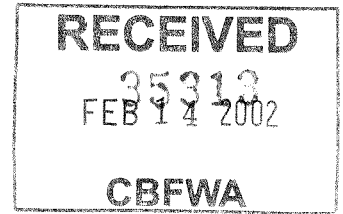




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TMG



State of Washington  
DEPARTMENT OF FISH AND WILDLIFE

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February 11, 2002

Jann Eckman, Interim Director  
Columbia Basin Fish and Wildlife Authority  
2501 SW First Avenue, Suite 200  
Portland, Oregon 97201

Dear Jann:

The Washington Department of Fish and Wildlife requests that two projects be reviewed for funding changes following the quarterly review.

The first is documented in the enclosed Within Year Change Request for Project Number 2001-053-00, for Duncan Creek chum. Due to savings in the project that are described in the request, we suggest increasing the scope of work for the project using the \$20,000 savings from the reduced salvage effort. The increased scope of work reflects efforts to begin the monitoring and evaluation portion of the project.

The second is documented in the enclosed letter to Bonneville Power Administration requesting immediate funding, through the quarterly review process, for Pygmy Rabbit Captive Breeding Proposal Project #25042 (Columbia Plateau Province - Crab Creek Sub-basin), in response to the dire status of the population. The U.S. Fish and Wildlife Service took emergency action on November 30, 2001, to list the Columbia Basin population of pygmy rabbits as Endangered under the ESA and the most recent population estimates have plummeted to fewer than 15 left in the wild.

We hope to have both of these proposals reviewed as expeditiously as possible by CBFWA, as they are both clearly time-sensitive. Thank you for your assistance.

Sincerely,

Bill Tweit  
Columbia River Policy Lead

BT:dak

Enclosures

cc: Larry Cassidy  
Tom Karier

**Re-Introduction of Lower Columbia River Chum Salmon into Duncan Creek, BPA  
Project Number 2001-053-00.**

Pacific States Marine Fisheries Commission and Washington Department of Fish and  
Wildlife

Lead Contact:

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BPA COTR: Alan Rugger

**Part 1. Background**

In the early twentieth century hundreds of thousands of chum salmon returned to Lower Columbia River tributaries and mainstem spawning sites. Since then habitat alterations leading to dynamic flow regimes, riverbed movement and heavy siltation have been largely responsible for the decline of this species in the Columbia. The few stable spawning areas that still exist are often in danger of being destroyed by flood events, development, or dewatering due to hydropower demands or climatic variation. In March 1999, the National Fisheries Service (NMFS) listed Lower Columbia River chum salmon as a threatened species under the auspices of the Endangered Species Act.

Duncan Creek, a Washington tributary that enters the Columbia at River Mile 140 (approximately 6 miles downstream from Bonneville Dam) was an important spawning area for chum salmon. In 1951, for example, over 500 chum were observed in Duncan Creek. In 1963, a dam was placed near the mouth of the creek and a culvert was installed for fish passage. However, chum returns rapidly declined after the dam was built and by 1969, no chum were found in the basin.

A three-pronged approach is being used to once again produce a self-sustaining chum salmon population in Duncan Creek. This approach includes modifying the dam, enhancing spawning habitat and using local brood stock to reintroduce chum back into the basin.

The first objective was accomplished in November 2000, when the dam was modified to allow free fish passage. The structure cost approximately \$500,000 including a \$131,106 self-assessment by the Skamania Landing Owners Association (SLOA). Washington Department of Fish and Wildlife (WDFW) and SLOA obtained the balance from non-federal sources including the State of Washington Governor's Salmon Recovery Office,

Salmon Recovery Funding Board, Washington Department of Natural Resources Aquatic Lands Enhancement Account, and the National Fish and Wildlife Foundation.

This project primarily addresses the next objective, the enhancement of spawning areas. A proposal was submitted to BPA during the High Priority Process. The proposal responded to Action 157 in the December 2000 FCRPS Biological Opinion. That action requires BPA to fund projects that improve and restore tributary and mainstem habitat for Columbia River chum salmon in the reach between The Dalles Dam and the mouth of the Columbia River to compensate for effects of water management operations in the Ives Island area.

The spring seep areas that chum historically spawned in are still present in Duncan Creek, however, during the past 30 years they have been covered by sediment, debris, and infested with reed canary grass. These sites will be cleaned and appropriate spawning gravels will be imported to maximize egg-to-fry survival rates. Estimated cost to provide approximately up to 18,726 feet of improved chum spawning habitat in Duncan Creek was \$287,000.

