



**BASIC MANAGEMENT PLAN
Deer Mountain Hatchery
Southern Southeast Regional Aquaculture Association, Inc.**

I. Introduction

Deer Mountain Hatchery (DMH) is located in Ketchikan, Alaska. Site location coordinates are 55°20'35.93"N, 131°38'06.44"W. The hatchery water source is Ketchikan Creek, Alaska Department of Fish and Game (ADF&G) Anadromous Waters Catalog (AWC) number 101-47-10250.

Deer Mountain Hatchery is one of the oldest hatcheries in Alaska and is located near the site of the former Ketchikan Territorial Hatchery that operated from 1925 to 1931. The existing building was built in 1954 by the Ketchikan Chamber of Commerce. The facility was leased to ADF&G for operations. The hatchery was initially involved with rearing steelhead and rainbow trout along with king and coho salmon.

In 1971, the hatchery was closed by the state and reopened soon after with funds appropriated by the legislature for operation of the hatchery by Ketchikan Borough schools and the Ketchikan Pulp Co. In 1977, the Ketchikan Borough and the Economic Development Authority renovated the facility and ADF&G operated DMH as a king and coho hatchery until 1993.

From 1994 through 2013, Ketchikan Tribal Hatchery Corporation (KTHC) operated the facility with ADF&G private nonprofit hatchery permit #37. DMH was permitted for 133,000 Unuk River stock king salmon eggs, 379,700 Reflection Lake stock coho salmon eggs, 8,500 Ketchikan Creek stock steelhead trout, and 43,300 Fort Richardson Hatchery stock rainbow trout.

In 2014, ADF&G permitted the Southern Southeast Regional Aquaculture Association's (SSRAA) Whitman Lake Hatchery (WLH) to begin releasing king salmon in Ketchikan Creek in anticipation of SSRAA assuming operations of DMH. SSRAA intends to operate DMH as a satellite of Whitman Lake Hatchery and as an alternate broodstock site for the Chickamin River stock king salmon program at WLH.

II. Goals

2.1 Production Goals

Permitted capacity for DMH is 600,000 Chickamin River stock king salmon green eggs.

2.2 Broodstock Source

The broodstock source for the DMH production will be king salmon returns to DMH or WLH. The ancestral broodstock source for king salmon production is Chickamin River, ADF&G AWC number 101-71-10040, located at 55.8234N, 130.8866 W.

2.3 Broodstock Development

Whitman Lake Hatchery's broodstock program is developed. Adult king salmon returning to WLH may be used for broodstock.

The first release of WLH/Chickamin River stock king salmon into Ketchikan Creek was in 2015 (brood year 2013). Adults returning to Ketchikan Creek may be used as broodstock.

2.4 Release Numbers and Locations

Permitted species, stocks, associated release sites, and maximum release numbers by life stage:

| Species | Stock | Release Site | Number | Life Stage |
|-------------|-----------------|------------------------------|---------|------------|
| King salmon | Chickamin River | Ketchikan Creek ¹ | 100,000 | smolt |
| King salmon | Chickamin River | Thomas Basin ¹ | 50,000 | smolt |
| King salmon | Chickamin River | Carroll Inlet | 600,000 | smolt |

Note: Maximum numbers are specific to release site; in combination, may not exceed permitted capacity.

¹ Approximately 100,000 smolt may be released in Ketchikan Creek and 50,000 in Thomas Basin, but releases may not exceed 100,000 smolt in combination.

Smolt may be short-term reared in net pens in Thomas Basin and Carroll Inlet prior to release.

2.5 Principal Project Goals

At maximum permitted capacity, DMH will contribute an estimated 15,000 adult king salmon annually to the common property fisheries (commercial, sport, personal use, and subsistence), primarily near Ketchikan and along migratory corridors. Local economic benefit in addition to

common property fisheries is provided through direct employment at the hatchery and indirectly to support industries.

SSRAA plans to conduct tourism operations, community outreach, and education at DMH. SSRAA also plans to construct a new pathology and otolith lab at DMH to enhance fish health monitoring and knowledge of SSRAA commercial fishing contributions.

2.6 Annual Fish Culture Objectives

- 95% survival from green egg to eyed egg stage
- 98% survival eyed egg to emerging fry stage
- 97% survival emerging fry to smolt stage
- Final average smolt weight: 25.0 grams

III. Hatchery Operations

3.1 Water Supply and Distribution

The main water supply to DMH is effluent water from the Ketchikan Public Utilities (KPU) hydroelectric plant, which is supplied by Ketchikan Lakes, Granite Basin, and Fawn Lakes. Water is degassed in the flume and low-pressure water is supplied via an 18-inch diameter iron pipe to the hatchery. Water is distributed to incubation and rearing areas through a series of supply lines.

