



# Oregon

Theodore R. Kulongoski, Governor

## Department of Fish and Wildlife

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May 10, 2010

Mr. Bill Ferber  
Oregon Water Resources Department  
725 Summer Street NE, Suite A  
Salem, OR 97301

REFERENCE: Transfer T-10984

The Department has received notification of your finding that transfer application T-10984 cannot be made without injury to an existing in-stream water right. You also indicated that the applicant intends to seek approval under ORS 540.530(1)(b) – (e). Based on this, you have requested ODFW make a recommendation on whether OWRD should consent to injury of an in-stream water right. For the ODFW to consent to injury of an in-stream water right, ODFW must find that the transfer will provide a net benefit to the resource consistent with the purposes of the in-stream water right, in this case fish and fish habitat.

The ODFW has evaluated the proposed transfers and finds that the over all benefits of the transfers provides a net benefit, which offsets the injury to the in-stream water right caused by the transfer. The attached analysis provides ODFW's reasoning for recommending the consent to injury of the in-stream water right.

If you have any questions, please contact Jeff Neal in our John Day office (541-575-1167) or Rick Kepler in our Salem office (503-947-6084).

Bruce McIntosh

Assistant Fish Division Administrator  
Fish Division

Cc: Jeff Neal, ODFW John Day Office  
Eric Julsrud, WRD Canyon City Office  
Rick Kepler, ODFW Salem

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Attachment: ODFW's Discussion and Analysis of Transfer T-10984 (May 10, 2010)

# **ODFW's Discussion and Analysis of Transfer T-10984**

## **May 10, 2010**

### **Action**

This project involves moving one Point of Diversion (POD) for water right No. 29970 upstream approximately 1200 feet to a scour pool where adequate water depth is available for pumping. Moving the POD upstream will enable the land owner to remove a pushup dam with the intention of improving fish habitat and passage. The authorized quantity of water for water right No. 29970 is 1.17 cfs. The Water Resources Department (WRD) has determined that transferring this water right upstream will injure at least one in-stream water right. ORS 540.530 (1)(c) allows the WRD to consent to injury of an in-stream water right only if the agency who applied for the in-stream water right recommends that WRD consent to the injury. For the recommendation and consent of injury to occur the agency that requested the in-stream water right must find that the transfer will result in a net benefit to the resource. This is Oregon Fish and Wildlife's (ODFW) analysis of the transfer and determination of whether a net benefit to the resource will occur.

### **Background**

The John Day river basin encompasses approximately 8,100 square miles, is the second longest free-flowing river in the lower 48 states and is one of the few rivers in the Columbia River basin that is managed exclusively for wild anadromous fish. The North Fork John Day River enters the John Day River at approximately river mile 185 near the community of Kimberly. The North Fork supports populations of wild redband trout, spring Chinook salmon, bull trout and summer steelhead, as well as mountain whitefish and many species of non-game fish.

Over the last 20 years, hundreds of fish habitat improvement projects have been implemented throughout the John Day River basin by ODFW, Watershed Councils, and Soil and Water Conservation Districts. These riparian fencing, irrigation diversion, streambank stabilization and upland restoration projects were funded to address fish passage barriers, habitat, water quality, flows, and screening. Many of the projects contribute to irrigation efficiency and effectiveness.

In recent years the North Fork John Day River Watershed Council (Watershed Council) has focused restoration efforts on improving fish passage and riparian function at irrigation diversion dams. The accepted historic irrigation water diversion method in the basin has been almost exclusively to use gravel push-up dams. These push-up dams require reconstruction prior to each irrigation season using a bulldozer, loader or backhoe to push stream gravels and cobble into a semi-porous berm that is angled across the stream. The dam spans all or most of the stream channel and often requires modifications throughout the summer to ensure that the legal rate of irrigation water is diverted as streamflows recede. Sealing the push-up often includes placing plastic or canvas on the upstream face of the dam, which can further impede adult and juvenile fish passage upstream. In many years, spring or early summer precipitation events wash out the push-up, requiring it to be installed a second or even third time. Each dam may divert water for several water rights and several different landowners. Some of these dams are significant barriers to upstream migration of adult and juvenile salmon and steelhead.

