NFWF

Columbia Basin Water Transactions Program

FY 2013 ANNUAL REPORT

OUR MISSION

Replenishing freshwater streamflows vital for fish and people in the communities of the Columbia Basin.

As we mark the beginning of a second decade for the Columbia Basin Water Transactions Program (CBWTP), we want to congratulate Andrew Purkey for his inspiring work as the National Fish and Wildlife Foundation's (NFWF) program director for CBWTP since 2003. Andrew has accepted a position to direct NFWF's Western Water Program, with a focus on expanding the water transaction approach for replenishing instream flows to other river basins in the West.

Andrew's work has been integral to the program's success, and we thank him for his energy and commitment. Happily, we'll still see him regularly as his office is just paces from that of NFWF's new program director for CBWTP, Scott McCaulou. Scott comes our way after 14 years of on-the-ground experience in water transactions at the Deschutes River Conservancy.

We're pleased to report that in 2013, CBWTP completed 45 transactions. These projects represent many years of hard work by our water trust and irrigator partners in Oregon, Washington, Idaho and Montana, culminating in more than 48,000 acre-feet of additional water for streams and rivers around the region.

In the following pages, you'll read stories about four tributary systems in the Columbia Basin rebounding with inputs of creativity, trust-building, restoration and new flows of water. These streams carry prosaic names like "Big Springs" or "Ninemile," yet their commonplace designations do not convey the urgent significance of their value, not just for irrigation, but as refuges for the remarkable fish of the Northwest.

We're gratified by the progress we're making with our partners, and eager to continue strengthening the resilience of the ecosystems on which our region's future depends.

Sincerely,

Christopher H. Furey, Esq.
Policy Analyst, Bonneville Power Administration

Scott McCaulou
Program Director, CBWTP,
National Fish and Wildlife Foundation

BACKGROUND

The Pacific Northwest is abundant with tributary streams branching to the region's major rivers, which ultimately join to the Columbia River. Most tributaries are fed by rainfall and especially by mountain snow pack, now on a diminishing trajectory due to a changing climate. Waterways ribbon across the 250,000 square miles of the Columbia Basin, through wilderness and forestlands and arid agricultural landscapes of Idaho, Montana, Oregon and Washington. Legal rights dating to the nineteenth century provide that landowners may divert the waters of these streams for agricultural production. A long list of commodities is supported by irrigation—from cattle to carrot seed, from alfalfa to apples. During the growing season, demand for water often exceeds what nature can supply, especially in dry years. Under these conditions, flows may be greatly diminished in sections of many streams; and water temperatures may jump, doubly compromising habitats dependent on water. Some tributaries run dry. Meanwhile, salmon, steelhead, trout and other fish that rely upon tributaries may be unable to complete their lifecycles, an impact that ripples to tribes and to fishing communities, which count on fish for their cultures and economies.

ABOUT THE PROGRAM

The Columbia Basin Water Transactions Program is the nation's first effort to restore the health of tributary streams on a regional scale. Our focus is on enhancing streamflows to benefit the fish, wildlife and communities that depend on them.

We provide financial and technical support for a partnership between nonprofit organizations, state water agencies and tribes. Together, we work with ranchers, farmers, municipalities and irrigation districts on voluntary, market-based approaches that bring water use into balance, so streams stay wet and working landscapes remain productive.

Water transactions offer financial opportunities for agricultural producers to change management practices in ways that respect their livelihoods and enhance the health of waterways they care about.

HOW WE BEGAN

A decade ago, the Bonneville Power Administration established a partnership with the National Fish and Wildlife Foundation (NFWF) in cooperation with the Northwest Power and Conservation Council to launch CBWTP at a time when using market approaches to restore water in streams was an emerging concept. Initially, the mission was to innovate and experiment to increase tributary flows. Over the years, we have worked with our partners to develop and use water transactions as effective stream restoration tools.

