

Lecture 24, 09 Nov 2006

Conservation Biology
ECOL 406R/506R
University of Arizona
Fall 2006

Kevin Bonine
Kathy Gerst



Figure 11.104 The same African elephant serves as an ecological proxy for African savanna ecosystems (left) as an effort to restore megafauna habitats to North American Borealine for food bank.

Donlan et al. 2006

Conservation in Practice

Jon and Laura will speak for 10 minutes ...

Lab this week:

none, meet 1230 s-side BSE 328 on 17 Nov

(see website for lab readings)

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Thank
Don Falk
and
other speakers

Housekeeping, 09 November 2006

Short oral presentations:
09 Nov - Jon and Laura
14 Nov - Dan and Lane
28 Nov - Amanda and Fred

Upcoming Readings

Today: Conservation Practices
(Pleistocene Rewilding, Donlan-related, Ch 8 and 10)
Tues 14 Nov: Economics and Sustainable Development
Thurs 16 Nov: Mike Rosenzweig, Win-Win Ecology
Tues 21 Nov: Conservation Biology Professional Panel
Thurs 23 Nov: Thanksgiving

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PUBLICITY PAMPHLET

Issued by
Janice K. Brewer
Arizona Secretary of State



Ballot Propositions
&
Judicial
Performance
Review



www.azsos.gov
1-877-THE VOTE

General Election

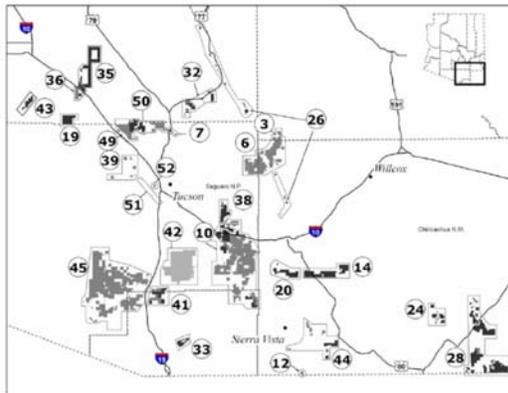
Proposition 103 Proposed amendment to the Arizona Constitution by the legislature relating to English as the official language
Ballot Format

Proposition 105 Proposed amendment to the Arizona Constitution by the legislature relating to state trust land
Ballot Format

Proposition 106 Proposed amendment to the Arizona Constitution by the initiative relating to state trust land
Ballot Format

Proposition 207 Proposed by initiative petition relating to eminent domain
Ballot Format

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PROPOSITION 207 Arizona Planning Association

What is Proposition 207?

Regulatory Takings- When a government deprives a person of the use of property by the application of regulations without compensating the owner.

Eminent Domain- Fifth Amendment allows for the taking of private property for a public use so long as just compensation is paid.

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Eminent Domain Effects

Property can only be physically taken for

- Government projects
- Literal safety issues

Courts will no longer be able to weigh public benefits against private controls in determining a public use in slum and blight areas.

Proposition 207 forces Arizonans to endure blight conditions and will limit future economic development opportunities.

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Regulatory Takings Effects

“if the existing rights to use, divide, sell or possess property are reduced by the enactment or applicability of any land use law and such action reduces the fair market value of the property the owner is entitled to just compensation from this state or political subdivision that enacted the land use law”

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Community Impacts

- Freeze development standards;
- Regulation becomes a one-way ratchet where taxpayers can decrease regulations but can never increase regulations without paying;
- Limit local control over development approvals;

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Community Impacts

ELIMINATE/RESTRICT-

- Modifications and updates to General Plans;
- Future land use protections for military installations;
- Preservation of historic buildings;
- Neighborhood-developed area plans;
- Building design standards; and
- Modification to other regulations that impact land use such as water, sewer, drainage or transportation.
- Enactment of future property maintenance requirements.

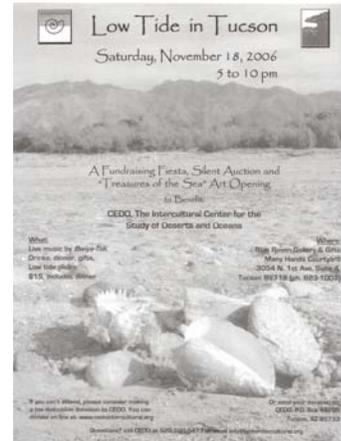
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Community Impacts

Negative impacts:

- Cost taxpayers millions in potential takings claims and litigation;
- Hurt the economy;
- Remove funding for other government services (such as Police and Fire);
- Eliminate an important economic development tool;
- Force Arizona's to endure blight conditions;
- Limits local control over land use decisions;
- Create a new regulatory bureaucracy.

