

Manti-La Sal NF Springs Reports
Grand Canyon Trust
11/9/2016

Brief Assessments (Cerissa Hoglander and Dave Erley)

Elk Ridge - 15 springs, June 27-29

La Sal Mountains - 11 springs, August 9-11, 2016

Rapid Assessments (Mary O'Brien and 20 Whitman College students)

Ferron-Price Ranger District – 10 springs, September 25, 2016

La Sal Mountains – 1 spring, Sept. 23, 2016; 9 springs, Sept. 28, 2016

I. Background

Springs are those locations where groundwater is exposed as surface water. Springs are groundwater-dependent, meaning their sources are underground as aquifers or water tables, and the water that emerges as a spring may have traveled below ground for tens of years to thousands of years. While among the most biodiverse ecosystems in the world, springs are sensitive indicators of global warming impacts such as drought.

Between June 27 and September 28, 2016, 47 Manti-La Sal NF springs were visited by Grand Canyon Trust and Whitman College students. The purpose of the visits was to briefly assess conditions at the springs, for instance whether the spring was fenced or not, whether spring fences were intact, whether surface water was present, whether the spring water was captured at the source, whether the water was piped to a trough, whether vegetation was in healthy or degraded condition (e.g., trampled, heavily grazed or browsed), whether the dominant vegetation was native or non-native, and whether wildlife sign was present. Methods are described in the reports themselves.

While the reports are presented separately, this document summarizes some of the results of these assessments (Part II) and raises the significant assessment issue of disappearing springs.

Additionally, numerous (but not all) springs on the MLSNF not specifically assessed in this report have been observed to be heavily trampled when not securely fenced. Springs are, when easily accessible, essentially a ground-level water trough for livestock. When 100% of the MLSNF is active livestock allotments, virtually 100% of springs accessible to the livestock must be fenced or be subject to over-use.

II. Summary

Twenty-one springs were visited in the La Sal Mountains, 15 on Elk Ridge (Monticello District) and ten on Ferron-Price RD (Fig. 1). Surface water was present at 83% (N=38; Fig. 2).

At 30 fenced springs, almost half, 43 % (N= 13; Fig. 4), were not maintained. Of the 12 fenced springs on Elk Ridge, seven were not maintained. At the 16 springs whose fences were maintained, trampling was observed at only 3; in each case, the trampling was outside the fence. In contrast, at 10 of the 14 springs at which the fence was not being maintained, trampling was observed.

Seven springs were visited in the two ungrazed allotments (WMCCA and Babylon) of Elk Ridge: six of them were fenced, one not fenced; only one was trampled. This one spring that was trampled was just inside an unmaintained fence that is a boundary with a grazed allotment, and trespass cattle (observed in years past) are associated with extensive hummocking.

