Spokane River Toxics and Human Health Workshop

Sponsored by the Lands Council and the
Collaborative on Health and the Environment- Washington
Wednesday, June 18th, 5-9 p.m.
Community Building Lobby, 35 W. Maine Ave, Spokane

- Environmental Health: Framing, overview and description of current issues of concern- Aimee Boulanger with the Institute for Children's Environmental Health and The Collaborative on Health and the Environment (CHE WA)

-**What is the link between environmental health and public health and why discuss this in the setting of the Spokane River?** The CHE in conjunction with, the Washington Department of Health and the Center for Disease Control are working on a tracking network to build systems and data to evaluate environmental health.

-Dr Steve Gilbert's Small Dose of Toxicology Workshop helped to illustrate the known and unknown dangers of the nearly 80,000 chemicals on the market; 1,500 new chemicals each year. 43% of the chemicals we use most often have no toxicity data on them.

-Children are the most vulnerable members of society and are likewise in the most in need of protection from these toxic substances. It has been noted that pesticide levels in children are twice that of their parents in the same household. They are the most vulnerable because their brains and other organs are still forming. It is essential that we take measures to protect the minority of us who are the most vulnerable.

-Some pregnant woman can be exposed to toxins and can pass that toxicity onto their children. Some of us have genetic preconditions that make us more vulnerable to certain toxins. Autism is 10 times more prevalent than it was in the 1990's; asthma rates have doubled since 1980. These are all preventable diseases with environmental links.

-We are here to talk about what locations of the Spokane River are safe, in what ways the river is safe, and how to engage in long term discussions on protecting the health of the Spokane River and people who recreate along the river.

- The Spokane River: Framing our communities river and what it means to us: Andy Dunau with the Spokane River Forum

-The Spokane River Forum started in January of this year to provide information exchange for all things Spokane River. It has been observed that protecting the Spokane River is truly a community enterprise.

-In an effort to engage the community in the cleanup process, the Forum spent three months canvassing along the river trying to get a perspective on how people care about

the river. The study found that people feel very connected to the Spokane River. The question arises as to how that connectedness and concern for the river is turned into action. 80% of survey respondents said that we need to protect the river; approximately 90% say that we owe it to future generations to clean up the river.

-People are connected with the Spokane River from a distance because the community has found itself in an environmental "soup" bogged down with acronyms and scientific jargon that is often hard for some people to grasp and turn into action.

-Culture and the history of the Spokane River have led to the river's current condition. Historically, the Spokane River has been a working river; our experience with the river up until now has been dominated with that notion that the Spokane River is a dirty, working river, rather than an iconic natural recreation resource (unlike the view of local Native American tribes).

-Literally and figuratively the community has turned its back on the river. But no one is at fault. Rather, it is the logical result of treating the river as a working river.

-Until 1960's the river was the community sewer pipe (prior to the construction of the wastewater treatment plant.) The Centennial trail was constructed in the 1990's. Now thousands of people are walking and biking along the river. This allows them to experience the river in a more intimate way and forming a sense of connectedness and hopefully stewardship.

-It is really hard to demystify a lot of the scientific and regulatory jargon. When discussing the toxics in the river, it would be more effective to ask and answer questions in a simpler manner. The fish advisories read like a Dr. Seuss book- it's a red fish, blue fish one fish two fish of what you can eat. It is an incomplete answer to the communities questions of what the toxics in the river mean to human health and what do we do about it. The science is meant to *inform* not *dominate* the community's discussions.

-Do we really want to know what the cost of the river cleanup would be? Or are we okay with encouraging people to recreate on the river and just avoid the fish? Our generation has to tell the next generation what to do with the river. Do we clean it up further or is it okay as is?