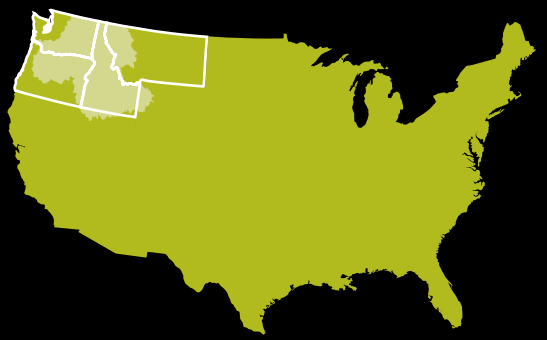
ABOUT THE NATIONAL FISH AND WILDLIFE FOUNDATION

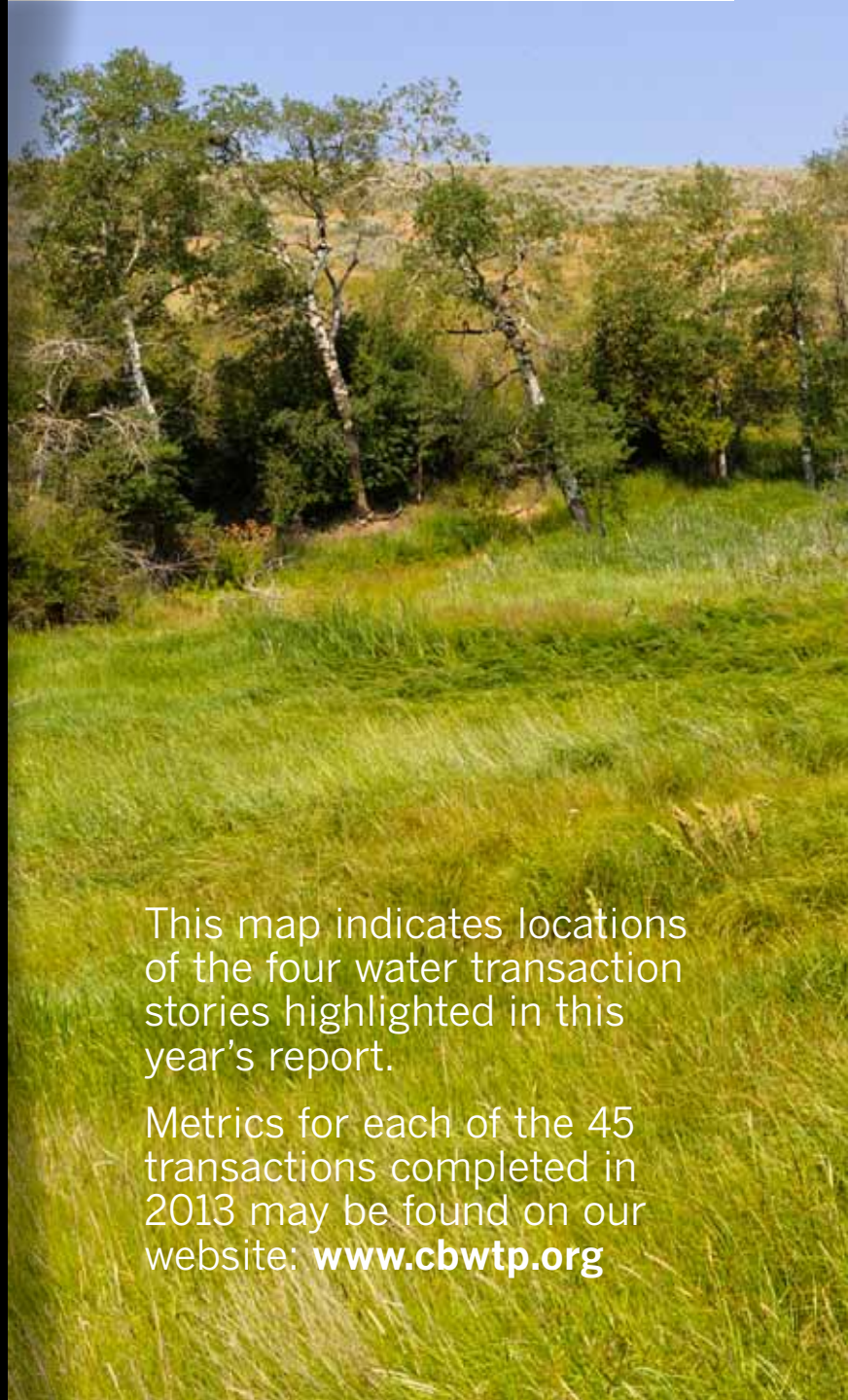
Chartered by Congress in 1984, the National Fish and Wildlife Foundation protects and restores the nation's fish, wildlife, plants and habitats. Working with federal, corporate and individual partners, NFWF has funded more than 4,000 organizations and committed more than $2.3 billion to conservation projects.

