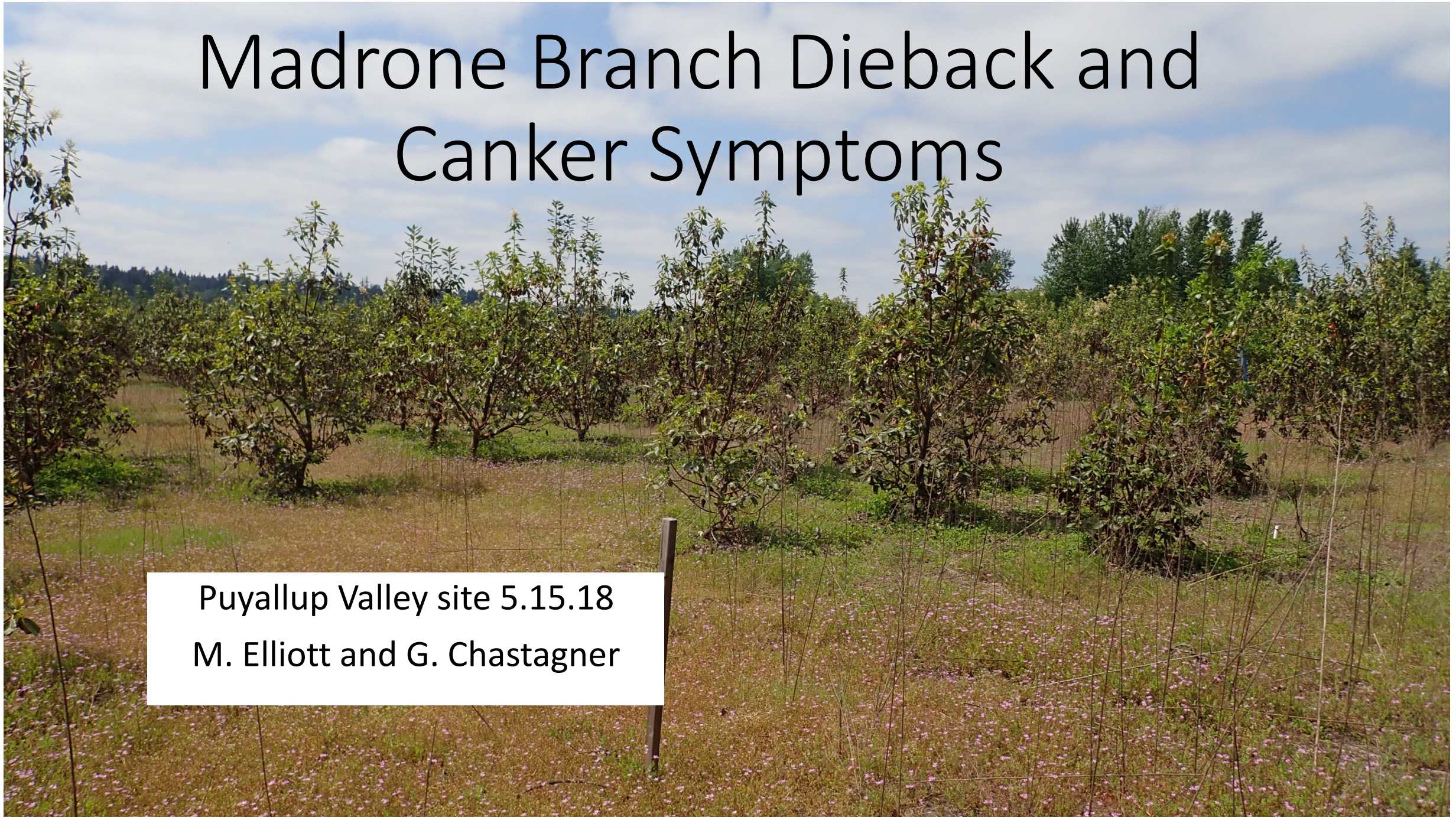


Madrone Branch Dieback and Canker Symptoms

Puyallup Valley site 5.15.18
M. Elliott and G. Chastagner



Two types

1. Branch dieback and canker that looks “burned”, with attached foliage that is silvery or grey in color (*Botryosphaeria/Fusicoccum* spp.)
2. Larger stem cankers with callused edge, usually at the base of the tree or larger branches. Since the trees are getting bigger, this is showing up more. (*Neofusicoccum arbuti*)

The first type is on branches that have died previously, this fungus is opportunistic and takes out stressed branches and shoots, that could be stressed by a canker further down or from root damage.

