

4-1-2009

# Tushar Grazing Allotments Collaboration: Final Report, Fishlake National Forest

Michele Straube

*S.J. Quinney College of Law, University of Utah*, [michele.straube@law.utah.edu](mailto:michele.straube@law.utah.edu)

Follow this and additional works at: <http://dc.law.utah.edu/edr>

 Part of the [Law Commons](#)

---

## Recommended Citation

Straube, Michele, "Tushar Grazing Allotments Collaboration: Final Report, Fishlake National Forest" (2009). *Environmental Dispute Resolution Program*. 17.

<http://dc.law.utah.edu/edr/17>

This Article is brought to you for free and open access by the Wallace Stegner Center for Land, Resources, and the Environment at Utah Law Digital Commons. It has been accepted for inclusion in Environmental Dispute Resolution Program by an authorized administrator of Utah Law Digital Commons. For more information, please contact [valeri.craigle@law.utah.edu](mailto:valeri.craigle@law.utah.edu).

# **TUSHAR GRAZING ALLOTMENTS COLLABORATION Final Report**

**Fishlake National Forest**

**PREPARED BY:**  
Michele Straube



**CommUnity Resolution Inc.**

**APRIL 2009**

U.S. Institute for **Environmental Conflict Resolution**



Morris K. Udall Foundation

# TABLE OF CONTENTS

---

*This table of contents contains clickable links. Hover your mouse over a section and click to be directed to that point in the report.*

<b>Section 1: Introduction .....</b>	<b>4</b>
<b>Section 2: Executive Summary .....</b>	<b>7</b>
<b>Section 3: The Collaborative Process.....</b>	<b>11</b>
Collaboration Recommendations on Continued Collaborative Activities.....	14
<b>Section 4: Administrative Framework.....</b>	<b>16</b>
Collaboration Recommendations on Administrative Process .....	17
<b>Section 5: Reintroduction of Beaver .....</b>	<b>18</b>
<b>Section 6: Aspen and Mountain Mahogany.....</b>	<b>21</b>
Collaboration Recommendations on Plans to Restore Aspen Recruitment .....	24
<b>Section 7: Desired Conditions and Monitoring .....</b>	<b>26</b>
Desired Conditions .....	27
Collaboration Recommendations on Monitoring.....	32
<b>Section 8: Allotment Management-The Pine Creek/Sulphurbeds Allotment.....</b>	<b>38</b>
Existing Conditions .....	38
Collaboration Agreements on Management Actions .....	48
<b>Section 9: Allotment Management-The Ten Mile Allotment .....</b>	<b>52</b>
Existing Conditions .....	52
Collaboration Agreements on Management Actions .....	62
<b>Section 10: Lessons Learned.....</b>	<b>66</b>
<b>Appendix A. Resolution Agreement.....</b>	<b>72</b>
<b>Appendix B. Tushar Allotments Collaboration Participants .....</b>	<b>77</b>
<b>Appendix C. Recommended AMP Template.....</b>	<b>78</b>

**Appendix D. Existing Conditions Summary Report-Aspen.....81**

**Appendix E. Existing Conditions Summary Report- Riparian Grass/Grasslike  
Utilization in Pine Creek/Sulphurbeds Allotments .....83**

**Appendix F. Existing Conditions Summary Report- Riparian Cottonwood and  
Willow in Pine Creek/Sulphurbeds Allotment .....85**

**Appendix G. Existing Conditions Summary Report-range readiness .....87**

**Appendix H. Existing Conditions Summary Report-Tour With Permittees .....90**

**Appendix I. Memorandum for the Heads of Executive Departments and Agencies  
.....92**

## SECTION 1: INTRODUCTION

---

The Tushar Mountains are located in southwest Utah. They are managed by the Beaver Ranger District of the Fishlake National Forest, located in Beaver, UT. The area has a long history of multiple use including grazing and ranching, mining, wildlife, and recreational use (motorized and non-motorized) by a variety of users. The area is on the transition between Great Basin and the Colorado Plateau, with a wide variety of ecosystems.

The Tushar Allotments Collaboration (“collaboration”) focused on two cattle grazing allotments, one on the west side of the Tushar Mountains (the Pine Creek / Sulphurbeds allotment) and one on the east side (Ten Mile allotment). Four grazing permits are currently active in the Pine Creek/Sulphurbeds allotment, while one grazing permit covers the Ten Mile allotment (see Figure 1 and 2).

The collaboration grew out of an appeal of a decision made by the Forest Service to reauthorize grazing on eight allotments within the Tushar Mountains. The appeal was withdrawn, so that issues regarding existing conditions, desired future conditions, and appropriate grazing management actions to move from existing toward desired conditions could be explored collaboratively among the Forest Service, grazing permittees, appellants and other interested stakeholders, with a focus on two representative allotments.

This report reflects the outcome of that two-year collaboration. The report contains the collaboration’s conclusions and recommendations for future management actions on the two allotments. It also documents the reintroduction of beaver into Pine Creek to improve riparian habitat. The report cannot, however, tell the full story of the collaboration – a story that follows the plot lines of a classic drama. The underlying conflict relates to the appropriate level of cattle grazing on a sensitive and currently impaired landscape.

The story of the collaboration began with strong disagreement – in some cases, denial -- about the nature and significance of the problems, and ended with a mutual understanding that conditions on the ground were less than optimal and needed improvement. Along the way, there were arguments and reconciliation; laughter and tears; personal conversations and increased understanding of each other’s knowledge and experiences. The collaboration’s story demonstrates the power of dialogue, the transformative potential of being in the field together and collaborative monitoring, and the creative problem-solving that is possible when

those who have different connections to public lands reach a common understanding of particular problems.

Figure 1: Pine Creek/Sulphurbeds Allotment

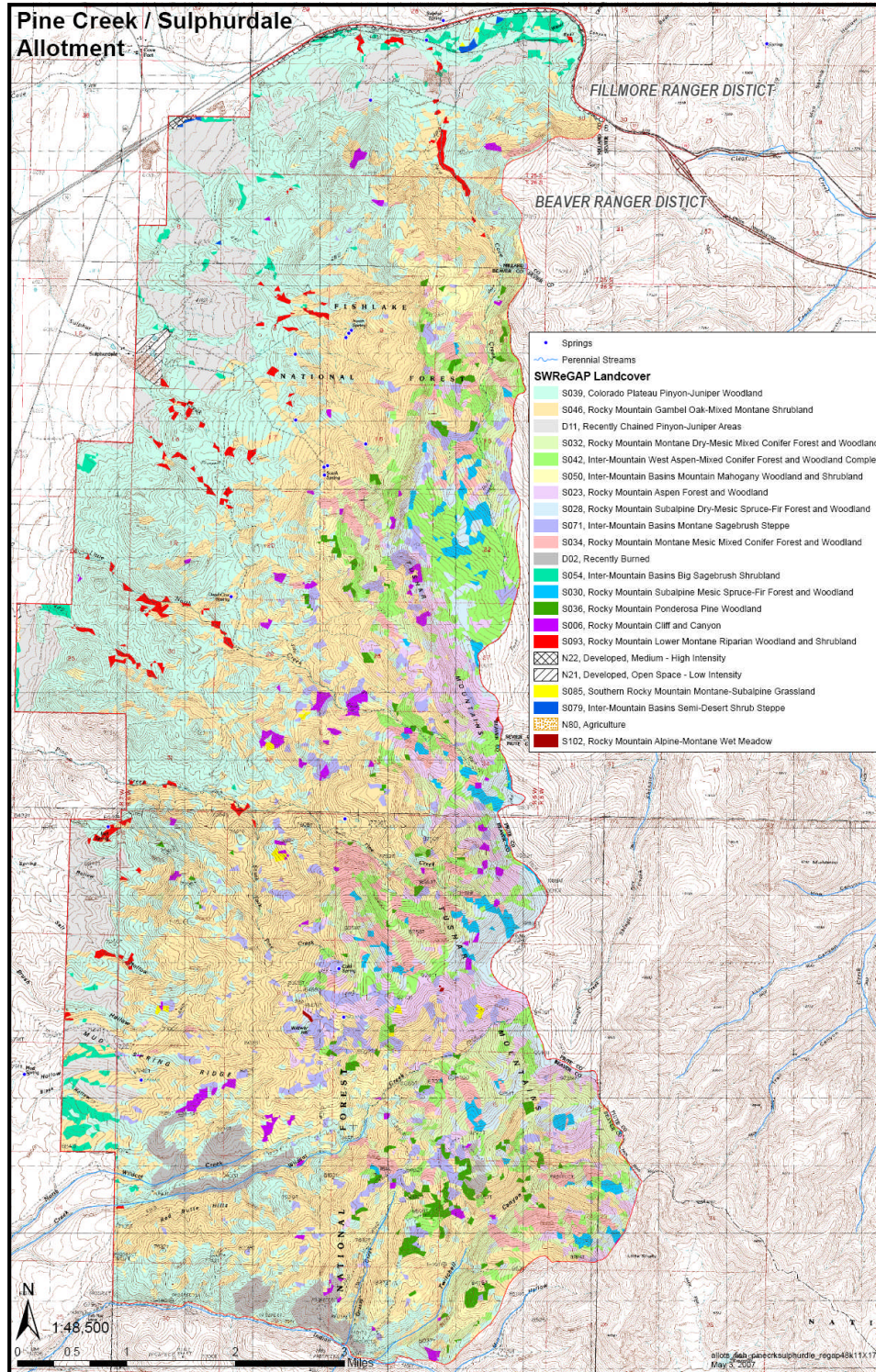
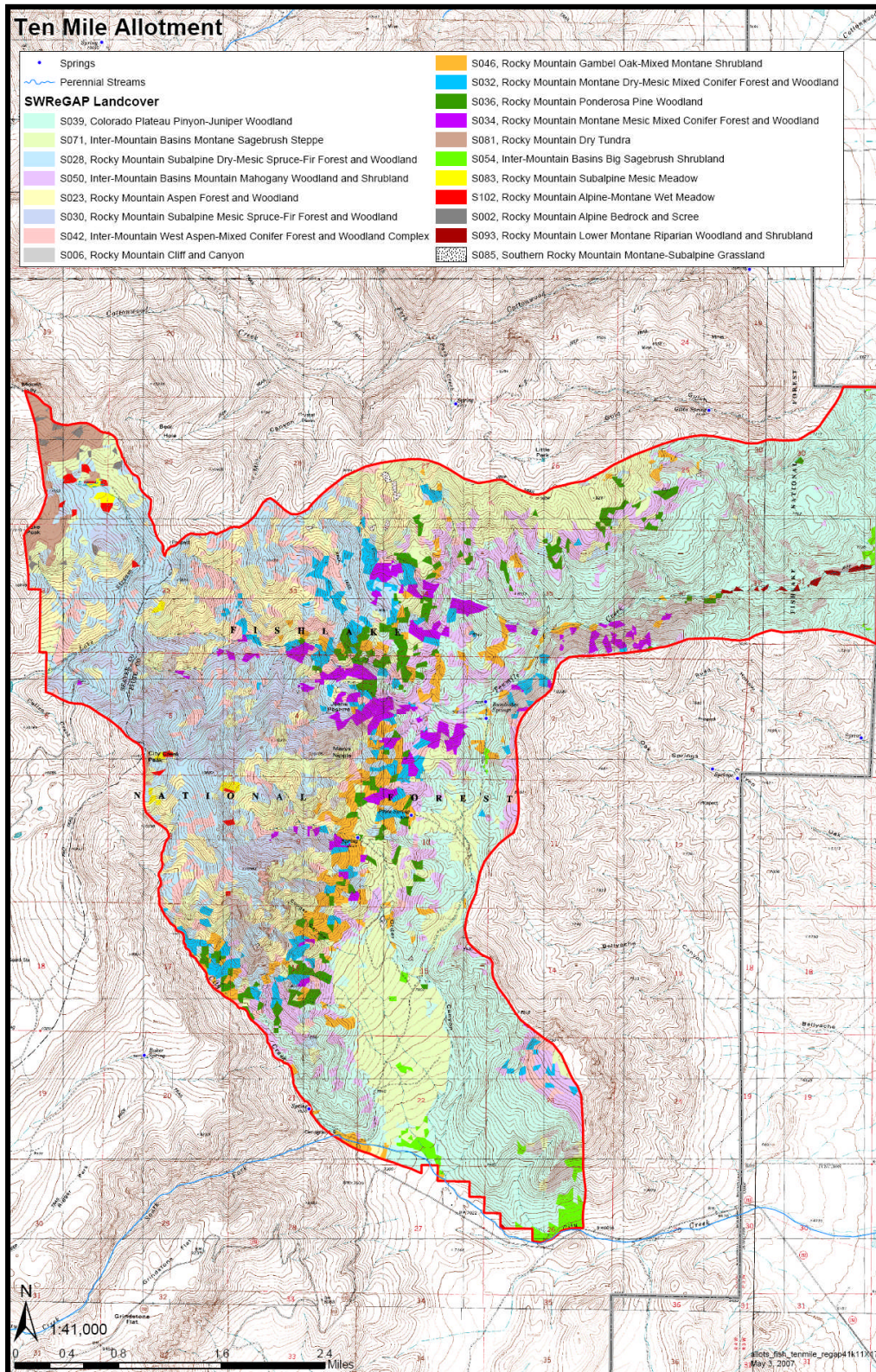


Figure 2: Ten Mile Allotment



## SECTION 2: EXECUTIVE SUMMARY

---

The Tushar Allotments Collaboration grew out of an appeal of a decision made by the Forest Service to reauthorize grazing on eight allotments within the Tushar Mountains. The appeal was withdrawn, so that issues regarding existing conditions, desired future conditions and appropriate grazing management actions to move from existing toward desired conditions could be explored collaboratively between the Forest Service, grazing permittees, the appellants and other interested stakeholders, with a focus on two representative allotments – the Pine Creek/Sulphurbeds and Ten Mile allotments.

The collaboration was co-sponsored by the Utah Farm Bureau and Grand Canyon Trust. The collaboration participants committed to work together for two years to address natural resource conditions and livestock management on the two allotments, including aspen and mountain mahogany recruitment on both allotments, and a plan for reestablishment of suitable habitat for beaver on at least one stream within the Pine Creek/Sulphurbeds allotment.

The collaboration members worked hard during the group's two-year life. One primary activity was data gathering in the field, with each trip open to participation by all collaboration members. Collaboration meetings were scheduled as needed to organize each summer's data gathering efforts, to synthesize the information gathered, and to discuss conclusions reached and develop collaboration recommendations. Some collaboration activities were purely educational in nature. The collaboration hired a professional facilitator about halfway through its work. The collaboration established a website in mid-2007, hosted by the U.S. Institute for Environmental Conflict Resolution (the U.S. Institute), which will be maintained for the foreseeable future. The collaboration's final report and all the supporting scientific reports are posted on the website: <http://tushar.ecr.gov>.

The collaboration agreed to a description of existing conditions on each allotment, as well as measurable and quantifiable desired future conditions, applicable to both allotments.



### ***Collaboration Recommendations on Continued Collaborative Activities***

- To ensure a fully transparent process, the Forest Service will host an annual meeting in January (at least in 2010 and 2011) for all interested collaboration members to review the past year's grazing activities, and planned changes for the coming year.
- At least in 2009 and 2010, the Forest Service will schedule 2-3 days on each allotment, where all interested collaboration members will be invited to participate in on-site monitoring.
- A post-collaboration subgroup will meet in Spring 2009 to discuss and/or develop monitoring protocols for assessing movement toward desired conditions.