- Data: What's in the River? Facts and analysis on toxics, sampling results- Dale Norton with the Washington Department of Ecology

-Spokane River Toxics Studies takes a look at target chemicals that are showing up on the list for Clean Water Act: metals- arsenic, cadmium, lead, zinc, PCB's, PBDE's (flame retardants), Dioxins and Furans

-Recent Ecology Studies to Address Toxics in the Spokane River:

-Spokane River PCBs Water Cleanup Plan (Total Maximum Daily Load) (2003-2004)

-Total Maximum Daily Load Study for PCB's (water-quality cleanup plan)
-State Line to Mouth of River (Porcupine Bay)
-Includes preliminary implementation strategy
-PCBs, PBDE's and selected metals in Spokane River Fish 2006
-Washington State Toxics Monitoring Program- Annual Monitoring for 2003 and 2005

-Study overview

Because of the PCBs cycle, Ecology looked at river water, storm water, suspended sediment, fish tissue, and consumed prey items in fish.

-One of the challenges is that state water quality is based on the federal standard of 170 pg/1(ppq) in water. This translates into a fairly low amount of 5.3 ppb in fish tissue. But tribal standard is much lower at 3.37 pg/1 in water translates into only 0.1 ppb for fish tissue.

-PCB concentrations in River water at the upper part of river is meeting the state quality but is far from meeting tribal water quality standards. Closer to Spokane, concentrations increase and state standards are not met.

-Composite of loads coming in at state line represents about 25% of load coming into the river, municipal about 15%, Little Spokane 5%, and Storm water 55%. There are older permits that don't cover newer load laws. So, grandfathered in PCBs could be coming from different sources Kaiser Trentwood had several PCB problems they have cut down dramatically over last 10 yrs.

-Spokane River PCB TMDL Results:

-PCB concentrations in water increase moving downstream from the ID border to Lake Spokane (Long Lake)
-The largest PCB loading to the river appears to be storm water from the City of Spokane
-To meet the Spokane Tribe water quality standard, all sources (including the river at the ID Border) will have to reduce PCB loads by a least _>95%
-Modeling suggests that PCB levels in sediments also need to be reduced to meet human health criteria.

Question: How does WA state deal with the fact that ID creates a lot of pollution?
Answer: Certain beaches along river that have clean up priority like Starr Road and soon Harvard Road. There is work going on also in Donkey Island in terms of cleaning up sediments.

Question: But what is the remediation long term? Is there pressure on ID to not do what they are doing? Is the tribe putting pressure through lawsuits? I feel like the steps are too small and what is going to take? This is a serious issue that the folks who are representing us aren't speaking up enough.

Answer: Attorney from Center for Justice- There is a provision to reject the upstream state and can result in lawsuit, but you have to let the political parties know so that they can pursue those steps.

-PCB's in Spokane River Fish: the basic pattern is that PCB level increases toward state line and decrease moving down stream. Some of these fish were in ppm but have now seen one to two orders of magnitude drop in levels.

-PBDEs levels are elevated at the state line, peak out at Ninemile, and decrease at Long Lake. PBDE levels in the Spokane River is about 25 times higher than others in the state.

Dioxins: Spokane River is high.

-Spokane River Fish Results

-PCBs declining from 1994 to 2995 in most areas of the Spokane River except Mission Park
-PBDEs in Spokane River fish from Nine Mile reservoir highest of 20 sites sampled statewide
-Metals highest near state line and decrease moving downstream
-Cadmium, lead, and zinc elevated in Spokane compared to other Washington rivers
-Arsenic not elevated in Spokane River fish
-Dioxin/Furan levels in most Spokane River fish samples above the 70th percentile of concentrations statewide (rainbow trout and mountain whitefish)

-City of Spokane Storm water

-Expanded sampling of storm water outfalls in 2007: sampled 14 drainages that discharge to the river – we can look at these drains and see which of these are the highest.

-Future Activities

-Trying to take and incorporate info in order to implement cleanups and other
-Complete PCB TMDL by June 2009
-Ongoing Site Cleanup Activities
-Urban Waters Initiative
-Development of Effectiveness Monitoring Plan for Spokane River

Spokane River Webpage & Ecology Publications:
www.ecy.wa.gov/geographic/Spokane/Spokane_river_basin.htm
www.ecy.wa.gov/biblio/eap.html

Question: Did the Coeur d'Alene Tribe determine that toxicity at CDA Lake is acceptable?
Answer: On June 24th, they will come out with Lake Management Plan—that well help get to the bottom of this issue.

