

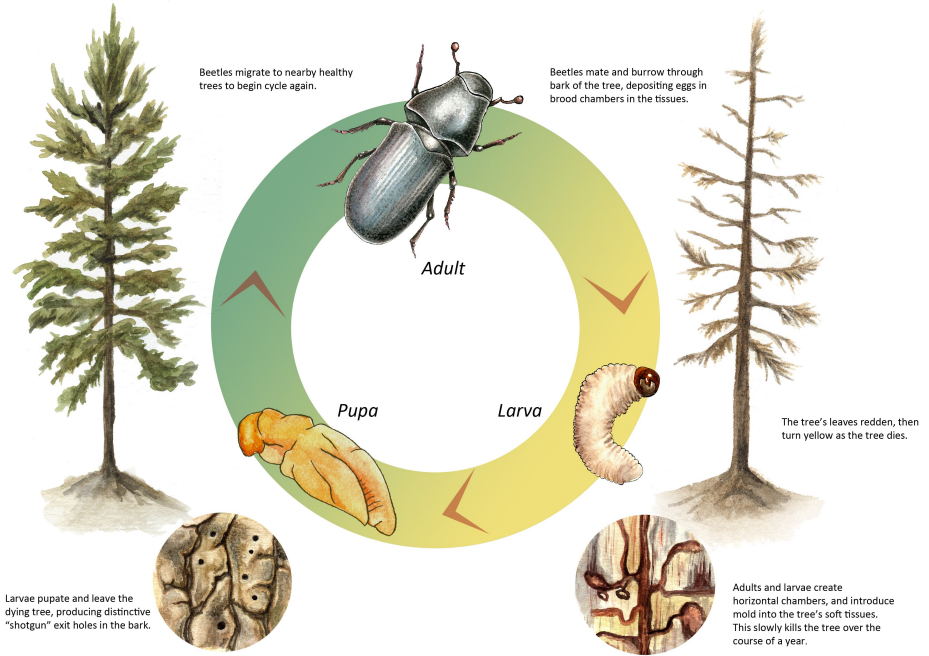
1. Adults fly
attack healthy
tree

2. Feed on phloem
- Creating
"Galleries"

3. Lay eggs

4. Larvae hatch,
feed
on phloem

Life Cycle of Mountain Pine Beetle, *Dendroctonus ponderosae*



Source: D.A. Leatherman, I. Aguayo, and T.M. Mohai

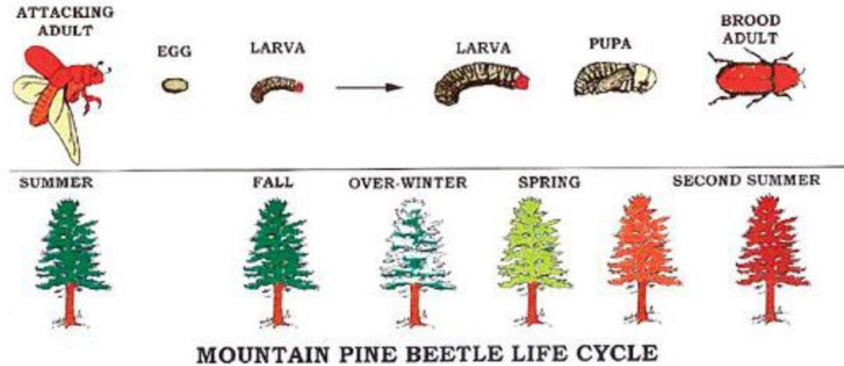
Sean Twiddy 2010

S. Pupa stage over winters,
C. Adults fly

Symptoms of 3B

→ Reddening of
needles, eventual
needle drop.

Bark Beetle Life Cycle and Effect on Forest Health



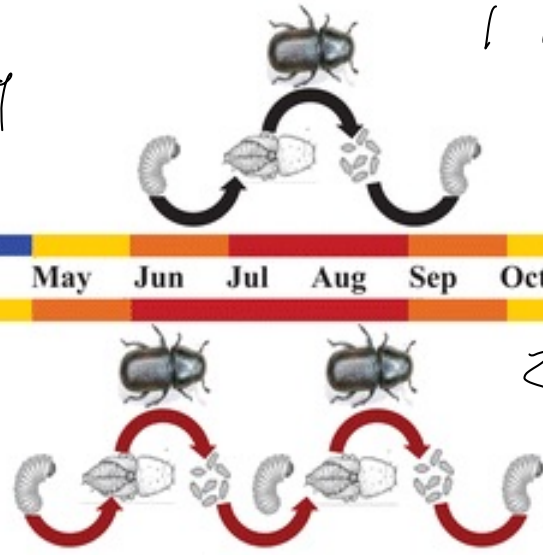
1 female can produce 4 offspring per generation

4 offspring
50% female

1 life cycle per year



Univoltine (historical)



12 offspring

2 life cycles per year

B, B and climate change

Life cycle is temperature dependent

Positive density dependent pop. growth

A small hand-drawn graph with an upward-sloping arrow, indicating a positive trend.

Signs of BB

1. Cavities or
"Galleries"

2. Adult
beetles
or larvae



3. Pitch tubes

→ holes in tree

bole, w/ sap

↳ trunk

4. Frass

Saw 1st

from beetle entering tree



Frass

Pitch
tubes

Example of galleries



Symptom

→ Blue stain

fungus

→ Formed by mites
on the head
of bark beetles

→ Fungus starts rotting
wood



Blue stain rarely
impacts heartwood

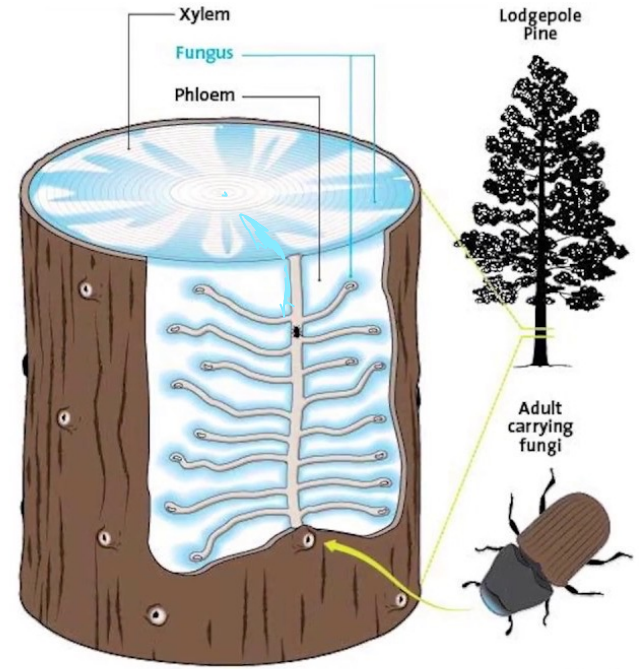


Illustration by Chris Philpot



Craft wood ... ♡ blue stain

Where are the mills?

