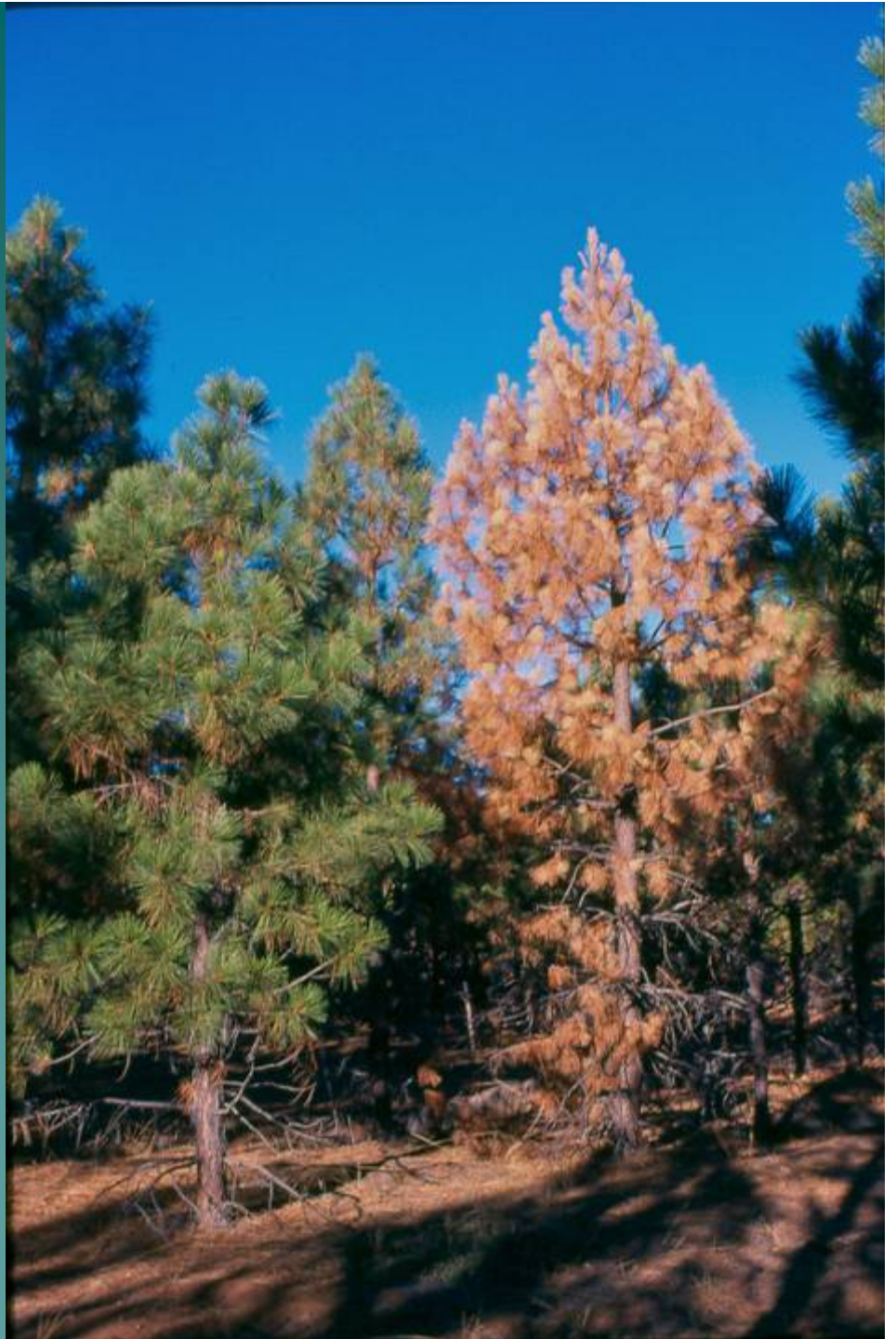
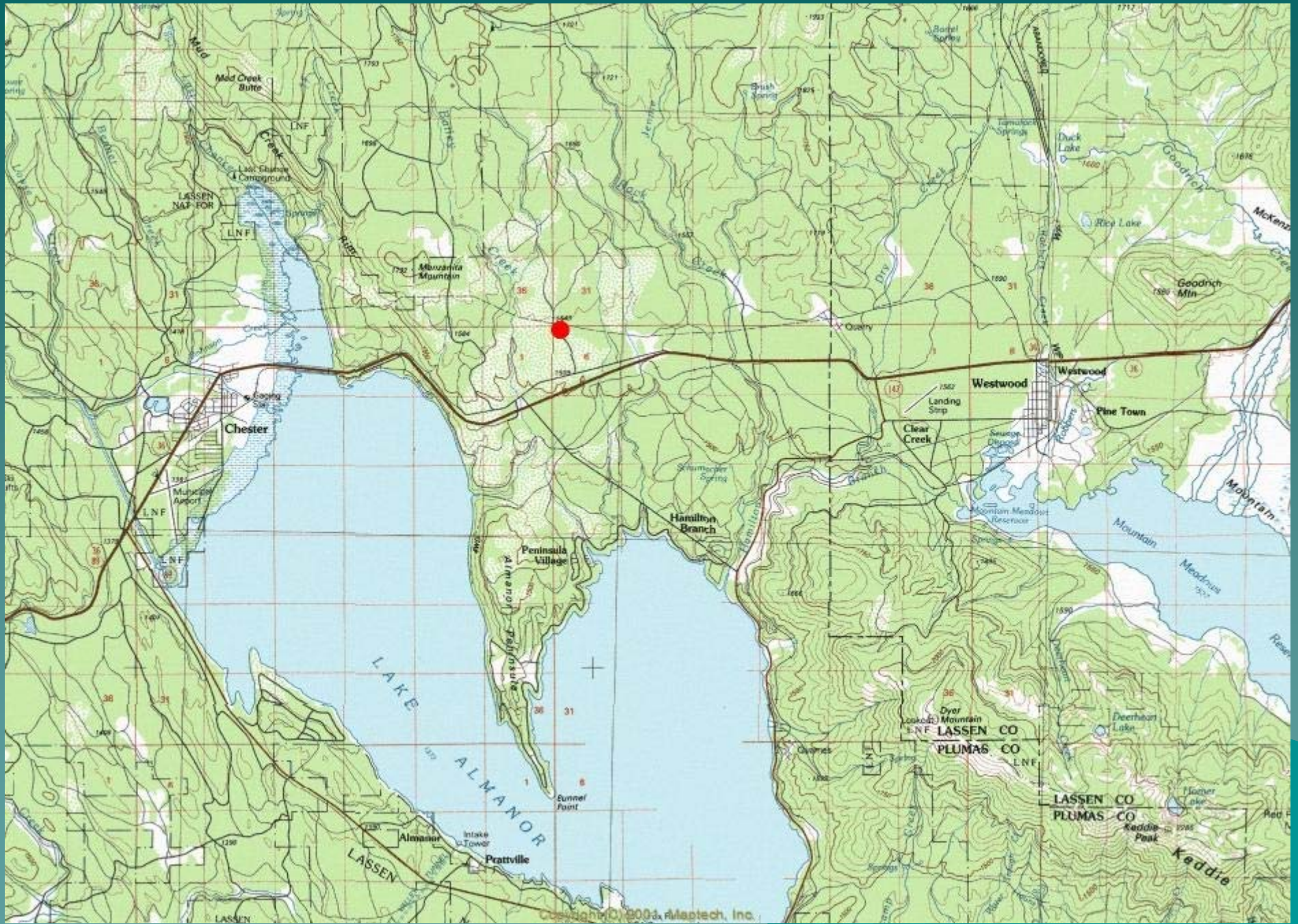