Rep from the Toxics Coalition: It's important for citizens to speak out to elected officials and representatives in order to get their voices heard. Department of Ecology doesn't change the laws, but elected officials do. In addition, non-profit groups are bound by their public funding.

Question: Why are PBDE levels so high here?
Answer: Nobody really knows why it's higher here. PBDEs are a chemical new on the agenda. They have arisen from recent science. Wastewater effluent and sludge from wastewater facilities contain the highest concentration. High levels easily explained because they're contained in clothing, carpeting, etc… all of these materials go into the sanitary sewer designed to chew up the chemicals they expect, so they are not designed with bacteria to chew up PBDE's, pharmaceutical products, and lead (you can't take lead out of the water with a bacteria).

- Discussion: What does this data mean to human health and the general health of the river: Dale Norton with Ecology, Peter deFur with Center for Justice, and Jim Dawson with Washington Toxics Coalition

-**Peter deFur, the Technical Advisor for Center of Justice** has facilitated with the clean up of contaminated rivers, superfund sites, etc. Works on national reviews with PCBE's, dioxins, etc.)
-I reviewed both the previous study on storm water and the clean-up of PCBE contaminated sediments, finished review of storm water analysis. The good news is that there is some very competent work being done. However, we are unsure if the technical quality of the work is up to snuff
-The concern that I have is twofold:

> -One- I have never before encountered a contaminated site where there's a fish consumption advisory for lead. I've asked some people to find one on the database, but they haven't found any either. Fish take up lead because there is a small amount in the water, but since it gets in the way of salt production they do not hold onto it. Thus, there must be a very high lead concentration for fish to retain it.
> -Two- Vulnerability. For children, fetus, neonatal: we should have learned this long ago when we learned that there is no safe dose of lead for the unborn. All of these chemicals affect the nervous system. We need to be able to tell people that various chemicals together have an unpredictable effect on the human.
> Example: in a Virginia River, 40% of fish with combined levels of four chemicals had no visible reproductive systems at the time of reproduction

-So what do we do about it? Many states have a table, giving information on each river, fish in that river, the chemicals present, and an advisory (in general, the simpler the advisory, the better). 40% of people in one study ate fish that were under an advisory. In one Portland study, many (despite one advisory in twelve languages) were subsistence fishers—having starving children is a bigger concern than the long-term damages involved in eating contaminated fish. Another possibly vulnerable group- the elderly. We know very little about the tie between contaminants and Alzheimer's, Parkinson's, and other problems.

- There is a provision in the Clean Water Act that one state has to respect the water quality standards of the downstream state. In closing, there is nothing more convincing than the ballot box to alert elected officials.

Question: What kind of advisory should we put out if we know people will eat the fish anyway?
Answer: First, tell people there are some fish you should never eat under any circumstances, and show them how to cut the fish to minimize intake of toxins. Second, have responsible parties pay for the protein on the plate of those affected individuals.

Question: Has the Clean Water Act been at all effective in lawsuits? How do we hold the companies and those responsible for lead and PCB's accountable? Has any citizen organization worked with, for example, Gonzaga Law School?
Answer: There are court cases, I believe, that were against state agencies (one state suing another). There were several lawsuits over that still being used today. Within the state, the Clean Water Act acts as a citizen suit provision. The citizen cannot bring the suit against the upstream state, but has to get the state to do that on your behalf. University of Washington Law clinic will work anywhere in the state. Center for Justice does a lot of watchdog work focused on the Spokane River and bring citizen suit actions when appropriate. The best way for an upstream state to be held accountable is for the downstream state to take action. If downstream state ignores its responsibilities, it's up to the citizens.

Question: Interesting how difficult it is for the public to get access to the process held within stakeholder meetings. In Idaho, one citizen's meeting came up with an idea for an independent technical review that was shut down for lack of funding. But there's got to be some way that this could be possible.
Response: Federal Law under superfund requires that the EPA must make available grant funds for a qualified citizen's organization to hire technical experts. When the state has its own program for cleaning up superfund sites, the state has to have all the same provisions that come in federal law. The state law has to have provisions at least as strong, if not stronger.

