169 Spring Condition Assessment

Location: Trail Mountain Allotment, North Trail East Pasture, Manti-La Sal National Forest
Date: September 28, 2016 **Begin/End Time:** 1:15pm to 2:30pm
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I.Introduction

Our purpose was to assess the condition of Spring 169 on the Wasatch Plateau in the Manti-La Sal National Forest. The location of the springs complex is NAD 83 UTM 482540 East, 4362382 North at an elevation of approximately 10,275'. The spring is located near a ridge in an area grazed by cattle. The spring source pools around a hummocked and muddy area (Fig. 1). The spring continues down the hill running north. As shown in the diagram, the water flow continues through downed wood and trampled mud (Fig. 6). All of this is considered microhabitat A. Further down there is a dry gully (Fig. 5) but it was still part of the riparian area so is considered microhabitat B.

II. Spring Evaluation Methods

Discrete spring sources were defined 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. The spring area was divided into different microhabitats and compared them for differing conditions. 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: *Spring Source from afar looking South*

. 2: S*pring source*

Fig. 3: *Fallen barbed wire fence at the source.*

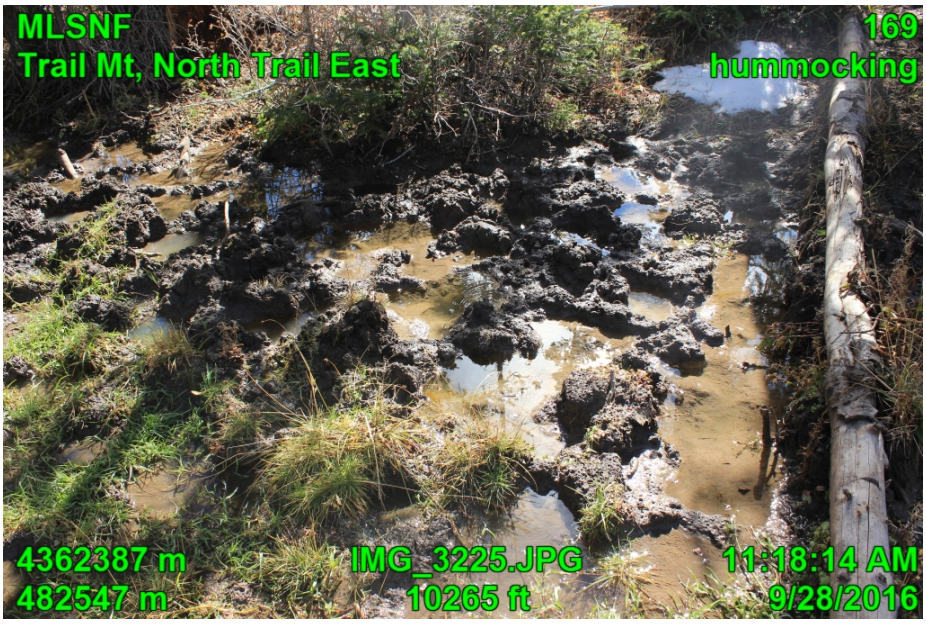


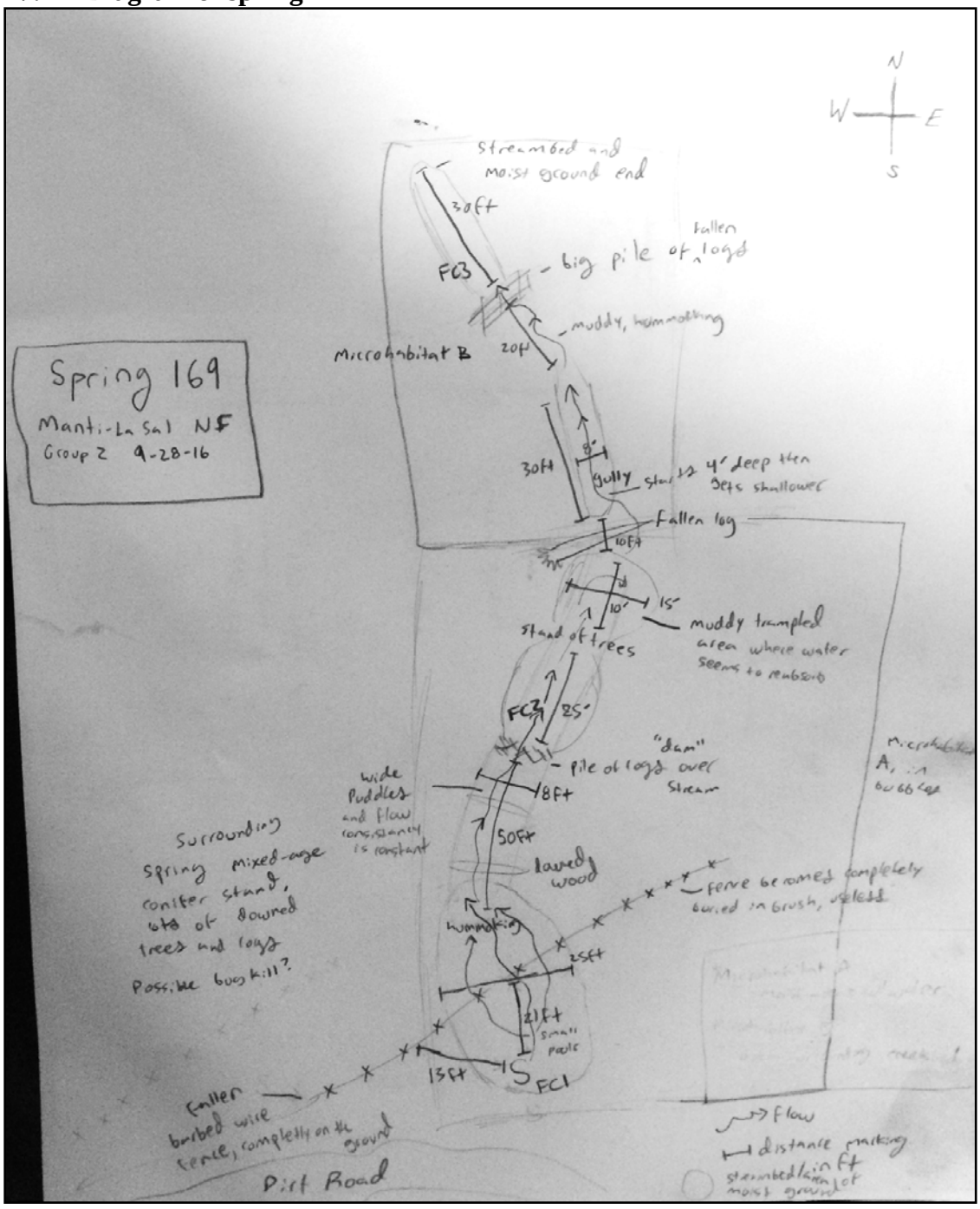
Fig.4: Hummocking in creek bed

Fig. 5: Partially vegetated gully that begins microhabitat B.

Fig. 6: Sticks placed across the spring

Fig. 7: End of flow, spring channel is dry.

IV. Diagram of spring



V. Assessment

At the source of the spring (Fig. 2) the flow consistency is a 4 meaning that there is surface water and a moderate flow, likely running all year. This flow consistency continues until the beginning of microhabitat B where there is no longer surface water. At this location, in the gully (Fig. 5), there are wet, damp soils but water flow is likely present intermittently. Throughout the spring the water forms small pools in the large hoof prints of cattle because it has been heavily trampled.

Near the spring source in microhabitat A, tufted hairgrass (*Deschampsia caespitosa*) is the most common grass, while downed trees and other wood and bare ground are also common. In this area there are also some rushes/sedges and forbs. Mosses, fungi and other trees are also present but uncommon. In contrast, in microhabitat B, wood, bare ground, grasses, including native meadow barley (*Hordeum brachyantherum*) and forbs are common. There were scattered rushes/sedges, shrubs (including a gooseberry or currant, *Ribes* sp.), trees, mosses and fungi.

