

CHE-WA Children's Environmental Health Working Group
Thursday, April 14, 2011 9:30-11:30
Collaborative on Health and the Environment- WA (CHE-WA)
130 Nickerson, Suite 150 Seattle, WA 98109 (King County site)

Our mission is to work collaboratively with diverse groups to eliminate children's harmful environmental exposures in the Puget Sound region and beyond during their most critical developmental years: pre-conception to age 8.

Attending: Julia Berg (LHWMP-KC), Jeanne Johnson, Russ Clausen (EPA), Nicole Thomsen (PHSKC), Heather Trim (P4PS), Susan Colton, Erin Mader (EPA), Katie Frevert (US DEOHS), Lauren Jenks (WA DOH), Holly Davies (WA DOE), Margo Young (EPA), Jennifer Howell (Triangle Associates), Elizabeth Loudon (ECOSS), Cynthia Shurtleff (WCAAP), Tracy Collier (NOAA), Liz Carr (WA DOH), Aimee Boulanger (CHE WA), Liz Tennant (LHWMP KC), Ray Carveth (LHWMP KC)

Host and note taker: Heather Trim

Action items

- Set up our group to now merge to the Ecology list serve (including addressing the geographic scope issue) – Holly and Julia
- EPA's Healthy School News coming out in May and so let Margo know if you have an article you want to submit by April 24.
- Consider adding the Physician Outreach piece for future agenda

Agenda Items

Note: May's meeting host will be Nicole Thomsen, Public Health Seattle & King County, Chinook Building (401 5th Ave, Seattle) in room 115. Topic will be related to flu pandemic.

Updates - Members share what they are doing that relates to children's environmental health.

- ECOSS, City of Seattle, with partners, submitted a proposal to EPA for a Children's Env Health Grant to do multiple pronged outreach to community activists who spread the word in informal, social settings (Tupperware party model) – chemical contaminated dust. Primary focus will be on lead. Green cleaning kits/dust control and a third topic picked by the community. South Park, Georgetown and Beacon Hill. Multi-lingual and targeted messaging. All related to dust. Pre and post surveys. 2-years (\$100,000). Target is to reach 1000 people.
- Triangle Associates for King Co Children's Env Health – teacher workshops for August and ongoing presentations to parents. Multi-lingual. Also they do presentations to classrooms about water quality for city of Everett and Bellevue
- EPA Childrens – National Center for Healthy Homes workshops in Seattle and in Bellingham (May 20) coming up. Also giving healthy schools presentations at major conferences. Creating a grants matrix that they want to share. Healthy School News coming out in May and so let Margo know if you have an article you want to submit by April 24.
- Ecology – have a list serve that they are not using. Everyone was excited to use this for our effort.
 - Their work is centered on products (BPA in baby bottles, etc). New grant from EPA which will link products with health of Puget Sound. Children's Safe Product Rule will go out for comment (again) next week – reporting list of chemicals in children's products.
 - Also working on PAHs (for whole state) chemical action plan. Coal Tar Sealants bill– used to black top parking lots – bill passed in WA session (first state in the US). Governor has not yet signed it. The nexus to children is tracking very high levels of PAHs into homes.
- WA DOH - Others applying for EPA grants were denied. CDC Healthy Homes grant is underway with the goal of facilitating a shift to tracking lead in homes rather than in the kids. A much better approach.

- UW Superfund Research – NIHS – did schools study (including lead among others)
- EPA – Alaska project – children’s env health initiative focusing on villages. Are at the starting stage. Will do trainings for healthy homes and schools. Model is the frequent flyer model – the highest risk kids (asthma kids) – focus on those homes. Wood burning stoves and lower cost activities. Also working on AK air issues and Tribes. Upcoming event: WA Asthma Summit on May 20.
- Aimee – working on mining related issues (across the US).
- WA DOH Fish - Puget Sound human health – fish advisory toxicology program. Are requesting funds from EPA and others to evaluate the effectiveness of cleanup activities in urban bays such as Elliott Bay, Commencement Bay, etc in terms of impacts on fish. Also want to look at some new species and also new chemicals like PBDEs.
- Jeanne – is volunteering in the community including “baby boost” for solid ground. And at healthy homes, tobacco.
- Susan – coal issues
- Public Health Seattle King Co – rental housing inspection program (March 9 presentation to City Council available on City Channel) – licensing program. First inspection would be educational (not regulatory at all) and would be free or low-cost. This would give the city knowledge about the location and state of rental housing. Would learn also about languages, issues, etc.
- EPA Lead program – March 16 WA taking over enforcement of the painting rule. May 21, Southern Idaho rule effort at Expo.
- WA Chapter American Academy of Pediatrics – Within Reach – Hepatitis B coalition. Many Asian-Pacific Islanders and East Africans. May 10 forum (Holly Community Center) on that topic.

