



Three years later. The same range after sheep had been excluded for three years. Brush, grass and ground-cover returned. Only cattle allowed to graze. - OUT WEST, 1906

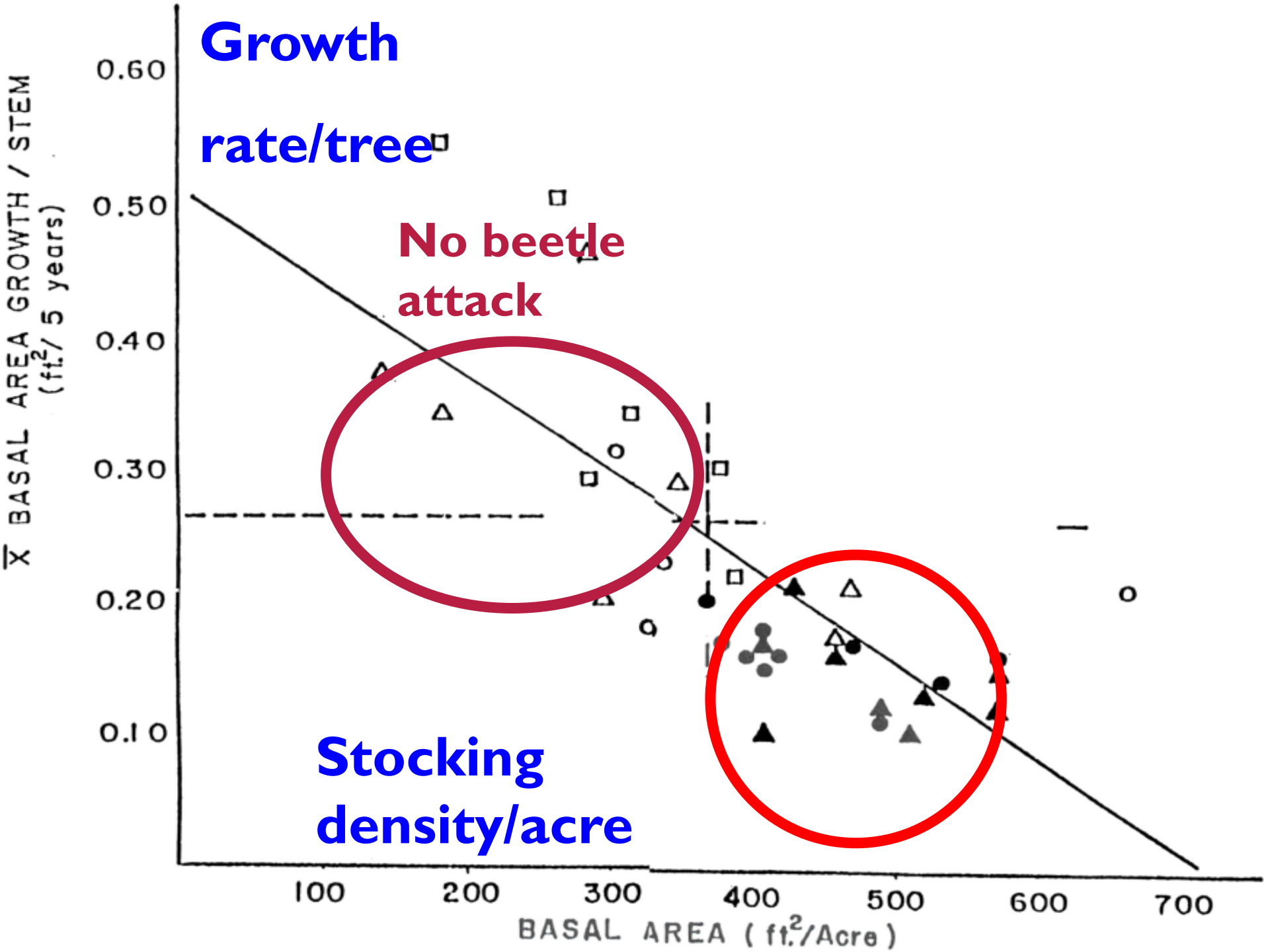
San Bernardino National Forest, c. 1906. Open forest, brush understory.

from Robinson, The San Bernardinos. 1989. Big Santa Anita Historical Society.









