Thad Box

Pondering 400 Years of Sheep and Drought

Our range management profession started during droughts, blizzards, and die-offs of cattle between 1880 and 1900. Severe overgrazing was associated with the rapid development of ranching following the Civil War, pacification of Native Americans, and the extension of railroads into the West. Records from the plains states, the Great Basin, and the Pacific Northwest indicate most ranges were overgrazed within three decades of the arrival of domestic livestock.

From the beginning, we have dealt with emergencies. This caused us to concentrate on short-term causes and effects. Studies of evolutionary changes in communities were rare. State and transition ecology changed some of our thinking about land management. But stories of that 19th-century rapid decline in range condition continue to haunt us. Antigrazing groups use the documented devastation to demand livestock be removed from public land.

We defend the biological basis for grazing by explaining plant and animal interaction. Vegetation on rangeland evolved with grazing. Unquestionably, diets, metabolism, and behavioral differences between species affect the way vegetation responds to grazing. Using biological science, we developed an understanding of effects on plants and soil from short-term grazing. We have done less with cultural and historical evaluation of long-term, free-ranging livestock on community evolution.

The people who brought livestock to the West in the 1860s came from a cropping culture in humid areas east of the 100th meridian. Their cattle were milk stock and draft oxen raised under farm conditions. Sheep from small flocks produced wool for clothing. Pure livestock farms, if they existed, were stud farms for blooded animals. When big ranches started in the west, it was a new (for them) experience.

The Spanish areas in America had centuries of continuous range livestock use. It was those areas that provided reservoirs of domestic animals to quickly populate western US ranges following the Civil War. The best publicized of these are cattle from Texas. Spanish missionaries brought cattle with them. There were few markets. Feral herds developed and hunters filled ships with hides and tallow along the Texas coast.

By the time the western ranges opened, south Texas had been grazed by “wild” cattle for 300 yr. Andy Adams’ *Log of a Cowboy* gave an eye-witness account of trail drives north. And Larry McMurtry’s *Lonesome Dove*, a fictional account of an Adams-like trailing of cattle from Texas to Montana, is well known to most Americans.

But the oldest, continuously used, most authentic range livestock area in the United States is the middle and upper Rio Grande basin in New Mexico. The country around Albuquerque, where the Society for Range Management meets next year, has been range for domestic animals for over 400 yr.

Spanish explorers brought livestock as they searched for gold in the mid-1500s. Some animals, especially horses or sheep, might have wandered away or were stolen. Although some historians suggest the Navajo and Hopi had sheep prior to the arrival of settlers, I found no documented numbers of presettlement livestock other than speculation about horses.

The early livestock business, sheep raising, has been documented in two scholarly books: John O. Baxter, *Las Carneradas—Sheep Trade in New Mexico 1700–1860*, and Susan Calafate Boyle, *Los Capitalistas: Hispano Merchants and the Santa Fe Trade*. In addition, numerous popular books, lawsuit transcripts, military logs, and church records testify to thriving range livestock populations in New Mexico long before the development of ranching in the United States.

Juan de Onate established the first settlement in northern New Mexico in 1598. He brought 4,000 sheep, 1,000 cattle, 1,000 goats, and 150 mares and colts with him. Other settlers brought more livestock. As missions were established, priests started livestock operations. Four hundred years ago settlers claimed land in the Albuquerque area. As early as 1630 ranges were overgrazed. Twenty or more estancias were operating in the vicinity of Albuquerque by 1660. Councils petitioned for more land and restriction of Indian livestock. As with modern livestock introductions, some ranges were overstocked within 30 yr of Onate's arrival.

The first ranching era in New Mexico was interrupted by the Pueblo Revolt of 1680. After Spanish reconquest, sheep were reintroduced. By the early 1700s these sheep, and possibly some prerevolt Indian sheep, made up substantial flocks.

Land area for Spanish range livestock was relatively small, essentially the middle and upper Rio Grande basins. It extended from a point some 20 miles north of present day Socorro north to the San Luis Valley in Colorado. It was enclosed by hostile tribes: Navajos on the west, Apaches in the South, and Comanches to the east. Exact area grazed and livestock numbers are debated. Extension to the east and west fluctuated according to varying relationships with Navajos and Comanches through the centuries. The southern boundary was stable, enforced by hostile Apaches. Flocks could not go south of La Joya de Servilleta without military escort.

From 1700 to 1846 the main exports from New Mexico were wool and carneradas (wethers over 2 yr of age) sent to Chihuahua. Baxter said peak numbers occurred around 1820. He thought reports of Governors Chavez and Baca owning one million and two million sheep, respectively, was romantic fantasy. But he said sheep numbers increased, overgrazing was reported, and exports of wethers remained high until New Mexico was conquered by the United States.

Both the number of sheep and the area grazed were influenced by management systems of transhumance (shifting nomadism) and partido (share cropping). Together they created a moving, landless form of animal agriculture, under the direction of hundreds of individual entrepreneurs whose

livelihood and future depended on healthy livestock grazing on unfenced ranges. Large nomadic flocks ranged widely looking for the best feed available.

A peer-reviewed paper by a geographer (W. Denevan, *Annals of American Geographers*, 1967), reported overgrazed rangelands in the early 1800s with as many as 500,000 head of sheep marketed in Chihuahua in a single year.

Other sources estimated between 13,000 (probably conservative) and 500,000 (likely exaggerated) wethers sent to market down the Chihuahua trail annually. Boyle's book includes examples of actual tax duty paid on exports (a small, but unknown fraction of total trade) that suggests a number much larger than the conservative estimate most range people have used.

Only male sheep 2 yr old or older could be sold for slaughter. Laws prohibited killing ewes. Sheep loss from Indian raids, predators, and malnutrition was high. Tree ring studies indicate several droughts as severe as the drought of the 1950s occurred between 1600 and today. By applying simple offtake models used in wildlife or livestock output in developing countries, estimates of early sheep populations suggest it is probable that northern New Mexico ranges were grazed barren many times during the last 400 yr.

Other papers in this issue of *Rangelands* discuss the vegetation in New Mexico prior to the ranching explosion in the 1860s. Then the grazing by domestic livestock south of La Joya de Servilleta was along the Chihuahua trail under protection of military escorts. Limited grazing in the eastern and western portions of northern New Mexico was by small bands of Navajo, Pueblo, or Comanche sheep or by partidarios who entered tribal areas by individual treaty. But the Rio Grande basin north of La Joya has been grazed, perhaps very heavily, for at least 350 yr.

Sheepmen lost their market in Chihuahua in 1846 with the Treaty of Guadalupe Hidalgo. They turned their flocks toward the gold fields in California. They provided stock and expertise for the nomadic western sheep industry. I recently browsed an 1850 history of Utah. Only 1 yr after the Mormons settled in the Salt Lake Valley, they were writing about the growing sheep industry that was made up of 95% Spanish sheep from New Mexico.

The annual meeting of the Society for Range Management will be in Albuquerque. On entering northern New Mexico, stop and look at land that makes up the earliest, most authentic rangeland in the United States. Imagine what it was like to be a partidario 300 yr ago. Ponder the Spanish influence on our food, music, saddles, boots, lariats, and spurs. Run what you see through your mental range ecology model. And discuss with your colleagues what we can learn from long-term, heavy grazing of arid rangelands.

Thad Box, thadbox@comcast.net