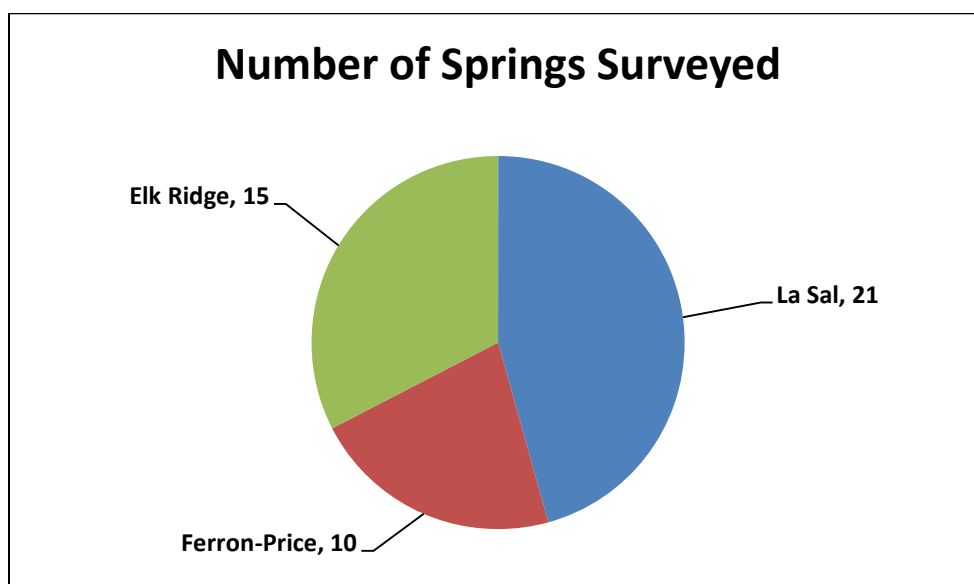


Fig. 1 Number of springs surveyed

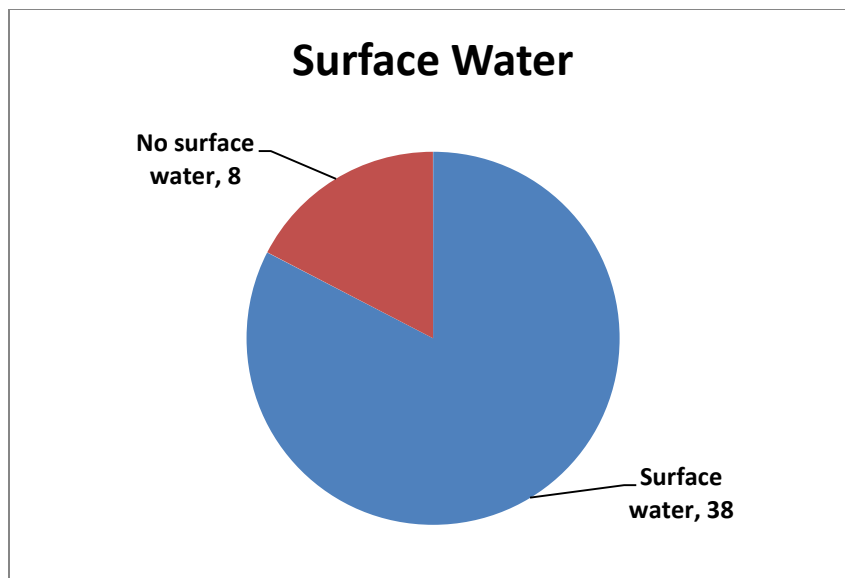


Fig. 2 Surface water observed as present or absent

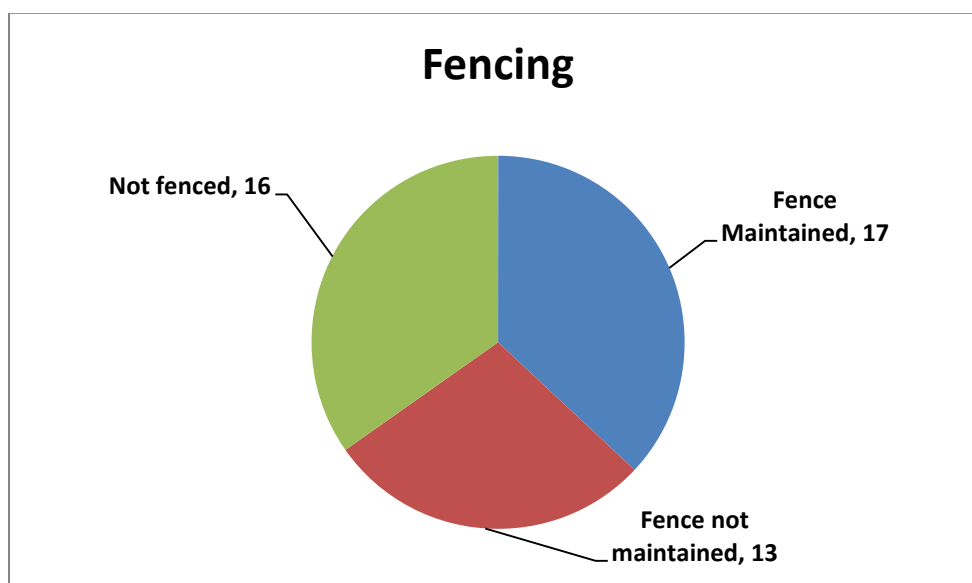


Fig. 3 Presence or absence of a fence around the spring source

