

WATER WATER EVERYWHERE

BUT IS IT CLEAN ENOUGH TO DRINK?

Swimming and fishing in Maryland's Chesapeake Bay during growing up years, Kristen Hughes acquired early on a keen appreciation for clean water. The local headlines in her hometown of Severna Park often carried doom-and-gloom forecasts when it came to area environmental problems.

"I realized in college that there were no silver-bullet solutions in anyone's holster," Hughes says, "and I was intrigued by the complexities of non-point source pollution issues in the Bay and elsewhere around the world."

As an undergraduate at the University of Maryland (UM), Hughes was fascinated by the varied and intricate interactions between the environment and people. "It was clear to me that farmers and municipalities faced tremendous challenges in providing food and services to people while protecting air and water quality at the same time."

ASABE member Kristen Hughes, though at home in metropolitan San Francisco, is concerned about the suburbanization of dairy farmland in the nation's Midwest: "It puts water quality at risk."

However, what made the greatest undergrad impact — the "ah-ha" moment of a lifetime for Hughes — was a journey to Egypt. During an intensely ambitious two-week, for-credit class abroad, leanings toward applying for medical school disappeared as she encountered gut-wrenching statistics on the status of children's health throughout the Middle Eastern country. She learned that one Egyptian child out of every five suffers from debilitating, sometimes fatal, gastrointestinal illnesses because of contaminated water supply.

Becoming very ill in Cairo — "the sickest I've ever been in my life" — was the pivot point. Hughes found her "true north," convinced that she needed to pursue solving an environmental problem rather than just putting the proverbial band-aid on it. Figuring out how to clean water either on farms or in countries where financial resources are limited became her crusade.

"I came home and knew very clearly what I wanted to do ... how very precious fresh water resources are."

Hughes completed two bachelor's degrees, one in biological resource engineering and another in natural resources management, and a master's in marine and estuarine environmental science at UM. She traveled trans-Atlantic to finish yet another master's in engineering science at the National University of Ireland just outside of Dublin. Her second thesis evaluated Ireland's phosphorous index and can be used as a risk assessment tool for nutrient pollution to pinpoint "red flags in the landscape scenario," she says. It can be utilized by both farmers and land-use planners to identify areas that are at high-risk for phosphorus loss to surface waters.

After all that schooling, Hughes was ready to start working with farmers. She signed on with Sustainable Conservation in San Francisco, Calif., a nonprofit company that "partners with business, agriculture, and government leaders to find practical ways that the private sector can protect clean air, clean water, and healthy ecosystems," as their Web site states. "Because the environment is everyone's business."

"The transition from school to work was wonderful ... working regular hours rather than doing thesis work and engaging in a vigorous corporate culture rather than working and writing 60 to 70 hours a week. This nonprofit company really takes care of people, does fantastic collaborative work with industry, tackles big problems, and asks the big questions ... I love my job!"

Hughes' company résumé indicates that her experience is "in the remediation of point and non-point source pollution at both field- and watershed-scales, using nutrient management, risk assessment, soil amendments, and ecologically engineered treatment systems." She has "developed innovative approaches for the use of industrial by-products as environmentally beneficial soil amendments — a win-win situation for both industry and farmers interested in improved water quality in the Chesapeake Bay."

As far as Hughes is concerned, "There is nothing better than working for people you respect and doing a job that energizes you and results in positive change in people's lives."

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