Oregon Department of Fish & Wildlife
Salmon and Trout Enhancement Program (STEP)

Fish Propagation Project Application

Project Name: Calapooya Fall Chinook

New: ☐ **Renewal:** ☒

PART I – APPLICANT INFORMATION

Applicant: Umpqua Fishermen's Association (UFA)

If an organization, do you have 501.c.3 status? Yes ☒ No ☐

Name of Key Contact: Darrell Tufly

Address: Umpqua Fishermen's Association, P.O. Box 2083

City: Roseburg **State:** OR **Zip:** 97470

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Signature: Darrell Tufly **Date:** 4/24/07

A goal of STEP is to achieve the recovery and sustainability of Oregon's native stocks of salmon and trout. Through STEP, Oregonians can submit a proposal to ODFW and the Fish and Wildlife Commission to conduct a project consistent with this goal.

The following sections of the STEP Fish Propagation Project Application will ask you to provide the information needed to thoroughly review your proposed project and determine if it is consistent with STEP goals. The review will also determine whether a project is consistent with the Native Fish Conservation Policy (NFCP) and contributes to the broader goals of the Oregon Plan for Salmon and Watersheds (OPSW) to restore salmon runs, improve water quality, and achieve healthy watersheds.

As a STEP volunteer, become familiar with these important plans and policies that guide and direct STEP activities. As you complete this application, consider and explain how your proposed project will help STEP to achieve its goals and will contribute to Oregon's efforts to recover native fish and establish healthy watersheds.

PART II – TYPE OF REARING PROJECT AND OBJECTIVE

Fish Species to be Reared: Fall Chinook (CHF)

Intent of Rearing Project (check only one):

Type 1.	Increase fishing and harvest opportunities	☒
Type 2.	Enhance existing natural production	☐
Type 3.	Restore fish to vacant habitat	☐
Type 4.	Develop broodstock	☐

Note: OAR 635-009-0125 defines STEP fish propagation projects as the following:
***Supplementation** – A project involving continued planting to maintain or increase fish abundance where natural production is insufficient to meet management objectives (Type 1 above).*
***Rehabilitation** – A project in which fish are released to rebuild a currently depressed run (Type 2 and 3 above).*
***Broodstock Development** – A project in which reared fish are released and the resulting adults return to a recapture facility to provide an egg source for management program(Type 4 above).*

Project Start Date: Fall 2007 **Project End Date:** Spring 2013

Project Duration:

If Type 1 (see above):
5 years ☒

If Type 2,3, or 4 (see above):

Coho salmon	3 years	☐
Chum salmon	4 years	☐
Chinook salmon	5 years	☒
Steelhead	4 years	☐
Trout	4 years	☐

Note: Projects that continue beyond the above-listed time periods must apply for renewal at the end of that time period.

Describe how the proposed project *(please answer all that apply)*:

(a) Addresses ODFW fish management needs as outlined in subbasin fish management, species, recovery or conservation, or other plans *(please cite specific plan, goal, objective, etc).*

The goal of this project is to provide additional chinook fishing opportunity by releasing 300,000 CHF presmolts into the Calapooya watershed of the Umpqua Basin. These fish will contribute to both the ocean and freshwater fishery. The chinook in the upper part of the freshwater fishery will be in a section of the Umpqua with high accessiblity to anglers. Since these fish will linger in the mainstem, they will be more available to anglers than chinook which migrate to the South Umpqua which is closed to fishing from September 16 to November 30th. This project is congruent with the ODFW's "Easy Angling Oregon" program which promotes fishing on the Umpqua River.

This is a project renewal and slight change of the UFA chinook project proposals approved by the ODFW in 2002. Changes include: 1) recognizing this program as a Harvest Augmentation program and 2) converting the program from a unfed fry program and presmolt program to a presmolt only program of 300,000. According to ORS 496: 635-009-0130, projects releasing over 100,000 presmolts require ODFW Commission approval.

Plans that support this goal include the Native Fish Conservation Policy (NFCP) 635-007-0503 part 3: "Foster and sustain opportunities for sport, commercial, and tribal fishers consistent with the conservation of naturally produced native fish and the responsible use of hatcheries." This UFA project will provide some CHF ocean sport and commercial fishing, plus will provide 100 miles of angling opportunity up the mainstem Umpqua. With the "Easy Angling Oregon" program, adult hatchery CHF returning to the confluence of the Umpqua and Calapooya may have to wait for several weeks for the Calapooya to have enough water to allow passage. With the nearby Umpqua, Mack Brown and James Wood boat ramps/parks, these CHF will likely provide an excellent localized fishery.

