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11/23/05
HC 441: Columbia River Ecology
Clark Honors College

Welcome to the Cruel World

Introduction: Statement of Purpose

Science, in many aspects, must be translated into simpler terms if it [is] to be understood by the [general] community. [This] may be the key to uniting the scientific population with that of the common citizenry (Koski 2-3).

Throughout this course, I have been the most interested in the history behind the current conditions on the river. Why was there a boom in dam building? Why are certain eras more filled with ecological reform than others? Why is it that we are looking at such a large non-point source pollution problem now when we have historically blamed the large farms and factories for our polluted rivers? This interest has little by little led to an interest in the various groups involved in the cleanup or restoration of the river. This is to say, however obtuse this statement may seem at first, in this paper I would like to put the past behind us. Yes, there are times when looking at how past conditions or actions have affected the current situation ecologically. However, none of us can go back in time to fix them. So we must start today.

The basic premise of my argument is one that is solidified by article after article, and class after class, and that is that if we do not continue to be part of the solution, then we are unfortunately part of the problem. In researching the current conditions of the lower Columbia, I came across a paper written by a student from last year's Willamette River course. This piece has continuously pushed my interest and inspired me to try to inspire others to change. I hope to provide similar inspiration to students who are stricken with a usual socially-induced case of apathy with regard to the nature around them, the Columbia in particular, and really anything that they can change but have little faith in.

A Disclaimer

Even in political movements, the largest mass of people that the politician must reach is that which does not have a complete understanding of the problem nor the possible solutions. The progress is made in educating the uneducated rather than swaying the ones who have already made up their mind. The best part about this topic is that it is very difficult to find someone who doesn't want a cleaner and healthier Columbia River. This common value of the river and the nature is what will really pull this topic from politics and set it in a more human realm.

I am a scientist only in the sense that I am a social scientist, and that I am in love with learning about people. This paper is intended for like-minded people. In reviewing source after source of thickly-worded scientific journal, I have decided to bridge the gap between the scientists and the rest of us. Again, returning to political talk, we see in politics year by year that many times common people can not understand the laws or

ballot measures in front of them when it comes time to vote, so they opt out. I feel as though people in specific realms of academia, whether it be scientists or mathematicians, or really any other applied discipline, can lose power in not presenting their findings in a way in such it can be readily available and digestible to everyone. Maybe that is the goal, however shortsighted.

A Brief History: A diving board of then

In the 1840's, the sawmills in Oregon City got into full swing, marking one of the first major polluters on a Columbia River tributary, requiring water a power source as well as a means to transport waste. Later in the century, in Trail, B.C. industry began pouring waste into the Columbia, sometimes boiling hot waste from smelters. This waste collected in what can only be described as black slag beaches, the slag being the term for the industrial waste. This is exactly the sort of waste that affects the sediment that is so critical to the continuation of the salmonid populations of the Columbia. When they spawn, they do so in gravel that is well aerated but small enough to be moved. This toxic sediment can clog nests and becomes a burial ground rather than a place of creation for salmon (Todd pers. comm.). Next we must consider Mica Dam, the uppermost dam built on the Columbia River. According to Glen Spain, a representative of the Pacific Coast Federation of Fishermen's Associations, dams generally serve one of four main purposes: They help with 1) flood control, 2) energy (though more often than not the energy conserved in basic daily practices can have a more profound effect on energy supplies than any dam can produce), 3) irrigation, and/or 4) transportation. This dam had one purpose, which was to store water (Spain pers. comm.). It soon became a biological desert from algae buildup and temperature changes, which was let loose in winter months to feed the energy needs of the U.S.

In the end of the 1940's, the dam production slowed, maybe due in part to a pro-cleanup river initiative passed three to one by Oregon citizens in the 1930's. At this point, there was not any pollution control. This is to say that all water and waste went directly into the river. It wasn't until 1949 that any major positive changes were made in the river. That year, the sewage treatment center opened and began operation at Oakridge, though only primary treatment initially (separating the liquid waste from the solid). By the 1970s, the Willamette River was clean enough to swim in again, dams and all.

