By Sonja Bjorn-Hansen*

The movie "Erin Brockovich" is based on a true story, the David-and- Goliath variety. The protagonist is a tough, scrappy piece of eye candy who overcomes enormous odds (including but not limited to: no formal education and sarcastic co-workers) to bring a large, evil corporation to its knees. In the end, hundreds of victims of poisoned wells and their lawyers get the largest settlement ever paid in a direct-action lawsuit in U.S. history...$333 million. Erin Brockovich, to her astonishment, also walks away a multi-millionaire. Oh, and she gets to keep the cute guy too.

I really enjoyed the movie. I especially liked the part where the cute guy shows up just in time to watch her kids (I too am a single mom) and fix the plumbing, right when her workload is really starting to ramp up. I also liked seeing the evil corporation, PG&E, get its comeuppance because I used to work there and didn't like it. By the way, the $333 million was ultimately paid for by ratepayers. And because PG&E had a legal monopoly, the ratepayers had no choice as to who they bought their gas and electricity from.

"Erin Brockovich" was a box office hit. The fact that Erin was ably played by none less than Julia Roberts probably had something do with this, but I think there was another reason as well. I think the movie satisfied the need of many people to believe that environmental problems (in this case, contaminated groundwater) can by and large be traced to the evil doings of large corporations, and that if we only had a few more Erin Brockoviches to go around, we would overcome pollution for sure.

As entertainment, Erin Brockovich is great. As a paradigm for dealing with environmental problems, it has its limitations.

Like Erin Brockovich, I have also spent time analyzing toxic data. The data that she acquired (with the help of her... winsome smile) involved well water. "My" data came from the Columbia Slough, a waterway that runs through Portland, Oregon. I didn't have to do anything to get it. I work for the Oregon Department of Environmental Quality (DEQ), and the city of Portland gave it to us. They had collected most of it, with the strong encouragement of local environmental groups it is only fair to add. A cluster of five or ten staff and managers from both DEQ and the city helped me analyze it from 1996-1997.

With a little research, Erin Brockovich soon knew what the problem was: chromium. Lots of it. Enough to send hundreds of people to the hospital with cancer and other maladies. And what did the data on Columbia Slough show? That is harder to say. I wouldn't drink the stuff if you paid me, but even after analyzing the data for a year and a half, I'd be hard-pressed to say what might happen if I did.

I'll try anyway. The water in the Columbia Slough got tested for about 160 different chemicals. Tests were run on sediment and fish tissue samples as well. In the end, about 80 different chemicals were found. The chemical that seemed to pose the biggest problem was lead. It showed up in about a quarter of the 200 or so water column samples tested. About half the time it was detected, it exceeded Oregon's water quality standard for the protection of aquatic life. The highest amount detected was one half the EPA action level for lead in drinking water... The same level found in the tap water at my house. In other words, if lead and human health were the only considerations, I'd be better off drinking water from the Slough than water from my own tap (I now drink filtered water, thank you very much). They aren't. I'll talk about the other things that showed up.

The other chemicals that showed up the most often were: PCBs, DDT, DDE (a metabolite, or breakdown product of DDT) and Dieldrin. Lead probably got there from being used as an additive to gasoline in the bad old days. PCBs have been banned for awhile now, but they were once widely used and they are mighty persistent, so it isn't surprising they showed up in the Slough. DDT and Dieldrin are both pesticides, now banned for sale in the U.S. In other words, everything we found in the Columbia Slough at levels that violated some sort of standard was what environmental professional-types call a "legacy condition". The Slough was clearly contaminated. What we could do about it was less clear.

We also decided to call dioxin a problem, even though the data we had was a bit sketchy. Dioxin itself is tricky. It comes in about 73 different forms, and the worst kind ranks as about the nastiest substance ever discovered. Perhaps because of all the different forms that exist (called congeners), it is very expensive to test for. We only had 7 test results to go by, and for various reasons, the three that happened to show the presence of dioxin were all suspect. So... why didn't we just bite the bullet and run some more tests? Well, it would simply have confirmed what we already knew. Dioxin is everywhere, albeit in low concentrations. It comes from sources as varied and diffuse as pesticide manufacturing plants and backyard garbage burning. A good rule-of-thumb for limiting your own production of and exposure to dioxin (as well as a bunch of other nasties): avoid burning plastic.

