

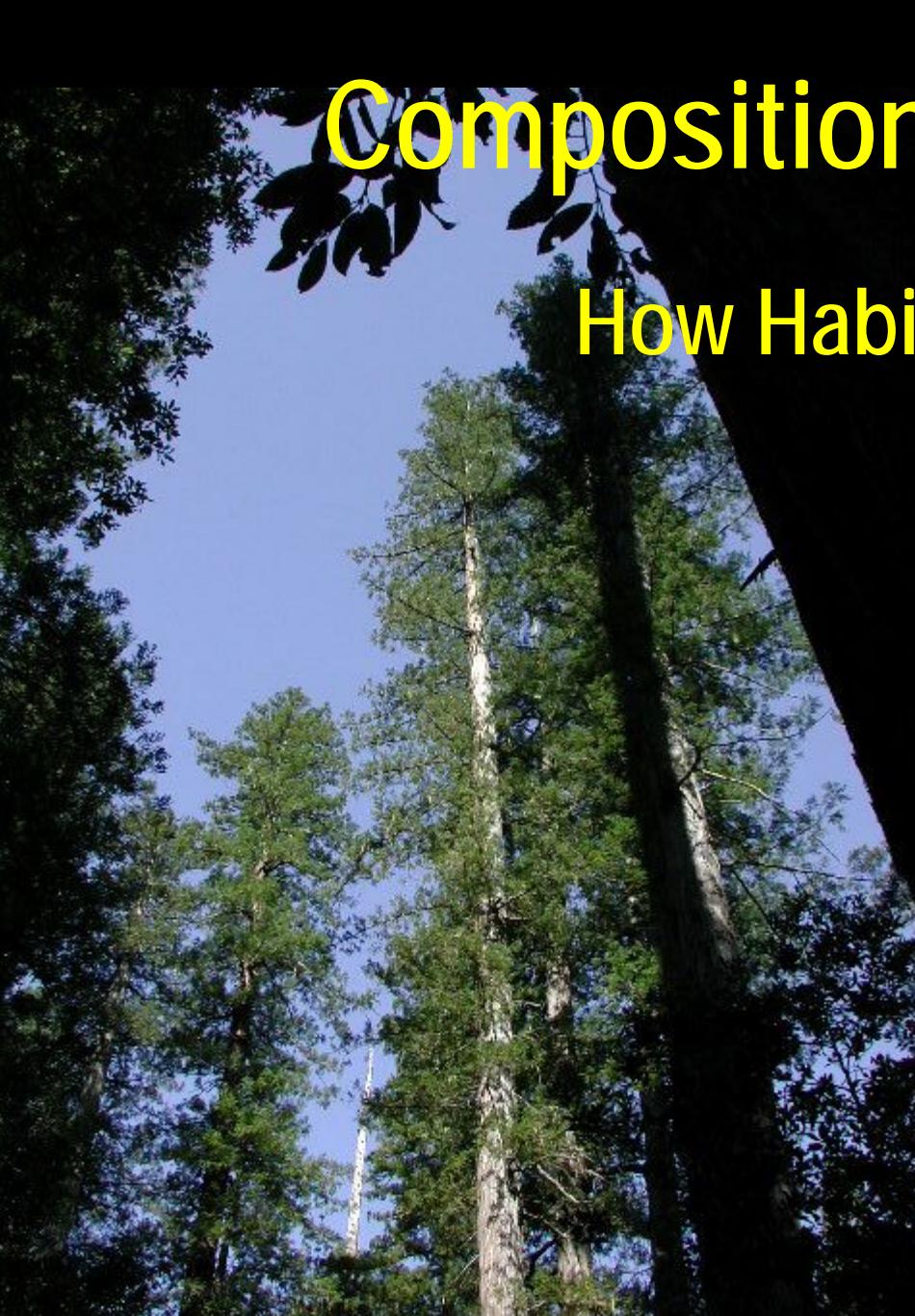


California Forest Pest Council

Fostering education on the pests of California's forests since 1951

Animal Damage: Species Accounts

Gregory A. Giusti – Chair
Animal Damage Committee
University of California
Cooperative Extension



Composition & Structure

How Habitat Works

- Criteria that promote and maintain:
 - ◆ habitat quality
 - ★ food, water and cover
 - ◆ diversity
 - ★ vertical and spatial diversity
 - ◆ species richness
 - ★ seasonal utilization

