

Bend talk 10/27/15

We are in the midst of a sixth wave of mass extinction. The first five were caused by events like collisions with asteroids. This latest wave is being caused by us. Civilization is once again threatening humanity. And we are faced once again with the job of figuring out how to make humanity outlast civilization. But my river guide friend raises an important issue in his email. "I'm not sure people are going to be able to think their way back to healing salmon, or rivers, after being so long broken. We might first have to be shown a way around the blockage, to create a context or contexts for bypassing the central processing unit and remembering we are whole...The pieces are whispering to each other, ready to be more than the sum of their parts. Matter over mind.

What's happened to the Deschutes is in some ways not much different than what happened to rivers all over the country. It's broken. To fix it, we have to remember it whole. Trouble is there aren't too many examples of that left. The U.S. has a little over 3 million miles of river, creek, brook and stream to call its own. Less than 6,000 of those miles remain free flowing rivers. We've built more than 80,000 dams taller than 15 feet, and perhaps as many as one million obstructions and diversions smaller than that. Rivers are the circulatory system of bodies of land. And we've effectively given that system the equivalent of blocked coronary arteries. Unfortunately, the example provided by the U.S. has been followed the world over. There are now at least 45,000 dams 50 feet or taller on earth. So what has this cost?

For starters, a landmass the size of California, much of it rich, riparian habitat, has been drowned. The 45 million people that once lived in this astonishing variety of places have been made refugees, migrants, jobless, and homeless. In the tropics, the stagnation of water by dams has led to outbreaks of 19th century diseases like dysentery and schistosomiasis.

Lack of sediment flows to major river deltas has made farmers dependent on chemical fertilizers and the politics of water delivery systems. In southeast Asia, the continuing construction of dams deprives river born sediment to rice growing deltas that currently produce food for 2 billion people.

Dams occasionally break. And when they do, the scale of casualties produced are rivaled only by the casualties of modern warfare. Johnstown: 3,000 people. St. Francis Dam: 4,000. Teton Dam: 14 people A \$1 billion in property damage. Vaiont Dam in Italy: At least 2,000. Banqiao Dam, China: 171,000.

Dams also cause earthquakes: Every since the gate closed on Hoover Dam in 1935, the phenomenon of "reservoir induced seismicity," has been studied by geologists the world over. There is good evidence that the 2008 quake in Seschuan, China which killed 80,000 people, was caused by a recently completed dam.

Dams also make bad storms and earthquakes worse: In the rains that swamped South Carolina a few weeks ago, at least 20 dams failed, adding velocity and volume to what were already ample flood waters.

Dams are good at controlling floods. Until they're not. The minute they fail or overtop, they work like a water disaster amplifier. Of course here in the Pacific Northwest, we are long overdue for the big earthquake that has come, on average, every 250 years over the last 100 centuries. Last time we had one there were no big dams here. Now there are more than 400 in the Columbia Basin alone.

Meanwhile dams wipe out aquatic ecosystems, and all the wildlife that depends on them. Tonight we are sitting within what was, until those 80 years ago, the greatest chinook-producing watershed on the planet. Somewhere between 10 and 30 million salmon a year returned to the Columbia and its tributaries, including the Deschutes. Chinook all the way up to Big Falls. Steelhead up the Crooked to the upper reaches of the North Fork.

Sockeye salmon in Suttle Lake.

Now all these are losses, and in the balance sheet by which decision-makers decide, you weigh the costs versus the benefits. Then, ostensibly, which ever side of the ledger scores the most points will at least have a clear advantage when the dirty politics of deliberation begin. That's conventional wisdom. But With the history of dam-building in this century, we could veer a long way off into a discussion about why this formula has rarely been followed, much less proved successful. There are many books written on this subject. I've written one of them. You can buy it here after this talk if you like.

