

## **Please, UMD, Let's keep Duluth fresh!**

UMD implemented a smoke-free policy in 2007. The original goal of the policy was to reduce exposure to secondhand smoke on campus. It is becoming more evident, however, that another important reason for UMD to be smoke-free, is for our environment to be cigarette butt free. A smoke-free policy at UMD has critical implications for public health and environmental health, on and off campus.

### **Lake Superior, largest inland lake...and ashtray??**

Lake Superior is the largest inland lake in the United States, containing 3,000,000,000,000,000 (3 quadrillion) gallons of water. This is enough water to submerge both North and South America under one foot of water. The shore of Lake Superior is 1,836 miles long, and it is home to 89 different species of fish. Lake Superior is a low-productivity lake, which means it, "...is sensitive to changes caused by increased nutrients, invasive species, contaminants, and intensive land uses," (Minnesota Sea Grant, 2012).

### **Cigarette Butts & Pollution**

Cigarette butts are the most commonly littered item in the United States. Estimates suggest that 4.5 trillion butts are littered annually (Reilly, 2009). Contrary to popular belief, butts do not immediately decompose when they are littered. Almost all cigarette butts are made up of cellulose acetate, which is a type of plastic, and they can take anywhere from 1 – 5 years to biodegrade (Moen, 2005).

Most cigarettes are littered on sidewalks and streets. When it rains, those cigarette butts get washed into storm drains and ultimately end up in Lake Superior. Storm water is not treated, so anything that enters the drains will end up in lakes and rivers. According to Moen, "...rain on the University of Minnesota Duluth (UMD) campus can become part of Lake Superior within 5 minutes, racing through culverts and down Oregon Creek."

Cigarette butts contain many dangerous toxins, including cadmium cyanide, arsenic, and lead. These toxins are particularly dangerous for the aquatic ecosystems. Studies done by the EPA have found, "...one cigarette butt in 2 liters of water is acutely toxic to water fleas, a planktonic animal that occupies a critical position in the food chain of aquatic ecosystems," (Sea Forever, 2010). Water fleas are at the bottom of the food chain, so once the toxins enter their system, they continue up the food chain. The animals at the top of the food chain will accumulate the most toxins. The butts can also be hazardous to fish and birds who may mistake them for food.

### **Second and Thirdhand Smoke**

Exposure to secondhand smoke is extremely dangerous, because there is no risk-free level of exposure. Secondhand smoke causes lung cancer, heart disease, and acute respiratory effects. According to the Centers for Disease Control and Prevention ([CDC], 2012), "Nonsmokers who are exposed to secondhand smoke at home or work increase their heart disease risk by 25–30%." It also increases the risk for lung cancer by 20 – 30% (CDC, 2012).

Recent research has found that cigarette residue can actually linger in a home or restaurant for months. This is generally referred to as third hand smoke. In fact, "...third hand smoke clings to hair, skin, clothes, furniture, drapes, walls, bedding, carpets, dust, vehicles and other surfaces, even long after smoking has stopped," (Dale, 2012). These particles can become airborne again and continue to affect the health of others.

Written by: Danielle Karvonen, MPH Intern; with contributions from Dori Decker, Health Educator, UMD Health Services

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