# HATCHERY AND GENETIC MANAGEMENT PLAN (HGMP)

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|---|---|
| **Hatchery Program:** | Glenwood Springs Chum |
| **Species or Hatchery Stock:** | Whatcom Creek *(Onchorynchus keta)* |
| **Agency/Operator:** | Long Live the Kings |
| **Watershed and Region:** | Eastsound (San Juan Islands)<br>North Puget Sound |
| **Date Submitted:** | March 17, 2003 |
| **Date Last Updated:** | January 27, 2003 |

## SECTION 1. GENERAL PROGRAM DESCRIPTION

**1.1) Name of hatchery or program.**

Glenwood Springs Chum

**1.2) Species and population (or stock) under propagation, and ESA status.**

Kendall Creek Chum (*Oncorhynchus keta*) - not listed

**1.3) Responsible organizations and individuals**

| | |
|---|---|
| **Name(and title):** | Mike O'Connell, Hatchery Manager |
| **Organization:** | Long Live the Kings (LLTK) |
| **Address:** | 1305 4th Ave. Suite 810 Seattle, WA 98101<br>P.O Box 1336 Eastsound, WA 98245 |
| **Telephone:** | (206) 382-9555 (Seattle), (360) 376-4773 (Glenwood) |
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| **Email:** | **moconnell@lltk.org** |

| | | |
|---|---|---|
| **Name (and title):** | Chuck Phillips, Region 4 Fish Program Manager<br>Ted Thygesen, Nooksack Complex Manager | |
| **Agency or Tribe:** | Washington Department of Fish and Wildlife | |
| **Address:** | 600 Capitol Way North, Olympia, Wa. 98501-1091 | |
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| **Email:** | **phillcep@dfw.wa.gov** | **thygetlt@dfw.wa.gov** |

**Other agencies, Tribes, co-operators, or organizations involved, including contractors, and extent of involvement in the program:**

Washington Department of Fish and Wildlife (WDFW) provides funding, project planning and overview.

**1.4) Funding source, staffing level, and annual hatchery program operational costs.**

Staff level is one full time and one part time employee, with substantial volunteer effort. The annual budget is approximately $90,000 per year.

**1.5) Location(s) of hatchery and associated facilities**.

Glenwood Springs is located on the eastern shore of East Sound, Orcas Island, Washington. The facility is located on 300 acres of private property. It includes the springs that supply the water to the hatchery and associated rearing ponds, the entire "watershed" and the saltwater bay to which the fish return.

**1.6) Type of program.**

Isolated harvest

**1.7) Purpose (Goal) of program.**

The goal of this program is harvest augmentation: to produce adult fish for harvest opportunity.

**1.8) Justification for the program.**

This program is to utilize a local hatchery stock and is located in an ideal location for selective fisheries. The fish return to a unique terminal area with no other salmon-bearing streams in the San Juan Islands.

**1.9) List of program "Performance Standards".**

**1.10) List of program "Performance Indicators", designated by "benefits" and "risks."**

Performance Standards and Indicators for Puget Sound **Isolated Harvest** Chinook programs.

| Performance Standard | Performance Indicator | Monitoring and Evaluation Plan |
|---|---|---|
| Produce adult fish for harvest | Survival and contribution rates | Monitor catch |
| Meet hatchery production goals | Number of juvenile fish released - **180,000** | Future Brood Document (FBD) and hatchery records |
| Manage for adequate escapement where applicable | Hatchery return rates | Hatchery return records |

| | | |
|---|---|---|
| Minimize interactions with listed fish through proper broodstock management and mass marking.<br>Maximize hatchery adult capture effectiveness.<br>Use only hatchery fish | Number of broodstock collected - **NA** | Rack counts |
| | Stray Rates | Spawning guidelines |
| | Sex ratios | Hatchery records |
| | Age structure | |
| | Timing of adult collection/spawning - **NA** | Spawning guidelines<br>Hatchery records |
| | Adherence to spawning guidelines - **NA** | |
| | Total number of wild adults passed upstream - **NA** | |
| Minimize interactions with listed fish through proper rearing and release strategies | Juveniles released as smolts | FBD and hatchery records |
| | Out-migration timing of listed fish / hatchery fish - **/April** | FBD and historic natural outmigration times |
| | Size and time of release - **600 fpp/April release** | FBD and hatchery records |
| | Hatchery stray rates | hatchery records (marked vs unmarked) |
| Maintain stock integrity and genetic diversity | Effective population size | Spawning guidelines |
| | Hatchery-Origin Recruit spawners | |

