Stakeholder Connection

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Institute for Environmental Solutions

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A New Generation of Tree Stewards for the Wheat Ridge Greenbelt

This spring, third grade students at Mountain Phoenix Community School and fourth grade students at Kullerstrand Elementary School will participate in the IES Preserve the Greenbelt program. The four-part education program will engage the children in learning about and caring for their backyard natural area, the Wheat Ridge Greenbelt. Three classroom workshops will give the students an understanding of the ecosystem in which they live and the important role trees have in the Greenbelt and in other urban forests. The students will discover the interdependence of plants, mammals, fish, insects, birds, air, water, and soil in the ecosystem. The students will play the roles of plants and animals that live in the Greenbelt. Using string, the students will connect to one another in a web of life to learn what happens if some parts of the ecosystem are lost. In another workshop, students will learn more about trees and their life cycle. Students will create storyboards of a tree's life after learning of their different stages. These workshops culminate with a tree planting at sites in the Greenbelt near each school. Students will plant native saplings in areas of the Greenbelt that have lost trees. They will participate in environmental activities, including guided nature walks led by City of Wheat Ridge staff members. Students will adopt the saplings and create a journal of their characteristics, encouraging them to return to the Greenbelt and check on their trees' life stages. Through IES's Preserve the Greenbelt project, we hope to inspire several dozen new environmental stewards. More information: Loren Klick, IES Tree Project Coordinator, loren@i4es.org.

High Profile Contaminant Spills - Tip of the Iceberg When it Comes to Water Safety

National Geographic Daily News reported on February 17 that the recent chemical spill affecting hundreds of thousands of people in West Virginia has raised concern over water safety nationwide. The 10,000-gallon spill of 4-methylcyclohexane methanol (MCHM, an unregulated chemical) caused the shutdown of a wastewater treatment plant and left 300,000 people without usable tap water for weeks. Some people still are not drinking the water. The unregulated, little-known characteristics of MCHM make it eerily similar to many contaminants of emerging concern (CECs) found in personal care, household, and cleaning products. Most CECs found in these common consumer products are unregulated and have undergone little testing, if any. In the National Geographic news article, the author states that experts are more concerned about the effects of the "chronic release of a more insidious kind—from pharmaceuticals and personal care products." The article warns about the silent danger that occurs through continuous release of CECs and the unknown reactions that occur between them. The IES CEC Project raises awareness about CECs and provides easy, cost-effective alternatives to avoid exposure to these toxic chemicals. For more information: Andrea Stucky, IES Institute Associate, andrea@i4es.org

The Wheat Ridge Greenbelt: Sites Selected for 2014 Elementary School Tree Plantings

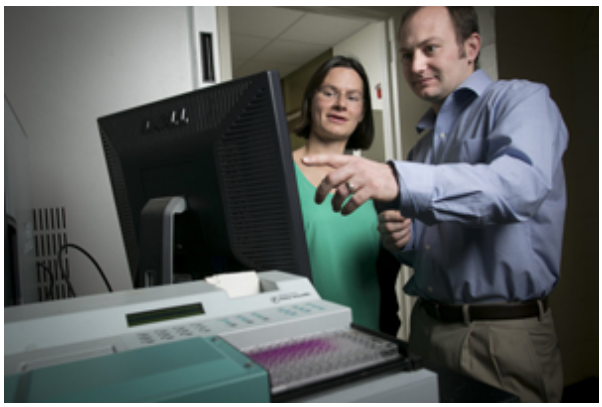
Two new sites were selected for this spring's IES *Preserve the Greenbelt* project. Sites were selected based on proximity to each of the participating schools, Kullerstrand Elementary School and Mountain Phoenix Community School. Site criteria include moisture availability, the need for vegetative cover, and accessibility. Trees in the Greenbelt are getting old and declining. There are not enough young and middle-aged trees to replace the aging trees. This program will introduce needed young trees and will increase the biodiversity with a variety of underrepresented species native to the Greenbelt.

Kullerstrand students will plant 60 saplings in an area on the western edge of the Wheat Ridge Greenbelt south of Bass Lake. This area is generally barren with several pockets of willow whips lying in depressions. There are indications that along with surface drainage towards Bass Lake, there is also some sub-surface flow of water toward the lake. This should help in sustaining new plantings. Mountain Phoenix students will plant trees just west of Kipling Street and south of 43rd Avenue. This planting area is next to Clear Creek and at a lower elevation to the water table again helping to sustain new plantings in the Greenbelt. The Mountain Phoenix planting area lost a lot of trees due to beaver activity. A clearing has been created with apparently saturated soils and deadfall trees. Both planting areas will provide great opportunities for the students to learn, preserve, and appreciate their backyard urban forest. More information: Brian P. Kelly, Institute Associate, bpkelly.mla@i4es.org.