But I've also tried to contemplate and write about the magic, grace, beauty, and endurance and comedy that I've witnessed on and in rivers. I've given much thought to the particular and peculiar combination of these qualities, plus a hundred other subtle combinations of adjectives I didn't mention, that remind us water is vital to life, and that moving water is as life-giving as blood from a beating heart. I like remembering and contemplating these things, because I want to believe we will remember how to be whole after being broken for so long.

Good rivers are like good stories, with a beginning, middle and end. Seductive sounds and rhythms. Crystal Clarity. Deep understanding. To interrupt these good stories, with a shitty commercial if it's a tv drama, or a fish-killing dam in the case of a river, is at the very least, annoying, and at worst, soul-destroying. Plus you might miss the good one-liners. "The pieces are whispering together, ready to be more than the sum of their parts, my guide friend wrote. Novelist Tom Robbins wrote, "human beings were invented by water as a device for transporting itself from one place to another. "To stick your hand in a river," as Barry Lopez wrote, "is to feel the chords that bind the earth together." Or maybe you prefer the way poet Czeslaw Milosz described it: "I have praised only you, rivers. You are milk and honey, love and death and dance."

So. That's the poetry portion of tonight's show. Hope you liked it. By the way, I banned fly-fishermen a few years ago from contributing from the poetry portion of river talks. Everyone got tired of them quoting the last page of a river runs through it.) I think the point is, if rivers can be thought of as analogous to a form of narrative art, a poem or song, than the Deschutes sings a song as lovely, as heart wrenchingly

poetic, as any other river. Even with its seven major dams and countless reservoirs and diversions, it's still alive. That's the secret of rivers. Or one of them. I've been lucky to travel a bit, and have seen rivers all over the world. Polluted rivers in Europe and Asia. Pristine rivers in Alaska and British Columbia. Dammed rivers everywhere. Here's the secret. They're still alive. All of them. Some of them just barely. Which is a miracle, because of all the costs of dams I listed a few minutes ago, the most intangible but stingingly painful loss is of the complexity and diversity and rich riot of life that every healthy river system represents.

The Deschutes included. Nowhere else on earth is there a river like it. Figuratively, it seems like the place where Utah meets the Yukon. It's got its mountain heart and its desert bones. It's got its old proximity to mountains near the ocean, pulling its own little disproportionate share of water each winter out of big Pacific storms. It's got young volcanic soils, ash and lava just half a million years old, acting like a giant percolator and filtration system. It's subsequently got a complex of springs between the Metolius and Crooked Rivers. Some of the water that bursts forth from these prolific aquifers-- the Deschutes downstream of here for most of the year is four-fifths groundwater-- may have fallen on snow in the Cascade crest as long ago as the 1500s. That's gotta be the most refreshing water in the world. Melted snow from the years when Copernicus was contemplating the stars. To put it in a plastic bottle is like putting the Sistine Chapel in a trailer park.

My favorite Deschutes basin story is a memory of a day fishing Whychus Creek. It was one of those Africa-hot central Oregon August afternoons, and I had had it with losing flies to the brushy banks of the Whychus. I stripped down to my skivvies and soaked in a chest deep pool. I buried my feet in fine gravels in the creek bed. Soon I couldn't help noticing some little pebbles there were hopping up and down. As if someone had stuck an aquarium pump in the bottom of the creek. Except when I looked further, there were miraculous little pumps everywhere. I had stumbled upon the precise elevation where Whychus's bed cuts into the Cascade complex of aquifers. I didn't know it then, but I was playing footsie with snow that fell on peaks to the west of me somewhere between the year before I had arrived at that spot on the creek and the year Cortez invaded Mexico.

Now I'm sure many of you here tonight have your own magic hour moment that happened somewhere here in your home watershed. Hang on to that. Guard it like it was something precious. Because I'm about to ruin a perfectly good evening chat by getting into water politics.

I said a few minutes ago that maybe one of the biggest unrealized losses chalked up to dam building, is the reduction of complex, resilient, dynamic diverse river systems into simple, mechanical systems, measured in deliveries of cubic feet per second, kilowatts of electricity, containers delivered to ports for export. This misconception of the nature of rivers has been costly, to say the least.