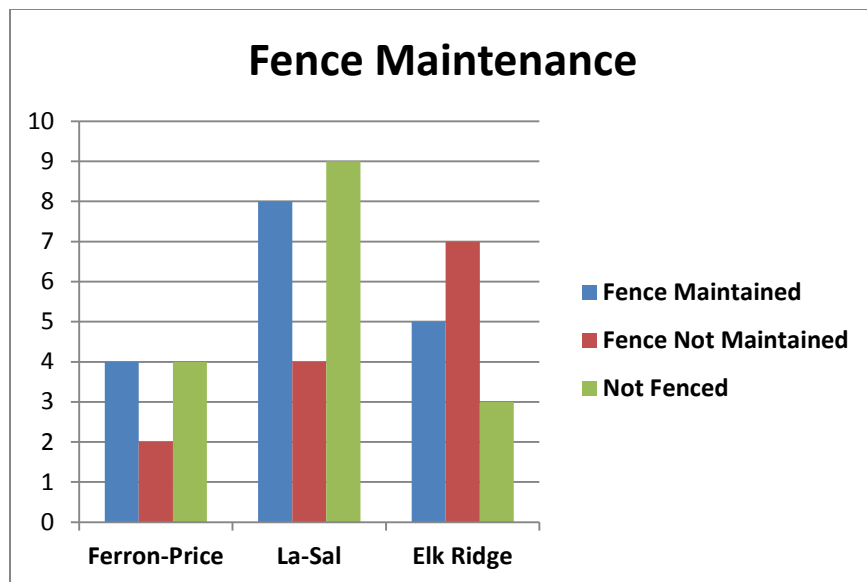


Fig. 4 Status of fence as intact or not maintained

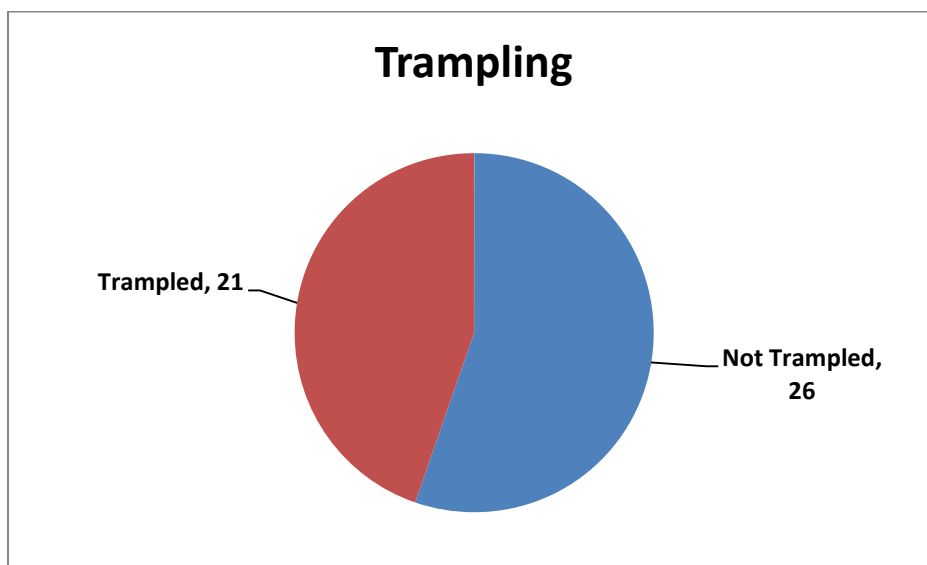


Fig. 5 Significant trampling in area of spring, inside or immediately outside a fence