FORESTS EVOLVED WITH DISTURBANCE

- Fire
- Insects
- Disease
- Fires Account for One-Fifth of Global CO₂ and Other GHG Emissions- Levine & Cofer, 2000, Schimel 1995



NATURAL FIRE REGIME

- Elements:
 - Fire Intensity
 - f of fuel arrangement
 - f of weather
 - f of topography
 - Fire Size
 - Fire Frequency

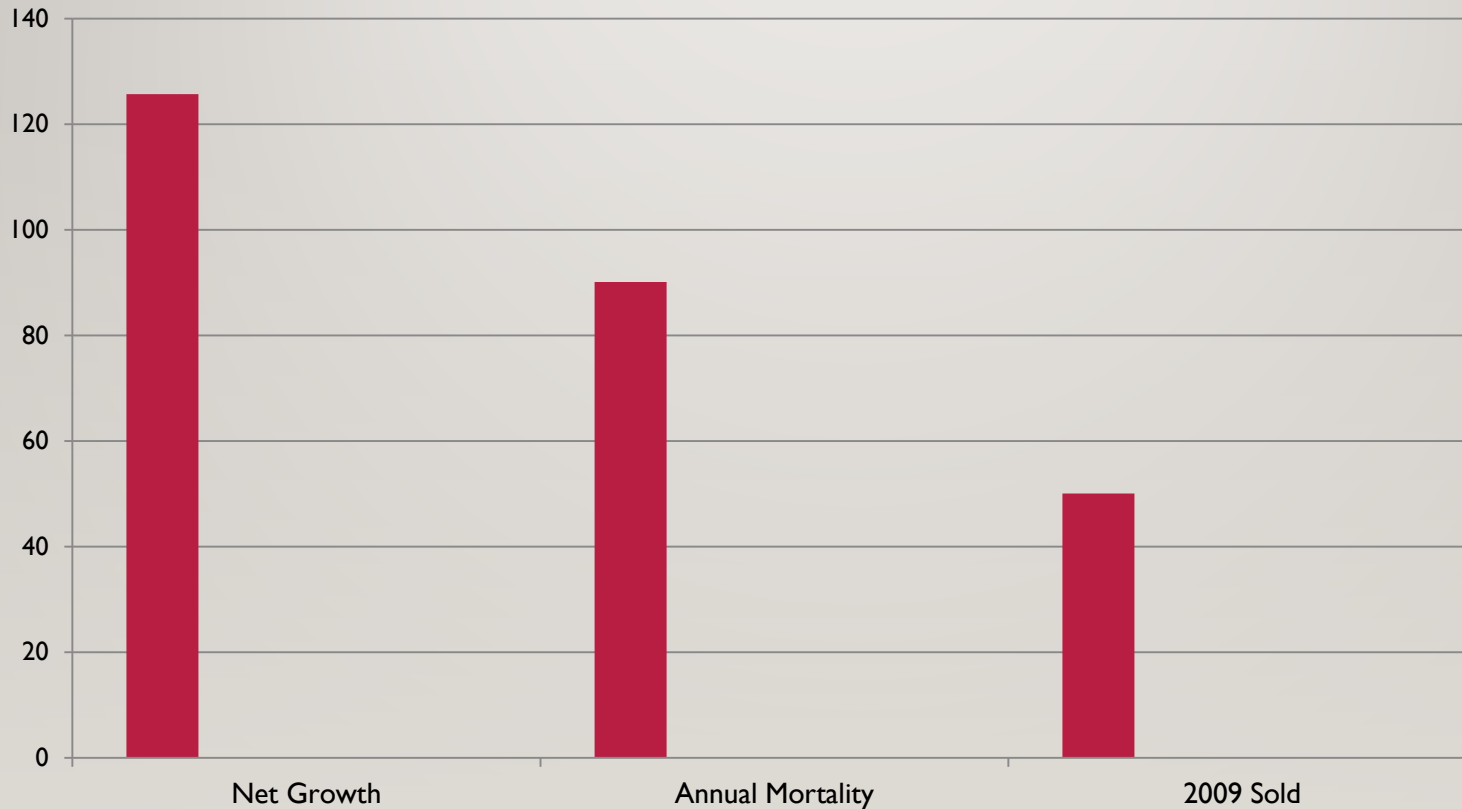


ROLE OF FIRE IN THE ECOSYSTEM

- Regeneration
- Competition Reduction
- Nutrition
- Thinning
- Sanitation
- Succession
- Wildlife

Annual Net Growth and Mortality; Klamath Natl. Forest

MMBF



CONE FIRE - SEPT. 2002

BLACKS MOUNTAIN EXPERIMENTAL FOREST

Unthinned



**Thinned
+
Prescribe Burn**

Unthinned

**Thinned
Early 1980s**

1 1:40PM