An auxiliary high-pressure line supplies wash-down and additional indoor rearing water. The auxiliary water line enters the indoor rearing area through the NE corner of the building. Prior to using this water for rearing purposes, it is directed to a second floor degassing column to reduce high nitrogen levels.

3.2 Facility Description

The hatchery is located on Ketchikan Creek in Ketchikan, Alaska. A partial and temporary weir may be installed to divert adult returns from Ketchikan Creek into the fish ladder at DMH. Fish navigate up the ladder into concrete raceways used for adult broodstock holding. The outdoor concrete raceways can also be used for rearing juvenile fish prior to release. The hatchery facility includes other rearing areas with circular tanks, large swede ponds, small swede ponds, indoor raceways, and an area for egg incubation.

3.3 Fish Culture

Egg takes will begin in early August at WLH, which will be the primary egg take location. Adult king salmon returning to Ketchikan Creek may be used as broodstock in case of a broodstock shortfall at WLH. Gametes will be collected using standard procedures, including iodine disinfection. Egg incubation occurs in double-stacked Heath tray units, or other style incubator. Females will be sampled for Bacterial Kidney Disease if designated for broodstock programs, and eggs will be family tracked. During incubation, eggs will be treated for fungus, as necessary.

At the eyed egg stage of development eggs are shocked, picked, inventoried, and reseeded into the incubators.

Emergent fry are ponded into circular tanks or raceways and temporarily reared at WLH until approximately 2 grams. A truck and transport tank transport fry to DMH, in late June or early July. At DMH, fry are reared in swede ponds, raceways, or circular ponds. An oxygen generator may be used during periods of low dissolved oxygen levels, which can occur during August and September. Fry are reared at DMH until released into Ketchikan Creek or transported to a remote release site the following spring. While rearing, fish will be fed a commercial fish feed diet.

IV. Fisheries Management

Operating at full production with a maximum of 600,000 green eggs, assuming a 3% smolt to adult survival rate, the average runs are estimated at 3,000 adult king salmon to Ketchikan Creek and 12,000 adult king salmon to Carroll Inlet.

4.1 Commercial Fisheries

DMH king salmon releases contribute primarily to troll fisheries. The troll catch occurs primarily in District 1, but a small contribution occurs as king salmon migrate back to the hatchery down the outer coast.

King salmon released at DMH will provide a small contribution to the traditional drift gillnet and purse seine fisheries. DMH king salmon have been recovered in the Districts 1, 6, and 8 drift gillnet fisheries, and the Districts 1, 2, and 4 purse seine fisheries.

King salmon released at Carroll Inlet will contribute primarily to traditional troll fisheries, with a small contribution going to traditional drift gillnet and purse seine fisheries.

If a cleanup fishery is required in the Carroll Inlet Special Harvest Area (SHA), return timing and incidental catch of pink and chum salmon will need to be monitored closely to develop a king salmon harvest plan that will effectively protect the wild stock returns.

4.2 Special Harvest Area

The Carroll Inlet SHA is designated as that portion of Carroll Inlet north of the latitude of the southernmost tip of Nigelius Point (located at latitude 55°33.50 N) (Figure 1).

4.3 Sport Fishery

The Ketchikan area king salmon marine sport fishery is managed under regional regulations with exception of the Ketchikan Area Sport Terminal Harvest Area (THA), the Neets Bay THA, and within Thomas Basin. King salmon harvested in the THAs do not count towards the nonresident annual limit. The Ketchikan Area Sport THA opens by regulation from June 1 to July 31 with a bag and possession limit of six king salmon of any size (Figure 2). Thomas Basin is open to sport fishing seaward from the Thomas Basin Bridge to the breakwater with a maximum of two single

hooks; bait is allowed year-round and snagging is prohibited. Since Thomas Basin is within the boundaries of the Ketchikan Area Sport THA, from June 1 to July 31, THA regulations apply. For the rest of the year regional king salmon regulations apply within the basin.

Ketchikan Creek is opened by regulation September 15 through May 31. Gear is limited to a single hook, and bait is prohibited. The regional freshwater regulation prohibiting king salmon fishing applies to Ketchikan Creek. Ketchikan Creek is closed to fishing by regulation from June 1 to September 14 to allow for king salmon broodstock collection at the hatchery. The department may establish regulations by EO to allow for the harvest of hatchery-produced king salmon, which are surplus of broodstock needs. The department may also establish regulations by EO to allow for sport fishing opportunity when DMH is not collecting broodstock.

