

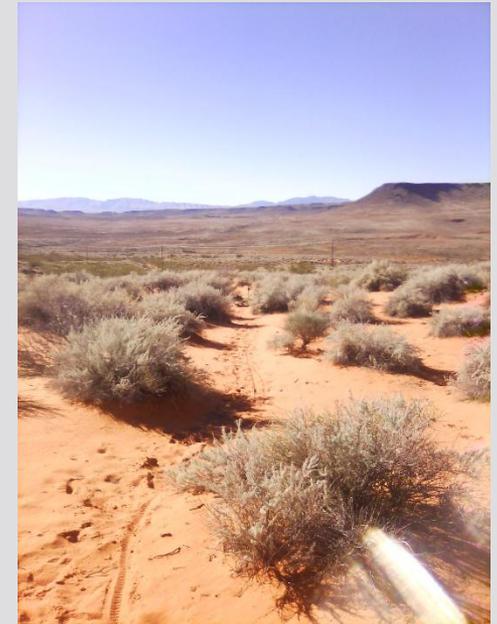
# Recreation Impact Monitoring



Bonewash

**FALL 2015  
(INITIAL RESULTS)**

**CITY CREEK  
MILL CREEK  
GRAPEVINE  
CHUCKWALLA**



Sandhill

# Desired Conditions

## Trails:

Trail width and depth\* stable or declining

**Unauthorized trails clearly marked as closed, revegetated, etc.**

**Trail nodes stable or declining**

**No off trail impacts; No proliferation of trails**

**No unauthorized trail access points**

## Recreational Activities:

**No campfires in lowland zone**

**Recreation in lowland zones to occur on designated trails**

**Camping restrictions followed**

**Climbing restricted to designated areas**

## Upland Zone Uses:

Well defined trail not excessive or redundant

No trail proliferation

Minimal impacts from camping

Impacts short-term

Note: recreation impact monitoring is focused on the lowland zone

## Non-native animals:

Pets on leash\* (this assessment and enforcement is through a volunteer patrol)

Feral animals controlled

No unmanaged domestic livestock

## Plants:

Nonnative weeds controlled

**No human caused plant destruction**

Perennial plant population maintained

Vegetative ground cover stable or increasing

## General Habitat Conditions

**Intact cryptobiotic crust**

Soils maintained

Boundary fences, signs, markers, etc. intact\*

Seasonal closures enforced

No human-induced tortoise mortality\*

## Refuse:

**No recreational human waste or liter**

No non-recreational (construction) trash\*

## Prohibited or heavily restricted activities:

**Motorized vehicles on designated roads only**

**No paintball activities**

**No target shooting**

# Methods



- **Field**

- Hiked 10/30, 11/21 & 11/27
  - ✦ Stop every 1/2 mile for interval data
  - ✦ Recorded visual disturbance impacts
- Data recorded in Terrasync with photos on Trimble Juno SB devices

- **Consistency**

- Data downloaded into ArcPad 10.1
- Inter-rater reliability check through systematic analysis of photos

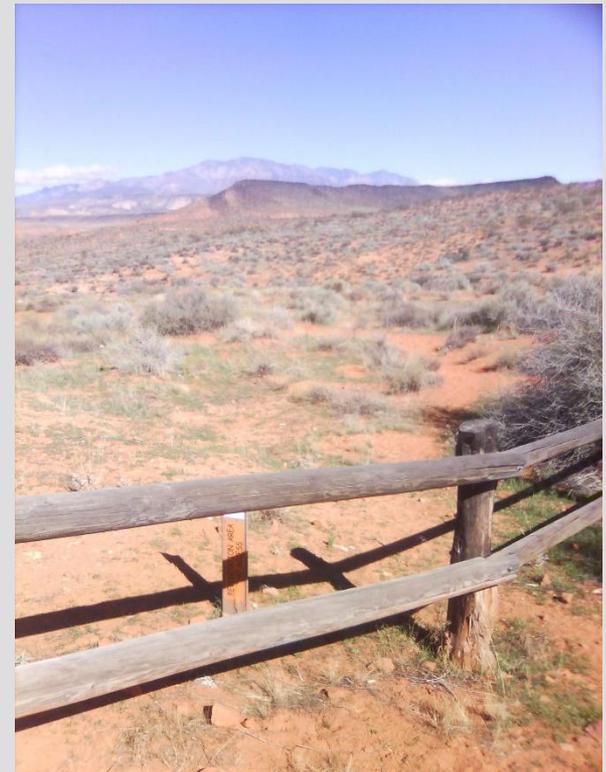


# Results



## Overall Results

Monitoring Summary	N (%) 2014
Trails	15
Miles	23 miles
Visual Disturbance photos with more than five impacts or severe impacts	2
ATV evidence	1
Evidence of climbing outside designated areas.	0
Dumping sites	1
Evidence of paintball or shooting	0
Graffiti or vandalism	0
Nodes	20
Campfire remains	0
Uses	Hiking, mountain biking, equestrian, and climbing



[ESRI MAP](#)

Pioneer Hills

# Trails with Red Severity Rating, n = 4



Impacts are visible, numerous (>5), and/or established and hard to erase. The red trails do not meet desired conditions, and have severe impacts.

