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September 9, 2010

## MEMORANDUM

**TO:** Fish and Wildlife Committee

**FROM:** Tony Grover

**SUBJECT:** Discussion with US EPA Permitting staff regarding Dworshak reservoir Nutrient Enhancement Project (2007-003-00)

Michael Lidgard, US Environmental Protection Agency Region 10, National Pollution Discharge Elimination permit unit manager, or his designee, will be joined by US Army Corps of Engineers staff to discuss the permitting requirements for project number 2007-003-00, Dworshak Dam Resident Fish Mitigation.

The goal of this project is to improve resident fisheries in Dworshak Reservoir as partial mitigation for losses from the construction of Dworshak Dam and continuing impacts from ongoing dam operations. Dworshak Dam was built in 1971 by the U.S. Army Corps of Engineers (USACE). This 218.8 m (718 ft) high dam irrevocably blocked the North Fork of the Clearwater River for access to hundreds of miles of tributaries for anadromous fish production and flooded 86.9 km (54 mi) of riverine habitat for resident fishes. The resident fisheries that were developed in the reservoir were intended to mitigate for some of these losses; however, they were only partial mitigation for the historic losses. Current fish mitigation is inadequate for the reservoir operations that continue to severely impact native and non-native resident fish in Dworshak Reservoir and the North Fork Clearwater ecosystem. In addition, the productivity of this ecosystem has been significantly reduced due to the loss of 'marine derived nutrients' from anadromous salmonids that no longer access the drainage.

The IDFG fish management objective for kokanee in Dworshak Reservoir is to maintain densities of 30 to 50 adult kokanee per hectare on an annual basis and catch rates of at least 0.7

fish/hr, at an average length of at least 25 cm. This project addresses this objective through supplementing the reservoir with nutrients in an effort to increase the efficiency of the food web. This results in more desirable phytoplankton community (i.e. edible taxa) and increased zooplankton abundance, which should, in turn, provide more forage for kokanee. While kokanee are the primary species benefiting from this project, it also benefits other resident fish throughout the entire ecosystem. An improved kokanee population provides forage for the reservoir's bull trout and smallmouth bass. Also, having 300,000+ adult kokanee migrate up tributary streams and die each fall adding nutrients to these stream systems, thereby enhancing fluvial fish populations above the reservoir.

This project is conducted jointly with the USACE. The USACE Walla Walla District recently contracted Dr. John Stockner to evaluate the current state of the reservoir and develop a prescription for a 5-year nutrient enhancement experiment. The USACE has been purchasing the needed fertilizer and equipment and performing the nutrient applications, while IDFG project staff worked cooperatively with both Dr. Stockner and the U.S. Army Corps of Engineers to assess the effectiveness of nutrient additions to increase reservoir productivity and enhance kokanee size or abundance.

In order to assess the effects of the nutrient supplementation, IDFG has been monitoring reservoir limnology at eight limnological stations; seven throughout Dworshak Reservoir and a single station in the North Fork Clearwater River below Dworshak Dam (NFC). Nutrient treatments have and are intended to occur in the main reservoir and the North Fork Clearwater Arm, therefore stations in these areas represent the treatment area.

EPA has recently reconsidered the need for a NPDES permit after a citizen complaint. The project is on hold until the appropriate studies and permits are in place. EPA staff are working with USACOE and Idaho Fish and Game personnel to develop the permit documents.