The current management strategies for the marine and freshwater fisheries will likely remain the same under the proposed production levels for DMH.

4.4 Personal Use Fishery

Ketchikan Creek is located within the Ketchikan Nonsubsistence Area as per regulation 5 AAC 99.015 (1). When there are king salmon in Ketchikan Creek in excess of broodstock needs, the department may work with hatchery personnel to open Ketchikan Creek to a dip net personal use fishery. The area open for this fishery has historically been upstream of the Harris Street Bridge and downstream of the KPU powerhouse outfall.

V. **Approval**

The Deer Mountain Hatchery Basic Management Plan is hereby approved.

Scott Kelley
Alaska Department of Fish and Game
Director, Division of Commercial Fisheries

Date

Tom Brookover
Alaska Department of Fish and Game
Director, Division of Sport Fish

Date

VI. Appendices

6.1 Maps

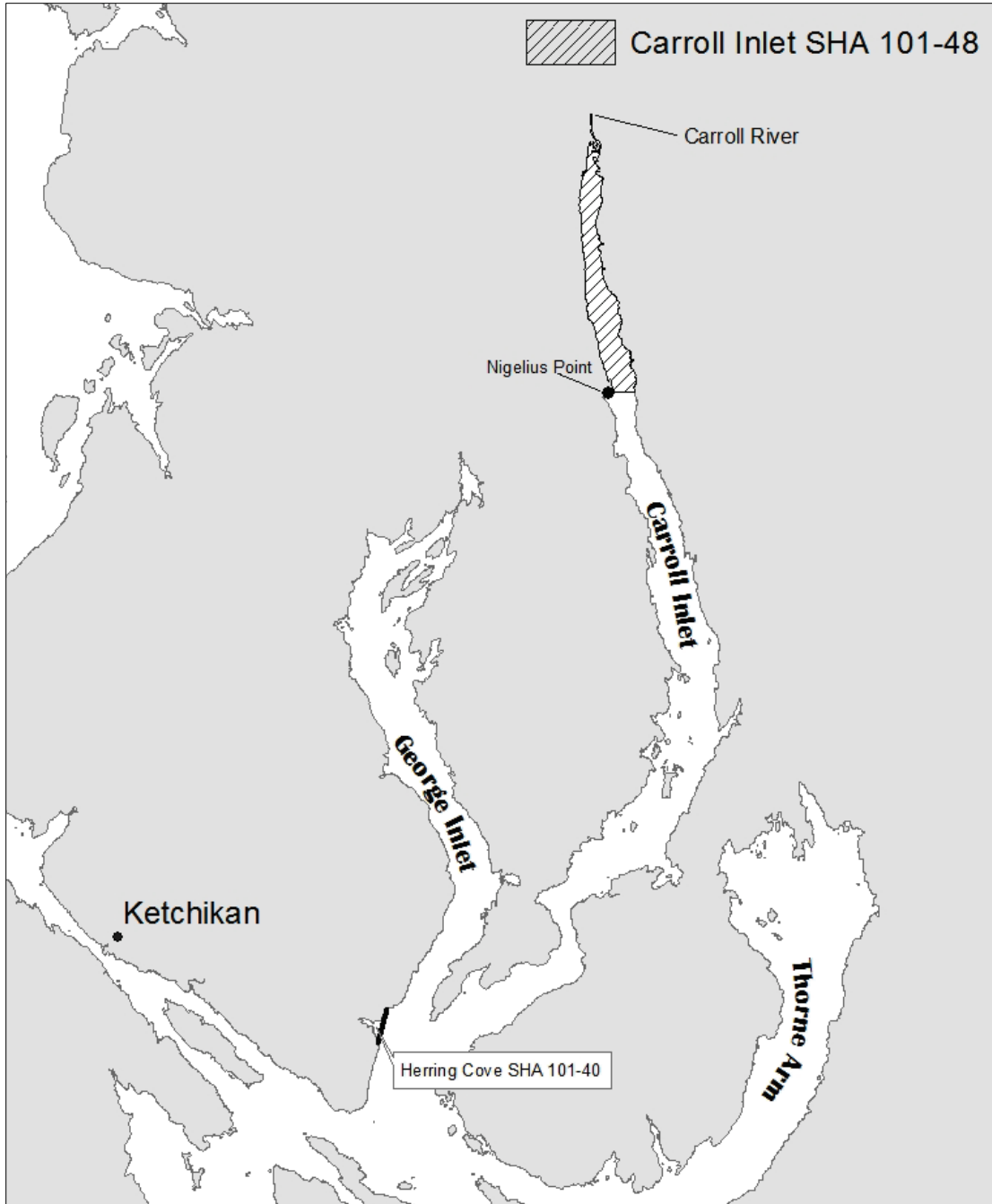


Figure 1.– Carroll Inlet Special Harvest Area.