<b>Trail</b>	<b>Mileage (miles)</b>	<b># Visual Disturbances* (2013)</b>	<b># Nodes (2013)</b>	<b>Erosion</b>	<b>Impact description of trail and recommendations.</b>
<b>Chuckwalla</b>	1	8 (>15)	8 (9)	Moderate to severe	An area of concern with increasing nodes, severe erosion, and social trails
<b>Elephant Arch</b>	.5	>15 (>15)	>5 (1)	Moderate to severe	An area of concern with increased social trails, unauthorized trails, and vegetation damage near arch

# Trails with Yellow Severity Rating, n =



Impacts are visible, but not dominate. The yellow trails do not meet desired conditions, but the impacts are comparatively moderate.

Trail	Mileage (miles)	# Visual Disturbances 2015 (2013)	# Nodes 2015(2013)	Erosion	Notes
Bone Wash	1.5	8 (8)	2 (3)	Moderate	Trail is through a wash for the majority of it's duration. Social trails are established.
City Creek	2	3 (8)	2 (2)	Moderate	Trail is well established with some OTI.
Dino Cliffs	2	5 (6)	2 (2)	Moderate to severe	A few nodes, severe erosion at South end.
Grapevine	2	14 (2)	0 (0)	Moderate	A road trail with signs of regular use.

# Trails with Green Severity Rating, n = 3



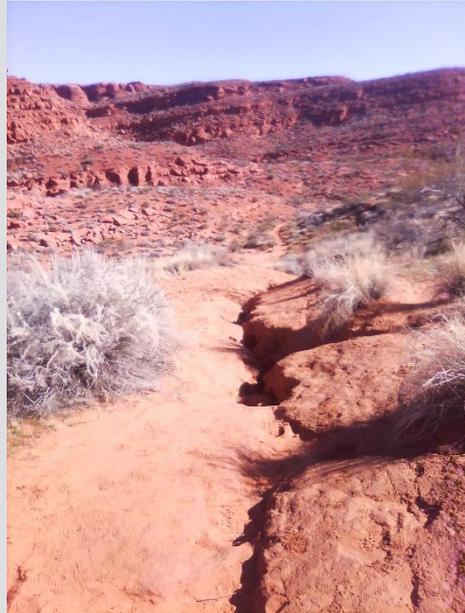
No impacts visible at interval photos. The green trails are closest to meeting desired conditions.

Trail	Mileage (miles)	# Visual Disturbances 2015 (2013)	# Nodes 2015 (2013)	Erosion	Notes
Cottontail	.5	0 (0)	0 (0)	Mild	No significant change
Middleton Power Line	3	2 (12)	0 (0)	Mild	Established trail with little OTI
Owen's Loop	1	4 (0)	0 (0)	Mild	Data lost for part of trail, add to 2016 re-do.
Pioneer Hills/Twisted Hollow	3	8 (?)	4 (?)	Mild	Nodes at trail intersections
Pioneer Rim	1	0 (?)	0 (?)	Mild	Trail was too faint to follow. Re-do 2016
Sand Hill	2	0 (1)	0 (0)	Mild	Sand trail
Yellow Knolls	2	0 (?)	0 (?)	Mild	Trail is established, little sign of use

# Severe Erosion Examples



**Bonewash**



**Dinosaur Cliffs**



**Grapevine**

# Analysis of Desired Conditions

## Desired Conditions Being Met

- **Camping restrictions followed**
  - In the monitored area, no campfire remains were found
- **Climbing restricted to designated areas**
  - Climbing was retained at Chuckwalla,
- **No recreational human waste or litter**
  - No recreational human waste or litter was found
- **Motorized vehicles on designated roads only**
  - No ATV evidence on trails
- **No paintball activities**
  - No paintball remnants found
- **No target shooting**
  - No target shooting evidence found
- **Unauthorized trails clearly marked as closed, revegetated, etc.\***
- **Intact cryptobiotic crust\***
- **No non-recreational (construction) trash**
  - No signs of dumping

## Desired Conditions NOT Met

- **No off trail impacts**
  - Every trail has off trail impacts, but less in this area
- **No proliferation of trails**
  - Yellow Knolls and Sand Hill had no social trails, all others had social trails
- **No unauthorized access points**
  - In this area few unauthorized access points
- **Recreation in lowland zones to occur on designated trails**
  - Social trails to view points and attractions are common
- **No human caused plant destruction**
  - Off trail impacts and nodes destroy plants along impact area

\* In this area, vs. all of Red Cliff

# Future Work



- **Refining**

- Continue to assess an area each fall.
- Maintain severe erosion points or re-route trails
- Analyze visual disturbance point data with BLM's social trail data.
- Complete a node analysis to assess in more details node trends.
- Refine the form for tablet collection that works with Esri's online resources, but include current data in updates so data is not lost. Updating form includes photos of condition classes for more consistent ratings in the field.
- Collect data by tracking "conditions" in line data as opposed to point data. This would be a more detailed account of conditions on the ground, without losing data that has been collected.

# Final Thoughts



- Partnership Opportunities
  - IIC YCC Training
- Sabbatical
  - Dr. Eastep
- Recreation causes impacts
- Thank you Dave Maxwell
- Thank you Dr. Goonan