Dams represent the ultimately suicidal idea that to master nature is to control it by dominating it completely, then by using it all up. In fact at the time the United States Bureau of Reclamation was plugging up the headwaters of the Deschutes, that was their slogan: "Total Use for Greater Wealth." But greater wealth for whom?

The very luckiest segments of the utility business, agribusiness, and far less

frequently, the real estate business have benefitted from dams. The beneficiaries have gotten wealthy by obeying a time-honored law of Western politics, not hydrology: “water flows uphill toward money.” You can learn a lot more about this law by reading books like Marc Reisner’s Cadillac Desert, or Don Worster’s Rivers of Empire. The Reader’s Digest version of these two books goes that the keys to federal water storage and delivery projects, and later, federal hydroelectricity, which were created to protect and serve middle class Americans in the hard-scrabble economy of the early 20th century American West, were eventually turned over to corporate interests. Some got filthy rich. And all depend on lavish underwriting from ordinary taxpayers. The original goal of the greater social good got lost in the shuffle. This is a story that played out most dramatically in California, where the farm economy is king and it’s been easy for Irrigation Districts to get drunk on free water and power and money. What’s happening in Oregon in general and the Deschutes in particular has been different so far. Different, but not necessarily better. We’ve bought time because (and this is where I reveal my true genius as political commentator) we have 1.) More water, and 2.) Fewer people.

There’s an old line of sentimental thought that goes things are better here because Oregonians are nicer or wiser generally better people than Californians. But Californication is not a character issue. It’s a set of powerful social, economic and historical circumstances, maybe slightly bent toward crops and people that need 250 or more days a year of sunshine. But it’s not a character issue. Those powerful circumstances were created by a government that continues to provide farmers and other entrepreneurs a triple subsidy: cheap water, cheap power, and price supports for farm commodities. As if it were still 1950. The same western water practices that shaped California are already established here. Further, perhaps irrevocable ecological damage is inevitable if these status quo practices are just simply scaled up according to demand. And of course, we haven’t even factored in the reality of climate chaos. The urgent question is, will we recognize these powerful forces in time to manage our water better than our predecessors? Can we think our way back to healing salmon and rivers? Will we remember that we can be whole? With that in mind let’s take a kind of vulture’s eye view of what’s happening here in this watershed.

The biggest issues facing the Deschutes from top to bottom of the basin are:

1. Seasonal flows in the upper river, controlled by releases from Wickiup and Crane Prairie.
2. The river through town, and the continued debate over whether Mirror Pond should stay or go.
3. The Pelton Complex, and the reality that the selective withdrawal tower installed to promote fish passage will probably never work.

Let’s take the last one first. Portland General Electric went all the way to the U.S. Supreme Court in 1958 for the right to built Round Butte Dam. The Oregon Fish Commission (now ODFW) knowing the dam would wipe out fish passage not only in the Deschutes, but Metolius and Crooked Rivers as well, sued them, claiming it wasn’t clear whether a private corporation had the right to condemn public land. The Supremes judged PGE did have that right. It was a travesty of a decision. The dam

was built. The company was supposed to provide fish passage at Round Butte. But the joke of a design, featuring a long gondola ride for returning adult fish, was abandoned by the mid-1960's. PGE proposed building a fish hatchery downstream instead, and everyone in the state, apparently in the throes of a lithium binge, thought that this was okay. For 35 years, hardly anyone gave the salmon-less upper Deschutes a second thought.

But by 2000 it was clear PGE would not be granted a new license unless they did something about fish passage. The solution was the \$180 million selective withdrawal tower. That it collapsed upon first attempt at installment should have been taken as a sign from God. But it took on the second try, and by 2009, the tower was mixing warm surface water with cold reservoir bottom water. Unintentionally, this arrangement did away with one of the happiest accidents in the history of hydropower. It also exposed the difficulties of fish restoration with the dam still in place. But about that happy accident.

