

# MARKING IN WILD SNOW LEOPARDS: A PRELIMINARY ASSESSMENT

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We characterized the types of marking shown by snow leopard as well as the attributes of marked sites and investigated marking site selectivity and spatial-temporal patterns of marking with respect to home range, habitat use, and the estrual cycle.

The snow leopard's marking repertoire includes scraping, deposition of feces, urine scenting of scrapes, scent-spraying of rocks, and claw-raking of tree trunks. Scraping was the most abundant (77%) type of marking observed. Data indicate that subadults and adults of both sexes mark extensively. Snow leopard displayed a high rate of marking and remarking of sites. Scrape-specific and site-oriented remarking was focused at conspicuous relic (traditionally used) sites and at fresher, more visible scrapes, indicating that much of the observed marking may be "overmarking," as individuals respond to one another.

Analysis of marking site selectivity suggested a strong preference for marking at prominent locations with an unobstructed view, in areas where terrain and topography are structurally diverse. Visits to sign transects by snow leopard and the likelihood that a leopard would mark remained relatively constant throughout the monitoring period. By contrast, the intensity of marking (amount of marks per visit) was significantly greater for the period corresponding to pre-estrus and estrus. A substantial portion of the seasonal and yearly differences in marking seemed to be related to increased marking intensity in response to estrus.

Density and pattern of sign reflected snow leopard patterns of density, home range, and habitat use. Sign density was positively associated with leopard density and sign concentration areas, which coincided with overlapping core-use areas. Significantly more sign was found along transects within core areas which were centered on permanent stream confluences. We suspect that the complex marking system displayed by snow leopards in the Langu Gorge enables them to minimize encounters, while sharing very limited areas.

