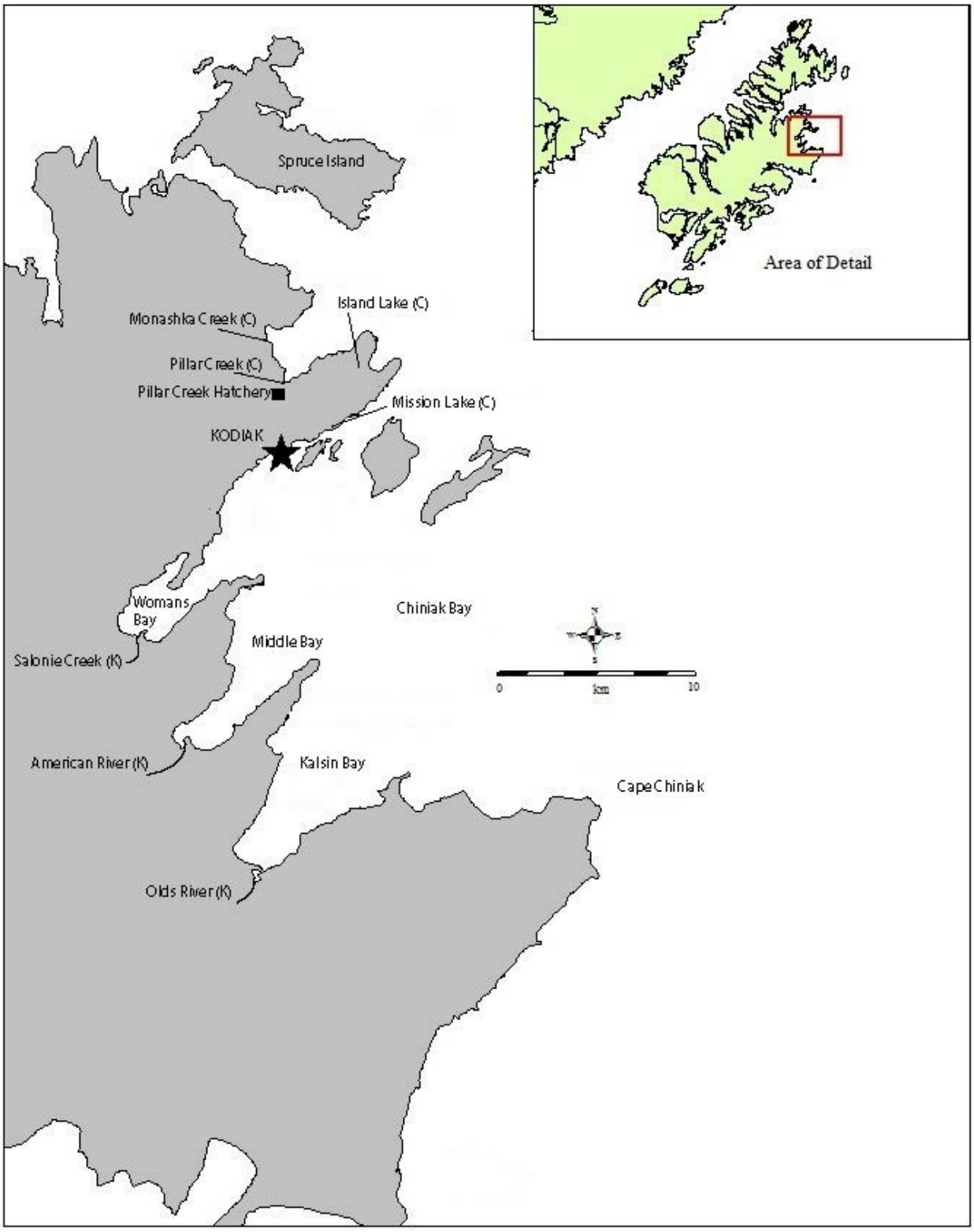
Tom Taube: Deputy Director, Division of Sport Fish 5/14/2024

