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**Gray Wolves in Washington: Possible Habitat and Corridors for Movement**

By: Joey Bisig, UWT GIS Certificate Program

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**Introduction**

Increasing the Gray Wolf (*Canis lupus*) population in Washington state plays two important roles. First, they are an important part of many ecosystems as they are a keystone species. This means that they are a top predator and their absence has reverberating effects on the rest of the ecosystem. As seen at Yellowstone State Park in Wyoming, elk populations ran rampant for many years and reached their peak of roughly 25,000 individuals in 1988 (Kaufman et al. 2008). The issue lies in the grazing that these elk partake as a perfect “laboratory” to monitor the effects wolves have on elk populations and on vegetation recovery levels.

Second, Gray Wolves have been on the Washington Endangered Species list since 1967. This is attributed to the mass hunting and elimination of these animals that were largely perceived as nothing more than pests, mostly by owners of livestock. Washington State, as of December 2011, currently has a Gray Wolf population of twenty seven individuals and only three active breeding pairs (WDFW 2011 & Figure 1). The purpose of this study is to increase the Gray Wolf population and help curb ungulate populations (Larsen 2006). The park acts as a perfect "laboratory" to monitor the effects wolves have on elk populations and on vegetation recovery levels.

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**Anthropocentric Raster**

**Quality of Protected Land**

**Corridor One**

**Corridor Two**

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**Current Gray Wolf Packs**

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**Objectives**

1. To use GIS to show habitat areas in Washington that are able to support Gray Wolves.
2. To find the associated cost of movement for the wolves depending on positive and negative habitat classifications.
3. To use GIS to discover corridors in which the wolves will be able to move from one quality habitat to another.

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**Gap Analysis**

**Total Cost Distance for Gray Wolves**

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**Total Cost Distance for Gray Wolves**

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**Results & Discussion**

The results of this project show that there could be many areas in Washington that can function as Gray Wolf habitat, especially land that is already protected (Figure 4). Much of the Cascades, barring no steep slopes or elevations, looks to be suitable for a population of the wolves as well as areas near the border of Idaho. This also includes much of the areas in the North Cascades which are already protected and gives hope for these animals to thrive in a protected environment. The corridors also show, with some resistance in high cost areas and the Columbia River, the ability to move to new habitats (Figure 6).

One area that I find sticks out in my project is the effect that highways have on the movement of the wolves. They can act as a barrier and run through many of the areas that I have deemed suitable habitat. To combat this Green Tunnels can be installed to give animals the ability to travel under these roadways, rather than over a dangerous highway.

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**References**