| | | |
|---|---|---|
| Maximize in-hatchery survival of broodstock and their progeny; and<br><br>Limit the impact of pathogens associated with hatchery stocks, on listed fish | Fish pathologists will monitor the health of hatchery stocks on a monthly basis and recommend preventative actions / strategies to maintain fish health | Co-Managers Disease Policy |
| | Fish pathologists will diagnose fish health problems and minimize their impact | Fish Health Monitoring Records |
| | Vaccines will be administered when appropriate to protect fish health | |
| | A fish health database will be maintained to identify trends in fish health and disease and implement fish health management plans based on findings | |
| | Fish health staff will present workshops on fish health issues to provide continuing education to hatchery staff. | |
| Ensure hatchery operations comply with state and federal water quality standards through proper environmental monitoring | NPDES compliance | Monthly NPDES records |

**1.10.1) "Performance Indicators" addressing benefits**.

**1.10.2) "Performance Indicators" addressing risks**.

1.The facility has the ability to attract returning fish directly into the fish ladder from Eastsound, or to allow the fish to remain in the fishery (by "turning off" the ladder). This enables managers to collect all fish if desired, removing them from the sound, and eliminating straying.

2. All fish are reared exclusively on Glenwood Springs water source prior to release, which should be beneficial in homing.

**1.11) Expected size of program.**

**1.11.1) Proposed annual broodstock collection level (maximum number of adult fish).**

No chum broodstock collection at facility (collected at Kendall Creek Hatchery)

**1.11.2) Proposed annual fish release levels (maximum number) by life stage and location.**

| Life Stage | Release Location | Annual Release Level |
|---|---|---|
| Eyed Eggs | | |
| Unfed Fry | | |
| Fry | Eastsound at hatchery site | 180,000 |
| Yearling (smolt) | | |

**1.12) Current program performance, including estimated smolt-to-adult survival rates, adult production levels, and escapement levels. Indicate the source of these data.**

**1.13) Date program started (years in operation), or is expected to start.**

**1.14) Expected duration of program.**

The program is re-negotiated with WDFW each year.

**1.15) Watersheds targeted by program.**

Eastsound, San Juan Islands

**1.16) Indicate alternative actions considered for attaining program goals, and reasons why those actions are not being proposed.**

NA

## SECTION 2. PROGRAM EFFECTS ON ESA-LISTED SALMONID POPULATIONS.

**2.1) List all ESA permits or authorizations in hand for the hatchery program.**

There are no permits in hand.

**2.2) Provide descriptions, status, and projected take actions and levels for ESA-listed natural populations in the target area.**

**2.2.1) Description of ESA-listed salmonid population(s) affected by the program.**

**- Identify the ESA-listed population(s) that will be directly affected by the program.**

No ESA listed population directly affected

**- Identify the ESA-listed population(s) that may be incidentally affected by the program.**

Puget Sound chinook

**2.2.2) Status of ESA-listed salmonid population(s) affected by the program.**

**- Describe the status of the listed natural population(s) relative to "critical" and "viable" population thresholds**

Critical and viable population thresholds under ESA have not been determined.

**- Provide the most recent 12 year (e.g. 1988-present) progeny-to-parent ratios, survival data by life-stage, or other measures of productivity for the listed population. Indicate the source of these data.**

There are no listed stocks in the vicinity.

**-Provide the most recent 12 year (e.g. 1988-1999) annual spawning abundance estimates, or any other abundance information. Indicate the source of these data.**

There are no listed stocks in the vicinity.