Forrest Bowers: Operations Manager, Division of Commercial Fisheries 5/22/2024

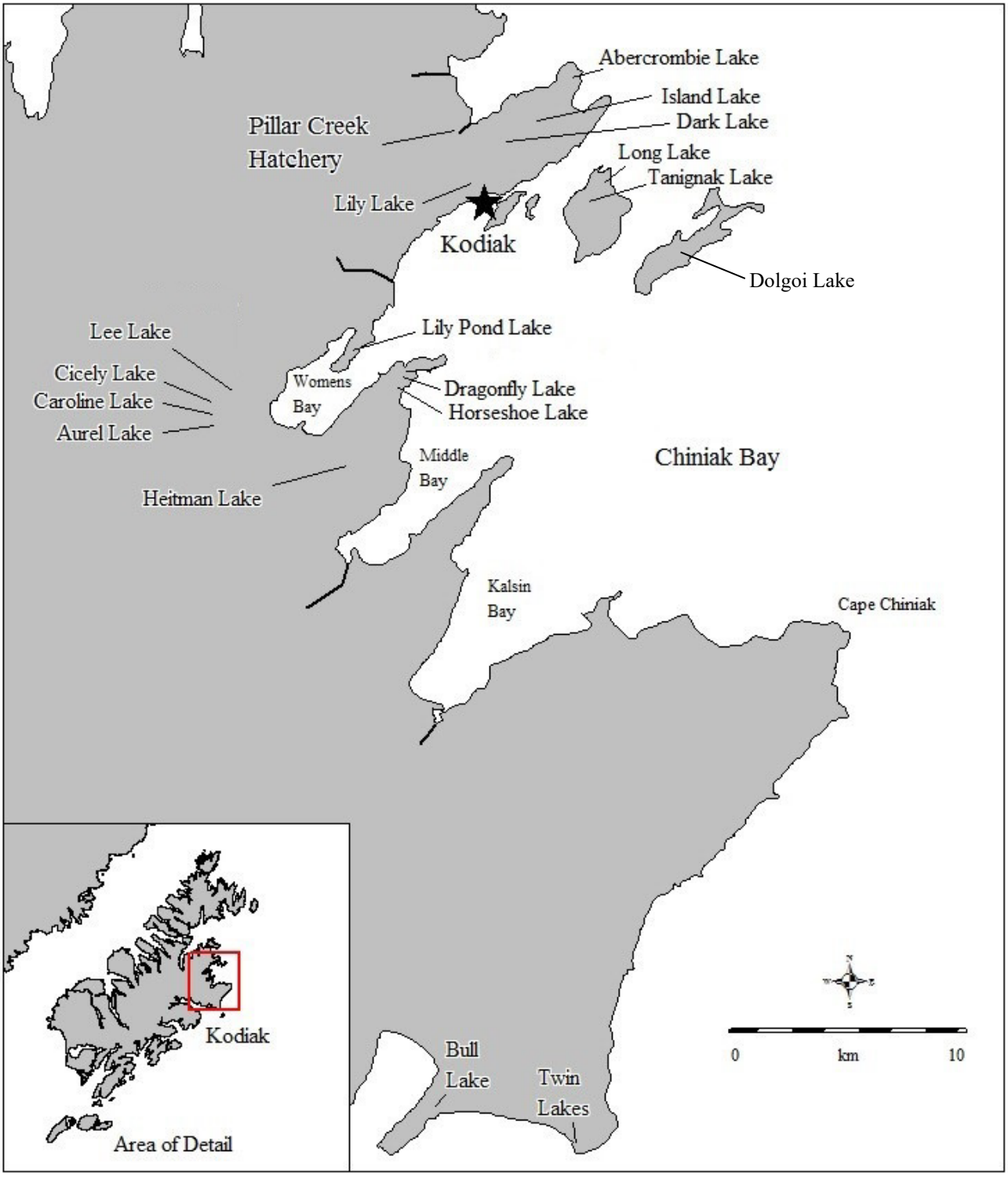
APPENDIX A. MAPS



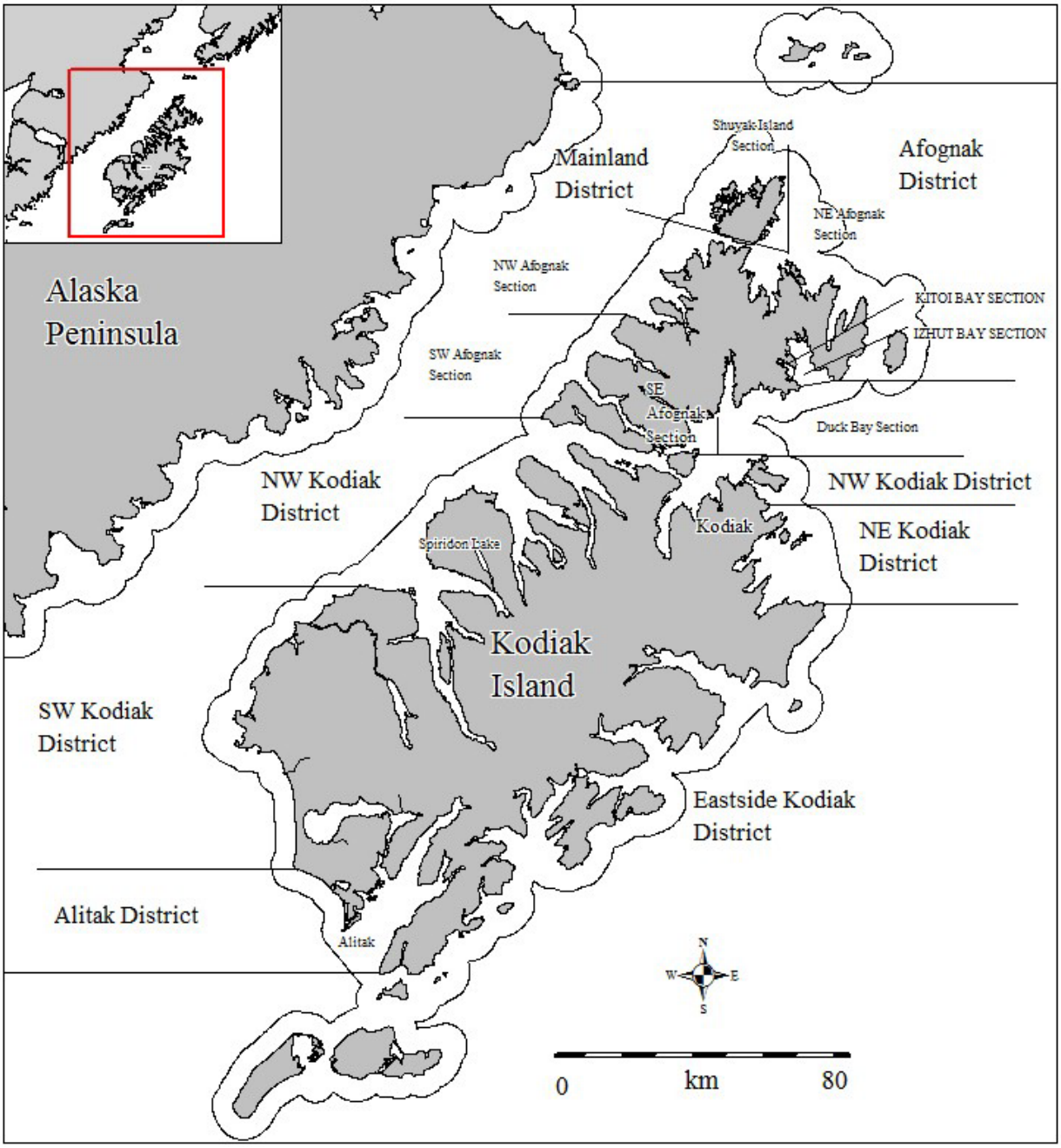
Appendix A1.–Locations of past and present sockeye salmon fishery enhancement and rehabilitation projects, and current egg-take sites on Kodiak and Afognak Islands.



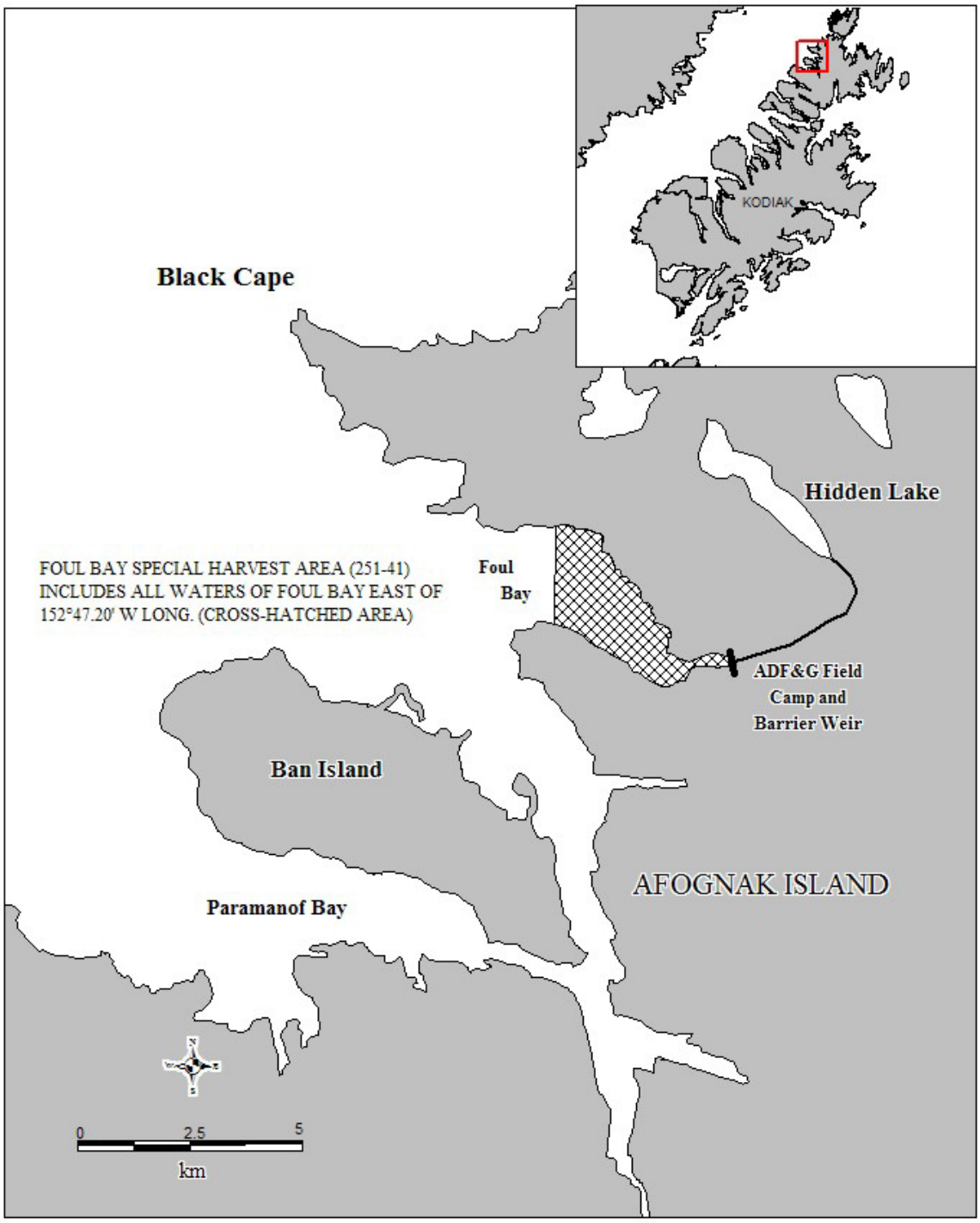
Appendix A2.–Locations of Kodiak Island road-system lakes and rivers that are stocked with coho (C) and king (K) salmon.



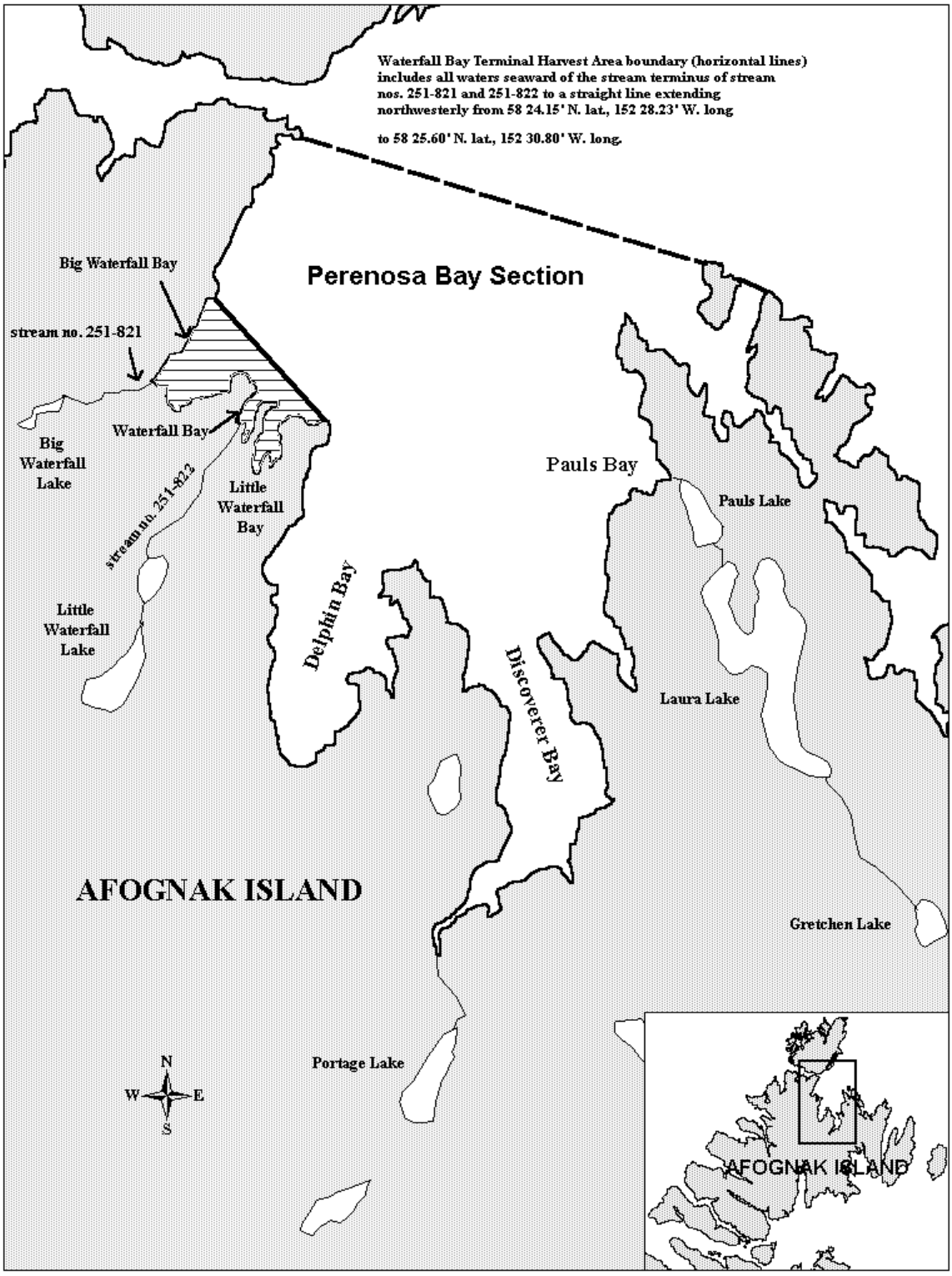
Appendix A3.–Locations of Kodiak Island road-system lakes that are stocked with rainbow trout.



