

Research Chair on Northern Biodiversity in a Mining Context

UQAT

INSTITUT DE RECHERCHE
SUR LES FORÊTS

1-A

Who we are

We are a group of university researchers, mainly from the University of Quebec in Abitibi-Témiscamingue (UQAT), who want to better understand the biodiversity of Abitibi-Témiscamingue and Eeyou Istchee-James Bay and better understand the influence of mining activities on this biodiversity.



Objective 1 - A

WHAT IS THE IMPACT OF MINE DUST ON PLANTS?



↑ Sampling around a mine site (Joutel), with data collection points, from 0 m to 1 km



↑ Sampling of soils and their microorganisms

What are we doing ?

To find out what are the impacts of dust on plants, student researchers study plants located near the mines, then plants located a little further, and then even further. It is based on the idea that there will be more dust near the mines and that the effects will therefore decrease the further away we go.

Xiangbo Yin

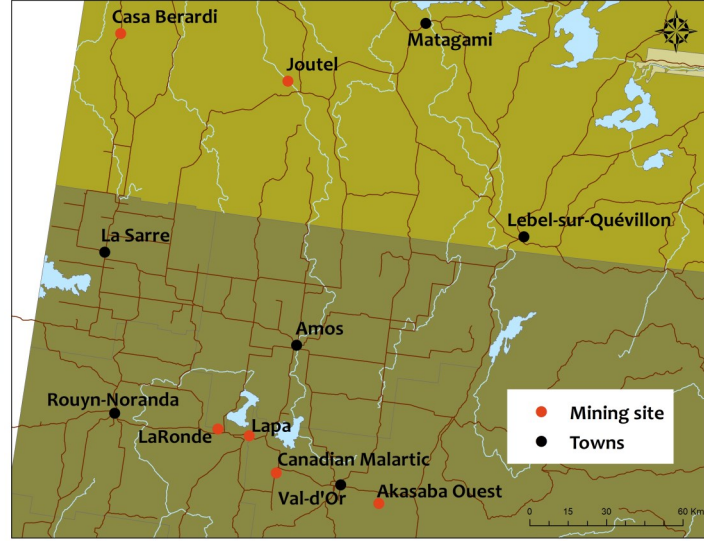
Xiangbo is analyzing the biodiversity of plants, even the smallest of them, such as mosses, to know if we find the same plants near mines as those that are far away from mines. And he's not just studying plants! He will also look at microorganisms that live on plants. Indeed, these microorganisms are often able to capture nutrients directly from the air and the water, so they are more susceptible to be impacted by dust.



Christine Martineau

Christine, research scientist at Natural Resources Canada, studies microorganisms (bacteria, fungi) as they play an important role in soils and water. In particular, they are responsible for the degradation of contaminants and the recycling of nutrients such as carbon and nitrogen. Their activity is therefore essential for the growth of plants and the maintenance of environmental quality. In this study, she will assess the impact of mining on communities of bacteria and fungi and their activity in the soils of forests and streams around mines.





Mélanie Jean

Mélanie focuses on one species of plant, a moss. She measures the concentration of heavy metals in this moss to see if it increases as you get closer to the mine. Since mosses don't have roots in the soil, this difference in metal accumulation will almost certainly come from dust falling onto the moss. She also measures the influence of the heavy metals in the dust on the growth of this moss.



Installation of rings on moss to measure their growth



Why is our research useful ?

These studies will provide a better understanding of the real footprint of a mine on its immediate environment, throughout its life, from the operating period to the closure period. Since this is not well known, it is not possible for now, to determine, for example, how far from the mine plants will be affected.

Questions?

If you have any questions, do not hesitate to contact us, it will be our pleasure to explain our projects in more detail!

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You can also visit our website <https://www.uqat.ca/recherche/chaire-industrielle-crsng-uqat-biodiversite-en-contexte-minier/>



Grand Council of the Crees (Eeyou Istchee)
Grand Conseil des Cris (Eeyou Istchee)

Cree Nation Government
Gouvernement de la Nation Crie



Resources naturelles
Canada

Natural Resources
Canada