Lackey Basin Spring Condition Assessment

Location: Buck Hollow Pasture, La Sal Allotment, Manti-La Sal National Forest
Date: September 25, 2016 **Time:** 1:54 pm to 4:22 pm
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Table of Contents

I. Introduction

Our purpose was to assess the condition of the Lackey Basin Spring, in the Buck Hollow Pasture of the Manti-La Sal National Forest. The location of the spring is NAD 83 UTM 651772 East, 4247865 North, at 8424' in elevation. This spring is in a small grassy meadow located partway up a sloping valley as it climbs between peaks of the La Sal mountains. The area within the well-fenced spring exclosure is profuse with asters, sedges, rushes, and both native and exotic grasses. Pollinators were abundant within the exclosure. However, immediately outside the exclosure, in areas still affected by the spring's moisture, the grass had been grazed to a bare turf, with very few flowers surviving cattle and other ungulates. This spring is piped down the valley bottom into a cistern, full to the brim, a quarter mile down the road from the spring. The habitat surrounding the spring and meadow is thick, scrubby Gambel oak interspersed Douglas-fir, juniper and piñon pine.

II. Spring Evaluation Methods:

We defined discrete spring sources as groundwater emergence separated by dry ground and non-riparian habitat. Our team consisted of a cartographer, photographer/GPS operator, data recorder, and observer/botanist. Flow was assessed on a qualitative scale from 0 to 4 with 0 representing no water present for the past year and 4 representing perennial water. Disturbance was assessed on a qualitative scale from 0 to 3 with 0 being no disturbance and 3 being severe degradation.

III. Photographs:

Fig. 1: *Source beneath rock (top center), w/ capped spring containment in foreground*

Fig. 2: *Overview of spring exclosure, overgrazed meadow in foreground*

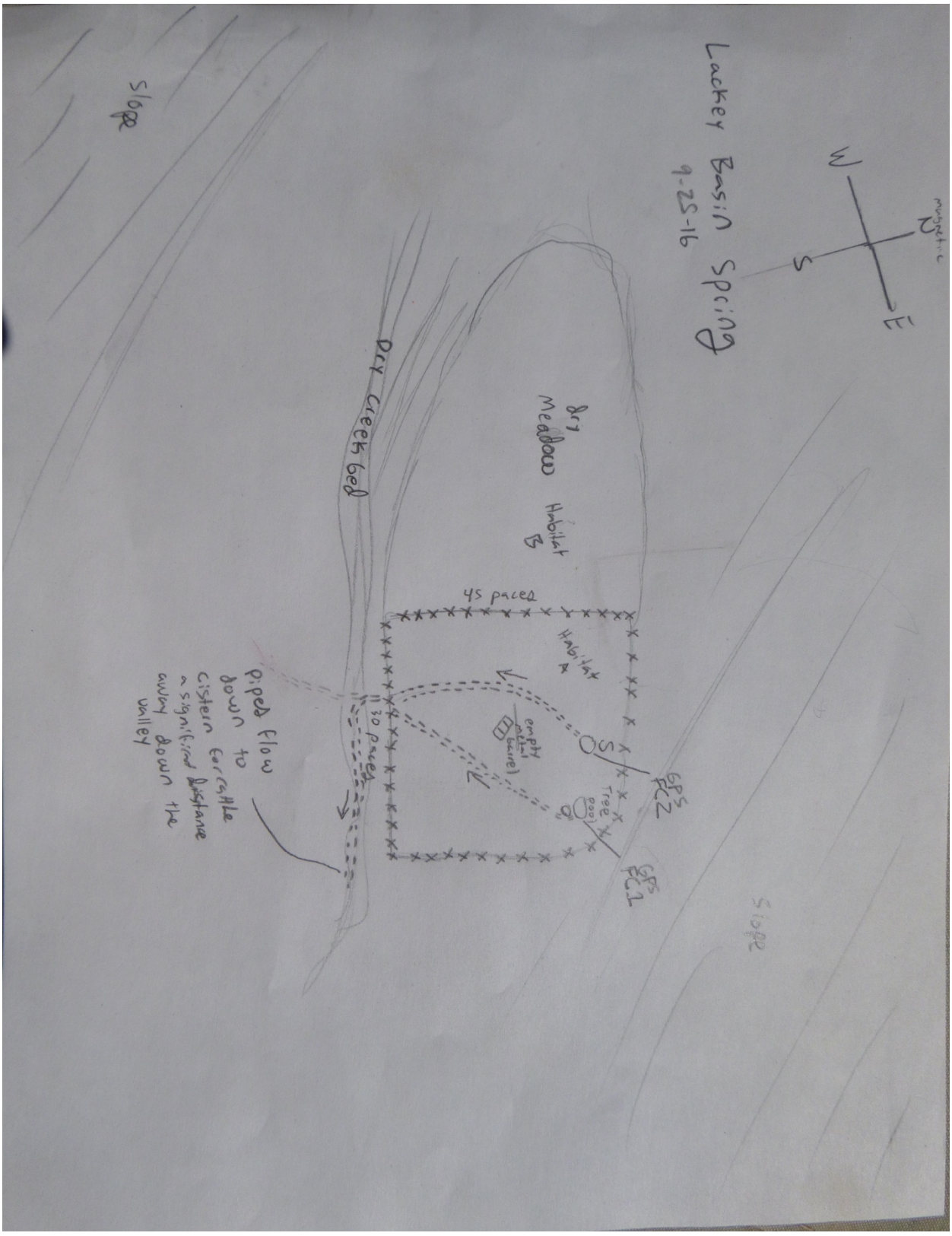
Fig. 3: *Overview of exclosure, from SE corner, looking NW toward grazed meadow outside exclosure (spring source right of captured scene)*