Erin Brockovich didn't just know what the problem was; she also knew who the victims were: people whose drinking water had been contaminated. With the Columbia Slough, it wasn't so clear. The Columbia Slough is not used as a source of drinking water. It mostly functions as a drainage way for stormwater. There may be some people who fish there, but probably not too many on account of the signs in 8 different languages warning people not to. As for non-human species, the Slough is what ecologists call "a highly simplified sys-
for such effects; we simply knew that they happen. That is all I and the people I worked with had no idea how to account for "additive effects" is hopefully self-evident. Synergistic effects are more like a stew. The detection limits for samples from a glass of water than in a bowl of stew. The Columbia Slough data was the problem of what to make of all those chemicals. How did that happen? Think of it this way: it is easier to taste a drop of lemon juice in a glass of water than in a bowl of stew. The Columbia Slough was more like a stew. The detection limits for samples from the Slough were correspondingly higher as a result.

One of the things that bothered me when I worked on the Slough data was the problem of what to make of all those chemicals. An example: trichloroethene. It was found in 46 out of 360 samples. That's a 12% detection rate. But the maximum detected value was only 10 micrograms per liter. The standard is 21,900 micrograms/liter, or more than 2000 times that.

There were 75 chemicals in the Slough like trichloroethene. They showed up regularly but only at very low levels, or they showed up at higher levels but only once in a great while. Or, most annoying, they never showed up, but the detection limits the laboratories were able to achieve were higher than the standards for the chemicals. How did that happen? Think of it this way: it is easier to taste a drop of lemon juice in a glass of water than in a bowl of stew. The Columbia Slough was more like a stew. The detection limits for samples from the Slough were correspondingly higher as a result.

This phenomenon gets a bit sobering when one considers the possibility of additive and synergistic effects. The meaning of "additive effects" is hopefully self-evident. Synergistic effects are easiest to explain by way of example. A person who has spent several years of his life working in a factory that makes asbestos is at risk for developing asbestosis, a lung disease. A person who does the same work and also smokes, has many times the risk of developing the same disease. Cigarette smoke and asbestos fibers work synergistically to mess with lungs.

I and the people I worked with had no idea how to account for such effects; we simply knew that they happen. That is all anyone really knows.
I sometimes wonder how things might have turned out if we had in fact found something both big and nasty in the Slough. Say, for example, dioxin in quantities sufficient to give nearby residents the ravaged visage of Viktor Yushchenko, the recently-elected president of the Ukraine. On his rocky road to becoming president, it appears that he narrowly survived a poisoning attempt involving dioxin.

I probably would have written, out of a sense of professional decorum as well as personal self-consciousness with complex roots, a dry report that would have been difficult to distinguish from hundreds of other reports the agency generates every year, except for the numbers that it contained. Local environmentalists would have seized on the results as vindication for all their efforts. I believe they deserve credit for the fact that the Slough is not a whole lot worse than it is.

There is a regulator-type in Erin Brockovich. Ostensibly, his job is to review data on drinking water. When Erin encounters him, he is watching T.V. at his desk. She quickly wins him over with her winsome ways, and in exchange he lets her have at the files. Once she has what she wants, she makes no secret of her contempt for him. I've always figured that is how some members of the public view us, but it is still a little tough for me to watch.

After I quit working on the Slough and began to get a life, it occurred to me to wonder if perhaps I'd deluded myself a bit. I'd had this idea that if I did a good job, I might be sparing the residents of Portland poisoning by dioxin. Or at least painful and possibly unnecessary hassles at the hands of a chemical like DES. By the same token, if I did a bad job, I wouldn't. Stressful way to live, that.

It also occurred to me to wonder what Putting the Problems of the Slough in Perspective might look like. I'm still trying to do this. I have a bunch of ideas. They feel half-baked. I want to share them anyway.

I suspect this need to share comes from the same place that my obsession with toxics in the Slough did. There is a scene towards the end of "Erin Brockovich" where Erin tells one of the victims of the chromium poisoning that she is going to get $5 million dollars and that it will be enough, more than enough, to pay for everything, and everything will be okay. Part of me scoffs and another part of me wants more than anything to be Erin Brockovich saying that. Let me fix it for everyone, let me tell them it is going to be okay, let me bask in their gratefulness.

I am not Erin Brockovich. About the only thing I have in common with her is that when something doesn't look quite right, sometimes I can't leave well enough alone.

A question that banged around the back of my mind while I analyzed data on the Slough was, how did we end up looking for these particular chemicals? What else could we have looked for? And what might we have found if we had?

A few years after I stopped working on the Slough, I stumbled across the fact that there are over 70,000 chemicals in use in the U.S. economy. Strange how once you manage to take in something like that, you start seeing it all over the place. I've now run across several variations on that surprising little factoid.
Treatment Works) to remove toxic substances from the waste stream. It suggests that the ability to do so is highly variable. To be specific, it states that:

Toxic pollutants present in the raw sewage entering secondary treatment plants may have several fates. Some toxic organic pollutants may biodegrade to varying extents. Those that are not biodegraded are either partitioned to sewage sludge, volatilized at various stages in the treatment train, or discharged to receiving waters. Metals are not biodegraded; they either enter sewage sludges or remain in the POTW’s waste stream and are discharged in the effluent.

