

Executive Summary

Eldorado Mountain/Doudy Draw Trail Study Area Sustainable Recreation Monitoring

Trail Condition Monitoring
in the Spring Brook/Goshawk Ridge Area

2008-2010 Monitoring Report



Prepared by:

Ann Lezberg and Deonne VanderWoude
Resource Monitoring Technicians

City of Boulder
Open Space and Mountain Parks Department
Boulder, Colorado

September 26, 2011

Acknowledgments

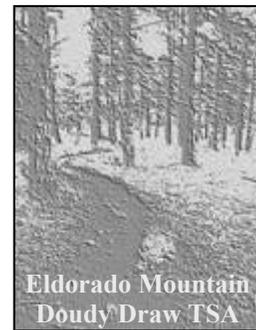
This report represents the collective work of the Monitoring Group within the City of Boulder Open Space and Mountain Parks (OSMP) Department. Steve Armstead, Mark Gershman, Marianne Giolitto, Deonne VanderWoude and Ann Lezberg contributed to project protocols. Ann Lezberg, Donna Middleton and Deonne VanderWoude collected field data for these projects. There were also numerous internal contributors and reviewers of the report.

Suggested Citation:

Lezberg, A. and VanderWoude, D. (2011). Trail Condition Monitoring in the Spring Brook/Goshawk Ridge Area *2008-2010 Monitoring Report*. The City of Boulder, Department of Open Space and Mountain Parks. Boulder, Colorado.

Sustainable Recreation Monitoring
Trail Condition Monitoring in the
Spring Brook/Goshawk Ridge Area
2008-2010 Monitoring Report

September 26, 2011



Executive Summary

In 2010, the City of Boulder Open Space and Mountain Parks (OSMP) Department completed three years of monitoring associated with two new trails, Spring Brook Loop and Goshawk Ridge Trail in the Eldorado Mountain/Doudy Draw Trail Study Area (EM/DD-TSA). These monitoring efforts included projects that evaluated the sustainability of designated trails under new visitor activities and an assessment of the reduction in the extent and severity of undesigned trails in the surrounding area. This document presents the results of three related monitoring projects:

1. Goshawk Ridge Trail – Trail Condition
2. Goshawk Ridge Trail – “Segment Two” Condition
3. Spring Brook Loop and Goshawk Ridge Trail - Undesignated Trails

For the three projects, staff measured trail tread conditions at 100-foot intervals along designated and undesigned trails prior to the opening of new trails for visitor travel (baseline data) and at least annually for 2 years afterwards.

Results presented in this report will be used by OSMP managers in their evaluation of the effectiveness of visitor management, trail management and trail closure strategies at improving upon or maintaining desired conditions described in the EM/DD-TSA Plan. Results will also be used to inform adaptive management responses as necessary.

Key elements of each of the three monitoring projects are summarized below and reported in more detail in this report.

Goshawk Ridge Trail – Trail Condition

What was monitored?	<p>Physical conditions of the Goshawk Ridge Trail (GRT) by:</p> <ol style="list-style-type: none"> 1. measuring tread width and incision depth and comparing those measurements to OSMP standards; 2. photo-documenting selected trail locations and 3. documenting evidence of equestrian and other visitor travel in close proximity to unacceptable tread width or incision
Why?	<p>To evaluate the ability of the current trail design to sustain human and equestrian travel at current use levels, determine if modifications are needed to support continued human and equestrian travel and identify trail sections that require immediate maintenance</p>
Where?	<p>Along the length of the GRT (except Segment One and Segment Two—see Figure 3)</p>
When?	<p>Baseline trail conditions were assessed just before opening of the GRT in January 2009. After opening the GRT to visitor travel, trail conditions were monitored quarterly (March, June, September and December) in 2009 and 2010.</p>
Results:	<ul style="list-style-type: none"> ▶ Trail incision is acceptable. Trail incision has generally remained stable between baseline conditions and monitoring completion. ! Trail width is <i>not within the acceptable range</i>. Trail width ranged between 16 and 82 inches (outside the range of acceptability for both trail width indicators).
Highlights for Managers:	<p>Tread incision has generally remained within ranges of acceptability under current use patterns. Localized trail erosion has been addressed by annual maintenance.</p> <p>Trail width has exceeded the range of acceptability on numerous occasions. In 2009 and early 2010, excessive tread width was addressed by the construction of water bars and camouflaging trampled areas along trail edges. Managers will need to address more recently measured unacceptable conditions.</p> <p>Excessive trail incision showing evidence of horse travel was found only once during the 2 years of monitoring. The incision problem at this location improved by the subsequent monitoring session. The monitoring data do not suggest a link between equestrian travel and physical trail conditions.</p>

Goshawk Ridge Trail - Segment Two Condition

What was monitored? Physical sustainability of Segment Two (**Figure 5**) of the GRT by:

1. measuring tread width, tread incision, development and severity of trail braiding, development of new undesignated trails and the number of structures constructed to support sustainability of Segment Two;
2. photo-documenting selected trail locations and
3. documenting evidence of visitor travel in close proximity to trail braiding or new undesignated trails

Why? To promptly detect and correct problems with the physical condition of Segment Two and evaluate the physical sustainability of the provisional alignment to determine if it meets minimally acceptable conditions established under the GRT Segment Two Limits of Acceptable Change (LAC) process.

Where? Along the second northern-most segment of the GRT alignment (Segment Two)

When? Baseline trail conditions were assessed just before opening of the GRT in January 2009. After opening the GRT to visitor travel, Segment Two trail conditions were monitored quarterly (March, June, September and December) in both 2009 and 2010.

