

Upper Salmon Basin Watershed

NEWS ABOUT RESTORING FISH HABITAT IN CENTRAL IDAHO

Winter 2011

Our Mission: Protect and restore the region's significant fish habitats through a partnership approach that respects agriculture and improves our way of life.



Homegrown, Common-Sense Conservation



Upper Salmon Basin
WATERSHED PROGRAM

In this issue:

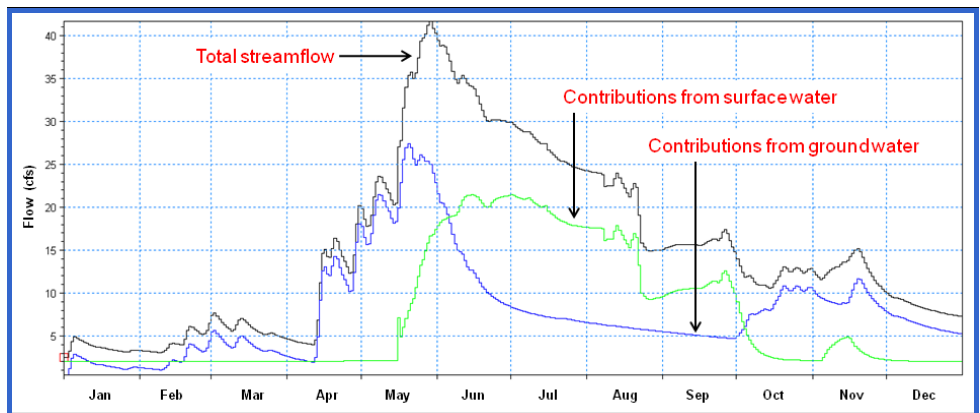
- Investigating the connections between irrigation, stream flow, and ground water in the Lemhi River Basin.
 - 2010 Project Report
 - Coordinators Comments

Investigating the connections between irrigation, stream flow, and ground water in the Lemhi River Basin

By Taylor Dixon, Hydrologist, Idaho Department of Water Resources

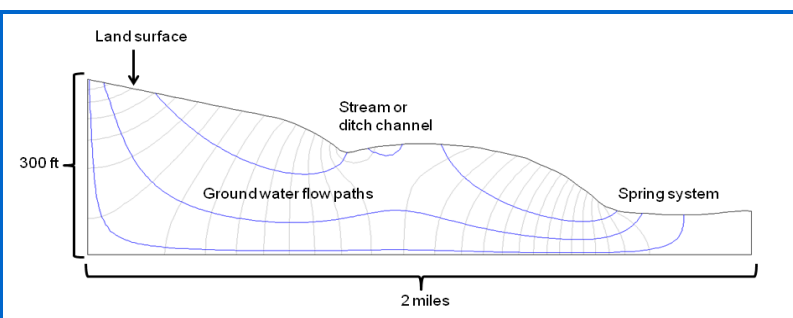
In the Lemhi River Basin, how dependent are stream flows on water that emerges from the ground? Where does this ground water come from, and what feeds it? How long does it take to travel beneath the surface? These are some of the general questions driving a current study underway by the Upper Salmon Basin Watershed Program, the Idaho Department of Water Resources, and consultant CH2MHill.

The goal of this two-fold study is to characterize the role of ground and surface waters in the Lemhi River Basin. From a fundamental standpoint, this information will complete our understanding of the Basin's water cycle by supplying answers to questions about how much water is supplied to the Basin, how much is lost from the Basin, and how it is distributed across the Basin. From a practical agricultural standpoint, this study seeks to provide information key to making water management decisions that make sense, such as determining where certain irrigation practices benefit stream flows and water users, and where alternative practices should be considered.



Example hydrographs of a stream characteristic of tributaries to the Lemhi River. With the aid of hydrologic models, and data from hydrologic field tests, the contributions of ground and surface waters to total streamflow can be differentiated, allowing for more accurate and useful water resource management decisions to be made.

Although it is common knowledge that ground water plays a role in the Lemhi River Basin, the magnitude and extent of this role is relatively unknown. Several previously conducted studies and local landowner accounts, have supplied important information relevant to the interactions between ground water, irrigation, and stream flows in the Basin. Specifically, there is evidence that irrigation augments ground water levels by seeping into the subsurface, and that ground water, in turn, helps supply surface flows during the irrigation season.



Cross-section of ground representative of a tributary catchment in the upper Lemhi River Basin with model-estimated ground water flow paths illustrated. As shown, ground water discharging to the surface in one location may have multiple sources in the catchment (watershed).

However, if understanding these interactions across the Basin is a puzzle, what we currently have is a handful of pieces and no definite ideas of where or how these pieces fit. Thus, additional tests are warranted to provide more detailed information regarding where ground water is fed by irrigation and natural runoff processes, which direction it flows, where it discharges to the surface, and how long it takes to travel beneath the surface.

The study currently underway aims to build upon existing information by discovering the missing pieces and connections that make the hydrologic puzzle whole. Through this effort we hope to shed light on unknowns that are critical to balancing agricultural needs with water resources in the Basin, such as where flood irrigation benefits downstream water users, and where it is more appropriate to conserve stream flows by utilizing sprinkler irrigation.