The native species present are wild strawberry, conifer species, white-stem gooseberry (*Ribes inerme*), and two grasses that will be identified later. Exotic Kentucky bluegrass and dandelion are present and common.

Birds observed near the spring included red-tailed hawk, common raven, pine siskin, gray jay, hairy woodpecker, ruby-crowned kinglet. A tachinid fly was present. The overall area around the spring is a mixed age=conifer forest with many dead trees, likely from beetles.

There are some human modifications to the spring. There is a downed barbed wire fence next to the spring that crosses through the spring channel about 15 feet from the source (Fig. 3). The wire is completely on the ground and the fence has most likely not been effective for many years. While this fence is near the spring, it did not enclose the spring. Slightly downstream (Fig. 6) sticks have been placed in the spring and logs have been put in the stream itself. This could have been placed to prevent cows from trampling the riparian area, but it is not effective. As shown on the diagram there is a USFS road about 30 feet uphill (south) from the spring. There is no culvert that would create an incised spring run

Vegetation around the spring is lightly browsed. The spring site (both microhabitats) have been highly impacted due to ungulate trampling (Fig. 4). Another disturbance is the previously mentioned fallen fence and log dam. The spring is easily accessible to ungulates and people, making the likelihood of degradation much higher.

VII. Analysis

Overall the spring is heavily degraded by ungulate trampling. Cattle appear to have trampled the vegetation in the spring channel as well as defecating in it (Fig. 4). Humans appear to have cut down trees in the area and placed some in the streambed which was unsuccessful in preventing trampling and hummocking (Fig. 6). Most of the species around the spring are native

but some of the less common features such as moss would be more common if there was less trampling.

VII. Recommendation

We recommend fencing off the spring with a well-constructed fence that could stay up for a long time and actually keep cattle out.

The current barbed wire fence present should be removed because it is serving no direct purpose and runs through the spring.

If cattle need water in this area, then some of the water could be diverted to a cattle trough some distance from the spring. When cattle are not in the pasture, water should be returned to the natural spring run to maintain spring health and hydrology.