Blue Crew Water Stewards Expands Into Teacher Training Workshops

Building on the success of the four pilot Blue Crew Water Stewards workshops at Mitchell Elementary School in Golden last spring, IES is developing a teacher training workshop to increase train teachers to teach kids to reduce CE water pollution and human exposure to contaminants throughout Colorado. The Blue Crew teacher training workshop will educate teachers about contaminants of emerging concern (CECs) and their harmful effects. It will provide age-appropriate content for students ages 9 to 11. Similar to the previous IES workshops, the focus of the teacher training workshop is to foster behavior change by encouraging students (and teachers) to reduce their chemical footprints. With CECs in many common personal care and household products, easy, cost effective alternatives can reduce the amount of contaminants released into our water. Through successful completion of the workshop, teachers will receive a packet that includes several IES-tested interactive activities to understand the personal sources of CECs and that prevention is the best strategy to reduce pollution and human exposure. The packet also contains ideas for enrichment and assessment of each activity, to ensure students understand the concepts and share their knowledge of CECs with their families and communities. Teachers interested in participating in the CEC Blue Crew Water Stewards teacher training should contact IES at Solutions@i4es.org. IES hopes to begin presenting teacher-training workshops in the next few months so that more students throughout Colorado can become Blue Crew Water Stewards. For more information: Andrea Stucky, andrea@i4es.org.

Contaminants in the News: New Method of Testing Could Provide Industries a Cheap Way to Test Toxicity



Duke University researchers outline a promising new method of testing hundreds of chemicals for environmental toxicity in a study published February 4 in *Environmental Science and Technology*. The study targeted the effect that antimicrobial chemicals have on bacteria, such as the beneficial soil bacterium, *Paraccocus denitrificans*. The study examined commercial antimicrobial chemicals, such as triclosan, found in most antibacterial soaps and toothpastes, that have toxic effects in the environment and on human health. The researchers, Claudia Gunsch and Ryan Holzem (see photo), found troubling concentrations of these unregulated chemicals in biosolids (sewage waste used as fertilizer). Antimicrobial chemicals such as triclosan and triclocarban in biosolids will negatively affect "good" bacteria necessary for soil quality. The new method of testing is promising due to its low cost and simple implementation. In the future, if adopted by product industries or regulatory agencies, the test could be a valuable form of pollutant prevention, providing an effective screening technique to target

critical environmental indicators. Dr. Gunsch stated, "We hope that companies developing new chemicals might use this method to start looking at potential environmental threats before incorporating them into consumer products." More information: Alex Key, CEC Project Intern, alex@i4es.org.

Emerald Ash Borer arrives in Colorado; 1.45 million ash trees threatened in Denver Area

Emerald Ash Borer (EAB) was found in Boulder in September 2013. EAB is a non-native insect that lacks predators to keep it in check. EAB only attacks ash trees, and is responsible for the death of millions of ash trees in the Midwest. Approximately 15% of trees in Colorado's urban forest are ash; the Denver metro area has an estimated 1.45 million ash trees. The Emerald Ash Borer is a beetle that came from Asia and was first discovered in 2002 in southeastern Michigan and Windsor, Ontario. It infests and kills North American ash species (*Fraxinus sp.*) including green, white, black and blue ash. As of August 2013, EAB is confirmed in 22 states and 2 Canadian provinces from New Hampshire to Colorado, Georgia to Minnesota. A federal quarantine is in place, which means that firewood, nursery stock and logs may not be moved out of infested areas. Moving firewood is the primary way EAB and many other invasive pests and diseases of trees are spreading.

The larval stage of EAB feeds under the bark of trees, cutting off the flow of water and nutrients. Infested trees gradually die over a 2-4 year period. EAB adults are dark metallic green in color, with a coppery red or purple abdomen under the wings. The insect is approximately 1/2 inch long and 1/8 inch wide. Adults may be present from May to September, but are most common in June and July. When adult beetles emerge from the tree, they leave distinctive D-shaped 1/8-inch exit holes in the outer bark of branches and the trunk. Their presence typically goes undetected until trees show symptoms of being infested. Communities will be faced with removal of thousands of dead ash trees that pose public safety hazards. If you have an ash tree, do not treat it unless you live within 5 miles of a site confirmed to be infested. The most important thing you can do is properly care for your tree. Purchase or cut firewood from the same general location where you plan to use it. When camping or at a cabin, do not take any leftover firewood home with you. Educate yourself on how to recognize signs and symptoms of EAB. For more information, visit the Colorado Department of Agriculture EAB website, www.eabcolorado.com. Carol Lyons, carol@i4es.org.

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IES Institute News

Alani Premer is IES's newest graduate intern on the CEC Project Team. Alani has a B.A. in Environmental Policy from The Colorado College.

IES is looking for an energetic professional who wants to ensure the application of sound scientific solutions to our pressing environmental challenges to join the IES **Board of Directors**. Please contact IES at Solutions@i4es.org for a position description and application.

IES is seeking two motivated **graduate interns** who are passionate about protecting the environment to join one of our project teams: The Tree Project or the Contaminants of Emerging Concern (CEC) Project. We also have openings for Development / Fundraising, Social Media Marketing, and Web Development / Programming Interns. These are part-time unpaid internships based in Denver with a flexible schedule. Interested candidates should submit a resume and cover letter to Solutions@i4es.org.

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