

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

SOUTHEAST REGIONAL OFFICE

Bill Walker, GOVERNOR

P.O. BOX 110024
JUNEAU, AK 99811-0024
PHONE: (907) 465-4250
FAX: (907) 465-4944

To: Sam Rabung
Statewide PNP Hatchery Coordinator
Commercial Fisheries – HQ, Juneau

Date: 02/20/15

Thru: Dan Gray
Regional Management Coordinator
Commercial Fisheries – Sitka

Telephone: (907) 747-6688- CF
(907) 747-5355- SF
Fax: (907) 747-6693

Robert Chadwick
Regional Management Coordinator
Sport Fisheries – Sitka

Subject: Management Feasibility
Analysis for Little Port
Walter Hatchery

From: Dave Gordon
Area Management Biologist
Commercial Fisheries – Sitka

Troy Tydingco
Area Management Biologist
Sport Fisheries – Sitka

Per your request, and as specified by **5 AAC 40.130. Management Feasibility Analysis**, the following management feasibility analysis (MFA) has been prepared for Armstrong-Keta, Incorporated (AKI) concerning Little Port Walter Hatchery (LPW) near the southeastern tip of Baranof Island, Alaska. Regulation identifies the following six items to be addressed by this analysis:

- 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

Armstrong-Keta, Inc. has requested a MFA for LPW. A completed MFA must be included when submitting a hatchery permit application to ADF&G.

Little Port Walter, established in 1934, is the primary research facility of the Auke Bay Laboratory. The research station is a remote facility, accessible only by boat or floatplane, located 110 miles south of Juneau, Alaska, near the southeastern tip of Baranof Island. The research facility includes a hatchery building, an array of fresh and saltwater floating raceways, and net pens. Little Port Walter holds a water right for 2.2 cubic feet per second of water (987 gallons per minute). Little Port Walter has been releasing king salmon since the 1970's (Table 1). The primary stocks released from LPW were Chickamin River and Unuk River stock king salmon. In 2013, LPW began collecting Keta River stock king salmon eggs, with the first release scheduled for the spring of 2015. Little Port Walter has been experiencing budget cuts and has some water and space available to facilitate projects for AKI. Armstrong-Keta, Inc. will not be running the hatchery; rather, LPW will be hatching eggs, rearing fry to the smolt stage and releasing fish as part of an AKI program, which requires a Private Nonprofit Hatchery Permit.

Port Armstrong Hatchery (PAH), established in 1981, is a facility that is owned and operated by AKI. The hatchery is located in Port Armstrong near the southeastern tip of Baranof Island, approximately five nautical miles south of LPW. Port Armstrong Hatchery has a water right for 20 cubic feet per second of water for hydropower generation, 15 cubic feet per second for hatchery use, and 5,000 gallons per day for miscellaneous use. The hatchery facilities include a primary incubation building, a king and coho salmon building, freshwater raceways, and two saltwater net pen complexes. Port Armstrong Hatchery produces pink, chum, coho, and king salmon for release at Port Armstrong and Port Herbert. The original Unuk River king salmon broodstock came from LPW. Both PAH and LPW use the other as a backup egg source for Unuk River stock king salmon. The releases contribute to common property fisheries in southern Chatham Strait and other areas of Southeast Alaska. The hatchery is located in a very productive traditional troll fishery area, and seine fisheries exist immediately north and east of Port Armstrong. Salmon returning to PAH, not harvested in common property fisheries are harvested for cost recovery in Port Armstrong special harvest area (SHA).

Little Port Water will prioritize developing a Keta River stock king salmon broodstock program, while they continue to produce Unuk River stock king salmon for their traditional program. Armstrong-Keta, Inc. is proposing to take 600,000 Unuk River stock king salmon eggs at LPW and release the approximately 430,000 smolt produced at PAH until approximately 2018, when the Keta River stock king salmon are projected to start returning to LPW in sufficient numbers to provide enough eggs for LPW operations. After that time, Unuk River stock smolt will be released at LPW. Port Armstrong Hatchery will remain a backup egg source for Unuk River stock king salmon eggs.

1. Potential Contributions To Common Property Fisheries

Potential Contributions to the Sport Fisheries

Relatively little sport harvest occurs in the immediate vicinity of LPW because of the small population base and distance from population centers. Statewide Harvest Survey estimates of sport fishing harvest and effort in the vicinity of LPW are not available due to an insufficient number of respondents.

