Effect of wolf predation on elk population in yellow stone park research paper ex...

Sociology, Population

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Abstract

According to research by federal scientists, the number of a major elk herd that migrates from Yellowstone National Park has decreased by 10 percent from 2011. At present, there are about 4100 elks in number of elks in the herd. The population of the herd was at the peak in the year 1992. Drop in population is due to predator attacks, Extreme winter seasons and hunters. The major effect in the reduction of elk population is due to the wolves, which are re-introduced in 1995-96. At the end of 2011, the wolf population was counted to be of 11 packs and 6 stray wolves in Yellowstone national park. This effect of wolf restoration on elk population from a single study is directed to encourage collaborations in predator – prey studies in the future.

Keywords: elk, endangered species, predator - prey, wolves, Yellowstone

Elk Population In Yellowstone Park

Introduction

There are numerous authors who investigate effects of wolves on elk population in Yellowstone Park, but the real effects of wolf predation remain unclear. An analysis of available data of 5 years contributes to research on wolf – elk dynamics. In the winter of 1999, a pack was established in Yellowstone. But with low survival of adult wolves, the pack did not exceed 5. Effect of wolf predation on elk differs a lot on small spatial scales. It depends on other factors too, which are complex in nature.

Hypothesis

The null hypothesis is: Introduction of wolves in Yellowstone park has not affected the elk population. The elk population is not affected at all with the introduction of a pack of wolves in the park. (Dickson, 2002)

Methodology

Yellowstone National Park is the main consideration for doing research on declined elk population and the effects of wolves on the elk population. Boundary of park is completely isolated. This boundary prevents the animals from straying outside. Fencing also avoids lack of predators from outside. In this boundary, the researcher performs age, sex and assessment for each elk. Collars are put on elks to determine their activities at a closer level. These 500 elks are then released again to habituate to their new surroundings.

Results

The total mortality of these 500 elks came to be 41 %. Out of these, 7 mortalities occurred in holding pens while putting collars inside the pen. Wolf predation is high for the first 200 releases. Sixty-five percent of these elks reproduced. There were 130 calves. Elk remains were present in stomachs of 4 out of 6 wolves that are trapped in the hunters. There is only one calf per 35 elks. Calves accompany only 30 % of elks. This percentage dropped to 23 % in the next 6 months. In January 2011, only 29 calves were present 75 elks. Poachers hunted down 25 of the elks released.

Conclusion

Elk population shows variable dynamics. Elk population is non migratory and remains to the valley bottom all year around. They do very short seasonal movements along rivers to higher elevated lands. Nutritional conditions in Yellowstone Park are better in winters for elks. Due to illegal hunting, a number of elks were shot down and causing damage to elk population. Hunters also shot 6 non-collared elks in this time period. Considering this situation, efforts are being adapted to increase hunter awareness of elks in Yellowstone Park. Our null hypothesis proves incorrect. Wolves affect the elk population to substantial levels. (Miller 2003)

This research also shows that 85% of all wolves preferred to kill elks. This ratio gives an average of 14 elks per wolf. The kill rates become higher at higher elevations. Elk and wolf dynamics are highly situational. Prior to wolf introduction, there is stability in the elk population in Yellowstone Park. Once, the wolves adapted to their new environment, a combination of

movements and robust hunting enabled them to grow in population. With the presence of wolves, the elk population is constantly under predation pressure. Wolves have influenced the elk population at a substantial level. High wolf densities and a greater number of wolf packs in Yellowstone Park are the primary factors that have a strong impact on the present elk population in decline of the elk population in Yellowstone Park. The challenge for the scientific community is now to continue with existing elk – wolf dynamics and establish a more controlled predator- prey situation to change the continuously declining elk population as now it is evident that wolves substantially influence the elk population.

References

Alan, D. L (1962). Our Wildlife Legacy. Funk and Waganals, Newyork, USA

Bangs, E. E. (1996). Reintroducing the Grey Wolf To Central Idaho and Yellowtsone Park, Wildlife Society Bulletin, 216-226.

Beschta, R. L. (2003). Cottonwoods Elk And Wolves in he Lamar Valley of Yellowstone National Park, Ecological Applications, 816-826.

Dickson, T. (2002). Will Wolves Wipe Out Montana’s Elk? Montana Outdoors 33: 8-15

Miller, M. L. (2003). The Wolf Returns to Idaho. Bugle. 22: 79-83