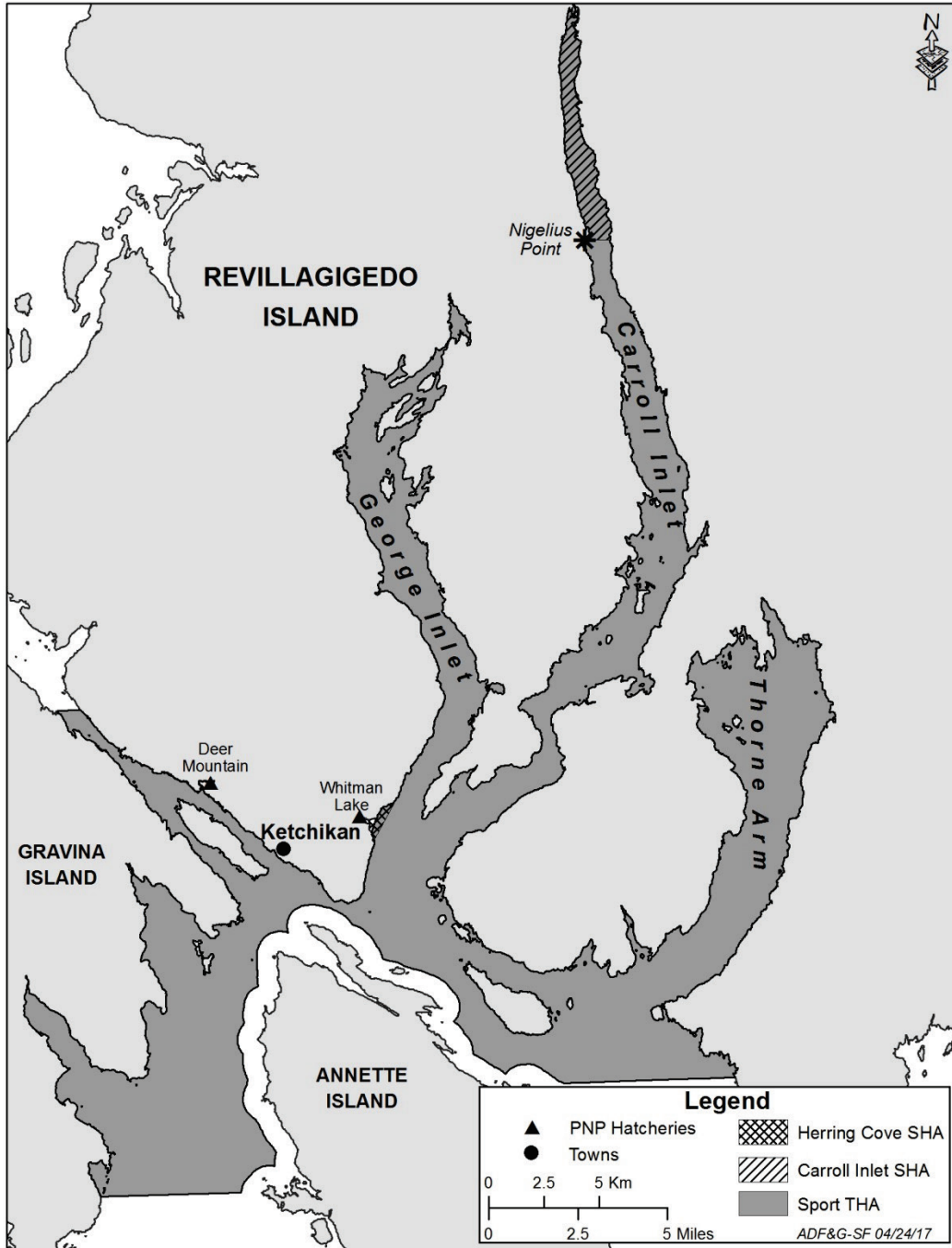


Figure 2.– Ketchikan Sport Terminal Harvest Area.