

Spring 177 Condition Assessment

Location: Gentry Allotment, Wild Cattle Pasture, Manti-La Sal National Forest

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Date: September 28, 2016 **Begin/End Time:** 1:00pm to 2:30pm

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I. Introduction

The purpose of the Spring 177 assessment is to determine the ecological health of the spring. Spring 177 is located at NAD83 489408E and 4374468N in the Wild Cattle pasture of the Gentry Allotment in Mani-La Sal National Forest. At its upper source, the spring rests at an elevation of 9557'. The spring complex consists of an enclosed upper source, an upper trough, an enclosed lower source, and lower trough. These two sources are separated by approximately one-quarter mile of juniper-grassland. Gentry allotment is grazed annually from June through September. This assessment was completed as cattle were being herded off the mountain. Spring 177 is heavily used during the grazing months.

II. Spring Evaluation Methods

The materials used for this spring assessment include a GPS, compass, ruler, camera, pencil, and data entry sheets. The area around the spring is divided up into microhabitats based upon the features of the spring. The group was divided into four distinct roles: recorder, illustrator, botanist, and photographer/GPS. The recorder compiled all observations and data onto the data entry sheet. The illustrator made a comprehensive map of the spring. The botanist collected plant samples and identified plants, animals, and animal scat. The photographer/ GPS technician was in charge of documenting the spring area, microhabitats, animal scat, animals, plants, and specific spring features. Plant identification was done on site when the botanist could successfully identify the plant, and plant samples were taken from the site when the plants could not be identified. Plant samples were pressed and will be sent to a botanist for identification.