Oregon Plan Principles: "Build partnerships, make friends, and strengthen community." This project provides the opportunity for the ODFW to build a partnership with the UFA and other community members. This partnership helps create a positive benefit in angling opportunity, plus garners assistance & support for the ODFW in other fish and wildlife projects. The project also provides educational opportunities for a variety of schools and the public.

(b) Will contribute to fisheries. Identify the fisheries and note any current special regulations such as "adipose fin-clipped only" that would affect the proposed project operation.

This program will contribute additional CHF for the ocean and Umpqua freshwater fishery. These fish will be available for recreational harvest in the mainstem Umpqua for about 100 river miles. Old coded-wire tag (CWT) data from mainstem South Umpqua and Cow Creek releases in 1987 - 1994 suggest a 0.2% survival of program fish with a 20% ocean and 15% freshwater harvest. Newer survival and harvest contribution data will become available from 2007 - 2009 as data is collected from the CWT marked CHF released in the Calapooya in 2004. A higher survival and subsequent contribution to the fishery is expected from the Calapooya released CHF. These increases would be the result of improved release techniques to enhance survival and actively promoting the availability of chinook in the upstream fishery.

According to ODFW 2001 - 2004 punch card data, freshwater harvest of CHF during September and October, when most program fish would migrate upstream, averaged 3,918 chinook in the bay and river. Moyers et al. (2003) estimated an upstream freshwater CHF harvest of about 948 - 1,436 salmon.

By promoting this fishery, we would hope to contribue several hundred chinook to the upper freshwater fishery.

Presently there is no fall chinook regulation that requires the harvest of clipped only salmon in the Umpqua basin. However, we would strive to mark at least 25% of the chinook for monitoring purposes. If requlations changed, these fish would be available for recreational harvest and plans could be made for marking a greater portion of hatchery salmon.

(c) Addresses the factors limiting adequate natural production in the basin *(lack of spawning habitat, poor rearing habitat)*. Also, please cite any information that supports that determination.

The Umpqua has over 200 miles of stock 18 spawning habitat from Elkton upstream. The primary spawning grounds for the stock 18 CHF occurs in the South Umpqua and Cow Creek. The South Umpqua is 11 miles upstream from the Calapooya where the project chinook will return. The CHF spawning grounds include 65 miles of the South Umpqua and 26 miles of Cow Creek (Moyers et al. 2003). These streams are closed to all angling during spawning to help protect the population. The Umpqua basin has also been active in a variety of stream restoration projects.These projects should also improve additional spawning habitat and migration corridors.

Fall chinook tend to migrate downstream after emergence from the gravel and spend most of the summer rearing in the estuary. The Umpqua estuary is well below its rearing carrying capacity. September estuary seining has documented hatchery CHF smolt lengths at 13.8 cm and native CHF at 14.1 cm. CHF lengths below 12 cm during the fall are suppose to be indicative of estuary carry capacities being exceeded (ODFW Information Report 88-1).

(d) Contributes to other STEP, OPSW, and salmon and/or watershed recovery needs *(education, citizen participation, other social benefit, etc)*.

This program provides an excellent opportunity for citizen participation and education. The UFA is the primary group which will implement this proposal. They are comprized of citizens from the communities of Sutherlin, Roseburg, Glide, Winston, Myrtle Creek, Canyonville, and Glendale. Because of this project, these volunteers learn basic fish culture skills and fish management practices as they actively work with a variety ODFW personnel. They also become involved in helping the Department in other ways such as angler education, free fishing days, monitoring/assisting at traps, attending public meetings, and assisting fund raising events such as the Umpqua Fishery Enhancement Derby. They advertise their activities in the local newspaper and have general meetings that are open to the public. UFA members annually contribute 4,000 to 5,000 hours of labor to the ODFW.

School kids and people from the general public also help with this program. The public and school kids are invited to assist the project at the Happy Valley trap

site and Rock Creek Hatchery. Volunteers get first hand experience with working with adult fish, fish culture techniques and learn about the ODFW's management plans for salmon.

(e) Is addressed under an existing Hatchery Genetic Management Plan or Hatchery Management Plan.

