

**Project Summary**  
**Rocky Mountains Cooperative Ecosystem Studies Unit**

<b>Project Title:</b> Evaluating the Abundance, Distribution, and Stress Hormones of Ungulates in Relation to Winter Human Use in the West-Central Portion of Yellowstone National Park
<b>Type of Project:</b> Research/biological sciences
<b>Funding Agency:</b> National Park Service
<b>Effective Dates:</b> June 15, 2003- March 30, 2004
<b>Funding Amount:</b> \$8,000
<b>Investigators and Agency Representative:</b> NPS KEY OFFICIAL: P.J. White, Yellowstone Center for Resources, POB 168, Yellowstone NP, Wyoming, 82190; (307) 344-2442, <a href="mailto:PJ.White@nps.gov">PJ.White@nps.gov</a> UNIVERSITY CONTACT: Robert Garrott, 310 Lewis Hall, Montana State University, Bozeman, MT 59717, (406) 994-2270, rgarrott@montana.edu
<b>Project Abstract:</b> The purpose of this cooperative agreement is to work with the University investigator to gain expertise and services to: 1) estimate the abundance of bison and elk in the west-central portion of the park at the onset and completion of each winter field season during the past five years; and 2) conduct assays of fecal glucocorticoid concentrations of elk feces collected from individual radiocollared elk throughout the winter of 2002-03. This project is related to winter monitoring for the effects of recreational activities.
<b>Outcomes with completion dates:</b> 1) Estimates of the abundance of elk in the west-central portion of the park at the onset and completion of each winter field season during 1998-99 through 2002-03. 2) Analyses of the abundance and distribution of bison from repeated ground censuses within the west-central portion of the park during the winters of 1998-99 through 2002-03. 3) Fecal glucocorticoid concentrations of elk feces collected from individual radiocollared elk throughout the winter of 2002-03.
<b>Keywords:</b> Yellowstone National Park, ungulates, winter human use, elk
<b><u>For Administrative use only:</u></b> <i>Date Annual Report Received:</i> <i>Date Final Report Received:</i> <i>Publications, etc. on file:</i>