Habitat elements determine species associations



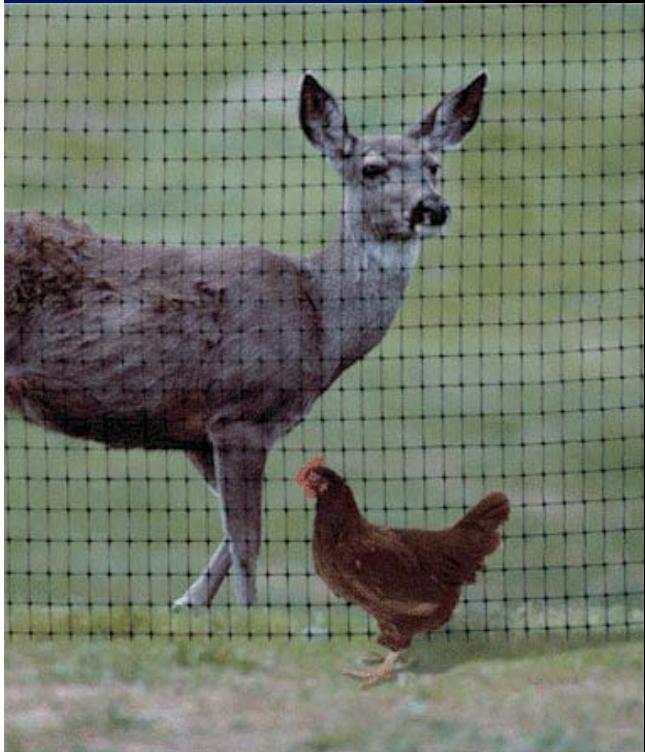
- Thermal Cover
 - ◆ structures, landscaping
- Nesting Cover
 - ◆ structures, vegetation
- Roosting Cover
 - ◆ attics, tree cavities, trees
- Hiding Cover
 - ◆ landscaping, wood piles,
- Foraging Cover
 - ◆ cover crops, landscaping

Vertebrate Taxonomy (mammals)



- Rodents
 - ◆ pocket gophers, voles, rats, mice, squirrels, muskrats, porcupines, beaver, etc.
- Insectivores
 - ◆ moles, bats
- Carnivores
 - ◆ raccoons, skunks, canids (coyotes & foxes), cats, bears
- Marsupials
 - ◆ opossums

Vertebrate Pest Management



- *Focus should be on minimizing damage:*
 - ◆ identify damage and responsible specie,
 - ◆ determine extent of *damage*,
 - ◆ evaluate damage management alternatives,
 - ★ both lethal and non-lethal options
 - ◆ evaluate alternatives that can prevent future conflicts.

Vertebrate Pest Management

- Non-Lethal Alternatives
 - ◆ Exclusion
 - ◆ Repellents
 - ◆ Frightening
 - ◆ Prevention
- Lethal Alternatives
 - ◆ Trapping
 - ◆ Toxic Baits
 - ◆ Shooting



When we change trees into forage it invites feeding behavior.



Species Accounts



UC Statewide IPM Project
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Moles. Order *Insectivora*



- Strictly fossorial (very seldom found about ground).
- Mostly carnivorous in its diet with a very wide food preference for worms, grubs, pupae, etc.
- Life cycle of most species not well known.
- Not generally considered a pest of forest trees (nurseries might be an exception)

Pocket Gophers - *Rodentia*

- Primarily fossorial but is capable of above ground foraging.
- Does not hibernate.
- A strict vegetarian.
- A very wide food preference list of plant species.
- Usually one litter/yr with 2-4 young/litter.
- Most damage occurs below ground.
- Seedlings at greatest risk but can kill larger trees from successive feeding activity.



Voles - *Rodentia*



- Nest below ground, but feed exclusively above ground.
- Very high reproductive potential starting in Nov. peaking in March.
- Social animals, often living in colonies.
- Primarily herbivorous.
- Young trees at greatest risk to above ground damage.
- Damage to young trees can be hidden from view by weeds.

Aplodontia - *Rodentia*

- A species of limited concern to young coastal redwood plantations with a high degree of slash.
- An ancient species of very limited distribution.
- The Pt. Arena mountain beaver is an isolated population given special regulatory consideration.



Porcupine - *Rodentia*

- A large rodent that can cause serious damage to pole size pine stands.
- Historically a problem in the Sierra-Nevada's and intermountain region.
- Does not hibernate.
- Craves salt causing it to chew on wooden tool handles.



Beaver - *Rodentia*



- A large rodent that feeds on wood and uses wood to construct dams to alter its habitat.
- Will feed on a large variety of tree species usually near stream corridors.
- Can create problems from both tree damage and flooding.

Forest Ground Squirrels- *Rodentia*

- Chipmunks, golden-mantled ground squirrels, Belding ground squirrels.
- Once a huge problem when aerial seeding of plantations was a common practice.
- Can be a problem in young plantations using nursery stock.
- More numerous in the Sierra-Nevada's and the intermountain region.



Woodrats - *Rodentia*



- Do not hibernate.
- Are primarily herbivorous but have been known to scavenge on deer carcasses.
- Can be a problem in young (<30 yr) redwood plantations.
- Damage to sprouting stumps can be significant.

Rabbits and Hares - *Lagomorpha*

- Neither rabbits or hares hibernate.
- Rabbits use underground burrows, hares do not.
- Damage can be distinguished from deer by “slanted” cut at point of feeding.
- Damage can be sporadic and localized.



Deer and Elk - *Artiodactyla*



- Large animals that can damage trees by foraging or rubbing antlers (males).
- Damage to terminal buds can affect tree growth and form.
- A game species offered special regulatory protection.

Black bears - *Carnivora*



- Problematic in NW California.
- Coast redwood and Doug-fir 11-20" dbh at most risk.
- Tree feeding behavior is seasonal.
- Damage often associated 1-2 years post commercial thinning activities.
- Problem has been recognized since the early 1950s.

Summation

- Animal damage can be sporadic and very localized.
- Damage can be seasonal depending on species involved.
- Silviculture can affect animal damage feeding behaviors.
- Animal damage prevention should be given the same level as observational diligence as other pests and pathogens.