Warm water floats. Cold water sinks. Thus colder Metolius water sits at the bottom of Lake Billy Chinook, and warmer water from the Crooked and middle Deschutes sits on top of it. By releasing only from the bottom of the reservoir, starting in 1964 when the floodgates of the dam closed, PGE inadvertently created one of the finest tailwater trout and steelhead fisheries in the country, if not the world. 50-degree, clear, cold, clean Metolius water was sent downstream into the lower 100 miles of the Deschutes. Not in any way intended to benefit fish, mind you, but simply because that's the way the dam was designed. The cold water helped endangered steelhead and chinook salmon strains native to the lower river survive. People came from round the world to wet a line in the lower river.

When, in 2009 the tower started mixing rivers in Round Butte, and releasing the results downstream, fishers were the first to notice some bugs hatched earlier. Other bugs didn't hatch at all. Craneflies disappeared. Turbidity increased. Ph levels sky-rocketed. Most troubling were blooms of algae that interrupted the life cycle of many insects. Worst of all, in 2015, temperatures climbed above the lethal limit and stayed there for too many days in a row. Salmon died. Biologists argued whether the warmer temps due to the work of the mixing tower were to blame.

But the real question should be, in an era of climate chaos, when is it ever a good idea to warm up a salmon stream?

Meanwhile, in every year since 2012, PGE was doing what corporations do best: Changing the rules of the game to make gaming the system easier. On at least three different occasions, PGE lobbied state officials successfully to have water quality standards loosened, so that the selective withdrawal tower could continue with status quo operations. In violation of Oregon law, these changes took place behind closed doors. Some of you may have heard of the concept of adaptive management in large scale ecosystem experiments. The idea is that you swiftly change management practices to meet biological standards. Here PGE has been doing the opposite: changing the biological standards in the river to meet status quo management practices.

Meanwhile, the tower that was supposed to put fish back in the upper Deschutes Basin is struggling to meet that goal. Despite the release of millions of hatchery

chinook, steelhead and sockeye juveniles, since 2009 only 750 fish have made it to the trap to be transported into one of the three rivers above the dam. Worse, out-migrating juveniles, released in tributaries above the dam, have a pre-dam mortality rate of 80 percent. That is to say, 8 of ten juvenile salmon migrating the short distance from the Metolius, Deschutes or Crooked rivers still die trying to get through the slackwater reservoir. This is the opposite of success, which was defined as 95% survival for these fish.

Ruining what was before 2009 pretty good--the lower 125 miles of river--for the sake of a hatchery re-introduction program that isn't working either does not sit well with a lot of folks. It's compromising the health of a \$100 million a year river recreation economy in the lower river. Meanwhile, The stated goals of PGE, "to manage the river as if the dam (Round Butte) weren't there" is proving to be much more of a challenge than anyone thought. It might be that the only way to manage a river as if a dam weren't there is if you take out the dam.

Now lets talk about the upper river. In fall 2013, the Deschutes above town here dried up. There was a big fish kill. Thousands of fish died. It made the national news. It was sad. But this abrupt change in flow happens every year, because of those same short-sighted western water practices. The demand for project water from Wickiup and Crane Prairie takes precedence over the health of the river. Seasonal flow regimes are upside down.

Some groups are suing to fix this; others prefer a collaborative approach. The latter are a patient bunch. Leasing water from rights holders, or other forms of paying farmers to not use water is probably more important for the social and cultural bridges it can build than the water it keeps in stream. Here in the Deschutes, where water is leased is also a huge issue. Paying for warm polluted surface water while the farmer puts cold, clean ground water on his fields to make up the difference isn't going to help many fish. But if it helps conservationists and farmers to have a conversation where they otherwise would not, there's some value to it.

Lawsuits do help fish--if the plaintiffs win. On the Columbia, the bump in returns of salmon to the mid-Columbia, and the miraculous return of sockeye are the result of a lawsuit. In 2005, Judge James Redden ordered water to be spilled between dams for the sake of the river and the fish. The results were immediate and sustained. But lawsuits don't make friends. The rancor between groups on the big river, and the resulting silence, is as bad as its ever been.