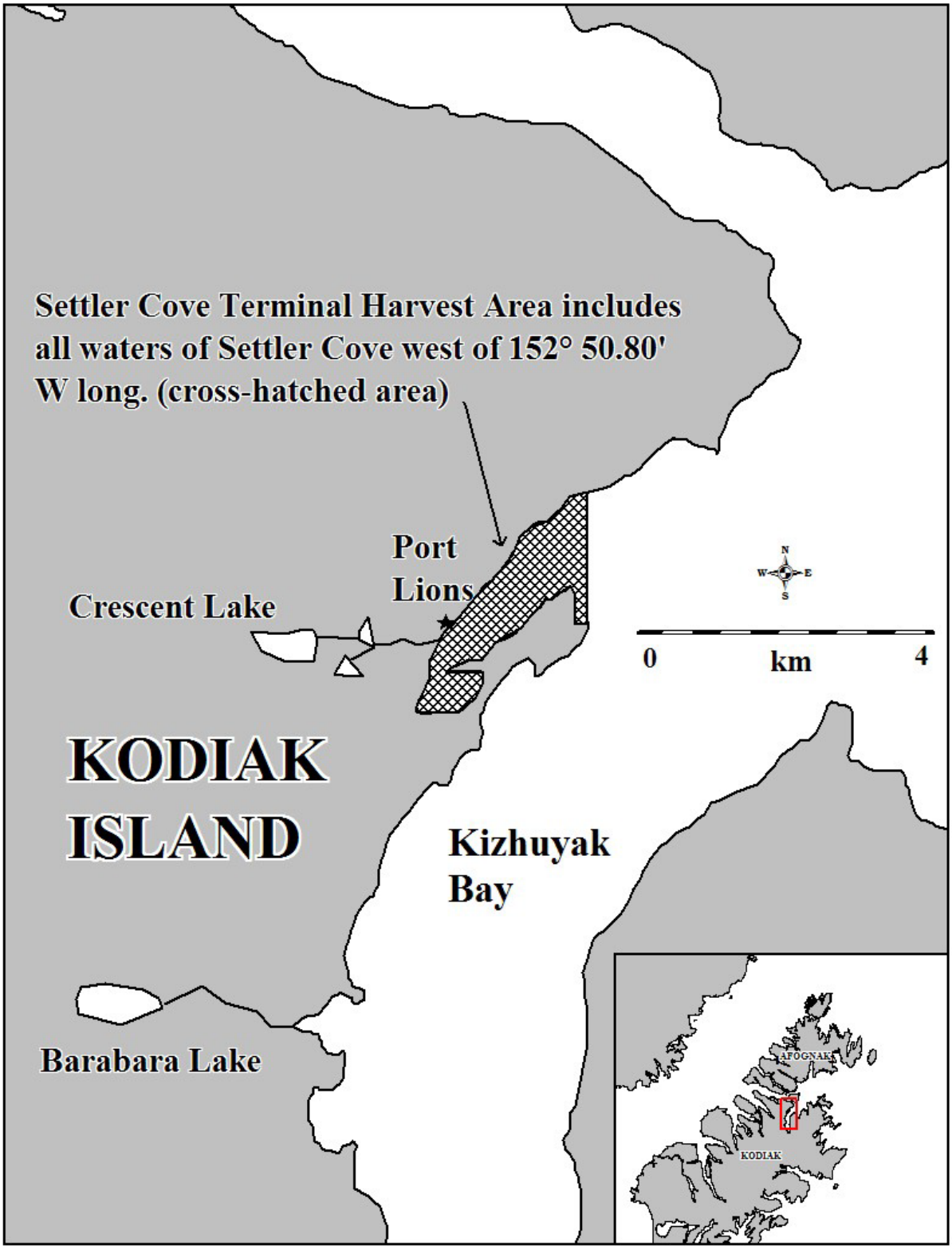
Appendix A4.–Map of the Kodiak Management Area depicting commercial fishing districts and selected sections.



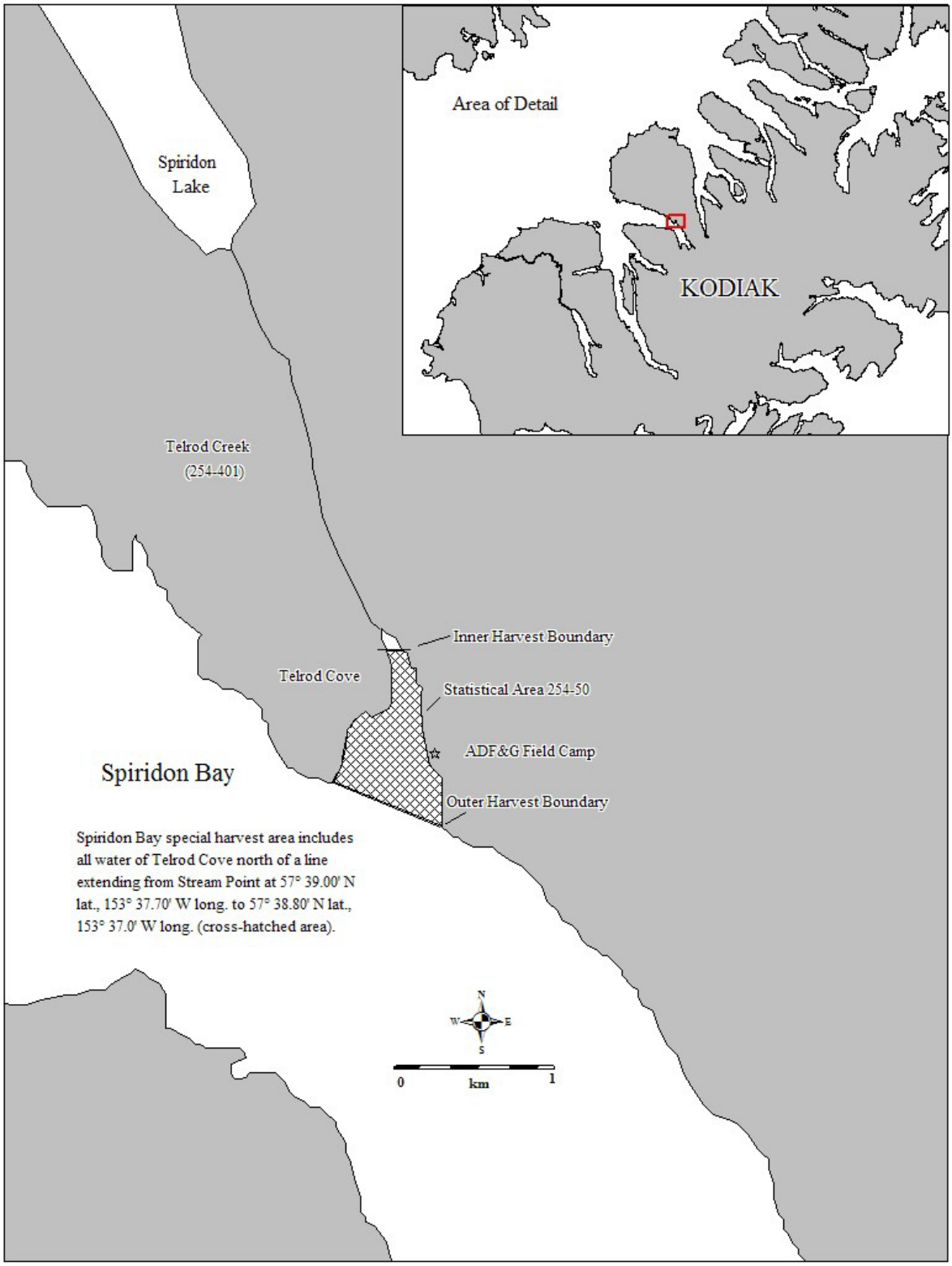
Appendix A5.–Location of the Foul Bay Special Harvest Area, and former locations of the ADF&G field camp and fish weir at Hidden Creek.