NFWF manages the Columbia Basin Water Transactions Program with the Bonneville Power Administration. For more information, visit www.cbwtp.org

CBWTP WATER TRANSACTION AREAS

The Columbia Basin includes portions of Idaho, Montana, Oregon and Washington. CBWTP is at work across this region, completing strategic transactions in tributaries that will provide the most significant biological benefits.





This map indicates locations of the four water transaction stories highlighted in this year's report.

Metrics for each of the 45 transactions completed in 2013 may be found on our website: **www.cbwtp.org**

COLUMBIA BASIN REGION

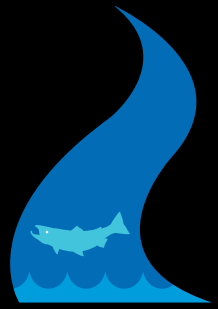
2013 KEY ACCOMPLISHMENTS*

NEW PROTECTED WATER INSTREAM

225
CUBIC FEET PER SECOND

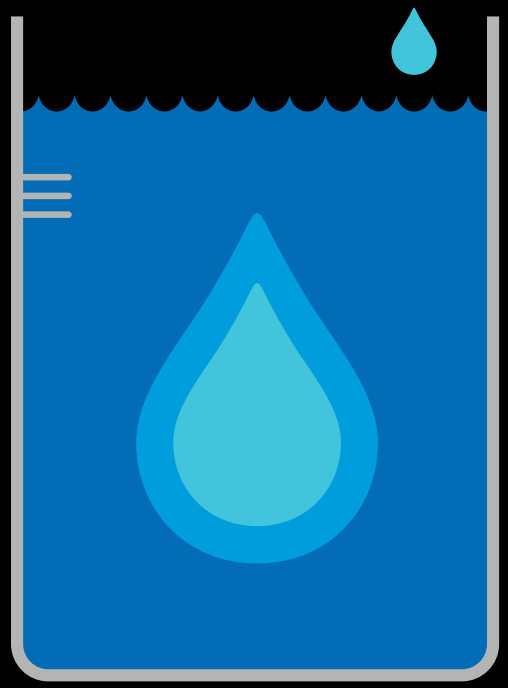
48,198
ACRE-FEET

HABITAT BENEFITTED BY NEW STREAMFLOWS



276
MILES

CUMULATIVE PROTECTED STREAMFLOWS FOR LIFE OF TRANSACTIONS FUNDED IN 2013



2,959,327
ACRE-FEET

ALL PROTECTED STREAMFLOWS SINCE 2003

819
CUBIC FEET PER SECOND

*Includes Accords

ACCORD WATER TRANSACTION OUTCOMES

The CBWTP and its partners develop and review water transactions carried out as part of the Columbia Basin Fish Accords with the State of Idaho, the Confederated Tribes of the Umatilla Indian Reservation, and the Confederated Tribes of the Colville Indian Reservation.

	IDAHO	CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION	CONFEDERATED TRIBES OF THE COLVILLE RESERVATION
NEW PROTECTED WATER INSTREAM	2,604 ACRE-FEET	933 ACRE-FEET	1,949 ACRE-FEET
	21 CUBIC FEET PER SECOND	8 CUBIC FEET PER SECOND	33 CUBIC FEET PER SECOND
ALL PROTECTED WATER INSTREAM SINCE 2003	14,011 ACRE-FEET	3,532 ACRE-FEET	2,702 ACRE-FEET
	65 CUBIC FEET PER SECOND	20 CUBIC FEET PER SECOND	38 CUBIC FEET PER SECOND
HABITAT BENEFITTED BY NEW STREAMFLOWS	10 MILES	32 MILES	50 MILES

BIG SPRINGS CREEK

Merrill Beyeler is a rancher with historical perspective and eyes on the future.

