Lecture 25, 13 Nov 2007
Restoration etc.

Conservation Biology
ECOL 406R/506R
University of Arizona
Fall 2007

Kevin Bonine
Cathy Hulshof

Upcoming Readings
today: Ch 11 and weblinks (Restoration, Reconciliation)
Thurs 15 Nov: Ch 12, and web-links (Economics)

Thank: Rob Robichaux, Cathy Hulshof
Q4 due TODAY

Exam 3: mean 82.4, median 84, max 93, min 60, before bonus

Conservation Biology Lab 406L/506L

Friday 30 Nov 1230 –> 1530, Wrap Up
Meet 1230h southwest corner of BSE

See lab website for more information

Debate 15 November 2007, **MOVED TO 27 NOV.**
RE: Galapagos Conservation

Three groups – one will debate, another will evaluate, third will observe, then we rotate.

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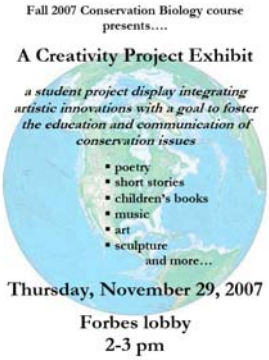
Debate 1 (20 Sept.)
Group A debate
Group B evaluate
Group C observe
Debate 2 (23 Oct.)
Group A observe
Group B debate
Group C evaluate
Debate 3 (27 Nov.)
Group A evaluate
Group B observe
Group C debate

Debate 1 (20 Sept.)
506 A assist
506 B assist
506 C observe
Debate 2 (23 Oct.)
506 A observe
506 B assist
506 C assist
Debate 3 (27 Nov.)
506 A assist
506 B observe
506 C assist

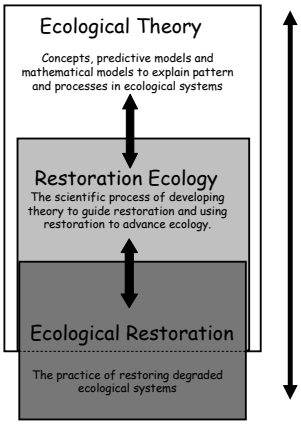


Grading Criteria due 27 November

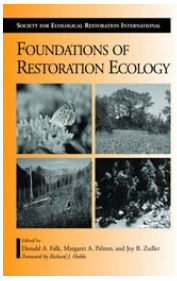
Out of 100 points.

15 points for your grading effort of other pieces.

Also, tell us soon what resources (table, vertical board, power supply?) you will need



Don Falk

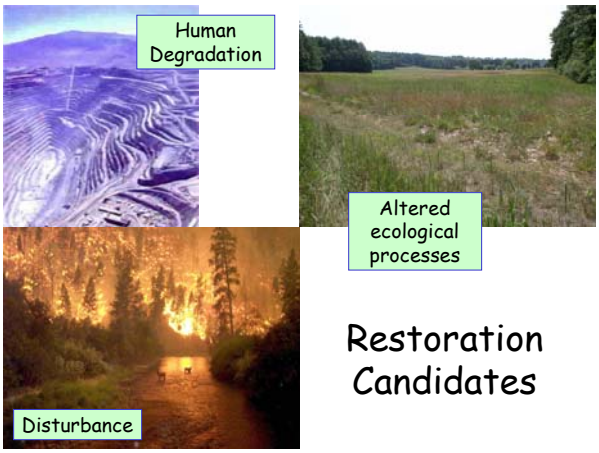


Falk et al. 2006

Society for Ecological Restoration International

http://www.ser.org/

http://web.utk.edu/~grissino/



Restoration Candidates

Three fundamental elements of restoration:

1. Defined reference condition.
2. Disrupted ecosystem.
3. Desired future condition.

Ecological Restoration:

"The process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed."

Restoration Ecology:

1. The study of relationships among organisms and the abiotic environment, in a context of ecological restoration. 2. The scientific study of patterns and mechanisms operating in ecological restoration." – Don Falk *et al.*, 2006

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Ecological Restoration Goals

- Restore ecosystems to conditions consistent with their evolutionary environments
- Connect sustainable human communities with sustainable wildlands
- Conserve wildlands for present and future generations

Covington, 2000

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Ecological Restoration: Criteria for Success

- Sustainability
- Resistance to Invasion
- Productivity
- Nutrient Retention
- Functional Relations
- Genetic Appropriateness

Therefore, monitor!

