

# STATE OF ALASKA

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Subject: Management Feasibility  
Analysis for Port Saint  
Nicholas Hatchery

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Per your request, and as specified by **5 AAC 40.130. Management Feasibility Analysis**, the following management feasibility analysis (MFA) has been prepared for Southern Southeast Regional Aquaculture Association (SSRAA) concerning Klawock River Hatchery (KRH) located in Klawock, Alaska. The following six items to be addressed by this analysis are identified in regulation:

- 1) potential contributions to common property fisheries;
- 2) potential size and location of special harvest area;
- 3) special management considerations or need for additional studies;
- 4) potential broodstock sources;
- 5) assessment of production potential for each species; and
- 6) additional relevant factors considered.

### **Background Information**

A completed MFA must be included when submitting a private nonprofit (PNP) hatchery permit application to ADF&G.

Established in 1995, Prince of Wales Hatchery Association (POWHA) is a PNP corporation with the mission of enhancing production of salmon in the Craig and Klawock areas. In 2004, POWHA was issued PNP Salmon Hatchery Permit #43 to operate Port Saint Nicholas Hatchery (PSNH) with a capacity of 385,000 Chickamin River stock king salmon green eggs. The PSNH is located beside the City of Craig Water Treatment Facility at mile 5, Port Saint Nicholas Road. The water source is North Fork Lake, which is also a source of the city's domestic potable water. In 2006, the PSNH permit was amended to include a remote release at Coffman Cove, and an increased capacity of 385,000 green Unuk River stock king salmon green eggs. In May 2010, the PSNH permit was amended to 770,000 Chickamin River stock king salmon green eggs for both programs, with Unuk River stock king salmon as a backup for Coffman Cove releases. Southern Southeast Regional Aquaculture Association (SSRAA) provides all of the Chickamin River stock king salmon eggs from returns to Whitman Lake Hatchery. In 2014, the PSNH permit was amended to allow 8 million summer chum salmon green eggs to be reared at the facility and released at Port Asumcion. The proposed broodstock source for the program is summer chum salmon eggs provided by SSRAA or Tamgas Creek Hatchery, near Metlakatla, on Annette Island.

Due to financial difficulties, POWHA would like to relinquish their hatchery permit contingent upon the approval of a permit for SSRAA to operate PSNH. SSRAA intends to submit a PNP Hatchery Permit application for 770,000 king salmon eggs and 8 million summer chum salmon eggs.

## **1. Potential Contributions To Common Property Fisheries**

PSNH has only been releasing king salmon since 2007, so return data is limited. Contributions from PSNH to common property fisheries can be found in the Appendix, Tables 1 and 2.

### **Potential Contributions to the Sport Fisheries**

Rearing and returning adults of PSNH origin are captured by sport fisheries in outside waters and inside water migration corridors of Prince of Wales Island. Contributions of king salmon to the marine boat sport fishery are estimated through the recovery of coded wire tags (CWT) placed in PSNH king salmon. From 2008 until 2015, sampling king salmon from boat anglers recovered a total of 34 CWTs originating from PSNH, of which 31 were from the Port Saint Nicholas release site and 3 from the Coffman Cove release site. The first sport harvest of king salmon originating from the PSNH and released at Port Saint Nicholas occurred in 2009 and estimated annual harvest (2009-2015) has averaged 112 fish (Table 1). The first sport harvest of king salmon originating from the PSNH and released at Coffman Cove occurred in 2013 and estimated annual harvest has averaged of 30 fish through 2015 (Table 2). A small terminal harvest area fishery occurs at the head of Port Saint Nicholas and Coffman Cove that consists of shore and boat anglers, however little effort, catch and harvest data is available from this fishery. From 2008 to 2014, the Prince of Wales area marine sport fishery harvested an average of 7,799 king salmon annually (Romberg et. al. *In prep*).

Chum salmon released at Port Asumcion may be caught incidentally, but will not likely be targeted in marine sport fisheries.

### Management of the Sport Fishery

Fresh Water: A regional fresh water regulation prohibiting king salmon fishing applies to the creeks that flow into Port Saint Nicholas and Coffman Cove. The department may use emergency order (EO) authority to address issues inseason.