Question: Are any groups trying to throw information off?
Answer: Industries that manufacture PBDE's are trying to downplay the toxicity; factories that handle PCB's if they handle them ineffectively. Also, when dioxins were on the rise a while back, the cattle industry put on a huge effort to tell people not to worry about beef due to the large concentration of dioxins in cattle. Association of wastewater treatment operators are nervous about what comes out in the effluent, sludge, that might try to downplay either the magnitude of the problem or the seriousness of the health consequences.

Question: So if people have lead and mercury in their bodies, are there any good diets?
Answer: Anyone who was a child before the late 1970's has an 80% chance of having high blood lead-levels as a child. Make sure calcium levels are adequate (lead

accumulates in teeth and you don't want it to de-mineralize into your body). There has also been an observed link between lead and mercury levels and dementia, so even at an older age, diet is really important. It is best to talk to your doctor if blood-lead levels are a concern.

- Fish Consumption Advisories: What are the recent updates and how can we best convey the new information to the public to protect their health- Elmer Diaz, Dave McBride, Erin Kochaniewicz with the Washington Department of Health, Mike LaScoula with the Spokane Regional Health District, Carol Bergin with Ecology, BJ Cummings with the Duwamish River Cleanup Coilition

-Evaluation of PCBS, PCBDEs and Metals in Spokane River Fish-

-Fish Advisories- Purpose: to inform the public of the contaminants in fish and to direct fish consumers to fish that have lower levels of contaminants
-Provide people with advice so people can reduce exposure to contaminants by providing meal recommendations- there is a paradox with the fish in that there are the adverse affects of the contaminants in the fish and there are also good health affects associated with fish consumption.
-DOH encourages people to eat fish because of the health benefits (i.e. protection from dementia, promote cardiovascular health.)

-Populations of Concern- recreational anglers, Native American populations (located in the lower section of the river), subsistence fishermen and various ethnic groups (Slavic, Hispanic, Hmong, Vietnamese), pregnant women and young children.

-Steps in creating fish advisory

-Determine Contaminant concentration in fish
-Estimate consumption rates of fish
-Estimate a dose of contaminants based on steps one and two
-Then they cross reference that with what is safe and what constitutes a cancer risk
-Incorporate risk management and risk communication decisions and provide recommendations.

-History of Spokane River Fish Advisories

-93-1996 Fish and sediment samples showed elevated toxin levels, 1999 SRDH and DOH issued fish consumption showed elevated PCB concentrations in upper Spokane River promoting Spokane Regional Health District to issue statements of concern
-1999- SHRD and DOH issued fish consumption advisory based on lead data from Ecology and USGS
-2001: DOH evaluated cadmium, lead, and zinc in the River
-Public health hazard existed for children and pregnant women from lead, mainly whole fish (large-scale suckers)

-2003- DOH and SDRHD issued fish advisory based on PCBs (mountain whitefish, rainbow trout, large-scale suckers, smallmouth bass)
-2007- DOH evaluates PCB, PBDE, and selected metals data from Ecology's 2006 study
-2008- DOH and SDRHD update fish advisories

-Idaho Border to Upriver Dam- Do not eat any fish (catch and release only)

-Upriver Dam to Nine Mile Dam- Eat no more than 1 meal of any kind of fish per month, except Large-scale Sucker which should not be eaten.

-Lake Spokane- Large-scale suckers and brown trout should be limited to one meal per month

-An advisory that said eat no fish could potentially remove some much needed protein from some people's diets.

-Conclusions

-Change in 2003 fish advisory for PCBs in the Spokane River (large-scale suckers, brown trout)
-Current Spokane river fish advisories for PCBs and protective for PBDEs and metals (lead)
-fish advisory results for PBDEs should be reassessed when EPA publishes final toxicity assessment
-reassessment should incorporate current information on exposures to PBDEs from other sources (dust, indoor air, other foods)
- DOH recommends continuing monitoring for PCBs, PBDEs and metals in the Spokane River
-DOH recommends that the general public limit the amount of fish they eat especially:
    -Women who might become pregnant,
    -who are pregnant,
    -nursing mothers,
    -young children
-Consumption of sports fish from long lake is preferred over the consumption of fish from other upstream portions of the Spokane River.