### ***Collaboration Recommendations on Administrative Process***

#### **A. Public Involvement in the National Environmental Policy Act (NEPA) Analysis of Grazing Allotments**

- To be most meaningful to the public, scoping notices should include information about existing natural resource conditions on the allotment. They should provide at least enough information to give the public sufficient background on whether the agency should re-authorize grazing, and if so, what types of management actions will be applied to the grazing.
- Given the time and administrative resources, the number of grazing allotments, and the number of acres impacted, it would be helpful to share with the public:
  - The planned schedule for reviewing and/or completing a new NEPA analysis on grazing allotments.
  - The factors used to determine the priorities.

#### **B. Sharing of Annual Monitoring**

- It would be helpful to share in some public way the results of grazing and natural resource monitoring completed each year.

### ***Reintroduction of Beaver***

Utah Division of Wildlife Resources (UDWR) began releasing beaver into the Pine Creek drainage in September 2008. At present a total of five (5) beaver have been live-trapped and relocated to Pine Creek. It is not known at this time whether any of the beaver released into Pine Creek were able to establish.

Consistent with applicable protocol, UDWR will live trap and relocate “nuisance” beaver to Pine Creek until beaver density equals 1 beaver family / 0.7 mile or until evidence exists showing that beavers transplanted to Pine Creek have adversely impacted stream habitats, roads, irrigation systems, etc.

### ***Collaboration Recommendations on Plans to Restore Aspen Recruitment***

- Implement existing project plans for upper elevations prescribed burning (Pine Creek/ Sulphurbeds allotment).
- Initiate analysis for aspen treatment where aspen is encroached by conifer and get in line for prescribed burn projects (Ten Mile allotment).
- Site-specific actions should be taken after a burn to protect the burned area from ungulate grazing until aspen recruitment has been reestablished.
- Specific management actions to protect isolated stands of pure aspen should be addressed at the pasture level.
- Grazing management should insure ongoing recruitment within aspen stands.

### ***Collaboration Recommendations on Monitoring***

The collaboration outlined a list of short-term and long-term monitoring, applicable to both allotments, to document that progress is being made toward desired future conditions. While collaboration members recognize that budgetary and time constraints will limit completion by the Forest Service of all the monitoring on the list, the list identifies the information provided by different types of monitoring, so that permittees, appellants and other interested citizens can participate.

### ***Collaboration Recommendations on Management Actions – Both Allotments***

- Permittees agreed to partial non-use for resource protection.
- Utilization across both allotments will be reduced to 30% to maximize productivity. The reduction to 30% utilization will be implemented one pasture at a time, in order of pasture priority.
- One pasture will be rested every year, and returned to grazing at 30% utilization.
- If in the future, the Forest Service determines there is additional capacity on either allotment, existing permittees will be granted their proportionate share of the additional capacity.
- The collaboration recommends there be no increase in current elk numbers within the herd unit, and if possible, a move toward decreasing the numbers of elk in the herd unit. In order to move from Existing Conditions toward Desired Conditions on each allotment, there should be no increase of elk numbers, thus minimizing the cumulative browsing and grazing impacts of wild ungulates and cattle.
- Protection of particular springs and springs developments were prioritized for each allotment.
- Fence improvement projects were prioritized for each allotment.
- Prohibitions against salt, supplements and developed drinkers (e.g. troughs) in aspen stands, and within ¼ mile of aspen, where possible.
- Protective fences will be provided to protect identified isolated pure aspen stands on each allotment.

## SECTION 3: THE COLLABORATIVE PROCESS

---

### ***Background***

For over twelve years<sup>1</sup> the Fishlake National Forest and the Beaver Ranger District worked on the NEPA analysis for continued livestock grazing on the Tushar Range of the Beaver Ranger District. In January 2007, a Record of Decision was issued for an Environmental Impact Statement (EIS) for eight of the Tushar Range allotments. The decision was appealed by seven conservation organizations (“appellants”), and the Forest Service Regional Standing Appeal Review Team reviewed the EIS.

Before a decision was made on the appeal and in order to avoid potential litigation, the Beaver Ranger District and appellants developed a Resolution Agreement in which appellants agreed to withdraw their appeal in exchange for working collaboratively in the development of the existing and desired conditions and management practices to be used in developing management plans for two of the eight Tushar Range allotments. The two allotments selected were the Pine Creek/Sulphurbeds and Ten Mile allotments. The Resolution Agreement was signed in April 2007 and is attached to this report as Appendix A.

The collaboration was co-sponsored by the Utah Farm Bureau and Grand Canyon Trust. Participants were invited to join the collaboration by the Forest Service. The U.S. Institute was requested to assist with convening the collaborative process, developing the group’s operating protocols, and assuring that professional facilitation was provided as requested by the participants.

The collaboration participants committed to work together for two years to develop existing and desired conditions and management practices to be used in developing the overall management plans for the Pine Creek/Sulphurbeds and Ten Mile allotments. The collaboration agreed to address natural resource conditions and livestock management on the two allotments, including but not limited to aspen and mountain mahogany recruitment on both allotments, and a plan for reestablishment of suitable habitat for beaver on at least one stream within the Pine Creek/Sulphurbeds allotment. It was assumed by all participants that the lessons learned from these efforts to improve natural resource conditions

---

<sup>1</sup> Appellants note that the public NEPA process did not begin until the scoping notice for the Tushar Range was issued in 2004.

and reduce resource damage on the two allotments would be shared for similar or related problems in other Fishlake National Forest livestock allotments.

Collaboration members included representatives from the following interest groups:

- Beaver County Commission
- Flying V Bar, Ten Mile allotment permittee
- Grand Canyon Trust
- Great Old Broads for Wilderness
- Pine Creek/Sulphurbeds allotment permittees
- Red Rock Forests
- Sierra Club, Utah Chapter
- US Forest Service, Beaver Ranger District
- US Forest Service, Fishlake National Forest
- Utah Division of Wildlife Resources
- Utah Farm Bureau
- Western Watersheds Project
- Wild Utah Project

In a few cases, the individual representing a particular organization changed throughout the two years of the collaboration's efforts. A full listing of collaboration participants at the end of the two-year period is attached to this report as Appendix B.

### ***Collaboration Activities***

The collaboration selected Michele Straube of CommUnity Resolution, Inc. as the group's facilitator in October 2007. She began working with the group about halfway through the collaboration's efforts.

The collaboration members worked hard during the group's two-year life. One primary activity was data gathering, all of which was open to participation by all collaboration members. Field visits intended for full collaboration participation were scheduled during both summers (2007 and 2008), so that the group could witness the same conditions and learn about various data gathering methods. The Forest Service and Grand Canyon Trust conducted ten days of joint data gathering in July 2008.

Collaboration meetings were scheduled as needed to organize each summer's data gathering efforts, and to synthesize the information gathered. The full collaboration met three times in early 2009 to discuss the conclusions to be drawn from the data gathered over the two summers, and to reach agreement on existing and desired conditions, as well as to develop recommendations for management actions to move from existing toward desired conditions.

Some collaboration activities were purely educational in nature. Grand Canyon Trust sponsored presentations by Idaho Range Conservationist, Lew Pence, in June 2008, who

talked about the use of beaver as a management tool to restore riparian areas. At least one day in the field was a demonstration of data gathering methodologies.

John Heyneman, manager of the North Rim Ranch, joined permittees from both allotments and two other collaboration



members for a two-day field trip to both allotments to talk about grazing management changes used elsewhere that might be helpful for the conditions in the Pine Creek/Sulphurbeds and Ten Mile allotments.

The collaboration established a website in mid-2007, hosted by the U.S. Institute, to provide public access to its work. Meeting summaries, data gathered during the two years, and relevant background information are all available on the website: <http://tushar.ecr.gov>. This final report and all the supporting scientific reports will be posted on the website, which will be maintained by the U.S. Institute for the foreseeable future.

### ***Development of Collaboration Final Report***

The collaboration's Operating Protocols provided that the collaboration's recommendations would be documented in a final report. The report would reflect consensus recommendations and identify areas of disagreement.

Collaboration members asked the facilitator to draft the final report, which would be distributed as a U.S. Institute report. Conclusions and recommendations for inclusion in the report were negotiated during the collaboration's January, February and March 2009 meetings. They represent good faith compromises and accommodations by all parties.

The facilitator drafted the report, circulated it to all collaboration members for review and comment, and made final changes to the report based on the comments received. For the most part, the report reflects agreement by the full collaboration.

### ***Collaboration Recommendations on Continued Collaborative Activities***

The collaboration members have agreed to the following ongoing collaborative activities as an outgrowth of the collaboration:

- To ensure a fully transparent process, the Forest Service will host an annual meeting in January at least in 2010 and 2011 for all interested collaboration members. Topics for discussion include, but are not limited to:
  - Review the past year's information about grazing activities on each allotment.
  - Inform collaboration members of proposed future actions on each allotment, with particular emphasis on proposed changes.
  - Coordinate collaborative monitoring activities during the upcoming grazing season.
- At least in 2009 and 2010, the Forest Service will schedule 2-3 days on each allotment, where all interested collaboration members will be invited to participate in on-site monitoring.
- A post-collaboration subgroup, to include all interested collaboration members, will meet before summer 2009 to discuss and/or develop monitoring protocols. The discussion will include, but not be limited to:

- Photographs: What information should be provided with the photographs to make them most useful.
- Trampling: Methodology to document level of trampling/shearing in riparian areas. (For example, Management Indicator Monitoring (MIM))
- Location and design of exclusionary devices (e.g., cages) to monitor:
  - Herbaceous biomass production
  - Shrub-aspen recruitment
  - Understory composition in aspen, sagebrush, and pinyon-juniper
  - Mountain mahogany recruitment
- Review Mueggler method
- Group logistics:
  - Doug Sorensen, Forest Service, will take the lead in setting up the conference calls and in identifying specific issues on which to present protocols.
  - The group will begin its discussions with a conference call in April 2009. In anticipation of the conference call, the Forest Service will propose monitoring protocols for group consideration, and other participants will suggest modifications or additional methods.
  - A follow-up conference call will take place in May 2009.



## SECTION 4: ADMINISTRATIVE FRAMEWORK

---

### ***Fishlake National Forest Decision Process***

The collaboration grew out of the NEPA process for eight allotments in the Fishlake National Forest. Public notice and comment were solicited for the EIS addressing the decision to re-authorize grazing on the eight allotments. Some members of the collaboration appealed the Final EIS and Record of Decision. As a resolution of the appeal, the collaborative group was formed to develop the desired conditions and recommendations for Allotment Management Plans for two of the eight grazing allotments.

The following chronology reflects the history of Forest Service administrative decisions related to the Pine Creek/Sulphurbeds and Ten Mile allotments.

- 1986 -- Fishlake Forest Plan
- 1987-1989 – Pine Creek/Sulphurbeds and Ten Mile Allotment Management Plans drafted
- 2000 -- Fishlake Forest Plan amendments on utilization
- Five Pine Creek/Sulphurbeds term grazing permits renewed separately in 2000, 2003, 2005, and two in 2007 — most recent term permits:
  - 4/17/2000 -- Joe and Robert Yardley
  - 6/2/2003 -- Avin Darrel and Geneal Yardley
  - 3/11/2005 -- Clark Bradshaw
  - 05/31/2007 --Sheb Yardley
  - 06/06/2007 -- Merrell Yardley Family Trust
- One Ten Mile allotment term grazing permit renewed in 2003
  - 7/22/2003 -- David and Verla Sorensen
- 2004 -- Scoping and Draft EIS on term grazing permits for eight Tushar allotments, including Pine Creek/Sulphurbeds and Ten Mile
- 2006 -- Final EIS for term grazing permits for eight Tushar allotments

- 2007 -- Record of Decision; Appeal of Final EIS and Record of Decision
- April 18, 2007 -- Appeal Resolution
- May 23, 2008 -- "Economic Analysis of Alternatives in Grazing EISs for the Beaver Ranger District" jointly issued by Beaver Ranger District and appellants

### ***Collaboration Recommendations on Administrative Process***

#### **A. Public Involvement in the NEPA analysis of Grazing Allotments**

- To be most meaningful to the public, scoping notices should include information about existing natural resource conditions on the allotment. They should provide enough information to allow the public to provide informed comments on whether the agency should re-authorize grazing, and if so, what types of management actions should be applied to the grazing.
- Given the time and administrative resources, the number of grazing allotments, and the number of acres impacted, it would be helpful to share with the public:
  - The planned schedule for reviewing and/or completing a new NEPA analysis on grazing allotments.
  - The factors used to determine the priorities.

#### **B. Sharing of Annual Monitoring**

- The results of grazing monitoring and natural resource monitoring completed each year should be accessible to the public.

## SECTION 5: REINTRODUCTION OF BEAVER

---

The collaboration agreed to take the following actions relating to the reintroduction of beaver:

- Collaboratively plan for the needs of functioning beaver colonies on at least one creek/stream within the Pine Creek/Sulphurbeds allotment.
- Collaboratively develop a plan for providing suitable habitat conditions for beaver on the creek selected.

The steps taken during the two years of the collaboration's existence are described in the following section, along with future plans to establish a functioning beaver colony on Pine Creek. Grazing management actions that will help to provide suitable habitat conditions for beaver are described in the report section focusing specifically on the Pine Creek/Sulphurbeds allotment.

### ***Beaver Relocation Activities Undertaken During Collaboration***

Pine Creek was identified by the Southern Region of Utah Division of Wildlife Resources (UDWR) as a potential relocation site for beaver in 2000. At the request of the collaboration and in coordination with the Beaver Ranger District of the Fishlake National Forest, UDWR began releasing beaver into the Pine Creek drainage in September of 2008.

At present a total of 5 beaver have been live-trapped and relocated to Pine Creek (See Table 1). All beaver released into Pine Creek were considered "nuisance" beaver. Nuisance beaver are animals that become established in or around populated areas and landowners or managers want them removed when their activities disrupt the flow of irrigation or municipal water or cause damage to trees around homes. Under Utah's current protocol these are the only beaver that can be relocated.

It is not known at this time whether any of the beaver released into Pine Creek were able to establish. Two of the beaver were released in February 2009, when the probability of survival is much less. However, since these were beaver that would otherwise be destroyed, the decision was made to attempt relocation.

Table 1: 2008-09 BEAVER RELOCATIONS, BEAVER COUNTY			
Date	Age	Location trapped	Location Released
09/26/08	Juvenile	Sevier River, Sevier County	Pine Creek, Beaver County
09/28/08	Mature	Sevier River, Sevier County	Pine Creek, Beaver County
11/04/08	Mature	Corn Creek, Millard County	Pine Creek, Beaver County
02/20/09	Mature	Sevier River, Sevier County	Pine Creek, Beaver County
02/23/09	Mature	Sevier River, Sevier County	Pine Creek, Beaver County

***Future Plans for Beaver Relocation***

Consistent with applicable protocol, UDWR will live trap and relocate “nuisance” beaver to Pine Creek until beaver density equals 1 beaver family/0.7 mile or until evidence exists showing that beavers transplanted to Pine Creek have adversely impacted stream habitats, roads, irrigation systems, etc. The UDWR beaver relocation protocol is available on the collaboration website at:

[http://tushar.ecr.gov/pdf/041409/Beaver\\_proto.pdf](http://tushar.ecr.gov/pdf/041409/Beaver_proto.pdf)

If Pine Creek beaver become established and are causing problems to landowners (for instance, interference with structures or significant interference with water flow), landowners should contact UDWR. The UDWR, in conjunction with the Pine Creek permittees and the Fishlake National Forest and Grand Canyon Trust, will seek to use reasonable structural or non-lethal means of

addressing problem situations caused by Pine Creek beaver before lethal means are used.

