Reproductive Endocrinology of Wolverines

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Abstract

Although of central importance to understand wolverine biology, our knowledge of basic reproductive patterns in this species is poor. At present, data are sparse and inconsistent, and the complex interactions between physiological processes and the social and ecological environment makes any studies of physiological mechanisms in wild wolverines very difficult. Captive animals could thus successfully be used to identify basic reproductive mechanisms and to develop more efficient tools for monitoring the physiological status of wild animals.

Non-invasive monitoring of hormone levels through metabolites in feces and urine is used today in a wide range of species (e.g., Schwarzenberger et al. 1996, Creel et al. 2002), and the potential to monitor hormone levels through metabolites in hair has recently been suggested (Koren et al. 2002). For elusive species like the wolverine, non-invasive techniques are advantageous as they do not require direct contact with the study animals. In this study, we propose to validate assays for non-invasive monitoring of reproductive and stress hormones through metabolites in wolverine feces. We will further use these techniques to investigate endocrine and behavioral correlates of reproductive failure in a small population of captive wolverine females.

Feces, behavioral data and reproductive data for 14 female wolverines have been collected during two study periods, June 1995 - July 1997, and January - May 2002, at a captive facility in Washington State. In addition, feces have been collected from three males at a captive facility in Washington State and from one male at Nordens Ark Zoo in Sweden during spring 2002. Laboratory analyses of the feces are currently being undertaken at Montana State University, with expected completion in early spring 2003.

Results will be presented in peer review publications, and part of the results will be incorporated in a PhD thesis on wolverine ecology at the Department of Zoology, Stockholm University. This is a continuation of a project previously described in Hall (1997).

References

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