



XIII: Conservation Management Studies

Case Study I: Black-footed Ferret

- Oldest endangered species recovery program in US; started in 1973.
- Ferrets main prey item are prairie dogs, large ground squirrels of the genus, *Cynomys*, that are associated with mixed and short grass prairies of the great plains.

Case Study I: Black-footed Ferret (*continued*)

- **Causes of population decline:**
 - Decimation of prey populations by human activity.
 - Decimation of prey population by introduced disease.
 - Habitat loss
 - Sensitivity to diseases: canine distemper and plague.

Case Study I: Black-footed Ferret (continued)

- **Captive Breeding Program**
 - Started in 1985, this program has reintroduced ferrets in Wyoming, South Dakota and Montana.
 - Predation by coyotes is a major problem for reintroduced populations.
 - Coyotes have been killed in the programs run in Montana and Wyoming.


Case Study I: Black-footed Ferret (continued)

■ Social Challenges

- Ranchers do not like prairie dogs or ferrets.
- Ranchers like the coyote control program.
- Agencies are trying to educate the public with difficulty and are in conflict with policies of other government agencies.

Case Study II: Sea Turtle

- **Sea turtles have been in the seas for over 100 million years.**
- **Seven species are found today.**
- **Sea turtles are an important subsistence food item for many cultures.**
- **The Yolngu, an aboriginal people, of northern Australia are working with the government organization to save the turtles.**
- **The project combines traditional knowledge with modern biological science.**

- 
-
- **science.**
 - **6 of 7 sea turtle species occur in northeast Arnhem Land and 5 nest there (all are endangered or listed as vulnerable by international conservation agencies.**
 - **Communities are involved in the research and monitoring of populations.**
 -

Case Study III: Spotted Owl

■ Hypotheses Tested

- 1. The population of owls is increasing.
- 2. Spotted Owls do not differentiate among habitats on the basis of forest age or structure.
- 3. No decline has occurred in the areal extent of habitat types selected by Spotted Owls for foraging, roosting or nesting.

Case Study III: Spotted Owl

(continued)

- Hypothesis 1 was rejected for the Northern Spotted Owl - No studies have found stable or increasing populations.
- Hypothesis 2 was rejected since most research shows that both subspecies prefer old-growth habitat.
- Hypothesis 3 was rejected since significant reductions in habitat have occurred in Oregon, Washington and California on public lands.

Case Study III: Spotted Owl (*continued*)

- Computer simulation models for the Northern Spotted Owl used by the ISC suggested that minimum habitat size for range-wide persistence for 100 years (95% confidence level) would contain 20 pairs of owls.

Case Study III: Spotted Owl (*continued*)

- **California Spotted Owl**
 - Hypothesis 1 was not rejected for the populations surveyed.
 - Both owl species seem to use the same habitats.
 - Verner (1992) proposed interim 5-10 year guidelines that reduced allowable harvest levels of trees and restricted silvacultural activities in habitats selected by owls.

Case Study III: Spotted Owl (continued)

- Why two different conservation strategies?
 - California Spotted Owls have not declined in population density/distribution like the Northern Spotted Owl. Why?
 - Silvicultural practices: Cascades - clear-cutting; Sierra Nevada - selective harvest.
 - Fire: not a threat in the Cascades; dangerous in the Sierras (if you created reserves).
 -

Improving the Role of Science in Conservation Policy


- **The courts are assuming an increasing role in the decision making process concerning land management issues.**
 - **Society has failed to acknowledge (or even recognize) that hard choices must be made with regard to environmental protection.**
 - **We have lacked adequate "forums" and processes for conflict resolution and decision making.**
- **Forums should include all affected parties and represent a diversity of perspectives.**

Improving the Role of Science in Conservation Policy *(continued)*

- Behavior should be governed by a set of rigid rules:
 - Treat each other with professional respect.
 - The strength of arguments should be a function of the information content of the argument (?).
 - No pertinent data should be withheld or suppressed.
 - The reliability of the data should be judged by the degree it represents the scientific process.

Case Study 4: Costa Rica

- **National System of Conservation Areas (SINAC)**
 - Merge forestry, wildlife, wildlands agencies into SINAC for facilitate national planning aimed at sustainable natural resource management
 - Public participation is at the heart of this system.
 - Structure of SINAC:
 - Central Office
 - Satellite Areas
 - Conservation Areas (10) (bioregionalism?)