The basic format for this program is described in the: 2006 South and Mainstem Umpqua River Fall Chinook Program Hatchery Genetic Management Plan (HGMP), (See Attached). The UFA released CHF into the Calapooya from 2000 - 2004. In 2002, it was discovered the program was operating without a current project proposal. Thus, new project proposals were written and approved in 2002. In 2005, after the 5-year cycle was completed for the Calapooya, the program moved to Lookingglass/Olalla and Paradise. CHF were released in Lookingglass/Olalla in 2005 and 2007, and into Paradise in 2005 and 2006 . The 2006 HGMP includes data for all three release sites. This project proposal moves the program back to the Calapooya because as a harvest augmentation program it keeps the salmon in the fishable portion of the Umpqua longer, will create a popular fishery between Umpqua, Mack Brown and James Wood boat ramps/parks, and will reduce straying of hatchery fish onto primary spawning grounds upstream. The Paradise program was logistically difficult to implement, and has been dropped.

(f) Is consistent with the goals of the Hatchery Management Policy and the NFCP *(please answer all that apply)*:

a. *Fosters and sustains opportunities for sport, commercial, and tribal fishers consistent with the conservation of naturally produced native fish.* This program is consistent with the NFCP and the Hatchery Management Policy (HMP). Record keeping required by the HMP will be completed and submitted in a timely manner. This program will provide additional CHF for ocean and freshwater harvest. Although some CHF will be harvested by commercial operations, the primary purpose of this project is for recreation. This program will contribute additional harvest opportunity at Winchester Bay and the lower 100 miles of the mainstem Umpqua. The program will likely have its greatest contribution in the upper freshwater fishery as the chinook linger in the mainstem Umpqua prior to entering the Calapooya.

b. *Contributes toward the sustainability of naturally produced native fish through the responsible use of hatcheries and hatchery-produced fish.* Brood stock from this program is 100% wild. The South Umpqua and Cow Creek are the primary spawning areas for the stock 18 CHF. Hatchery straying on the primary spawning grounds should be minimal since these fish should home to the Calapooya which is about 11 miles downstream from the South Umpqua. The ODFW stock status report designates the South Umpqua CHF population as healthy. Run size has varied from 1,231 to 10,447 in the last decade.

c. *Maintains genetic resources of native fish spawned or reared in captivity.*
This program uses brood stock captured in the South Umpqua at Happy Valley or above. There may be a slight hatchery influence from unmarked presmolts and unfed fry released from brood year 2004 and 2006 in Lookingglass/Ollala which is a tributary of the South Umpqua. However, once the Calapooya program is implemented there will be no CHF hatchery program in the South Umpqua. Thus the brood will be native and should maintain the genetic resources of the stock 18 CHF.

d. *Minimizes adverse ecological impacts to watersheds caused by hatchery facilities and operations.*
Spawning and the initial traying of the eggs for this program is done at ODFW's Rock Creek Hatchery. The eyed eggs are transferred to the volunteer hatchbox sites. Each hatchbox site is above anadromous fish distribution, screened and uses gravity feed water. The hatchbox sites operate within ORS 537.142 statues. Ecological impacts to the watershed are negligable. Fish ponded are normally distributed to two sites. However, even if one site is used, only 3,750 pounds of fish are produced. This is well below the 20,000 pounds of fish required for NPDS permits.

Program fish have been free of disease since the program was initiated in the 1980s. Consequently disease threats are minimal to the watershed and the program has not had to use any water-applied chemical treatments to treat fish.

Releases of program fish are timed to mimic naturally produced chinook at both the fry and presmolt stage. Additionally, both program and naturally produced chinook emigrate at a smaller size than coho smolts, further reducing potential negative interactions.

PART III – LOCATION OF REARING PROJECT OR FACILITY

County: Douglas
Basin or Watershed: Umpqua/South Umpqua
Stream: Calapooya
and one of the following:
Road address _____
River or stream mile Confluence with mainstem Umpqua @RM 103
Legal (Township/Range/Section) _____
UTM coordinate _____

****Please include a map showing the project location within the watershed****.

Other salmon, steelhead and/or trout species present in basin:

Species	Run	Hatchery or Naturally Produced?	State or Federally Listed?
Chinook	Fall	Both	No
Chinook	Spring	Both	No
Steelhead	Winter	Both	No
Steelhead	Summer	Both	No
Coho		Both	No
Cutthroat		Natural	No
Rainbow		Both	No

List all other propagation programs in the basin or watershed:

Species	Responsible Agency or Organization	Number Released	Program Objective
Winter Steelhead	ODFW	80,000 - 120,000	Harvest Augmentation
Coho	ODFW	65,000	Harvest Augmentation/Mitigation
Spring Chinook	ODFW	320,000	Harvest Augmentation
Fall Chinook	GRWB STEP	100,000	Harvest Augmentatin
Fall Chinook	ODFW	70,000	Harvest Augmentation
Summer Steelhead	ODFW	165,000	Harvest Augmentation
Rainbow Trout	ODFW	55,000 - 100,000	Harvest Augmentation of Lakes

Brook Trout	ODFW	18,000	High Lakes Harvest Augmentation

If other propagation programs exist, what is the relationship of the proposed project to these other programs?

