

True Fir Mortality in the Central Sierra Nevada

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True Fir Mortality Contributors

White Fir

- Dwarf mistletoe
- Leafy mistletoe
- Fir engraver
- Dense stocking
- Annosus root disease

Red Fir

- Dwarf mistletoe
- Cytospora canker
- Fir engraver
- Dense stocking
- Annosus root disease



White Fir True Mistletoe (*Phoradendron bolleanum* ssp. *pauciflorum*)



Branch flagging in red fir from dwarf mistletoe and *Cytospora* canker (*Cytospora abietis*).



Branch flagging in red fir from dwarf mistletoe and *Cytospora* canker (*Cytospora abietis*).



Red fir dwarf mistletoe (*Arceuthobium abietinum* f.sp. *magnificae*)



Branch flagging in red fir from dwarf mistletoe and *Cytospora* canker (*Cytospora abietis*).

Densely stocked stand





Fir engraver galleries
(*Scolytus ventralis*)

Annosus root disease
(*Heterobasidion annosum*)





California Forest Pest Council -
Nov. 16, 2005

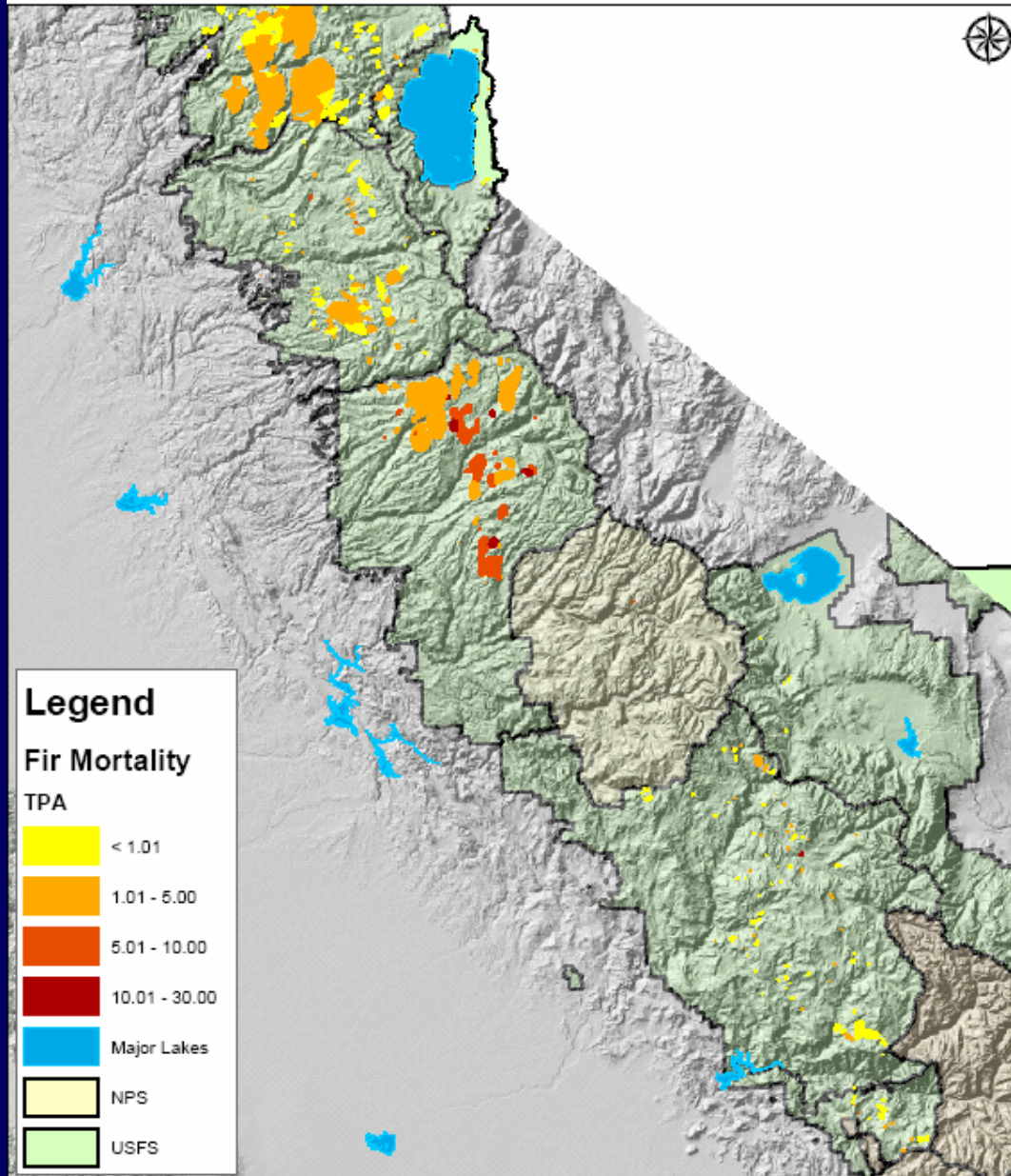


Annosus conks in white fir stump

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Central Sierra True Fir Mortality

2005 Aerial Survey



1:1,300,000

0 5 10 20 30 40 Miles



True Fir Mortality Reported From FHP 2005 Aerial Surveys

| National Forest/Park | Total Acres With Mortality | Average Dead Trees/Acre |
|----------------------|----------------------------|-------------------------|
| Eldorado | 27,636 | 2.1 |
| Stanislaus | 86,505 | 7.4 |
| Yosemite | 3 | 5.7 |
| Sierra | 9,851 | 1.0 |

CONCLUSIONS

- Most true fir mortality appears to be concentrated within the Stanislaus NF
- Many causes associated with mortality
- Salvage of dead trees is dependent on distribution and density of snags