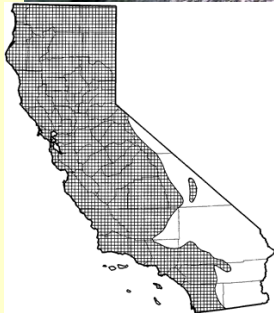


Squirrel Biology & IPM

Bill Tietje, UC Cooperative Extension



Otospermophilus beecheyi



Spermophilus beldingi

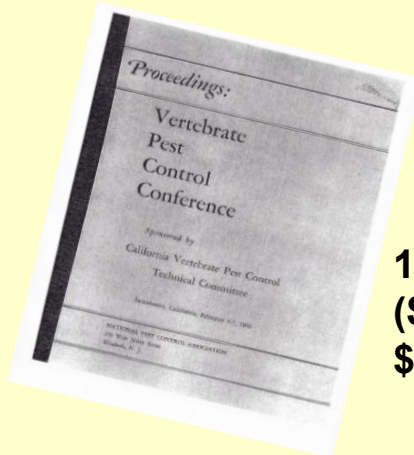


Brief History



Santa Barbara Mission--1808

**The Bounty 3¢
(repealed 1877)**



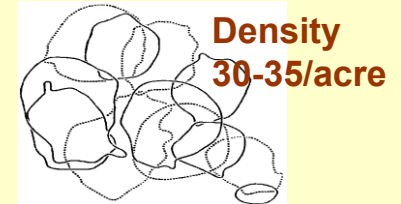
**1st Vertebrate Pest Conference
(Sacramento, 1962)
\$1.00**

Reproduction/Annual Cycle

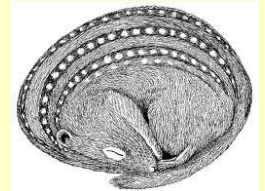
Hibernate (Sep-Jan)

Active (Feb-Jun)

Aestivate (Jun-Aug)

