Lecture 21, 03 Nov 2009
Legislation & Reserve Design
Conservation Biology
ECOL 406R/506R
University of Arizona
Fall 2009
Kevin Bonine
Mary Jane Epps

506 meet in BSE129
9am Wed (04 Nov)
Krista C.

Q6 Will post third ‘October’ option today.
(Due by xx6am xxMonday xxNovember as .DOC attachment to MJ (mycota@gmail.com) via email.)

Exam Two Key to post as well

If graduate school might be in your future, check out the possibilities at this year’s UA Graduate School Day!
This year’s Career Services-sponsored UA Graduate School Day will feature around 70 different programs from all over the country, as well as some international opportunities!
Graduate School Day
Wednesday, November 4th - 1pm to 4pm
Student Union Memorial Center 3rd floor ballroom
Find out more about graduate school life at USC, UC Riverside, Creighton, New Mexico University, American University of Antigua, Pepperdine, University of Florida and Colorado State, to name a few. These are just some of the grad schools attending representing a wide range of disciplines including medical schools, law schools, business schools, Schools of Public Policy, Schools of Arts and Sciences and a School of Earth Science. In addition, several graduate programs from across the UA campus will be there.
Further details and links to participating schools’ Web sites can be found at http://www.career.arizona.edu/students/?gradschoolfair.
Questions? Please call Susan Miller at 520/621-1408.

Interested in research?
Apply to UBRP for the Summer of 2010!
Applications available online at:
http://ubrp.arizona.edu
Deadline:
February 1, 2010

UA House of Diminishing Impact?

SONORAN DESERT DISCOVERY
HOT TOPICS IN ECOLOGY

SAHRA, OALS, SNRE, EEB, SWES, LTRR, Jim Riley, Solar House,
Solar Car, Landscape Architecture, School of Architecture,
Sustainability Committee, Parasol, etc.
Pop Quiz:

Name and date?
What does SDCP stand for?
When was the ESA passed into law?
Under what section of the ESA do Habitat Conservation Plans fall?

PVA requires lots of data, which takes time, work, and money, whereas managers want answers (predictions about extinction) now. Few species will get thorough PVA. When should PVA be used and what type of PVA (how complex)?

Predictions from PVA can only be as good as the data that go into the analysis. We can only have degrees of confidence in the predictions from PVA. Populations should not be managed to their “minimum viable population” size.

One of the greatest strengths of PVA is the ability to play “what if” games with the model. That is, what if management were to increase patch sizes or connectivity? What if adult survival were improved?

Sonoran Pronghorn
‘ESA’ listing 1967

The U.S. Fish and Wildlife Service set a population of 300 Sonoran pronghorn as its recovery goal. Some conservationists judge this to be unattainable, as viable desert habitat is limited and much of the Sonoran pronghorn’s former range is now fragmented by development. Captive breeding and relocation is also a possibility. One critical step is reducing fawn mortality, which has ranged from about 75 to 100 percent in recent years. Scientists believe this high rate results primarily from poor environmental conditions.

Sonoran pronghorn antelope, the fastest terrestrial mammal on the American continent (clocked at 86.5 km per hour), is endangered. The species population fluctuates from a low of around 100 animals to a high of more than 250. Population trends correlate closely with climate: wet weather years allow for increased fawn propagation and survival; the reverse is true during dry seasons. The Sonoran pronghorn’s habitat is located entirely on Federal lands in southwestern Arizona. These lands are controlled by multiple Federal agencies, including the U.S. Marine Corps, the U.S. Air Force, the U.S. Army National Guard, the Bureau of Land Management, the National Park Service, and the Fish and Wildlife Service. The Immigration and Naturalization Service and the Border Patrol also conduct activity (illegal alien patrols) in the pronghorn’s habitat.
The situation grew dire in summer of 2002. Neither the winter rains nor the monsoons came. It was the driest year on record. Wildlife biologists hoped that the pronghorn's protected range could provide enough food to skirt through, but, without rain, seasonal water sources ran dry. The US population dwindled to 25 individuals, a tight genetic bottleneck. There was still a viable population of 600 animals in Mexico, but new mining and ranching development had begun to limit their habitat as well.