Fig. 4: *Isolated pool within exclosure, near spring source, slightly lower than original source (possible second source?)*

Fig. 5: *Overflowing cistern, down valley from spring*

Fig. 6: *Overview of valley, showing small grassy meadow (yellow arrow) surrounded by thick oak and juniper*

IV. Diagram of Spring



V. Assessment:

Within the spring exclosure, grazing was not evident, with several types of asters, grasses, rushes and sedges present and frequented by a variety of pollinators. In the green meadow outside the spring exclosure, the grasses and forbs were heavily grazed and very few flowers were available for pollinators. Dominant vegetation structure within the exclosure was non-native creeping bentgrass (*Agrostis stolonifera*), other grasses, rushes, sedges and low forbs, with the occasional juniper, Gambel oak, and Woods' rose (*Rosa woodsia*) providing higher shrub/tree cover. Dominant species included native foxtail barley (*Hordeum jubatum*), western aster (*Aster ascendans*), Baltic rush, curlycup gumweed (*Grindelia squarrosa*), yarrow, showy goldeneye (*Heliomeris multiflora*), and non-native, invasive creeping bentgrass (*Agrostis stolonifera*). A variety of pollinators, including eight species of butterflies, were found feeding on the flowers within the spring exclosure. Evidence of several species of mammals, including gopher mounds, were observed as well. See Appendix I for a full list of wildlife observed.

No noticeable water flow was observed at the spring, but the small pool within the exclosure, the damp ground beneath a low rock ledge at the source, and the cistern lower down the valley all appeared to be perennial water sources. Water was flowing from the fully diverted spring through a pipe a quarter mile down the valley to a large, overflowing cistern.

VI. Analysis:

Although the spring exclosure, a sturdy hog-wire fence, appeared to be effective at keeping cattle away from the source of the spring, this spring was also so heavily diverted that very little flow from the spring was able to reach the surface to provide spring habitat. However, the spring's additional moisture zone extends 150 feet northwest upslope of the exclosure, and this meadow, if exclosed from cattle, could offer a diversity of grasses and forbs, important habitat for pollinators. As it is now, this meadow is cropped to the ground.

VII. Recommendations:

We recommend extending the fence, which is sturdy and effective, to include the grassy meadow directly northwest of the exclosure. If not grazed, this isolated meadow otherwise would provide important habitat for wildlife, especially pollinators.

Appendix I: (Wildlife)

Butterflies in Exclosure:

Field Crescent
Juba Skipper
Purplish Copper
Melissa Blue
Mourning Cloak
Orange Sulphur
Clouded Sulphur
Canyonland Satyr

Birds outside Exclosure:

Steller's Jay
Cooper's Hawk
White-crowned Sparrow
Mountain Chickadee

Mammals outside Exclosure:
Rock Squirrel
Mule Deer
Black Bear (scat)

Appendix II: (Wildlife Photos)

Fig. 7 Purplish copper butterfly on aster sp.

Fig. 8 Bumblebee on aster

Fig. 9 Purplish copper and two Tachinid fly species on aster

Fig. 10. Field crescent on aster sp.

Fig. 11: Probable invasive, exotic European honeybee, feeding just outside exclosure on curly gumweed (Asteraceae).

Fig. 12 Bumblebee on Aster sp.