

THE EXPEDITION OF 1805

President Thomas Jefferson asked Lewis & Clark to keep detailed notes of their western exploration, with emphasis on natural history.

The President's request was accomplished.

By Jack Taylor

All of us who have traveled and studied the western rangelands share a common fantasy: to see the land the way the first explorers found it, before it had been "spoiled" by advancing settlement.

Popular perception is that North America was a veritable paradise before white contact, and that only with the introduction of domestic livestock and the advance of the agricultural frontier was the country changed to its current highly transformed and deteriorated condition. However, extensive study of early journals, letters, and other written documentation suggests otherwise.

There is substantial evidence in both the western United States and Canada that large native herds of grazing ungulates produced extensive areas of habitat degradation, and that in many cases the condition of habitats today is improved significantly from those first seen by white observers.

A good example is the experience of Meriwether Lewis and William Clark during their epic traverse of what is now Montana. During the spring and summer of 1805, these first journalists wrote perceptively and completely about their adventure. Their mentor and sponsor, President Thomas Jefferson, was very specific in his instructions. The party was to keep careful and detailed notes on a wide variety of topics, especially natural history.

Lewis and Clark's journal entries are specific enough that they can legitimately form the basis of modern interpretation, given our understanding of the ecological processes associated with grazing. The following quotations cover the travel from the mouth of the Yellowstone River to Lemhi Pass during the summer of 1805. Captain Lewis kept the more complete notes on plants and

Lewis' keen powers of observation and his sensitivity to ecological relationships.

On May 11, the party was in present Valley County. Lewis describes creeping juniper, and remarks that the soil has very low productive potential. The "pulpy-leaved thorn" (greasewood) is noted, and the wild hyssop is tall. Grizzlies are becoming more troublesome; Lewis' earlier opinion of them as a

minor threat is being revised with additional bear encounters.

By May 20th the explorers had passed the mouth of the Musselshell. Lewis notes "...immense numbers of prickly pear in the plains and on the hills."

During the winter of 1804-05 the Mandan Indians had told of well-timbered country interspersed with handsome plains and meadows. Lewis concludes that the party now has seen this country,

and it is "...nothing more than a few scattered scrub pine and dwarf cedars on the summits of some of the hills...nine tenths of the country being wholly destitute of timber of any kind, covered with a short grass, aromatic herbs and the prickly pear."

Lewis commented (18 June, during the difficult portage around the Great Falls of the Missouri) on the large numbers of grasshoppers, and concluded that "...they no doubt contribute much to keep the grass (as) low as we find it, which is not generally more than three inches. The grass is a narrow leaf, soft, and affords a fine pasture for the buffalo." This probably is a reference to blue grama grass.



Bison were the predominant plains animal at the time of Lewis & Clark. (Painting by Bodmer, Joslyn Art Museum, Omaha, NE.)

plant communities, so most of the quotes are his.



The party entered Montana on 26 April 1805. Near the mouth of the Yellowstone River, Lewis describes the lowland shrub communities, and observes the differences in plant species associated with topographic positions: cottonwood on bottoms, various woody species moving up-slope, and "wild hyssop" (sagebrush) in the uplands. At the same time he mentions the great abundance of buffalo. This shows clearly

By July 14 the portage was completed and the party was in the vicinity of Ulm, entering the canyon of the Missouri south of Great Falls. Abundant grasshoppers and short grass again are mentioned.

Five days later, the Gates of the Rocky Mountains were behind them and the Helena area entered. Lewis comments that (prickly pears) "...have now become so abundant in the open uplands that it is impossible to avoid them and thorns are so keen and stiff that they pierce a double thickness of dressed deerskin with ease." Captain Clark extracted 17 spines from his feet at the campfire that night.

The expedition continued south, following the Missouri into present Broadwater County. On July 22 Lewis again commented on the abundance of sagebrush. Four days later, near the mouth of Sixteen Mile Creek, he described the broad bottoms as "...fine tufts of greensward," and the uplands "...thin and meager soil covered with dry low sedge and a species of grass...the seeds of which are armed with long twisted beard at the upper extremity...the lower point is a sharp fine subulate point beset with stiff little bristles...which serve as a barb.... These penetrate moccasins and the dog's feet, to his great discomfort." This is the first description of needle-and-thread grass. Meanwhile, prickly pear is "...abundant as usual."

In late July the three forks of the Missouri were discovered and named the Gallatin, Madison, and Jefferson Rivers. The western-most tributary, the Jefferson, was the route followed. On the last day of July the Captains named the Philosophy River (now Willow Creek) after one of the "principal attributes" of President Jefferson. Lewis depicted the lowlands as lush and succulent; the uplands were occupied by needle-and-thread, threadleaf sedge, and prickly pear. Lewis made the first collection of the wild blue flax here.

On August 3 the party was traveling along the upper Jefferson River. Lewis wrote that "This evening we passed through a high plain for about 8 miles covered with prickly pears and the bearded grass." This was hard going because the strong river current made towing the boats very tiresome.

August 10th saw the group south of Dillon in Clark Canyon, now the Beaverhead River. Lewis recorded that the "uplands are covered with prickly pears

and twisted or bearded grass and are but poor; some parts of the bottom lands are covered with grass and tolerably fertile, but much the greater proportion is covered with prickly pears, the pulpy-leaved thorn, southernwood, wild sage, etc. and like the uplands is very inferior in point of soil."

Shortly afterward the expedition crossed Lemhi Pass into Idaho and points west.



These journal entries are typical of many others made in the trek across Montana in the summer of 1805. The significant observations have to do with the great abundance of both grazing animals and plant species which we know to be enhanced by excessive grazing.

It might be argued that reconstructing the historic ecological status of a region from such notes, even carefully kept journals, is risky business. Of course, there are pitfalls, and they should be considered.

The party (and many other early travelers) came up the main rivers, where animal impacts probably were more severe than elsewhere. They were moving quickly through the country, so could not watch any time-moderated changes at any one location. Their observations were colored by their experiences in the more humid parts of the country. And, they were more likely to comment on new or unusual situations than on more familiar things.

Nevertheless, we know that certain species indicate certain things in grasslands. Our modern knowledge of plant ecology as influenced by grazing allows legitimate interpretations of early observations, particularly ones which are repeatedly made over extensive reaches of country and at different times. Lewis' recurrent comments about prickly pear, low closely cropped grassland and abundant sagebrush all suggest grazing-induced retrogression of the native vegetation in 1805. The enormous numbers of herbivores encountered by Lewis and Clark and many others to follow supply the necessary agents of grazing.

Lewis and Clark were not the only ones to record signs of rangeland deterioration. Many others commented similarly on both plant species and animal impacts. So, recognizing the problems of



Captain Meriwether Lewis kept the most complete journal on plants and plant communities. (Painting by Olaf Seltzer, Montana Historical Society Museum, Helena, MT.)

long distance interpretation, the evidence supports the notion that at least some significant portions of the route traveled by Lewis and Clark were functioning as deteriorated ecosystems. For many areas, if we want to see the land at or near its ecological potential, we have merely to look.



The quotations used are all taken from the new edition of the "Journals of the Lewis & Clark Expedition," edited by Gary E. Moulton and published by the University of Nebraska Press. Eventually to comprise 11 volumes, this is the most carefully edited and annotated edition by far.

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