Peak run timing and freshwater harvest tends to be different between other propagation fish and the CHF. In the upper mainstem, CHF contribute to harvests opportunities from late August to October. Coho provide harvest opportunity from late October to January, STW from November to April, Spring Chinook from March to May and STS from May to November.

PART IV – OPERATION

Please explain the proposed operation including the following *(where applicable)* or attach a copy of the existing Hatchery Genetic Management Plan (HGMP) or Hatchery Management Plan (HMP):

(a) Source of broodstock.
South Umpqua, stock 18

(b) Number of eggs needed.
350,000

(c) Number of broodstock (males and females) needed.
81 pair

(d) Mating procedures.
Spawn at Rock Creek hatchery, 5 x 5 matrix

(e) Number of fry needed.
0

(f) Number of fingerling needed.

(g) Number of pre-smolt needed.
300,000

(h) Number of smolt needed.

(i) Anticipated or historical losses at each stage.
6% brood, 8% shock, 4% fry, 2% after ponding

(j) Anticipated or historical number of adult returns resulting from rearing project.
Based on the old 1987 - 1994 CWT data, this project should produce at least 600 adults and contribute approximately 210 chinook for ocean and freshwater harvest. By promoting the upper freshwater fishery, we hope that an additional 100 - 300 hatchery program chinook are harvested. In 2004, 100,0000 CHF released in the Calapooya were CWT and adiposed clipped. As these fish return in 2007 - 2009, the survival and harvest contribution of this program will be updated.

It is suspected that this program will have a higher survival than suggested by the older data since the releases in the Calapooya are 11 to 50 miles downstream of the historic releases which should reduce some emigration stress and predation. Based on the best survival data from the previous releases, the current presmolt releases are now conducted in May. This helps maximize water flow conditions for emigration, and reduces some of the predation that occurs as the CHF migrate downstream. Harvest levels should be increased, particularly upstream because the availablity of these fish will be promoted. As the adult program fish return to the confluence of the Umpqua and Calapooya in late Augusts and September, they may have to wait for several weeks for the Calapooya to have enough water to allow passage. With the Umpqua, Mack

Brown and James Wood parks and boat ramps being right there, the CHF should provide a good localized fishery.

(k) How returning adults will be collected.
Returning program chinook will not be collected. They will be allowed to enter the Calapooya. The Umpqua has over 200 miles of stock 18 CHF habitat from Elkton upstream to the South Umpqua and Cow Creek (Streamnet 2007). Consequently the 25 miles of fall chinook habitat in the Calapooya that the program fish would use represent less than 10% of the total CHF habitat in the upper basin. Thus the Calapooya will be designated as a hatchery influenced stream for use by the program fish. The program will also actively promote the recreational fishing opportunity provided by these fish. This has not been done in the past. Consequently harvest on the program fish should be greatly increased.

(l) Disposition of collected adults.
CHF collected for broodstock are part of the DEQ Memorandum of Agreement for carcass placement in the South Umpqua/Cow Creek. Carcasses not used for nutrient enrichment are normally donated to Wildlife Safari Zoo for their predators.

(m) Other projects that may receive eggs or reared fish from this project.
If a structural or water flow problem occurred at the UFA hatchbox sites and all of the eyed eggs could not be placed at UFA hatchboxes, the eggs could be left at Rock Creek Hatchery or transferred to Gardiner-Reedsport-Winchester Bay STEP's hatch house for rearing to the fry stage. Fry would then be transferred back to the UFA for placement or ponding.

Release Program (summarize proposed fish releases):

Number Released	Date of Release	Size (fish/lb) or Stage	% Marked	Release Location
300,000	May	250 - 80 presmolts	25% 75,000	Calapooya

(n) If fish are marked, please describe the type of mark and the reason for marking.
The program would mark at least 75,000 presmolts which represents 25% of the release. If tagging operations with the volunteers goes smoothly, the volunteers may try to mark additional chinook. The program fish will be adipose-clipped. If funding were available, we could contract with stock assesment to do an adipose and coded-wire-tag mark. Marking the fish will help identify program fish for survival and harvest contribution estimates. It will also help the program evaluate potential upstream stray rates.