Sub-groups report out

- WSEHA – Julia Berg
 - 2-4 trainings (6 hours) in both eastern and western WA are planned. Will have a Healthy home and lead focus.
- Mini-symposium – Margo Young
 - UW is going to take over leadership
- Medical provider education subgroup – still underway. Have been working to find out the right inroads to doctors. It is very difficult to do! Confounded by 11 minute visit issue (how long doctors spend with the patients) and med school.

Speaker

Tracy Collier – NOAA’s Ocean and Human Health Initiative

- 2004 Oceans and Human Health Act – goals for fed research
 - Has leveraged resources. One center is in Seattle, one in Charleston and one in Great lakes
 - Give out grants, and do graduate trainees
 - One ocean, one health. What we do in the oceans comes back to us – human health, wildlife and ecosystem health are all interrelated.
 - Radionuclide issue of what might come from Japan
- Toxics in Puget Sound
 - Puget Sound Partnership founded 2005/2007.
 - Working with WA Fish and Wildlife – two pager on toxics. Got a lot of traction.
 - Get a handle on sources coming into the sound (loadings)
 - Determine needed reductions
 - And use adaptive management
 - Puget Sound is isolated hydrologic ally. Very deep. Not much tidal exchange relative to other estuaries. And have sills blocking water flow.
 - And is isolated biologically. Many animals live out their entire life span. Esp. compared to other estuaries.
 - Therefore, it is especially sensitive to toxic inputs

- Now there is a toxics loadings effort going on (15 chemicals, looking at pathways, modeling and collecting new data)
- Want Puget Sound Partnership to set strong goals
 - 40% of toxics loading should be removed.
 - Challenge of some chemicals that are entrained in the system – need to deal with over time
 - And emerging chemicals of concern. Quick arrestment of use of chemicals can make a difference in short time (Sweden study on PBDES)
- Contaminants of Emerging Concern (CECs)
 - Defined as:
 - Generally these are chemicals that are recently detected in the environment (newer chemicals or better lab techniques)
 - Or are associated with novel biological effects being seen in the environment (example - PAHs)
 - Or are increasing in production, even in cases where we haven't found them yet in the environment (example – some current use pesticides).
 - Issue of legacy versus emerging
 - Legacy – not manufactured anymore, do not break down
 - Newly introduced – new ability to detect or new knowledge about old chemicals
 - Current CECs for marine and estuarine environment include:
 - New age flame retardants (PBDEs and beyond)
 - Pharmaceuticals and personal care products, including hormones
 - Phenolics, including BPA, alkyl phenols, triclosan
 - Perfluorinated compounds (PFOS, PFOA)
 - Nanomaterials (huge and broad group!)
 - Current use pesticides, including synthetic pyrethroids
 - Other, PAHs?
 - Solutions
 - Get them out at the sources
 - Don't let chemicals be proprietary
 - Upgrade treatment (sewage treatment, for example)
 - New NMFS data – BPA in bile of fish (detected)
 - 30,000 chemicals in commerce
 - 400 are estimated to be persistent
 - 4% are routinely analyzed
 - 75% unstudied
 - Many are designed to kill (pesticides)
 - Unanticipated side effect (e.g. flame retardants)
 - Pharmaceuticals in sewage treatment charge
 - Petroleum is full of a large number of unstudied chemicals
 - How to deal with the complexity of this (Paul Hawken, 2009, U Portland)
 - We have one quadrillion cells, 90% are not human cells (bacteria)
 - In a millisecond, our body has undergone ten times more processes than there are stars in the universe.
 - So very difficult to prove “the harm”
 - Therefore we have to biologically based monitoring and assessment
 - Critical for Puget Sound Partnership to do this (adaptive management) – figure out if actions are working and if not, change course.
 - Tendency is to refine the loading estimates, but the real question is do we have biological evidence of toxic exposures being reduced, and toxics-associated biological dysfunctions are being reduced.
 - Pre-spawn mortality of adult Coho salmon in Piper's creek. Die before they spawn. It is due to chemical water quality problem.
 - Therefore standard approach of water quality standards is not working
 - 71% death of adult Coho before spawning - in Longfellow Creek