III. Map and Photographs:

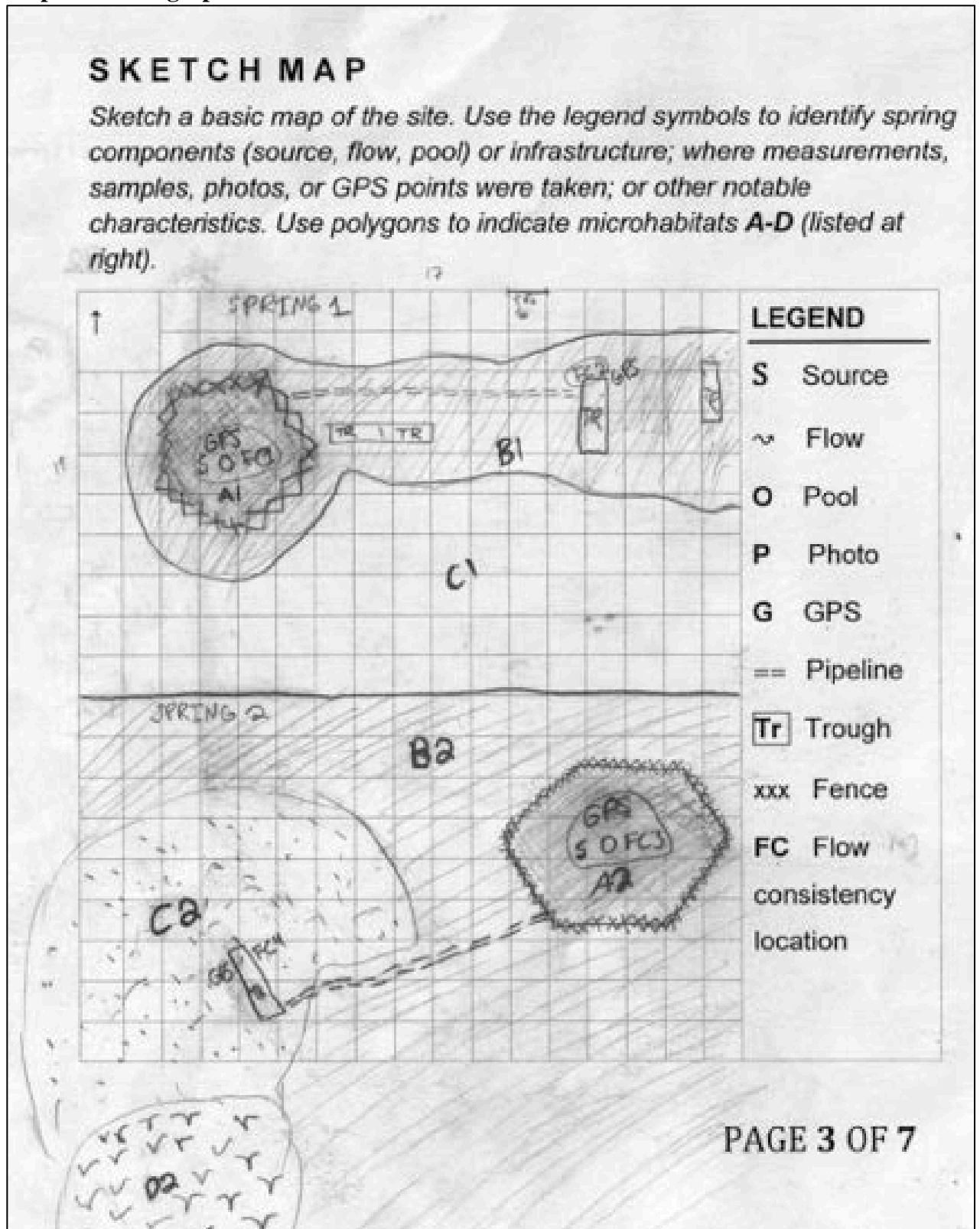


Fig 1: Sketched map of upper and lower springs.

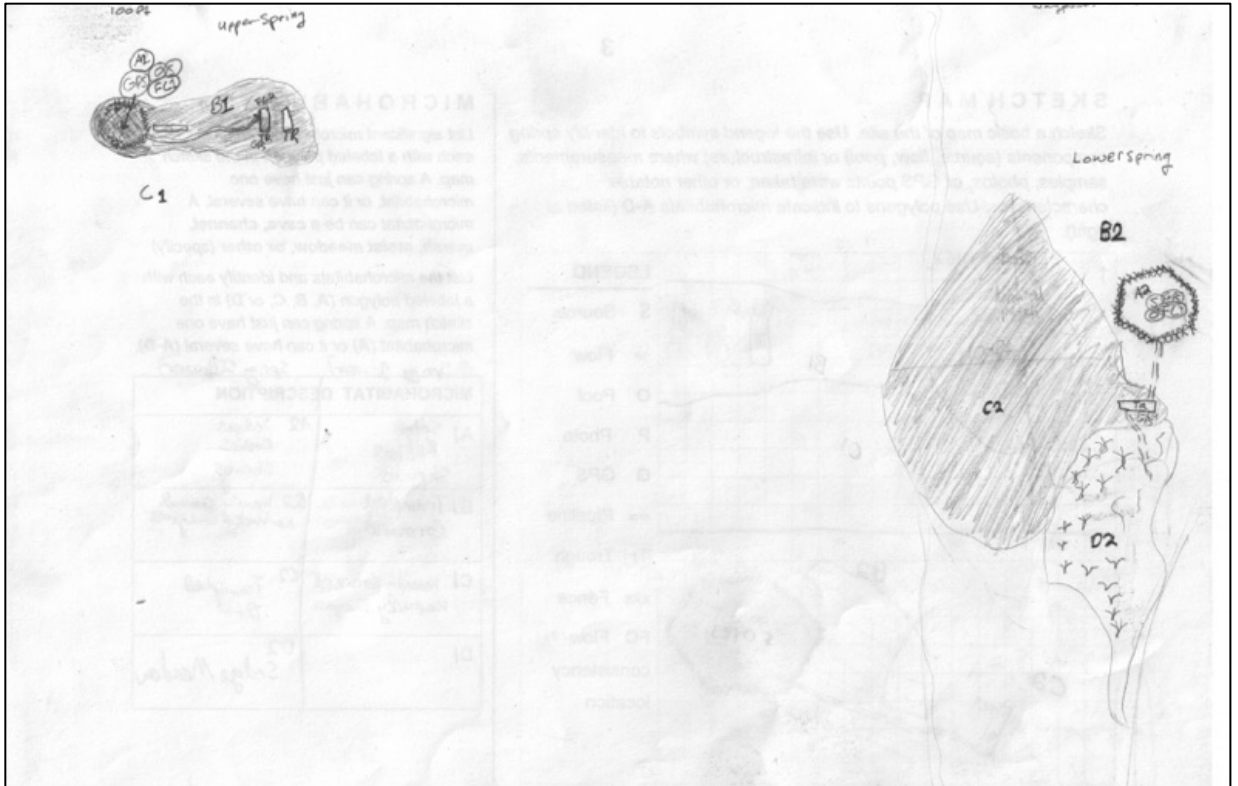


Fig 2: Sketch of a bigger picture view of the two springs.