The third objective, using local brood stock to reintroduce chum back into the basin, is a by-product from the chum salvage operation. Water levels in the lower Columbia River during early 2001 were the second lowest on record and were predicted to remain low through the fall. The region expected to go into the year with approximately 9 million acre feet less water available in Canadian storage than the previous year. If fall rains were scant or began late compared to the start of chum spawning, large volumes of reservoir storage would be needed to support a spawning operation in the Ives Island area. If the conditions persisted, chum salmon returning to spawn from November through December would likely encounter limited access to spawning areas, at best. The Bonneville Population were the most at risk, as low water in Hamilton and Hardy Creeks may create a complete barrier to fish passage, while much of the Ives Island spawning area may be too low for successful spawning, if not completely exposed. Allowed to fare on their own, these populations may experience overcrowding of remaining available habitat, a significant increase in pre-spawning mortality, or, at worst, complete loss of the 2001 brood.

In response to this situation, the Bonneville Power Administration (BPA), with full NMFS support, requested that the Washington Department of Fish and Wildlife generate a chum salmon "salvage" plan outlining potential options for emergency intervention. The goal of the chum salvage operation is to preserve the genetic diversity within the Lower Columbia River chum Evolutionary Significant Unit (ESU), specifically the Bonneville Population, by ensuring that adequate numbers of chum survive to spawn successfully, either naturally or artificially. The degree of intervention would depend on an evaluation of water levels and spawning ground accessibility during October and November 2001, under prearranged triggers developed with the salmon managers and the Technical Management Team. Estimated cost of a full chum salvage operation including purchasing equipment to thermally mark the artificially produced fry was slightly less than \$200,000.

## **Part 2. Current Situation**

The primary objective of this project, the enhancement of the spawning areas in Duncan Creek, was completed in November 2001. The construction was completed within the approved budget.

Because flows in Hamilton and Hardy creeks were adequate in early November 2001, chum entry into those streams was largely unimpeded. Hamilton Creek flows were sufficient in early November to provide some level of spawning for chum in the mainstem Columbia near Ives Island. Since tributary access and some level of spawning area was available in the mainstem Columbia, the chum salvage operation last fall focused on re-introduction efforts into Duncan Creek. The reduced salvage effort provided savings of about \$20,000.

Initially, chum collected for brood stock from the Bonneville area were transported to Washougal Hatchery for spawning, incubation, and rearing. After the completion of the Duncan Creek spawning channels, some fish were released into those areas to spawn naturally. All total, 44 females and 52 male chum were collected during the brood stock collection efforts. Of those, 16 females and 24 males were allowed to spawn naturally upstream from the monitoring weirs in the Duncan Creek spawning channels.

This Within Year Change Request is to increase the scope of work for the project using the \$20,000 savings from the reduced salvage effort. The increased scope of work reflect efforts to begin the monitoring and evaluation portion of the project. The methods are explained in the Monitoring and Evaluation Plan for the Duncan Creek Salmon Reintroduction Program. Specifically, the egg-to-fry survival rate from adult chum salmon placed into the renovated Duncan Creek spawning channels would be evaluated and the environmental parameters within the newly created channels would be assessed. The objective is to make sure the channels are operating at optimum levels.

## **Part 3. Issue**

Periodic assessments of fry condition throughout the emergence period will help document any environmental effects on fry produced from each channel. For example, poor intra-gravel conditions may prompt pre-mature emergence. This would be disclosed by fry being smaller than normal.

Environmental or abiotic conditions are known to affect the performance and survival of salmonid fishes during spawning, incubation, and downstream migration. To evaluate the success of the Duncan Creek habitat restoration, the environmental conditions it operates under need to be continuously monitored. This type of documentation will identify factors that are responsible for any unexpectedly high mortality rates. It may also offer insights into conditions that need to be improved or simply explain why mortalities occurred.

Chum salmon utilize two interconnected zones in streams, a surface water area where spawning and juvenile life takes place and the hyporheic zone or intra-gravel area where incubation proceeds. The types of environmental parameters that would be measured in each of these zones are somewhat similar; however, the sampling methods used in each area are often different. In the surface water zone, velocity, depth, flow, temperature, suspended sediments, and dissolved oxygen levels will be routinely observed. In the hyporheic zone, gravel composition, water temperature, vertical hydraulic gradients, and oxygen levels will need to be monitored.