Salt Water: It is anticipated that king salmon returning to PSNH release sites will be harvested in the marine sport fishery. Sport fisheries will be managed as described in general codified regulations for those waters. The department may use EO authority to address issues inseason.

### Potential Contributions to the Commercial Fisheries

King salmon produced at PSNH have contributed to common property fisheries in the last several years based on coded wire tag recoveries. The troll fleet harvests the majority of king salmon released from Port Saint Nicholas, while the gillnet fleet harvests the majority of king salmon released from Coffman Cove.

Chum salmon produced at PSNH were originally planned to provide a cost recovery opportunity for POWHA. Contribution to common property fisheries would be limited to directed fisheries within the Port Asumcion special harvest area (SHA).

### Management of the Commercial Fisheries

Commercial fisheries specifically targeting PSNH king salmon are not planned at this time. It is anticipated that commercial fisheries on the west coast of Prince of Wales Island, Clarence Strait, Sumner Strait, and District 113 troll fishery will intercept returning PSNH king salmon.

Commercial fisheries specifically targeting PSNH chum salmon returns to Port Asumcion will be limited to a SHA within Port Asumcion.

### Potential contributions and Management of Personal Use Fisheries

If deemed necessary by either the department or POWHA, to achieve full utilization of king salmon returning to the Port Saint Nicholas release location, a personal use fishery can be authorized by EO per 5AAC 77.685. A personal use fishery would be open in the SHA, or a portion of the SHA, and would allow both dip net and beach seine gear. Daily and annual limits would be set by ADF&G, in consultation with POWHA.

## **2. Potential Size and Location of Special Harvest Area**

### **5 AAC 40.053. District 3: Port Saint Nicholas Special Harvest Area.**

- (a) There is established the Port Saint Nicholas Special Harvest Area, consisting of all waters of Port Saint Nicholas east of 133°02.92'W longitude and west of 132°59.50'W longitude, located at the mouth of the Port Saint Nicholas headstream.

(b) A hatchery permit holder harvesting salmon within the special harvest area is exempt from the provisions of 5 AAC 33.310. Fishing periods for the hatchery permit holder will be open from May 1 through August 15, unless closed earlier by emergency order.

(c) Notwithstanding 5 AAC 33.330, legal gear for the hatchery permit holder in the special harvest area is purse seine, beach seine, and dip net.

Coffman Cove: The department may authorize cost recovery of king salmon if it is determined there are king salmon in excess of sport and commercial fishing needs. Removal of excess fish also reduces the chances of hatchery-produced salmon from straying into other systems. The department will issue an inseason EO that establishes, under the provisions of 5 AAC 40.005, the Coffman Cove SHA. The SHA consists of the waters of Coffman Cove south of 56°00.69'N latitude. Fishing periods for the hatchery permit holder would be opened and closed by EO. Legal gear would be drift gillnets (with a minimum mesh size of 6-inches) and beach seines. In addition, the department would request that weekly updates of cost-recovery efforts be provided to the Division of Commercial Fisheries AMB in Petersburg and Division of Sport Fisheries AMB in Craig.

Port Asumcion: The hatchery SHA for Port Asumcion is designated as all waters within Port Asumcion north and west of a line from Point Cosinas located at 55° 21.789'N latitude 133° 30.645'W longitude to a point west of Point Maria located at 55° 22.040'N latitude 133° 30.256'W longitude.

A map of the Port Saint Nicholas, Coffman Cove, and Port Asumcion Special Harvest Areas can be found in the Appendix, Figures 1, 2 and 3.

### **3. Special Management Considerations or Need For Additional Studies**

Weirs have been run at Port Saint Nicholas Creek and Coffman Cove Creek to block and collect returning adult king salmon. The current hatchery operates the weir as described in the annual management plan.

#### Potential Straying and Interactions with Other Species

Since king salmon releases began in 2007, only one coded-wire-tagged king salmon has been recovered in escapement surveys. In 2014, a brood year 2009 king salmon released from Coffman Cove was recovered in the Unuk River. That king salmon was of Unuk River stock, released as part of the one-check rearing program, and had a tag ratio of 1.026.