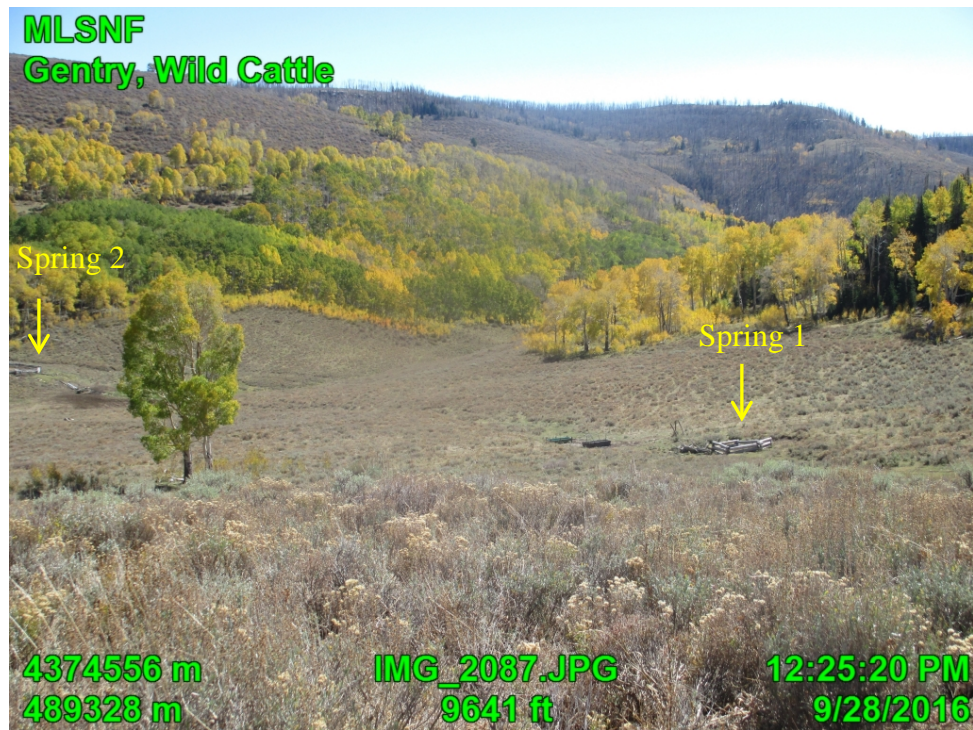


Fig. 3: Overall view of Spring 177

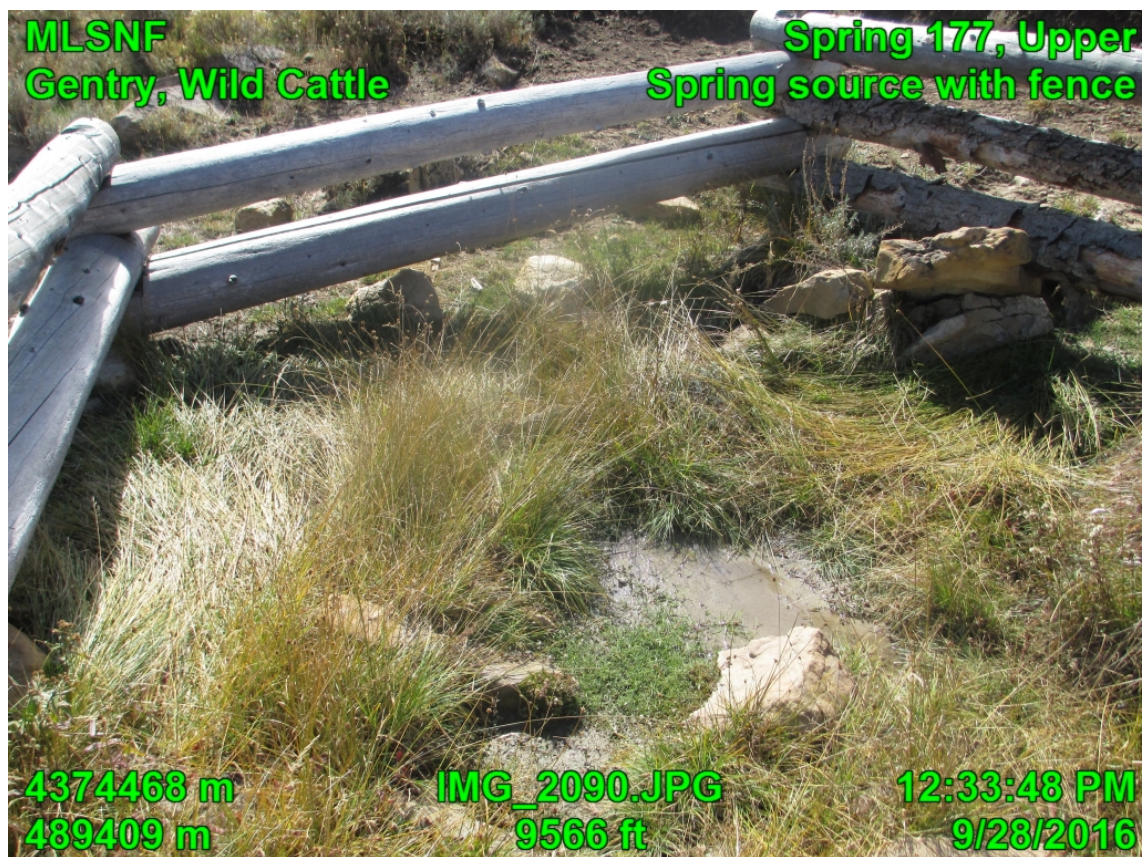


Fig. 4: Surface water of spring source within upper enclosure

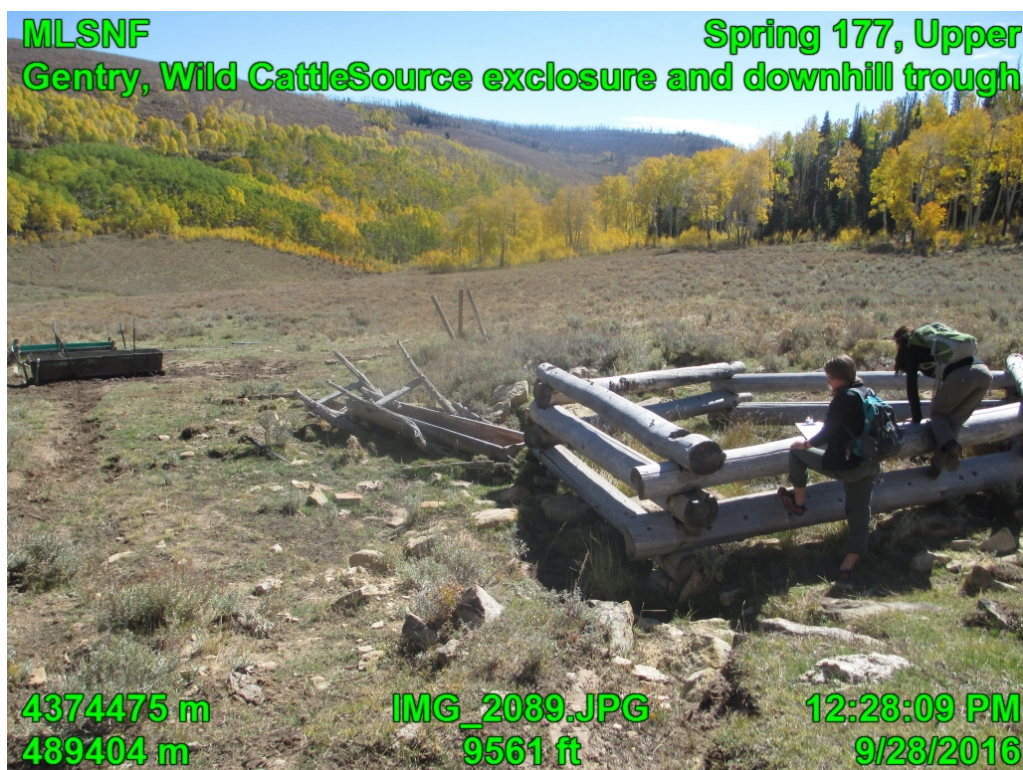


Fig. 5: Full exclosure of upper spring source



Fig. 6: Overall view of lower spring

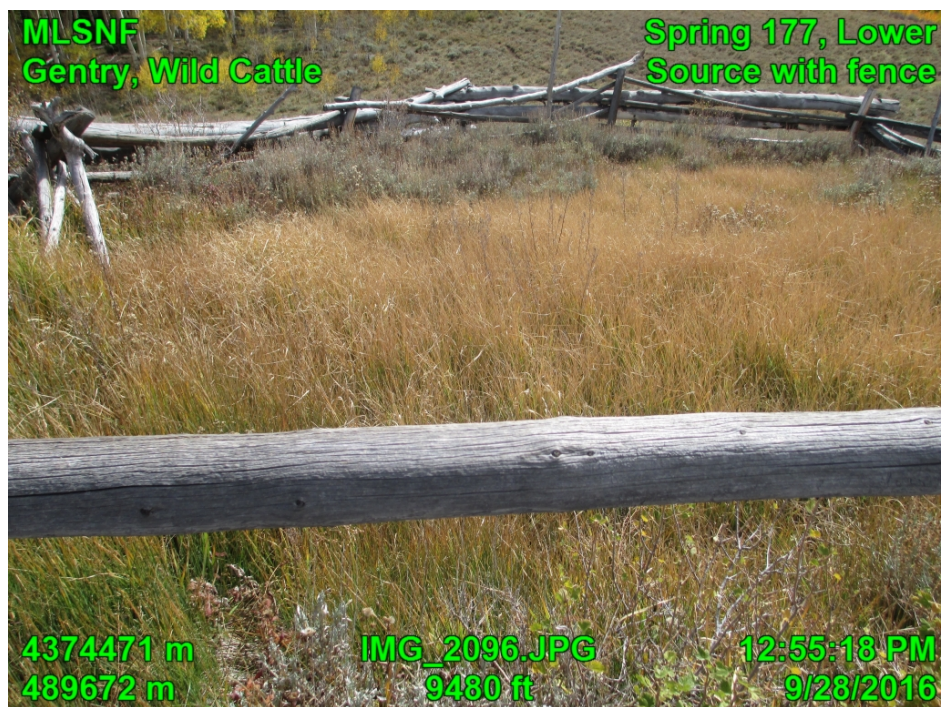


Fig. 7: Lower spring exclosure



Fig. 8: Lower springs trough drainage and uphill source enclosure



