Animal Conservation

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2009 Animal Conservation Student Poster Award

in partnership with the Society for Conservation Biology

The annual *Animal Conservation* Student Poster Award was presented at the Society for Conservation Biology meeting in Beijing, China, in July 2009

The 2009 winners are:

FIRST PRIZE

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Reversal of Desertification is Associated with a Loss of Islands of Fertility and Changes Physical and Chemical Properties in the Soil

Abstract
Conceptual models of desertification predict desertified shrublands are in a stable state, and grass recovery is unlikely. Positive feedback loops involving fertile islands under shrub canopies or insufficient water infiltration rates have been hypothesized to prevent the return of perennial grasses to desertified sites. However, current models cannot account for recent reports of reversals of desertification following long-term livestock removal. We analyzed soil nutrient concentrations and water infiltration rates at a desertified site where native perennial grasses are recovering inside a 50-year livestock exclosure. Soil nutrient levels and water infiltration were elevated inside the fence and fertile islands were not detected. We postulate that, in the absence of livestock, there is a slow release from compaction that results in an increase in water infiltration and a concomitant decrease in erosion, which promotes nutrient accumulation in the soil. The increased water infiltration and soil nutrient levels eventually create an environment conducive to perennial grass re-establishment. Our model unifies previous hypotheses, accounts for the timescale of reversal of desertification and thus more comprehensively describes the dynamics of vegetation in arid systems. Our work suggests that given sufficient time and removal of livestock, soil properties at desertified sites can improve sufficiently to support the re-establishment of perennial grasses.

WILEY-BLACKWELL

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SECOND PRIZE

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Distinct Evolutionary Lineages in the South American fur seal, Arctocephalus australis: Insights for its Systematics and Conservation

Abstract
South American fur seals, *Arctocephalus australis*, occur along the Atlantic and Pacific coasts of South America, but despite their broad distribution, their systematics remains unsolved. Three subspecies have been suggested: *A. australis galapagoensis* for the Galapagos Islands, *A. australis australis* for the Falkland Islands, and *A. australis gracilis* for the rest of South America, however, in 1971 *A. galapagoensis* was recognized as a full species. Here we report the analysis of 15 skull measurements (traditional morphometrics), 52 anatomical landmarks digitized on 754 skull images (geometric morphometrics) and 111 sequences of mitochondrial DNA (control region and cytochrome b) in eight populations of *A. australis*. Significant differences were observed between the Pacific and Atlantic populations, suggesting at least two distinct evolutionary lineages. The populations from Peru and northern Chile were highly distinct from the remaining areas, possibly comprising a separate species. Regardless of the resolution of taxonomic issues, important implications for conservation can be raised, especially given that this Pacific evolutionary unit has been listed since 1999 as endangered for the entire Peruvian coast. Financial support: FAPESP 2007/58728-9