Branch dieback and canker
caused by *Botryosphaeria*
spp.

B. dothidea (*Fusicoccum aesculi*), *B.*
ribis (*Fusicoccum ribis*), possibly others.

Branches and leaves look sooty or
“burned”

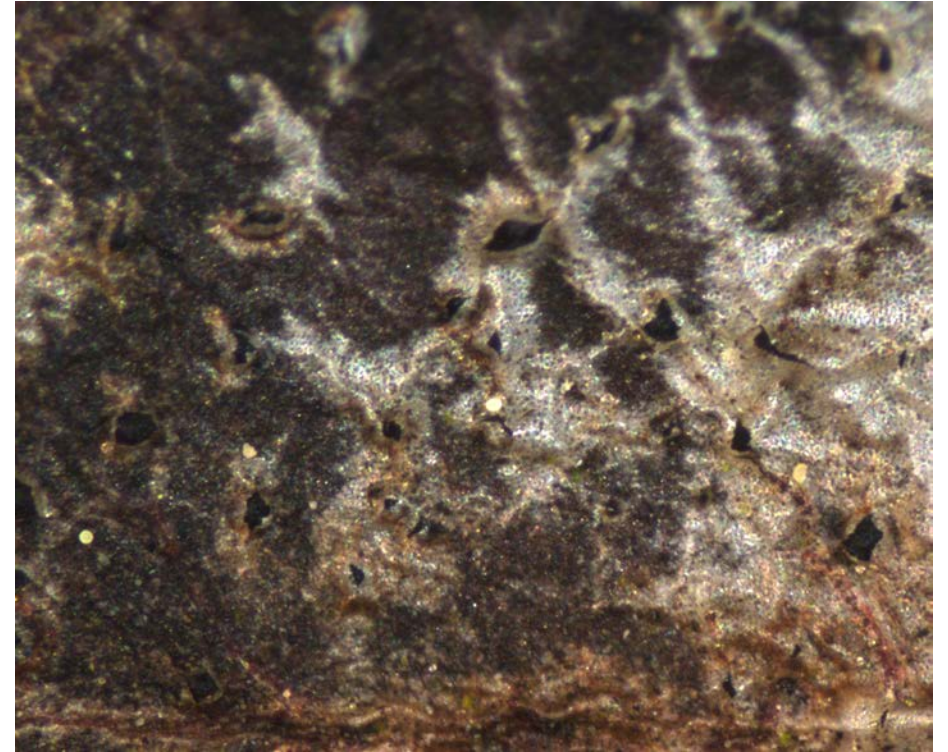
These fungi are usually opportunistic
and kill tissue stressed by something
else (water stress, shade)

In the common gardens trees (and parts
of trees) that have died one or two
years previously will have these
symptoms.





Shoot dieback with pycnidia. The silvery color is from the epidermal layer being detached and pycnidia rupturing through.



