



# RESEARCH2REALITY

Shining a light on research & innovation.

## Always Changing, Shaping Our Lives

| An Interview with Professor Irena Creed  
| Water Researcher, Western University

### What are you looking for when you study ecosystems?

The type of research that I do is ecosystem science, which is a very interdisciplinary science that includes hydrology, biogeochemistry, and ecology. One of the things that I'm very passionate about is water. And what I do is track, basically, the movement of water through landscapes and ultimately to the surface waters – the streams, the rivers, and the lakes – that people can enjoy. That water molecule could be a vector for producing really potent greenhouse gases and we want to know what triggers that. It can also move downslope and be basically something that contributes to toxins in the water, toxins that are very harmful to society. Some of these toxins have actually been linked to diseases like Alzheimer's, Parkinson's, and Lou Gehrig's disease. So here I am as an ecosystem scientist, with research that has an impact on things that are so broad that it could actually, you know, influence the health of many communities.

### What should we be worried about?

The ways that ecosystems are functioning are changing, and some of that leads to more of these micronutrients coming into the waterways and having pretty nasty downstream effects. Think about the birth control pills. Think about the antipsychotic drugs. We call those the emerging contaminants, and increasingly, we've got this mosaic of chemicals within the water, that we don't even know what is in there. So basically you know you can talk about the detergent days and our success there, but now we're facing increasingly challenging problems, especially with the emerging contaminants. So I'm doing a lot of work with that in terms of ecosystem function and being able to predict using satellite imagery, computer models, as well as on-the-ground measurements, and taking all of those three approaches together to define how the ecosystem functions, and once we know how it functions, we can look at the benefits that come from that. So we are able to translate what we're doing in the laboratories, in the field, to the benefits that societies can have.