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Restoring functioning ecological communities

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Example:
Restoring species interactions

- Pollination
- Dispersal
- Herbivory & Predation
- Competition
- Trophic Structure and Dynamics

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Everglades Restoration

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Everglades Restoration
Flows, Timing, Quality

$3.3 Billion

Water Quality and Agriculture
Phosphorous

Land Acquisition

Stormwater Treatment

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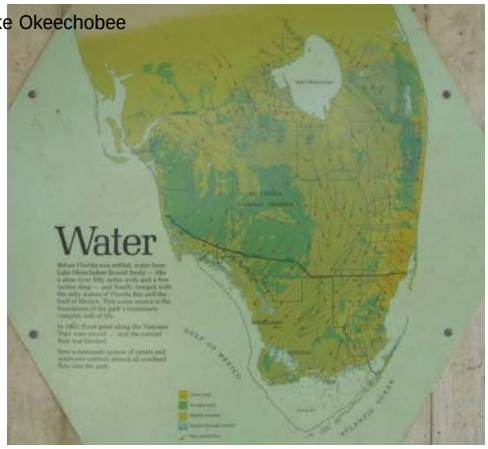
Lake Okeechobee



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Coopertown, FL

Native?
Invasive?
Alligators
Crocodiles
Pythons

Southwest Watersheds

Beaver Dams

Gabions

20

Grand Canyon

Historic Flood Regime
vs.
Kanab Amber Snail (ESA)

Goals in conflict?

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EPA SuperFund Sites in Arizona

http://www.epa.gov/region09/cleanup/arizona.html

TIA:

http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/vwsoalphabetic/Tucson+International+Airport+Area?OpenDocument

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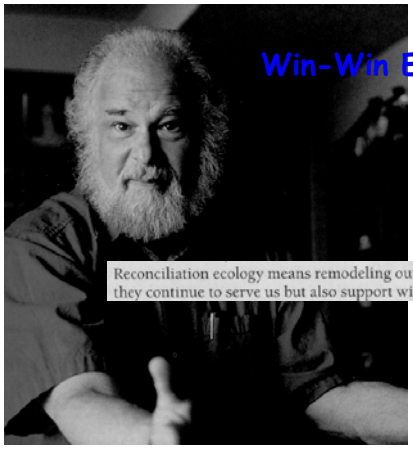

Win-Win Ecology

Reconciliation ecology means remodeling our habitats so that they continue to serve us but also support wild species.

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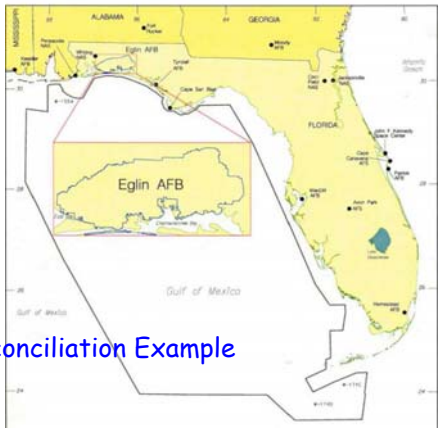

Reconciliation Example

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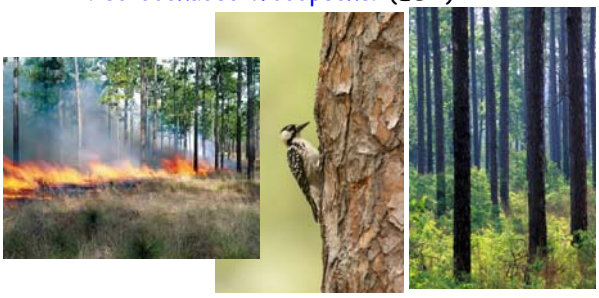
Eglin Air Force Base

Longleaf Pine (90 million → 5k acres)
Fire (germination, reduce competition)
Red-Cockaded Woodpecker (ESA)



Monitoring

- What to monitor to measure success of restoration or management efforts?

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