PART V – FACILITY INFORMATION

Please describe - or provide attachments that describe - the facility including:

(a) Design – include a diagram or sketch that shows structures, water diversions, water distribution system, settling ponds, fish ladders, adult traps, etc.

Broodstock Collection: Happy Valley, Tangle-Net, Hook & Line: See HGMP Section 1.5 and Section 5.1.

Adult Spawning Holding, Spawning, Early Incubation: Rock Creek Hatchery: See HGMP Section 1.5, Section 5.3, Section 5.4 and Section 9.1.3. - 9.1.4.

Hatchboxes & Rearing: See HGMP Section 1.5 , Section 5.4 - 5.5, Section 9.1.3 - 9.1.4 and Section 9.2.2. Also see additional attachments for: Barrett Creek, Cooper Creek, Fall Creek, Tributary to Deer Creek, and Rock Creek Springs. Other sites mentioned in the HGMP are not presently used for the CHF project.

(b) Water supply - identify source, quantity available, quantity needed, and provide existing water quality and temperature (daily, weekly, monthly) data.

Same attachements as above.

Hatchboxes are operated by the volunteers and are used for eyed egg to fry rearing. The boxes were designed by Junge (1984). Each box holds three screened baskets which can hold 5,000 eggs each. The water for each site is from the tributary where the boxes are located. The water is gravity-fed into the system using a PVC pipe to divert some stream flow through a sub-surface water intake, barrel sand filter or screen then into the box. The sub-surface or screened/filtered intakes help control water flow, debris and sediment. The boxes use 6 - 10 gal/minute and maintain dissolved oxygen at 8 - 11 ppm. With the exception of Barrett Creek the water outlet returns the water from the hatchbox to the stream via a PVC or flexiable pipe. Barrett Creek hatchbox water flows into an earthen pond before returning to the tributary.

Hatchboxes for this program are used from November to March when stream cfs flows at each site far exceeds the operational water needed by the hatchboxes. Water for the Cooper Creek site comes from Cooper Creek Reservoir.

(c) Incubation, rearing, and/or broodstock holding facilities - dimensions, capacity, water required, etc.

Same attachments as part V. a.

Broodstock are transferred to Rock Creek Hatchery for holding and spawning. Holding pens are 12' x 30' concrete structures. Water depth is adjustable from

1.5' to 4' and normally kept at 4'. Water is supplied from Rock Creek from October to June. Flow is adjustable, but normally set at 1.5 cfs. Spawning occurs in an adjacent hatch house building. Rock Creek Hatchery incubates the eggs from green to eyed. Incubation takes place in 20 Marisource stack incubators. The water is filtered to 20 micron mesh from Rock Creek and passed through UV sterilization. The water supply is the same as the rest of the hatchery.

Eyed eggs are transferred to volunteer hatchboxes (See Above).

Rearing takes place at the Barrett Creek and Cooper Creek sites. The CHF are reared from the button-up stage to presmolt stage. Rearing at Barrett Creek is via an upright, round swimming pool (24' round, 4' deep) with a plasitc liner. The flow and depth are adjustable, but usually maintained at 3' deep and 60 gal/minute. The sides have been darkened to provide a more natural color, and the pool is equipped with an submerged feeder.

The Cooper Creek rearing pond is a 20' round, 4' deep fiberglass container. Flow and depth are adjustable, but usually maintained at 3' deep. This structure was purchased in 2006 and assembled in 2007. Like Barrett Creek, the outlet is via a mesh covered, 4" PVC pipe in the center of the pond. Water depth is controlled by the height of the central pipe. Water exits into a small, screened catch tank before draining into Sutherlin Creek.

(d) Adult trapping, holding and handling facilities.

The South Umpqua Happy Valley trap is a temporary PVC picket trap with a fyke that leads into a variable sized holding area (See Attached). The trap is placed in the stream by securing panel frames to steel fence posts pounded into the stream substrate. Then one inch PVC pipes are placed into the holes in the frame. The other side of the stream is partially blocked by a gravel bar that is breeched once the fall rains begin. The trap is checked daily and usually has a host living on site. Chinook are crowded with drift nets in the holding area and captured with dip nets. The salmon are then transported to Rock Creek Hatchery for holding and spawning. At different times throughout the trapping period the trap is left open to allow CHF passage. The trap is opened by removing some of the pickets from the back frames of the trap. Throughout most of the trapping period, a portion of the CHF run can bypass the trap by swimming up the opposite side of the river. This picket trap can not sustain full winter water flows so is removed when the water increases to a level that threatens the trap.