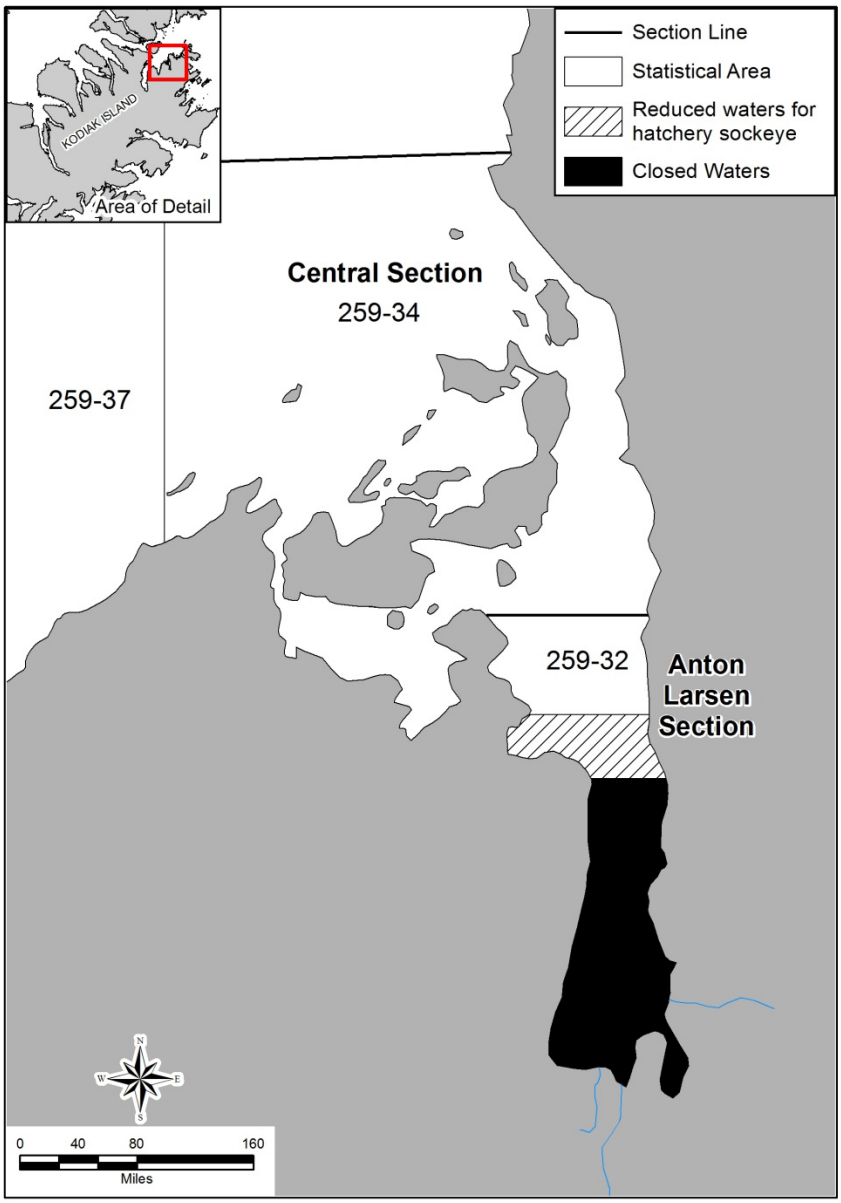
Appendix A6.–Waterfall Bay (Little and Big Waterfall lakes) Special Harvest Area, Pauls Bay system (Pauls and Laura lakes), and the Pauls Bay Section in Perenosa Bay.



Appendix A7.–Settler Cove (Crescent Lake) Terminal Harvest Area boundaries in Kizhuyak Bay.



Appendix A8.–Spiridon Bay (Telrod Cove) Special Harvest Area boundaries, and fishery monitoring camp location in Telrod Cove.



Appendix A9.–Anton Larsen Bay Special Harvest Area boundaries

APPENDIX B. PILLAR CREEK HATCHERY HISTORIC PRODUCTION TABLES

Appendix B1.–Pillar Creek Hatchery sockeye salmon egg takes at Afognak Lake, 1991–2023.

Brood year	Adult salmon	Green eggs (millions)	Number stocked	Year stocked	Stocking location
1991	2,076	2.6	260,000	1992	Hidden Lake
			399,000	1992	Crescent Lake
			493,000	1992	Little Waterfall Lake
			96,000	1992	Big Waterfall Lake
			464,000	1992	Afognak Lake
			182,000	1992	Little Kitoi Bay
1992	1,890	2.7	554,600	1993	Hidden Lake
			202,000	1993	Crescent Lake
			205,000	1993	Little Waterfall Lake
1993	2,169	3.4	250,000	1994	Hidden Lake
			314,000	1994	Crescent Lake
			150,000	1994	Little Waterfall Lake
			183,000	1994	Little Kitoi Lake
			311,000	1994	Afognak Lake
			293,000	1994	Little Kitoi Bay
			3,500	1995	Little Kitoi Lake
			97,800	1995	Little Waterfall Lake
1994	1,190	1.6	98,650	1995	Hidden Lake
			90,200	1995	Crescent Lake
			100,000	1995	Little Waterfall Lake
			112,900	1995	Little Kitoi Lake
1995	1,440	2.2	390,800	1996	Hidden Lake
			427,000	1996	Crescent Lake
			82,300	1996	Little Waterfall Lake
			146,000	1996	Sorg Lake
			50,600	1996	Little Kitoi Lake
			528,000	1996	Afognak Lake
1996	1,700	2.2	455,200	1997	Hidden Lake
			432,000	1997	Crescent Lake
			246,800	1997	Little Waterfall Lake
			125,800	1997	Little Kitoi Lake
			328,300	1997	Afognak Lake
1997	1,600	2.4	340,400	1998	Hidden Lake
			571,000	1998	Crescent Lake
			237,300	1998	Little Waterfall Lake
			422,700	1998	Afognak Lake
1998	1,060	1.6	310,000	1999	Hidden Lake
			273,000	1999	Little Waterfall Lake
			42,000	1999	Big Waterfall Lake
			371,700	1999	Crescent Lake

-continued-

Brood year	Adult salmon	Green eggs (millions)	Number stocked	Year stocked	Stocking location
1999	1,350	1.8	504,400	2000	Hidden Lake
			358,800	2000	Little Waterfall Lake
			124,400	2000	Big Waterfall Lake
			206,000	2000	Crescent Lake
2000	1,420	2.1	315,500	2001	Hidden Lake
			310,000	2001	Little Waterfall Lake
			224,300	2001	Big Waterfall Lake
			331,500	2001	Crescent Lake
2001	290	0.4	51,600	2002	Hidden Lake
			46,100	2002	Little Waterfall Lake
			44,300	2002	Big Waterfall Lake
			33,600	2002	Crescent Lake
2002	180	0.3	31,000	2003	Hidden Lake
			72,500	2003	Little Waterfall Lake
			0	2003	Big Waterfall Lake
			36,500	2003	Crescent Lake
2003	268	0.4	70,700	2004	Hidden Lake
			32,100	2004	Little Waterfall Lake
			0	2004	Big Waterfall Lake
			22,600	2004	Crescent Lake
2004[a]	0	0	0	2005	
2005[b]	1,296	1.3	421,700	2006	Hidden Lake
			0	2006	Little Waterfall Lake
			238,000	2006	Crescent Lake
2006	1,445	1.7	500,300	2007	Hidden Lake
			249,500	2007	Little Waterfall Lake
			100,000	2007	Big Waterfall Lake
			309,000	2007	Crescent Lake
2007	1,037	1.3	353,800	2008	Hidden Lake
			252,400	2008	Little Waterfall Lake
			46,600	2008	Big Waterfall Lake
			345,200	2008	Crescent Lake
2008	822	1.0	254,600	2009	Hidden Lake
			162,400	2009	Little Waterfall Lake
			59,500	2009	Big Waterfall Lake
			202,900	2009	Crescent Lake
2009	540	0.7	334,800	2010	Hidden Lake
			0	2010	Little Waterfall Lake
			45,400	2010	Big Waterfall Lake
			117,700	2010	Crescent Lake