So how is it recently? The Lower Columbia River Bi-State Water Quality Program did a study to research the water quality as a factor of the pollutants in the lower Columbia. Essentially, they sought to "identify, describe, and explain, as possible, the major factors that affect observed water-quality conditions and trends" (Fuhrer et al. iii). Through a study of ten sites in the Columbia River Basin (four from the Columbia River itself), they measured the occurrence of arsenic and chromium, among other pollutants. Arsenic, a human carcinogen, was found in all but one of the samples taken from the lower Columbia (15 of 16 samples). Though not found in dangerous quantities, Chromium was found in all four of the Columbia River sites. Much of this pollution can be attributed to agriculture. The highest concentrations of these pollutants were due to a

cycle of spring application and fall runoff of excess fertilizers. The idea was to measure these levels against the EPA guidelines. Though these pollutants represent a widespread problem, they do not exceed the EPA's limits. There was also a dissolved oxygen decrease which can be attributed to the cutback of vegetation along the river. In a presentation given in our university classroom, Jared Rubin commented on another pollutant posing a problem in the Columbia River: Mercury. He emphasized the several sources of the mercury so as to demonstrate the complexity of the ecological follies of the Columbia. Among the sources, he mentioned the role of the old mines-some even shut down- as well as the role of industry, erosion due to forestry and agriculture, and the irrigation runoff (Rubin pers. comm.). This is to say that the river is in mediocre shape.

Tragedy of the Commons

We have dammed it and diked it, filled it and diverted it, choked off its tributaries, and paved over much of its watershed, floodplains, and habitat. We've used it as a ditch, as a dumping ground, and as a sewer and waste conveyor (Katz 2001).

As Mayor Vera Katz pointed out in an address to the city of Portland in 2001, we in the northwest have a way of using the rivers beyond their means. The problem that we are currently facing with the Willamette and the Columbia was illustrated quite well in 1968 by thinker Garrett Hardin. He describes a commons, just a plot of pasture to be shared amongst the citizens of a particular town or region, on which they can feed their cattle. Given that certain factors impair the ability of the shepherds and herdsman to overfeed their livestock, the commons will sustain life there. However, in a society where the populations of both man and beast are unchallenged, each herdsman will seek to maximize his own profit by adding one unit, or pushing the boundaries slightly in their favor. After recognizing that their benefit can be increased as a product of how rapidly the herd grows in number, "Each man is locked into a system that compels him to increase his herd without limit -- in a world that is limited... Freedom in a commons brings ruin to all" (Tragedy 1246). In the northwest U.S. we are dealing with a very similar situation in which many different facets of society want the rivers for their own benefit, and are willing to exploit this resource even at the expense of others.

Changes to be made now

We used to blame all our river pollution entirely on farm runoff but in recent years have come to know that urban pollution is one of the foremost

contributors... Seems like we just have to come to terms with everything we do has its impact and needs our careful oversight (Piercy 1).

As I understand it now, the Columbia River has been continuously dammed and subjected to the relentless greed and selfishness of northwest U.S. citizens. What will you do to help? You, the landscaper, can do a number of things when remodeling a lawn. You can do anything from planting native plants so that additional fertilizers and watering aren't needed, to leaving that extra patch of foliage near streams rather than mowing all the way up the edge. This sort of buffer can do wonders as a filter for any waste that comes off of your cars as they wash them, or anything that the rain washes towards the water. The same goes for farmers. You farmers can switch to drip irrigation which will save you bundles on your water bill, and will water the roots of your plants instead of the tops of them. By not using an excess of water, you will have much less surface runoff, and this will allow the fertilizers you use to be absorbed by the plants rather than slip and sliding through irrigation ditches into the nearby streams. The main non-point sources for the pollution of rivers are logging, agriculture, industry/construction, mining, urban waste, and of course the individual (Volin 1993).

As I mentioned in my introduction, this piece is written for the average citizen, not necessarily the farmer or industry manager, nor the politician. However, I hope they get the opportunity to read this as well if it has the power to inspire them toward change. As we saw in the 1970s, a river that was once filled to the brim with sludge and organic material can once again be made clean enough to swim in safely, if not made clean enough for all native aquatic life to survive. As an individual, before you consider becoming a politician, or before joining some larger interest group, must realize that you alone can have a positive or negative effect on the environment. Conservation is key, as always, but there is so much more that can be done. As mentioned for the landscaper or the farmer, you too can make a difference by the sorts of practices you employ with regards to your lawn or property. When you wash your car, take the time to wet a rag or sponge and use a little elbow grease rather than standing back and hosing off the entire car with a storm of gallons upon gallons of unnecessary water. If you do choose to use a soap, use a natural and biodegradable one that will not foam, as the foam itself can be considered a form of pollution and will end up in the river. Be conscious. Think before you use water because there are storm drains everywhere that may end up collecting the extra water or pollutants that you cover your car with, whether you mean to pollute the rivers or not.

