



MEMORANDUM

OREGON DEPARTMENT OF FISH AND WILDLIFE INTRA-DEPARTMENT

DATE: February 06, 2008
TO: Greg Apke
FROM: Jim Muck
SUBJECT: Waiver Request for the Oregon Department of Transportation at Tuttle Creek, Interstate Highway 101.

The ODFW Transportation Program in coordination with the ODFW Lower Rogue Watershed District, has reviewed the request by the Oregon Department of Transportation (ODOT) to obtain a fish passage waiver at the Interstate Highway 101 road/stream crossing at Tuttle Creek. The Department is agreeable to the request and has provided justification in the Benefit Analysis below.

Background

Tuttle Creek is located south of the town of Brookings in the unincorporated community of Harbor. Tuttle Creek is a tributary of the Chetco River. The current culvert crossing on Highway 101 of Tuttle Creek is a 48 inch corrugated metal pipe that has been in place nearly 40 years. The culvert is 400 feet long, is located under 500 feet of fill, and is under a four-lane section of the Interstate 101 highway. Several years ago, ODOT discover that the pipe was breached in the middle resulting in water flowing around and under the pipe. This caused significant scour at the outlet. This culvert is in need of repair and the construction will trigger the Department's fish passage requirements.

The ODOT reviewed alternatives for fish passage at the Tuttle Creek Crossing. These alternatives were: 1) Ramming a 12-foot culvert through the fill below the highway, and 2) Building a full spanning bridge over Tuttle Creek. ODOT determined both fish passage alternatives were not economical feasible. ODOT is also concerned about potential flooding issues to downstream landowners with a new pipe. Existing conditions at the culvert do not sufficiently allow water flow during high floods and ponding above the culvert occurs.

There are three culverts downstream of the Interstate Highway 101 culvert at Tuttle Creek. The first culvert is 300 feet long and is located at the mouth of Tuttle Creek. This culvert extends to the Curry County Road Department's clean-out station. Immediately upstream from the County's cleanout station is another 600-foot culvert that runs through a private RV park. The total length of these two culverts creates a partial passage barrier to salmonids. The third culvert is an undersized 40-foot culvert upstream of the RV Park and again limits passage for salmonids. These are relatively new culverts and fish passage will not be improved until a trigger occurs.

The ODOT asked the Department in April 2007 to review possible fish passage alternatives to the existing culvert and/or potential mitigation opportunities in lieu of fish passage at the highway 101 crossing site. ODOT subsequently determined that passage restoration at Tuttle Creek was not economically feasible and ODOT is now requesting a fish passage waiver. ODOT has proposed a mitigation project at Joe Hall Creek, which is located on the lower Chetco River. The mitigation consists of replacing a culvert that is currently problematic for fish passage on North Bank Chetco River County Road with a bridge to improve fish passage.

The Department has determined Tuttle Creek may potentially provide significant spawning and rearing habitat for Federally ESA-listed Southern Oregon/Northern California Coast Evolutionarily Significant Unit (SONCC) Coho Salmon. Historical usage of Tuttle Creek also includes Winter Steelhead, Cutthroat Trout, and Pacific lamprey.

Benefit Analysis

Waiver Site: Tuttle Creek, Interstate Highway 101 Crossing

ODFW District staff and the ODOT Environmental Tech Center staff conducted various site visits to Tuttle Creek. Tuttle Creek is tributary to the Chetco River Estuary, and is located on the Harbor Bench, south of the town of Brookings at mile-post 359.10. The Department estimated the stream has 1.72 miles of habitat available to migratory fish above the Hwy 101 culvert. There are three partial fish passage barriers downstream of the Hwy 101 crossing. The stream length downstream of highway culvert is 0.7 miles. Upstream of the highway crossing are two county culverts, one that has recently upgraded to meet fish passage requirements on the south tributary, and one on the north tributary that is a partial barrier. There is also a dam located just upstream of the County Culvert on the north tributary of Tuttle Creek. This dam is a complete fish passage barrier and is located 0.25 miles above the existing highway culvert.