During some years a tangle-net or hook-and-line may be used to collect broodstock. These techniques are done in cooperation with the ODFW at sites approved by the ODFW. Sites would vary depending on water conditons.

(e) Water treatment (if applicable) and discharge process. Please also note whether a National Pollutant Discharge Elimination (NPDES) Permit is required.

Rock Creek Hatchery operates under a NPDES permit. The volunteer hatchboxes and rearing ponds operate under STEP Program ORS 537.142 for Water Rights. CHF ponded by the volunteers are normally distributed to two sites. However, even if one site is used, only 3,750 pounds of fish are produced. This is well below the 20,000 pounds of fish required for NPDES permits. Organic discharge is also controlled by the volunteers by avoiding over feeding the fry and placing material from vacuming the pond on the soil instead into a water source.

(f) Known existing or potential disease issues or considerations.

This program has been releasing CHF since the 1980s. No disease outbreaks have occurred at any of the sites to date.

(g) Process for disease monitoring.

Brood fish are tested by ODFW pathology. Once at the volunteer sites, the volunteers stay in touch with the STEP biologist. If adnormalities are noted, the STEP Biologist collects samples and sends them to pathology for testing.

(h) Anticipated facility operation and maintenance costs.

Volunteer Labor:	$66,000	
Maintenance:	$3,000	Volunteer fund raising & labor
Fish Food:	$3,000	R& E
Spawn to Eyed	$3,520	Rock Creek Hatchery
Tech Assistance	$4,360	STEP Bio & travel/hauling
TOTAL:	$79,880	

Documents attached that demonstrate legal access to the site or property rights:

Lease(s)	☐	**Access agreement**	☒
Option(s)	☐	**Water right**	☐
Easement	☐	**Other written authorization**	☐

Attach a written statement from the appropriate local planning authorities of the county or jurisdiction within which the proposed facility is located stating whether the proposed operation is in compliance with all local comprehensive land-use and/or estuary plans.

Note: It is the responsibility of the project sponsor to obtain all water rights, access agreements, easements, use permits or any other permits needed to undertake the project.

PART VI – PROJECT MONITORING AND EVALUATION

Please explain how this project will be monitored and evaluated and by whom (volunteer, ODFW, or other) including:

(a) Monitoring for disease.

Initial pathological evaluation of the broodstock is conducted by ODFW Pathology. Rock Creek Hatchery then monitors and treats the eggs with formalin from traying to the eyed stage. At the eyed stage, the eggs are transferred to the volunteers. Once transferred to the volunteers, the volunteers contact the STEP Biologist in the event of unusual mortality or abnormal fish. The STEP Biologist checks the fry prior to ponding, and checks the presmolts prior to release. When necessary, samples are collected by the STEP biologist and sent to pathology for testing.

(b) Monitoring of juvenile survival and/or distribution (if applicable).

In 2004, 100,000 CHF presmolts released in the Calapooya were CWT'ed. These fish will be returning from 2007 to 2009. Subsequently project-specific data on survival and distribution will be available. Older data exisits for CHF released in 1987 - 1994 in Cow Creek and the South Umpqua. Survival rates from these releases were low. This may have been partially due to release timing (late May and June) and releasing the fish in a larger water body.

(c) Monitoring of adult returns to this or other collection facilities (if applicable).

A few chinook may travel as far upstream as the Calapooya Nonpareil fish ladder. All fish passing the Nonpareil trap will be recorded by ODFW staff through 2009 due to coho genetic monitoring project. After 2009 the Nonpareil trap will be operated as ODFW budget and priorities dictate.

(d) Monitoring of adult returns to natural spawning areas (if applicable).

Some data of spawner/mile has already been collected by the ODFW and volunteers. Spawning ground surveys conducted in 2001 (prior to the return of CHF released in the Calapooya in 2000) documented less than 1 CHF per mile. In 2003, as some of the 3-year old program fish potentially returned, spawning ground surveys documented 0.9 - 3.1 CHF per mile (Groom 2003). In 2004 when more program fish would have returned, CHF ranged from 2.6 - 13.1 CHF per mile and averaged 5.5 (Biegun 2004). From 2007 - 2009, volunteers will have the opportunity to monitor the return of CWT-marked chinook to the Calapooya. The CWT-marked chinook will also help document the distribution of these salmon and their contribution to the fishery. (See Attached)

(e) Contribution to sport or commercial fisheries (if applicable).

