Spring 243 Condition Assessment

Location: North Trail East Pasture, Trail Mountain Allotment, Manti-La Sal National Forest
Date: September 28, 2016 **Begin/End Time:** 1:17pm to 2:30pm
Surveyors: Willa Johnson, Thomas Meinzen, Evan Romasco-Kelly, Grace Butler, & Gardner Dee

Table of Contents

I. Introduction

The purpose of this report is to assess the condition of Spring 243 in the North Trail East pasture of the Trail Mountain allotment in Manti-La Sal National Forest. The spring is located on the Wasatch Plateau in a valley that leads into Upper Joe's Valley from the east (NAD 83 UTM coordinates: Zone 12S, 480907m E, 4361419m N), at an elevation of approximately 9156'.. Water emerges from a small outcrop of sandstone at the base of a hill cloaked in aspen and is immediately diverted into a plastic pipe that leads to a livestock trough about 50 feet downslope. The spring outlet and the 20 by 20 foot (~400 $ft^{2)}$ area directly around it are surrounded by a barbed-wire fence that separates it from another fenced area that has several openings, which contains the trough (Fig. 1).

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. We divided the spring into two distinct microhabitats (the spring exclosure and the trough exclosure) and observed characteristics such as the presence of flowing water and different species of vegetation in each. Water 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 presence. Disturbance was assessed on a qualitative scale from 0 to 3 with 0 being no disturbance and 3 being severe degradation.

III. Map and Photographs

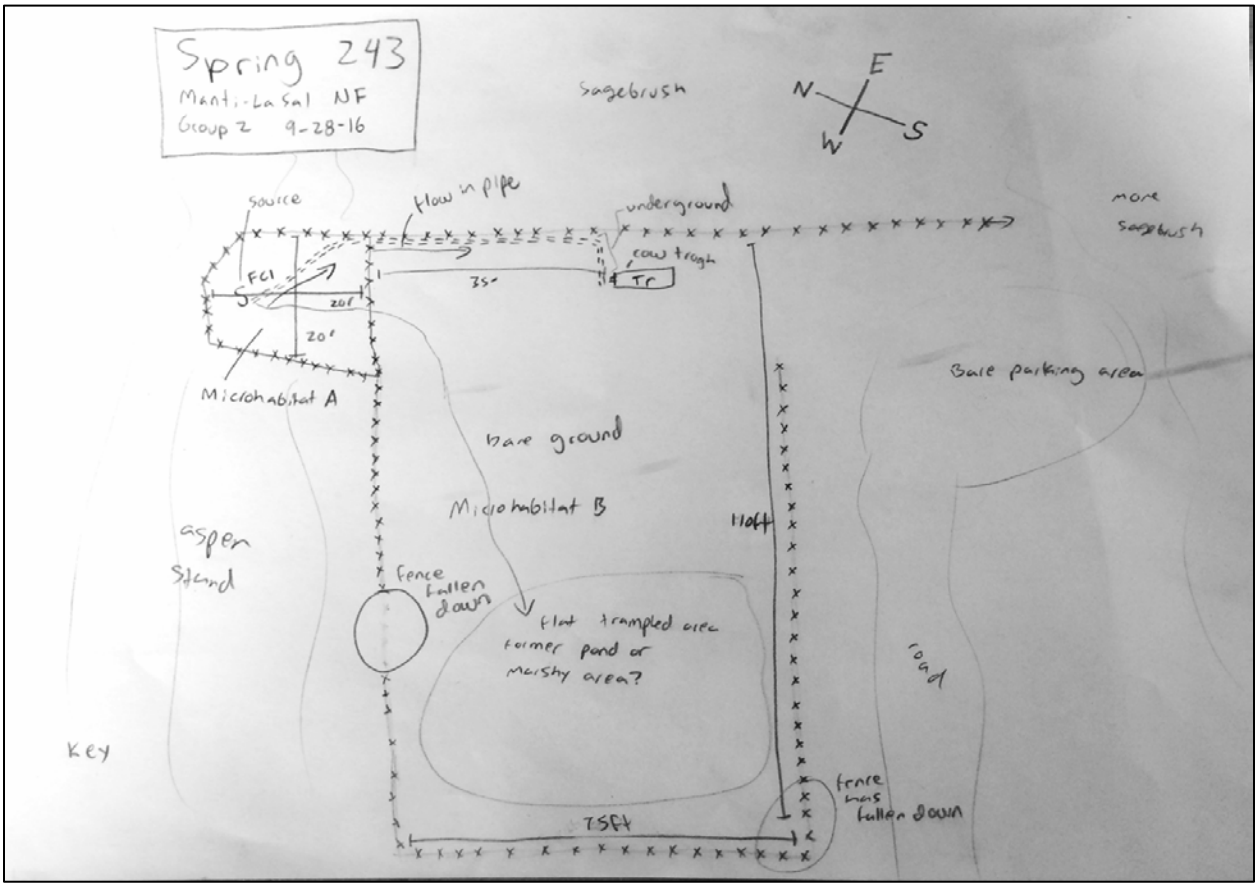

Fig. 1 *Sketched map of spring 243*

Fig. 2 *Microhabitat A; outlet of Spring 243 with trench for water pipe to livestock trough*

Fig. 3 *Exclosure fencing for Microhabitat A spring outlet*

Fig. 4 *View of Microhabitat B and livestock trough from spring outlet; black water pipe leading to trough visible in bottom left*