Maybe what's missing here is a collaborative approach among the conservationists. Right now, river conservation and the environmental movement generally suffer from a weird brand of Balkanization. Maybe because these issues arouse our passions, maybe because there's too much competition amongst groups for the same pots of foundation and wealthy donor money, maybe because the Big NGO's have drifted pretty far from their roots in the practice of grassroots politics. Maybe because there aren't enough good people in any endeavor to go around. I don't know. But it seems to me if you have one faction suing and another collaborating, you have the makings for a carrot and stick approach that could bear fruit (or water) if the two teams on the same side of the issue were to talk. They don't need to be on the same page, but they ought to be working out of the same book.

Here's a crazy idea that I'll float to you tonight. After all, that's what these talks are for. Irrigation works in the Deschutes were conceived and built, for the most part, before Round Butte Dam was built. That means that end-users in the North Unit Irrigation District are getting water that's travelled more than a hundred miles from Wickiup, under the hot summer sun, and through leaky irrigation canals. Estimates are that up to half of the water in the 600 miles of central Oregon irrigation districts is lost. With longer summers becoming a reality, everyone is scrambling to line these canals or otherwise enpipe the water. A worthy but expensive proposition. But what if you left all of North Unit's irrigation in the river, let it flow into Lake Billy Chinook, then pumped it out of there instead of Wickiup? It seems to me you could restore a hundred miles of the Deschutes with dependable year round flows, do away with at least that many miles of canal maintenance, and maybe mitigate seepage and evaporation loss too. With electricity generated at the dam, power for the pumps would be a cinch. You'd be able to mothball Haystack Reservoir, saving money on maintenance there too. Hell you could fill that empty reservoir with solar panels and make up for the hydropower that would be dedicated to the north unit's new pumps. Is there a reason this wouldn't work? There has to be. Somebody please tell me after this talk the reason that won't work. It may be in the arcane world of western water policy, it's just too simple to be do-able.

Last item: Mirror Pond. This is an issue I and a lot of other out-of-towners don't understand about a certain segment of Bend's citizens. What could possibly be the attachment to this structure, so outdated it would look run down in a Ghetto in New Delhi or Lima? Really? You want to keep a dam so leaky that if a boy scout had built it they'd have taken all his badges away? Really?

This deadbeat, delapidated, dangerous, fish choking sediment collector has to go. After more than a thousand similarly run down dams have been torn out around the country in the past 15 years? Really? You're really going to buy it from Pacific Power and rebuild it with perfectly good taxpayer money? Really? From a company that's torn out dams on the Hood, White Salmon, and possible soon the Klamath Rivers? Really? When Medford has torn out its dam on Bear Creek? Missoula its dam on the Clark Fork? After Augusta, Maine freed the Kennebec? After Boise built a 50-mile greenway around its free-flowing, namesake river? Really? You want to be out-greened by the capitol city of Idaho? Really? What to do with Mirror Pond? I have an opinion. As Andy Kerr once said of the now demolished Savage Rapids Dam on the Rogue, "the only discussion we should be having about this dam is who gets to push the plunger for the dynamite that would blow the thing up." Trade the explosives for a truck load of demolition equipment and get rid of this thing. If it takes putting all the people you can muster on big yellow school buses and rallying on the capitol steps in Salem, go do it. Be persistent. Don't take anything short of removal for an answer. And don't stop until the Deschutes runs free through Bend, and Mirror Pond takes its rightful place as the name of a good ale from a local brewery.

I'll finish with the letter my thunder struck guide friend sent. "The fucked up thing about being broken for so long its like even when the pieces come back, they can't find each other. We won't think our way back to healing salmon and rivers. The

pieces are whispering to each other, ready to be more than the sum of their parts. We are each one of the pieces. Are you ready? We've got this; this above all else, we can do. Matter over mind. Thanks