Foliage with pycnidia

Branch dieback often
stops at the branch
collar





Sooty bark

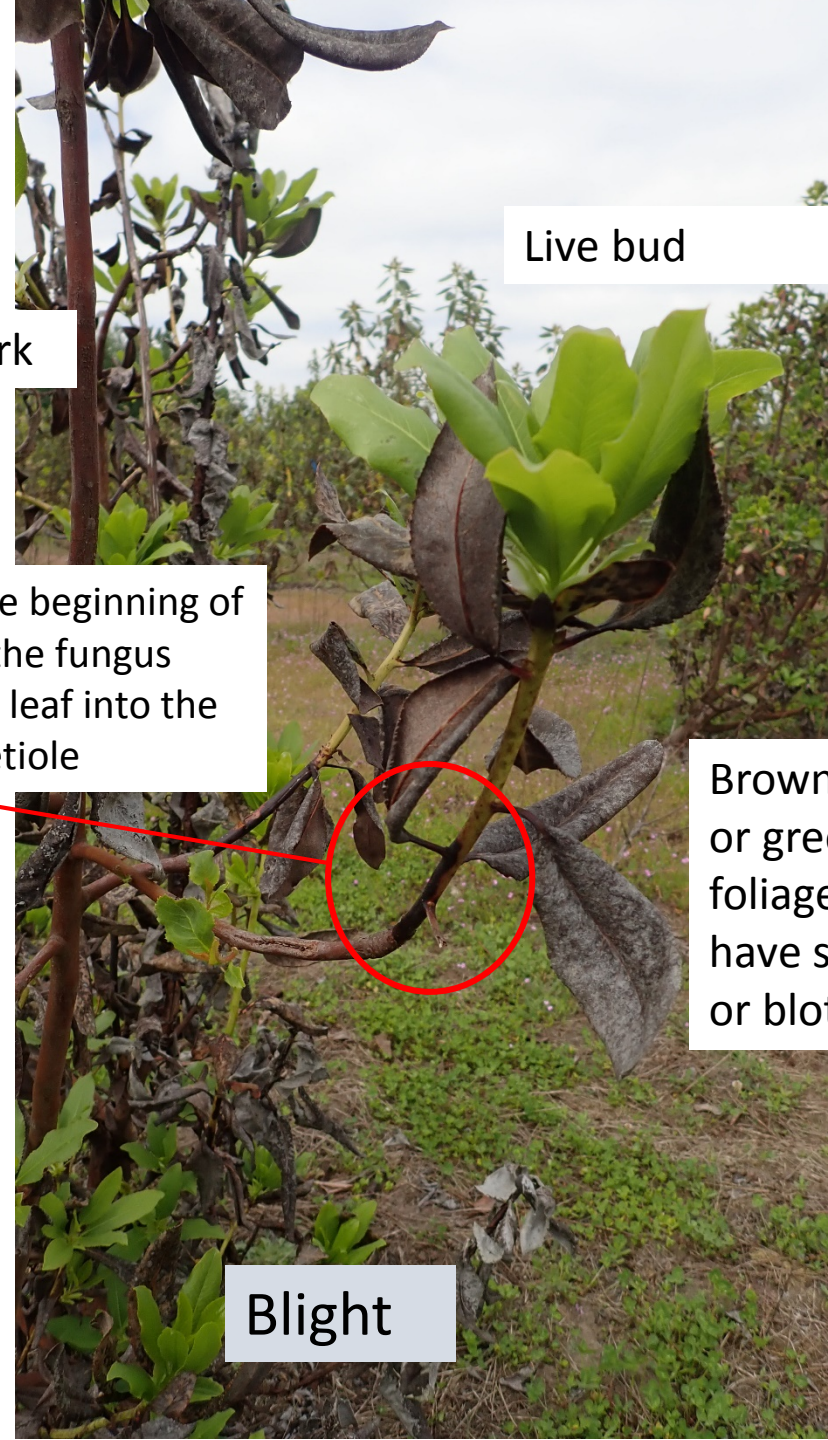
Dead bud

Silver-grey foliage

Dieback

Brown bark

This could be the beginning of shoot blight as the fungus moves from the leaf into the shoot via the petiole