Older data suggest a 20% ocean and 15% freshwater contribution to the fishery.With the collection of the CWT'ed chinook in 2007 - 2009, we hope that this data is updated. With the promotion of the fishery in the upper Umpqua, we

hope to contribute 100 - 300 additional fish to an upstream freshwater harvest that ranges from 948 - 1,436 chinook.

(f) Estimated monitoring costs.

Cost will primarily be volunteer labor unless funding is secured from outside sources for CWT-marking. Stock assesment may decide to do an evaluation of this program. CWT costs would be approximately $20,000 for 100,000 fish (approximately 33% of the presmolts). With non-CWT, adipose clipping, volunteer labor will be used. It will take about 150 hours to mark 75,000 presmolts. At $17/hour this is a value of $2,550, plus about $500 in staff time and ODFW equipment.

Spawning ground surveys are normally conducted 3 - 5 times, with 2 - 3 volunteer surveyors. Each survey takes approximately 6 hours. Thus the value of the surveys is: 90 hours of labor, @ $17/hour, equals $1,530 for volunteer labor and about $500 for staff contribution.

Volunteers could periodically conduct rig and boat count creel surveys to monitor angler effort when program chinook return. They might also be able to document some harvest data via angler interviews. If funding was available, a statistical creel could be implemented to monitor the contribution of program fish to the fishery. Statistical creel surveys cost approximately $10,000.

If this is a project renewal, please identify or provide a summary of past monitoring information including:

(a) Results of disease monitoring (please attach appropriate reports).

No diseases have been documented since this program began in the 1980s. Broodstock testing and treating the eggs to the eyed stage is done by the ODFW. Additional monitoring is described in the HGMP Sections 7.7, 9.1.6, 9.2.7, and 10.9.

(b) Results of any surveys (juvenile, adult trapping, spawning, creel, etc).

See section VI d above for spawning ground survey results and HGMP Section 6.2.2 for adult trapping and broodstock collection data. The program has normally captured about 90 - 100 pair of CHF per year since 1999 except for 2005 when the Happy Valley trap converted from a floating weir back to a picket trap. Brood goals were met again in 2006 with the picket trap.

The South Umpqua CHF population increased from 1,231 in 1998 to over 10,000 salmon in 2002 (Moyers et al. 2003). There was a low run of about 1,649 in 2005, but the population was nearly 2,400 in 2006 and is considered healthy. Freshwater harvest of CHF was estimated to be 948 to 1,436 and represents 8.3% to 21% of the South Umpqua escapement (Moyers et al. 2003).

(c) Reports, management plans, technical documents, or journal articles that reference the project.

The background data, facility data and operational procedures of this project are documented in the 2006 HGMP which is attached. The spawning ground data are contained in student intern papers by R. Groom (2003) and K. Biegun (2004) on file at the Southwest Regional Office. Moyers et al. 2003 is a cumulative progress report by the ODFW for the Chinook Technical Committee (Project Numbers: N98-17, N98-16, N99-07, N99-09, C00-12, N00-04, N01-18, C02-06, and C03). The overall health of the South Umpqua CHF is provided in the ODFW stock status report which notes the population is healthy.

Please identify any potential social consequences resulting from project returns and how those will be monitored or evaluated.

Since this program was previously considered a rehabilitation program, there has never been an effort to promote the fishery provided by the returning program chinook. However, as a harvest augmentation program, this project wants to contribute to the fishery, therefore will promote the freshwater opportunity provided by these fish. This will have a positive social consequence in promoting the fishery, and demonstrating the partnership and efforts of the volunteers and the ODFW. This would also be in keeping with the ODFW's "Easy Angling Oregon" initiative to promote local fisheries.

This fishery may also have a positive economic benefit for local communities. The chinook will linger in the mainstem Umpqua in an area that will be proximate to anglers from both Roseburg and Sutherlin. There are three boat ramps in this area that would provide access to this section of the river, plus there would be some bank fishing opportunity on the county park property at the boat ramps. A potential negative, would be if anglers started snagging fish. However, again due to the accessibility of this stretch of the Umpqua, law enforcement officials could help curb this negative behavior.