Fig. 5 *Livestock trough in Microhabitat B*

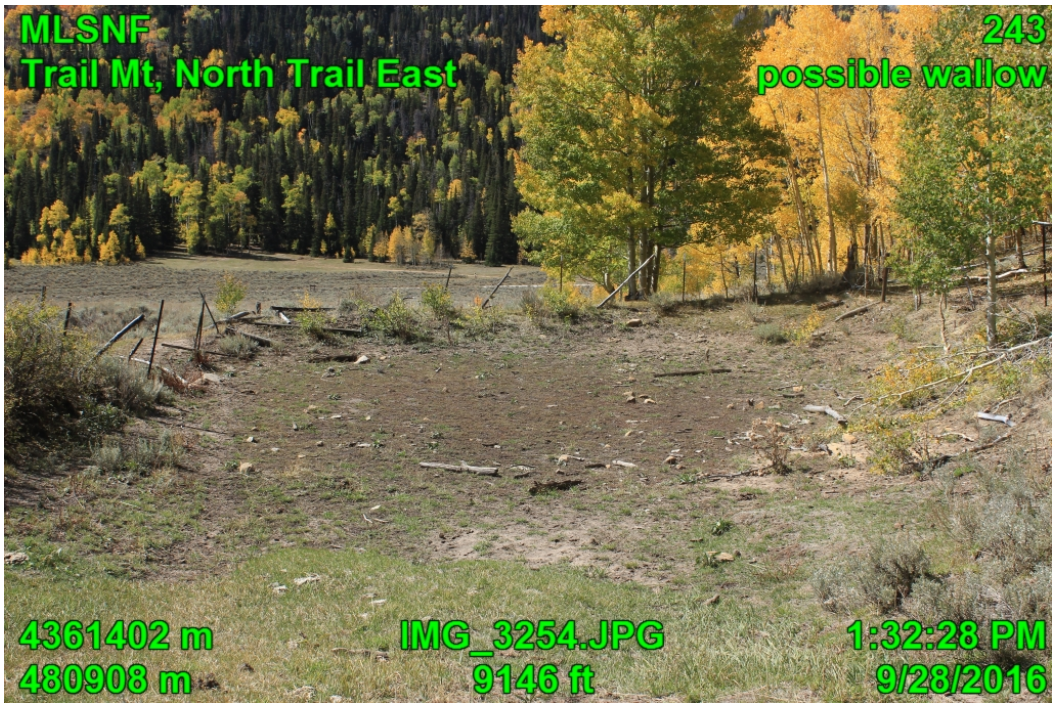

Fig. 6 *View towards SW fence in Microhabitat B*

Fig. 7 *Cattle manure in Microhabitat B*

IV. Assessment

The site consists of two areas: the spring outlet (Microhabitat A) and the area surrounding the livestock trough (Microhabitat B). Microhabitat A is enclosed by a barbed-wire and log fence roughly 20' long and 20' wide (Fig. 3). At the base of the sandstone outcrop, where the spring water emerges, there is a pile of gravel on top of the end of a black plastic pipe which leads to the livestock trough (Fig. 2). No water seemed to be flowing from the spring while this assessment took place, however the trough was full of water and the soil near the outlet was wet. The vegetation in this exclosure consists primarily of grasses, with forbs such as exotic bull thistle; mosses also fairly common. Sedges and rushes are also present, but less common than other types of vegetation. Additionally, the spring outlet is surrounded on three sides by mature aspen trees, and several aspen sprouts are growing within the fenced area.

Microhabitat B, approximately 110' X 70') is larger than Microhabitat A and is surrounded by a fence on four sides, except for a gap of 15-20 feet which allows cattle to enter the area (Fig. 4). There is a small trench that leads from the general area of the spring outlet downhill to a low-lying area that may become a pool during rain events or higher spring flow (Fig. 6). Bare ground and grasses dominate the ground cover in this area, and a few rushes and sedges are scattered throughout. Cattle manure and hoof-prints were observed throughout this enclosed area, with the ground surrounding the trough being especially bare (Fig. 5). Flora include aspen trees (a few mature, several sprouts), several clumps of sagebrush, and Wood's rose along the southern fence line. Of particular note is a large aspen snag that has fallen on the northern fence, flattening it and allowing cattle to cross into the aspen stand on the other side. Significant browsing of regenerating aspen was observed in this stand.

Insects observed at this spring include yellowjackets, grasshoppers, and tachinid flies. Very little other wildlife was observed, likely due to the complete diversion of the spring's water into the cattle trough. Evidence of deer was present inside the second exclosure, Microhabitat B.

V. Analysis:

Given that no evidence of browsing or trampling was observed with the fence surrounding Microhabitat A, the exclosure appears to be effective at keeping out cattle that might degrade the spring outlet. However, the combination of the complete diversion of water to a trough and the small size of the area fenced off from cattle means that little to no riparian or spring-influenced habitat is currently provided by the spring.

Microhabitat B is significantly impacted by cattle and has a large portion of bare or semi-bare ground (i.e., only partial grass cover). In the aspen stand on the other side of the downed fence in Microhabitat B, there is a trampled path along the fence line, cattle manure, and browsing of aspen sprouts.

VI. Recommendation:

The pipe that transports water to the trough appears to be capturing so much of the spring flow that it is preventing spring habitat (for wildlife and plants) from existing near the outlet.

We recommend the following:

- Survey and monitor the flow of the spring to ensure that the water is being appropriately divided among spring- and riparian-dependent wildlife and livestock uses.
- Remove the fallen aspen on the northern side of Microhabitat B and the downed fence be repaired in order to prevent cattle from browsing the aspen stand above the spring.
- Install a wildlife escape ramp in the livestock trough, which currently lacks any such wildlife-friendly infrastructure (Fig. 5).