Fig. 9: Lower spring trough pipe draining into soil, rushes and sedges downhill



Fig. 10 Panorama, lower spring degradation.

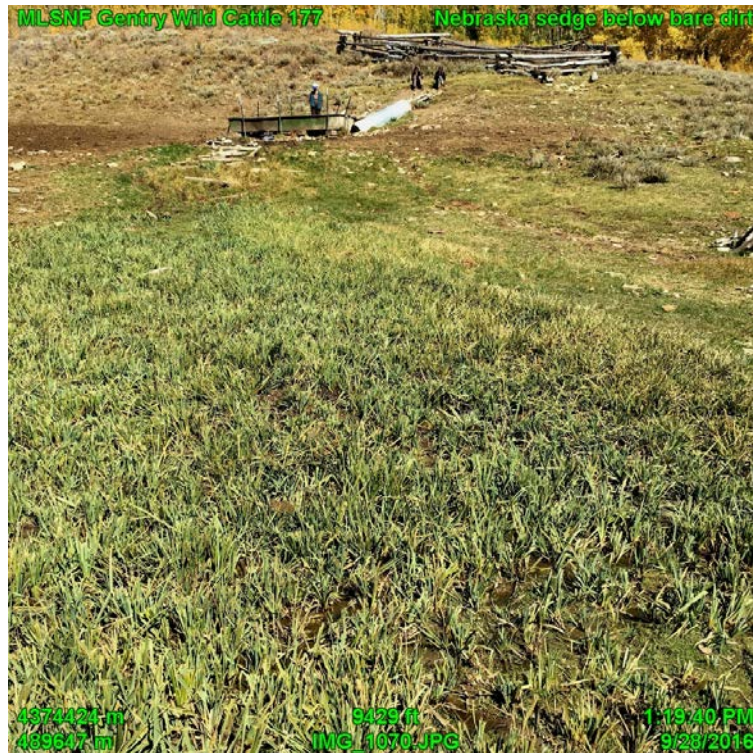


Fig. 11 Nebraska sedge below 200' X 100' bare mud area.

IV. Assessment

Ungulate Disturbance: Due to the sturdiness of the fence surrounding the small upper enclosure, ungulate damage (trampling, grazing/browsing) was virtually absent immediately surrounding the spring source. Downslope of the upper enclosure and the lower enclosure, ungulate heavy trampling, denuding, and browsing/grazing of vegetation dominated (Figs. 5,8,9).

The enclosure at the lower spring source was similarly intact, preventing ungulate damage immediately around the source (Figs. 8,9). A 100' X 200' area outside the lower enclosure between the edge of the fence and the lower trough was completely denuded (Figs. 6, 8-10).