Merrill's place near the town of Leadore, Idaho, population 105, is backstopped by the Beaverhead Mountains of the Continental Divide, the easternmost terminus for migratory Pacific salmon.

"I think about the journey those fish make," Merrill says. "Pretty spectacular. Why do they do that? It's for the next generation. And why do we do what we do? To pass this land to the next generation." By the way, the Beyelers are five generations into their journey—and counting.

After negotiating a conservation easement with The Nature Conservancy on a newly acquired parcel of his Lemhi Valley ranch in 2010, Merrill turned his attention to making it a healthier piece of the watershed. "I'm as interested in having the salmon here as I am in raising cattle," he says.

Fortunately for the fish, one of the most significant stretches of the Lemhi River ropes past his property. "The majority of spawning Chinook in this river are just up and downstream of it," says biologist Morgan Case of the Idaho Water Resource Board, a partner of the Columbia Basin Water Transactions Program. "And this is a project that may enhance their production by improving the conditions for egg-to-smolt survival."

At the center of the restoration activities is a 20-year agreement that provides for Merrill to consolidate

diversions and secure his water from the mainstem of the Lemhi rather than from several of its local tributaries. The net result of these changes boosts Lemhi flows over nearly four miles of this important stretch of the river. Meanwhile, Big Springs Creek, compromised by low flows for decades, has an additional 1.36 cubic feet per second in its lower reach where spawning and rearing habitat are ideal.

Now that four and a half miles of irrigation ditches are no longer needed to convey water, the two creeks they intercepted, Lee and Big Eight Mile, once again connect with the Lemhi River in their lower reaches. Local contractors have re-meandered the channel in Lee Creek and, in an extremely dry 2013, it ran with one to two cubic feet per second of water.

Big Eight Mile Creek is on the state's priority list for good reason. Its 22-mile system sweeps through alluvial fans and deep into the high country of the Lemhi Range where an abundance of bull trout find refuge. With a major migration barrier removed, this high-potential tributary is positioned for a dramatic response from reconnection upstream.

"This project represents some of the most biologically beneficial actions we can do for salmon and steelhead in the basin," says Jeff Diluccia, fisheries biologist with the Idaho Department of Fish and Game. "It provides watershed connectivity in the face of climate change, so fish can move around and access diverse habitat. And, it improves the quality of existing habitat. It's not often you get both of these in one project."

One of the questions Merrill Beyeler asks when he makes changes on the family ranch is, "Is there a measurable biological outcome?" Like the restoration partners he works with shoulder-to-shoulder, Merrill's vision is generative. "We want our place to have the values that are important to us, including seeing the salmon spawn," he says.

PHOTOS (left and above) Merrill Beyeler on his Lemhi Valley ranch. *Photos by Mark Gamba, courtesy of Upper Salmon Basin Watershed Program.*

NEVADA SPRING CREEK

"What it is now, is not what it was before," says a smiling Stan Bradshaw, project manager with Trout Unlimited–Montana Water Project (MWP).

Now, Nevada Spring Creek runs cold and clear. With support from the Columbia Basin Water Transactions Program, it's the first stream in Montana to receive permanent flow protection under a new state pilot program. Before, the creek was often dewatered for irrigation, widened beyond its historic channel by generations of cows; it ran shallow, a warm sediment soup where no native trout could be found.

Near the town of Helmville, in the southern portion of the Blackfoot Basin, Nevada Spring Creek emerges on a slope populated by a small grove of aspen and willows. Here, it pulses from the ground at a pristine, artesian 46 degrees. But for decades, by the time it traversed four and a half miles of ranchland to deliver its murky waters into Nevada Creek, temperatures could be measured in the high 70s, a thermal barrier for fish.