To date, the only complaint of damage has been to a local cabin that the owner attributed to beavers. No additional damage has been reported and no further action has been taken.

Other drainages on the Tushar Mountains have healthy beaver colonies and the potential exists for beaver to naturally establish a population in Pine Creek or one of its tributaries. If beaver re-enter the Pine Creek watershed on their own (i.e., without UDWR reintroduction), the above procedures for responding to problem situations will also apply.

## SECTION 6: ASPEN AND MOUNTAIN MAHOGANY

---

The Resolution Agreement provides that the collaboration will specifically consider conditions in the two allotments regarding aspen and mountain mahogany:

- Collaboratively document where recruitment is failing in aspen clones and mountain mahogany stands within the two allotments.
- Collaboratively develop a plan to restore recruitment, as part of the National Forest Monitoring and Assessment (NFMA) analysis and which could lead to NEPA analysis for future projects.



In the interests of available time and reaching meaningful conclusions, the collaboration chose to focus its data gathering efforts primarily on aspen. No comprehensive field studies were undertaken with respect to mountain mahogany.

This section contains the collaboration's conclusions on the existing conditions for the aspen and mountain mahogany communities on the two allotments, the desired future conditions for both species, as well as collaboration recommendations on a plan for large-scale recruitment of aspen on both allotments. Grazing management actions to protect isolated stands of pure aspen can be found in the allotment-specific collaboration recommendations for actions to move from existing toward desired conditions. (Sections 9 and 10 of the report)

The collaboration did not develop a plan for recruitment of mountain mahogany beyond the reductions of cattle numbers and grass utilization limits found in the allotment-specific collaboration recommendations for actions to move from existing toward desired conditions.

### ***Aspen Existing Conditions – Pine Creek Allotment***

Conditions can vary widely in aspen within short distances.

Estimates (quantities represent total acreage of aspen based on soil map symbols):

- Total aspen acreage: 5585
  - 645 acres, mixed-conifer with a scattering of aspen
  - 4,880 acres, mixed-conifer/aspen
  - 360 acres, pure aspen (without conifer encroachment)
- Aspen within capable areas: 1,216 acres (calculated from GIS)
  - 974 acres, mixed-conifer/aspen (first two categories above)
  - 242 acres, pure aspen (without conifer encroachment)

There is an elevational band of pure aspen stands at approximately 8000 feet and above on slopes less than 20% that will soon be lost without protection. The stands are experiencing almost no recruitment and represent some of the largest aspen trees in the district. In at least one aspen stand, a salt block was observed adjacent to an unfenced water seep.

Many stands of pure aspen had high levels of leader browse, and a deficit in height classes of 4-6 feet.

Disagreement regarding percentage of pure aspen that is “sustainable”

- 50% sustainable (Bob Campbell) – 180 acres
- 20% sustainable (Mary O’Brien) -- approximately 70 acres

### ***Aspen Existing Conditions – Ten Mile Allotment***

Conditions can vary widely in aspen within short distances.

Estimates (quantities represent total acreage of aspen based on soil map symbols)

- Total aspen acreage: 3,945

- 2,315 acres, mixed-conifer with low scattering of aspen
- 1,285 acres, mixed-conifer/aspen
- 345 acres, pure aspen (without conifer encroachment)
- Aspen within capable areas: 164 acres (calculated from GIS)
- 110 acres, mixed-conifer / aspen (first two categories above)
- 54 acres, pure aspen (without conifer encroachment)

There are isolated stands of pure aspen that will soon be lost without protection. The stands are experiencing little to no recruitment, some have water developments in the stand, and salt has been found in or near some stands.

- Price Spring
- Cougar Spring
- Order Spring

There are other small isolated stands on capable lands within Upper City and Price Cougar pastures, or directly adjacent to these areas.

Many stands of pure aspen had high levels of leader browse, and a deficit in height classes of 4-6 feet.

Disagreement regarding percentage of pure aspen that is “sustainable”

- 40% sustainable (Bob Campbell) – 140 acres
- 20% sustainable (Mary O’Brien) -- approximately 70 acres

### ***Aspen Desired Conditions - Both Allotments***

Stands contain appropriate proportions of height classes from <1' to >15'.

Ground cover (i.e. basal vegetation, litter, moss/lichen or rock  $\geq 3/4$ ") is greater than 90%. Appropriateness of percent basal vegetation should be considered.

Approximate conditions described in appropriate Ecological Site Descriptions.

In the interim, until an appropriate Ecological Site Description is available:



- 2-4 species of perennial bunch grasses that typically decrease under grazing pressure make up the majority of the grass component.
- 2-4 species of perennial forbs that typically decrease under grazing pressure make up the majority of the forb component, with flowers available for pollinators.

Conifer cover (understory and overstory) <15%.

Aspen canopy cover >40%.

Sagebrush cover <10%.

### ***Collaboration Recommendations on Plans to Restore Aspen Recruitment***

- Pine Creek/Sulphurbeds allotment:
  - Implement existing project plans for upper elevations prescribed burning. (NEPA analysis has been completed.)
- Ten Mile allotment:
  - Initiate analysis for aspen treatment where aspen is encroached by conifer.
  - Get in line for burn projects.
  - Initiate goshawk surveys.
  - The collaboration recognizes the Forest Service will have to decide between burning first on Ten Mile, South Beaver or other allotments.
- After a burn:
  - Site-specific actions should be taken to protect the burned area from ungulate grazing until aspen recruitment has been reestablished.
  - Resting pastures is one option.
- Isolated stands of pure aspen on each allotment:
  - Specific management actions to protect these isolated stands should be addressed at the pasture level.

- The allotment-specific collaboration recommendations for actions to move from existing toward desired conditions (Sections 9 and 10 of the report) identify fencing priorities to protect a few of the isolated stands of pure aspen on the two allotments.

### ***Mountain Mahogany (Curl Leaf and Birch Leaf) Existing Conditions – Both Allotments***

In the interests of time, the group decided not to systematically measure mountain mahogany browse.

There are areas of livestock intensive use where recruitment of mountain mahogany is non-existent. In other areas, less heavily used by livestock, there is a diversity of age and height classes.

### ***Mountain Mahogany Desired Conditions – Both Allotments***

Recruitment of mountain mahogany species is sufficient for long-term health of stand.

Ground cover (i.e. basal vegetation, litter, moss/lichen or rock  $\geq 3/4$ ") is greater than 75%. Appropriateness of percent basal vegetation should be considered.

Approximate conditions described in appropriate Ecological Site Descriptions.

In the interim, until an appropriate Ecological Site Description is available:

- 2-4 species of perennial bunch grasses that typically decrease under grazing pressure make up the majority of the grass component.
- 2-4 species of perennial forbs that typically decrease under grazing pressure make up the majority of the forb component, with flowers available for pollinators.

## SECTION 7: DESIRED CONDITIONS AND MONITORING

---

A large proportion of the collaboration's time was spent accomplishing this Resolution Agreement task:

- Collaboratively develop existing and desired conditions and management practices to be used in developing Allotment Management Plans for the two allotments.
- Collaboration recommendations will be used in developing Allotment Management Plans for the Ten Mile and Pine Creek/Sulphurbeds allotments.

The next sections of the report begin with the **Desired Conditions** that the collaboration hopes to see in the future on both allotments. They were developed by the group to be quantifiable and measurable by objective, repeatable methods, so that future monitoring can determine whether progress is being made toward meeting the Desired Conditions.

This section then outlines the collaboration's recommended short-term (annual) and long-term **Monitoring** on both allotments to determine whether progress is being made toward meeting the Desired Conditions.

The allotment-specific (i.e., Pine Creek/Sulphurbeds and Ten Mile) sections that follow reflect a summary of **Existing Conditions**, based on field data and observations gathered through existing historical records and the collaboration's monitoring during the Summers of 2007 and 2008. The supporting field data and reports are available on the collaboration's website, with direct links provided in the report text. In addition, brief non-technical summaries of what the collaboration found during its field monitoring are provided in Appendix D through I of the report.

Each final allotment-specific section also contains the collaboration's agreements for **Management Actions** that are intended to facilitate ecosystem recovery so that site conditions will move from Existing Conditions toward Desired Conditions. These agreements were fiercely negotiated, and reflect significant compromises and accommodations from all collaboration participants, made with the understanding that the management actions will be implemented through the allotment-specific Allotment Management Plans and Annual Operating Instructions.

## ***Desired Conditions***

These Desired Conditions statements were drafted by the full collaboration. They apply equally to both allotments – Pine Creek/Sulphurbeds and Ten Mile.

Desired future conditions set the framework for grazing management on the allotments in that management actions are developed and implemented so that the desired conditions may be achieved. Desired conditions are determined through an interdisciplinary process. Desired conditions should be specific, quantifiable, and focused on rangeland resources.

In some cases, the desired condition already exists today. However, in many cases, the desired condition does not currently exist, and may take many years to reach.

### **A. Grazing Management to Reach Desired Conditions**

Ungulate capacity is based on slope, current forage production, distance to water, soil conditions, and both wild and domestic ungulate populations.

Utilization standards are complied with during each grazing season.

All range improvements are maintained to standard prior to livestock entering a pasture. Maintenance of improvements in rested pastures occurs each grazing season.

Grazing management does not impair existing conditions and will lead to the achievement or maintenance of desired conditions.

The grazing system provides presence of seedheads for reproduction of grasses and forbs on a predictable schedule.

### **B. Upland Sagebrush**

Ground cover (i.e. basal vegetation, litter, moss/lichen or rock  $\geq 3/4$ ") is generally increasing and is greater than 85%. Appropriateness of percent basal vegetation should be considered.

The desired conditions approximate those found in an appropriate Ecological Site Description for upland sagebrush.

In the interim, until an appropriate Ecological Site Description is available:

- 2-4 species of perennial bunch grasses that typically decrease under grazing pressure make up the majority of the grass component.
- 2-4 species of perennial forbs that typically decrease under grazing pressure make up the majority of the forb component, with flowers available for pollinators.

Conifer cover (*Pinus*, *Juniperus*, *Pseudotsuga*, *Abies* and *Picea* spp.) of generally less than 5%.

Community structure: Sagebrush / steppe habitat conditions meet the needs of sagebrush obligate species.

### **C. Mountain Mahogany**

Recruitment of mountain mahogany species is sufficient for long-term health of stand.

Ground cover (i.e. basal vegetation, litter, moss/lichen or rock  $\geq 3/4$ " ) is greater than 75%. Appropriateness of percent basal vegetation should be considered.

The desired conditions approximate conditions in an appropriate Ecological Site Description for mountain mahogany.

In the interim, until an appropriate Ecological Site Description is available:

- 2-4 species of perennial bunch grasses that typically decrease under grazing pressure make up the majority of the grass component.
- 2-4 species of perennial forbs that typically decrease under grazing pressure make up the majority of the forb component, with flowers available for pollinators.

### **D. Aspen**

Aspen stands contain appropriate proportions of height classes from <1' to >15'.

Ground cover (i.e. basal vegetation, litter, moss/lichen or rock  $\geq 3/4$ "") is greater than 90%. Appropriateness of percent basal vegetation should be considered.

The desired conditions approximate conditions found in an appropriate Ecological Site Description for aspen.

In the interim, until an appropriate Ecological Site Description for aspen is available:

- 2-4 species of perennial bunch grasses that typically decrease under grazing pressure make up the majority of the grass component.
- 2-4 species of perennial forbs that typically decrease under grazing pressure make up the majority of the forb component, with flowers available for pollinators.

Conifer cover in aspen stands (understory and overstory) <15%.

Aspen canopy cover >40%.

Sagebrush cover in aspen stands <10%.

#### **E. Pinyon-Juniper Seral Woodlands [i.e. stands consisting of trees <150 yrs. old]**

Ground cover (i.e. basal vegetation, litter, moss/lichen or rock  $\geq 3/4$ "") is greater than 70%. Appropriateness of percent basal vegetation should be considered.

The desired conditions for pinyon-juniper woodlands approximate conditions described in an appropriate Ecological Site Description.

In the interim, until an appropriate Ecological Site Description is available:

- 2-4 species of perennial bunch grasses that typically decrease under grazing pressure make up the majority of the grass component.
- 2-4 species of perennial forbs that typically decrease under grazing pressure make up the majority of the forb component, with flowers available for pollinators.

Pinyon-juniper canopy cover  $\leq 10\%$ .

## F. Riparian areas

[*Definition:* Riparian areas include the area on each side of a stream or creek, or surrounding a spring or wetland area that supports riparian vegetation, not just the greenline. Riparian vegetation includes plants that require water in excess of annual precipitation.]

Stream banks are capable of withstanding significant flow events without showing excessive erosion.

Based on potential, stream banks are  $\geq 95\%$  vertically stable.

Based on potential, native shrub cover is almost continuous, with distribution of height classes sufficient to provide ongoing recruitment.



Ground cover (i.e., basal vegetation, litter, moss/lichen or rock  $\geq 3/4$ ") is greater than greater than 90%. Appropriateness of percent basal vegetation should be considered.

Deep-rooted native riparian grasses and grasslike species are in a condition that they can regain ground that is being lost to Kentucky bluegrass, bare ground, and a depleted diversity.

Of the grass/grass-like species component,  $\geq 70\%$  is native species (i.e., not Kentucky bluegrass or other non-natives).

Cottonwood and willow height classes indicate ongoing recruitment above ungulate browse height (e.g.,  $\geq 20\%$  of individual cottonwood or willow plants are in the 4.1'-6' height class).

## **G. Springs**

Riparian areas surrounding springs are maintained such that the vegetative and wildlife community within the spring's riparian zone and associated wetlands remain intact.

## **H. Fish / In-Stream Conditions**

In fish-bearing streams

- Peak water temperature <20° C.
- Cobble embeddedness is  $\leq 25\%$ . (Use Rapid Stream Riparian Assessment – RSRA -- method or Forest Service approved protocol)
- Frequent, high-quality pools are present according to potential.
- A healthy and diverse clean water assemblage of macroinvertebrates is present according to potential.
- Multiple age classes of fish are present and average of current biomass is maintained.

Grasses are overhanging the creek/stream at bank edge.

## **I. Cheatgrass / Noxious Weeds**

Existing and new noxious weed populations are decreasing in acreage, number of sites and plant density.

Cheatgrass is declining in acreage, number of sites and plant density.

## **J. Wildlife**

Food and construction materials exist for beavers where conditions are physically appropriate for beaver to exist.

Crucial big game winter range supports deer and elk populations within ecological capacity.



Sagebrush / steppe habitat conditions meet the needs of sagebrush obligate species.

Healthy aspen stands and older age class aspen stands are present and restored for goshawk reproduction.