**-Provide the most recent 12 year (e.g. 1988-1999) estimates of annual proportions of direct hatchery-origin and listed natural-origin fish on natural spawning grounds, if known.**

There are no appropriate salmon spawning grounds in the vicinity.

**2.2.3) <u>Describe hatchery activities, including associated monitoring and evaluation and research programs, that may lead to the take of listed fish in the target area, and provide estimated annual levels of take</u>**

**- Describe hatchery activities that may lead to the take of listed salmonid populations in the target area, including how, where, and when the takes may occur, the risk potential for their occurrence, and the likely effects of the take**.

No broodstock taken at facility.

Releases of chum fry impose no real impacts to any listed fish that may be in the area at release.

- **Provide information regarding past takes associated with the hatchery program, (if known) including numbers taken, and observed injury or mortality levels for listed fish**.

NA

**-Provide projected annual take levels for listed fish by life stage (juvenile and adult) quantified (to the extent feasible) by the type of take resulting from the hatchery program (e.g. capture, handling, tagging, injury, or lethal take).**

See "take" table

**- Indicate contingency plans for addressing situations where take levels within a given year have exceeded, or are projected to exceed, take levels described in this plan for the program.**

NA

## SECTION 3. RELATIONSHIP OF PROGRAM TO OTHER MANAGEMENT OBJECTIVES

**3.1) Describe alignment of the hatchery program with any ESU-wide hatchery plan (e.g. *Hood Canal Summer Chum Conservation Initiative*) or other regionally accepted policies (e.g. the NPPC *Annual Production Review* Report and Recommendations - NPPC document 99-15). Explain any proposed deviations from the plan or policies.**

None

**3.2) List all existing cooperative agreements, memoranda of understanding, memoranda of agreement, or other management plans or court orders under which program operates.**

This program operates with a Purchased Services Contract with WDFW.

**3.3) Relationship to harvest objectives.**

**3.3.1) Describe fisheries benefiting from the program, and indicate harvest levels and rates for program-origin fish for the last twelve years (1988-99), if available.**

Recreational fishery in East Sound (Areas 7 and 7D)

**3.4) Relationship to habitat protection and recovery strategies.**

There are no habitat protection issues in this watershed. The entire watershed is controlled by private ownership.

**3.5) Ecological interactions.**

The Species Interaction Workgroup (SIWG) (1984) identified chum as posing a low risk of competition and predation to naturally produced chinook in freshwater.

## SECTION 4. WATER SOURCE

**4.1) Provide a quantitative and narrative description of the water source (spring, well, surface), water quality profile, and natural limitations to production attributable to the water source.**

The water source is several springs that emerge on the property, approximately 300-600 gallons per minute. It is fish and specific pathogen free. The water temperature is 48-50 degrees F at emergence, with higher and lower temperatures where exposed to hot or cold air temperatures. The only limitation to production is the diminished flow of water that occurs during dry periods (late summer).

**4.2) Indicate risk aversion measures that will be applied to minimize the likelihood for the take of listed natural fish as a result of hatchery water withdrawal, screening, or effluent discharge.**

There is no chance of natural fish being affected by the hatchery water withdrawal because the water sources are fish free.

## SECTION 5. FACILITIES

**5.1) Broodstock collection facilities (or methods).**

There is no chum broodstock collection at Glenwood Springs.

**5.2) Fish transportation equipment (description of pen, tank truck, or container used).**

NA

**5.3) Broodstock holding and spawning facilities.**

NA

**5.4) Incubation facilities.**

The eggs are incubated in vertical incubators and held there until ponding.

**5.5) Rearing facilities.**

The fish are reared in earthen ponds. The first rearing pond is of irregular shape (roughly 150'x 30'x 5'deep). Final rearing, after adipose fin clipping, is done in a large (5 acre) lake.

**5.6) Acclimation/release facilities.**

Fish are incubated and reared on Glenwood Springs water. They are acclimated to salt water in the adult holding pond prior to release.

**5.7) Describe operational difficulties or disasters that led to significant fish mortality.**

There have been no operational disasters that led to significant mortality.

