**Wolf Predation on Elk Populations in Yellowstone National Park in Relation to Climate Change

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Climate change drove ecosystem change within Yellowstone National Park over the past five decades (Vucetich 2005). The wolf population within Yellowstone National Park grew due to warm weather patterns favoring wolf (*Canis lupus*) reproduction success rates. Elk (*Cervus canadensis nelson*) interactions with wolves became more frequent leading to increased elk mortality. As elk are a keystone species of the Yellowstone ecosystem, increased mortality led to holistic ecosystem change. Elk calf survival rates fell 35% since the introduction of wolves to Yellowstone National Park (Christianson 2014). Cow elk mortality increased by 37% in areas of the park known to have wolf pack dens near elk herds. Researchers expected population decreases in elk herds after wolf reintroduction, however the rate of decline of the Yellowstone elk population outpaced predictions.This research hypothesized that wolf predation on elk within Yellowstone National Park increased due to climate change causing wolf population growth. While research has addressed that wolf population growth occurred due to warming weather and elk population declines occurred due to wolf reintroduction within Yellowstone National Park, no research has addressed the relationship linking climate change to elk mortality from wolf predation.