

Social Behavior and Reproductive Biology of Female Wolverines (*Gulo gulo*) in Captivity

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Abstract:

This study documents social behaviors of selected female wolverines in captivity to determine if there are observable changes in behavior associated with physiological changes in their reproductive cycles. Specifically, can a female wolverine's reproductive cycle be determined based on behavioral indicators other than copulation? In addition, will fecal steroid analysis provide the physiological support to the behavioral indicators?

The primary objective for the behavioral observations is to characterize (i.e. describe and quantify) social and reproductive behaviors of captive wolverines, a task that would be difficult, if not impossible, to accomplish in the field.

There are two objectives for the physiological measures. One is to provide a noninvasive measure of steroid hormone metabolism and ovarian activity for wolverines through feces analysis. This hormone-monitoring approach has been proven extremely useful for elucidating the hormonal regulatory mechanisms associated with the reproductive cycle, pregnancy, and parturition of intractable, stress-susceptible endangered felid and other species (Brown et al. 1994). One of the intents of this study is to establish the same type of protocol for wolverines which may be equally as intractable and stress-susceptible. The second objective is to provide a strong physiological correlate for the behavioral activities observed and to help pinpoint

behavioral indicators of hormonal changes related to reproduction.

Anticipated products from this study include an ethogram (catalog of behaviors), validated wolverine fecal assays for progesterone and estrogen, an analysis of documented behaviors associated with reproduction, and associated publications. This information may serve as baseline information for future comparisons between captive and wild animals.

Two consecutive years of data collection have been completed as of August 1997. A total of 215 hours of behavioral observations and 456 fecal collections were made on 5 female wolverines during this time frame. Breeding activity was documented for three of the five females during the first year of the study, and four of the females the second year. Two of the breeding females gave birth during the first year. Only one female gave birth during the second year of the study. Data analysis is currently underway.

References:

Brown, J.L., et al. 1994. Comparative Aspects of Steroid Hormone Metabolism and Ovarian Activity in Felids, Measured Noninvasively in Feces. *Biol. of Reproduction* 51:776-786.

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