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## **Discussion and Analysis of Transfers T-10984 (5-06-10)**

In 1998, the North Fork John Day Watershed Council began replacing push-up dams on the North Fork John Day River with pump stations that no longer required construction of push up dams. In this proposed transfer the POD is being moved up stream to take advantage of a natural scour pool. A pump will be installed in the pool and a pushup dam will no longer be required to be constructed and maintained. Since 1998, numerous push-up structures have been replaced with pump stations throughout the lower North Fork John Day River basin. For all projects, an approved fish screen is installed. Benefits resulting from replacing a push-up dam with the installation of a pump in a natural pool are the elimination of a barrier to fish passage and eliminating annual streambed and bank disturbance. Eliminating annual streambed and bank disturbance will improve stream riparian habitat conditions over time, promoting greater stream stability and more rapid riparian vegetative recovery.

### **In-stream Water Right**

The project stream reach has two established instream water rights (MF 216 and IS No. 69960). According to WRD stream flows in the North Fork through this reach have a history of being able to meet all water rights except the ISWRs. Therefore, moving the POD upstream has the potential to "injure" the ISWR. The Water Resources Department has determined that transferring this water right upstream 1200 feet will injure the in-stream water right and has asked ODFW to concur with the injury if we find that the transfer will result in a net benefit to the resource. Following is ODFW's analysis and evaluation of whether the transfer will result in a net benefit to the resource.

MF 216 with a priority date of May 24, 1962 has a water right of 55 cfs year around, IS No. 69960 with a priority date of June 12, 1989 has recommended minimum flows for fish life that varies by month from 140 to 380 cfs. Comparison of the ISWRs flows to WRD's Expected Average Natural Flow (EANF) shows there is likely to be injury to IS No. 69960 if the point of diversion is moved (transferred) upstream.

### **Injury**

Potential injury of the IS No. 69960 would most likely occur during the irrigation season beginning in July until the end of the irrigation season at the end of September. The Water Availability Tables show a deficient of between 22 and 85 cfs in flows.

Habitat within the affected reach is utilized during the period of expected impact to the ISWR by adult and juvenile Chinook salmon, adult and juvenile steelhead, resident redband trout, Pacific Lamprey and fluvial bull trout. The greatest potential for negative impact to the in-stream water right would be in late September when resident redband trout, and juvenile Chinook and steelhead would be moving downstream through this stream reach. During downstream migration juvenile salmon and steelhead and fluvial sized resident redband trout will utilize this stream reach for foraging and escape cover much like they would habitat that is occupied all year long. Potential impacts include reduced availability of foraging habitat, reduced availability of edge habitat (hiding cover offered by stream bank sedges and slightly submerged vegetation), reduced water depth, and any effects that less water in the channel would have on water quality such as increased water temperature. Because of these impacts on the habitat in this stream reach, ODFW has determined that under ODFW's Mitigation Policy (OAR 635-415) the habitat would fall into Category 3. Category 3 habitat is essential or important habitat that is limited on

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## Discussion and Analysis of Transfers T-10984 (5-06-10)

a physiographic province or on a site-specific basis. If impacts are unavoidable, ODFW requires in-kind, in-proximity replacement of impacted habitat and no net loss of habitat quantity or quality. In this case reduced flows have the potential to limit fish migration, escape cover and forage opportunities.