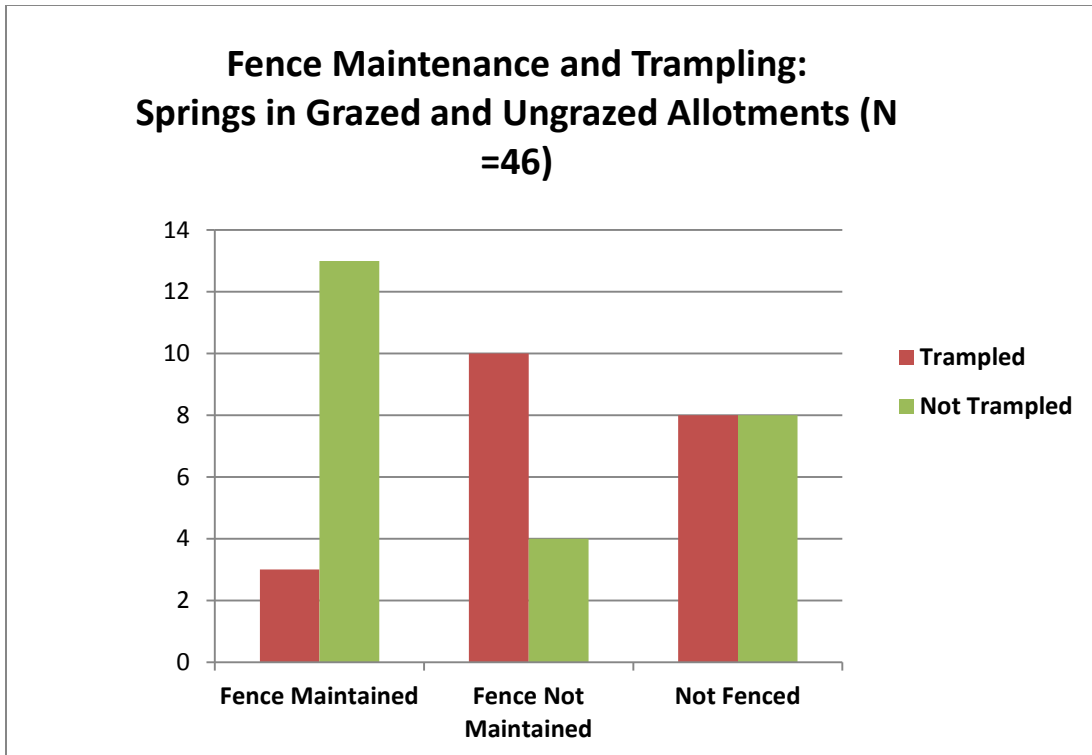


Fig. 6 Association of fence maintenance and trampling of spring source area in grazed and ungrazed allotments

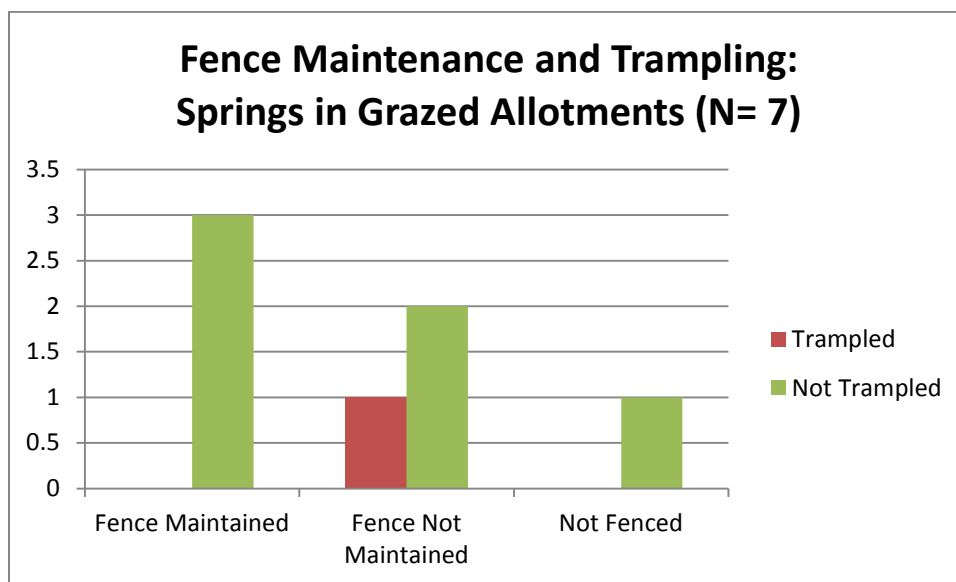


Fig. 7 Association of fence maintenance and trampling of spring source area ungrazed allotments