Angler effort and techniques could be monitored by conducting periodic rig and boat counts in this section of river. Angler success could also monitored. An informal creel survey could be done by volunteers, or the ODFW could implement a statistical creel to compare the results to Moyers et al. 2003. The ODFW could also promote voluntary "snout dropoffs" of CWT'ed chinook that return in 2007 - 2009.

PART VII – OTHER SUPPORTING INFORMATION

Please attach additional documents or provide information that details the project history, how the project may have evolved from the original design, or any changes/improvements that have been made to the operation.

The UFA formed 25 years ago when the STEP program was first initiated in the state. Like most groups, its primary focus was fish culture via the use of hatchboxes. Through the leadership of the ODFW, the volunteers reared unfed fry or presmolts to help recover salmon populations in various streams. As the ODFW evolved, so did the UFA.

Fish culture activities are still, by far, the most popular activity of the volunteers. Working with fish, hands on, is also the most effective way for the UFA to recruit members. However, as active partners with the ODFW the UFA has also evolved so that they now play a vital role in:

A. Providing volunteers each week to help Rock Creek Hatchery with department spawning activities.
B. Aquiring grants, building, maintaining and operating acclimation sites for ODFW hatchery programs.
C. Annually setting up netpens and feeding smolts that are part of the department's hatchery and mitigation program.
D. Participating in rearing fish for ODFW research projects.
E. Assist in data collection for ODFW research projects.
F. Monitoring and passing adult fish at various fish ladders.
G. Assisting at Free Fishing Day events.
H. Teaching angler education.
I. Providing "kiddy pond" trout fishing opportunities at various sports shows, community events and handicapped events.
J. Assisting the local Umpqua Fishery Enhancement group with fund raising efforts to provide a grant program for fisheries projects in the area.
K. Participating on the watershed council.
L. Participating at ODFW public meetings---usually as supportive voice.
M. Providing donations to special ODFW projects such as Diamond Lake.
N. Providing volunteers that also assist wildlife projects.

Since 2002 - 2004 when the UFA successfully reared and released over 400,000 unfed coho fry annually for the ODFW's Coho Pedigree Research project, the ODFW has cut the UFA's hatchbox coho program. The ODFW has also modified the UFA's chinook program from releases in Cow Creek and the South Umpqua to releases in smaller tributaries. Since 2000, the UFA's chinook releases have been completed by mid-May to help ensure adequate water flows and less predation during emigration. The releases have also been either in the Calapooya or Lookingglass/Olalla as a rehabilitation project. This current proposal is a modification to a harvest augmentation program. As such, the Calapooya provides the best release site because it provides nearby public access for increased angling opportunity. It will also contribute some chinook that stay in the mainstem longer, rather than migrating to the South Umpqua which is closed to

fishing in the fall. The Calapooya program also helps keep the hatchery fish downstream of the major spawning grounds in the South Umpqua. Since this strategy provides increased harvest opportunity and minimal hatchery straying, we are requesting a program change from 100,000 presmolts and 263,000 unfed fry (2002), to 300,000 presmolts. The presmolts will have higher survival, thus a greater contribution to the fishery. Presmolts are also larger prior to release, so can be marked for monitoring purposes. This program will contribute to the fishery; in the ocean, in 100 miles of the mainstem Umpqua and in a localized area near the confluence of the Umpqua and Calapooya.

This level of production will also help the UFA maintain a high degree of volunteer involvement and satisfaction, plus help continue the positive partnership between the UFA and ODFW.

ODFW USE ONLY

Reviewer	Name	Date	Approve[1]	Do Not Approve[1]
STEP Biologist	Laura Jackson	5/01/07	✓	
District Fish Biologist	Jim Mack	5/15/07	✓	
Watershed Manager	David McTimmis	6/6/07	✓	Attached comments
Regional Supervisor	Steven R Bagley	6/9/07	✓	
Fish Propagation	[signature]	10/8/07	✓	
Engineering	NO NEW ENGINEERING	—		
Conservation & Recovery	Kevin Goodson	7/26/07	With conditions	
STEP Coordinator	[signature]	8/8/07	WITH CONDITIONS	
Fish Division Administrator	[signature]	2/15/08	WITH CONDITIONS	
F & W Commission[2]	[redacted]			

[1] Please attach any comments that explain your position or will aid the project review.
[2] Projects that release more than 100,000 fish must be approved by the Fish and Wildlife Commission.