http://www.nps.gov/orpi/naturescience/pronghorn.htm

In 2004, scientists started a captive breeding program. Eleven animals were caught (not an easy task considering the animal's elusive reputation), some taken from Mexico to provide for genetic diversity. A square mile of desert was set aside in a non-wilderness area of Cabeza Prieta National Wildlife Refuge. It took a few years and some supplemental food and water, but the captive population grew. The experiment seemed a success. Some of the male yearlings were released in 2006 and seemed to integrate well into the US population. A few more were released in the following two years. In 2008, another twenty-seven fawns were born, nudging the captive population to around 55 animals. Up to fifteen more yearlings are slated to be introduced during the winter of 2009. Biologists hope that the new shot of genetic material will keep the next generation resistant to disease and as wary as ever.

Administrative Laws
Executive Orders
State Laws
Policies
Federal Laws
Treaties
Agreements

Domestic

Laws arose 1970's following concern of 1950s+

Laws reflect current social values but also persist into the future...

Advocacy

ConBio: science and empirical data + law/policy?

Litigation

e.g., polluters liable, citizen involvement, NGOs, public comment, transparency

EDF 1968
people have right to clean environment

1872 Yellowstone NP
1891 Forest Reserve Act
1916 NPS
1964 Wilderness Act
1965 Land and Water Conservation Fund Act
- acquire lands, use resource revenues
1969/1970 NEPA (EIS)
- think about environment up front
1970 Clean Air Act
1972 Clean Water Act
1973 ESA (species focus)
- endangered, threatened, critical habitat
- recovery plan
National Environmental Policy Act of 1969 (NEPA)

Requires that all Federal Agencies prepare detailed environmental impact statements for “every recommendation or report on proposals for legislation and other major Federal actions that significantly affect the quality of the human environment.”

Federal Hook or Nexus? (land, funds, permits)

The Story of NEPA

(through the eyes of Dave Prival, Brooke Gebow, and Cori Dolan, March 2004)

“...man and nature can exist in productive harmony...”
- National Environmental Policy Act (1969)

Under NEPA, if a government agency is planning to do something that will significantly affect the quality of the environment, that agency has to write an...
Environmental Impact Statement

NEPA, NEPA, NEPA!!!!!

An EIS includes…

• Project goals and objectives
• Resources that might be affected
• Alternative ways to try to achieve the goals
• Environmental impacts that are likely to occur under each alternative
• Potential mitigation

Summary

• The EIS is supposed to help agencies decide how they can achieve their goals, taking all environmental impacts into account, with input from the people who are going to be affected (the public).
Fujicolor Processing Pleads Guilty to Environmental Crime

Fujicolor Processing agreed to pay $200,000 to resolve criminal charges for discharging excessive amounts of silver-tainted photo-processing waste to a Texas wastewater treatment plant, the Justice Department and Environmental Protection Agency announced today.

**Fujicolor pleaded guilty to one count of negligently violating a requirement to pretreat silver at its photo-processing facility in Terrell, Texas.**

Based on an internal investigation, Fujicolor discovered that from 1999 through July 2002 employees were selectively reporting to the city only test results that fell within permit limits. Industrial facilities report results to local agencies for permit compliance purposes. Employees would send part of a sample to a laboratory for screening and, if the sample met permit limits, it would be submitted to the city. If a sample did not meet the silver limit, employees would keep collecting samples and they found one that fell within allowable limits. Fujicolor discovered similar problems at its facilities in New Britain, Conn., and Tukwila, Wash.

"By 'cherry-picking' samples, Fuji's employees undermined federal and state permit programs," said Granta Nakayama, assistant administrator for the EPA's enforcement and compliance assurance program. "This investigation was conducted by the EPA's Criminal Investigations Division, and the Texas Department of Environmental Quality. The case was prosecuted by the U.S. Department of Justice Environmental Crimes Section and the U.S. Attorneys Office for the Northern District of Texas.

EIS drawbacks?

