

## **Examining the Relationship Between Injury and Dominance in The Alpha Female Wolves of Yellowstone National Park**

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The social dynamics of wolf packs have been heavily studied, and nowhere as extensively as in Yellowstone National Park (YNP) since the reintroduction of gray wolves (*Canis lupus*) in 1995. The objective of this study is to gather data on the impact of injury of alpha female wolves in Yellowstone, specifically the effect of injury on their dominant status. Injury is a serious threat to wild wolves in the park, who may sustain several injuries during their average lifespan of 5 years. Female wolves may only have a few litters of pups in their lifetime, and the alpha female is the primary breeder in a pack. There have been multiple documented cases of alpha females sustaining injuries and subsequently losing their status to another related female. We collected observational data on four established wolf packs in the Northern Range of YNP, focusing primarily on wolves 907F and 969F, two sisters who alternated as dominant females of the Junction Butte Pack from 2017 to 2019. We also analyzed observational data on wolves 870F and 970F, a second pair of sisters who alternated as dominant females of the same pack from 2012 to 2015. The results of this project will add to our understanding of the long-term impacts of injury in alpha females on pack dynamics. Understanding this issue is a key component of wolf conservation in the Greater Yellowstone Ecosystem.