Results:

- ▶ Trail incision is **acceptable**. Trail incision generally remained stable between the baseline survey and monitoring completion.
- ▶ Number of trail structures is **acceptable**. No additional trail structures have been installed by OSMP since trail opening.
- ▶ The extent of trail braiding and undesignated trail is **acceptable**. One braided segment was recorded in 2009 and zero braided segments or undesignated trails were recorded during 2010 monitoring.
- ! Trail width is **not within the acceptable range**. Trail width exceeded 30 inches during the last three monitoring periods and a few continuous sections greater than 36 inches wide remain.

Highlights for Managers: A few segments where width exceeded 36 inches in 2010 should be considered for management actions such as the addition of wood or rock water bars and risers.

Based on LAC trail standards used to assess trail conditions and allowing for minor seasonal maintenance, there is little evidence to suggest the provisional Segment Two alignment was unsustainable in the given time frame.

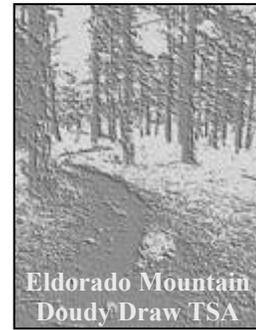
Spring Brook Loop and Goshawk Ridge Trail - Undesignated Trails

What was monitored?	Condition and status of undesignated trails by: 1. measuring tread width, trail length and trail condition class and 2. mapping locations for existing and any newly developed undesignated trail segments
Why?	To detect new undesignated trails and to determine if desired reductions in length and width and improvement of conditions classes of existing undesignated trails have occurred.
Where?	In two monitoring sites: 1) a predefined area around the Spring Brook Loop Trail; and 2) near the Goshawk Ridge Trail corridor
When?	Baseline undesignated trail conditions were assessed just before trail opening in December 2008 (SBL) and January 2009 (GRT). After opening the SBL and GRT to visitor travel, the extent and condition of undesignated trails were monitored in fall and early winter of 2009 and 2010.
Results:	<p>At both monitoring sites:</p> <ul style="list-style-type: none"> ▶ Total length is acceptable. Trail length of existing undesignated trails decreased slightly between 2008 and 2010. ▶ Tread width is acceptable. Average tread width decreased in both sites between 2008 and 2009 and again between 2009 and 2010. ▶ Trail condition classes improved during each monitoring year. <p>! Development of new undesignated trails is not within the acceptable range. Short undesignated trail segments branching from existing trails were located and mapped in 2009 and/or 2010; however whether visitors travel on these trails is uncertain.</p>
Highlights for Managers:	<p>Over the two-year time frame, reductions in length and width of undesignated trails fell within OSMP’s ranges of acceptability, while development of new undesignated trails was outside of the acceptable range. However, evidence suggests that conditions are changing towards desired conditions.</p> <p>Managers should consider the following recommendations:</p> <ul style="list-style-type: none"> ▶ End EM/DD-TSA focused undesignated trail monitoring and continue monitoring these undesignated trails at less frequent intervals starting in 2011 and periodically thereafter through OSMP’s system-wide undesignated trail monitoring. ▶ Consider alternative closure and/or tracking strategies for the few undesignated trails that are not improving or that have developed since opening of the GRT and SBL.

Sustainable Recreation Monitoring

Trail Condition Monitoring in the
Spring Brook/Goshawk Ridge Area
2008-2010 Monitoring Report

September 26, 2011



1.0 Introduction

Two new trails, the Spring Brook Loop Trail (SBL) and the Goshawk Ridge Trail (GRT) were approved for construction in the Eldorado Mountain/Doudy Draw Trail Study Area (EM/DD-TSA) Plan (City of Boulder, 2006, pp. 31-33, 38-39). Because these trails lie within sensitive landscapes and allow new visitor activities (i.e., dog walking, cycling), the EM/DD-TSA Plan also contained a commitment to conduct a suite of monitoring designed to both: 1) assess how visitor and trail management strategies were working; and 2) provide OSMP with information needed to adjust these management strategies to protect natural resources and provide the opportunity for high quality visitor experiences (City of Boulder, 2006, pp. 21-23).

1.1 Trail condition monitoring projects

Among the monitoring efforts included in the EM/DD-TSA Plan were three projects intended to evaluate change, if any, in trail conditions on either newly established designated trails or nearby undesignated trails after visitor and trail management strategies were implemented. These three projects are:

1. Goshawk Ridge Trail – Trail Condition
2. Goshawk Ridge Trail – Segment Two Condition
3. Spring Brook Loop and Goshawk Ridge Trail - Undesignated Trails

The visitor and trail management strategies implemented (i.e., building designated trails, allowing new recreational uses, closing undesignated trails and requiring on-trail travel for some activities) were designed to provide sustainable recreational opportunities on designated trails while shifting visitor travel away from undesignated trails in sensitive areas and thus promoting their restoration.

1.2 Monitoring sites and trail descriptions

The monitoring projects were conducted on and/or in the vicinity of the three trails or trail segments described below. These trails lie within the west-central portion of the EM/DD-TSA where the Eldorado Mountain Habitat Conservation Area (HCA) and the Doudy Draw Natural Area meet (Figure 1, inset).

The **Goshawk Ridge Trail** is a new pedestrian and equestrian trail in the Eldorado Mountain HCA. This trail (Figure 1) extends from an access bridge along the Denver Water Board Road (DWB Road) from the southeast to the Conda Mine Road and Fowler Trail junction to the northwest. On-trail travel on the GRT is required unless an off-trail HCA permit is obtained.

GRT Segment Two was previously an undesignated trail that was incorporated into the GRT alignment. This trail segment extends from the ridge north of the Spring Brook drainage on the southern end to the Conda Mine Road on the northern end.