

FOREST HEALTH, LAND-USE, AND ENVIRONMENTAL CHANGE IN THE LAKE TAHOE REGION

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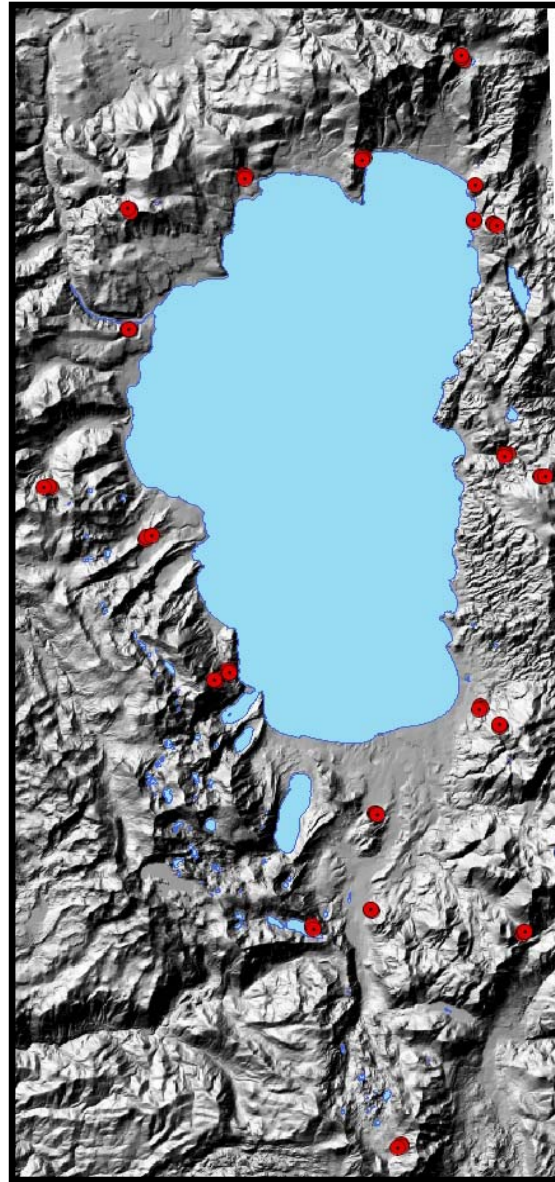
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**NATURAL AND ANTHROPOGENIC THREATS TO WHITE PINES FROM LOWER MONTANE FORESTS TO SUBALPINE WOODLANDS OF THE LAKE TAHOE BASIN: AN ECOLOGICAL AND GENETIC APPROACH
APPROACH FOR CONSERVATION, MONITORING, AND MANAGEMENT.
(VOGLER & MALONEY SNPLMA ROUND 7)**