#### **K. Fire**

Vegetation has enough fine fuels to allow historic fire return intervals and intensity, and effectively carry natural ignitions and prescribed fire.

Patch mosaics of reduced fuel loading are similar to historic conditions in mixed- conifer/aspen and pinyon-juniper woodland.

### ***Collaboration Recommendations on Monitoring***

The full collaboration prepared the following as their list of monitoring that would be able to document what progress is being made toward desired future conditions. The monitoring applies to both allotments – Pine Creek/Sulphurbeds and Ten Mile.

Collaboration members recognize that budgetary and time constraints will limit completion by the Forest Service of all the monitoring on the list. In an effort to encourage collaborative and complementary monitoring activities, the list often identifies what types of information will provide useful monitoring information, so that permittees, appellants and other interested citizens can participate. The identification of specific documentation methods is not intended to be all-inclusive; the collaboration members acknowledge that additional or different monitoring methods to those identified below may be available and appropriate.

#### ***A. Agreement to continue discussions about monitoring methods***

A post-collaboration subgroup, to include all interested collaboration members, will meet to discuss and/or develop monitoring protocols. The group's first meeting or conference call will be held in April / May 2009. The discussion will include, but not be limited to:

- Photographs: What photographs and what accompanying information will make them most useful.

- Trampling: Methodology to document level of trampling/bank shearing in riparian areas.
- Location and design of exclusionary devices (e.g., cages) to monitor:
  - Herbaceous biomass production
  - Woody riparian and upland aspen recruitment
- Review Mueggler method

## **B. Short-term (annual) monitoring**

Anyone going out in the field on either allotment is encouraged to take GPS-linked photographs that are generally representative of site conditions. Repeat photographs at the same location, but at different times of the grazing season, are particularly helpful.

### 1. Confirmation that the grazing plan is being followed

- Documentation: Permittees will provide this information at the end of the season, to include but not be limited to:
  - Times on and off each pasture
  - Known missing cows
  - Salt management
  - Other issues of concern

If, while in the field, anyone sees salt in the wrong place, they should take a picture and report the location of the salt to the Forest Service.

### 2. Condition of riparian areas, including springs

- Documentation:
  - Forest Service inspection notes
  - Photographs taken by anyone out in the field

### 3. Maintenance of allotment facilities

- Documentation:
  - Forest Service inspection notes
  - Photographs taken by anyone out in the field

### 4. Utilization

- Upland

- Riparian stubble in the greenline and riparian areas adjacent to the greenline
  - Triggers to mark the appropriate time to move livestock between units or off the allotment
  - Documentation:
    - Measurements taken by the Forest Service or anyone else out in the field
    - Photographs taken or observations by anyone out in the field
5. Understory characteristics (sagebrush, aspen, mountain mahogany)
- Documentation: Photographs taken by anyone out in the field and accompanying information
6. Browse (cottonwood, aspen, willow)
- Documentation: Protocol to be developed within the next year by a Forest Service task force
7. Cheatgrass presence and changes over time
- Documentation:
    - Photographs and notes taken by anyone out in the field
    - Locations identified on maps while out in the field
8. Condition of stream banks, including overhanging of fish streams by grasses and trampling
- Documentation: Photographs, notes and/or measurements taken by anyone out in the field
9. Tracking of beaver reintroduction and signs of active or past use by beaver
- Documentation: Photographs and notes taken by anyone out in the field
10. In-stream water temperature
- Documentation:

- Thermal sensors or other methods used by Jim Whelan, USFS/UDWR Forest Fisheries Biologist and Cooperative Aquatic Biologist

#### 11. Wild ungulate counts

- Documentation: Steve Flinders and UDWR.

#### 12. Elk utilization in rested pastures or prior to livestock entering a pasture/allotment.

- Documentation: Photographs and notes taken by anyone out in the field

#### 13. Monitoring of drought conditions

- Documentation: Forest Service, during May time frame.

### **C. Long-term Monitoring**

#### 1. Understory conditions (sagebrush, aspen, pinyon-juniper)

- Documentation:
  - Nested frequency transects, conducted by Forest Service every five years. New transects will need to be established for aspen and pinyon-juniper cover types in 2009 (one aspen and one pinyon-juniper per allotment).
  - Grand Canyon Trust has suggested placement of four (4) permanent range cages on each allotment in these locations:
    - A “C” channel riparian meadow accessible to livestock,
    - An aspen stand currently lacking in recruitment,
    - A lowland sagebrush site, and
    - A mountain mahogany site currently lacking in recruitment.

2. Ground cover and recruitment in prioritized mountain mahogany stands

- Documentation: Rapid assessment method (Forest Service, others)

3. Herbaceous plant productivity. Characterize current production across each allotment.

- Documentation:
  - Appellants suggested the paired plot method for measuring current forage production, done by the Forest Service at utilization sites with standard utilization cages. The potential use of this method can be one of the topics for discussion at the post-collaboration meeting about monitoring methods.
  - Grand Canyon Trust suggested placement of four (4) permanent range cages (as described above)

4. Condition of springs.

- Documentation:
  - Forest Service MIM protocol, adapted for springs
  - Photographs taken by anyone out in the field

5. In fish-bearing streams:

- Every three (3) years, number of pools that are > 1' depth in prioritized reaches of Ten Mile and Pine Creeks.
  - Documentation: Methodology used by Jim Whelan, USFS/UDWR Forest Fisheries Biologist and Cooperative Aquatic Biologist
- Every five (5) years, macroinvertebrate presence in stream and age classes of fish.

- Documentation: Methodology used by Jim Whelan, USFS/UDWR Forest Fisheries Biologist and Cooperative Aquatic Biologist

6. Browse of cottonwood, aspen, willow in stream reaches of concern.

- Documentation: Protocol to be developed within the next year by a Forest Service task force

7. Long-term impact of climate and drought.

## SECTION 8: ALLOTMENT MANAGEMENT-THE PINE CREEK/SULPHURBEDS ALLOTMENT

---

### ***Existing Conditions***

The statements of Existing Conditions were developed and reviewed by the full Collaboration. Supporting documentation for the statements is identified in the bullets following each statement, with links provided to the full-length reports on the collaboration website. Summaries of the reports from collaboration field work documenting Existing Conditions are found in Appendices D through I of this report.

#### ***A. Allotment Management Conditions***

During the 2008 season the Pine Creek allotment was grazed by 2 separate herds. The first herd started in the Sulphurbeds pasture and grazed from June 16th to approximately the mid to latter part of August. These animals then moved to the Little North Creek pasture to complete the season and then were removed on or after September 30th. The second herd started in the Pine Creek pasture and remained there until the mid part of August. These animals then moved to the Wildcat pasture to complete the season and then were removed on or after September 30.

The allotment has been managed with a two herd system for at least 15 years. Typically one herd will enter either the Sulphurbeds or Cove Creek, and then move to another pasture until the end of the season. The second herd will enter either the Pine Creek or Wildcat pasture and then move to another pasture until the end of season. The Little North Creek pasture is alternately used either first or last in the rotation with the two herds. However, when the prescribed burning was being accomplished, some major changes in rotation were required. For several years the Wildcat pasture was used all season long.

- Pine Creek / Sulphurbeds grazing schedule (2004-2008)  
[http://tushar.ecr.gov/pdf/041409/Schedule\\_pine.pdf](http://tushar.ecr.gov/pdf/041409/Schedule_pine.pdf)
- Mary O'Brien photos (In 2008 a salt block was photographed 5' from a spring on Wittwer Hill (Pine Creek pasture); ten salt blocks were photographed near Brush Hollow Creek (Pine Creek pasture))

## B. Utilization

In pastures scheduled for grazing, all study sites exceeded Forest Service utilization standards for upland grasses and riparian graminoids. Utilization was measured in each of the pastures scheduled for use in 2008. Each study site exceeded the Forest Plan standard.

- Doug Sorensen and others' 2008 utilization sampling:  
<http://tushar.ecr.gov/pdf/030309/utilization.pdf>

Riparian cottonwood and willow had high levels of leader browse (up to 90%), and in particular a deficit of the recruitment height class 4-6 feet.

- Mary O'Brien browse reports: View reports at <http://tushar.ecr.gov/?link=121> under "Utilization" and "Riparian Conditions"/Riparian browse surveys: Cottonwood, aspen, willow and graminoid conditions

The Forest Service utilization standard does not accurately capture riparian impairment of the site. For example, the transect labeled "Grassy Creek 2" did not exceed the standard for Kentucky bluegrass (1.5"), but had 90% utilization of cottonwood and willow browse. Native sedges have been eliminated.

- Mary O'Brien browse and utilization reports: View reports at <http://tushar.ecr.gov/?link=121> under "Utilization" and "Riparian Conditions"/Riparian browse surveys: Cottonwood, aspen, willow and graminoid conditions

Earlier productivity estimates no longer represent current conditions in two pastures. Current productivity in Cove Creek and Sulphurbeds Pastures is greater than was measured in the mid-1960's and 1981. They were seeded and chained in the mid-1980's.

The other three pastures in this allotment were analyzed for productivity in the mid-1960's. No conclusions can be reached whether productivity has increased or decreased since then.

- Jim Catlin – two 2008 sites



### C. Mountain Mahogany (curl leaf and birch leaf)

In the interests of time, the group decided not to systematically measure mountain mahogany browse.

There are areas of livestock intensive use where recruitment of mountain mahogany is non-existent. In other areas, less heavily used by livestock, there is a diversity of age and height classes.

- 2008 visual observations and photos

### D. Aspen

Conditions can vary widely in aspen within short distances.

Estimates of aspen acreage within Pine Creek/Sulphurbeds allotment (quantities represent total acreage of aspen based on soil map symbols):

- Total aspen acreage: 5585
- 645 acres, mixed-conifer with low scattering of aspen
- 4,880 acres, mixed-conifer / aspen
- 360 acres, pure aspen (without conifer encroachment)
- Aspen within capable areas: 1,216 acres (calculated from GIS)
  - 974 acres, mixed-conifer / aspen (first two categories above)
  - 242 acres, pure aspen (without conifer encroachment)
- Bob Campbell and Mary O'Brien/Season Martin 2008 field visits / transects: View reports at <http://tushar.ecr.gov/?link=121> under "Aspen Conditions"



There is an elevational band of pure aspen stands at approximately 8000 feet and above on slopes less than 20% that will soon be lost without protection. The stands are experiencing almost no recruitment and represent some of the largest aspen trees in the district. In at least one aspen stand, a salt block was observed adjacent to an unfenced water seep.

- Personal observations

Many stands of pure aspen had high levels of leader browse, and a deficit in height classes of 4-6 feet.

- Bob Campbell and Mary O'Brien 2008 field visits / transects: View reports at <http://tushar.ecr.gov/?link=121> under "Aspen Conditions")
- Map of aspen locations on Pine Creek/Sulphurbeds allotment [http://tushar.ecr.gov/pdf/042909/PineCreek\\_Range.pdf](http://tushar.ecr.gov/pdf/042909/PineCreek_Range.pdf)

Disagreement regarding percentage of pure aspen that is "sustainable"

- 50% sustainable (Bob Campbell) – 180 acres
- 20% sustainable (Mary O'Brien) -- approximately 70 acres
- Bob Campbell and Mary O'Brien 2008 transects: View reports at <http://tushar.ecr.gov/?link=121> under "Aspen Conditions"

## **E. Pinyon-Juniper Seral Woodlands**

The pinyon-juniper ecotype makes up approximately 60% of the capable acres on the allotment.

Understory conditions within the pinyon-juniper seral woodlands have not been surveyed.

- GIS data from Chad Horman: <http://tushar.ecr.gov/pdf/040809/PineCreekPJ.pdf>

## **F. Riparian Conditions**

The Existing Conditions statements for riparian areas are based on field observations and studies during the 2007 and 2008 summer field seasons. Not all riparian areas in the allotment were visited. Additional areas of concern not identified in these Existing Conditions statements may exist.

### **1. North Wildcat Creek**

The stream runs intermittently and may be fed by springs. It is used as a travelway for cattle and the banks are largely denuded and eroding. The slopes adjacent to the creeks are erodible soils with vegetation largely absent. Riparian slopes and adjacent uplands are steep, with erodible soils. Cheatgrass is found in the area. Riparian browse surveys found little willow recruitment and little recruitment due to browsing in an isolated coyote willow stand (lower North Wildcat Creek).

- Mary O'Brien report and photos (springs and riparian browse, 2007-2008)
  - Springs: N. Wildcat Creek report  
<http://tushar.ecr.gov/pdf/102908/MOBWildcat.pdf>
  - Riparian browse: N. Wildcat Creek (5/9/08) report  
<http://tushar.ecr.gov/pdf/102908/MOBWildcat5908.pdf>
  - 2007 Collaboration visit  
[http://tushar.ecr.gov/pdf/wildcat\\_fieldtrip\\_rpt\\_MOB.pdf](http://tushar.ecr.gov/pdf/wildcat_fieldtrip_rpt_MOB.pdf)

### **2. Wildcat Creek**

This is a perennial stream in a steep canyon with few accessible slopes. Accessible banks and small riparian meadows are trampled and heavily grazed by cattle. Downed large cottonwood provide large woody debris in the creek, but there is little cottonwood recruitment due to ungulate browsing. Cheatgrass is present. Willow is dense in inaccessible sites.

- Mary O'Brien report and photos:
  - Wildcat Creek #1 (5/9/08) report  
<http://tushar.ecr.gov/pdf/102908/MOBwildcat1.pdf>

- Wildcat Creek #2 (5/9/08) report  
<http://tushar.ecr.gov/pdf/102908/MOBwildcat2.pdf>
- 2007 Collaboration visit  
[http://tushar.ecr.gov/pdf/wildcat\\_fieldtrip\\_rpt\\_MOB.pdf](http://tushar.ecr.gov/pdf/wildcat_fieldtrip_rpt_MOB.pdf)

### 3. Twitchell Creek

Two riparian browse surveys in lower Twitchell Creek found that willow and aspen were heavily browsed with lack of recruitment. All grasses, sedges and rushes were under 1.5" and bare soil predominated in the creek's small riparian areas. Utilization study location on terrace adjacent to stream showed 58% use on Sandberg bluegrass (*Poa secunda*).

- Mary O'Brien riparian browse report and photos
  - Twitchell Creek #1 riparian browse  
<http://tushar.ecr.gov/pdf/103108/MOBtwitch1.pdf>,
  - Twitchell Creek #2 riparian browse  
<http://tushar.ecr.gov/pdf/103108/MOBtwitch2.pdf>
  - 2008 Utilization study (PC-WC 02)

### 4. Pine Creek

Pine Creek is a perennial stream within a rather narrow canyon. Livestock have full access to the lower elevation segments. Three small enclosures have been constructed to provide improved habitats for the Bonneville cutthroat trout (listed as a sensitive species). The upper enclosure is nearly 500 feet long and mostly not subject to unauthorized use. The center enclosure is maintained, but subject to intrusion by livestock. The lower enclosure is not maintained securely. Cottonwood and willow sprouts are heavily browsed outside the upper enclosure.

Individual beaver have been released in Pine Creek two times during 2008 and once in 2009.

