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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)
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
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?

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

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.*
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
field journal

➢ rewrite your field observations in a format that is easy for you and others to read
➢ include written descriptions, a species account and a catalog of collected specimens
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/