The best measure of the incubation characteristics of each channel will be the egg-to-fry survival rate collected through the capturing of the fry. These rates should be 40% or higher. If survival falls below this level, the environmental monitoring effort should help indicate why that may be occurring and consequently what things might be done to increase a channel's capacity to produce more fry.

#### **Part 4. Alternative Solutions**

This Within Year Change Request may be somewhat unusual; instead of requesting additional funds to complete a project, the Duncan Creek project was completed under budget and the proponents are asking to do more related work with the savings.

An alternative would be to defer the request to increase the scope of work for the project to the Provincial Rolling Review Process. Unfortunately, the final decisions on projects in the Lower Columbia review will not be made until August, long after the juvenile chum have exited Duncan Creek.

Chum emergence is expected to occur from mid-February through May. Assuming each female contained 3,000 eggs and the expected survival rate of 40 percent, then approximately 20,000 fry may be captured. Fry would be collected from the trap, enumerated, measured, weighed, and possibly marked, each day. The natural production monitoring would involve purchasing modified Fyke nets and capture boxes to be placed in the weirs.

The egg-to-fry survival rates would be easily obtained. There were known numbers of female chum placed into each channel. The carcasses were sampled to determine size. Fecundity data collected from fish spawned at Washougal Hatchery can be applied to estimate the number of eggs deposited in Duncan Creek. The resulting number of fry would be captured at the monitoring weirs.

Its possible the chum fry could be marked to determine egg-to-adult and fry-to-adult survival rates. Its possible the fry may be placed in a diluted strontium bath or may be marked with a fin clip. This information would help estimate survival rates and determining if straying occurred as adults.

As with any project proposal, there is a chance this project may not be approved for funding under the Provincial Rolling Review Process. In that case, the monitoring and evaluation portion would not be conducted and it would be unknown whether the improved spawning habitat at Duncan Creek is operating at optimum levels. In addition, if the naturally produced fry are not marked from last year's return, it would be difficult to assess whether adult returns three to five years later are the result of natural recolonization or unmarked fish from the salvage operation.

## **Part 5. Recommendation**

It is recommended the monitoring and evaluation portion of the project proceed using the savings from the salvage operation. Even if the Duncan Creek Project is not approved during the Provincial Rolling Review Process, at least returning adults in 2002 would have optimum spawning habitat within the stream.

Last year was the first time within the Columbia Basin when adult chum from adjacent stocks were released to spawn naturally in newly restored habitat in areas where chum had largely disappeared. Beginning the monitoring and evaluation program this spring would gain insight from those efforts. The results gained could be applied to other chum recovery efforts on the lower Columbia. In addition, the monitoring at Duncan Creek would complement those efforts at nearby Hamilton and Hardy creeks to gain egg-to-fry survival rate information on Columbia River chum. Also, if the juvenile chum from the natural production in Duncan Creek are marked, it would be easier to assess the benefits from the habitat restoration and the salvage operation when the fish return as adults.

Again, the main objective is to determine if the Duncan Creek spawning channels are operating at optimum levels. The tasks listed above were described fully in the Monitoring and Evaluation Plan for the Duncan Creek Chum Salmon Re-Introduction Program. Unfortunately, due to original budget concerns this portion of the project was not addressed in the scope of work. We believe that savings from the reduced salvage operation are sufficient to achieve this objective. However, time is of the essence because the juveniles will begin to emerge in mid to late February.

January 9, 2002

Sarah McNary, KEW  
BPA  
P.O. Box 3621  
Portland, OR 97208

Dear Ms. McNary,

This letter is a request for immediate funding, through the quarterly review process, for Pygmy Rabbit Captive Breeding Proposal Project # 25042 (Columbia Plateau Province – Crab Creek Sub-basin). During the preceding three months, circumstances have changed significantly in Washington State for pygmy rabbits (*Brachylagus idahoensis*). First, the U. S. Fish and Wildlife Service (USFWS) determined that the genetic evidence demonstrates that Washington's pygmy rabbit population is unique and should be listed under the Endangered Species Act (ESA). Second, the USFWS took emergency action on November 30, 2001 to list the Columbia Basin population of pygmy rabbits as Endangered under the ESA. Surveys in fall 2001 confirmed that only a handful of animals are left in the wild. Third, this proposal received a "high priority" funding recommendation from both the Independent Scientific Review Panel (ISRP) and the Columbia Basin Fish and Wildlife Authority (CBFWA); however, funds were not allocated through the Provincial Review Process to implement this project proposal.