-continued-

Brood Year	Adult salmon	Green eggs (millions)	Number stocked	Year stocked	Stocking location
2010	434	0.6	245,000	2011	Hidden Lake
			45,000	2011	Little Waterfall Lake
			0	2011	Big Waterfall Lake
			140,000	2011	Crescent Lake
2011	605	0.6	279,465	2012	Hidden Lake
			0	2012	Little Waterfall Lake
			0	2012	Big Waterfall Lake
			122,450	2012	Crescent Lake
2012	407	0.6	274,900	2013	Hidden Lake
			0	2013	Little Waterfall Lake
			0	2013	Big Waterfall Lake
			187,400	2013	Crescent Lake
2013	407	0.6	200,000	2014	Hidden Lake
			60,000	2014	Little Waterfall Lake
			0	2014	Big Waterfall Lake
			140,000	2014	Crescent Lake
2014	641	0.5	178,271	2015	Hidden Lake
			44,703	2015	Little Waterfall Lake
			54,660	2015	Big Waterfall Lake
			0	2015	Crescent Lake
2015	1,371	1.0	99,969	2016	Hidden Lake
			0	2016	Little Waterfall Lake
			0	2016	Big Waterfall Lake
			0	2016	Crescent Lake
2016	708	0.75	214,883	2017	Hidden Lake
			0	2017	Little Waterfall Lake
			0	2017	Big Waterfall Lake
			132,176	2017	Crescent Lake
2017	710	0.82	204,300	2018	Hidden Lake
			75,000	2018	Little Waterfall Lake
			50,000	2018	Big Waterfall Lake
			101,500	2018	Crescent Lake
2018	0	0	0	2019	No Releases
2019[c]	650	0.553	0	2020	No Releases
2020	769	0.7	278,700	2021	Hidden Lake
			0	2021	Little Waterfall Lake
			0	2021	Big Waterfall Lake
			105,200	2021	Crescent Lake

-continued-

Brood Year	Adult salmon	Green eggs (millions)	Number stocked	Year stocked	Stocking location
2021	558	0.753	341,636	2022	Hidden Lake
			0	2022	Little Waterfall Lake
			0	2022	Big Waterfall Lake
			205,887	2022	Crescent Lake
2022	722	0.559	229,307	2023	Hidden Lake
			0	2023	Little Waterfall Lake
			0	2023	Big Waterfall Lake
			84,562	2023	Crescent Lake
2023	743	0.729	320,000[d]	2024	Hidden Lake
			50,000[d]	2024	Little Waterfall Lake
			50,000[d]	2024	Big Waterfall Lake
			80,000[d]	2024	Crescent Lake

[a] No egg take occurred at Afognak Lake in 2004. Malina Lake was utilized as an alternative broodstock for early-run sockeye salmon stocking projects because adult returns to Afognak Lake had been depressed since 2001.

[b] Afognak Lake was one of two brood sources utilized for the 2005 early-run sockeye salmon egg take; Malina Lake sockeye salmon were also utilized. A total of 1,917,609 early-run sockeye salmon eggs were taken from the two brood sources in 2005.

[c] Incubation water temps surpassed 17°C and all BY19 eggs perished.

[d] Stocking figures are projected.

Appendix B2.–Pillar Creek Hatchery sockeye salmon egg takes at Saltery Lake, 1994–2023.

Brood year	Adult salmon	Green eggs (millions)	Hatchery[a]	Number stocked	Year stocked	Stocking location
1994	4,238	7.60	PCH	4,599,000	1995	Spiridon Lake
1995	122	0.20	PCH	150,000	1996	Ruth Lake
1996	103	0.20	PCH	147,000	1997	Ruth Lake
1997	2,700	4.00	PCH	3,340,000	1998	Spiridon Lake
			PCH	100,000	1998	Ruth Lake
			KBH	106,700	1999	Little Kitoi Lake
1998	2,560	4.30	PCH	3,564,000	1999	Spiridon Lake
			PCH	66,500	1999	Ruth Lake
			KBH	98,700	1999	Little Kitoi Lake
			KBH	74,500	2000	Little Kitoi Lake
			KBH	23,800	2000	Little Kitoi Bay
1999	4,318	6.80	PCH	4,397,100	2000	Spiridon Lake
			PCH	78,700	2000	Ruth Lake
			KBH	154,000	2000	Little Kitoi Lake
2000	2,582	4.80	PCH	1,700,600	2001	Spiridon Lake
			PCH	0	2001	Ruth Lake
			KBH	282,100	2001	Little Kitoi Lake
2001	845	1.57	PCH	1,182,000	2002	Spiridon Lake
			PCH	0	2002	Ruth Lake
			KBH	212,400	2002	Little Kitoi Lake
2002	2,000	3.30	PCH	1,417,500	2003	Spiridon Lake
			PCH	0	2003	Ruth Lake
			KBH	102,800	2003	Little Kitoi Lake
			KBH	193,600	2004	Little Kitoi Lake
2003	4,175	5.96	PCH	2,800,000	2004	Spiridon Lake
			PCH	111,400	2004	Ruth Lake
			PCH	0	2004	Jennifer Lake
			PCH	97,400	2004	Little Kitoi Lake
			KBH	20,700	2004	Little Kitoi Lake
			KBH	280,000	2005	Little Kitoi Lake
2004	4,079	4.99	PCH	1,380,000	2005	Spiridon Lake
			PCH	35,000	2005	Ruth Lake
			PCH	0	2005	Jennifer Lake
			PCH	56,900	2005	Little Kitoi Lake
			KBH	20,000	2005	Little Kitoi Lake
			KBH	380,000	2006	Little Kitoi Lake

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Brood year	Adult salmon	Green eggs (millions)	Hatchery[a]	Number stocked	Year stocked	Stocking location
2005	5,422	6.39	PCH	3,196,500	2006	Spiridon Lake
			PCH	46,800	2006	Ruth Lake
			PCH	22,900	2006	Jennifer Lake
			PCH	0	2006	Little Kitoi Lake
			KBH	206,900	2006	Little Kitoi Lake
			KBH	404,000	2007	Little Kitoi Lake
2006	3,537	4.41	PCH	1,810,100	2007	Spiridon Lake
			PCH	72,600	2007	Ruth Lake
			PCH	342,300	2007	Jennifer Lake
			PCH		2007	Little Kitoi Lake
			KBH	133,500	2007	Little Kitoi Lake
			KBH	415,000	2008	Little Kitoi Lake
2007	1,818	2.19	PCH	1,049,800	2008	Spiridon Lake
			PCH	0	2008	Ruth Lake
			PCH	0	2008	Jennifer Lake
			PCH	0	2008	Little Kitoi Lake
			KBH	116,500	2008	Little Kitoi Lake
			KBH	417,800	2009	Little Kitoi Lake
2008	1,799	2.39	PCH	1,475,160	2009	Spiridon Lake
			PCH	0	2009	Ruth Lake
			PCH	0	2009	Jennifer Lake
			PCH	0	2009	Little Kitoi Lake
			KBH	100,400	2009	Little Kitoi Lake
			KBH	393,000	2010	Little Kitoi Lake
2009[b]	3,123	3.86	PCH	2,846,500	2010	Spiridon Lake
			PCH	0	2010	Ruth Lake
			PCH	0	2010	Jennifer Lake
			PCH	0	2010	Little Kitoi Lake
			KBH	132,786	2010	Little Kitoi Lake
			KBH	400,000	2011	Little Kitoi Lake
2010[b]	2,707	3.25	PCH	2,000,000	2011	Spiridon Lake
			PCH	35,000	2011	Ruth Lake
			PCH	80,000	2011	Jennifer Lake
			PCH	0	2011	Little Kitoi Lake
			KBH	100,000	2011	Little Kitoi Lake
			KBH	400,000	2012	Little Kitoi Lake