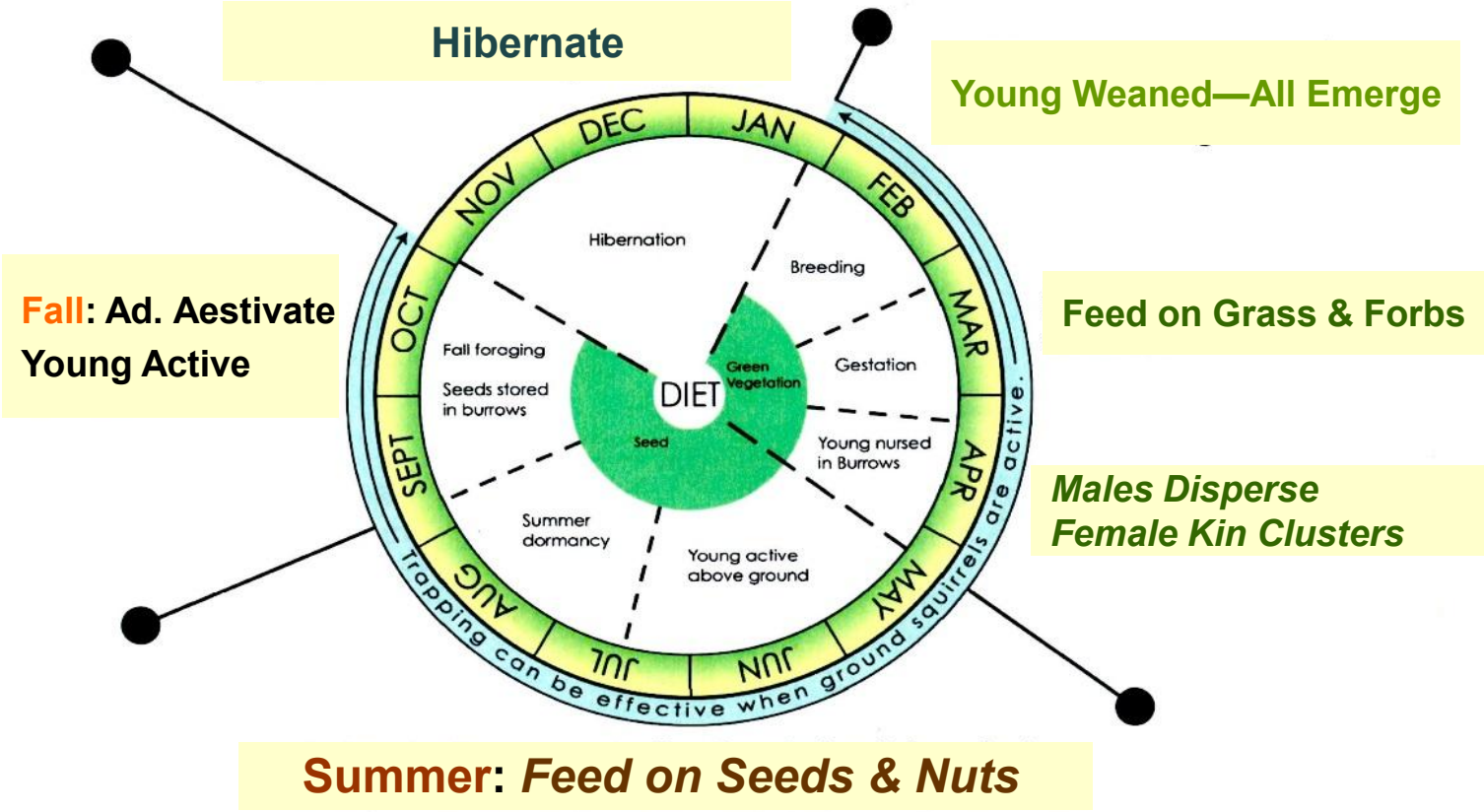


**Ad. Males
& Females
Aestivate**

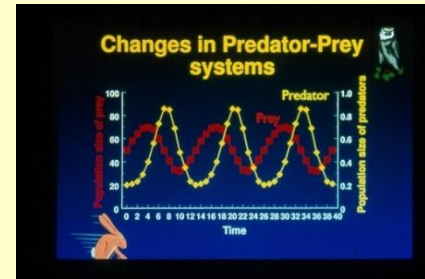


- 1 litter/year
- 5-7 young nursed underground
- Males disperse/Female Kin Clusters
- Yearlings reproductively mature

Gd. Squirrel Calendar



Control Options—Biocontrol



- 70% diet rattlesnake
- Blood proteins
- Hemotoxin/Neurotoxin

Cattle & Squirrel

A. Forage Competition

IMPACT—Very Site Specific.

B. Critical time:

Late winter (Low forage for cattle)

C. Study: *Effects of Livestock on CA Gd. Sq.*

Conclusion:

Moderate grazing

Adequate rainfall

Can have cattle, squirrels, & predators the squirrels support.

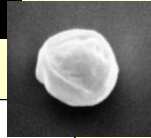


Disease & Squirrel

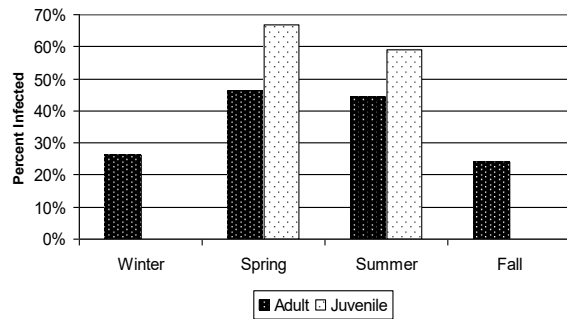
Cryptosporidium parvum



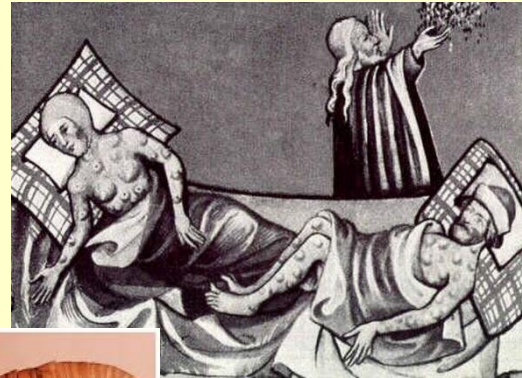
Oocist



Cryptosporidium Occurrence in Ground Squirrels



Septicemic Plague



Black Plague



Oak Tree & Squirrel

- **Ideal habitat**
 - shelter
 - food (acorns)
- **Burrowing dries roots**
- **Moved soil may be contaminated w/oak root fungus**
- **Destroys seedlings**



Not ALL Bad!

The Bad:

- Ag pest extraordinaire!
- Health hazard: Bubonic plague
- Oak seedling predator



The Good:

- Keystone Spp.: helps maintain predator & grassland diversity



Challenge: Maintain the functional roles of burrowing mammals in ways compatible with human activities

END