Port Asumcion is located on Baker Island, which has a number of small unnamed drainages. Chum salmon have been documented as present in two creeks flowing into Port Asumcion. Larger drainages on Prince of Wales Island, in proximity to Baker Island, that support chum salmon include the Klawock River, Shinaku, Crab, Port Saint Nicholas, Trocadero and Cable creeks. While these larger systems contain significant numbers of chum salmon, none of them are used as index

streams due to the lack of a consistent series of chum salmon counts stemming from the difficulty of surveying these systems (water conditions, flight distances, masking by pink salmon, etc.).

#### **4. Potential Broodstock Sources**

All Chickamin River stock king salmon eggs are supplied from hatchery returns to Whitman Lake Hatchery. In the unlikely event a backup egg source is necessary for the Coffman Cove release, Unuk River stock king salmon eggs may be obtained from Port Armstrong Hatchery. Carroll River stock summer chum salmon, provided by SSRAA or Tamgas Creek Hatchery, was approved for Port Asumcion releases.

#### **5. Assessment of Production Potential**

The PSNH is small and rearing space limited. The water source is North Fork Lake. The hatchery's water is delivered via a 12-inch steel pipeline, shared with the City of Craig's water treatment facility. The unrestricted flow capacity of the line is approximately 26.7 to 35.6 cubic feet per second (LAS #11738). The available water limits production to the current king salmon production, plus enough water to incubate approximately 20 million chum salmon. The original chum salmon permit alteration request was for 20 million eggs based on water availability, but the approved permit alteration was for 8 million eggs based on the estimated financial needs of the program and SSRAA not having a short-term solution to provide 20 million summer chum salmon eggs annually. Assuming a 2% return from egg take, 8 million chum salmon eggs could produce approximately 160,000 returning adults. Utilizing the full water potential and assuming the same survival rate, 20 million eggs could produce approximately 400,000 returning adults. Production of PSNH king salmon can be found on Table 3. The zero-check rearing program has been discontinued due to extremely low marine survivals. The one-check releases at Coffman Cove have also been reduced in an effort to produce larger healthier smolt, which in turn should increase marine survivals.

#### **6. Additional Relevant Factors Considered**

There were no additional relevant factors considered.

## Appendix:

**Table 1:** Estimated number of Port Saint Nicholas Hatchery produced king salmon harvested in common property fisheries from Port Saint Nicholas releases, based of coded wire tag recovery data.

| Year        | Drift Gillnet | Purse Seine | Troll        | Sport      | Grand Total  |
|-------------|---------------|-------------|--------------|------------|--------------|
| 2008        |               |             | 25           | 0          | 25           |
| 2009        |               |             | 434          | 208        | 642          |
| 2010        | 89            |             | 541          | 148        | 778          |
| 2011        | 28            |             | 475          | 159        | 662          |
| 2012        | 0             |             | 242          | 7          | 249          |
| 2013        | 303           |             | 447          | 19         | 769          |
| 2014        | 62            | 9           | 255          | 167        | 493          |
| 2015        | 28            | 27          | 140          | 77         | 272          |
| Grand Total | <b>510</b>    | <b>36</b>   | <b>2,559</b> | <b>785</b> | <b>3,890</b> |

