Pack Creek Spring Condition Assessment

Location: Pack Creek Spring, Dorry Allotment, Dorry Canyon Pasture, Manti-La Sal National Forest
Date: September 25, 2016 **Begin/End Time:** 1:15pm to 2:20pm
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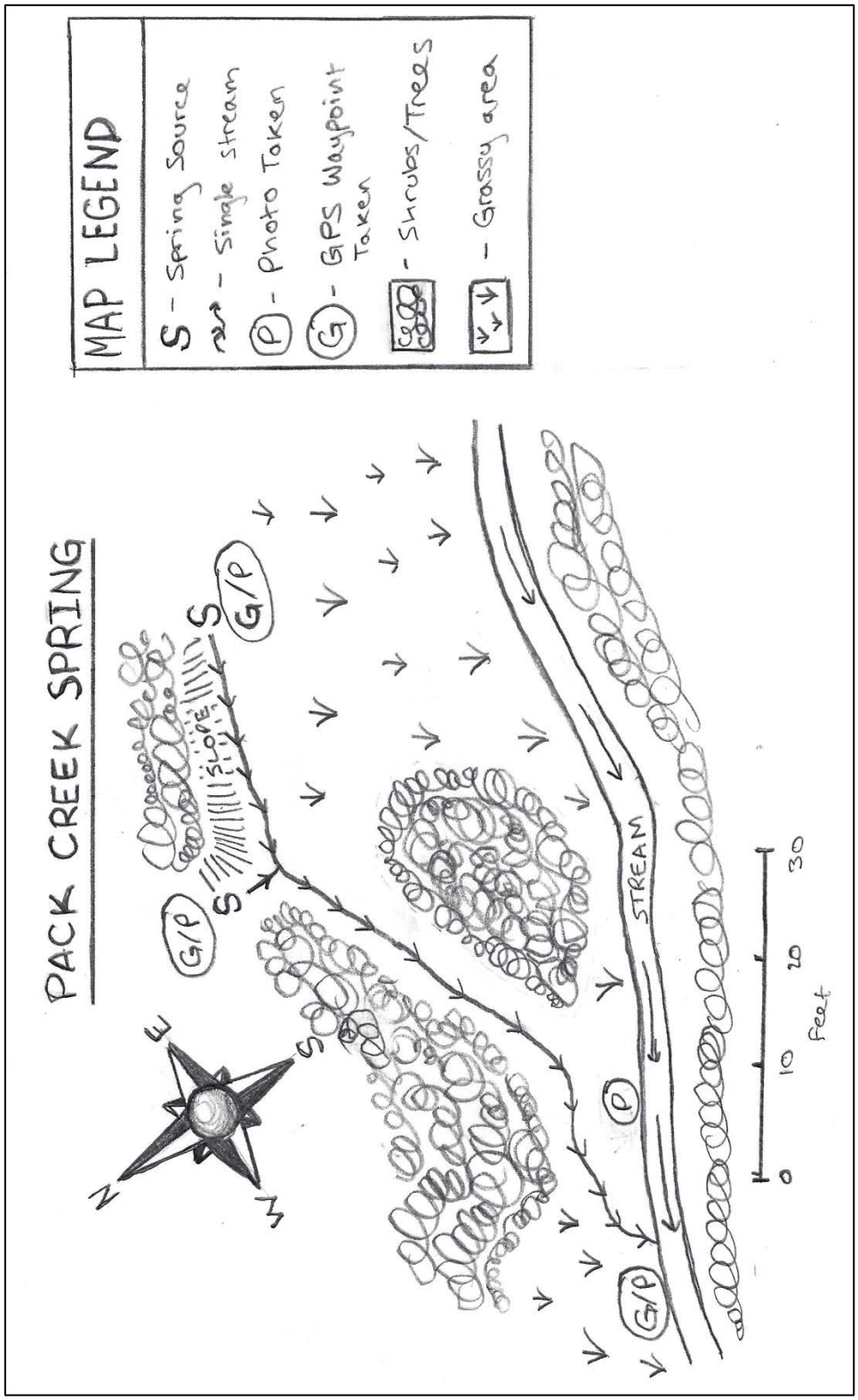
I. Introduction

The purpose of assessing Pack Creek Spring is to analyze overall spring conditions and health. Pack Creek is located in the Manti La Sal National Forest. The source is located at NAD 83 E644950 N4255250 at an elevation of 6,429'. The site is very moist and grassy with a large spring consisting of open water that flowed into the creek. The area around the spring is diverse in vegetation yet homogenous throughout the stream, including only one microhabitat. Many moisture-dependent plant species were identified in the area including watercress, willow, cottonwood and mosses. The spring was in good condition although there was significant evidence of human activity around the stream and significant browsing of willows and roses.

