YELLOWSTONE'S NORTHERN ELK HERD:

A CRITICAL EVALUATION OF THE "NATURAL REGULATION" PARADIGM.

by

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of

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At some point in an acknowledgement it is usually customary to thank your reviewers and to make a statement to the effect that any errors which remain are solely those of the author. Instead, I will close by citing a line from Hurlbert's (1984) acknowledgement "Any errors that remain are their responsibility and theirs alone," unless, of course, I failed to heed their good advice.

Charles E. Kay

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ABSTRACT

Yellowstone's Northern Elk Herd:

Critical Evaluation of the "Natural Regulation" Paradigm.

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Prior to 1968, the National Park Service contended that an unnaturally large population of elk had severely damaged Yellowstone Park's northern winter range, including aspen and willow communities. However, under "natural regulation" management adopted in the early 1970s the agency now believes that vegetation changes in the park are due to normal plant succession, climatic change, or fire suppression, not ungulates. The agency also believes that large numbers of elk (12,000-15,000) have wintered on the park's northern range for the last several thousand years. This study tested several of the major assumptions or predictions of the Park Service's "natural regulation" paradigm by collecting vegetational data, reviewing historical source materials, and analyzing archaeological reports.

The available evidence suggests that observed changes in Yellowstone's tall willow and aspen communities are due primarily to ungulate browsing, not other factors. The future of sexually reproducing willow and aspen communities on the park's northern range appears to be in jeopardy. Under current management, their extinction is only a matter of time. Moreover, entire plant and animal communities have been affected, not just aspen and willows. Historical accounts and archaeological data indicate that few elk inhabited Yellowstone prior to creation of that national park in 1872. These results do not support

the "natural regulation" paradigm. Prior to European influence, predation by Native Americans and carnivores limited elk, as well as other ungulate numbers throughout the Greater Yellowstone area.

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