The pygmy rabbit is the smallest native rabbit in North America and has declined with the development and loss of shrub-steppe habitat in the central Columbia Basin of Washington. As a keystone shrub-steppe obligate species, the pygmy rabbit was used as a Habitat Evaluation Procedures (HEP) indicator species by the Washington Department of Fish and Wildlife (WDFW) to assess shrub-steppe losses resulting from the construction and subsequent inundation associated with Grand Coulee Dam. Furthermore, shrub-steppe habitat is also considered by both the Northwest Power Planning Council (NPPC) and WDFW to be a high priority habitat.

There is a direct link between existing BPA funded shrub-steppe mitigation projects like the Sagebrush Flat Wildlife Area (SFWA) and this proposal. WDFW intends to release progeny from the captive breeding project on the SFWA and in appropriate habitat on other lands purchased by BPA and/or permanently protected, enhanced, and maintained with BPA funds. This proposal is consistent with both adaptive management strategies for pygmy rabbits, which includes supplementing at risk endemic populations with individuals that are genetically identical to the few rabbits that remain in the wild within Washington, and the NPPC's Fish and Wildlife Program overarching biological objectives (ESA species). Moreover, Bonneville Power Administration recently funded a three-year research project on the SFWA to assess the impacts of livestock grazing on pygmy rabbit/shrub-steppe habitat.

WDFW, in conjunction with Washington State University and the Oregon Zoo, is bringing a few

of the remaining wild pygmy rabbits into captivity to rear young for release to the wild. Costs of the project are approximately \$250,000 per year. This includes funds to protect wild rabbits and rear captive rabbits.

The project is a last-ditch attempt to save the genetically distinct Washington pygmy rabbit from extinction. Support by BPA will ensure that the project continues and young captive-reared rabbits will be released back into shrub-steppe in eastern Washington including the SFWA. The project abstract follows, the narrative for 25042 contains the full description of the proposal.

### PROJECT ABSTRACT

Washington's endangered pygmy rabbit population has dramatically declined over the past decade, during which time efforts to acquire, protect, and restore habitat have been implemented. **Current numbers of pygmy rabbits have declined to 1 small population, and we estimate fewer than 15 rabbits remain.** Genetic analyses of pygmy rabbits in Montana, Idaho, Oregon, and Washington have confirmed that the Washington population of pygmy rabbit is distinct and isolated from the rest of the species' range. Because small populations of rabbits are susceptible to extirpation from severe winter weather and predation, extinction of this unique pygmy rabbit subspecies or race may occur at any time. We therefore have initiated a study with the Oregon Zoo of captive Idaho pygmy rabbits to develop husbandry techniques for captive rearing, release, and augmentation of Washington's population. The goal of the proposed augmentation project is to ensure maintenance of Washington's pygmy rabbits until habitat acquisition, recovery and restoration is sufficient to maintain populations without augmentation. We propose immediately applying the results of the Oregon Zoo husbandry study to implement captive rearing and augmenting Washington's pygmy rabbits. We propose a cooperative, three-year project involving the Washington Department of Fish and Wildlife, the lead agency, Washington State University, where captive breeding of Washington's pygmy rabbits will occur, and the Oregon Zoo, where husbandry techniques are being studied. A research scientist will be hired to oversee captive rearing, release, and monitoring phases of the project. The scientist will annually report on production, release and post-release survival phases of the project. Washington Department of Fish and Wildlife will assist with construction of the breeding facility, capture, and release of pygmy rabbits at WSU. A parallel captive population will be established at a regional zoo. Dr. Kenneth Warheit of WDFW will conduct genetic analyses of the captive population. The Oregon Zoo will consult on husbandry methods and participate in oversight of the project. A technical oversight team with members from the Oregon Zoo, Washington Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, the Nature Conservancy and Washington State University will review all aspects of the project.

Thank you for considering this very urgent funding request. Should you have questions about this request, please contact Mr. Paul Ashley at (509) 456-2823. I look forward to receiving your favorable response in the near future.

Sincerely,



Bill Tweit  
Columbia River Policy Lead

Cc: Larry Cassidy, Tom Karier, Stacey Horton, Brian Walsh  
Doug Marker, Peter Paquet  
Dave Brittel, John Pearce, Mark Quinn, Paul Ashley, Dennis Beich, Dave Hays