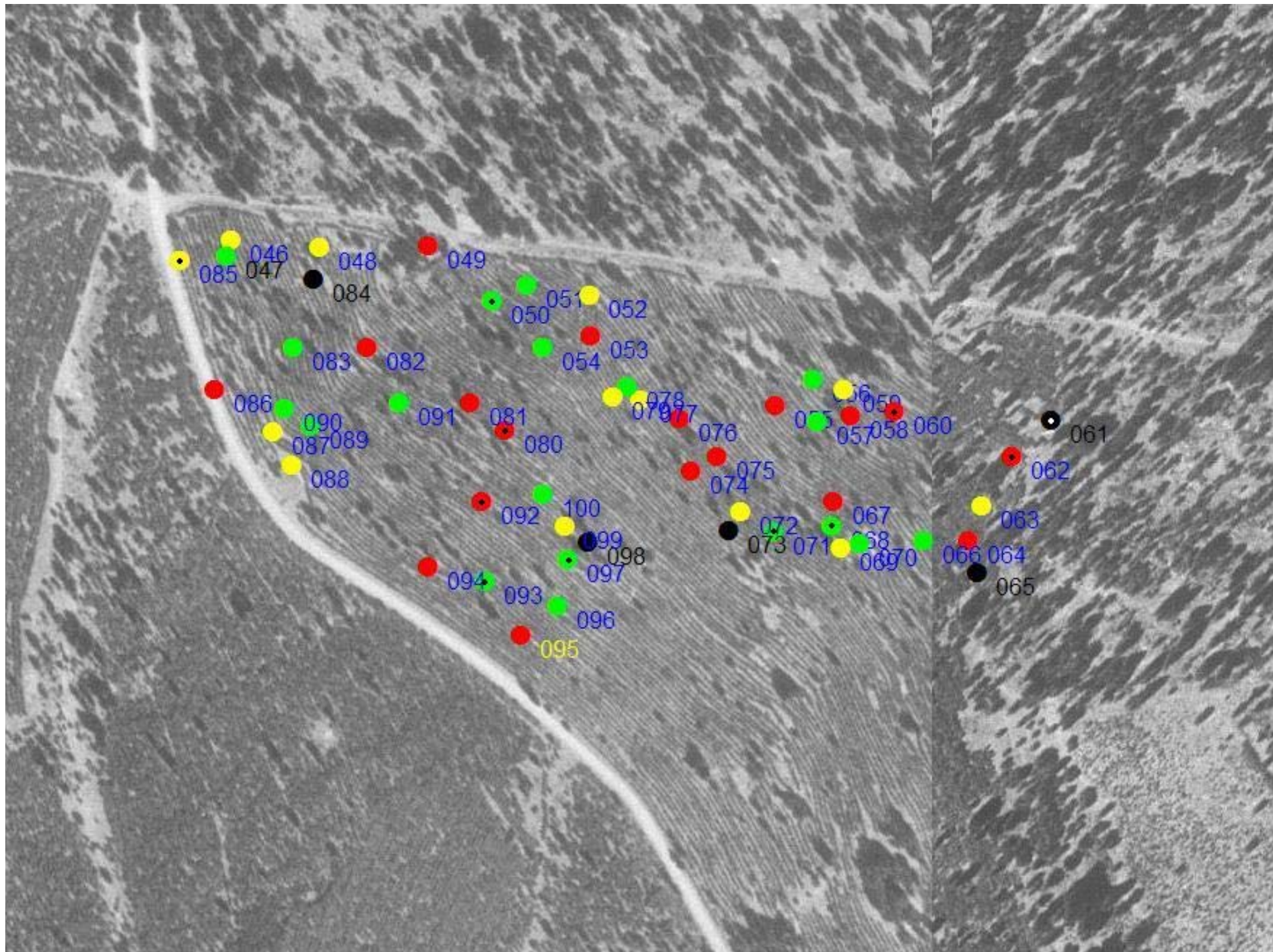