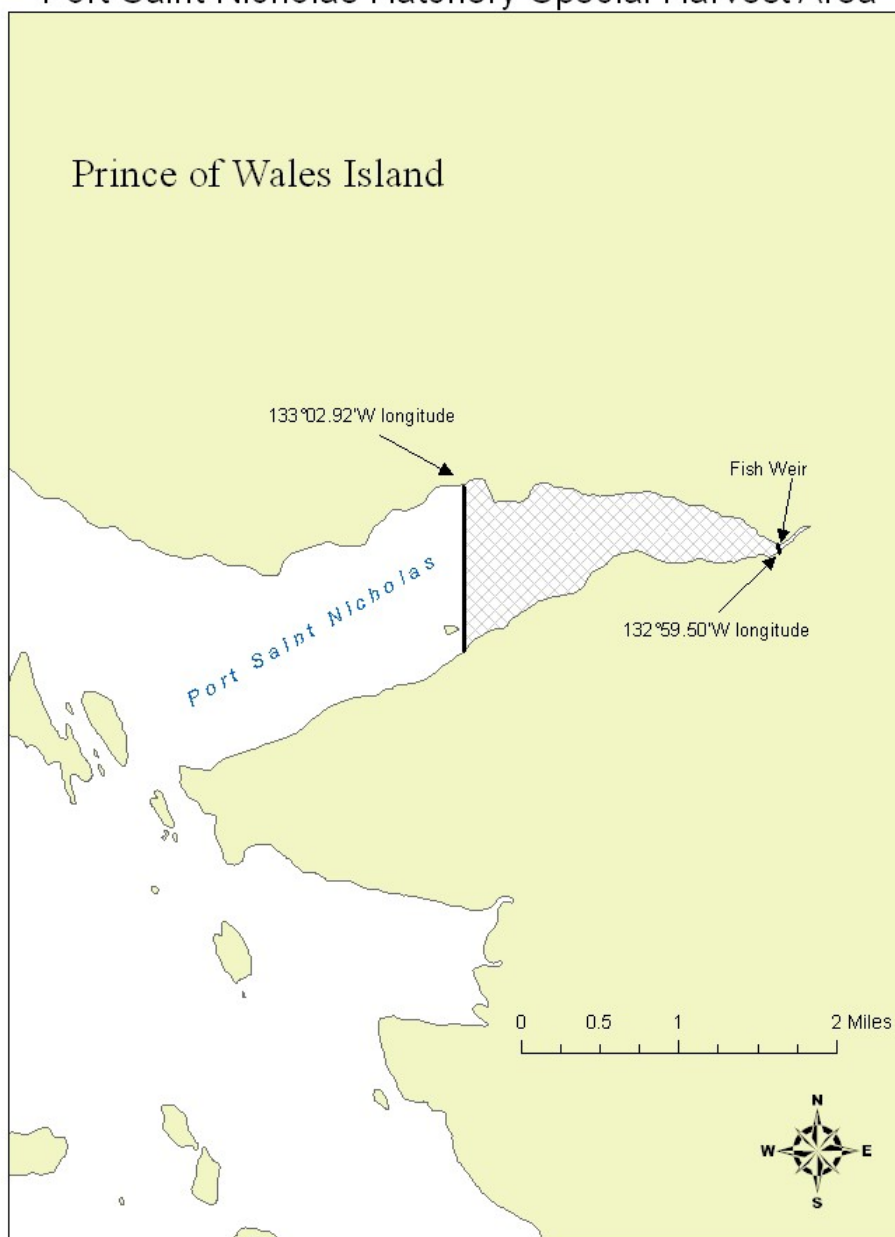
**Table 2:** Estimated number of Port Saint Nicholas Hatchery produced king salmon harvested in common property fisheries from Coffman Cove releases, based of coded wire tag recovery data.

| Year        | Drift Gillnet | Purse Seine | Troll      | Sport     | Grand Total  |
|-------------|---------------|-------------|------------|-----------|--------------|
| 2008        | 0             | 0           | 0          | 0         | 0            |
| 2009        | 0             | 0           | 0          | 0         | 0            |
| 2010        | 9             | 0           | 14         | 0         | 23           |
| 2011        | 47            | 0           | 23         | 0         | 70           |
| 2012        | 120           | 3           | 25         | 0         | 148          |
| 2013        | 331           | 8           | 122        | 31        | 492          |
| 2014        | 193           | 4           | 40         | 33        | 270          |
| 2015        | 266           | 5           | 77         | 25        | 373          |
| Grand Total | <b>966</b>    | <b>20</b>   | <b>301</b> | <b>89</b> | <b>1,376</b> |