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Global Climate Change Lecture Series

All lectures will take place at UA Centennial Hall.

All lectures begin at 7pm and are free to the public. Call 520.621.4090 for more information.

- Tuesday, October 17
Global Climate Change: The Evidence
Malcolm Hughes, Professor of Dendrochronology
- Tuesday, October 24
Global Climate Change: What's Ahead
Jonathan Overpeck, Director of the Institute for the Study of Planet Earth and Professor of Geosciences
- Tuesday, October 31
Global Climate Change: The Role of Living Things
Travis Huxman, Assistant Professor of Ecology and Evolutionary Biology
- Tuesday, November 7
Global Climate Change: Ocean Impacts and Feedbacks
Julia Cole, Associate Professor of Geosciences
- Tuesday, November 14
Global Climate Change: Disease and Society
Andrew Comrie, Dean of the Graduate College and Professor of Geography and Regional Development
- Tuesday, November 21
Global Climate Change: Could Geoengineering Reverse It?
Roger Angel, Regents' Professor of Astronomy
- Tuesday, November 28
Global Climate Change: Designing Policy Responses
Paul Portney, Dean of the Eller College of Management and Professor of Economics

<http://cos.arizona.edu/climate/>

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Barely Extinct Mammals of the SW

- If you go to Southern Africa you will find many habitats like South Western US and Mexico:
- Deserts, grasslands, woodlands, tropical dry forests with many species of plants that look similar to ours.
- But you will also see elephants, lions, rhinos, zebras, and many deer and antelope.



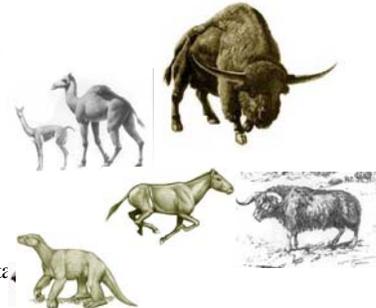
Barely Extinct Mammals of the SW

- North America was like that until only 12,000 years ago.
- Our pronghorns probably run so fast because they evolved alongside the American Cheetah.
- Horses and camels evolved in America before moving to the old world.
- We got gypped (by our Clovis hunter predecessors)!



Barely Extinct Mammals of the SW

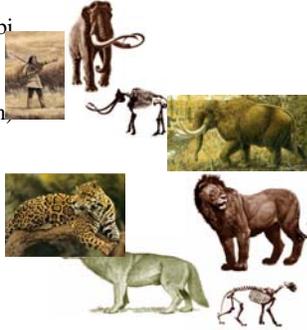
- Bison latifrons (longhorn bison)
- Camelops
- Hemiauchenia
- Horse
- Euceratherium (shrub ox)
- Nothrotheriops shastensis (Shastean ground sloth)
- Tapirus (tapir)



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Barely Extinct Mammals of the SW

- *Mammuthus columbi* (Mammoth)
- *Mammut* (Mastodon)
- *Panthera* (jaguar)
- *Panthera leo atrox* (American lion)
- *Canis dirus* (dire wolf)



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(Pleistocene) Re-wilding of North America

Donlan et al. 2005, Nature, 436:913-914.

1. What happened about 13k yrs ago in N. America?
2. Are there really no apparent costs to restoring Bolson's tortoise?
3. How do you predict African cheetahs and US mountain lions would interact?
4. Is this paper about "playing God"?
Are we a natural force in the evolution of life on this planet?

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Re-wilding of North America

- Start with non-threatening herbivores:
- The 50-kg Bolson tortoise (*Gopherus flavomarginatus*) – still in Mexico
- Feral horses (*Equus caballus*) and asses (*E. asinus*), critically endangered Asian asses (*E. hemionus*) and Przewalski's horse (*E. przewalskii*).
- Bactrian camels (*Camelus bactrianus*), now on the verge of extinction in the Gobi desert.



