

**By Thad Box** 

## Challenge on Zebulon Pike's Trail

ast May, Jenny and I ate lunch in Salida, Colorado, near where Lt. Zebulon Pike spent Christmas in 1806. We followed the Arkansas River down to central Kansas, turned south through Oklahoma to north Texas, then west again through the Texas Panhandle. I wanted to retrace part of Pike's trail, visit sites where I worked years ago, and see for myself what the epicenter of the Dust Bowl looks like these days.

History of the southern Great Plains provides a key in understanding modern human beings' impact on land. Those grassy plains were first "discovered" by Europeans in 1540, almost 500 years ago. Francisco Vasquez de Coronado, while searching for riches in the Seven Cities of Cíbola, reached the Arkansas River in Kansas, crossed the plains of eastern New Mexico, and wandered through the Texas Panhandle. He found no gold. He reported healthy natives living in an agrarian, bison-based culture.

Almost 300 years later, in 1806, Gen. James Wilkinson dispatched Lt. Zebulon Pike to explore the southern portion of the Louisiana Purchase and chart the headwaters of the Arkansas and Red rivers. It was a military operation, not approved by the president. It had no Meriwether Lewis with scientific qualifications for describing the flora and fauna. In early 1807, Pike and some of his men were captured by Spanish soldiers near the present town of Alamosa, Colorado. They were taken to Mexico and escorted back across Texas to Louisiana.

Most of Pike's writings about lands and people were confiscated. But he was told of huge herds of bison and feral horses, treeless plains, timbered streams, sand dunes, and good hunting grounds. Little reliable information was available about the Great Plains until railroads were extended westward about 150 years ago.

After the Civil War hundreds of thousands of cattle were trailed from Mexico and Texas to railheads in Kansas and Nebraska. Bison and feral horses were extirpated. Native people were killed or relocated to reservations. Vast stands of "free grass" attracted cattleman entrepreneurs. The entire Great Plains area was soon overstocked. Blowing snow in the winter and shifting sand in the summer replaced herds of migrating bison that had once blocked train traffic.

By the 1880s most of the area was overgrazed. Cattle died by the thousands. Big cattle companies became bankrupt. Ranchers turned to the government for help. Botanists were sent from Washington. The first range experiment station was established in the Texas Panhandle. Land grant universities hired faculty to study plants and land. In the early 1900s plant ecology programs were established in Nebraska and Kansas. The idea for range management was born, scientists began gathering facts, and programs of study in land care developed.

Promoters hawked Homestead Acts and cheap railroad land. The plains filled with farmers. Only a small percentage of each farm was cultivated. The remainder provided pasturage for draft animals and milk cows. Soon tractors and mechanized agriculture made it possible to plow larger percentages of the land. A run of wet years in the 1920s caused more marginal lands to be plowed. Then a run of dry years created disaster. Winds built new sand dunes. Skies from the Rocky Mountains to Washington, DC, filled with blowing dust. Forced migration of farmers left the plains wounded and empty. Land damage and human suffering has been documented in government reports like the "The Western Range," scientific papers by ecologists like J. E. Weaver and F. W. Albertson, and John Steinbeck's classic novel *The Grapes of Wrath*. Ken Burn's recent video documentary *The Dust Bowl* has brought the story to millions of Americans. The story continues.

A few people began consolidating abandoned homesteads, drilling wells into an aquifer of fossil water, and irrigating crops. With cheap energy, shallow water, and government subsidies the farmers prospered. Farms became larger with fewer people on the land. Capital investment increased. As water levels dropped, more efficient irrigation systems developed. Recharge of the aquifer was slow to none.

As the cost of water increases, the irrigated area shrinks, profits decrease, and farming practices change. Farmers use fossil fuel to pump nonrechargable water to grow corn to make subsidized ethanol for fuel. They use residue to feed cattle. Even if technology develops new equipment and crops that can be grown with less water, the fossil aquifer will be drained.

Silent pumps, broken machines, and empty pens indicate a change is coming. The new "go back" land community will form from altered landscapes, disturbed soil, and plants that did not grow there 500 years ago. New vegetation will reflect the condition of the land and the climate when the water dries. Grasslands will not be what Coronado and Pike saw, what cattle barons exploited, what homesteaders plowed, or what Professor Albertson studied.

Will land care professions that rebuilt the Dust Bowl be up to the new challenge? Soil conservationists learned and taught how to stabilize soil and increase fertility. But terraces they created were leveled so pivot irrigation systems would work. Foresters learned the value of trees in banking snow, but windbreaks they planted stand as dead, naked snags. Wildlife managers learned to increase populations of prairie chickens, but bird habitat was planted to corn. Range managers learned which plants decreased, increased, or invaded with livestock grazing. But cattle are fed in pens were grass once grew.

Critics say that applied land care professions have failed and are no longer needed. We failed society when we allowed our efforts to go solely for improving an industry, saving a thing, or to maintaining the status quo. We became ineffective when we did basic research without relating it to the real world. We erred when we became enamored by a product and ignored the process. We lost credibility when we became advocates rather than going with our strengths. The strength of ecology-based professions is managing change. Scientific theories, basic research, economics, history, and policy are some of our tools. Our success is measured, not in things, but by the health of land as human needs change.

The present condition of the southern Great Plains suggests that applied ecologists, whatever we call ourselves, are much needed today. And that need is great the world over. There are tools available on the Internet that allow one to pick any point on the globe and see images taken by *Landsat* cameras from 1984 to 2012. Pick a point you think you know well. Zero in on a square mile around that point and look at an image taken every year for 25 years. Then expand you view to your county and repeat the process. Then to your state, your nation, your world.

Try to get your mind around what you saw. What I saw was increasing numbers of houses, decreasing amount of arable land, and a changing landscape. What is happening in our world clearly shows that applied ecologists are needed more than ever. We may have to redirect our efforts from cows and grass, fish in the creel and trees on the truck to keeping the land healthy whatever abuse humans give it. Today's range manager will use tools different from those of the trail boss, but the challenge remains.

I really like using Charles Russell's "Trail Boss" as our logo. The boss sits astride his old nag and looks out over the country he has to cross. He knows the dangers out there and mentally sorts through ways to get his party safely through them. He feels the responsibility of getting people, wagons, and livestock behind him to a destination different from anything they have known before. His boots, big hat, spurs, and sturdy mount were important tools in helping him get his job done. Let's not make his tools our symbol, but focus instead on our mission. We may use different tools, but we must manage change with courage as great as his.<sup>1</sup>

<sup>i</sup> Here is a handy tool I used to help me focus my thinking: http://world. time.com/timelapse/.

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