- Jim Whelan report Electrofishing Survey, Pine Creek (February 2009)  
<http://tushar.ecr.gov/pdf/030309/electrofishpc.pdf>
- Petty stream report:  
[http://tushar.ecr.gov/pdf/041409/Little\\_Inventory.pdf](http://tushar.ecr.gov/pdf/041409/Little_Inventory.pdf)

- Jim Catlin, RSRA: RSRA field score sheets - Upper Pine Creek <http://tushar.ecr.gov/pdf/102908/RSRApine.pdf>

## 5. Dipping Vat Springs (Cove Creek Pasture)

This is a lowland wetland area below a hillslope spring. There is evidence of cattle trampling and incision, isolating the wetlands from the surrounding area. There is currently an old rusted-out trough, with its pipe disconnected. Invasive exotic species (e.g., bull thistle, *Cirsium vulgare*; cheatgrass) are at the margins of the wetlands.

- Mary O'Brien report and photos
  - Dipping Vat Springs report <http://tushar.ecr.gov/pdf/102908/MOBDipping.pdf>
  - 2007 Collaboration visit [http://tushar.ecr.gov/pdf/wildcat\\_fieldtrip\\_rpt\\_MOB.pdf](http://tushar.ecr.gov/pdf/wildcat_fieldtrip_rpt_MOB.pdf)
- Doug Sorensen water developments report
  - Pine Creek/Sulphurbeds Water Developments <http://tushar.ecr.gov/pdf/030309/creekwater.pdf>

## 6. North Spring (Sulphurbeds Pasture)

Three troughs are located along a lateral pipeline running west to another trough and ultimately terminating at the Sulphurdale Geothermal power plant. There are concerns over poor maintenance. The dewatering of the site has almost eliminated the riparian area.

- Doug Sorensen water developments report
  - Pine Creek/Sulphurbeds Water Developments <http://tushar.ecr.gov/pdf/030309/creekwater.pdf>

## 7. Grassy Creek Spring (Wildcat Pasture)

An old spring development here is no longer functioning. The spring area is unprotected and trampled. Lupine and cheatgrass are dominant on surrounding slope. Riparian browse surveys

conducted on the creek found mostly large old cottonwood with no recruitment. Sparse Kentucky bluegrass was the only graminoid present.

- Mary O'Brien report and photos (springs and riparian browse)
  - Springs: Grassy Creek Spring report  
<http://tushar.ecr.gov/pdf/102908/MOBGrassy.pdf>,
  - Riparian browse: Grassy Creek #1 riparian browse  
<http://tushar.ecr.gov/pdf/103108/MOBGrassy1.pdf>,
  - Grassy Creek #2 riparian browse  
<http://tushar.ecr.gov/pdf/103108/MOBGrassy2.pdf>
- Sorensen water developments report:
  - Pine Creek/Sulphurbeds Water Developments  
<http://tushar.ecr.gov/pdf/030309/creekwater.pdf>

## **G. Fish / In-Stream Conditions**

In the past (1994, 2001) Pine Creek has held below average levels of fish biomass. With two seasons grazing rest, upland watershed prescribed fire treatments, and a "flushing" spring runoff flow in 2005, Pine Creek held about average fish biomass levels in recent (2005, 2008) monitoring.

Thick brush protects much of the stream; "brush" consists of scrub oak, maple, rose, etc. rather than willows and cottonwoods. By comparison, the upper enclosure has more open/ herbaceous habitat.

Grazing impacts to open meadows and sediment from the two-track road that parallels most of the creek have increased fine sediment levels. Sediment has covered riffles and partially filled in pools.

- Jim Whelan report: Electrofishing Survey, Pine Creek (February 2009) <http://tushar.ecr.gov/pdf/030309/electrofishpc.pdf>
- Jim Catlin RSRA report: RSRA field score sheets - Upper Pine Creek <http://tushar.ecr.gov/pdf/102908/RSRApine.pdf>

## H. Cheatgrass

Due to the allotment's location on the western side of the Tushar Mountains, patches of cheatgrass exist (5-80 acres in size). Cheatgrass presence is rising in elevation above 8,000 feet. The potential for expansion of cheatgrass is significant, particularly following fire on low elevation, south-facing slopes and in areas of localized soil disturbance. A number of observations show that cheatgrass occurrences have significantly increased in the Sulphurdale area.

- Map created during 2008 summer by permittees and added to by other collaboration members, all based on personal observation; areas of cheatgrass are circled, map compiled by Jenneka Knight: [http://tushar.ecr.gov/pdf/042909/PineCreek\\_CheatGrass.pdf](http://tushar.ecr.gov/pdf/042909/PineCreek_CheatGrass.pdf)

## I. Wildlife Conditions

A variety of wildlife species can be found on each allotment given the diversity of plant communities, availability of water, and other factors which determine quality and quantity of habitat. Relevant to grazing are those herbivorous species that have some dietary overlap with cattle. Various lagomorphs, i.e. cottontails and black-tailed jackrabbits are abundant especially at lower elevations on both allotments. Use by these species is focused mainly in and around sage-steppe communities, which for these allotments are previously chained and reseeded areas--or in the case of Ten Mile, a "Dixie" harrow treatment. Various rodents including microtenes (voles), deer mice, woodrats, and squirrels are also abundant and utilize a portion of the annual production of plants within these allotments. Use by these small mammals is unknown and even difficult to estimate but when subjected to close scrutiny and research is often surprising and significant.

Big game on these allotments entails deer, elk, and mountain goats. These animals can range great distances daily and especially seasonally to take advantage of best habitat/forage conditions. Goat use in the subject allotments would mainly be the top (west) end of the Ten Mile allotment near Mt. Holly with some wintering use in mountain mahogany stands on the high ridges.

Deer use on these allotments is widespread with the lower elevations of both allotments providing some winter range. On normal winters, deer in

the Ten Mile area typically winter even lower on BLM and private lands while a higher proportion of deer remain on the Forest in the Pine Creek allotment area but are also often forced down onto BLM and private lands by winter snows (see Deer and Elk report). Sagebrush, bitterbrush/cliffrose, and mountain mahogany are the most important winter browse in these areas. Deer fawning is also widespread depending on “green-up” conditions and often takes place during spring migration while moving up onto the Forest. Plant communities with a healthy forb component are especially important to support these lactating does.

Elk have a much stronger dietary overlap with cattle compared to deer, and can occur in larger group sizes during the grazing season within these allotments. Elk are very adept at exploiting optimal foraging areas and conditions while being very transient in nature. Their grazing use is often widespread and light enough to confound measure but under certain conditions in small delicate communities may promote negative trends, e.g. small aspen stands. Elk are often blamed for over-utilization when in fact it has been the wildlife biologist’s observation that areas rested from livestock use, generally exhibit far less negative long-term impacts from grazing. This can be seen in both subject allotments by exploring neighboring lands like the Cottonwood allotment north of Ten Mile (not grazed by livestock for 30 years) and private land near Sulphurdale—both available to big game. Furthermore, springs/wetlands showing ungulate impacts are often solved when only livestock are excluded by fencing as evidenced by the many exclosures in Pine Creek. Elk winter and spring use is common in the low lying areas of the Pine Creek/Sulphurbeds allotment, while in high summer, these animals can also be found utilizing the higher elevations. Few animals winter on the Ten Mile allotment but the upper elevations are very popular in the summer through the fall. Some calving is observed on the western edge of the Ten Mile allotment as well as in the eastern edge of the Pine Creek/Sulphurbeds allotment (see Deer and Elk report).

- Steve Flinders Report: Existing Conditions for Deer and Elk  
<http://tushar.ecr.gov/pdf/040809/flinders.pdf>



## **J. Fire**

The Pine Creek/ Sulphurbeds allotment is located on the west slope of the Tushar mountain range. The allotment runs south from I-70 to Indian Creek and from the drainage divide to the west forest boundary. The vegetation types consist of a sagebrush steppe in the lower elevations then grading to Gambel oak and piñon-juniper woodland, then at somewhat higher elevations into aspen and then mixed-conifer timber types.

Historically, the fire frequency varied from approximately a 5 to 15 year return interval for the sage steppe; somewhat longer, 10 to 25 years, for the piñon juniper woodland and Gambel oak; and then over 40 years for the aspen types. Historically, mixed-conifer types may have had a return interval of about 40 years to 80 years depending on aspect and elevation.

In 1999 the Beaver District began a multi-year prescribed burning project on this allotment with the objective of reducing fuel loading and restoring these vegetative types to properly functioning condition. Some burning has been accomplished in the Wildcat, Pine Creek and Cove Creek pastures, with additional burning scheduled in the Little North Creek and Sulphurbeds pastures.

In recent history, no large wildfires have occurred on this allotment. Wildfires have not been as frequent as they were historically. At the lower elevations, prescribed fire has approximated historic levels, but at a lower fire intensity.

- Map compiled by Jenneka Knight:  
[http://tushar.ecr.gov/pdf/042909/PineCreek\\_Fire.pdf](http://tushar.ecr.gov/pdf/042909/PineCreek_Fire.pdf)

### ***Collaboration Agreements on Management Actions***

After extensive discussion, the full collaboration reached agreement on the following management actions intended to allow for restoration of the Pine Creek / Sulphurbeds allotment, such that site conditions have the opportunity to move from existing conditions toward desired conditions.

## A. Grazing Levels

Permittees voluntarily agree to a partial non-use for resource protection in 2009.

Utilization across the allotment will be reduced to 30% during a five year period to maximize productivity. The reduction to 30% utilization will be implemented one pasture at a time, in order of pasture priority. Pasture priority will be determined annually between the Forest Service and permittees. The 30% utilization will be phased in as follows:

- 2009, Pasture A will be at 30% utilization
- 2010, Pastures A and B will be at 30% utilization
- 2011, Pastures A, B and C will be at 30% utilization, as will Wildcat Pasture
- 2012, all pastures will be at 30% utilization or being rested

One pasture will be rested every year.

- Wildcat Pasture will be rested first (2009 and 2010).
- Scheduled burn will take place in North Creek Pasture in fall 2010, with that pasture being rested after the burn (2011 & 2012).

Any rested pasture comes back into grazing use at 30% utilization.

A complete capacity determination will be completed by fall 2013. Mapping and utilization study points will be used to accomplish the capacity determination.

If in the future, the Forest Service determines there is additional capacity on the allotment, existing permittees will be granted their proportionate share of the additional capacity.

The collaboration recommends there be no increase in current elk numbers within the herd unit, and if possible, move toward decreasing the numbers of elk in the herd unit. On the Pine Creek / Sulphurbeds allotment, in order to move from Existing Conditions toward Desired Conditions, there should be no increase of elk numbers, thus minimizing the cumulative browsing and grazing impacts of wild ungulates and cattle.

## B. Water Developments

Permittees agree to use the following water development construction standards at spring sources:

- An adequately sized enclosure that will effectively prevent livestock from entering the water source. Minimum enclosure size is 40' x 40', or larger as necessary to take in the entire source area.
- The enclosure must be built with extremely durable materials capable of withstanding the extra pressure exerted by livestock at these types of sites. Avoid using barb-wire or net-wire, since this type of fence will not stand up to the increased pressure from livestock.
- The spring source itself will be developed or re-built with new materials that are dependable and will withstand the elements. Appropriate construction materials are outlined in Doug Sorensen's Pine Creek Water Developments report: <http://tushar.ecr.gov/pdf/030309/creekwater.pdf>

The following springs water development projects will be accomplished in 2009:

- North Spring: Replace troughs.
- Dipping Vat: Build large enclosure; run lateral pipeline and trough. Grand Canyon Trust volunteers will provide volunteer labor (40 people days) on a weekend in late May.
- Grassy Spring: Build enclosure.
- Ray Spring. Repair trough.



## C. Fences

The following are the 2009 priorities for fence improvements:

- Wildcat and Pine Creek: Convert to barbwire fence.
- Western Forest boundary: Need to coordinate with BLM.

- Pine Creek / Little North Creek cattle guard: Clean out and fix fence to the east.

#### **D. Aspen**

No salt or supplements are allowed in an aspen stand. No salt or supplements are allowed within  $\frac{1}{4}$  mile of aspen, where possible.

No developed drinkers (e.g. troughs) are allowed in an aspen stand. No developed drinkers are allowed within  $\frac{1}{4}$  mile of aspen, where possible. Water developments will be placed so that cattle use will not worsen a nearby aspen stand.

A protective fence will be provided in 2009 at the isolated pure aspen stand northwest of Wittwer Hill. This is also a potential location for one of the permanent range cages suggested by Grand Canyon Trust. (More information is provided in the section on Collaboration Recommendations for Monitoring.) The Forest Service will supply materials for this fence project. Also, the water source at the lower edge of the stand will be developed and piped about a  $\frac{1}{4}$  mile away to a small stock pond or trough.

## SECTION 9: ALLOTMENT MANAGEMENT-THE TEN MILE ALLOTMENT

---

### ***Existing Conditions***

The statements of Existing Conditions were developed and reviewed by the full Collaboration. Supporting documentation for the statements is identified in the bullets following each statement, with links provided to the full-length reports on the Collaboration's website. Summaries of the reports from collaboration field work documenting Existing Conditions are found in Appendices D through I.

#### ***A. Allotment Management Conditions***

Livestock entered the allotment on or about June 11, 2008, in the Upper City Creek pasture, then to the Lower City Creek, then to the Price/Cougar pasture to complete the season. However, on several occasions livestock could be observed and forage was being utilized in the rested (Ten Mile) pasture or in a pasture not scheduled for that specific time period.

The permit compliance issues in 2008 are similar to most years since the permit was first issued in 1994 to the present permittee. The permit files can provide a detailed account of non-compliance. As a general rule, there have been non-compliance issues each year since 1995. Typically these issues are finding livestock in the wrong pasture of the allotment and/or finding livestock outside of the permitted allotment.

- Mary O'Brien photos (including photographs of utilization of Ten Mile Pasture vegetation by cattle in 2008, dead cow within Price-Cougar cattle pond and dead calf nearby on 7/18/08 and remaining 9/9/08, and salt blocks near tributary to Order Creek (Price pasture) and near Ten Mile Creek (Ten Mile pasture)).
- Ten Mile grazing schedule (2002-2008):  
[http://tushar.ecr.gov/pdf/041409/Schedule\\_ten.pdf](http://tushar.ecr.gov/pdf/041409/Schedule_ten.pdf)

Since 1999, unauthorized use has been identified in the closed Cottonwood allotment by Ten Mile cattle.

- Incomplete fence and fence in disrepair; cattle observed in Cottonwood allotment.
- Gates opened.

The fence along the northern boundary of Ten Mile Pasture is not sufficiently maintained to provide control of cows within the pasture.

- Ten Mile Fences (Doug Sorensen)  
<http://tushar.ecr.gov/pdf/030309/tenmilefences.pdf>
- Ten Mile pasture boundary fence report (Mary O'Brien)  
<http://tushar.ecr.gov/pdf/103108/MOBtenmilefence.pdf>
- 2008 personal observations in field and photos

## **B. Utilization**

Pastures scheduled for grazing exceeded Forest Service standards for upland grasses in every year measured (7 years). The range of utilization is 60-80% in the seven years measured.

- Ten Mile allotment evaluation provides use summary and calculates the carrying capacity.
- 2007 – Jim Catlin, livestock census

Herbaceous riparian standard was also exceeded.

- TM-PC3 study site all years of study period
- Photo evidence

There is a downward trend of vegetation.

