

WHAT'S NEW IN THE LITERATURE

Monitoring reproductive steroids in feces of Arabian oryx: towards a non-invasive method to predict reproductive status in the wild. Ostrowski, S.; Blainvillain, C.; Mésochina, P.; Ismail, K.; Schwarzenberger, F. *Wildlife Society Bulletin*. 2005, 33, 3: 965-973.



Arabian oryx ©D O'Donovan

We measured metabolites of progesterone (progestins) in faecal samples collected from captive Arabian oryx (*Oryx leucoryx*) females in postpartum (n=8), nonpregnant (n=9), and pregnant (n=8) reproductive stages between 1996 and 1998. We analysed progestins using enzyme-immunoassays for pregnanediol and 20-oxo-pregnanones, respectively. Progestin concentrations were elevated for 3 days after parturition and then decreased to basal anoestrous concentrations. Ovarian cyclicity resumed 25 plus or minus 2.4 days after parturition in 5 of the 8 females monitored. In nonpregnant females, excretion of faecal progestins followed a cyclic pattern increasing 6- to 12-fold from the follicular to the luteal phase. Faecal progestin concentrations allowed discrimination between pregnant and nonpregnant females after 3 months of gestation ($P < 0.01$), mean concentration of the tested hormone metabolites being at least 3 times higher during mid and later stages of gestation (>3 months) than during early pregnancy (0-3 months). These data were subsequently used to set criteria for designation of a cow as pregnant in 55 free-ranging Arabian oryx in the reserve of Mahazat as-Sayd, Saudi Arabia sampled in 1998-1999 and 2003. The proportion of pregnant and nonpregnant oryx correctly identified by the test was 81% and 83%, respectively, when using both progestin assays. Despite a limited sample size, our results provide evidence that faecal progestin analysis is a reliable non-invasive method to determine the reproductive status of captive Arabian oryx and that it also can provide reasonably accurate physiological indices of pregnancy status in free-ranging specimens

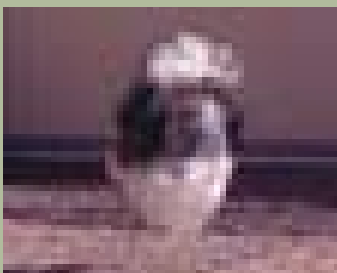
The effects of human visits on the use of a waterhole by endangered ungulates. Wakefield, S., Attum, O., *Journal of Arid Environments*, 2006, 65, 4: 668-672.



Mountain gazelle ©D. O'Donovan

We report the impacts of human visits at a waterhole used by mountain gazelles, (*Gazella gazella*), and Nubian ibex, (*Capra ibex nubiana*), in the Ibex Reserve of Saudi Arabia. Our hypothesis was that the species that normally used the waterhole during the day, the typical period of human visits, would be negatively affected. The results did not support our hypothesis, as both the diurnal mountain gazelles and partly nocturnal Nubian ibex avoided the waterhole within 6 h after human visits. We found no significant difference of waterhole use by Nubian ibex and mountain gazelles within the period of 6-12 h or 12-24 h after human visits. Given the high conservation concern of these species and the rarity of waterholes, we suggest that human visits continue to be regulated by allowing visits on non-consecutive days to give the ungulates opportunities to drink, especially during the summer and droughts when heat stresses are higher, animals are less tolerant of water deprivation, and there are less alternative waterholes.

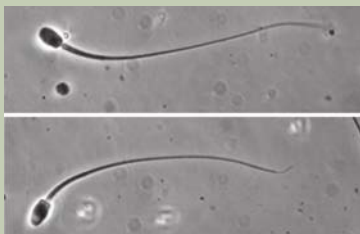
Assessment of Newcastle disease vaccination of houbara bustard breeders (*Chlamydotis undulata undulata*). Facon, C., Guerin, J.L., Lacroix, F., *Journal of Wildlife Diseases*. 2006, 41, 4: 768-774.



Displaying houbara bustard ©T. Bailey

The houbara bustard (*Chlamydotis undulata undulata*) is endangered in North Africa. Through a captive-breeding program established in Morocco by The Emirates Centre for Wildlife Propagation, wild populations are being supplemented with the release of captive-reared birds. Newcastle disease, which is caused by Newcastle disease virus (NDV; Avian paramyxovirus type 1), can infect houbara bustards and is a significant threat through contact with backyard poultry and possibly wild birds. Three vaccination schedules for Newcastle disease were evaluated by serologic monitoring to assess the efficiency and safety of various types of vaccines (live vs. inactivated), vaccine strains (Hitchner B1 and Clone 30), and administration routes (intranasal vs. injection). We evaluated antibody titres in 211 adult houbara bustards for 10 mo. Antibody titres to NDV in both sera and egg yolks were monitored by haemagglutination inhibition test. The inactivated vaccine provided a high, homogeneous, and durable serologic response in breeders; titres were higher than $\log_2 11$ after 4 wk and remained higher than $\log_2 7$ after 10 mo. The response to the two live vaccines was similar, and antibody titres did not exceed $\log_2 6$ at sero-conversion. Maternally derived antibodies were efficiently transmitted in vitellus, further confirming that offspring of females hyperimmunized with the inactivated vaccine received high titres of maternal antibodies.

Semen characteristics and sperm morphology in the Arabian leopard (*Panthera pardus nimr*) and how these vary with age and season. van Dorsser, F.J., Strick, J.A. *Reproduction, Fertility and Development*. 2005, 17, 7: 675-682.



Leopard sperm image normal morph © van Dorsser

The Arabian leopard is a critically endangered species. Since there are only an estimated 200 animals remaining in the wild, careful management of the captive population is necessary to minimise inbreeding. The objective of this study was to characterise sperm morphology and ejaculate quality in captive males. Semen was collected by electroejaculation from 8 adult captive male leopards (aged 2-16 years) during the summer and winter months, and semen parameters, including sperm morphology, were assessed. Two-year-old leopards showed lower total sperm counts per ejaculate than older animals and these counts declined at >8 years. Ejaculates collected during the hot summer showed significantly lower sperm concentrations, total sperm counts, sperm motility and viability and percentage of spermatozoa showing normal morphology than ejaculates collected in the cooler winter. The results showed that the male leopard attains sexual maturity between 2 and 3 years of age and exhibits good semen quality until 8 years. Collection of semen for artificial breeding or banking would best be carried out in the cooler winter months.