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Re-wilding of North America

- Then bring in the big boys on private property:
- small numbers of African cheetahs (*Acinonyx jubatus*), Asian (*Elephas maximus*) and African (*Loxodonta africana*) elephants, and lions (*Panthera leo*).
- Eventually create 'ecological history parks', covering vast areas of economically depressed parts of the Great Plains.
- Perimeter fencing would limit the movements of otherwise free-roaming ungulates, elephants and large carnivores.
- (like parks in Africa)

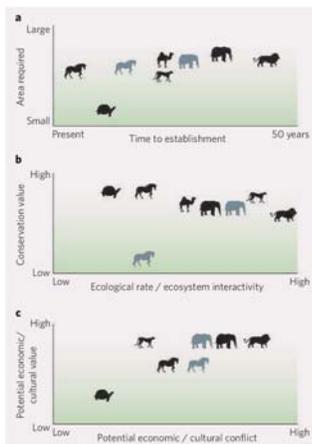


Figure 1 Pleistocene re-wilding in North America. Symbols represent horses (*Equus caballus* and *E. asinus* in black; *E. przewalskii* and *E. hemionus* in grey), Bolson tortoises, camels, cheetahs, Asian (grey) and African (black) elephants, and lions. **a**, The likely timescale and area required to restore proxies for extinct large vertebrates. **b**, Conservation value and ecological role (interactivity with other species) on the landscape. **c**, Potential economic/cultural value versus potential conflict.

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Pleistocene Rewilding: An Optimistic Agenda for Twenty-First Century Conservation

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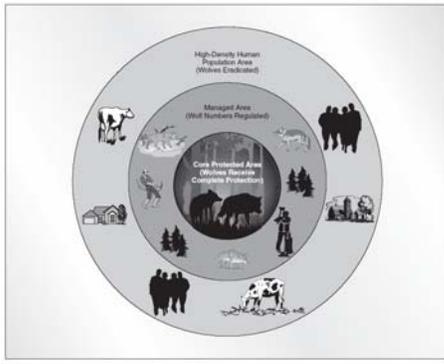
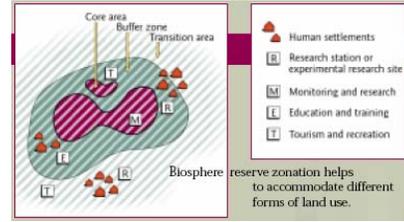


Figure 10.10
 "Zonation management" for reserves or other large, multiple purposes. In a core protected area with low human densities and minimal human impacts, reserves receive complete protection. In a surrounding area (management zone), wild numbers are regulated and individual reserves that kill livestock or pose are destroyed. In surrounding areas of high human population densities and impacts, reserves are killed if they enter the area.
 Based on a concept described by Moth (1995).
 Van Dyke 2003



reserve zonation helps to accommodate different forms of land use.

Biosphere reserves (core, buffer, transition)

- Research and Monitoring
- Conservation
- Local Development



Miller, 2003
 Chapter 7

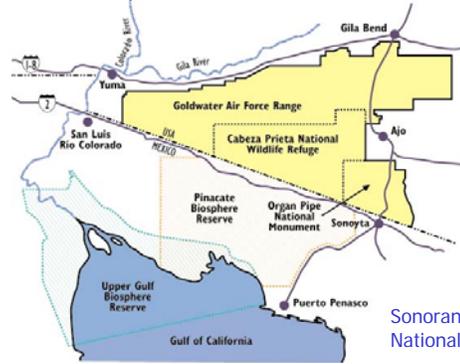
The World Network of Biosphere Reserves

includes more than 400 sites in 94 countries. It promotes North-South and South-South partnerships and represents a unique tool for international co-operation, through sharing of knowledge, exchanges of experiences and promotion of best practices. Co-operative activities of scientific research, global monitoring and training of specialists are promoted.

Where
 Why?



- Organ Pipe Cactus National Monument
- Pinacate Biosphere Reserve
- Gulf of California Biosphere Reserve



Sonoran Desert National Park?

- Organ Pipe Cactus National Monument
- Pinacate Biosphere Reserve
- Gulf of California Biosphere Reserve



Let us know what you need:

- How much table space?
- Space on a poster display board?
- TV? VCR? DVD player? Slide projector?

Other things we haven't thought of?

Exam Two...

Mean: 76.9

Median: 77

Minimum: 42.5

Maximum: 93.5