UGA13







- ◆ Ponderosa pine ~ 15-20 yrs old
- ◆ Dunning site 3 w/ 25-30" average annual precip.
- ◆ Roughly 70 acres sheared in spring / early summer 2004
- ◆ 2+ trees per acre killed by RTB
- ◆ Most killed in 2005
- ◆ < 10% killed 2006
- ◆ Mortality scattered, rarely clumped
- ◆ Evidence of repeated attacks, pitch-outs prior to death
- ◆ RTB primary invader above ground







TREE NOTES

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION

Pete Wilson
Governor
State of California

Richard A. Wilson
Director

Douglas Wheeler
Secretary for Resources
The Resources Agency



NUMBER: 23

May 1998

Diplodia Blight of pines, caused by *Sphaeropsis sapinea* (*Diplodia pinea*)

Donald R. Owen

Forest Pest Specialist, 6105 Airport Road Redding 96002. (530)224-2494 (don_owen@fire.ca.gov)

In most years, the fungal disease Diplodia blight is an incidental problem on low elevation and coastal pines in California. Ponderosa pine is a common host, although many native and exotic pine species are susceptible. Outbreaks of the disease on ponderosa pine are associated with wet spring weather and typically occur below 2000 ft elevation. The majority of trees recover from outbreaks, but some may be debilitated by heavy and/or repeated infections.

Recognition

Shoot dieback is the principal symptom of disease. From a distance, severely diseased trees may appear to be dying because of the large amount of dead, brown foliage. Closer-up, it becomes apparent that it is primarily the new shoots that are dead. Infected shoots are green in the spring and do not turn brown until hot weather begins to dry the needles. Because of this, shoot dieback is not usually noticed until summer.

Several symptoms are characteristic of shoot dieback caused by Diplodia blight. When seen together, these

On some trees, entire branches and/or the top may be killed. This may or may not occur in conjunction with shoot dieback and appears to take place in a couple of ways:

- 1) repeated shoot infections contribute to a branch's decline and eventual death or
- 2) on older branch tissue, girdling infections can occur through wounds. Wounding by insects, for example, has been associated with such infections.

Infection and Impact

The fungus can infect new needles and shoots, older woody tissue through wounds, and second year cones. Pycnidia, a minute type of fungal fruiting structure, may be produced on any of these substrates, usually in the spring of the year following infection. Infected cones can be found on trees without other types of infection and spores from cones may provide a ready source of inoculum for shoot infections under appropriate environmental conditions.

On ponderosa pine, shoots are typically infected once a year, in the spring as the new shoots are elongating.

Diplodia Blight

- ◆ Wet weather following bud break promotes infection
- ◆ Larger trees often suffer greater damage, perhaps due to the contribution of cone infections
- ◆ 1993, 1995-1998 wetter than normal
- ◆ Disease in upper Sacramento River drainage first reported 1997
- ◆ Disease reoccurrence every year since then (1997-2006)