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Brood year	Adult salmon	Green eggs (millions)	Hatchery[a]	Number stocked	Year stocked	Stocking location
2011[b]	2,965	3.74	PCH	1,836,000	2012	Spiridon Lake
			PCH	0	2012	Ruth Lake
			PCH	0	2012	Jennifer Lake
			KBH	142,717	2012	Little Kitoi Lake
			KBH	412,472	2013	Little Kitoi Lake
			PCH	648,350	2013	Telrod Cove
2012[b]	2,843	3.74	PCH	2,101,700	2013	Spiridon Lake
			PCH	0	2013	Ruth Lake
			PCH	0	2013	Jennifer Lake
			PCH	100,000	2014	Ouzinkie Village
			PCH	180,000	2014	Anton Larsen Bay
			PCH	600,000	2014	Telrod Cove
2013[b]	3,758	4.56	PCH	2,200,000	2014	Spiridon Lake
			PCH	55,000	2014	Ruth Lake
			PCH	55,000	2014	Jennifer Lake
			PCH	98,000	2015	Ouzinkie Village
			PCH	218,811	2015	Anton Larsen Bay
			PCH	631,281	2015	Telrod Cove
2014	2,725	3.22	PCH	2,249,901	2015	Spiridon Lake
			PCH	45,000	2015	Ruth Lake
			PCH	95,000	2015	Jennifer Lake
			PCH	650,000	2016	Telrod Cove
2015	2,548	3.41	PCH	2,276,878	2016	Spiridon Lake
			PCH	62,000	2016	Ruth Lake
			PCH	97,000	2016	Jennifer Lake
			PCH	395,000	2017	Telrod Cove
2016	3,490	4.14[d]	PCH	2,118,152	2017	Spiridon Lake
			PCH	65,073	2017	Ruth Lake
			PCH	92,000	2017	Jennifer Lake
			PCH	450,000	2018	Telrod Cove
2017	4,097	5.39[e]	PCH	3,252,800	2018	Spiridon Lake
			PCH	74,500	2018	Ruth Lake
			PCH	152,000	2018	Jennifer Lake
			PCH	546,000	2019	Telrod Cove
2018	3,546	4.78[f]	PCH	3,250,000	2019	Spiridon Lake
			PCH	25,000	2019	Ruth Lake
			PCH	80,000	2019	Jennifer Lake
			PCH	340,000	2020	Telrod Cove

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Brood year	Adult salmon	Green eggs (millions)	Hatchery[a]	Number stocked	Year stocked	Stocking location
2019	1,400	1.91	PCH	1,085,000	2020	Spiridon Lake
			PCH	25,000	2020	Ruth Lake
			PCH	90,000	2020	Jennifer Lakes
			PCH	440,500	2021	Telrod Cove
2020	2350	3.0	PCH	2,020,117	2021	Spiridon Lake
			PCH	21,003	2021	Ruth Lake
			PCH	74,810	2021	Jennifer Lakes
			PCH	419,151	2022	Telrod Cove
2021	2,999	3.44	PCH	1,992,241	2022	Spiridon Lake
			PCH	6,079	2022	Ruth Lake
			PCH	50,000	2022	Jennifer Lake
			PCH	276,912	2023	Telrod Cove
2022	3,387	3.63[g]	PCH	2,701,417	2023	Spiridon Lake
			PCH	22,749	2023	Ruth Lake
			PCH	75,460	2023	Jennifer Lakes
			PCH	475,000	2024[c]	Telrod Cove
2023	3,232	4.52[h]	PCH	2,500,000	2024[c]	Spiridon Lake
			PCH	14,000	2024[c]	Ruth Lake
			PCH	45,000	2024[c]	Jennifer Lakes
			PCH	450,000	2025[c]	Telrod Cove

[a] Pillar Creek Hatchery (PCH), Kitoi Bay Hatchery (KBH).

[b] From 2009 through 2013, late-run sockeye salmon egg takes were conducted at Saltery and Little Kitoi lakes.

[c] Stocking figures for 2024 and 2025 are projected.

[d] Additional eggs collected for KBH. Approximately 1.1 million of the 4.14 million transferred to KBH.

[e] Additional eggs collected for KBH. Approximately 856,000 of the 5.39 million transferred to KBH.

[f] Additional eggs collected for KBH. Approximately 739,300 of the 4.78 million transferred to KBH.

[g] Additional eggs collected for KBH. Approximately 775,000 of the 3.63 million transferred to KBH.

[h] Additional eggs collected for KBH. Approximately 847,000 of the 4.52 million transferred to KBH.

Appendix B3.–Sockeye salmon egg takes at Little Kitoi Lake, 1992–2012.

Brood year	Adult salmon	Green eggs (millions)	Stock of origin	Hatchery[a]	Number stocked	Year stocked	Stocking location
1992	1,011	0.59	Upper Station	KBH	0	1993	Little Kitoi Bay
1993	1,050	1.10	Upper Station	KBH	880,000	1995	Little Kitoi Bay
1994	600	1.50	Upper Station	KBH	150,000	1995	Little Kitoi Lake
					300,000	1995	Jennifer Lake
					880,000	1996	Little Kitoi Bay
1995	155	0.19	Upper Station	KBH	150,000	1996	Little Kitoi Lake
1996	1,210	1.20	Upper Station	KBH	150,000	1997	Little Kitoi Lake
					580,000	1998	Little Kitoi Bay
1997b	0	0.00	Upper Station	PCH	0	1998	Little Kitoi Lake
					0	1998	Spiridon Lake
					0	1998	Ruth Lake
					0	1998	Jennifer Lake
					0	1999	Little Kitoi Bay
2004c	0	0.00	Saltery Lake	PCH	0	2005	No egg take
2005c	0	0.00	Saltery Lake	PCH	0	2006	No egg take
2006 c	0	0.00	Saltery Lake	PCH	0	2007	No egg take
2007 c	0	0.00	Saltery Lake	PCH	0	2008	No egg take
2008 c	0	0.00	Saltery Lake	PCH	0	2009	No egg take
2009 c	382	0.68	Saltery Lake	PCH	153,500	2010	Spiridon Lake
				PCH	40,000	2010	Ruth Lake
				PCH	0	2010	Jennifer Lake
				PCH		2010	Little Kitoi Lake
				KBH	0	2010	Little Kitoi Lake
				KBH	0	2011	Little Kitoi Lake
2010	558	0.93	Saltery Lake	PCH	0	2011	Spiridon Lake
				PCH	119,100	2011	Ruth Lake
				PCH	80,000	2011	Jennifer Lake
				PCH	0	2011	Little Kitoi Lake
				PCH	282,000	2012	Telrod Cove
				KBH	0	2011	Little Kitoi Lake
				KBH	0	2012	Little Kitoi Lake

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Brood year	Adult salmon	Green eggs (millions)	Stock of origin	Hatchery[a]	Number stocked	Year stocked	Stocking location
2011	405	0.69	Saltery Lake	PCH	0	2012	Spiridon Lake
				PCH	0	2012	Ruth Lake
				PCH	0	2012	Jennifer Lake
				PCH	0	2012	Little Kitoi Lake
				PCH	0	2013	Telrod Cove
				PCH	95,000	2013	Ouzinkie Village[d]
				PCH	491,700	2013	Anton Larsen Bay[d]
				KBH	0	2012	Little Kitoi Lake
				KBH	0	2013	Little Kitoi Lake
2012	500	0.72	Saltery Lake	PCH	0	2013	Spiridon Lake
				PCH	0	2013	Ruth Lake
				PCH	0	2013	Jennifer Lake
				PCH	0	2013	Little Kitoi Lake
				PCH	0	2014	Telrod Cove
				KBH	21,665	2013	Little Kitoi Lake
				KBH	654,000	2014	Little Kitoi Lake

[a] Pillar Creek Hatchery (PCH), Kitoi Bay Hatchery (KBH).

[b] Little Kitoi Lake was a contingency egg-take location in 1997; the late-run sockeye salmon brood source for KRAA projects was changed from Upper Station to Saltery Lake stock in 1997.

[c] 2004 was the first year that the late-run sockeye salmon return to Little Kitoi Lake was composed exclusively of Saltery Lake origin stock. By 2003, Little Kitoi Lake sockeye salmon was to be considered as the late-run sockeye brood source for PCH stocking projects (KBH BMP). Little Kitoi Lake sockeye salmon escapements from 2004–2008 were not sufficient to support egg-take goals. From 2009–2011, late-run sockeye salmon egg takes were conducted at both Saltery and Little Kitoi Lakes.

[d] These salmon overwintered within Margaret Lake due to water and space restrictions at PCH. Permit alteration request approved in May 2013 for release sites at Ouzinkie and Anton Larsen Bay.