**5.8) Indicate available back-up systems, and risk aversion measures that will be applied, that minimize the likelihood for the take of listed natural fish that may result from equipment failure, water loss, flooding, disease transmission, or other events that could lead to injury or mortality.**

There is no likelihood of lethal take of listed fish due to facility operation.

## SECTION 6. BROODSTOCK ORIGIN AND IDENTITY

**Describe the origin and identity of broodstock used in the program, its ESA-listing status, annual collection goals, and relationship to wild fish of the same species/population.**

**6.1) Source**.

Eyed eggs from Whatcom Creek Hatchery via Kendall Creek.

**6.2) Supporting information**.

**6.2.1) History.**

See section 6.1

**6.2.2) Annual size.**

NA

**6.2.3) Past and proposed level of natural fish in broodstock**.

The level of natural fish in the broodstock is unknown.

**6.2.4) Genetic or ecological differences**.

None known

**6.2.5) Reasons for choosing.**

Most locally adapted stock.

**6.3) Indicate risk aversion measures that will be applied to minimize the likelihood for adverse genetic or ecological effects to listed natural fish that may occur as a result of broodstock selection practices.**

NA

## SECTION 7. BROODSTOCK COLLECTION

**7.1) Life-history stage to be collected (adults, eggs, or juveniles)**.

Adults spawned at Kendall Creek, eggs transferred to Whatcom Creek where approximately 200,000 are transferred to Glenwood Springs.

**7.2) Collection or sampling design.**

NA.

**7.3) Identity.**

NA

**7.4) Proposed number to be collected:**

**7.4.1) Program goal (assuming 1:1 sex ratio for adults):**

NA

**7.4.2) Broodstock collection levels for the last 12 years (e.g. 1988-99), or the most recent years available:**

| Year | Adults Females | Males | Jacks | Eggs | Juveniles |
|---|---|---|---|---|---|
| 1988 | | | | | |
| 1989 | | | | | |
| 1990 | | | | | |
| 1991 | | | | | |
| 1992 | | | | | |
| 1993 | | | | | |
| 1994 | | | | | |
| 1995 | | | | | |
| 1996 | | | | | |
| 1997 | | | | | |
| 1998 | | | | | |
| 1999 | | | | | |
| 2000 | | | | | |
| 2001 | | | | | |

**7.5) Disposition of hatchery-origin fish collected in surplus of broodstock needs.**

NA

**7.6) Fish transportation and holding methods.**

NA

**7.7) Describe fish health maintenance and sanitation procedures applied.**

NA

**7.8) Disposition of carcasses.**

NA

**7.9) Indicate risk aversion measures that will be applied to minimize the likelihood for adverse genetic or ecological effects to listed natural fish resulting from the broodstock collection program.**

NA

## SECTION 8. MATING

**Describe fish mating procedures that will be used, including those applied to meet performance indicators identified previously**.

**8.1) Selection method.**

NA

**8.2) Males.**

NA

**8.3) Fertilization.**

NA

**8.4) Cryopreserved gametes**.

NA

**8.5) Indicate risk aversion measures that will be applied to minimize the likelihood for adverse genetic or ecological effects to listed natural fish resulting from the mating scheme.**

NA

## SECTION 9. INCUBATION AND REARING -

**Specify any management *goals* (e.g. "egg to smolt survival") that the hatchery is currently operating under for the hatchery stock in the appropriate sections below. Provide data on the success of meeting the desired hatchery goals.**

### 9.1) Incubation:

#### 9.1.1) Number of eggs taken and survival rates to eye-up and/or ponding.

Unavailable

#### 9.1.2) Cause for, and disposition of surplus egg takes.

Excess eggs would occur if there were too many eggs taken in anticipation of a need from WDFW. Disposal would be by burial.

#### 9.1.3) Loading densities applied during incubation.

4000 eggs per tray.

#### 9.1.4) Incubation conditions.

Spring water 48 –50 degrees F, 3 gpm per half stack

#### 9.1.5) Ponding.

Fish are ponded after consultation with WDFW pathologist, using small transfer containers to the small rearing pond.