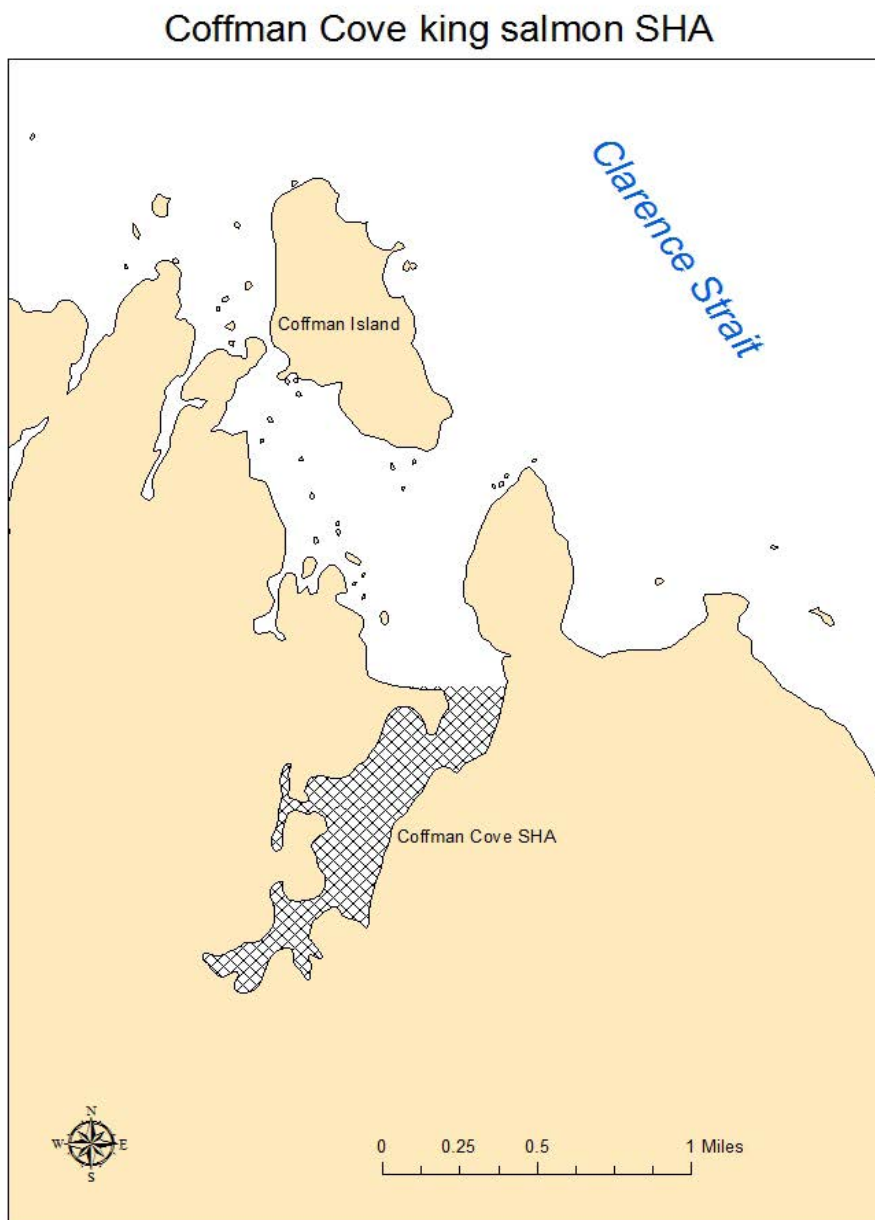
**Table 3:** Port Saint Nicholas Hatchery king salmon releases at Port Saint Nicholas Creek and Coffman Cove.

| <b>Release Year</b> | <b>PSN Creek Smolt</b> | <b>Coffman Cove<br/>Zero-check</b> | <b>Coffman Cove<br/>One-check</b> |
|---------------------|------------------------|------------------------------------|-----------------------------------|
| 2007                | 208,882                | 98,421                             | 0                                 |
| 2008                | 192,132                | 230,263                            | 0                                 |
| 2009                | 252,172                | 247,436                            | 0                                 |
| 2010                | 303,801                | 116,446                            | 72,264                            |
| 2011                | 152,628                | 106,635                            | 31,556                            |
| 2012                | 96,737                 | 0                                  | 53,861                            |
| 2013                | 3,075                  | 0                                  | 0                                 |
| 2014                | 246,358                | 0                                  | 67,808                            |
| 2015                | 175,459                | 0                                  | 48,796                            |
| <b>Totals</b>       | <b>1,631,244</b>       | <b>799,201</b>                     | <b>274,285</b>                    |

## Port Saint Nicholas Hatchery Special Harvest Area



**Figure 1:** Port Saint Nicholas Special Harvest Area.



**Figure 2:** Coffman Cove Special Harvest Area.

### Port Asumcion Hatchery Special Harvest Area



**Figure 3:** Port Asumcion Special Harvest Area.