2010 Project Report

2010 was a productive year for the Upper Salmon Basin Watershed office. We improved access to 9.4 miles of aquatic habitat for anadromous fish migration and protected almost four miles of native streamside vegetation. These projects provide benefits to both federally-listed and resident fish, and agricultural operators, through water conservation, riparian habitat protection and enhancement, and improvement of agricultural systems. We are proud to have completed a total of seven on-the-ground projects and are excited to have five projects already planned for completion in the Lemhi and Salmon-Panther watersheds for 2011.

- **Hayden Creek 1A Diversion Closure and Riparian Fencing Project:**

Closed a small, unscreened surface water diversion which potentially captured migrating fish. Replaced with sprinkler irrigation and 3,480 feet of fencing. Sponsored by Lemhi Soil and Water Conservation District.

- **Lower Lemhi Side-Channel Enhancement and Upstream Barrier:**

Construction of an upstream fish barrier structure to prevent fish movement into the L-8A ditch system while still allowing fish to access good habitat in the lower end of the ditch; 3,400 feet of riparian fence constructed. Sponsored by Lemhi Soil and Water Conservation District.

- **Middle Carmen Creek Riparian Fencing Project:**

Protects riparian habitat for fish with 8,384 feet of riparian fencing. Sponsored by Lemhi Soil and Water Conservation District.



The Middle Carmen Creek fence protects vegetation which will provide streamside habitat for fish and wildlife

This siphon/barrier spreads out water flow and has no plunge pool, keeping steelhead from entering the irrigation system and backdoor fish screens.



- **Little Springs Culvert Replacement under Highway 28 Project:**

Replaced culvert which is a velocity barrier to certain life stages of migrating fish with fish passable culverts and simulated stream bottom. Sponsored by the Office of Species Conservation and in partnership with Idaho Department of Transportation.

- **Upper Carmen Creek Riparian Fencing Project:**

Protects riparian habitat for fish with 8,000 feet of riparian fencing and a riparian grazing plan. Sponsored by Lemhi Soil and Water Conservation District.

- **Iron Creek Culvert Replacement:**

Replaced two culverts which were a velocity barrier to certain life stages of migrating fish with a concrete and steel bridge. Sponsored by Lemhi Soil and Water Conservation District.

- **Kenney Creek Riparian Fencing Project:**

Protects riparian habitat for fish with 6,650 feet of riparian fencing. Sponsored by the Lemhi Regional Land Trust.

Upper Salmon Basin Watershed Program

Phone 208-756-6322/FAX 208-756-6376
E-mail: Hans.Koenig@osc.idaho.gov
Web site: www.species.idaho.gov

Staff

Hans Koenig.....Project Coordinator
Allen BradburyProject Planner
Douglass Fitting..... Project Planner
Abbie Gongloff.....Technician 4

Coordinated by

Idaho Governor's Office of Species Conservation
Nathan Fisher, Administrator
Mike Edmondson, Program Manager

USBWP Advisory Committee
V. Don Olson, Chairman

“As I look back at all of the projects that have gone in, not one is a silver bullet, but there is a cumulative effect. And you have all of these other values that you pick up along the way.”
Merrill Beyeler, local rancher



NEWS ABOUT
RESTORING FISH
HABITAT IN
CENTRAL IDAHO

955 Riverfront Drive,
Suite B
Salmon, Idaho 83467

WE'RE ON THE WEB:

WWW.MODELWATERSHED.ORG

To:

Coordinators Comments *By Hans Koenig*

There are new faces in the watershed program office. In November, Abbie Gongloff joined our staff as a Technician 4. Abbie received her Master's Degree in Botany from the University of Wyoming in Laramie. She previously worked for North Wind, Inc. in Salmon. Douglass Fitting also arrived in November to fill the vacant Planner position. A graduate of Utah State University, Douglass previously worked for the Idaho Department of Lands for 11 years and was most recently employed as a Hydrologist by an engineering firm in Oregon. Please join me in welcoming Abbie and Douglass to the watershed program.

This fall, Narrative Lab of Portland, Oregon completed our outreach project which included a website, color brochure and a free-standing display for fairs and school programs. Our new look with motto and mission statement is captured on the cover of this newsletter. Our remodeled website contains the stories and photographs of some of our conservation partners from the East Fork, Pahsimeroi, Lemhi and Salmon. We plan to continue to grow the site, adding more tales and images from our efforts in the restoration of habitat for Chinook salmon and steelhead.

The watershed program is also featured on the Idaho Rangeland Resource Commission's new website, Life on the Range. Steve Stuebner, a well-known Idaho author and producer of the old *Incredible Idaho* television series, visited our office in the fall and spent a day with me in the field meeting with agricultural producers. The articles and video that Steve and his crew produced provide a unique insight into the lives of local ranchers and their vital role in the recovery of anadromous fish in the Upper Salmon Basin. These stories can be seen at www.lifeontherange.org.

This issue of the Watershed News highlights the projects that we have completed in 2010. As we say goodbye to another year, I want to take the opportunity to thank all of those agencies and individuals who have dedicated their time, energy and resources to assist us in making this a most successful and productive year for the Upper Salmon Basin Watershed Program. I would especially like to express my sincere appreciation to BLM Fish Biologist Jude Trapani for his contributions to the watershed program and to this community. As the long-term Chairman of the Technical Team and a founding member of the Advisory Committee, Jude has assumed a pivotal role in the watershed program for nearly two decades.