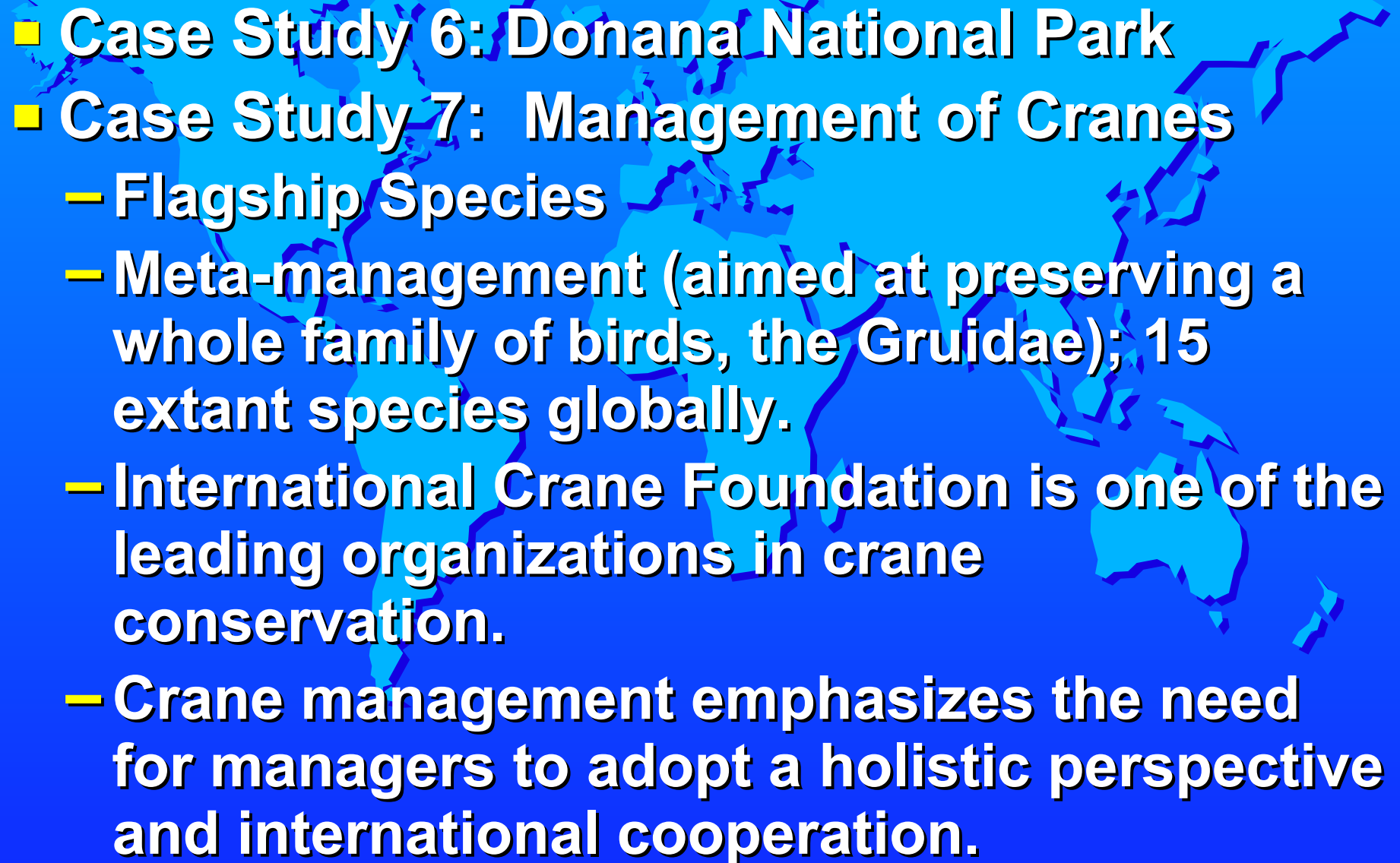
- 
-
- **Independence and autonomy for the Conservation areas is encouraged.**
 - **20% of the cost of the program is government funded the rest of the money is coming from sustainable activities, foreign aid, or endowments.**
 - **This program appears to be an international model how to proceed with sustainable development while protecting large areas of habitat (29% of Costa Rica is in reserves!)**

Case Study 5: The Everglades

- **Restoring the Everglades**
 - **Vegetation Issues:**
 - **Spatial distribution due to water levels.**
 - **Losses in native cover due to land use conversion and water problems.**
 - **Nutrient inputs and community effects.**
 - **Exotics**
 - **Animal Issues:**
 - **Exotics**
 - **Endangered species (Florida panther, Wood Stork, ,etc.)**

Everglades continued

- Other Issues:
 - Toxins
- Restoration Efforts
 - Late 80's symposium produced a plan of restoration goals
 - Hydrology is the key.
 - Fire
 - Pollution control.
 - Adaptive management.

- 
-
- **Case Study 6: Donana National Park**
 - **Case Study 7: Management of Cranes**
 - **Flagship Species**
 - **Meta-management (aimed at preserving a whole family of birds, the Gruidae); 15 extant species globally.**
 - **International Crane Foundation is one of the leading organizations in crane conservation.**
 - **Crane management emphasizes the need for managers to adopt a holistic perspective and international cooperation.**