-Public health advisories don't necessarily cover the "cocktail" of toxins- rather (it seems) the fish advisory is meant to convey a message about the safe consumption level of fish that are contaminated with one of these toxins.

Question: Are you confident that the model is accurate and it has not been influenced by political pressure?
Answer: I feel no political pressure at changing these numbers- many contaminants have been looked at very carefully and oftentimes they are reviewed by the National Academy of the Sciences. We have not seen a Dioxin value from the EPA to work with- there has

been some political pressure over the standard in blood lead- a number of scientists have published data over the years that provides evidence that there is an increase in neurological/behavioral issues with a blood lead level far smaller that the current safe level of consumption. If you start telling people that the fish aren't safe to eat, you may see an overall decrease in access and recreation along the river, they may also stop all of their other activities associated with the river- this may potentially have an adverse impact on the local economy

Question: If there is no safe level for lead, what level are you saying is permissible for children and pregnant women (5mg will drop five IQ points)?
Answer: We want to direct people to consume fish that have lower levels of contaminants because some people are in desperate need of the benefits associated with fish consumption.

-**BJ Cummings- discussed the Duwamish River cleanup** (superfund), Washington's Model Toxics Control Act, fish advisories, statewide salmon advisory
-On the Duwamish River, everything else is a do not eat advisory. Again, low income, homeless, recent immigrants are most vulnerable for a variety of different reasons.
-Duwamish started out with a less black and whit fish advisory, but DOH upgraded the advisory to state that no fish should be consumed because toxicity levels were high enough to make that call.
-Local subsistence fishers do not have the option to buy fish from the store or drive out of town to a cleaner water source.
-One was to help and protect people's health is to make sure that the communication is clear, visual, multilingual, and then try to focus back on how do we fix this problem as soon as possible to protect these most vulnerable populations.
-One thing that was attempted in order to communicate this message was the creation of a colorful, comprehensive Duwamish River Guide that shows people the general layout of trails and sites along the river as well as historical facts and environmental tidbits to help increase awareness of river issues and hopefully turn that into positive action.
-where do we go- bring all interested parties to the table and allow them to come to a consensus on what needs to be done next.
-In the case of the Duwamish, all interested parties were brought to the table in order to reach a consensus on what needed to be done next. This community visioning process has brought the community together and allowed them to voice all that they see for the future of their river. This incredible process of community engagement has brought out all kinds of ideas and collaboration that alone would not have been reached.

- Wrap Up and Next Steps

-The River Forum will put together a stakeholders group. We do need to evaluate this stuff; we can have the best science in the world but as a community we need to come down on the side of what do we tell people about eating the fish and how to use the river safely. We need to let the community know that anyone can get involved in these discussions

-It is important to keep in mind that this community has priorities. One of the priorities is to ensure that citizens are protected from toxic substances in the environment and another priority is to promote sustainable economic growth. We need to realize that the river is an essential part of our economy. The economic benefits of the river need to be explored and developed. If we are able to get toxic levels within a safe range, the Spokane River could potentially be an attractive recreational/tourist destination, more so than it is today

-One of the common themes that arose throughout the discussions was the importance of the political system as a way to resolve these toxicity issues. Concerned citizens have an obligation to let their elected officials know that inaction or slow responses are no longer an option. This can be done through letter writing campaigns, letters to the editor, as well as working to elect public officials who will prove to be leaders on this issue

-We need to alert people to the importance of having a clean river not just because some people eat fish from and recreate along the river, but because it is the Spokane River that recharges our aquifer and can potentially have disastrous health affects if left untreated. Beyond that, we have an obligation to future generations to leave them with a river that is cleaner than the one that we all know right now

-Taking the Urban Waters Initiative to the community. Go to those that deal with these hazardous materials and then do active monitoring to see if non-source pollution can be decreased.