ICICLE STRATEGY

Leavenworth National Fish Hatchery Conservation Water Quality Improvements

More information available at: http://www.co.chelan.wa.us/natural-resources/

PROJECT DESCRIPTION

The Leavenworth National Fish hatchery (LNFH) relies on both a surface water diversion from Icicle Creek at RM 4.5 (42 cfs) and groundwater wells located near the hatchery canal (14.9 cfs) to produce the water quality necessary for their fish production year-round. The hatchery also relies on 16,000 ac-ft of storage to supplement surface water diversion during low flow periods (July through early October). To maintain groundwater supplies in the shallow wells, flows from Icicle creek are diverted to the hatchery canal for groundwater recharge. These flows are controlled by LNFH Structure 2.

Several projects have been identified that would offset some of the surface water that the LNFH currently uses for its operations. Cumulatively, these projects would cost $20 million dollars and could reduce use by up to 20 cfs.

Water Effluent Pump Back: Effluent water would be pumped into the hatchery canal to recharge the wellfield. The results would be a reduction of water currently diverted from Icicle Creek for that purpose.

Wellfield Enhancement: A new wellfield would be developed for use by LNFH that is hydraulically connected to the creek. This would result in a reduction of water currently diverted from Icicle Creek to recharge the existing wellfield at the hatchery canal.

Water Re-Use: : Implementation of water reuse systems for onsite operations. This may include installing recirculating tanks that reuse and reduce water, and improves water quality.

PROJECT BENEFITS

- Instream flow benefits of up to 20 cfs in Icicle Creek
- Reliable water supply for hatchery operations

GUIDING PRINCIPLES

- Improves instream flow
- Supports a sustainable LNFH
- Enhances Icicle Creek habitat and passage

POTENTIAL ISSUES/DATA GAPS

- Requires NEPA environmental review
- Coordination with passage improvement projects for structure 2 and screening upgrades
- Further review of Water Re-Use Pilot
- Any projects need to maintain the hatchery groundwater supply

TIMELINE TO IMPLEMENT

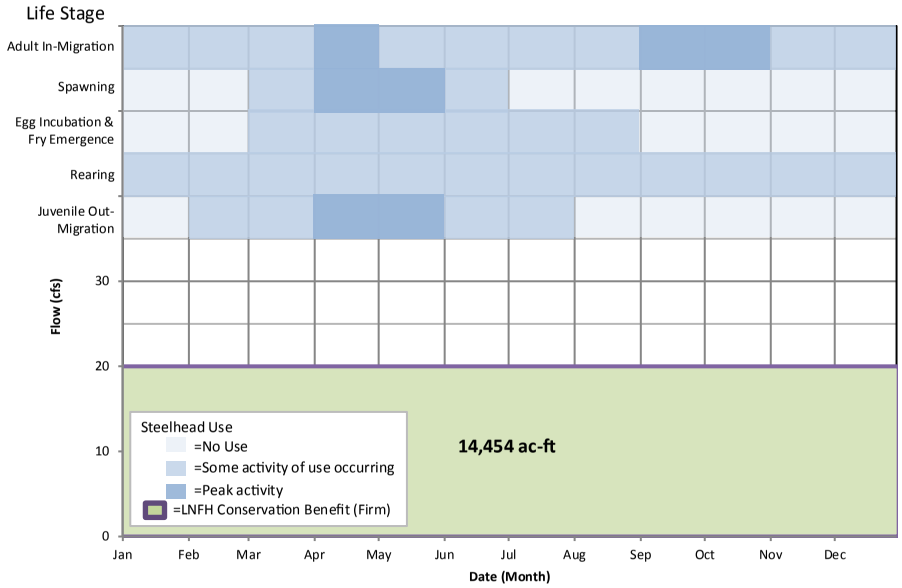
2015	Effluent Pump Back Pilot Project
2015	Wellfield Enhancement Feasibility Study
2016	Water Re-use Pilot Study
2016	2018 Environmental Review
2018	Project Implementation & Construction

EXISTING AND ONGOING STUDIES

- LNFH Effluent Pump Back Preliminary Assessment, 2015, Anchor QEA.
- LNFH Icicle Creek Rapid Geomorphic Assessment, 2014, USBR
- LNFH Groundwater Model Update Technical Memorandum, 2014, USBR
- Icicle Creek Fish Passage Evaluation for LNFH, 2013, USFWS
- Icicle Creek Instream Flow and Fish Habitat Analysis for LNFH, 2013, USFWS
- Leavenworth National Fish Hatchery Final Value Analysis, 2012, USBR
- Leavenworth National Fish Hatchery, Proposed Flow Management Operations for 2009-2014, January 2009
- Biological Assessment for Operations and Maintenance of Leavenworth National Fish Hatchery, 2006, USFWS
- Water Management Plan for Leavenworth National Fish Hatchery, 2004, Montgomery Water Group

Revised: 4.2016

Project Benefit Hydrograph and Steelhead use within the Wenatchee Basin



GIS Path: T:\projects_8\Icicle_Creek_Water_Management_120045\Delivered\2_Page_Documents\LeavenworthNationalFishHatchery.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2/5/2016 || User: acrumbaker || Print Date: 2/24/2016