

University of California Agriculture and Natural Resources

uc california naturalist

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4. Endangered Species Act (ESA):

Designed to protect critically imperiled species from extinction as a "consequence of economic growth and development untempered by adequate concern and conservation." (1973)

a. What does the ESA do?

Lists species as threatened or endangered, designates habitat essential for their survival and recovery, and ultimately restores healthy populations of the species so they can be removed from the list.

b. What are four problems that impede effective implementation of the act?

Consequences of listing

- Prohibition of “take”
- Development of recovery plan
- Critical habitat defined where possible
- Federal government works with states, private landowners to conserve listed species.



Essentials of ESA

- Endangered
- Threatened
- State vs federal
- International (CITES, Convention on International Trade of Endangered species)
- International Union for Conservation of Nature (IUCN)



California least tern
Sterna antillarum browni



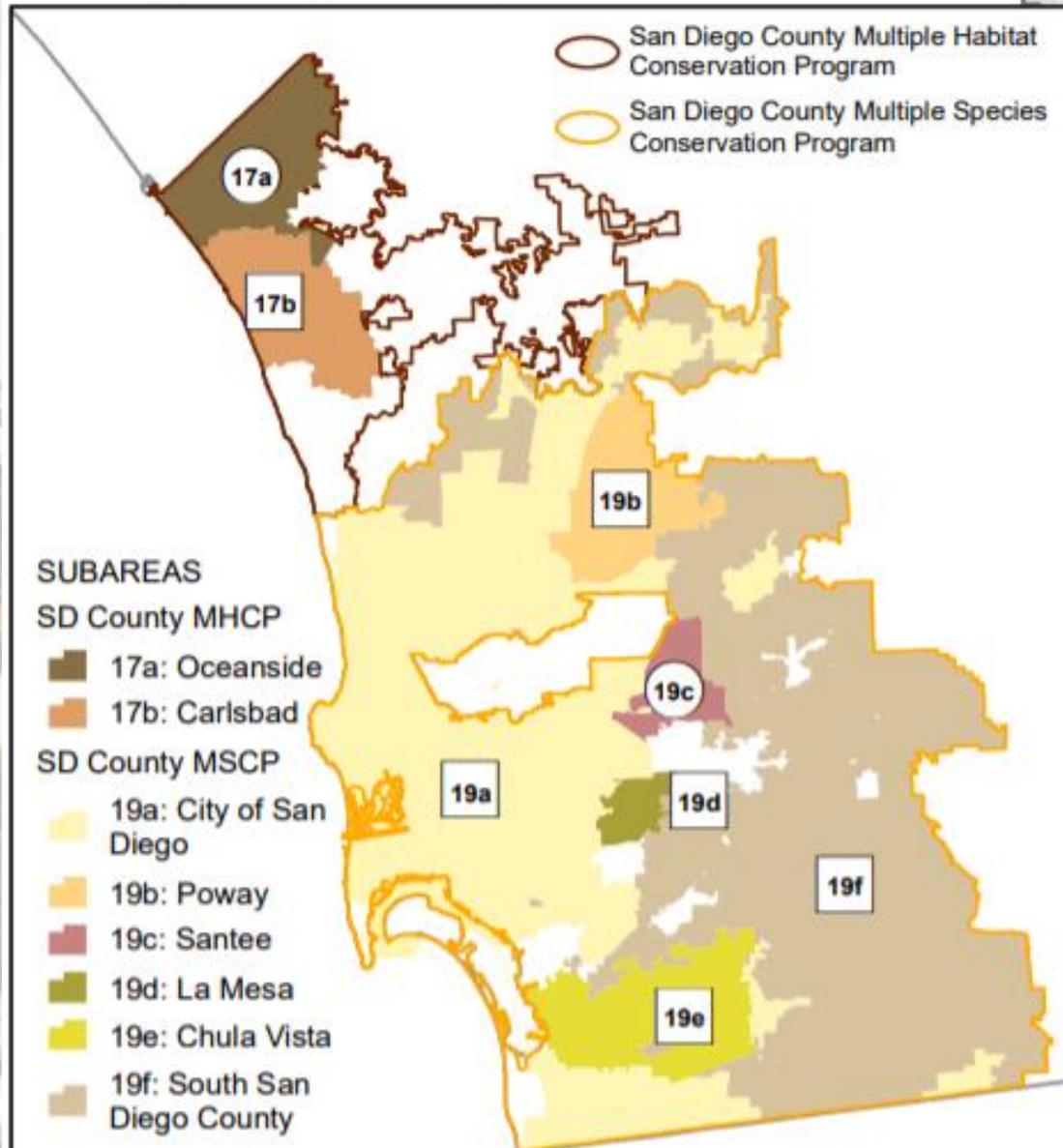
Coastal CA gnatcatcher
Polioptila californica californica

Possible Tools

- **Conservation Agreements (pre-listing)**
- **Safe Harbor Agreements (federal and CA)**
- **Habitat Conservation Plans (federal and CA)**
 - ◆ CA = 17 Natural Community Conservation Planning (NCCP) in different regions of the state some with subarea plans; CDFW approved
 - ◆ County = Multiple Species Conservation Program (MSCP)
 - ◆ Multi-jurisdictional = Multiple Species Habitat Conservation Plan (MSHCP)
 - ◆ City = Habitat Management Plans (HMP) or Habitat Conservation Plans (HCP)