Why drive an SUV if a Geo Metro will do the job? A conscious citizen will only consume what is necessary, leaving a V8 engine nearly useless. These large trucks and SUVs have a tendency to spit oil on the road, not to mention the horrible emissions they produce. If you do drive a "gas hog" please make sure to keep it in good condition with regular checkups and oil filters to minimize the fluid leakage. All of those beautiful colors that appear on your driveway will wash their way into streams that will affect the aquatic life and water quality, if not the whole aquatic ecosystem (Volin 1993).

Organizing

Knowing that the power to change the current environmental situation lies with the individual is the first step toward helping mend a beaten ecosystem. Yes, changing the world can be a daunting task if not bitten off crumb by crumb. If the sort of changes that one can make individually doesn't seem like enough of a change, or drastic enough a change, then there will always be interest groups to turn to.

For example, American Rivers is a group that works for the benefit of not only the fish and wildlife or healthy rivers, but also the riverside communities. Through a multilateral approach to the improvement of U.S. rivers, American Rivers attacks the problems head-on. The organization deals with 1) keeping water clean, 2) protective the surviving wild rivers, 3) managing water so as not to allow it to go scarce, 4) removing and reforming dams, 5) advocating for well-planned communities that maintain a high quality of life, 6) keeping an eye on the most endangered rivers as well as endangered species, 7) working to reform the Army Corps of Engineers, 8) dealing with community watersheds as well as maintaining focus on the Columbia, Missouri and Snake Rivers (American Rivers). In getting involved in an organization such as this, a volunteer has many opportunities to help out in whichever field he/she feels the most passionate about.

Another group that stays very active is the Columbia Riverkeeper. Columbia Riverkeeper is the only non-profit organization that is solely focused on the Columbia River water quality. In response to recent studies by the Environmental Protection Agency, which demonstrated that the toxicity levels in Columbia River fish were high enough to harshly violate human health standards, the Columbia Riverkeeper stated the following:

With fourteen dams, thirteen pulp mills and 1,243 miles to oversee, the governmental agencies responsible for protecting the water quality of the Columbia are under-funded and understaffed. As a result, environmental policies and laws are often violated. In lieu of the increasing threats, the Columbia River needs a voice to speak and act on its behalf. This is the role of Columbia Riverkeeper (Columbia Riverkeeper).

This may be a good place to start for an Oregonian looking to volunteer. This is a well-known organization that, much like the Willamette Riverkeeper, has a good reputation as being an organization that pairs scientific observation with citizen action to provide a knowledgeable and driven workforce of help for the Columbia.

For citizens who have already done volunteer work in Oregon, whether helping with a beach cleanup or a riverbank cleanup, SOLV is an organization for Oregonians

looking to help. Established by Gov. Tom McCall in 1969 to address problems facing an ever-growing state, SOLV also works to build community through volunteerism (Stop Oregon Litter and Violence). For Idaho residents, or those looking to put in a little volunteer time while outside Oregon, volunteers can turn to Idaho Rivers United. Their goals are similar to those of the American Rivers organization, except with a focus on salmon and steelhead preservation as well as hydroelectric power renovation. The key is to be productive in some way. All programs will work to some greater benefit.

Conclusion

This study is for whiners. It is for whiners especially because, after reading this paper, you have come to realize that the Columbia River is in dire need of help. I have just eliminated as many reasons as I possibly can for you to not volunteer and make a difference. I am saving you the energy of having to come up with excuses for why you can't help. Now you have an extensive list of things that you can do as an individual, as well as groups to get involved with if you can't bring yourself to do it all on your own, or if you just don't know what to do on your own. As we can see by the progress made in the 1960s, our efforts can make a profound difference. Also, we must not forget that we can have an equally negative effect on the environment if we live without taking responsibility for what is ours, and conserve. Our "commons pasture" is getting overexerted and overused, neglected and mistreated, and it is time to show it some care.

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