- **The EIS is supposed to help agencies decide how they can achieve their goals, taking all environmental impacts into account, with input from the people who are going to be affected (the public).**
- **Time and Money?**

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**NEPA: 3 pages**

**EIS: 175 pages**

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**REAL ID Act, 2005**

WASHINGTON - Defenders of Wildlife has been informed that Michael Chertoff, secretary of the Department of Homeland Security (DHS), will waive a number of laws in order to resume construction of a border wall and road in the San Pedro Riparian National Conservation Area (NCA) in southeastern Arizona. Under Section 352 of the REAL ID Act, passed in May 2005, Chertoff has now waived environmental, cultural and numerous other laws in three separate instances to allow border wall construction through fragile habitat.

"The issue here is whether wildlife and other sensitive environmental values will be given fair consideration in the decision the government makes," said Robert Dreher, vice president for Defenders of Wildlife. "On the past, Secretary Chertoff himself has acknowledged the border wall's inherent failures, and yet he still chose to bypass our nation's laws to plow forward with the administration's destructive, ineffective plan. Rather than attempt to comply with our nation's laws, Chertoff chose to "waive" in their entirety... all federal, state, or other laws, regulations and legal requirements" related to the following 20 federal statutes: National Environmental Policy Act Endangered Species Act Federal Water Pollution Control Act (aka Clean Water Act) National Historic Preservation Act Migratory Bird Treaty Act Clean Air Act Archaeological and Historic Preservation Act Safe Drinking Water Act Noise Control Act Solid Waste Disposal Act Comprehensive Environmental Response, Compensation, and Liability Act Federal Land Policy and Management Act Fish and Wildlife Coordination Act Antiquities Act National Environmental Policy Act Arizona-Idaho Conservation Act Fish and Wildlife Coordination Act Antiquities Act National Environmental Policy Act Arizona-Idaho Conservation Act Fish and Wildlife Coordination Act Antiquities Act National Environmental Policy Act

**ESA The endangered species program**

http://www.fws.gov/endangered/

**“Taking”**

Shoot, Shovel, Shut Up

Led to Habitat Conservation Planning (HCP) Incidental Take Permits (e.g., SDCP with mitigation)

San Bruno Mtns - negotiate, compromise, all parties involved

**“No Surprises”**

MOAs Safe Harbor Agreements

Need to include and motivate private landowners

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**Release date:** 09/06/2007
Pre-Endangered Species Act of 1973 Legislation

- **Lacey Act** - 1900. Authorized Federal enforcement of state wildlife laws and based on Federal power to regulate interstate commerce.

- **Committee on Rare and Endangered Wildlife Species 1964** - consists of 9 biologist - published the first “Redbook” - first Federal list of fish and wildlife considered threatened with extinction.

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Endangered Species Act of 1973, as Amended

- Largest controversy involved whether protection should be extended to plants.

- Not seen as a large economic issue. Passed Senate unanimously, passed House overwhelmingly

- Signed into law on December 28, 1973

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Endangered Species Act of 1973, as Amended

- Jointly administered by Secretaries of Interior and Commerce
  (Fish and Wildlife Service and National Marine Fisheries Service)

- Amended many times.

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Endangered Species Act of 1973, as Amended

- Section 3. Definitions
- Section 4. Determination of endangered species and threatened species (Listing)
- Section 5. Land acquisition
- Section 6. Cooperation with States
- Section 7. Interagency cooperation
- Section 8. International cooperation
- Section 8A. Convention implementation
- Section 9. Prohibited Acts
- Section 10. Exceptions
- Section 11. Penalties and enforcement
- Section 12. Endangered Plants
(c) Similarity of Appearance Cases.—The Secretary may, by regulation of commerce or taking, and to the extent he deems advisable, treat any species as an endangered species or threatened species even though it is not listed pursuant to section 4 of this Act if he finds that—

(A) such species so closely resembles in appearance, at the point in question, a species which has been listed pursuant to such section that enforcement personnel would have substantial difficulty in distinguishing between the listed and unlisted species;

(B) the effect of such substantial difficulty is an additional threat to an endangered or threatened species; and

(C) such treatment of an unlisted species will substantially facilitate the enforcement and further the policy of this Act.