King salmon originating from the potential hatchery would likely contribute to the marine boat fisheries in the vicinity of LPW and along migration corridors. The increase in availability of king salmon may attract sport fishing effort from neighboring southeast communities along with increased guided sport fishing effort. The anticipated contribution to sport fisheries is expected to be small due to low angler effort, and the distance from population centers.

Management of the Sport Fishery

Currently, sport fisheries in the vicinity of LPW are managed under regional bag and possession limits. Regional regulations would likely remain in effect in marine waters outside of the immediate vicinity of LPW (currently six chum, six pink, and six coho salmon daily with 12 of each species in possession per angler). King salmon limits are set annually based on a preseason index of abundance. Liberalized regulations for king salmon could potentially be implemented in a limited area to encourage the harvest of hatchery-produced salmon if excess fish returned to the hatchery. Alternatively, sport fishing may be closed in a small area to facilitate broodstock collection.

Potential Contributions to the Commercial Fisheries

Since the late 1970's, LPW has been releasing king salmon from the hatchery. In 2001, PAH, began a king salmon broodstock program utilizing Unuk River king salmon stock from LPW. Both LPW and PAH king salmon releases are recovered mainly in commercial troll fisheries. Over the most recent 10-yr period, from 2005–2014, LPW and PAH have contributed an estimated 16,000 and 5,600 king salmon to regional troll fisheries, respectively. Nearly half of these contributions occurred in the District 9 and District 12 spring troll fisheries, which are designed to target these fish as they migrate back to terminal areas. This represented a contribution to the 10-yr total harvest of District 9 and District 12 spring troll king salmon of 7% from LPW, and 3% from PAH. The majority of remaining contributions were taken during summer troll king salmon retention periods in Districts 9 and 13, and in the winter troll fishery in District 10, where contributions to the 10-year district harvest was 8% for LPW and 2% for PAH. LPW on average has released 174,000 king salmon smolt and the average annual harvest of LPW king salmon is 1,600. Assuming similar results it would be expected that the release of 430,000 additional king salmon smolt would contribute approximately 4,000 king salmon to common property fisheries annually.

Management of the Commercial Fisheries

The proposed releases are not expected to change management of the spring troll fisheries in southern Chatham Strait. Seine fisheries do occur on the shoreline outside of Little Port Walter based on the strength of local pink salmon returns. Seine openings along this shoreline generally do not begin until the second week of August, after when most of the king salmon will have returned to Little Port Walter.

Potential contributions and Management of Personal Use Fisheries

If broodstock and cost recovery needs are met and surplus hatchery-produced king salmon are available in the Little Port Walter SHA a personal use fishery can be allowed. A personal use fishery would allow the use of gillnets and hand seine gear within the marine waters of LPW. Providing for a personal use fishery is not normally encouraged in hatchery terminal areas since this activity may interfere with hatchery operations and conflict with other uses, including sport fishing.

2. Potential Size and Location of Special Harvest Area

A small special harvest area could be established in Little Port Walter to clean up large returns of king salmon with a seine vessel or gillnet. Little Port Walter's salmon research will take priority, which makes bulk harvest in the bay impractical. The primary cost recovery on excess king salmon will most likely take place at the rack. Little Port Walter differentially marks 100% of their king salmon releases. If it becomes desirable by the hatchery operator to conduct cost recovery harvest in the bay, a suggested SHA would include the waters of Little Port Walter south of the latitude of the Hutchinson Point Light.

King salmon returning to PAH will be harvested in the Port Armstrong special harvest area (5 AAC 40.081)

3. Special Management Considerations or Need For Additional Studies

Wild Salmon Stocks

Protection of wild stocks is a primary consideration in the assessment of proposed salmon enhancement projects. There are no wild stock king salmon streams in the vicinity of Little Port Walter. The only known island king salmon system in Southeast Alaska is the King Salmon River on Admiralty Island which is 115 miles distant from Little Port Walter. The closest mainland system is Farragut River which is approximately 75 miles distant. Given the location of the hatchery facilities there is little concern of negative impacts to wild stock king salmon due to harvest management of hatchery returns to LPW. Sashin Creek pink and coho salmon do not begin to show in Little Port Walter until after the first week of August, well after the mid-July peak run timing for king salmon.

