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Title: Grizzly Emigration And Land Use: An Interdisciplinary Case Study Of The Greater Yellowstone Ecosystem

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ABSTRACT

The Greater Yellowstone Ecosystem (GYE) is the largest tract of wild land remaining in the lower 48 states. Its habitat, however, is being fragmented by private land development, roads, mining and oil gas extraction, and other forms of human activity. The flagship species in the GYE is the grizzly bear (*Ursus arctos horribilis*) which persists here at its southernmost North American latitude. This GYE subpopulation is believed to have been isolated from the Northern Continental Divide Ecosystem (NCDE) subpopulation for around a century. As a result, scientists have measured a loss of genetic diversity in GYE grizzly bears. Retaining or reestablishing usable habitat connectivity between the GYE, the NCDE and the Selway-Bitterroot Ecosystem would help mitigate this genetic loss. Using GIS analysis, some factors that appear to contribute to how far grizzly bears have emigrated from the GYE in a northward direction are identified: large centers of human population and one section of an Interstate Highway. Though already known to the most informed grizzly bear scientists and managers, additional related GIS insight includes the following: the GYE grizzly bear Primary Conservation Area contains many roads and mining claims/oil and gas leases which are not beneficial to the bear, newly created Roadless Areas also have these same resource extraction opportunities because of the enabling legislation, but Wilderness Areas have thwarted such activity in most cases. This research also has a land use policy analysis component which will not be addressed here.