Laurentian SETAC
Laurentian Chapter of the Society of Environmental Toxicology and Chemistry

Ottawa Pub Night

The BOREAL Project: Simulating diluted bitumen spills in a boreal lake

Dr. Jose Luis (Pepe) Rodriguez Gil,
Postdoctoral Fellow
University of Ottawa

When: Wednesday September 25
5:00 – 7:00 p.m.

Where: Clock Tower Brew Pub
575 Bank Street

Cost: $1 members
$3 non-members

Join us for an engaging talk, good eats and fine brew!
For more information contact Rebecca Dalton:
becca.dalton@gmail.com

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The BOREAL Project: Simulating diluted bitumen spills in a boreal lake

Jose Luis (Pepe) Rodriguez Gil, Ph.D
Environmental Toxicologist and Risk Assessor
Postdoctoral Fellow, University of Ottawa

Abstract:

Canada is home to the third largest crude oil reserves in the world, in the form of the bitumen found in the Alberta/Saskatchewan Oils sands. Over the past few years, a number of high level governmental scientific reports highlighted the numerous knowledge gaps that currently exist in relation to the weathering, fate, behaviour, and environmental effects of a potential spill of diluted bitumen, (dilbit) into aquatic systems. These reports emphasized the need for field research to address these gaps, especially in freshwater systems. The BOREAL project (Boreal lake Oil Release Experiment by Additions to Limnocorrals) was created to address these research needs with a large-scale field simulation of a dilbit spill in a boreal freshwater system. Our 2018 study consisted of nine 10-m diameter, 157 m3 volume enclosures deployed in a research boreal lake at the IISD-Experimental Lakes Area (IISD-ELA). A regression design was chosen, with 2 controls and 7 oil treatments to assess the weathering, fate, and behaviour of dilbit in an outdoor aquatic environment, as well as to examine its effects on aquatic ecosystems (phytoplankton, zooplankton, benthos, amphibians, and fish), and to assess the toxicity weathered dilbit on test organisms. Dilbit treatments to the limnocorrals ranged between 1.6 to 160 L, resulting in oil:water ratios ranging between 1:100,000 to 1:1000. This presentation will introduce the project, its structure, objectives, and some general results from the main study conducted in 2018, as well as a smaller scale pilot study in 2017.

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Biography:

Dr. Rodriguez Gil is an environmental toxicologist and risk assessor, currently working as a postdoctoral fellow with Dr. Jules Blais , at the University of Ottawa. He started his scientific career at the Rey Juan Carlos University (Madrid, Spain), where he obtained his BSc in Environmental Sciences and his MSc in Environmental Science and technology. Dr. Rodriguez Gil PhD work was conducted under the supervision of Dr. Keith Solomon and Dr. Mark Hanson at the University of Guelph (Canada) refining the aquatic hazard assessment of agriculture-use alkylamine ethoxilate surfactants, such as those used in glyphosate formulations (e.g. Roundup).

Currently, at the University of Ottawa, he is coordinating the BOREAL project (Boreal lake Oil Release Experiment by Additions to Limnocorrals) which tries to fill in current data gaps on the fate and effects of a potential spill of diluted bitumen (unconventional oil) into boreal fresh water ecosystems.