Appendix B4.–Pillar Creek Hatchery coho salmon egg takes, 1991–2023

Brood year	Adult salmon	Number of green eggs	Number stocked	Year stocked	Stocking location
Monashka Creek stock					
1991	25	60,100	52,000	1992	Monashka Creek
1992	6	10,500	9,000	1993	Monashka Creek
Buskin River stock					
1993[a]	78	156,000	136,200	1994	Kodiak Road System lakes[b]
1994	56	98,000	76,140	1995	Kodiak Road System lakes[b]
1995	85	120,000	28,000	1996	Kodiak Road System lakes[b]
1996	65	177,000	148,200	1997	Kodiak Road System lakes[b]
1997	65	153,000	134,500	1998	Kodiak Road System lakes[b]
1998	102	158,000	128,000	1999	Kodiak Road System lakes[b]
1999	40	91,000	63,800	2000	Kodiak Road System lakes[b]
2000	60	112,000	73,400	2001	Kodiak Road System lakes[b]
2001	60	146,000	110,000	2002	Kodiak Road System lakes[b]
2002	29	57,100	48,300	2003	Kodiak Road System lakes[b]
	25	51,000	43,100	2004	Monashka Creek[c]
2003	49	98,500	88,100	2004	Kodiak Road System lakes[b]
	21	43,200	33,500	2005	Monashka Creek[c]
2004	22	36,700	33,900	2005	Kodiak Road System lakes[b]
	32	54,100	48,600	2006	Monashka Creek[c]
2005	39	76,600	33,000	2006	Kodiak Road System lakes[b]
	17	19,800	8,500	2007	Monashka Creek[c]
2006	60	114,500	75,200	2007	Kodiak Road System lakes[b]
	0	0	0	2008	Monashka Creek[c]
2007	56	92,600	88,500	2008	Kodiak Road System lakes[b]
	0	0	0	2009	Monashka Creek[c]
2008	52	91,300	82,700	2009	Kodiak Road System lakes[b]
	0	0	0	2010	Monashka Creek[c]
2009	58	142,500	99,000	2010	Kodiak Road System lakes[b]
	58	143,900	100,000	2011	Monashka and Pillar creeks[c]
2010	56	106,000	89,000	2011	Kodiak Road System lakes[b]
	58	110,000	0	2012	Monashka and Pillar creeks[c]
2011	64	110,000	86,000	2011	Kodiak Road System lakes[b]
	0	0	0	2012	Monashka and Pillar creeks[c]
2012	60	108,250	88,000	2013	Kodiak Road System lakes[b]
		0	0	2014	Monashka and Pillar creeks[c]
2013	69	129,500	88,500	2014	Kodiak Road System lakes[b]
		0	0	2015	Monashka and Pillar creeks[c]
2014	124	311,000	50,000	2016	Island and Mission lakes
			239,000	2016	Monashka and Pillar creeks

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Brood year	Adult salmon	Number of green eggs	Number stocked	Year stocked	Stocking location
2015	124	262,500	70,200	2017	Island and Mission lakes
			152,700	2017	Monashka and Pillar creeks
Big Kitoi Creek stock[e]					
2009	129	34,800	32,400	2010	Katmai Lake
2010	130	35,000	32,500	2011	Katmai Lake
2011	130	35,000	32,500	2012	Katmai Lake
2012	130	36,800	35,000	2013	Katmai Lake
Pillar Creek Stock					
2016[f]	126	92,000	0	2018	Island and Mission lakes
			89,400	2018	Monashka and Pillar creeks
2017[g]	133	262,500	50,412	2019	Island and Mission lakes
			82,325	2019	Monashka and Pillar creeks
2018	121	255,000	50,412	2020	Island and Mission lakes
			184,582	2020	Monashka and Pillar creeks
2019	84	240,000	50,777	2021	Island and Mission lakes
			143,062	2021	Monashka and Pillar creeks
2020	113	220,500	50,749	2022	Island and Mission lakes
			172,090	2022	Monashka and Pillar creeks
2021	115	220,500	50,422	2023	Island and Mission lakes
			121,959	2023	Monashka and Pillar creeks
2022	130	277,000	50,000	2024[d]	Island and Mission lakes
			148,000	2024[d]	Monashka and Pillar creeks
2023	137	296,000	50,000	2025[d]	Island and Mission lakes
			175,000	2025[d]	Monashka and Pillar Creeks

[a] Prior to 1993, KBH supplied juvenile coho salmon for stocking the road system lakes. Buskin River coho salmon green egg figures do not include small numbers of eggs dedicated to Kodiak school classroom incubators each year.

[b] Road system lakes include Island, Dark, Mission, Potato Patch, Big (Lily), Mayflower, Southern (on Long Island), Margaret (Boy Scout), Abercrombie (Gertrude), Snag, and Chiniak lakes, and Barry Lagoon.

[c] Smolt releases occur only as rearing space allows. Lower than anticipated king salmon production can make rearing space available for spring coho salmon smolt production. The determination to take eggs for coho smolt is made just prior to the coho salmon egg take, when king egg survival for the brood year has been assessed.

[d] Stocking figures 2024 and 2025 are projected.

[e] Big Kitoi Creek coho salmon eggs were taken at KBH and transferred to PCH at the eyed stage.

[f] Pillar Creek coho were used since Buskin River did not meet escapement goal.

[g] Pillar Creek became the primary egg take site; Buskin River designated at back up.

Appendix B5.–Pillar Creek Hatchery king salmon egg takes, 2000–2023.

Brood year[a]	Adult salmon	Number of green eggs	Number stocked	Year stocked	Stocking location
2000	48	124,818	60,400	2002	Monashka Creek
2001	34	86,120	34,000	2003	Monashka Creek
2002	59	147,000	12,300	2004	Monashka Creek
2003	70	172,300	72,150	2005	Monashka Creek
2004	76	181,600	29,000	2006	Monashka Creek
2005	92	208,700	46,800	2007	Monashka Creek
			28,200	2007	American River
			28,300	2007	Olds River
2006	123	357,100	113,100	2007	Island Lake
			10,000	2007	Abercrombie Lake
			60,000	2008	Monashka Creek
			44,250	2008	American River
			44,250	2008	Olds River
2007	83	208,700	79,300	2009	Monashka Creek
			51,500	2009	American River
			54,100	2009	Olds River
2008	139	267,600	83,500	2010	Monashka Creek
			75,750	2010	American River
			75,750	2010	Olds River
2009	104	66,800	61,000	2011	Monashka Creek
			0	2011	American River
			0	2011	Olds River
2010	100	167,300	70,000	2012	Monashka Creek
			31,000	2012	American River
			31,000	2012	Olds River
2011	152	214,900	51,200	2013	Monashka Creek
			50,075	2013	American River
			40,000	2013	Olds River
2012	126	359,100	70,000	2014	Monashka Creek
			70,000	2014	American River
			70,000	2014	Olds River
			62,561	2014	Salonie Creek
2013	160	398,206	73,272	2015	Monashka Creek
			75,272	2015	American River
			75,044	2015	Olds River
			71,042	2015	Salonie Creek

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Brood year[a]	Adult salmon	Number of green eggs	Number stocked	Year stocked	Stocking location
2015	74	118,600	26,250	2017	American River
			26,509	2017	Olds River
			20,518	2017	Salonie Creek
2016	112	169,030	36,600	2018	American River
			45,000		Olds River
			46,000		Salonie Creek
2017[b]	45	71,584	0	2019	Not Applicable
2018[c]	42	92,300	0	2020	American River
			39,098		Olds River
			39,964		Salonie Creek
2019	22	49,560	26,782	2021	Salonie Creek
2020	4	12,000	8,148	2022	Salonie Creek
2021	30	62,000	27,001	2023	Salonie Creek
2022	4	8,200	4,000	2024[c]	Salonie Creek
2023	47	110,000	86,000	2025[c]	TBD

[a] King salmon egg takes for brood years 2000–2004 were conducted at the Karluk River; 2005 was the first year that adult progeny of the king salmon project returned to Monashka Creek. Since 2005, egg takes have been conducted at Monashka Creek utilizing a portion of the return as brood.

[b] Production lost due to unintentional introduction of formalin during incubation.

[c] Releases are estimates.

Appendix B6.–Pillar Creek Hatchery sockeye salmon egg takes at Malina Lake, 1991–2005.

Brood year	Adult salmon	Green eggs (millions)	Number stocked	Year stocked	Stocking location
1991	120	0.141	85,000	1992	Malina Lake
1992	1,005	1.410	318,000	1993	Malina Lake
1993	644	0.930	547,000	1994	Malina Lake
1994	350	0.475	53,500	1995	Malina Lake
1995	400	0.590	426,300	1996	Malina Lake
1996	454	0.791	390,400	1997	Malina Lake
1997	470	0.800	350,500	1998	Malina Lake
1998	550	0.710	406,000	1999	Malina Lake
2004[a]	2,450	1.582	188,300	2005	Hidden Lake
			78,700	2005	Little Waterfall Lake
			49,100	2005	Big Waterfall Lake
			54,000	2005	Crescent Lake
2005[b,c]	727	0.647	184,600	2006	Little Waterfall Lake
			75,100	2006	Big Waterfall Lake
			80,800	2006	Malina Lake

[a] Malina Lake sockeye salmon were utilized as an alternative broodstock for early-run sockeye fisheries enhancement projects in 2004. Afognak Lake is the primary early-run sockeye salmon broodstock, but the low 2004 Afognak Lake escapement precluded conducting an egg take.

[b] Malina and Afognak lake brood sources were utilized for the 2005 early-run sockeye salmon egg take. 1.918 million early-run sockeye salmon eggs were taken from the two brood sources in 2005.

[c] No egg take occurred at Malina Lake in 2006 through 2012. Since 2005, Afognak Lake escapement has been sufficient to allow the full egg-take goal to be achieved.

APPENDIX C. Assumptions and Return Estimates

Appendix C1.–Salmon survival (stocking to adult return) and age assumptions used to estimate returns for Pillar Creek Hatchery.

