

# Mountain Pine Beetle

The mountain pine beetle in novel habitats: Predicting mountain pine beetle impacts to northern forests in Yukon's warming environment

## CONTEXT

Climate change is having an impact on northern boreal forests. One of the reasons is because of increased temperatures. Beetle outbreaks are becoming more common, and the biggest health concern for lodgepole pine forests in western Canada is the mountain pine beetle. Currently the beetle is not present in Yukon; however, it has been moving northward (where it has not historically been established) and is near the Yukon/B.C. border. This research will provide a realistic assessment of the risk that the beetle has on Yukon pine forests before it arrives in Yukon.

Photo Credit: Government of Yukon



## OBJECTIVE

The objectives for this project are to:

- Develop a climatic model for the mountain pine beetle relevant to northern pine forests;
- Create an index for northern lodgepole pine forests that have not co-evolved with the beetle;

- Combine the climate models with future climate projections to predict the potential for the beetle to establish, spread and impact the lodgepole pine forests in southern Yukon;
- Develop decision support tools that will provide forest managers with tools to manage the beetle in Yukon.

## APPROACH

Computer software will assist researchers in looking at three models of climate characteristic ideals for mountain pine beetle. Another approach will be to identify the susceptible host trees in order to see abundance and distribution to measure the possibility of an outbreak. Mapping software will identify 'high risk areas' where climate ideals and pine tree abundance overlap considerably.

## EXPECTED RESULTS

The expected results from this project will:

- Provide forest managers with the ability to predict how susceptible Yukon pine trees are to mountain pine beetle;
- Deliver projections of rates of spread and impacts by the beetle to lodgepole pine trees;
- Provide decision support tools to forest managers to facilitate management of the beetle in the short and long term.

## Significance

*Understanding the potential for mountain pine beetle outbreaks in Yukon is important for protecting the health of pine forests. Research can establish management steps to lessen the impacts and spread of the beetle.*

## Partners

- University of British Columbia
- Forest Management Branch, Energy, Mines and Resources, Government of Yukon
- Aboriginal Affairs and Northern Development Canada

## MORE INFO

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