II. Spring Evaluation Methods:

To effectively assess the Pack Creek spring, four volunteers examined various aspects of the area. Each member of the team performed a specific task, including photographing and creating GPS waypoints, recording data, identifying and collecting vegetation samples, and sketching a map of the spring. GPS waypoints and photographs were taken at significant features of the spring including sources, intermittent pools, and streams. At these features, the flow of water was also measured. Vegetation samples of the more dominant species were also collected and identified. While observing vegetation, team members also looked for evidence of disturbance including browsing, trampling, and fire damage. To complete these steps and assess the spring, volunteers used GPS devices, digital cameras, plant sample bags, and data assessment forms.

III. Map and Photographs:



Sketched Map of Pack Creek Spring

Fig. 1: Primary spring source flowing into stream

Fig. 2: Secondary spring source flowing into stream

Fig. 3: Spring stream outlet into larger Pack Creek

Fig. 4: Overall view of spring stream that flows into larger Pack Creek

Fig. 5 Browsed willow and trampled grass near creek

Fig. 6: Browsed willow and trampled grass near stream

Fig. 7: Vegetation including grasses and watercress around spring source

Fig. 8: Diaper

IV. Assessment:

Water Presence

The spring complex consists of a primary source (Fig. 1), secondary source (Fig. 2), and outlet into a creek (Fig. 3). Both the primary and secondary sources consist of moderately flowing perennial surface water. Together they flow downslope, feeding a small flowing stream that empties into an outlet in a larger creek (Fig. 4). No water infrastructure was observed. The riparian area of the Pack Creek Spring was considered to be one microhabitat as the vegetation and water presence were relatively consistent throughout the smaller spring stream and its sources.

Vegetation Composition

The most abundant vegetation around the source of the spring is grasses and rushes (Fig. 7). Mosses were scattered streamside as well as the exotic watercress (*Nasturtium officinale*). Also common around the source are willow, Woods' rose (*Rosa woodsii*), poison ivy (*Toxicodendron radicans*) and a midsize red osier dogwood (*Cornus sericea*). Mature trees populate the area near and surrounding the spring including cottonwood (*Populus fremontii*) water birch (*Betusa occidentalis*) and western serviceberry (*Amelanchier alnifolia*). These tall trees provide shade to the lush understory and stream that makes up Pack Creek Spring.

Wildlife evidence

There is abundant evidence of livestock grazing in the area surrounding Pack Creek. Near the stream and spring sources there were cow patties and heavily grazed willows and roses. Trampling was also observed in the more open areas near the spring. Although cows were present and actively grazing in this area, the spring itself did not appear to be heavily damaged by cattle, possibly because they drink primarily from Pack Creek instead of the spring.

Disturbance evidence

Both the primary and secondary spring sources show evidence of moderate browsing/grazing that resulted in some degradation to the spring site. In particular, Wood's rose and the willows that had not yet reached recruitment height were heavily browsed and stripped of leaves. Several willows above recruitment height were browsed below the six-foot mark (Figs.5,6). Evidence of moderate trampling was observed throughout the riparian area and spring outlet. In terms of human usage, trash (plastic bottles, broken glass, razor blades, and a diaper) was observed in the vegetation of the riparian zone and surrounding wooded areas. It is possible that there is more trash at this spring because it adjacent to a day-use picnic area.

V. Analysis:

Overall, the spring displayed lush green vegetation, but the small willow and rose plants had been stripped of leaves by ungulates. Cow pies were common and many young willow saplings >6’ tall had been browsed. There is also evidence of human presence around the spring. Despite this, the spring itself did not appear trampled and did not seem heavily affected by browsing or other uses.

VI. Discussion:

Restoration Recommendation:

1. Placement of nearby trash receptacles and signs could reduce the amount of trash present in the riparian area.