### Mitigating Measures

Installing a pump system in a natural scour pool would assure that all life stages of fish will have passage at all stream flows throughout the entire year. Salmon, trout, and steelhead have adapted life history patterns within the basin to take advantage of the most desirable habitats and water temperatures needed for survival. One of these adaptations is for them to move either upstream or downstream seeking cool water refuge areas. Push-up dams have the potential to prevent these juvenile salmonids from reaching refuge areas. Removal of the historically used push-up dam and replacing it with a screened pump system that is fish friendly will greatly benefit fish passage in the lower North Fork John Day River and allow these juveniles fish access to the most desirable water temperatures and habitat.

A second benefit to removing the push-up dam is that streambed material will no longer be disturbed each year to construct the push-up dam. This will result in more stable stream banks at the retired push-up dam construction site and likely will result in a more stable stream channel downstream from the former pushup dam site. By not disturbing streambed material each year the stream channel will, over time, become more stable which should result in improved riparian vegetation at the site and a narrower and deeper stream channel. Other similar projects completed within the North Fork watershed have resulted in increased sedge growth at the waters edge, increased willow growth on the stabilized gravel bars, and a gradual narrowing and deepening of the stream channel. The improvements in fish passage, riparian vegetation and stream structure would provide additional higher quality habitat than the habitat found using a pushup dam.

The Watershed Council has been monitoring water temperatures at a similar project upstream from the project site. Preliminary results indicate that water temperatures can increase by as much as eight degrees Fahrenheit in the artificial side channels formed by pushup dams that divert a significant portion of the river, and that the majority of the warmed water passes by the pump location and returns to the main river, resulting in warming of downstream flows. By eliminating the need for the pushup dam, there will no longer be annual disturbance of the gravel bar and artificial maintenance of the side channel entrance. Eventually gravel, sand and silt will accumulate in the diversion to the point where the un-vegetated side channel will cease to exist. Eliminating the need to maintain the pushup dams could result in reductions in water temperatures.

There are other aspects of the project not associated with water rights that will help mitigate for potential injury to the ISWR. The applicant has enrolled the riparian area adjacent to the irrigated pastures into the Conservation Reserve Enhancement Program (CREP) administered by the Farm Service Administration and is developing a management plan for the uplands. The CREP portion consists of building a corridor fence to prevent grazing within the riparian area over several miles of river frontage and the management plan calls for construction of cross fences to improve livestock grazing in the upland pastures. These two activities will allow for

## Discussion and Analysis of Transfers T-10984 (5-06-10)

natural growth rates of riparian vegetation and eventually lead to a fully functioning channel (within site capability).

### Conclusion

Transferring water right No. 29970 upstream approximately 1200 feet has the potential to injure IS No. 69960 by potentially reducing low flows by 1.17 cfs. This in turn has the potential to limit fish migration, and make escape cover and forage opportunities less accessible. In considering this water right transfer, ODFW estimates that a series of benefits will offset the injury. ODFW believes fish migration will not be prevented by the reduction in flow caused by the upstream transfer. Sufficient water will remain in stream to facilitate migration. Any flow reductions will be offset by an increase in quantity and quality of fish habitat as a result of the removal of the pushup dam. The habitats that are increased or improved include escape cover, foraging habitat and reduction in water temperature. The channel is expected to narrow and stabilize at and for a substantial distance below the pushup dam site which in turn will allow riparian vegetation to recolonize the area providing more escape and forage habitat for fish. Additionally, allowing stream banks to stabilize will improve riparian vegetation providing shade and a deeper channel which should, at a minimum, curtail warming of the stream and has the potential to allow the stream to maintain cooler water temperatures. Additionally, as a net benefit the new POD will allow volitional passage past the diversion, whereas, the pushup dam blocked such passage. Because of these stated reasons ODFW finds that the overall project benefits will more than offset any negative effects and hereby recommends that WRD concur in the injury of IS No. 69960 for the transfer of Water Right No. 29970.

### References

Lauman, J. E. 1977. Fish and wildlife resources of the John Day basin, Oregon, and their water requirements. Oregon Department of Fish and Wildlife. Portland, Oregon

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