In 2000, the ranch changed hands to owners with an interest in restoration. MWP, along with Montana Fish, Wildlife and Parks (FWP), catalogued impairments and launched multi-year projects with the landowners to return the creek to its channel, to narrow and deepen it; and finally in 2012, to conserve instream up to 13 cubic

feet per second of its flows, all of the water rights to the creek. According to Paul Roos, one of the new partners, "We made a trout heaven here." Still, there was more work to be done.

Nevada Spring Creek was also compromised by other parts of the watershed that needed mending. So, over the last decade, MWP extended its efforts, including a partnership on Wasson Creek, an important spawning tributary to Nevada Spring Creek. (See 2007 CBWTP annual report.) Wasson's upper and lower reaches are now reconnected with flows, and producing riparian habitat that shades an expanding population of migratory westslope cutthroat trout, or "cutts."

Last year, biologist Ron Pierce and his crew from FWP radio-tagged 14 of these fish to find out how fish might be using the now intact stream network. Ten fish moved up the restored Nevada Spring and Wasson Creeks, then spawned and swam out. "It's a complicated restoration project years in the making," says Ron. "And a really good model for bringing migratory native fish back into the landscape."

The acclaimed Blackfoot River, which receives Nevada Creek's waters, is benefitting from the tributary restoration approach here and elsewhere in the basin, just as planners had hoped. In 1989, researchers found just a single west-slope cutthroat trout for every thousand feet they checked in the Blackfoot near Ovando. Last year, there were 30 fish every thousand feet. "This is mostly the result of healthier tributaries," says Stan. "If we can restore the resilience of this system over the long term—especially if climate change is a factor—these tributaries will be core to the strategy."

Norman Maclean, writing about the Blackfoot River in a short story adapted for a 1992 Hollywood film, offered a vision in his prose that also seems to capture a sense of what happens when a waterway is renewed. "Eventually, all things merge into one, and a river runs through it."

PHOTOS (left) Westslope cutthroat trout. Photo courtesy Montana Fish, Wildlife and Parks. (above) Nevada Spring Creek. *Photo by Jeff Gersh.*

FIFTEENMILE CREEK

"Fifteenmile" is a modest name for a 54 mile creek. Its waters arise from low elevation snowpack on the east side of Mt. Hood and meander through striking, austere landscapes to the Columbia River just below The Dalles Dam.

This is dry country, averaging 12 inches of rain a year when 18 inches is needed for a crop of wheat. "It borders on desert," says Phil Kaser, a third-generation farmer near Dufur, Oregon and chairman of the Fifteenmile Watershed Council, which includes participation from local residents as well as state and federal agencies. To bridge the difference, Phil and his neighbors employ dryland farming techniques. In summer, about half the acres dedicated to wheat in their rotation may be left unplanted so they can support a harvest in the following year. Fifteenmile Creek is their water source to grow feed for cattle. "When the country was settled," Phil says, "it was all irrigated out of the creek."

Most years, over three-quarters of the water in Fifteenmile's middle and lower reaches is diverted for irrigation, a strain on its wild steelhead—now listed as threatened—and on Pacific lamprey, a species of concern in the Columbia Basin.

Since it began in 2003, the Columbia Basin Water Transactions Program has supported The Freshwater

Trust, and the Oregon Water Trust before it, to work with landowners in the Fifteenmile watershed on replenishing flows. Permanent transactions protect up to one and a half cubic feet per second of water at the mouth, about 20 percent of the goal.

A turning point came in summer 2009, when water temperatures soared, making the creek deadly for juvenile fish. After the National Marine Fisheries Service (NMFS) was notified, the prospect of intervention under the Endangered Species Act brought landowners and partners together to create what the Watershed Council calls Fifteenmile Action to Stabilize Temperatures (FAST). "FAST is unprecedented," says Natasha Bellis, who works with the Council and leads the project for The Freshwater Trust and CBWTP. Developed as a contingency plan, FAST encourages landowners to curtail water use at their discretion, in response to acute low flow and high stream temperature situations. "It requires a great degree of flexibility and quick decisions regarding water use," she says, and the need for detailed, timely information about the creek's condition.