#### 9.1.6) Fish health maintenance and monitoring.

Fish are examined prior to ponding by a WDFW fish pathologist

**9.1.7) Indicate risk aversion measures that will be applied to minimize the likelihood for adverse genetic and ecological effects to listed fish during incubation.**

NA

**9.2) <u>Rearing</u>:**

**9.2.1) Provide survival rate data (*average program performance*) by hatchery life stage (fry to fingerling; fingerling to smolt) for the most recent twelve years (1988-99), or for years dependable data are available.**

Unavailable

**9.2.2) Density and loading criteria (goals and actual levels).**

Fish are reared at very low densities – difficult to measure because of the nature of the rearing containers and varying natural flow. They are monitored regularly by the WDFW pathologist, whose assessment of the fish quality supports this "low density" claim.

**9.2.3) Fish rearing conditions**

Fish are reared in earthen ponds on spring water, monitored regularly by WDFW fish pathologist and daily by LLTK staff. The fish eat a large amount of natural feed, as is evidenced by the below 1:1 feed conversion rate. Dissolved oxygen and other water quality parameters are monitored but not manipulated. To date, there have been no problems with rearing conditions.

**9.2.4) Indicate biweekly or monthly fish growth information (*average program performance*), including length, weight, and condition factor data collected during rearing, if available.**

Not available

**9.2.5) Indicate monthly fish growth rate and energy reserve data (*average program performance*), if available**.

Not available

**9.2.6) Indicate food type used, daily application schedule, feeding rate range (e.g. % B.W./day and lbs/gpm inflow), and estimates of total food conversion efficiency during rearing (*average program performance*).**

Fish eat the food supplied by WDFW, as is available through their state contract. Fish are fed at a maximum of 2% body weight per day, and are supplemented by natural food.

**9.2.7) Fish health monitoring, disease treatment, and sanitation procedures**.

These fish are checked routinely by WDFW fish pathologist. Disease treatments are prescribed by the Fish Health Specialist as needed.

**9.2.8) Smolt development indices (e.g. gill ATPase activity), if applicable.**

NA

**9.2.9) Indicate the use of "natural" rearing methods as applied in the program.**

Fish are reared in natural, earthen ponds, with a tremendous amount of natural food. The yearlings are exposed to avian (and other) predation and are thought to learn avoidance. Fish are fed by hand according to apparent need, instead of following a prescribed formula.

**9.2.10) Indicate risk aversion measures that will be applied to minimize the likelihood for adverse genetic and ecological effects to listed fish under propagation.**

NA

## SECTION 10. RELEASE

**Describe fish release levels, and release practices applied through the hatchery program.**

### 10.1) Proposed fish release levels.

| Age Class | Maximum Number | Size (fpp) | Release Date | Location |
|---|---|---|---|---|
| Eggs | | | | |
| Unfed Fry | | | | |
| Fry | 180,000 | 600 fpp | April | Eastsound |
| Fingerling | | | | |
| Yearling | | | | |

### 10.2) Specific location(s) of proposed release(s).

**Stream, river, or watercourse:** Eastsound, Orcas Island (saltwater)
**Release point:** Eastsound
**Major watershed:** None
**Basin or Region:** San Juan Islands (N. Puget Sound)

### 10.3) Actual numbers and sizes of fish released by age class through the program.

| Release year | Eggs/ Fry | Unfed | Avg size | Fry | Avg size | Fingerling | Avg size | Yearling | Avg size |
|---|---|---|---|---|---|---|---|---|---|
| 1988 | | | | | | | | | |
| 1989 | | | | | | | | | |
| 1990 | | | | | | | | | |
| 1991 | | | | | | | | | |
| 1992 | | | | | | | | | |
| 1993 | | | | | | | | | |
| 1994 | | | | | | | | | |
| 1995 | | | | | | | | | |
| 1996 | | | | | | | | | |
| 1997 | | | | | | | | | |
| 1998 | | | | | | | | | |
| 1999 | | | | | | | | | |
| 2000 | | | | | | | | | |
| 2001 | | | | | | | | | |
| Average | | | | | | | | | |

Data source to be: Long Live the Kings

### 10.4) Actual dates of release and description of release protocols.

### 10.5) Fish transportation procedures, if applicable.

Fish are transported from the large lake to the acclimation pond by a tank on a truck.