III. How Many Springs Have Disappeared on Manti-La Sal NF?

Through a chance encounter on September 25, 2016, Lee McElprang, a long-time permittee on Gentry Mountain (Ferron-Price RD), showed several Whitman College students a spring that disappeared in 1979 as a consequence of subsidence due to underground coal mining in the area (Lee was a coal miner in the area as well as a rancher at that time).

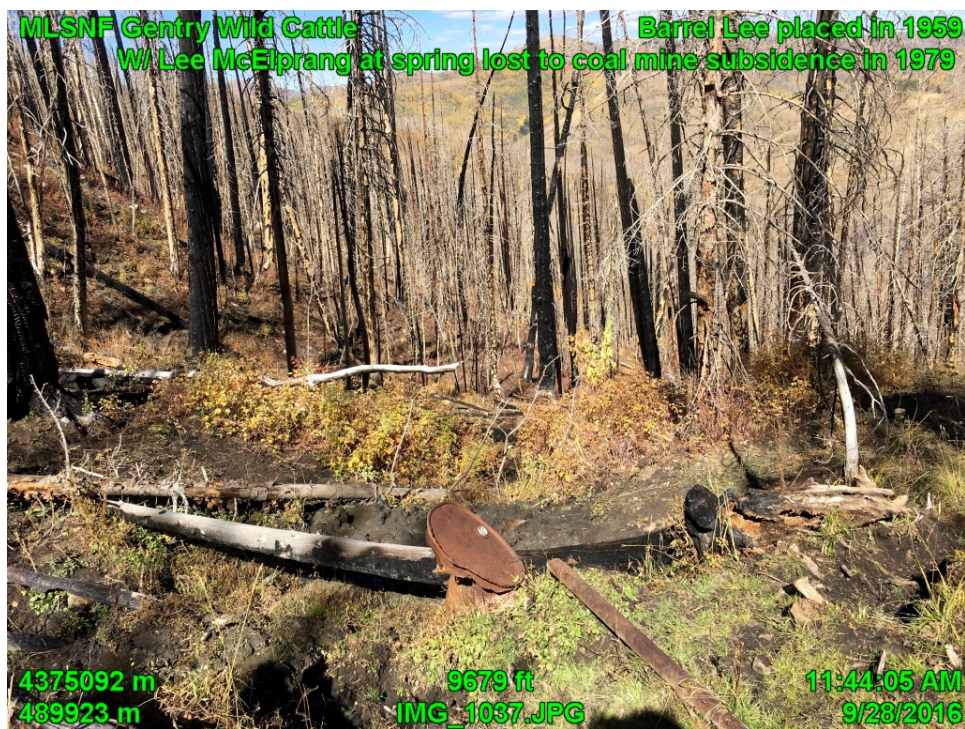


Fig. 8 Old spring site w/ water barrel placed in 1959; spring ceased flowing in 1979



Fig. 9 Old pipe at site of spring that ceased flowing in 1979; water dripping, reportedly for the first time in recent years

An unknown number of other MLSNF springs have been lost to mining subsidence. As noted in the 2015 *Final Supplemental Environmental Impact Statement for the Leasing And Underground Mining of the Greens Hollow Federal Coal Lease Tract* on the Ferron-Price Ranger District, flows ceased in four springs under the Pines Tract shortly after longwall mining in late 2003, reemerging downslope the following year. As well, three additional springs were lost following two separate subsidence mining occurrences in 2005 and 2006. Water was not able to be restored following mitigation (i.e., installation of grout curtains). The SEIS notes, “Local riparian ecosystem is decreasing” (Table 2.1, p. 39).