

CHAPTER 3	Launch Lab: The Mountain Pine Beetle vs. an Ecosystem	BLM 3.0.2
HANDOUT		
Purpose: To assess the environment impact of Mountain Pine Beetle infestations in western North America		

The lodgepole pine grows in the North American west, as far north as the Yukon. It tolerates most soil conditions; cold, wet winters; and warm, dry summers. Seed cones can withstand freezing temperatures and most insects. The trees have fairly thin bark and a shallow root system, making them susceptible to damage by fire and insects; however, the high temperatures of fires release the seeds to quickly regenerate trees after a forest fire. During the last hundred years, forest fires have been controlled and suppressed.

The mountain pine beetle is a common parasite of the lodgepole pine. Adult beetles bore through the thin bark to lay eggs and deposit a fungus carried on their bodies. The larvae live in and feed on the bark during the winter, as does the fungus. The bark damage usually kills the host tree, although sustained temperatures of -25°C during the early fall or late spring or temperatures of -40°C during winter can kill the larvae. Infestations usually last 5 to 7 years and happen in 20- to 40-year cycles.

The pine beetle infestation began in British Columbia in 1993, and over a decade later residents in affected areas are reporting:

- small mammals such as squirrels have disappeared
- song birds have left the area
- trap lines are increasingly empty
- cougars are coming to settled areas and preying on family pets
- devil's club, a plant used for Aboriginal medicine, is increasingly hard to find

Analysis

1. What biotic and abiotic components of the environment affect the life cycle of the lodgepole pine? What biotic and abiotic components of the environment affect the life cycle of the mountain pine beetle?
2. Can you suggest reasons why the current mountain pine beetle infestation has lasted longer than the usual 5 to 7 years?
3. What can you infer from the local reports about the impact of the loss of the trees on other organisms?

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Extension

4. Choose one of the following roles and write or present a short paragraph on how the pine beetle infestation affects you as:
 - a) a local elder
 - b) a logger
 - c) a planner for the department of forests
 - d) a wilderness tour operator