- Des Moines – 63%
- Piper’s – 54%
- Thornton Creek – 86%
- Other creeks (less urban) is not showing the deaths
- Appears to be associated with urban density and likely road runoff
- How to test this: Sweeping the streets really well before the rains come, for example –to see if that works
- PCBs in herring in Puget Sound – as contaminated as anywhere else in the world
- Salmon – whole body testing for PCBS. Puget Sound has higher levels than central California.
 - The resident species have even higher levels!
- Human health
 - Fish consumption advisories. Fish is good for you. Balancing act.
 - Consumer gets confused
 - It is a quality of life issue in Puget Sound – we are losing the ability to have the connection to the natural system (it is a well being issue)
 - Can’t do it in humans...but Sea lions in CA – that die of cancer have higher levels of PCBs, etc than those that die from other causes.
- Biota will tell us when our actions are having an effect by our actions
 - “Develop a biological observing system for the Sound” 2007
 - It is still a plan – it is still not happening
- PAHs – new science on the effects of oil spills
 - Exxon Valdez oil spill really impacted herring. Herring populations crashed (lost spawn)
 - Fish eggs and larvae exposed to oil become deformed and non-viable
 - NMFS looked at impacts of PAHS on cardiac function. (creates arrhythmia, messed up heart structure, etc)
 - Weathered oil (i.e., lower levels) on gravel and still see effects.
 - So what are the implications for human health?
 - These compounds are the same PAHs that are absorbed to the PM2.5 (particle size) – therefore effecting human health in air pollution (these particles get deep down into the lung) – traffic volume, proximity to roads, and wood burning stoves (although those have a different profile)
- Young fish – and implications for adults
 - Fish heart changes as it becomes adult.
 - 36 hours to 48 hours – huge change!
 - Heart shape of adults is related to their ability to swim fast
 - So looked at zebra fish embryos (just published)
 - Created oiled gravel.
 - Exposed the fish
 - They all got edema
 - Once the oil weathered – got to 31% after 40 days
 - And after 100 days 3% got edema
 - Then took the survivors of the 40 day ones and then let them age to adult and put them on a fish “treadmill”
 - Zebra fish are one of the fastest of all fish per body length
 - And found that all of the fish showed decreased ability to swim (30% reduction in swimming speed)
 - And looked at the shape of the heart and the heart was more round shaped.
 - In sum: PAHs in oil – abnormal heart rhythm – abnormal heart development – ill-shaped adult heart – reduced speed of swimming

Speaker bio

- Tracy Collier, NOAA' Oceans and Human Health Program. Tracy will speak about the interface of human health and Puget Sound. He will focus on work by agencies including the Puget Sound Partnership as well as NOAA's efforts on oceans and human health. His talk will also include impacts to wildlife health.

Tracy's bio:

Tracy Collier currently serves as the science advisor to NOAA's Oceans and Human Health Program, where he provides science direction in the areas of chemical contaminants, pathogens, and algal toxins and their effects on human and ecosystem health, for US coastal waters and the Great Lakes. The OHH Program also investigates benefits from the sea, including the development of novel drugs. Until recently, Dr. Collier was director of the Environmental Conservation Division of NOAA's Northwest Fisheries Science Center, where he supervised a research enterprise comprised of approximately 90 scientists. His expertise is in the area of environmental toxicology, where he conducted some of the first work on metabolism of PAHs by aquatic animals, and throughout his career has emphasized field assessments and biologically based monitoring aimed at understanding the stresses posed by toxic chemicals on aquatic ecosystems. More recently he has overseen studies on the effectiveness of restoration efforts, especially in urbanizing areas. When the Puget Sound Partnership undertook an aggressive effort to protect and restore Puget Sound, Dr. Collier was asked to oversee a rapid effort to catalog existing regional environmental indicators and determine their utility for measuring progress in meeting Partnership goals. Over 700 indicators were described, binned, and evaluated, in the areas of protecting habitats and species, human health, water quality, and water quantity. Dr. Collier received his PhD from the University of Washington, he holds faculty appointments at Oregon State University and Washington State University, and he consults for NOAA through a cooperative agreement with the University Corporation for Atmospheric Research. He serves on a number of regional, national, and international panels and committees, including the recently created Delta Independent Science Board in California. Until recently, he was an editor for Environmental Toxicology and Chemistry, and he has over 130 scientific publications.