In 2010, the first flow meters were installed on Fifteenmile. Today more than 95 percent of diversions are monitored with assistance from the state and local watershed partnerships. Flow data is input to a stream temperature prediction model developed by the Oregon Department of Fish and Wildlife. When numbers approach a threshold, landowners receive phone and email alerts. "Monitoring gives a scientific basis to verify we need to curtail irrigation for steelhead," Phil says. "We didn't have that before."

Phil was one of seven irrigators who voluntarily left water instream during the alert period last summer when FAST launched its pilot. "Most people want to do what's right," he says. "We don't want to see steelhead die." None did—and NMFS has congratulated irrigators for their improvements on Fifteenmile. Up next, Natasha is developing a water-leasing program matched to the basin's crop rotation pattern, with the goal of permanently endowing it. "The whole process has irrigators looking at the stream differently. There's a lot of receptivity to make this happen," she says.

PHOTOS (left) Fifteenmile Creek. (above) Volunteer members from the Fifteenmile Watershed Council at a gathering to review their progress. *Photos by Jeff Gersh.*

NINEMILE CREEK

Picture yourself as an Oncorhynchus mykiss.

More specifically, imagine that you're an individual from the threatened population of Columbia summer steelhead genetically tailored by time and geography to spawn in Ninemile Creek, among a landscape of high peaks, white-tailed deer, and wolves.

Your itinerary directs you from the Pacific Ocean into the Columbia River for 550 miles, then up the Okanogan another 78 miles to Lake Osoyoos. Here you locate and enter the mouth of Ninemile Creek, one of the northern-most anadromous fish-bearing streams in the lower 48 states, and just below the border with Canada.

Since the start of the First World War, you would have found Ninemile emptied of water most years starting about four miles above its confluence with the lake. A small, homemade dam in the stream diverted its contents to grow crops and pasture. "The irrigator had the rights to dry this creek up," says Washington Department of Fish and Wildlife biologist Paul LaRiviere.

In 2010, Washington State purchased six thousand acres of the property for preservation. Staff of Trout Unlimited-Washington Water Project (WWP) saw an opportunity to leverage the acquisition with a water transaction to create a series of additional benefits. That vision was met with enthusiasm.

"We consider this...the pinnacle of flow restoration examples in the Columbia River Basin," Paul wrote in his biological assessment. Indeed, when he and his team visited Ninemile for the first time, "we found steelhead spawning right below the dry reach. Had there been flow, they would have migrated."

This year, WWP project director Aaron Penvose completed fieldwork and negotiations for permanent protection of all flows in the creek. He designed a complex plan supported by the Columbia Basin Water Transactions Program replacing the surface water diversion with a more efficient groundwater system to irrigate the most productive agricultural land for another two generations, until ownership reverts to the public through a life estate.

An additional two cubic feet per second of water in the creek doubles or even triples its flow during spring and summer, and reconnects as much as five miles of upstream habitat. "Now, steelhead can spawn and rear throughout the basin," Aaron says. "The natural hydrograph is back." In addition, WWP has replaced a pair of crossing barriers with bridges and—to provide a fresh start for riparian areas—built more than two and a half miles of fencing along the most impacted reach. None of the work could have happened without the support of the landowner. "I really credit him for sharing this vision," says Aaron.

New flows of water are unharnessing the genetic potential of Ninemile's Oncorhynchus mykiss. "Mother Nature has created a wild steelhead population programmed for long migrations to this stream," says Paul. "Their production will increase now because the fish can move year-round. The significance is huge."

PHOTOS (above) A young steelhead. *Photo courtesy of FISHBIO.* (right) Aaron Penvose from Trout Unlimited–Washington Water Project surveys a portion of Ninemile Creek now under restoration. *Photo courtesy of WWP.*

INTERVIEW: STAN BRADSHAW

Stan Bradshaw has been deeply involved in Montana's streamflow issues for more than three decades. He's now a water lawyer for Trout Unlimited's Montana Water Project, where he focuses on voluntary cooperative drought response, and negotiating instream water leases. Stan first became involved in water rights work as chief counsel for the Montana Department of Fish, Wildlife, and Parks in the early 1980s, representing the Department in the statewide water rights adjudication. He was instrumental in passage of Montana's first instream flow water rights leasing bill in 1989. A year later, the Governor appointed him to the State Water Plan Advisory Council, where he led development of a proposal enacted as drought planning legislation in 1991. When Stan's not talking water with ranchers or others who will listen, he spends as much time as he can on the water.