### 10.6) Acclimation procedures

Fish are acclimated to salt water for several days prior to release.

**10.7) Marks applied, and proportions of the total hatchery population marked, to identify hatchery adults.**

None applied

**10.8) Disposition plans for fish identified at the time of release as surplus to programmed or approved levels.**

We do not anticipate any excess fish.

**10.9) Fish health certification procedures applied pre-release.**

WDFW fish pathologist will examine the fish prior to release.

**10.10) Emergency release procedures in response to flooding or water system failure.**

There have not been floods or other failures at Glenwood Springs and we do not anticipate such in the future.

**10.11) Indicate risk aversion measures that will be applied to minimize the likelihood for adverse genetic and ecological effects to listed fish resulting from fish releases.**

The Puget Sound Technical Recovery Team did not identify a historical chinook salmon population in this location.

## SECTION 11. MONITORING AND EVALUATION OF PERFORMANCE INDICATORS

### 11.1) Monitoring and evaluation of "Performance Indicators" presented in Section 1.10.

#### 11.1.1) Describe plans and methods proposed to collect data necessary to respond to each "Performance Indicator" identified for the program.

The comanagers conduct numerous ongoing monitor programs, including catch, escapement, marking, tagging, and fish health testing. The focus of enhanced monitoring and evaluation programs will be on the risks posed by ecological interactions with listed species. WDFW is proceeding on four tracks:

1) An ongoing research program conducted by Duffy et al. (2002) is assessing the nearshore distribution, size structure, and trophic interactions of juvenile salmon, and potential predators and competitors, in northern and southern Puget Sound. Funding is provided through the federal Hatchery Scientific Review Group.

2) A three year study of the estuarine and early marine use of Sinclair Inlet by juvenile salmonids is nearing completion. The project has four objectives:

a) Assess the spatial and temporal use of littoral habitats by juvenile chinook throughout the time these fish are available in the inlet;

b) Assess the use of offshore (i.e., non-littoral) habitats by juvenile chinook;

c) Determine how long cohorts of juvenile chinook salmon are present in Sinclair inlet;

d) Examine the trophic ecology of juvenile chinook in Sinclair Inlet. This will consist of evaluating the diets of wild chinook salmon and some of their potential predators and competitors. Funding is provided by the USDD-Navy.

3) WDFW is developing the design for a research project to assess the risks of predation on listed species by coho salmon and steelhead released from artificial production programs. Questions which this project will address include:

a) How does trucking and the source of fish (within watershed or out of watershed) affect the migration rate of juvenile steelhead?

b) How many juvenile chinook salmon of natural origin do coho salmon and steelhead consume?

c) What is the rate of residualism of steelhead in Puget Sound rivers?

Funding needs have not yet been quanitifed, but would likely be met through a combination of federal and state sources.

4) WDFW is assisting the Hatchery Scientific Review Group in the development of a template for a regional monitoring plan. The template will provide an integrated assessment of hatchery and wild populations.

**11.1.2) Indicate whether funding, staffing, and other support logistics are available or committed to allow implementation of the monitoring and evaluation program.**

See Section 11.1.1.

**11.2) Indicate risk aversion measures that will be applied to minimize the likelihood for adverse genetic and ecological effects to listed fish resulting from monitoring and evaluation activities.**

Risk aversion measures will be developed in conjunction with the monitoring and evaluation plans.