WPBR



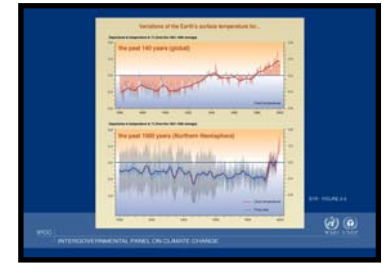
FIRE & FIRE SUPPRESSION



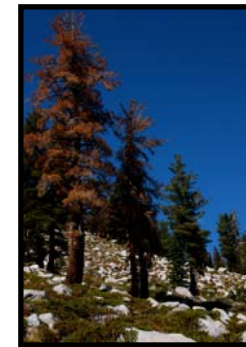
HISTORICAL LOGGING



CLIMATE

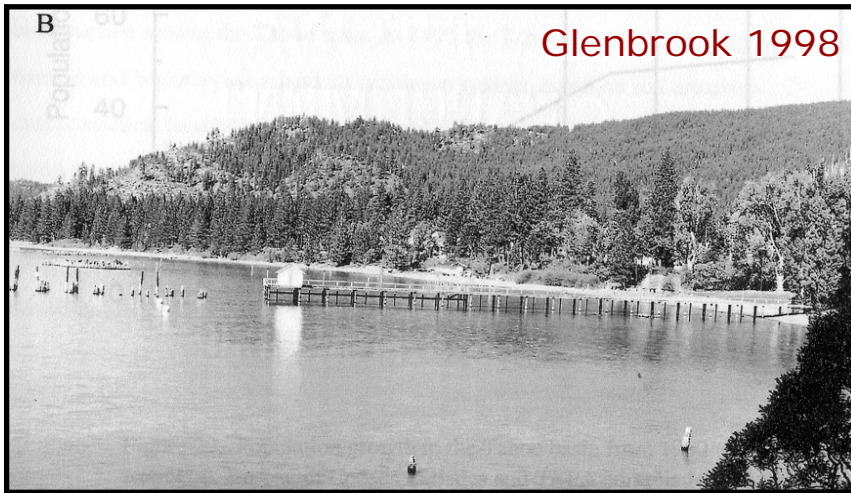
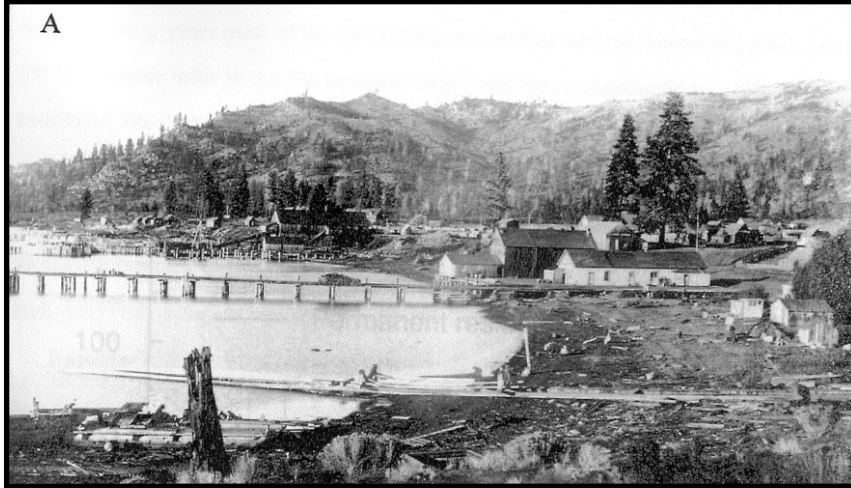


MOUNTAIN PINE BEETLE



SUGAR PINE & HISTORICAL LOGGING

Glenbrook 1900



Glenbrook 1998

Extensive logging dramatically changed the structure & composition (Lindstrom et al. 2000; Manley et al. 2000).

Historical composition: 20-25% (in some locations, Lindstrom et al. 2000).

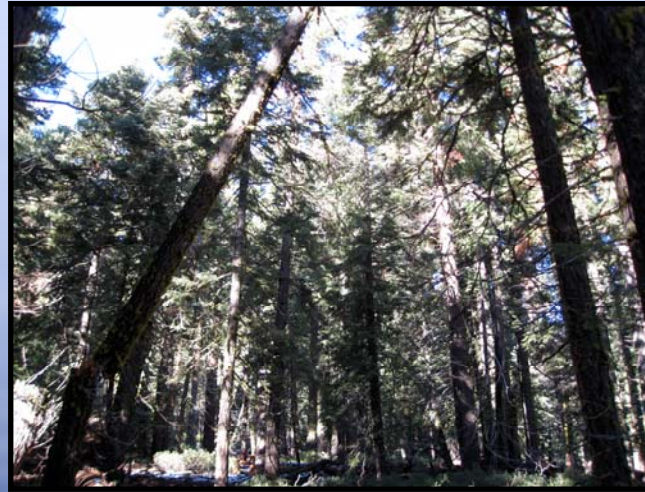
Present-day composition: 1-6% (Barbour et al. 2002; Lindstrom et al. 2000).

Population & genetic consequences: Effects on population structure and dynamics, but also genetic structure and diversity. Population and genetic losses.

Such losses may affect sugar pine's resilience to disturbances and environmental change (e.g., WPBR, MPB, climate).

Sugar Pine, Fire Suppression, & WPBR

- ◆ Stand densification
- ◆ Large overstory SP
- ◆ Suitable conditions for WPBR
- ◆ Limited regeneration



Granlibakken Sugar Pine

