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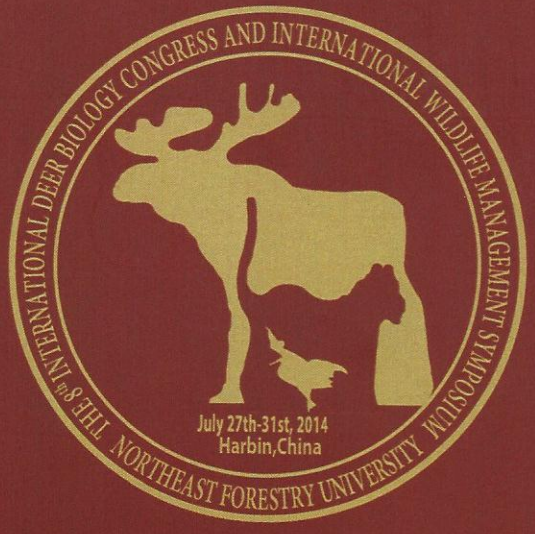

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Key words: conservation, management, NGO, protected areas, umbrella species

D11 Soil selenium levels corroborate direct evidence of selenium deficiency in endangered Patagonian huemul deer (*Hippocamelusbisulcus*)

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The lack of recovery in most subpopulations of endangered huemul deer (*Hippocamelusbisulcus*) may relate to the marginal mineral nutrition of currently inhabited areas. Mineral nutrition is implicated by deficient antler development and osteopathology in at least 57% of adult huemul deer. At the same time, responsive Se deficiency in livestock has been reported in Southern Chile, including nutritional muscular dystrophy where most forages are Se deficient, and >60% of cattle production is developed on deficient pastures. Animal intake of Se depends on Se uptake by their forage plants. Uptake by plants depends on both the form and total concentration of Se in soil. In areas used for agriculture and livestock, huemul subpopulations generally subsist only at higher elevations, which generally provide decreased amounts of Se. Therefore, we measured Se concentrations in soils from high-elevation sites commonly used by extant huemul subpopulations. Using a microwave-assisted acid digestion method, total Se in samples and standards was measured in single-element runs by ICP-MS which has a limit of quantification 0.0125 mg/kg and instrumental detection limit of about 0.005 mg/kg. It was found that high-elevation soils had deficient Se levels averaging 0.19 mg/kg (SE 0.02, n=12), whereas a valley bottom sample had 0.80 mg/kg

of Se. These low Se levels in high-elevation soils are consistent with previous blood analysis revealing that 73% of huemul were deficient in Se (64% severe deficiency). Research in Wyoming has previously identified a similar relationship between deficient high-elevation soil Se levels and the occurrence of apparent nutritional muscular dystrophy in bighorn sheep lambs. The results presented here explain the low blood Se levels reported in huemul, possibly the overt consequences on bone metabolism, and the poor herd performance.

Key words: trace mineral deficiency, conservation, management

D58 Regulation of Estrogen Receptors on seasonal reproduction in the striped hamster (*Cricetulus barabensis*)

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The estrogen receptor (ESR) plays an important role in the regulation of animal seasonal reproduction by regulating the activity of the hypothalamic-pituitary-gonad axis. Two subtypes of the estrogen receptor (α and β) exist, and the acting mechanism of the estrogen receptors in seasonal reproduction is unclear. The striped hamster is a typical seasonal reproduction animal,and it has higher reproductive activities in spring (March-May) and autumn (September-November), lower reproductive activity in summer (June- August), and no reproductive activity in winter (December to January). Differential expression of *ESRα* and *ESRβ* in the striped hamster during four seasons was examined to understand the mechanism of ESR action on the seasonal reproduction. In this study, cDNA sequences of *ESRα* and *ESRβ* were cloned by the RT-PCR method, [*ESRα* was 1017 bp (KC345615) and *ESRβ* was 896 bp (KF267446)], and differential expression of estrogen receptors were examined by real-time PCR technology for the striped hamster during four seasons. The results indicate that significantly higher expression levels of *ESR* exists in the hypothalamus of the female striped hamster during the non-breeding season than during the breeding season ($P<0.05$), and no significant difference exists between the breeding and non-breeding seasonfor male individuals