Can you point to cultural shifts related to instream flows among irrigators over the last three decades?
In 1989, the popular political view and prevailing wisdom of agriculture in Montana was that you could not sever water rights from the land. From then to now, there's been something like a sea change in attitude. Irrigators willing to dip their toe in the pond discovered that they wouldn't drown. They found out that there were other ways besides irrigation to derive value from their water rights. A group of water-leasing irrigators with experience and tangible benefits was created; a stream restoration culture has evolved. It's now possible to permanently protect water instream in Montana, and that was inconceivable twenty-five years ago. I can go into any room of ranchers today to talk about water transactions—and that was not always the case.

What's necessary to come to agreement on a water transaction with an irrigator?
Irrigators are skittish about talking water rights. You must bring absolute transparent honesty. To the extent there is uncertainty, you have to be clear about it. Your review of a water right may reveal things that are uncomfortable. And, the administrative process may change the portrait of the water right—what you can pay for it; what you can do with it. You have to share this news up front. Be focused on what you're trying to do—and listen closely.

What have you learned from tributaries?
When I first started fishing in Montana, I equated a stream's usefulness to the degree that I could catch fish in it. I've learned not to take any little body of flowing water for granted. Tributaries are the lifeblood of the mainstems for native fish. It's where they spawn and rear. But we got to the point of not paying attention to those things because fisheries management—through most of the last century—was grounded in hatchery management, which masked the damage inflicted on our tributary habitats. In the Blackfoot, without this infusion, we had to look at why we had fewer fish. Well, it was because of habitat impairment. That was a big alarm bell—especially in hindsight.

What's on your mind about streamflow and watershed restoration?
The restoration culture to date has been one of proliferating projects, brick-and-mortar-mode, to fix individual impairments—but often without a game plan for watching to see the effects. We're spending billions in the West to improve habitats for all time. And, we're working on things that we expect will extend beyond our lifetimes. How do we make sure those investments are secure? The work of figuring out how to extend relationships through the generations—we haven't sorted this out. What happens when the landowner dies or sells his land? In a watershed, we need to monitor the infrastructure and assure its longevity; we need to pay attention to the habitat

restoration work. Was it effective? Did it stay in place? I'm talking about changing the culture of groups like Trout Unlimited and the philanthropists that fund us. We're now too enamored of doing the deal, and we need to place more emphasis on restoration stewardship. We don't get to walk away.

How urgent is climate change on your list of priorities for fisheries health in Montana?
It's real urgent as I sit here on a 40-plus-degree day in mid-January. It feels like things are changing quickly. One thing I can't resolve: in snowpack-dependent states, there may be effects of climate change that we will have no way to deal with. Let's not be discouraged about the things we can't fix, and work on the things we can.

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FY13 EXPENSES

CLARK FORK COALITION	$159,416
CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION	$4,125
DESCHUTES RIVER CONSERVANCY	$249,276
IDAHO DEPARTMENT OF WATER RESOURCES	$320,342
NATIONAL FISH AND WILDLIFE FOUNDATION	$574,252
OREGON WATER RESOURCES DEPARTMENT	$71,143
THE FRESHWATER TRUST	$321,115
TROUT UNLIMITED–MONTANA WATER PROJECT	$52,535
TROUT UNLIMITED–WASHINGTON WATER PROJECT	$255,233
WALLA WALLA WATERSHED MANAGEMENT PARTNERSHIP	$54,849
WASHINGTON DEPARTMENT OF ECOLOGY	$114,982
WASHINGTON WATER TRUST	$265,157
WATER TRANSACTIONS	$3,192,881
TOTAL*	$5,635,307

*Funding provided through BPA projects #2002-013-01; #2008-608-00; #2008-206-00; #2008-104-00

CBWTP.org

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NFWF

Columbia Basin Water Transactions Program

BONNEVILLE POWER ADMINISTRATION

Northwest Power and Conservation Council

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