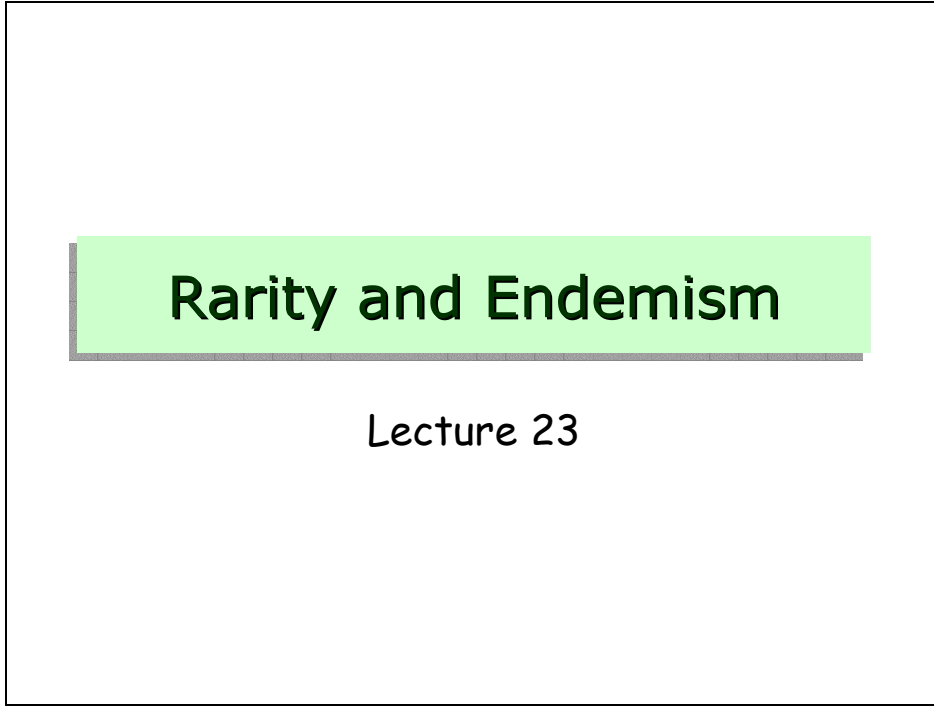


Slide 1



Rarity and Endemism

Lecture 23

Learning Outcomes

- Endemic Plants
 - Paleoendemics
 - Neoendemics
- Rare Plants
- CNPS Rare Plant Inventory
- Endangered and Threatened Plants



We are the last Dodos on the planet, so I've put all of our eggs safely into this basket...

Rarity

- Small population
- Few individuals
- Restricted to a handful locations



Death Valley Monkeyflower
Mimulus rupicola

Endemism

- Plant restricted to a named location
- May be abundant where it occurs.....
- Often endemic plants are also rare
- California
- Hawaii volcanic islands
- Adaptive radiation of Lobelia



Endemism

- California Floristic Province high endemism
- 3.4% of genera
- 30% of species



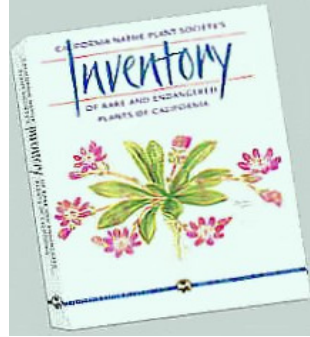
- New species
- Recent speciation
- Geologically young landscapes
- New species adaptations to particular habitat
- Small population
- Restricted to site of origin
- Bonnie Doon Manzanita
- Restricted to Sand deposits

Neoendemics



CNPS Rare Plant Program

- Inventory of Rare and Endangered Plants of California
- Online Inventory of Rare Plants (7th ed.)
- <http://www.cnps.org/cnps/rareplants/ranking.php>
- updated Quarterly



List 3

- List 3: Plants About Which We Need More Information - A Review List
- 56 species on list



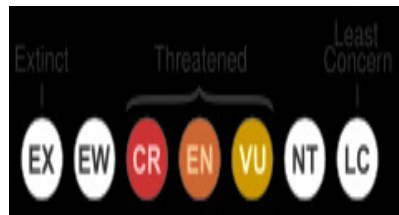
Salvia dorrii var. *incana* (list 3)

Endangered Species Act 1973

- authorizes the determination and listing of species as endangered and threatened;
- prohibits unauthorized taking, possession, sale, and transport of endangered species;
- provides authority to acquire land for the conservation of listed species, using land and water conservation funds;
- authorizes establishment of cooperative agreements and grants-in-aid to States that establish and maintain active and adequate programs for endangered and threatened wildlife and plants;
- authorizes the assessment of civil and criminal penalties for violating the Act or regulations; and
- authorizes the payment of rewards to anyone furnishing information leading to arrest and conviction for any violation of the Act or any regulation issued there under.

Endangered Species

- Endangered
- a population of organisms which is at risk of becoming extinct because it is either few in numbers, or threatened by changing environmental conditions
- Critically Endangered



<http://www.endangeredspecies.com/states/ca.htm>

Endangered Species Act Listing

1. There is the present or threatened destruction, modification, or curtailment of its habitat or range.
2. An overutilization for commercial, recreational, scientific, or educational purposes.
3. The species is declining due to disease or predation
4. There is an inadequacy of existing regulatory mechanisms.
5. There are other natural or manmade factors affecting its continued existence.

Federally Endangered Species

- California 178 Listed Plants
- Threatened and Endangered Species
- San Mateo Thornmint



State Legislation

- California ESA
- Ca Dept Fish and Game
- State listing represents status within the state
- May have different status compared to Federal list
- Laws of enforcement differ