- Nested frequency re-read on three old condition and trend transects
- Ten Mile Nested Frequency Trend Studies  
<http://tushar.ecr.gov/pdf/030309/nestedfrequency.pdf>

Grazing occurred in pastures scheduled to be rested. Therefore, use in pastures scheduled for use is probably more than expected.

- Documentation for three years and 2008.

Impairment of springs, seeps, streams, and wetlands, including downcutting and active head-cutting.

- RSRA documents impairment of Ten Mile Creek: RSRA field score sheets - Ten Mile Creek  
<<http://tushar.ecr.gov/pdf/102908/RSRAtenmile.pdf>
- Photo documentation 2005, 2007, 2008
- Doug Sorensen and Jim Catlin / two utilization monitoring sites

Current productivity is estimated to be much less than was measured in 1967. Earlier estimates no longer represent current conditions. Magnitude of difference: Lower and Upper City Creek / productivity was measured at 1400 lb/acre in 1967; current productivity may be 300-500 lb/acre.

- Productivity data from 41 years ago (1960's) after seeding treatment when productivity would be high. Treatment has declined in productivity.
- Ten Mile – 2 small sites, Jim Catlin (2008)

During the last 13 years the actual number grazed has been approximately 140 to 150 head of livestock, which is 25% below the 200 head permitted on the allotment. The reduced number has been personal preference by the permit holder.

Grazing in accordance with Forest Service carrying capacity assumptions has resulted in exceeding utilization standards. Original assumptions of carrying capacity probably used utilization numbers that were too high, based on what we know today. Lack of periodic monitoring of trend and utilization did not pick up loss of productivity. As use exceeded capacity, degradation accelerated.

### **C. Mountain Mahogany (curl leaf and birch leaf)**

In the interests of time, the group decided not to systematically measure mountain mahogany browse.

There are areas of livestock intensive use where recruitment of mountain mahogany is non-existent. In other areas, less heavily used by livestock, there is a diversity of age and height classes.

- 2006-2008 visual observations and photos

### **D. Aspen**

Conditions can vary widely in aspen within short distances.

Estimates of aspen acreage within Ten Mile allotment (quantities represent total acreage of aspen based on soil map symbols)

- Total aspen acreage: 3,945
  - 2,315 acres, mixed-conifer with low scattering of aspen
  - 1,285 acres, mixed-conifer/aspen
  - 345 acres, pure aspen (without conifer encroachment)
- Aspen within capable areas: 164 acres (calculated from GIS)
  - 110 acres, mixed-conifer / aspen (first two categories above)
  - 54 acres, pure aspen (without conifer encroachment)

There are isolated stands of pure aspen that will soon be lost without protection. The stands are experiencing little to no recruitment, some have water developments in the stand, and salt has been found in or near some stands.

- Price Spring
- Cougar Spring
- Order Spring



There are other small isolated stands on capable lands within Upper City and Price Cougar pastures, or directly adjacent to these areas.

- Personal observations
- Map of aspen locations on Ten Mile Allotment  
[http://tushar.ecr.gov/pdf/042909/TenMile\\_Range.pdf](http://tushar.ecr.gov/pdf/042909/TenMile_Range.pdf)

Many stands of pure aspen had high levels of leader browse, and a deficit in height classes of 4-6 feet.

- Bob Campbell and Mary O'Brien 2008 field visits / transects: View reports at <http://tushar.ecr.gov/?link=121> under "Aspen Conditions"

Disagreement regarding percentage of pure aspen that is "sustainable"

- 40% sustainable (Bob Campbell) – 140 acres
- 20% sustainable (Mary O'Brien) -- approximately 70 acres
- Bob Campbell and Mary O'Brien 2008 transects: View reports at <http://tushar.ecr.gov/?link=121> under "Aspen Conditions"

### **E. Pinyon-Juniper Seral Woodlands**

The pinyon-juniper ecotype makes up 50% of the capable acres on the allotment. Understory (grass, forb) conditions have not been surveyed.

- GIS data (Chad Horman):  
<http://tushar.ecr.gov/pdf/040809/TenMilePJ.pdf>

### **F. Riparian Conditions**

The Existing Conditions statements for riparian areas are based on field observations and studies during the 2007 and 2008 summer field seasons. Not all riparian areas in the allotment were visited. Additional areas of concern not identified in these Existing Conditions statements may exist.

## 1. Price Canyon Creek

Price Canyon Creek is deeply incised via headcuts up to 5' below bermed cattle ponds. Headcutting is expanding in tributaries to the incised creek. The creek is isolated from the surrounding land due to headcutting, erosion and trampling. Heavy grazing is occurring within the incised creek and on surrounding uplands, exacerbating erosion and headcuts. In the 1970's several dams and ponds were constructed to stop the erosion. Heavy livestock use of the ponds and creek and lack of maintenance have reduced the effectiveness of these structures. The surrounding sagebrush area is heavily grazed and lacking ground cover.

- Mary O'Brien report and photos (2007, 2008): Order Canyon Report [report misnamed; actually refers to Price Canyon] <http://tushar.ecr.gov/pdf/102908/MOOrder.pdf>
- 2007 Collaboration visit [http://tushar.ecr.gov/pdf/wildcat\\_fieldtrip\\_rpt\\_MOB.pdf](http://tushar.ecr.gov/pdf/wildcat_fieldtrip_rpt_MOB.pdf)
- Hydrologist's report: Ten Mile Allotment Riparian Areas (11-20-08 visit) <http://tushar.ecr.gov/pdf/030309/existinghydro.pdf>

## 2. Ten Mile Creek

Ten Mile Creek is experiencing active downcutting. It is currently a sanctuary for Bonneville cutthroat trout that were relocated from the Sanford Fire on the Dixie National Forest.

- Jim Whelan fish report: Electrofishing Survey, Ten Mile Creek (February 2009) <http://tushar.ecr.gov/pdf/020909/Whelan.pdf>
- Jim Catlin, RSRA: RSRA field score sheets - Ten Mile Creek <http://tushar.ecr.gov/pdf/102908/RSRAtenmile.pdf>

## 3. Bumblebee Spring

The spring development has deteriorated, only a clogged culvert remains, and the spring is flowing out into the road. There is no enclosure protecting the spring and it is trampled, with little riparian vegetation present.

- Mary O'Brien report and photos: Bumblebee Spring report  
<http://tushar.ecr.gov/pdf/102908/MOBBumblebee.pdf>
- Doug Sorensen water developments report: Ten Mile Water Developments  
[http://tushar.ecr.gov/pdf/020909/sorensen\\_waters.pdf](http://tushar.ecr.gov/pdf/020909/sorensen_waters.pdf)

#### 4. Cougar Spring

The water development is within an aspen stand at the mouth of Cougar Canyon, and aspen are not recruiting here. The spring headbox is in good condition in a dense forest. The old trough is not maintained and needs to be replaced by a new trough to encourage livestock to water away from the aspen stand. The existing fence does not prevent livestock from gaining access to the spring itself. Mountain mahogany downslope of the spring is lacking recruitment.

- Mary O'Brien photos and report
- Doug Sorensen water developments report: Ten Mile Water Developments  
[http://tushar.ecr.gov/pdf/020909/sorensen\\_waters.pdf](http://tushar.ecr.gov/pdf/020909/sorensen_waters.pdf)

#### 5. Price Canyon Spring

This spring originates in an aspen stand. The aspen and riparian area at the spring is heavily used and the old spring enclosure is non-functional. The riparian area is degraded.

- Mary O'Brien report and photos: Order Canyon Report  
<http://tushar.ecr.gov/pdf/102908/MOOrder.pdf>
- Doug Sorensen water developments report: Ten Mile Water Developments  
[http://tushar.ecr.gov/pdf/020909/sorensen\\_waters.pdf](http://tushar.ecr.gov/pdf/020909/sorensen_waters.pdf)

#### 6. Order Spring

Order Spring originates in a small aspen stand with other aspen stands nearby. The spring enclosure does not prevent direct spring access. A trough is in the aspen stand. The spring flow and wetlands are open and being trampled by cattle, and riparian

vegetation standards are being exceeded. Adjacent aspen stands lack recruitment except for one portion where old trees have fallen and jackstrawed, discouraging browser access.

- Mary O'Brien photos and report
- Doug Sorensen water developments report: Ten Mile Water Developments  
[http://tushar.ecr.gov/pdf/020909/sorensen\\_waters.pdf](http://tushar.ecr.gov/pdf/020909/sorensen_waters.pdf)

### **G. Fish / In-Stream Conditions**

Data prior to 2004 are limited but it appears that Ten Mile Creek once held an above average non-native rainbow trout fishery. Bonneville cutthroat trout were reintroduced in 2002. Now the native trout biomass is about average.

Ten Mile Creek is naturally limited by low flow and pool quality. Ten Mile Creek is entrenched for much of its length from historic (since settlement) downcutting. This concentrates flood energies, constrains fisheries habitat development and diversity, and has probably further lowered base flows. High quality pools are lacking on much of the stream.

Riparian herbaceous and shrub/willow cover are lacking, but conifers have encroached on the stream and shade many parts of the stream. Water temperatures are good, however, due to the shading.

On much of the creek, livestock impacts are not evident, but do occur on open meadows.

- Jim Whelan fish report: Electrofishing Survey, Ten Mile Creek (February 2009) <http://tushar.ecr.gov/pdf/020909/Whelan.pdf>
- Jim Catlin, RSRA: RSRA field score sheets - Ten Mile Creek  
<http://tushar.ecr.gov/pdf/102908/RSRAtenmile.pdf>

### **H. Cheatgrass**

There are minor occurrences of cheatgrass.

## **I. Wildlife Conditions**

A variety of wildlife species can be found on each allotment given the diversity of plant communities, availability of water, and other factors which determine quality and quantity of habitat. Relevant to grazing are those herbivorous species that have some dietary overlap with cattle. Various lagomorphs, i.e. cottontails and black-tailed jackrabbits are abundant especially at lower elevations on both allotments. Use by these species is focused mainly in and around sage-steppe communities, which for these allotments are previously chained and reseeded areas--or in the case of Ten Mile a "Dixie" harrow treatment. Various rodents including microtenes (voles), deer mice, woodrats, and squirrels are also abundant and utilize a portion of the annual production of plants within these allotments. Use by these small mammals is unknown and even difficult to estimate but when subjected to close scrutiny and research is often surprising and significant.

Big game on these allotments entails deer, elk, and mountain goats. These animals can range great distances daily and especially seasonally to take advantage of best habitat/forage conditions. Goat use in the subject allotments would mainly be the top (west) end of the Ten Mile allotment near Mt. Holly with some wintering use in mountain mahogany stands on the high ridges.

Deer use on these allotments is widespread with the lower elevations of both allotments providing some winter range. On normal winters, deer in the Ten Mile area typically winter even lower on BLM and private lands while a higher proportion of deer remain on the Forest in the Pine Creek/Sulphurbeds allotment area but are also often forced down onto BLM and private lands by winter snows (see Deer and Elk report). Sagebrush, bitterbrush/cliffrose, and mountain mahogany are the most important winter browse in these areas. Deer fawning is also widespread depending on "green-up" conditions and often takes place during spring migration while moving up onto the Forest. Plant communities with a healthy forb component are especially important to support these lactating does.

Elk have a much stronger dietary overlap with cattle compared to deer, and can occur in larger group sizes during the grazing season within these

allotments. Elk are very adept at exploiting optimal foraging areas and conditions while being very transient in nature. Their grazing use is often widespread and light enough to confound measure but under certain conditions in small delicate communities may promote negative trends, e.g. in small aspen stands. Elk are often blamed for over-utilization when in fact it has been the wildlife biologist's observation that areas rested from livestock use, generally exhibit far less negative long-term impacts from grazing. This can be seen in both subject allotments by exploring neighboring lands like the Cottonwood allotment north of Ten Mile (not grazed by livestock for 30 years) and private land near Sulphurdale—both available to big game. Furthermore, springs/wetlands showing ungulate impacts are often solved when only livestock are excluded by fencing as evidenced by the many exclosures in Pine Creek. Elk winter and spring use is common in the low lying areas of the Pine Creek/Sulphurbeds allotment, while in high summer, these animals can also be found utilizing the higher elevations. Few animals winter on the Ten Mile allotment but the upper elevations are very popular in the summer through the fall. Some calving is observed on the western edge of the Ten Mile allotment as well as in the eastern edge of the Pine Creek/Sulphurbeds allotment (see Deer and Elk report).

- Wildlife report by Steve Flinders:  
<http://tushar.ecr.gov/pdf/040809/flinders.pdf>

## **J. Fire**

Ten Mile allotment is located on the east slope of the Tushar mountain range. The allotment runs north from City Creek to Ten Mile ridge and from the drainage divide to the east forest boundary. The vegetation types consist of a sagebrush steppe in the lower elevations grading to Gambel oak and pinion-juniper woodland, then at somewhat higher elevations into aspen and then mixed-conifer timber types.

Historically, the fire interval varied from approximately 5 to 15 years for the sage steppe; somewhat longer (10-25 years, for the pinion juniper woodland and Gambel oak; and then over 40 years for the aspen types. The mixed-conifer types may have had a frequency of about 40 years to 80 years depending on aspect and elevation.

Fires have not been as frequent as they were historically. In recent history, no large wildfires have occurred on this allotment. However, in 1996 the Pole Creek fire burned approximately 9,000 acres and the northeastern flank may have crossed onto the Ten Mile allotment in a few isolated areas within the upper reaches of the City Creek Drainage. Within the last 100+ years, fire has not played its historic role in this allotment.

- Map compiled by Jenneka Knight  
[http://tushar.ecr.gov/pdf/042909/Tenmile\\_Fire.pdf](http://tushar.ecr.gov/pdf/042909/Tenmile_Fire.pdf)

### ***Collaboration Agreements on Management Actions***

After extensive discussion, the full collaboration reached agreement on the following management actions intended to allow for restoration of the Ten Mile allotment, such that site conditions have the opportunity to move from existing conditions toward desired conditions.



#### ***A. Grazing Levels***

Permittee voluntarily agrees to a partial non-use for resource protection over a period of five (5) years. Use will be at 40% of permitted use in 2009 (resulting in a 60% reduction in permitted grazing use (head months) on the allotment). At the annual meeting between the permittee and the Forest Service, adjustment of the level of partial non-use for resource protection may be discussed, based on then-current site conditions.

From the permittee's perspective, the objective of the partial non-use for resource protection is to employ sound range management and

restoration practices to the end that the range be restored to a level capable of serving authorized uses.

Utilization across the allotment will be reduced to 30% during a five year period to maximize productivity. The reduction to 30% utilization will be implemented one pasture at a time, in order of pasture priority. Pasture priority will be determined annually between the Forest Service and permittees. The 30% utilization will be phased in as follows:

- 2009, Price Pasture will be at 30% utilization
- 2010, Price Pasture and Pasture A will be at 30% utilization, as will the pasture that was rested in 2009
- In each succeeding year, one additional unrested pasture will be used at 30%, until all pastures are at 30% utilization.

One pasture will be rested every year.

- Lower City Creek or Ten Mile Pasture will be rested first (2009), with the other being rested next (2010).

Any rested pasture comes back into grazing use at 30% utilization.

During the 2001-2008 grazing seasons, the Forest Service has measured grazing capacity of the Ten Mile allotment at 320 head months. An updated capacity determination will be completed by fall of 2013.