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(A) No permit may be issued by the Secretary authorizing any taking referred to in paragraph (a)(1) unless the applicant thereby submits to the Secretary a conservation plan that specifies—
(i) the impact which will likely result from such taking;
(ii) what steps the applicant will take to minimize and mitigate such impacts, and the funding that will be available to implement such steps;
(iii) what alternative actions to such taking the applicant considered and the reasons why such actions are not being utilized;
(iv) such other measures that the Secretary may require as being necessary or appropriate for purposes of the plan.
(3) If the Secretary finds, after opportunity for public comment, with respect to a permit application and the related conservation plan that—
(i) the taking will be incidental;
(ii) the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking;
(iii) the applicant will ensure that adequate funding for the plan will be provided;
(iv) the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild;

(13) ENFORCEMENT OF COMMITTEE.—There is established a committee to be known as the Endangered Species Committee (hereinafter in this section referred to as the "Committee").

(1) The Committee shall review any application submitted to it pursuant to this section and determine in accordance with subsection (a) of this section whether or not to grant an exemption from the requirements of subsection (a)(1)(A) of this section for the section set forth in such application.

(2) The Committee shall be composed of seven members as follows:
(A) the Secretary of Agriculture;
(B) the Secretary of the Army;
(C) the Chairman of the Council of Economic Advisors;
(D) the Administrator of the Environmental Protection Agency;
(E) the Secretary of the Interior;
(F) the Administrator of the National Oceanic and Atmospheric Administration;
(G) the President, after consideration of any recommendations received pur-
### Section 10, ESA

#### Exceptions

10(a)(1)(A) – Recovery Permits

10(a)(1)(B) - HCP

(SDCP: Multi-species HCP)
Recovery Planning

Mount Graham Red Squirrel
*Tamiasciurus hudsonicus grahamensis*

- Listed as endangered in 1987

Mount Graham Red Squirrel
*Tamiasciurus hudsonicus grahamensis*

- Restricted to:
  - Spruce-Fir
  - Transition
  - Mixed Conifer

- Above 8000 ft

Mount Graham Red Squirrel
*Tamiasciurus hudsonicus grahamensis*

Revised Mount Graham Red Squirrel
*(Tamiasciurus hudsonicus grahamensis) Recovery Plan*

- Technical Subteam
  - Squirrel biologists
  - Silviculturalist
  - Fire Ecologist
  - Forest health specialist
  - Conservation biologists
  - Population biologists
  - Entomologists
The U.S. Fish and Wildlife Service has completed a final rule designating 32 units of critical habitat along the coast of California, Oregon, and Washington for the Pacific coast population of the western snowy plover, a Federally threatened species. The critical habitat units total 12,145 acres, nearly 40 percent less acreage than an earlier critical habitat plan the Service adopted in 1999.

Of the designated units, 24 are in California (7,472 acres), five are in Oregon (2,147 acres), and three are in Washington (2,526 acres). Of the total acreage, 2,470 acres (20 percent) are on Federal lands; 6,474 acres (53 percent) are owned by states or local agencies; and 3,191 acres (26 percent) are private.

Compared to the 1999 plan, today’s action designates more critical habitat units but generally smaller ones, based on increased knowledge of the species’ needs and better mapping. This new rule designates 32 units covering 12,145 acres, compared to 28 units covering 19,474 acres in the 1999 plan.

The rule will take effect 30 days after publication.

Some 2,859 acres of proposed critical habitat in six units were deleted because of the projected cost of designating critical habitat. An economic analysis prepared by Industrial Economics Inc. projected that critical habitat could cost between $275 million and $645 million, with the biggest costs due to beach recreation losses. More than three-quarters of the loss was found to occur in five proposed California critical habitat units, located on Coronado’s Silver Strand, Morro Bay, Pismo Beach, and two on Monterey Bay.

In addition, 615 acres were deleted because of management plans and commitments — such as Habitat Conservation Plans — and 1,621 acres were deleted because they are covered by military land management plans or national security needs.