Jim Muck, ODFW, and Julie Haire, ODOT, conducted rapid habitat assessment surveys for Tuttle Creek. The average active channel width for Tuttle Creek is 6.2 feet. Tuttle Creek has two main tributaries, north and south, along with several smaller tributaries on the north. Fish distribution was estimated by drainage acreage and gradient. The total combined miles for salmonid rearing is estimated at 1.72 miles. Tuttle Creek is forested above the Interstate 101 highway, and the riparian zone is well shaded. However, the stream was dry during the survey with only two pools present. Cutthroat trout were observed in both these pools, located on the south tributary.

Mitigation Site: Joe Hall Creek crossing on North Bank Chetco River Road.

The Oregon Department of Transportation is proposing a bridge replacement at the Joe Hall Culvert on North Bank Chetco River County Road located at mile-post 1.65. This culvert is owned by Curry County. This culvert consists of a 10-foot reinforced concrete box culvert (RCBC) with fish passage baffles and a two-to-three foot perch on the outlet depending on flow conditions. It is a direct tributary of the Chetco River at approximately river mile 2. The current culvert was installed by the county approximately 20 years ago and does not meet current ODFW fish passage criteria. The culvert only passes fish during high flow events, severely limiting passage for coho salmon, fall Chinook, and cutthroat trout. The culvert has a life span of 50 plus years, and it is unlikely the county will replace it with a fish passable structure any time in the near future.

ODOT proposes to replace Joe Hall Culvert with a full spanning bridge. This bridge would allow for fish passage at all life stages over a wide range of flows, as well as allow for natural sediment and large wood transport. Replacement of the culvert with a bridge would open up approximately 2.22 miles of habitat for coho salmon, fall Chinook, winter steelhead, cutthroat trout, and Pacific lamprey. The active channel width (ACW) for Joe Hall Creek is considerably larger than Tuttle Creek with an average 25.3 feet versus an average ACW in Tuttle Creek of 6.2 feet.

Historically, Joe Hall Creek supported winter steelhead, coho salmon, fall Chinook, sea run cutthroat trout, and Pacific lamprey. Jim Muck, ODFW Transportation Liaison, and Julie Haire, ODOT Biologist, conducted a rapid habitat assessment survey of Joe Hall Creek. The stream is low in gradient, and is well vegetated with conifers, alder, and other natural vegetation. ODFW estimated fish distribution for the mainstem of Joe Hall Creek at 1.75 miles. The average active channel width for Joe Hall Creek is 25.34 feet. There are also several smaller tributaries on Joe Hall Creek with combined estimated fish distribution mileage of 0.47 miles. The pool to riffle ratio for Joe Hall creek was good and surveyors observed winter steelhead throughout the stream reach.

Conclusions and Recommendations:

Tuttle Creek is in close geographic proximity to Joe Hall Creek. Both watersheds are located within the Rogue Species Management Unit and within the Chetco Sub-basin of the South Coast Drainage Basin (17). Both watersheds are tributaries to the Chetco River. Historically, Tuttle Creek supported populations of cutthroat trout, winter steelhead, and Southern Oregon/Northern California Coast Coho Salmon. Tuttle Creek and Joe Hall watershed basins are 4 miles apart. Because of the close geographic proximity and the similarities in historical fish usage, Joe Hall Creek Watershed is an appropriate choice as a mitigation site for Tuttle Creek.

Joe Hall Creek is about the same linear stream length as Tuttle Creek, Joe Hall Creek has four times the average wetted width of Tuttle Creek, resulting in a greater usable salmonid habitat area in Joe Hall Creek. The rapid habitat survey showed that stream flow is very limited in the summer on Tuttle Creek, while flows and pool habitat in Joe Hall Creek was sufficient for summer rearing of juvenile salmonids. This provides a net benefit of salmonid production. Joe Hall Creek will also provide additional habitat for fall Chinook salmon. However, no mitigation for fall Chinook salmon is required.

ODOT plans to replace the culvert with a bridge at the road crossing at Joe Hall Creek in 2009, during the ODFW In-water work window. The bridge will meet National Marine Fish Service fish passage guidelines along with state fish passage criteria.

ODFW staff recommend that a fish passage waiver for this project be granted.

c: Todd Confer (ODFW), Jon Germond (ODFW)
Julie Worsley (ODOT), Jim Collins (ODOT), Sammy Dunnivant (ODOT)