If in the future, the Forest Service determines there is additional capacity on the allotment, it shall be restored to the permittee.

The collaboration recommends there be no increase in current elk numbers within the herd unit, and if possible, move toward decreasing the numbers of elk in the herd unit. On the Ten Mile allotment, in order to move from Existing Conditions toward Desired Conditions, there should be no increase of elk numbers, thus minimizing the cumulative browsing and grazing impacts of wild ungulates and cattle.

## **B. Water Developments**

Permittees agree to use the following water development construction standards at spring sources:



- An adequately sized enclosure that will effectively prevent livestock from entering the water source. Minimum enclosure size is 40' x 40', or larger as necessary to take in the entire source area.
- The enclosure must be built with extremely durable materials capable of withstanding the extra pressure exerted by livestock at these types of sites. Avoid using barb-wire or net-wire, since this type of fence will not stand up to the increased pressure from livestock.
- The spring source itself will be developed or re-built with new materials that are dependable and will withstand the elements. Appropriate construction materials are outlined in
- Doug Sorensen's Ten Mile Water Developments report. [http://tushar.ecr.gov/pdf/020909/sorensen\\_waters.pdf](http://tushar.ecr.gov/pdf/020909/sorensen_waters.pdf)

Springs water development projects will be accomplished in the following priority:

- Price Spring, in 2009: Enlarge and improve enclosure; relocate trough.
- Cougar Spring, in 2009: Improve enclosure; upgrade water development to meet water development construction standards.
- Bumblebee Spring: At a minimum, build enclosure. This will require work with a road crew.
- Ten Mile Pasture Green Ridge Spring, in 2009: The Forest Service will conduct the needed work.

Pete Haraden (hydrologist) recommendations regarding headcutting and erosion in the channel below Price Spring will be implemented.

<http://tushar.ecr.gov/pdf/030309/existinghydro.pdf>

### **C. Fences**

The following are the 2009 priorities for fence improvements:

- South Ten Mile fence (west end): Extend fence up to cliff area.
- Gold Gulch fence (northern Ten Mile allotment boundary fence):
  - Extend fence at the west end.

- Add gates and cattle guard(s), or realign the fence, in the middle section.
- Repair and maintain the entire length of the fence between Ten Mile and Cottonwood allotments.
- City Creek Campground: Maintain fence around the campground.

Future areas of inquiry for fence improvements include:

- Areas with significant unauthorized use by cattle from a different allotment.

#### **D. Aspen**

No salt or supplements are allowed in an aspen stand. No salt or supplements are allowed within ¼ mile of aspen, where possible.

No developed drinkers (e.g. troughs) are allowed in an aspen stand. No developed drinkers are allowed within ¼ mile of aspen, where possible. Water developments will be placed so that cattle use will not worsen a nearby aspen stand.

Isolated pure aspen stands will be protected as follows in 2009:

- Order Canyon aspen stand: A protective fence will be built around the two parts of the stand. Conifers will be cut and laid on the ground. The Forest Service will provide materials; dedicated hunters will provide labor.
- Price Spring aspen stand: A protective fence will be built around the stand. This protective fence can double as a permanent range cage for long-term monitoring. The Forest Service will provide materials.

## SECTION 10: LESSONS LEARNED

---

Each group of stakeholder interests (Forest Service, UDWR, Permittees on both allotments, appellants, other collaboration members) and the facilitator were given the opportunity to submit “Lessons Learned” from the two-year collaboration. These “Lessons Learned” statements were not reviewed or edited by any other participants, and have been included *verbatim* in the final report (with minor formatting changes for ease of reading).

### ***Appellants***

1. **Open, transparent livestock management.** The Tushar Collaboration is an example of transparency and open government as envisioned by the current Administration (Appendix I; note highlighted sections particularly relevant to this Collaboration).
2. **Collaborative field work.** The fastest way to reach agreements among parties disagreeing about allotment conditions is to observe and document conditions in the field together.
3. **Data gathering protocols.** Scientific data gathered by objective and repeatable methods will be accepted by collaboration participants if they are discussed ahead of time, even if the methods are not “Forest Service” methods.
4. **Range management specialist.** An observant and objective range management specialist (like this one) who (1) is committed to observance of permit conditions and ecosystem health; and (2) remains on a District for many years is worth her/his weight in gold.
5. **Facilitator.** It is extremely important for a collaboration to select its own independent facilitator (as we did); and the facilitator is essential not only for facilitating the meetings, but also for keeping people to their deadlines, keeping all participants involved, and for coordinating the development of written reports and decisions.
6. **Forest Supervisor.** When a Forest Supervisor (1) visits the allotments with collaboration participants; (2) participates in key collaboration

meetings; and (3) offers innovative solutions rather than defending what hasn't been working (as this Forest Supervisor did), her/his staff gets the green light to make needed changes.

7. **Permittees.** It is a challenging undertaking for permittees to work on public lands grazing management with forest users who are not invested economically or personally with livestock grazing.
8. **Last meeting.** Never leave the last meeting of a collaboration until every word of the final agreement has been read together. Everyone should have a printed copy of the final decision items before they walk out the door for the final time.
9. **Term grazing permits.** The current Forest Service policy of having to gather utilization data for three years in a row before permit numbers are reduced in allotments clearly experiencing damage from over-grazing is unworkable in light of (1) the sheer number of allotments that are currently over-capacity for livestock; (2) the lack of Forest Service staffing to assess three years of utilization on each of those allotments in any reasonable time; (3) the damage that continues/accelerates while continuing to run full/nearly-full permit numbers in order to determine utilization three years in a row; and (4) the damage that continues/accelerates while an allotment waits in queue for years/decades to begin its three years of utilization data-gathering. As well, the policy is unnecessary in light of the similarity of problems on many allotments, particularly adjacent ones. Privileging permit numbers above degradation to water quality and quantity; fish; and sensitive, native wildlife and vegetation must end, particularly in light of climate change.
10. **Actual number of cattle.** Misreporting of actual numbers of cattle run on the allotments makes true capacity analysis impossible when actual numbers are less than the numbers reported to FS by permittees.
11. **Forest Service attention to certain important ecosystem features.** Impacts to certain features of forest health (e.g., cottonwood and willow recruitment; flowers and pollinators: understory of sagebrush and aspen; intact stream banks) are not being monitored at all by the Fishlake NF and the Forest has no standards or other mechanisms by which to respond to their degradation or diminishment. The

collaboration was able to address these in Desired Conditions; now we have the next 5 years to see if restoration of them begins.

12. **Elk plus cattle.** State-level Utah Division of Wildlife pressure on national forests to increase number of elk is counter-productive when browsing and/or grazing is already excessive on the forest.
13. **Level II riparian inventories.** The Fishlake NF has contracted for a number of excellent Level II riparian inventories (e.g., for Pine, Wildcat, and North Wildcat Creeks), but the Forest has not been acting on the reports. For instance, six years ago, on Wildcat Creek, the Level II Riparian Inventory wrote:

*The stream channel and riparian area are protected from cattle grazing on some of the reaches because of steep banks that do not allow access. The remainder of the stream is in poor overall condition, as riparian vegetation is overgrazed and there appears to be no effort to keep cattle off the riparian areas. Better livestock management needs to be implemented to prevent further deterioration of this area. Cattle management should emphasize leaving the area after a utilization limit has been reached on the riparian and the upland vegetation. This will mean the permittee will have to ride the allotment and herd cattle away from heavily used areas. The current riparian conditions on this creek are unacceptable, and either the permittees comply with better management or they should not be allowed to graze the area.*

*As of 2008, riparian grazing practices had not changed and degradation had continued. The Fishlake should complete (and use) Level II riparian inventories for all remaining unsurveyed creeks.*

14. **AOI meetings.** Permittees are able to put excessive, if not abusive, pressure on the Forest Service, out of the public's eye, during meetings for Annual Operating Instructions. AOI meetings are neither transparent nor open, as the public is excluded. AOI meetings address private entity impacts on public lands and the public should either be present, or met with separately prior to issuance of AOIs.
15. **Alternatives.** The Forest Service should work with organizations that may have proposals re: livestock grazing before they become

appellants. Reasonable alternatives submitted by the public should be considered by the Forest Service for partial or complete adoption and implementation.

### ***Utah Farm Bureau***

After looking back on the process, it appears that there could have been some issues or points that we could have agreed upon early on in the process. Issues such as:

1. **The Beaver transplant** (if we would have agreed upon this one early, we could have started the transplant a year earlier and possibly could have seen some results),
2. **The mountain mahogany** (agreeing early on that there wasn't enough information to make a determination, we could have taken it off the board), and
3. **The isolated aspen stands** (some of these could have been identified and fences built around them and observed a year of results).

Also we might have made better use of sub-groups (although we did use them fairly well) and not had to meet as the main group so many times.

### ***Facilitator***

The collaboration self-facilitated for the first half of its life. The facilitator's "lessons learned" are informed only by what she experienced coming into the middle of an ongoing process, one that had already developed a group personality (with some good and some difficult dynamics) and had been moving in a particular direction for almost a year.

1. **Value of Joint Fact-Finding.** In the end, the collaboration was successful because all participants share a genuine love and concern for the landscape, and because they reached conclusions about existing conditions together. By going out into the field together, all collaboration members saw the same things and were able to educate each other in the moment about why they reached the conclusions they did.

Another advantage of joint fact-finding was the ability to place all known information about the allotments -- data and photographs, as well as information across disciplines (e.g., aspen, riparian browse, utilization, water quality, cheatgrass) – in one place (on one map). This facilitated reaching informed conclusions about the severity of existing conditions, as well as identifying synergistic opportunities for management actions to start moving toward desired conditions.

- 2. Collaboration Design.** The group may have been too large, containing many representatives for each different stakeholder interest (appellants, Forest Service, permittees). Within each stakeholder interest group (especially appellants and permittees), each representative had a different agenda, sometimes a competing agenda relative to other representatives in the same interest group. Because of this, there was great reluctance by some collaboration members to allow any discussions without all collaboration members being present. Yet, many collaboration members were not interested in the details of some specific agendas, the discussion of which took up much meeting time. Had all collaboration members been amenable, much more of the collaboration's work could have been done in targeted smaller group discussions, bringing the smaller group's recommendations to the full group, thus being more respectful of each participant's time and level of interest.

While on paper the collaboration may appear balanced (similar number of appellants to permittees), the reality turned out to be that all permittees did not have time to attend all meetings. (Often, only one permittee representative (i.e., only one permittee from one of the allotments) attended.) The perception in most meetings, therefore, was that the group was Appellant and Forest Service-heavy. This was less of an issue when specific topics were discussed extensively in a small group made up of one representative from each major stakeholder interest, only then bringing the small group's recommendation to the full collaboration.

- 3. Difficulty Prioritizing.** The group took on too much. In part because of genuine disagreement, in part because of differing agendas, and in part because some of the participants wanted to solve all grazing-related issues in this one collaboration, the goals for field work and scientific data gathering were set quite broadly early on in the collaboration's efforts. Participants had difficulty setting priorities for data gathering that would

support meaningful conclusions, even as the time commitment for gathering and analyzing all the desired data became overwhelming.

4. **Distance and Technology (or the lack thereof).** Many collaboration members lived or worked in the vicinity of the allotments and the local Forest Service office (Beaver, UT). Many collaboration members needed to travel long distances to attend collaboration meetings (e.g., Oregon, Durango CO, Moab UT and Salt Lake City). This created a tension between allowing adequate face-to-face time for mutual understanding to develop and limiting expensive travel costs (time and money).

One permittee lives in California. While one of this permittee's local ranch employees attended many of the full collaboration meetings, there was frequent turnover at the local level and decision-making authority rested in California. The distance and resulting lack of meaningful engagement in the process until the very end of the collaboration presented a challenge.

Some of the group's work was accomplished through conference calls, but this technology cannot replace face-to-face meetings. Much research was done to identify other technologies to facilitate virtual face-to-face meetings (e.g., video-conferencing, Skype), but to no avail. No video conferencing facilities were found in Beaver. Not all collaboration participants had access to the internet, making Skype or other internet-based conferencing technologies unavailable.

There was great reliance on e-mail between meetings and to edit the collaboration's final report. While this worked well for the most part, the participant without e-mail access had to receive all meeting reminders and documents by fax or snail mail, and then did not have an easy way to provide timely feedback. Also, many of the e-mail providers in central Utah did not have adequate storage space to hold the full report, again making review and editing of the final report more complicated. These types of logistical difficulties should be considered up-front in process design for place-based collaborations such as this, where many of the participants and the physical location at issue are geographically and technologically remote.



# APPENDIX A. RESOLUTION AGREEMENT

---

## RESOLUTION AGREEMENT

Regarding the Appeal of Final EIS and ROD for the Reissuance of Term Grazing Permits on Eight Cattle Allotments  
Beaver Mountain Tushar Range, Beaver Ranger District  
Fishlake National Forest

[Click here for PDF Version](#) [4 pages, PDF 66kb]

April 18, 2007

Note: As used below, "collaboration" involves the Forest Service, Appellant representatives, Permittees, Scientists, and other interested parties (such as the Farm Bureau), implementing the principles for federal agency participation in collaboration prepared by the White House Office of Management and Budget and Council on Environmental Quality (Attachment A)<sup>2</sup>.

The U.S. Institute of Environmental Conflict Resolution (USIECR) will be asked to assist or advise in ensuring that the principles for collaboration are understood and implemented. There will be no involuntary commitment of funds for the USIECR. All proceedings will be open to the public, and data relied upon will be available to the public.

### BEAVER RANGER DISTRICT COMMITMENTS

1. The Beaver Ranger District and appellants agree to work with economists to develop guidelines for quantitative economics analysis of livestock grazing in Environmental Impact Statements (EISs) for grazing authorizations.
2. The Beaver Ranger District and appellants commit to undertaking a collaborative, multi-stakeholder process to develop existing and desired conditions and management practices to be used in developing management plans for two of the eight Tushar Range allotments:

---

<sup>2</sup> Office of Management and Budget and President's Council on Environmental Quality: Memorandum on Environmental Conflict Resolution. (<http://www.whitehouse.gov/ceq/jointstatement.html>)

- a. Ten Mile allotment including aspen and mountain mahogany recruitment. It is understood that certain actions taken within or beyond the AMP may require NEPA analysis and no commitment for EA's or EIS's are implied.
- b. Either Pine Creek/Sulphurdale or South Beaver allotment, including aspen and mountain mahogany recruitment and provision of suitable habitat conditions for beaver on at least one creek.

### **WITHIN ONE YEAR**

## **ECONOMICS**

1. The Beaver Ranger District and appellants<sup>3</sup> will work with Forest Service Region 4 Economist to develop a set of guidelines to be used for quantitative economic analyses of livestock grazing in EISs for grazing authorizations in the next three years<sup>4</sup>.
2. Drafts of the guidelines will be peer-reviewed by a diversity of professional economists.

### **WITHIN TWO YEARS**

#### **1. TWO ALLOTMENTS**

- a. Collaboratively develop existing and desired conditions and management practices to be used in developing management plans for two allotments:
  - i. Ten Mile allotment, including mountain mahogany and aspen recruitment, see below.
  - ii. A second allotment (either Pine Creek/Sulphurdale or South Beaver) including,
    1. Aspen and mountain mahogany recruitment

---

<sup>3</sup> Lead contact for appellants will be Mary O'Brien, Southern Utah Forest Project Manager, Grand Canyon Trust.