Potential Straying and Interactions with Other Species

Since 1988, Unuk River stock king salmon have been released from LPW. Since 2003, Unuk River stock king salmon have been released from PAH. Since king salmon releases began in 1977 with the Chickamin River stock king salmon program, seventy one coded wire tags have been recovered in rivers where ADF&G does escapement surveys. It is expected that the proposed releases will have similar low stray rates into those rivers (Table 2). It is expected that some adult hatchery-produced king salmon from the proposed releases may stray into nearby streams that have no natural king salmon production. In Sitka Sound, department staff has

observed large numbers of adult hatchery-produced king salmon in streams near Medvejie Hatchery including in 2012 when approximately 2,000 king salmon were observed in Salmon Lake. Impacts of hatchery-produced king salmon strays on other species are not known but assumed to be minimal.

4. Potential Broodstock Sources

Both LPW and PAH currently have hatchery-produced Unuk River stock king salmon returning to their facility, and each use the other as a backup egg source. Little Port Walter provided the original broodstock for PAH.

5. Assessment of Production Potential

Little Port Walter is currently operated as a NOAA research facility. The proposed production of 600,000 Unuk River stock king salmon eggs and released progeny of approximately 430,000 smolt can be achieved using available current infrastructure.

6. Additional Relevant Factors Considered

Given the long history of king salmon releases and CWT data available on the returning fish, there are no additional relevant factors the department wishes to consider.

Table 1. King salmon releases from Little Port Walter Research Station.

Little Port Walter	Unuk	Chickamin	Total
	Chinook	Chinook	Chinook
1977		5,054	5,054
1978		13,451	13,451
1979		0	0
1980		0	0
1981		22,105	22,105
1982		15,506	15,506
1983		25,858	25,858
1984		44,814	44,814
1985		0	0
1986		0	0
1987		43,814	43,814
1988	141,694	145,418	287,112
1989	59,191	82,896	142,087
1990	37,480	42,672	80,152
1991	102,583	4,000	106,583
1992	159,368	11,444	170,812
1993	44,534	166,028	210,562
1994	47,228	75,569	122,797
1995	49,004	80,297	129,301
1996	49,392	59,149	108,541
1997	105,415	49,533	154,948
1998	29,802	77,907	98,736
1999	55,311	51,209	106,520
2000	67,338	66,758	134,096
2001	55,328	53,498	105,676
2002	0	0	0
2003	28,919	166,136	195,055
2004	33,987	124,278	158,265
2005	126,986	39,844	166,830
2006	68,716	14,537	83,253
2007	97,634	36,188	133,822
2008	164,653	54,083	218,736
2009	154,501	54,716	209,217
2010	200,780	36,920	237,700
2011	125,054	62,709	187,763
2012	91,371	59,052	150,423
2013	74,211	64,900	139,111
2014	211,164	0	211,164

Table 2. Hatchery-produced king salmon released from Little Port Water found in ADF&G escapement surveys.

L PORT WALTER 109-10

1982			1992		
	POLITOFSKI LAKE	2		CRESCENT LAKE	2
	STIKINE & TRIBUTARIES	1		FARRAGUT RIVER	12
1983				FORD ARM LAKE	1
	FALLS LAKE	2	1993		
1984				FARRAGUT RIVER	4
	CRYSTAL LAKE	3	1995		
	FALLS LAKE	3		CHICKAMIN & TRIBUTARIES	1
1985				JUNEAU MISC.	1
	FALLS LAKE	4	2000		
1986				STIKINE & TRIBUTARIES	1
	OTHER ALASKA	1	2001		
1987				STIKINE & TRIBUTARIES	1
	CRESCENT LAKE	1	2006		
	TAKU & TRIBUTARIES	1		FISH CREEK (111-50)	1
1988			2007		
	FALLS LAKE	1		FARRAGUT RIVER	4
	KARTA/SALMON LKS SYSTEM	1		JUNEAU MISC.	1
	MEDVEJIE	2		TAKU & TRIBUTARIES	1
	NAHA RIVER	3	2008		
	TAKU & TRIBUTARIES	1		FARRAGUT RIVER	1
1989			2012		
	FARRAGUT RIVER	3		HUGH SMITH LK SYSTEM	1
1991			2014		
	CRESCENT LAKE	1		AUKE CREEK	1
	FARRAGUT RIVER	7		Total	71
	HARDING RIVER	1			

Source: ADF&G Mark Tag and Age Lab query 2/20/2015.