

The Variables Associated with Livestock and
Their Relationship with Navajo Nation Grazing Policies Research

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Abstract

The purpose of this experiment is to determine if the grazing policies on the Navajo Nation are still needed in today's society. Overgrazing is a reoccurring problem on the Reservation and various attempts have tried to resolve this issue. Data found in the research has been used to develop and modify an agent-based model simulation. This data includes facts about sheep, populations at critical points in time, and grass reproduction rates. The simulation replicates the research data and allows users to control the presence of grass, the growth rate of grass, and the amount of sheep. The purpose of the simulation itself is to run various trials under preset conditions and gather information in a virtual environment. Since it is improbable to observe sheep in real time, a computer simulation with incorporated data should provide accurate results. The data collected reveals a natural carrying capacity of the land to be 15% of the initial value of the sheep.

Somewhere deep in the desolate canyons in New Mexico and Arizona, a million bones lie unscathed and nearly forgotten. These remains are not the result of human genocide. The massacre of livestock is one solution for an overgrazing problem on the Navajo reservation. These actions eventually led to the creation of the current livestock permit system used on the Navajo Nation today. Overgrazing on the Navajo Nation was recognized in the 1930s by American environmentalists. Many attempts have been made to reduce the amount of livestock on the Reservation.

Like many domestic animals, the sheep was non-native to the America. America's first domestic sheep arrived over 400 years ago by the Spanish explorers and settlers. (Taylor) At this time, the Spanish conquistadors sought gold in the New World. Navajos obtained sheep through trades with the Spanish. Sheepherding became the livelihood of most Navajos and the sheep became an essential part of Navajo culture. The sheep were used for trading, food, teaching family values, income, and also signified success and wealth.

Navajos utilize sheep in many different ways. They butcher sheep in a manner that does not let anything to go to waste. Even the blood and stomach are used to make a delicacy called Blood Sausage. Besides obtaining food and nourishment from the churro, the sheep's pelt is also used in the creation of wool found in famous Navajo rugs. Wool is spun by the women of the Navajo and is either sold to trading posts as wool or dyed and used in creating rugs and rug dresses. The Navajos also used sheep to teach children important life values such as work ethic, responsibility, and self-esteem. Children were often the ones who interacted with the sheep the most and were given certain responsibilities.

Back in those times, sheepherders did not need to worry about landownership. There were no fences needed to keep someone from trespassing. Landownership is a completely western idea that was introduced to the Navajo. Navajos had no sense of landownership so the livestock were grazed on the open range with little to no limitations. With no parameters and open range grazing, the sheep population skyrocketed to over a million sheep on the Navajo Nation. The rapid growth of sheep was seen as a blessing to the Navajo people, but later on, Americans saw it as an abnormality. Free grazing led to an abundant sheep population, which in turn, led to overgrazing.

The minimum population of the churro came with the Navajo imprisonment at Bosque Redondo. Officials, who rounded up the Navajo tore up cornfields, burned peach orchards, killed horses, and sadly slaughtered thousands of sheep leaving them to rot. (What is a Churro?) Those who hid in the canyons would not have had enough time to gather their sheep and herd them to safety. After the imprisonment at Ft. Sumner, the Navajos had to restart their sheepherding livelihood. This was made possible through families sharing their herds and rapid growth of the sheep. Luckily, the Navajo Nations combination of climate, environment, and people, promotes the existence of sheep. The Navajo were such good weavers and shepherds that their mixed flocks grew to 574,821 sheep by 1930. (Taylor) Just prior to the Navajo War their sheep numbered between 250,000 and 500,000. (Cattle and Sheep Grazing)

Under U.S. government implementation, several reduction programs were created to reduce the amount of sheep a person could hold. Tragically the Navajo-Churro nearly became extinct during the past century through federal management policies during the 'Stock Reduction' era which was covered up for decades and unknown only to those who lived

through it. (What is a Churro?) One of the program, aimed at reducing sheep to 1000 per herd and charging a fee for each sheep over 1000. Since most Navajos did not have enough money to pay the fees, the government took the sheep. Whole flocks were called to various locations and exterminated by gun fire. (What is a Churro?) Eventually, this led to another program that may seem more humane. Goats and sheep taken from herders under this program were planned to be slaughtered, cooked, canned, and redistributed to reservation schools. Despite the idea and program, hauling the livestock was still a burden on implementers and they also turned to the mass killings of sheep in remote areas on the reservation. There was also an instance where the government gave back sheep to the Navajo as compensation and a few years later, took them away under another reduction program.

The Navajo Nation is the largest Native American reservation in The United States. In 1933, the Bureau of Indian Affairs, judging two-thirds of the Navajo range to have been destroyed by overgrazing, unilaterally instituted a stock reduction program on the Reservation which was greeted with little enthusiasm on the part of the Navajo. (Cattle and Sheep Grazing) Scientists hired by the U.S. government out that the Navajo Reservation only has grass enough for 560,000 sheep units of livestock. (Stock Reduction Program) They divided the area into 6 jurisdictions and each one had a set amount of sheep it was allowed: Northern, 20,000 head; Southern, 32,000 head; Eastern, 15,000 head; Western, 15,000 head; Hopi, 10,000 head; Leupp, 8,000 head. (Stock Reduction Program). These new policies required livestock owners to register as permit holders and are regulated by the Navajo Nation's agricultural committee. In essence, the program keeps track of all the livestock on the Navajo Nation and allows them to graze on predetermined pieces of land. On the Navajo Nation, there are 511,784 sheep units of

permitted livestock which includes cattle, sheep, horses, goats, and llamas on the 17,061,885 acres of land. (The Navajo Nation and Extension Programs)

Grazing policies on the Navajo Nation have led to family disputes, land rights tension, and a limiting amount of livestock a person could have. The Navajo Nation does not have as many livestock owners in the past and their sheep are not as abundant.