



## Forest and Tundra ECOSYSTEMS

**FORESTS AND TUNDRA ARE ESSENTIAL SPACES FOR PEOPLE IN CANADA**, providing ecosystem services including social and cultural benefits, and economic value.

### IMPACTS OF CLIMATE CHANGE INCLUDE:

**Higher risk** of drought and forest fires

**Increased susceptibility** to existing and novel pests and pathogens

**Changes to ecosystem services** provided by forests

### GENOMICS

Every living being has a genome: the complete set of genetic information (DNA) that provides instructions for its development and functioning. Using genomic tools, scientists can assess populations' ability to adapt to changing environments and predict whether populations will be vulnerable to climate change.



## RESEARCH ACTIVITIES

### BOREAL FOREST

Assessing the capacity of boreal tree species, their microbiomes and their pests to adapt to climate change to inform climate-resilient forest management activities, including assisted migration and reforestation.



### AGROECOSYSTEMS

Investigating the role of microbes in maintaining tree ecological services and how these will be affected by climate change and forestry.

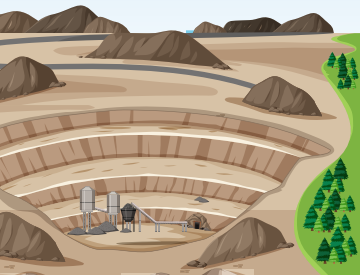


### MICROBIOMES

Microbiomes are communities of microorganisms, including fungi, bacteria and viruses. Microbes can be both beneficial and harmful to their host and play a key role in the functioning of organisms and ecosystems. For example, microbes associated with tree roots play an important role in nutrient absorption.

### MINING-IMPACTED ECOSYSTEMS

Investigating the effects of mining and climate change on surrounding ecosystems to improve the efficiency and viability of remediation and restoration of mine-impacted sites in the face of climate change.



### CARIBOU

Assessing the genomic vulnerability of caribou, including identifying emerging pathogens, to predict whether populations have the capacity to adapt to climate change.



## OUTCOMES

### GENERATE

foundational genomic data and resources

### PREDICT

the capacity of forest and tundra species to adapt to future climate scenarios

### DEVELOP TOOLS

to monitor impacts of land use and climate change on surrounding ecosystems

### PROVIDE SCIENCE ADVICE

to inform climate-resilient management and conservation