Intact and trampled cow pies were scattered throughout the areas around both the upper and lower troughs.

Vegetation Composition: The dominant vegetation within the upper spring source enclosure were rushes (*Juncus ensifolius*) and sedges (*Carex nebrascensis*) Other native plants included *Helenium hoopsii*, mountain big sagebrush, and a forb (*Epilobium* sp.). Exotic Kentucky blue grass was present inside the lower enclosure. Other observed plants included currants (*Ribes* sp.), big mountain sagebrush, and Kentucky blue grass (exotic).

The large (100 X 200') denuded area surrounding the lower spring's trough and below the enclosure was due to ungulate disturbance (Figs. 6, 8-10).

At the downslope outlet of the lower trough, overflow water spilled out into the grassy area below. Due to the increased frequency of water presence in this area, a small Nebraska sedge patch had sprung up at the base of one downhill outlet drainage (Fig. 11) and a Baltic rush patch at another drainage.

Wildlife evidence: Evidence of grazing/browsing, scat, and trampling indicated that cows were the most common form of wildlife in the spring complex area (Fig 6,8,9). Grasshoppers were observed in the grass between the upper and lower springs, and a spider web hung above the empty upper trough. Within the upper enclosure, a single adult vole was sighted underneath an abandoned cistern lid.

Water Presence: Water at the upper source (within the enclosure) took the form of a small, damp puddle measuring approximately 1' X 3'. This surface water was likely present intermittently, but water could be present here underground, indicating a perennial flow consistency (Fig. 4). The upper trough contained approximately six inches of spring water and was being continually filled by rapidly dripping water from the pipe. The soil in the enclosure at the lower source was dry, but the presence of a full grass/sedge community indicated that water was present at least intermittently (Fig. 7). A strong stream of spring water from a pipe was filling the lower trough at a rate of approximately 2 inches per hour.

Water Infrastructure: The upper source enclosure, built from heavy logs, measured approximately 14 feet in diameter, with a wall height ranging from 3-4 feet tall (Fig. 4) An intact cistern with a lid was present on the east side of the enclosure, as well as an extra metal cistern lid. From the spring source to the outside of the enclosure, a pipe ran underground to the upper spring trough. The trough was partially filled by drip-water from the upper spring and did not contain a wildlife escape ramp. There was a second, dry upper trough downslope of the main upper trough.

The lower spring enclosure was also built from sturdy logs and appeared to be fully intact (Fig. 7). A pipe ran partially above ground from the lower source and emptied directly into the lower trough. An intact wildlife ramp was observed. The lower trough had an outlet pipe head that led to a plastic pipe facing downslope. The plastic pipe emptied into the surface soil, where someone had placed a series of logs to reduce erosion from water action (Figs. 8-9).

V. Analysis:

Upper Spring 177

Because the enclosure surrounding the upper spring source was intact and effectively keeping ungulates away from the source, there was no evidence of ungulate

damage inside the spring enclosure. Given the dominant presence of native grasses, rushes, and sedges—which provide wildlife habitat evidenced by the presence of a vole—the area was determined to be healthy, with no or negligible disturbance.

The region outside the enclosure and surrounding the upper trough was heavily degraded in the form of trampled, denuded soil, and grazed/browsed plants at the margin. This area was determined to be severely damaged by ungulate presence.

Lower Spring 177

The enclosure surrounding the lower spring source was also intact, preventing the enclosed area from suffering ungulate damage. There was a healthy community of grasses, sedges, and rushes as well as smaller shrubs including sagebrush and white stem currant (*Ribes inerme*). This diversity indicated a lack of disturbance or selective browsing/grazing.

The area outside the lower enclosure was severely trampled and denuded. The distinct lack of vegetation or wildlife habitat indicated that the area surrounding the trough had been severely degraded. Furthermore, the outlet pipe leading downslope from the lower trough maintains downhill moisture. This led to the growth of a sedge meadow beneath the outlet that was perhaps indicative of what the area would look like if water not been diverted for livestock use.

VI. Recommendation for Restoration:

- Continue to maintain the current enclosures.
- Install a wildlife escape ramp in the upper trough to prevent any accidental drownings.
- Fence the area of potential wetland and moist meadow below both enclosures and place the water troughs in drier, upland vegetation. This would restore a large wetland area.
- Release water from the springs into the restored wetland area when cattle are not in the pasture