

## Water offers smooth sailing for scientific minds

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When Andrea Mackintosh thought about the environment as a young teen, water rarely rose to the top of her mind.

The 22-year-old reveled in the sciences throughout high school, and by the time she reached Grade 12 she had already spent time volunteering at hazardous waste collections, recycling initiatives, even doing a river cleanup.

Yet even when her hands were thick in the muck, it wasn't clear that this might hint at her future.

"I just hadn't thought specifically about water yet," said Mackintosh, who now works for GreenStep in Kelowna where she is one of the go-to person on water issues.

It wasn't until she started looking around that she realized there were entire careers devoted to water, starting with a Diploma in Water Engineering Technology from Okanagan College. She jumped in.

Anna Warwick Sears, executive director of the Okanagan Basin Water Board, isn't surprised it took a while for to see what was in front of her. It's a common career path oversight in a country where water has a reputation for being not only plentiful, but safe.

"It's a bit of a dichotomy. We're a victim of our own success," she said. "Water is essentially invisible to people, especially when you're young and haven't followed the news. If they are concerned about the environment, they're thinking about climate change, or any number of other issues. They never think about where water comes from, or what it takes to be cleaned or treated."

Those who have lived in the Okanagan for any stretch of time know that water treatment is critical, even in developed countries.

In the mid-1980s, giardia made its way into an unfiltered surface water supply in Penticton, making hundreds ill. A decade later nearly 12 per cent of Kelowna residents suffered the effects of a cryptosporidium outbreak.

Water treatment may be better today, but it's still not what it could be. Just look at the crop of boil water advisories that dot the province every spring.

"There are many communities in B.C. that aren't totally protected," said Warwick Sears, who recently attended a Federation of Canadian Municipalities workshop where the issue was raised, particularly as it applies to water treatment on First Nation reserves and in small rural communities.

"There is no question there is a shortage of water treatment operators across the country," she said, adding she expects the Okanagan Valley to only need more as the population continues on its upward trend over the next 20 years.

"We need people who are trained to use these systems and there aren't many programs in the country."

Professor Allison MacMillan, faculty chair of the Water Engineering Technology program at Okanagan College, said for many people the interest in water comes later in life.

"Last year only one of our students came straight out of high school," MacMillan said. "This is an amazing program for students who are good at biology, chemistry, math and English. And what's even better is that there are jobs."

With two streams, students can specialize in either Water and Wastewater Technology or Environmental Monitoring, where students deal with water quality and quantity in domestic, industrial or natural settings.

That leaves the door wide open for environmental work around the world, MacMillan said.

"There are aid organizations all over the world that need people with this expertise," she said. "We had one student last year who went to Africa to build water wells. Another student ended up working with Ducks Unlimited helping to protect wetland habitat, and then there was a student who worked with Environment Canada monitoring water quality in the Canadian Arctic."

Closer to home, one of the College's students is working for the South Okanagan Similkameen Invasive Plant Society. The society is expanding its reach into invasive water species, looking beyond milfoil to the devastating impact of the zebra mussel, and the possibility of other predators like the snakehead fish recently captured from Burnaby Lake.

Steven Barrett, another graduate of Okanagan College's program who is now continuing his environmental studies at Royal Roads University, agrees the opportunities are far greater than he initially realized.

"Water supports all life on the planet and it is the backbone of modern society," he said. "Cities

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everywhere you look are beginning to see how important this once seemingly unlimited resource is to modern life.”

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