## SECTION 12. RESEARCH

**12.1) Objective or purpose.**

No research is planned

**12.2) Cooperating and funding agencies**.

**12.3) Principle investigator or project supervisor and staff.**

**12.4) Status of stock, particularly the group affected by project, if different than the stock(s) described in Section 2.**

**12.5) Techniques: include capture methods, drugs, samples collected, tags applied**.

**12.6) Dates or time period in which research activity occurs.**

**12.7) Care and maintenance of live fish or eggs, holding duration, transport methods.**

**12.8) Expected type and effects of take and potential for injury or mortality.**

**12.9) Level of take of listed fish: number or range of fish handled, injured, or killed by sex, age, or size, if not already indicated in Section 2 and the attached "take table" (Table 1).**

**12.10) Alternative methods to achieve project objectives.**

**12.11) List species similar or related to the threatened species; provide number and causes of mortality related to this research project.**

**12.12) Indicate risk aversion measures that will be applied to minimize the likelihood for adverse ecological effects, injury, or mortality to listed fish as a result of the proposed research activities.**

## SECTION 13. ATTACHMENTS AND CITATIONS

SIWG (Species Interaction Work Group). 1984. Evaluation of potential species interaction effects in the planning and selection of salmonid enhancement projects. J. Rensel, chairman and K. Fresh, editor. Report prepared for the Enhancement Planning Team for implementation of the Salmon and Steelhead Conservation and Enhancement Act of 1980. Washington Department of Fisheries. Olympia, WA. 80pp.

Washington Department of Fish and Wildlife and Washington Treaty Indian Tribes. 1998. Salmonid Disease Control Policy of the Fisheries Co-Managers of Washington State. Olympia.

Washington Department of Fish and Wildlife. 1996. State of Washington Fish Health Manual. Hatcheries Program, Fish Health Division. Olympia.

Washington Department of Fish and Wildlife and Washington Treaty Indian Tribes. 1999. Current Brood Document.

## SECTION 14. CERTIFICATION LANGUAGE AND SIGNATURE OF RESPONSIBLE PARTY

"I hereby certify that the foregoing information is complete, true and correct to the best of my knowledge and belief. I understand that the information provided in this HGMP is submitted for the purpose of receiving limits from take prohibitions specified under the Endangered Species Act of 1973 (16 U.S.C.1531-1543) and regulations promulgated thereafter for the proposed hatchery program, and that any false statement may subject me to the criminal penalties of 18 U.S.C. 1001, or penalties provided under the Endangered Species Act of 1973."

Name, Title, and Signature of Applicant:

Certified by_____ Date:_____

**Table 1. Estimated listed salmonid take levels by hatchery activity.**

| Listed species affected: Chinook ESU/Population: Puget Sound Activity: Hatchery chum rearing/release | | | | |
|---|---|---|---|---|
| Location of hatchery activity: Eastsound, Orcas Island Dates of activity December-April | | | | |
| Hatchery program operator: Long Live the Kings Orcas Island/East Sound | | | | |
| **Type of Take** | **Annual Take of Listed Fish By Life Stage *(Number of Fish)*** | | | |
| | Egg/Fry | Juvenile/Smolt | Adult | Carcass |
| **Observe or harass a)** | | | | |
| **Collect for transport b)** | | | | |
| **Capture, handle, and release c)** | | | | |
| **Capture, handle, tag/mark/tissue sample, and release d)** | | | | |
| **Removal (e.g. broodstock) e)** | | | | |
| **Intentional lethal take f)** | | | | |
| **Unintentional lethal take g)** | | Unknown | | |
| **Other Take (specify) h)** | | | | |

a. Contact with listed fish through stream surveys, carcass and mark recovery projects, or migrational delay at weirs.
b. Take associated with weir or trapping operations where listed fish are captured and transported for release.
c. Take associated with weir or trapping operations where listed fish are captured, handled and released upstream or downstream.
d. Take occurring due to tagging and/or bio-sampling of fish collected through trapping operations prior to upstream or downstream release, or through carcass recovery programs.
e. Listed fish removed from the wild and collected for use as broodstock.
f. Intentional mortality of listed fish, usually as a result of spawning as broodstock.
g. Unintentional mortality of listed fish, including loss of fish during transport or holding prior to spawning or prior to release into the wild, or, for integrated programs, mortalities during incubation and rearing.
h. Other takes not identified above as a category.