Live bud

Brown, grey, or green foliage, can have spots or blotches

Blight

Shoot blight and
branch dieback



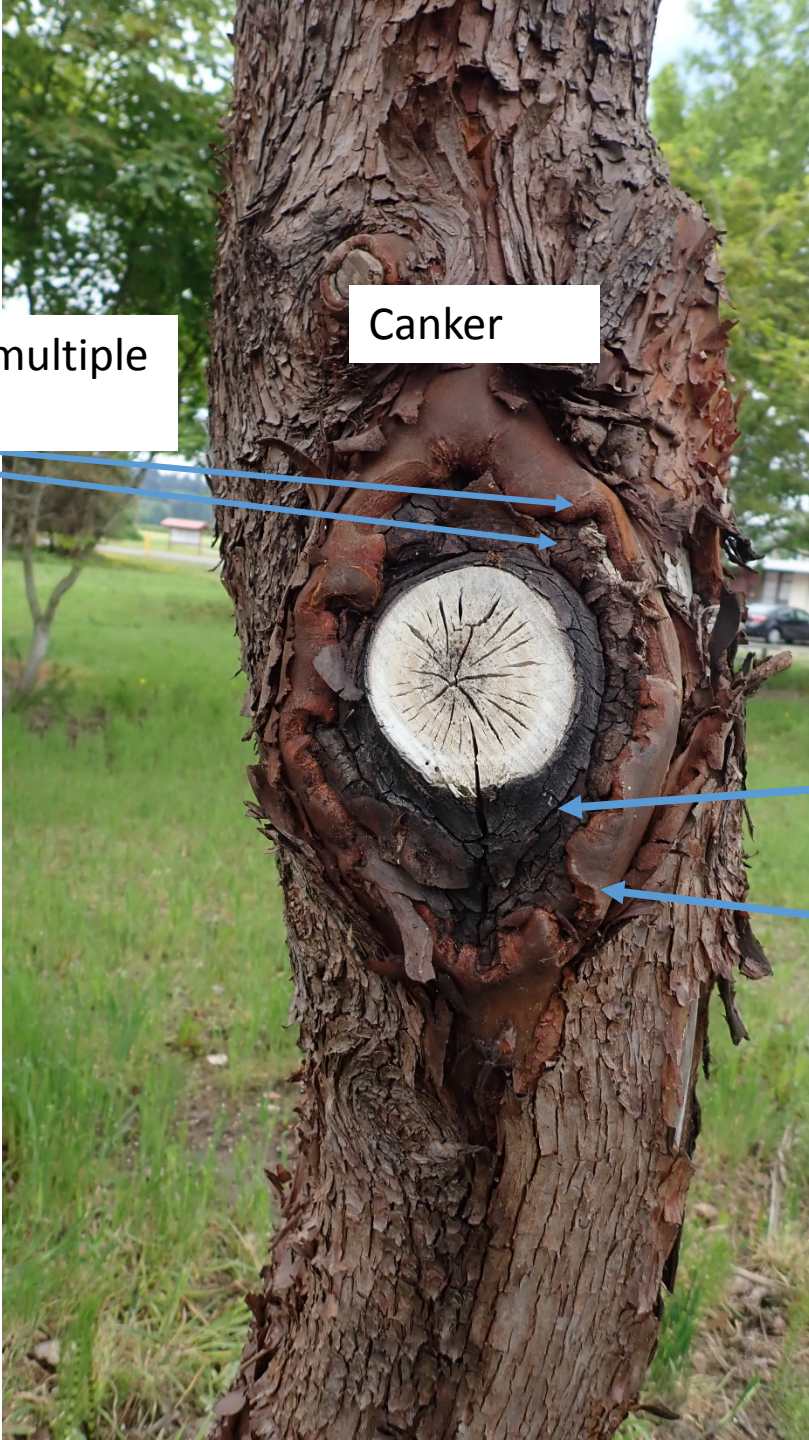
Foliar blight

Canker caused by *Neofusicoccum arbuti*

Sunken cankers on stem and branches with irregular, black margins.

Often centered on a branch stub or an injured area.





Canker

Can have multiple layers

Healthy tissue, not black

Smooth margin

Blackened, sunken area

Irregular margin



Mechanical damage

Other stem and branch symptoms on bigger trees

Chewing damage by varmints – many of the remaining trees at the BL site were damaged in 2016 and we also saw this at the PV site this year.

Maybe mountain beaver:

https://wdfw.wa.gov/living/mtn_beavers.html



Chewing at PV site 2018



Chewing damage at
BL site 2016



Other stem and branch symptoms on bigger trees

Sunscauld on W side
of tree



Fruit mummies from previous year
a source of inoculum?

Will isolate from these to ID fungi
present, probably *Botryosphaeria*s.

