NEW AND EMERGING TECHNOLOGIES TO MONITOR CANADA'S WATERS AND CLIMATE

WATER SCIENTISTS ARE

Analysing increasing trends in the magnitude and frequency of extremes of flooding and drought

Using satellites to estimate water driven risks to agricultural productivity

Modernizing streamflow measurement methods, while developing big data, remote sensing and drone technologies

Developing interactive maps to assess the past, current and future states of Canadian lakes, and providing new tools for lake assessments ranging from genetic markers to remote sensing approaches

Using isotopes to monitor groundwater quality and study the age of water in storage systems

Studying river-ice and developing methods to predict ice-jam floods in cold region river

EXAMPLE PROJECTS

Faculty from University of Northern British Columbia are measuring seasonal snowpack and glacial melt in of western Canada using space- and airborne remote sensing with funding from the Natural Sciences and Engineering Research Council of Canada and the Canada Research Chair programs

Funded by the Winnipeg Foundation, researchers at the International Institute for Sustainable Development Experimental Lakes Area are determining the impact of microplastics on freshwater

The eDNA project, funded by Global Water Futures, is using environmental DNA (eDNA) and next-generation sequencing (NGS) to provide a prompt status of aquatic systems by classifying the full spectrum of biological diversity, including the presence of unique and endangered species

The Formbloom project is examining mitigation measures and improving the use of new technologies to mitigate risks of algae blooms i.e. cyanobloom, which can be fatal to humans

WATER DAY ON THE HILL

The Office of the Chief Science Advisor of Canada and the Global Institute for Water Security are jointly organizing 'Water Day on the Hill' in March 2020. For more information, please contact:

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This note was prepared by the Global Institute for Water Security, University of Saskatchewan