		Stocking				Age-at-return proportions (%)								
Species	Stock	Location	Life stage[a]	Size (g)	Stocking to adult return	1.1	1.2	2.1	1.3	2.2	1.4	2.3	2.4	1.5
Sockeye	Afognak	Hidden Lake[b]	F	0.4	4.3%	0.02	0.61		0.31	0.03		0.02		
		Waterfall[b]	F	0.7	5.2%	0.02	0.6		0.31	0.05		0.01		
		Crescent[c]	F	0.4	4.3%	0.02	0.61		0.31	0.03		0.02		
	Saltery	Spiridon Lake[d]	F	0.4	11.3%	0.01	0.4	0.01	0.34	0.2		0.05		
		Telrod Cove[e]	S	15.0	19.6%	0.02	0.64		0.34		0.06			
Coho	Pillar	Road System	S	15.0	4.4%		1							
Chinook	Kodiak	Road System	S	7.5	1.3%		0.12		0.33		0.55			

[a] F = Fry, FG = fingerling, FPS = fall presmolt, S = smolt, and SPS = spring presmolt.

[b] Survival and age proportion data based on historic harvest and scale pattern analysis.

[c] Due to a lack of freshwater and marine survival, estimate is based on Hidden fry-adult with the historical average adult age composition.

[d] The average smolt-adult survival was used with the BY 98-16 average adult age composition (data gathered through historic harvest and scale pattern analysis).

[e] Based on BY 12–16 smolt-adult survival for Telrod Cove. Age proportion based average age composition (data gathered trough harvest and scale analysis).

[f] Due to a lack of fishery information, an assumed 15% smolt-adult survival estimate was used with assumed Spiridon/Telrod adult age composition.

Appendix C2.–Forecasted runs, broodstock requirements, minimum escapements, cost recovery needs, and potential harvest of salmon returning to systems in 2024 as a result of prior Pillar Creek Hatchery releases.

		Forecasted Return			Broodstock	Minimum	Cost	Potential
Return location	Species	Point	Low	High	required	escapement[a]	recovery	harvest[c]
Spiridon/Telrod	Sockeye	184,000	26,000	342,000	0	0	50,000[b]	134,000
Foul Bay	Sockeye	5,440	4,080	6,800	0	0	0	5,440
Perenosa Bay	Sockeye	0	0	0	0	0	0	0
Crescent Lake	Sockeye	0	0	0	0	0	0	0
Island Lake	Coho	1,400	1,050	1,750	0	0	0	1,400
Mission Lake	Coho	900	675	1,125	0	0	0	900
Monashka Creek	Coho	1,800	1,320	2,250	0	0	0	1,800
Pillar Creek	Coho	3,600	2,700	4,500	200	0	0	3,600

[a] There are no minimum escapement goals for these areas.

[b] Cost Recovery based on 250,000 lb. goal.

[c] Projected harvest is the return point estimate minus broodstock, escapement, and cost recovery needs.

APPENDIX D. PILLAR CREEK HATCHERY CURRENT FISH TRANSPORT PERMITS

Appendix D1.–Pillar Creek Hatchery current fish transport permits (FTPs).

FTP #	Species	Donor stock/ Ancestral stock	Description[a]	Expiration date
06A-0042	sockeye	Afognak Lake/ Afognak Lake	400k fry, 400k fingerlings, or 200k presmolt to Little Waterfall Lake	12/31/24
06A-0044	sockeye	Afognak Lake/ Afognak Lake	500k fry, 500k fingerling, or 500k presmolt to Hidden Lake	12/31/24
06A-0046	sockeye	Afognak Lake/ Afognak Lake	250k fry, 250k fingerling, or 250k presmolt to Big Waterfall Lake	12/31/24
06A-0047	sockeye	Afognak Lake/ Afognak Lake	500k fry, 500k fingerling, or 275k presmolt to Crescent Lake	12/31/24
09A-0044	sockeye	Afognak Lake/ Afognak Lake	egg take of 4.1M at Afognak Lake, incubate PCH	12/31/24
17A-0041	sockeye	Afognak Lake/ Afognak Lake	4.1M egg take at Afognak, incubate KBH, incubate PCH	12/31/26
10A-0116	sockeye	Upper Malina Lake/ Upper Malina Lake	4.1M backup egg take (for Afognak stock) at Malina Lake, incubate at PCH	12/31/24
10A-0117	sockeye	Upper Malina Lake/ Upper Malina Lake	250k fry, 250k fingerling, 250k presmolt to Big Waterfall Lake	12/31/25
10A-0118	sockeye	Upper Malina Lake/ Upper Malina Lake	500k fry, 500k fingerling, or 275k presmolt to Crescent Lake	12/31/25
10A-0119	sockeye	Upper Malina Lake/ Upper Malina Lake	600k fry, 600k fingerling, or 500k presmolt to Hidden Lake	12/31/24
10A-0120	sockeye	Upper Malina Lake/ Upper Malina Lake	400k fry, 400k fingerling, or 350k presmolt to Little Waterfall Lake	12/31/24
17A-0042	sockeye	Upper Malina Lake/ Upper Malina Lake	4.1M egg take at Malina Lake, incubate KBH, transport eyed eggs to PCH, incubate PCH	12/31/26
09A-0052	sockeye	Saltery Lake/ Saltery Lake	11M egg take at Saltery Lake, incubate PCH	12/31/24
10A-0124	sockeye	L Kitoi Lake/ Saltery Lake	11M egg take at Little Kitoi Lake, incubate PCH	12/31/25
10A-0125	sockeye	Saltery Lake/ Saltery Lake	300k fry, 300k fingerlings, or 300k presmolt to Ruth Lake	12/31/25
10A-0126	sockeye	Saltery Lake/ Saltery Lake	7M fry, 7M fingerling, or 1M presmolt to Spiridon Lake	12/31/25
10A-0129	sockeye	Saltery Lake/ Saltery Lake	400k fry, 400k fingerling, or 250k presmolt to Jennifer Lake	12/31/25
18A-0019	sockeye	Saltery Lake/ Saltery Lake	650k smolt to Telrod Cove	12/31/27

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FTP #	Species	Donor stock/ ancestral Stock	Description[a]	Expiration date
19A-0033	coho	PCH/ Buskin River	500k egg take at Pillar Creek, incubate PCH release 350k at Pillar Creek to not exceed 350,000 in combination with releases at Monashka Creek	12/31/33
16A-0025	coho	Buskin Lake/ Buskin River	30,000 smolt from Margaret Lake, release at Island Lake	12/31/25
19A-0034	coho	PCH/ Buskin River	30,000 smolt release at Island Lake	12/31/24
16A-0026	coho	Buskin Lake/ Buskin River	20,000 smolt from Margaret Lake, release at Mission Lake	12/31/25
19A-0035	coho	Buskin Lake/ Buskin River	20,000 smolt release at Mission Lake	12/31/33
24A-0005	coho	PCH/ Buskin River	20,000 smolt release at Mission Lake	12/31/33
19A-0036	coho	Buskin Lake/ Buskin River	170k presmolt to Monashka	12/31/23[b]
24A-0006	coho	PCH/ Buskin River	170k presmolt to Monashka	12/31/33
15A-0043	coho	Buskin Lake/ Buskin River	500k fry from PCH to rear at Margaret Lake	12/31/25
04A-0004	coho	Buskin Lake/ Buskin River	265k egg take at Buskin River, incubate at PCH, release at Pillar Creek	12/31/28
19A-0031[c]	king	Russian River/ Karluk River	450k egg take at Russian Creek to PCH	12/31/28
07A-0017[c]	king	Monashka River/ Karluk River	450k smolt PCH to American River	12/31/26
07A-0020[c]	king	Monashka River/ Karluk River	450k smolt PCH to Olds River	12/31/26
10A-0128	king	Monashka Raceway/ Karluk River	450k juveniles from Monashka satellite rearing site to PCH	12/31/25
10A-0159[c]	king	American River/ Karluk River	450k backup egg take at American River, incubate PCH	12/31/28
10A-0161[c]	king	Olds River/ Karluk River	450k backup egg take Olds River, incubate PCH	12/31/28
14A-0001[c]	king	PCH/ Karluk River	112.5k smolt to Salonie Creek	12/31/28
17A-0019[c]	king	Salonie Creek/ Karluk River	450k backup egg take at Salonie Creek, incubate PCH	12/31/28
21A-0012[c]	king	Monashka River/ Karluk River	450k egg take at Monashka Creek, incubate at PCH, rear and release at Monashka Creek	12/31/26
18A-0016[c]	rainbow trout	WJHSFH/ Swanson River	200k eggs from WJHSFH to PCH; 29k fingerling to category 1 lakes	12/31/28
18A-0017[c]	rainbow trout	WJHSFH/ Swanson River	200k eggs from WJHSFH to PCH; 39k fingerling to category 2 lakes	12/31/28

[a] M denotes million, k denotes thousand.

[b] Application for renewal has been submitted and is being processed.

[c] ADF&G Sport Fish permit.