The removal of most toxic pollutants from wastewaters by POTWs is largely incidental to the treatment of conventional pollutants and should be considered in terms of partitioning among alternative pathways; pollutants may be shifted from one medium to another (to the air through volatilization or adsorbed to sludge), as well as removed through biodegradation.

This report may be accessed at: http://www.epa.gov/npdes/pubs/owm0244.pdf.

Near as I can tell, having an absurdly short and out-of-date Priority Pollutant List means we don't really know what toxics to look for. And if we did know what to look for, we would probably find out that our treatment plants aren't completely up to the job of treating them.

I am surprised by the silence around this problem. I work in the permit program at DEQ. We regulate the discharge of chemicals to waterbodies in Oregon. You would think we would have some idea of how many things we are regulating vs. how many things we aren't regulating. And you would think that if we didn't bring it up ourselves, environmental groups would bring it up for us. Not so. I have been at DEQ for 14 years. The only time I have heard these issues brought up is when I have mentioned them.

Silence begets silence. The bigger the silence, the more powerful it is. Silence can become so all-encompassing that one is not even aware of it. In such instances, entire constellations of thoughts, questions and conversations simply do not arise. Or, if they do, the pervasiveness of the silence makes them seem dangerous. Perhaps the last person who tried to break the silence got in trouble, perhaps she became a pariah, perhaps she lost her job.

Between when the Priority Pollutant List was first promulgated and now, critics of DEQ have been busy pointing out that we don't apply our rules often enough or consistently enough. They tell us it is hard to keep up with the constantly changing regulations. They say we don't do enough to regulate stormwater and they also say we try to do too much. They tell us that dischargers should be required to meet water quality standards at the point of discharge and not, say, 100 feet downstream. They tell us the fish consumption rates that our risk analyses are based on do not reflect the consumption patterns of minority groups and we need to re-do them. They tell us our permit backlog is too big, and our permits are too complicated.

Yes, agreed, and in the decades that we have been debating these issues, the number of chemicals we perhaps ought to regulate has mushroomed almost beyond imagining. But no one is talking about that.

How hard would it be to take on this subject? What would happen if we did? I recently got the nerve to try and find out, as a result of watching a movie about racism called "The Color of Fear". I found it to be both searing and cathartic. I saw it at work. Afterwards it occurred to me that if DEQ management was committed to encouraging staff to watch this movie, perhaps there was more room than I thought for other kinds of difficult conversations as well. So I have begun initiating them. The main thing I notice is... I have more energy.

I don't claim to know what fixing the problem of toxics would look like, but I doubt it would look like what we have already been doing, multiplied by some large number. I also don't think it would look like the end of "Erin Brockovich" where a corporation pays up and the victims wind up rich. I find myself instead picturing a big, messy conversation between lots of very different people who finally get that they need to talk. And maybe they don't get around to talking to toxics right away. It hasn't escaped my notice that not everyone perceives the issue to be as important as I do. Perhaps first they talk about subjects such as religion, racism, the implications of corporate power, nationalism, sexism, class-ism.

Erin Brockovich knew about class-ism. It was the biggest challenge she had to overcome in order to do what she did. Erin Brockovich was white trash, the uppity kind, and her co-workers would have little to do with her. But she had a heart bigger than Texas, and she used it to connect with the victims of the chromium poisoning. She met with them in their homes. She memorized their names, their diseases, their phone numbers. The lawyers she worked with, encased in privilege and education, couldn't or wouldn't do that. Even her boss couldn't do it, and he had a heart almost as big as hers. He did the next best thing: he trusted Erin Brockovich to do it. Together they formed a delicate bridge across the divide. Remembering that makes me want to see the movie again. Perhaps Erin Brockovich contains a parable for our time, after all.

Rachel's Environment & Health News is a publication of the Environmental Research Foundation (ERF), Peter Montague, editor. Contact ERF at P.O. Box 160, New Brunswick, NJ 08903-0160; Phone: (732) 828-9995; Fax (732) 791-4603; E-mail: erf@rachel.org; http://www.rachel.org. Unless otherwise indicated, Rachel’s is written by Peter Montague. The paper edition of Rachel’s is printed on 50% kenaf, 50% post-consumer wastepaper (processed chlorine free). Rachel’s Environment & Health News is uncopyrighted.