SD County Map

San Diego County MHCP and MSCP Subareas



Impediments to successful implementation of ESA

1. Dangerously low numbers
2. Funding
3. Private landowners
4. Focus on individual species
5. Recent changes to ESA

For discussion in class: Within the last 4 years the US EPA has been directed to include the economic costs of any new regulations. For example, with regards to the Endangered Species Act, the EPA *“proposed to remove the prohibition on the Services describing economic factors when listing, delisting, or reclassifying species as threatened or endangered.”*¹ What is your response to this?

https://www.fws.gov/endangered/improving_ESA/regulation-revisions.html

<https://www.nytimes.com/2019/08/12/climate/endangered-species-act-changes.html>

A photograph of Jane Goodall, a prominent naturalist, looking through binoculars in a lush green forest. She has long, wavy blonde hair and is wearing a light-colored collared shirt. The background is filled with dense foliage and trees.

The Role of Naturalists

**"To be a Naturalist is better
than to be a King."**

**Charles William Beebe, Journal,
31 December, 1893**

Jane Goodall

what a naturalist does

- observes
- reports
- collaborates



Center County, in
Northeast Pennsylvania
← yellow wild flowers
growing along a
rock wall behind
the gas station →
Ely, about 1000 feet
many beautiful places
to visit: The Doe River
Covered Bridge, Cat Island
Museum at Park and
Spokane Shores
Frontier Village on the
Watauga River

established in 1772. Fort Watauga - 1776
This is where the Open Mountain Men assembled
to fight the British soldiers in the Revolutionary War



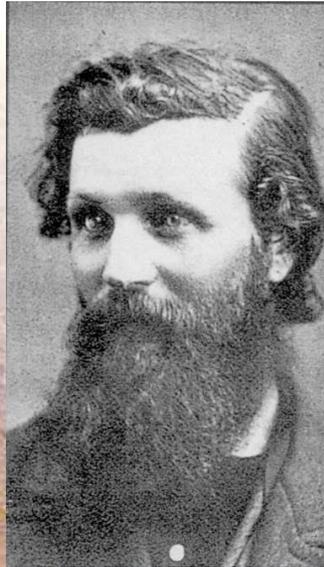
The 150 ft. bridge across the Doe River
built in 1892. In Dr. E. Hunter for \$8000.

Historically humans had to be
naturalists.

6. Influential naturalists:

- a. Name two naturalists who influenced your thinking.
- b. What did they communicate that you think is important?

c. exemplary naturalists



7. Classification of species:

- a. What is the “Linnaean Classification” system?
- b. How do we use it to describe species?
- c. What does it tell us about the relationships between organisms?

Carl Linnaeus (1707-1778),
hierarchical classification

- each *species* is assigned a *binomial*
 - *genus*
 - *species*

Hierarchical classification example:

Kingdom: Animalia

Phylum: Chordata

Class: Mammalia

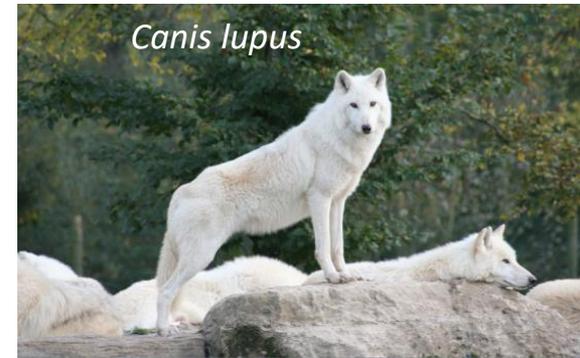
Order: Carnivora

Family: Canidae

Genus: *Canis*

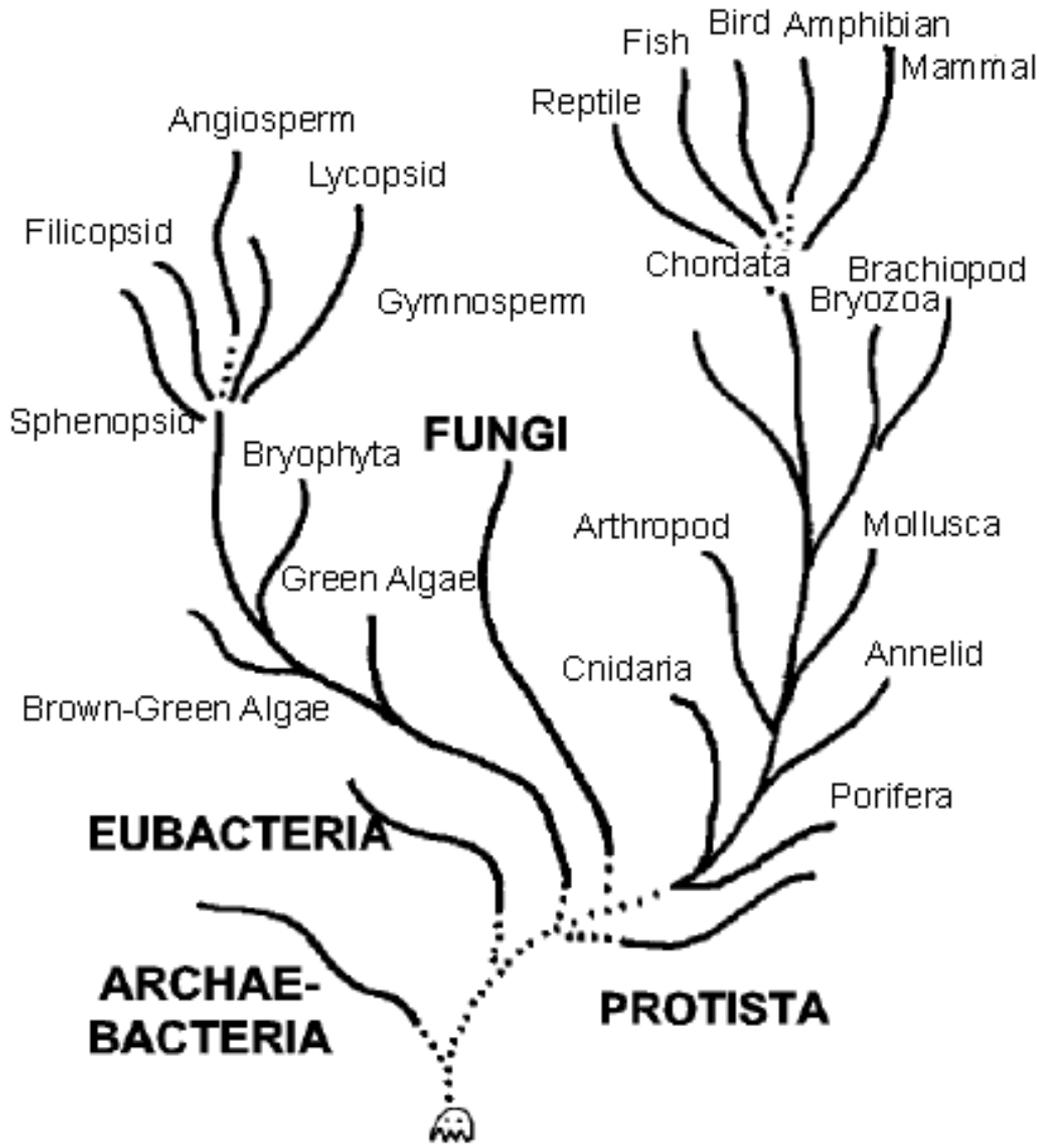
Species: *domestica*

- King Phillip came over from Germany slyly.



PLANTAE

ANIMALIA

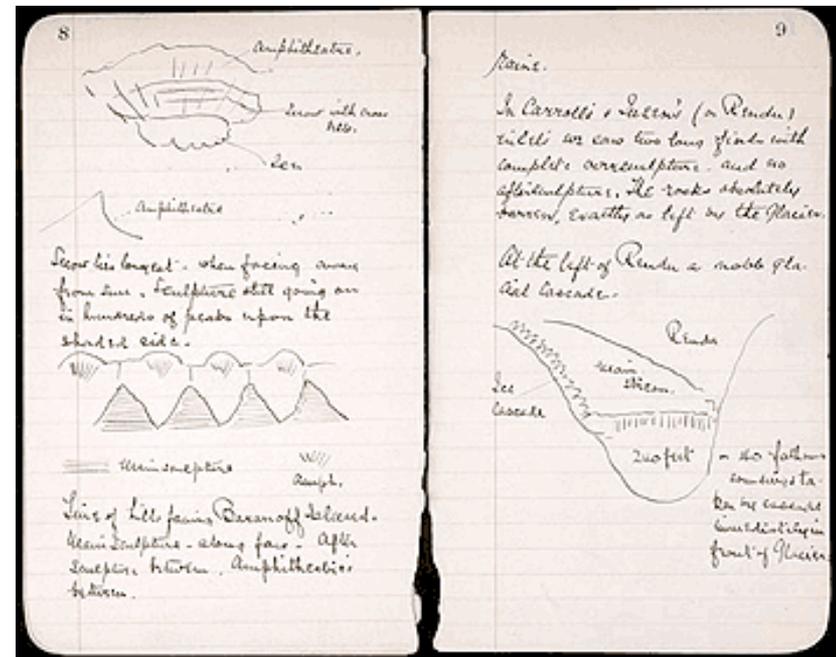


Grinnell Method

- field notebook

- what you actually take to the field to record your observations.
- record detailed observations.
- put up an "Observation checklist" on the first or last page.

- Time & date
- Locate
- Route
- Weather
- Habitat/vegetation type
- Species/rocks
- General observations
- Drawings, maps, photos



becoming a naturalist

- practice observing the world around you with all your senses



- record your observations in a naturalist journal
- a resource for other naturalists

Good resource for nature journaling – John Muir Laws

<https://johnmuirlaws.com/>