<sup>4</sup> Livestock grazing EISs are not required to develop economic analyses. The guidelines will be used if alternatives in a grazing authorization EIS are compared in terms of socio/economic consequences.

2. A plan for re-establishment of suitable habitat for beaver on at least one stream recommended for beaver re-establishment in the Forest's Level II riparian inventories.

## 2. ASPEN and MOUNTAIN MAHOGANY

- a. Collaboratively document where recruitment is failing in aspen clones and mountain mahogany stands within the two allotments.
- b. Collaboratively develop a plan to restore recruitment as part of NFMA analysis and which could lead to NEPA analysis for future projects.

## 3. BEAVER

- a. Collaboratively plan for the needs of functioning beaver colonies on at least one creek/stream for which beaver restoration has been recommended in Fishlake NF's Level II Riparian Assessments within Pine Creek/Sulphurdale or South Beaver allotment
  - b. The Beaver Ranger District will consult with its resource specialists, Division of Wildlife Resources, water rights stakeholders and Appellant Grand Canyon Trust (as lead Appellant) to select the creek/stream(s) within Pine Creek/Sulphurdale or South Beaver allotments.
  - c. Collaboratively develop a plan for providing suitable habitat conditions for beaver on at least one of the creeks as part of NFMA analysis and which could lead to NEPA analysis for future projects.
4. It is assumed by all parties that the efforts to improve natural resource conditions and reduce resource damage on these two allotments would be shared for similar or related problems in other Fishlake National Forest livestock allotments.
  5. In exchange for the above commitments made by the Forest Service, appellants agree to withdraw their administrative appeal of this decision.

**AGREED BY:**

Terry A. Krasko  
District Ranger

Mary O'Brien,  
for Grand Canyon Trust, Date

Veronica Egan  
Great Old Broads For Wilderness

Terry Shepherd  
Red Rock Forests

Wayne Hoskisson  
Sierra Club, Utah Chapter

Kevin Mueller  
Utah Environmental Congress

John Carter  
Western Watersheds Project

Allison Jones  
Wild Utah Project

**Attachment A.**

**Basic Principles for Agency Engagement  
in Environmental Conflict Resolution and Collaborative Problem Solving**

**Informed Commitment**

Confirm willingness and availability of appropriate agency leadership and staff at all levels to commit to principles of engagement; ensure commitment to participate in good faith with open mindset to new perspectives

**Balanced, Voluntary Representation**

Ensure balanced, voluntary inclusion of affected/concerned interests; all parties should be willing and able to participate and select their own representatives

**Group Autonomy**

Engage with all participants in developing and governing process; including choice of consensus-based decision rules; seek assistance as needed from impartial facilitator/mediator selected by and accountable to all parties

**Informed Process**

Seek agreement on how to share, test and apply relevant information (scientific, cultural, technical, etc.) among participants; ensure relevant information is accessible and understandable by all participants

**Accountability**

Participate in process directly, fully, and in good faith; be accountable to the process, all participants and the public

**Openness**

Ensure all participants and public are fully informed in a timely manner of the purpose and objectives of process; communicate agency authorities, requirements and constraints; uphold confidentiality rules and agreements as required for particular proceedings

**Timeliness**

Ensure timely decisions and outcomes

**Implementation**

Ensure decisions are implementable; parties should commit to identify roles and responsibilities necessary to implement agreement; parties should agree in advance on the consequences of a party being unable to provide necessary resources or implement agreement; ensure parties will take steps to implement and obtain resources necessary to agreement

Source: Office of Management and Budget and President's Council on Environmental Quality. Memorandum on Environmental Conflict Resolution.

<http://www.whitehouse.gov/ceq/joint-statement.html>

## APPENDIX B. TUSHAR ALLOTMENTS COLLABORATION PARTICIPANTS

---

1. **Mel Bolling** (U.S. Forest Service, Beaver Ranger District)
2. **Chuck Bradshaw** (Pine Creek/Sulphurbeds permittee)
3. **Bob Campbell** (Fishlake National Forest)
4. **John Carter** (Western Watersheds Project)
5. **Jim Catlin** (Wild Utah Project)
6. **Rose Chilcoat** (Great Old Broads for Wilderness)
7. **Steve Flinders** (Fishlake National Forest)
8. **Wayne Hoskisson** (Utah Chapter, Sierra Club)
9. **John Keeler** (Utah Farm Bureau)
10. **Jeneka Knight** (Fishlake National Forest)
11. **Sean Kelly** (Utah Division of Wildlife Resources)
12. **K. L. McIff** (Flying V Bar, Ten Mile Allotment)
13. **Mary O'Brien** (Grand Canyon Trust)
14. **Neil Perry** (Utah Division of Wildlife Resources)
15. **Allen Rowley** (U.S. Forest Service, Fishlake National Forest)
16. **Terry Shepherd** (Red Rock Forests)
17. **Doug Sorensen** (Beaver Ranger District, Fishlake National Forest)
18. **Aaron Stewart** (Flying V Bar, Ten Mile Allotment)
19. **Donald Willden** (Sportsman, Beaver County Commission)
20. **Joe Yardley** (Pine Creek/Sulphurbeds permittee)
21. **Lee R Yardley** (Pine Creek/Sulphurbeds permittee)
22. **Selena Yardley** (Pine Creek/Sulphurbeds permittee)

# APPENDIX C. RECOMMENDED AMP TEMPLATE

---

## Allotment Management Plan Outline

### Cover Page

A separate (approval) cover page that states the allotment name, National Forest and District names with signature blocks for the preparer, permittee, and approver.

### Introduction

Site description: Brief description of the allotment location, total acres, elevation ranges, major vegetation types, waterways, permitted numbers and season of use and how the allotment fits into the overall ranch operations (i.e. where do livestock go when not on the Forest).

### Statements

- NEPA Decision – Include statement that indicates that this AMP is based on current NEPA decision and list the document and date signed.
- Grazing Permit – Include statement which says “This Allotment Management Plan is made part of your Term Grazing permit in accordance with Section....of that permit, approved on ..... This statement could be written on the cover page with the signatures.
- Annual Operating Instructions – Include statement that implementation will be carried out through the Annual Operating Instructions.

### Desired Conditions

This section describes the desired conditions for the allotment developed during the collaboration process.

- Soil
- Riparian
- Vegetation
- Wildlife

- Fire
- Livestock Management

### **Current Conditions and Need for Change**

Describe current conditions in relation to desired conditions. Describe need for change for those cases where current conditions are not meeting desired conditions.

- Soil
- Riparian
- Vegetation
- Wildlife
- Fire
- Livestock Management

### **Management Actions and Implementation Plan**

- Management Actions - Describe actions that will be taken to address items described in the Need for Change section in order to move toward desired conditions. Also included in the description is an explanation of how the action will move current conditions towards desired condition. Actions may include:
  - Livestock Management
  - Wildlife Management
  - Vegetation Management
  - Range Improvement Projects
- Implementation Plan – The plan should describe the process and schedule for implementing the management actions such as:



- Proposed range improvements including budget estimates and funding plan for the improvements.
- Interim livestock management pending completion of proposed range improvements.
- Future actions following completion of proposed range improvements.
- Realistic time line for implementation of projects and management changes.
- Drought management guidelines.

### **Monitoring**

Both annual and long-term monitoring efforts need to be listed. Describe methods, locations and frequency of data collection that will be used in both annual and long-term monitoring. Include utilization standards and guides that will be used in annual monitoring.

### **Additional Information**

- Allotment map showing pasture boundaries, existing and proposed range improvements and key area (monitoring) locations.
- Soil and capable acres map
- Ecological Site Descriptions

# APPENDIX D. EXISTING CONDITIONS SUMMARY

## REPORT-ASPEN

---

*Authors: Bob Campbell (Fishlake NF Ecologist) and Mary O'Brien (Grand Canyon Trust)*

### EXISTING CONDITIONS

#### Aspen on Ten Mile and Pine Creek/Sulphurbeds Allotments

Most acres of aspen on Ten Mile (91% of 3,945 acres) and Pine Creek/Sulphurbeds Allotments (88% of 5,585 acres) are mixed with or overtopped and crowded by conifers. Bob Campbell, Forest Ecologist, estimates that much of this acreage was earlier dominated by aspen, as fallen logs in such forests tend to be dominated by older aspen rather than older conifer. Young aspen experience difficulty in growing under the competition and shade of conifers.

Much of the comparatively small acreage of aspen not mixed or dominated by conifer (~345 acres in Ten Mile; ~360 acres in Pine Creek/Sulphurbeds) is also lacking in recruitment of young stems into the overstory. This was found both in ten browsing/recruitment transects run by Grand Canyon Trust and two transects and 14 "risk-factor" plots run by Bob Campbell.

Much of the lack of the recruitment is due to the young stems being repeatedly browsed by cattle and/or elk/deer, preventing their growth above 4'. Once aspen grow above 6'-7' tall, they are generally able to grow up into the overstory because elk typically do not consume their tallest leaders.

Ongoing recruitment of aspen is important because individual aspen trees typically lose vigor as they approach 100 years of age, and so maintenance of overstory requires entrance of new understory trees into overstory. Aspen stands on gentle slopes (e.g., <15% slope) in the two allotments are particularly vulnerable to excessive browsing due to their accessibility. Excessively-browsed pure aspen stands can indicate that aspen in nearby conifer-overtopped stands that are burned or logged could themselves become subject to excessive browsing.

Aspen stands on the two allotments, as elsewhere in the West, however, can be highly variable. Aspen “stands” are often one or two genetically identical organisms (clones), with the stems joined underground. Some clones appear to be relatively unpalatable to ungulate browsers. This may account for the not-infrequent observation of one aspen stand experiencing recruitment, while surrounded by other stands which are heavily browsed and lacking in recruitment.

Given conifer encroachment and heavy ungulate browsing, we suggest that aspen is not sustainable under current management on at least 95% of the area where aspen occurs in these two allotments.

**More Information:**

1. See <http://tushar.ecr.gov/?link=121> under “Aspen” for detailed recruitment/browse transect reports (Grand Canyon Trust) for four aspen stands on Pine Creek/Sulphurbeds allotment and three aspen stands on Ten Mile allotment. In addition, a “Grindstone Flat” aspen report compares results within three adjacent aspen stands: an elk/cattle exclosure, a cattle exclosure, and outside an exclosure. Grindstone Flat is on Tushar Plateau between and above Pine Creek/Sulphurbeds and Ten Mile allotments. Methods for these transect studies are also found at <http://tushar.ecr.gov/?link=110> under “Aspen”.

2. See Field report by Bob Campbell (Fishlake NF Ecologist) on aspen stand conditions in Pine Creek/Sulphurbeds and Ten Mile allotments.

# APPENDIX E. EXISTING CONDITIONS SUMMARY

## REPORT- RIPARIAN GRASS/GRASSLIKE UTILIZATION IN PINE CREEK/SULPHURBEDS ALLOTMENTS

---

*Author: Mary O'Brien (Grand Canyon Trust)*

### EXISTING CONDITIONS

#### Riparian Grass/Grasslike Utilization

#### In Pine Creek/Sulphurbeds Allotment

The stubble height of grasses and grasslike (i.e., sedges, rushes) vegetation in Pine Creek/Sulphurbeds allotment riparian areas was measured post-livestock grazing along eight transects on four creeks (Grassy #2, Little North #3-#5, Pine #1-#2, and Twitchell #1-#2). These were the same transects along which browsing of cottonwood and willow were measured both pre- and post-livestock grazing (see report on Existing Conditions, Riparian Cottonwood and Willow in Pine Creek/Sulphurbeds allotment).

Where riparian sites are accessible to cattle and elk, the grasses and grasslike vegetation are grazed to similar heights, generally 1"-1.5". This is noteworthy, because the Forest riparian stubble-height standards differ for Kentucky bluegrass (1.5") and native hydrophytic (wet soil) grasses, sedges, and rushes (4"). Only within the Pine Creek cattle enclosure did the hydrophytic grasses (4.9") meet Forest standard; sedges/rushes weren't encountered on the enclosure transects (see "More Information", below).

It appears that Forest stubble standards are not being met where riparian areas are accessible to Pine Creek/Sulphurbeds cattle.

#### **More Information:**

1. See <http://tushar.ecr.gov/?link=12> Utilization, under "Pasture and Grazing Conditions" for detailed reports on measurements of utilization of grass and grasslike vegetation at 8 sites on four creeks (Wildcat, North Wildcat, Pine, Twitchell, Grassy, and Little North Creeks). The reports on grass/grasslike utilization are present on the last two pages in the browse reports for these creeks.

2. See <http://tushar.ecr.gov/pdf/111808/MOBGrassForm.pdf> for the method and data form that was used to measure the heights. In 2009, this form will be modified to note whether a forb is encountered within 3" of the transect point, if a grass/grasslike plant is not.

# APPENDIX F. EXISTING CONDITIONS SUMMARY

## REPORT- RIPARIAN COTTONWOOD AND WILLOW IN PINE CREEK/SULPHURBEDS ALLOTMENT

---

*Author: Mary O'Brien (Grand Canyon Trust)*

### EXISTING CONDITIONS

#### Riparian Cottonwood and Willow

#### In Pine Creek/Sulphurbeds Allotment

Narrowleaf cottonwood and willow species (primarily Booth's, but also some coyote) grow immediately next to Pine Creek/Sulphurbeds allotment creeks in many locations. The riparian floodplains of the allotment's creeks are generally narrow, with steep slopes (i.e., upland areas) and/or dense Gambel's oak or conifers within 100' feet of the creek. As a result, the riparian willow patches are often small and the cottonwood few and/or scattered, thus becoming particularly vulnerable to near-complete consumption of leaders (tallest, upward-pointing twigs) by cattle and/or elk.

Where riparian sites are accessible to cattle and elk, cottonwood and willow populations are generally lacking in recruitment of young and short (<4') cottonwood and willow into >6' tall overstory. Much of the lack of the recruitment is due to young willow and cottonwood stems under 4' being repeatedly browsed by cattle and/or elk/deer, preventing their growth above browse height. Browse of cottonwood and willow leaders is often high before cattle enter the pasture in the spring and higher by the time the cattle leave (see "More Information", below).

This lack of 4.1'-6' cottonwood and willow is similar to the lack of 4.1'-6' aspen in upland aspen stands on both Pine Creek/ Sulphurbeds and Ten Mile allotments.

Some Pine Creek/Sulphurbeds allotment riparian sites are moderately or completely inaccessible to large ungulates (cattle, elk, deer), for instance where creek slopes are steep. In these inaccessible areas, tall and dense stands of willow can be seen, indicating the creeks' potential for dense and tall riparian vegetation in the absence of heavy browsing. Similarly, the single riparian cattle exclosure on Pine Creek/Sulphurbeds allotment (Pine Creek), most leaders were retained within the exclosure while most leaders had been browsed outside the

enclosure by the end of the pasture's cattle use (<http://tushar.ecr.gov/pdf/103108/MOBpine1.pdf>) .

Once cottonwood or willow grow above 5' tall, cattle do not typically consume their tallest leaders, and once they grow above 6'-7' tall, they are generally able to grow up into the overstory because elk typically do not consume their tallest leaders. While some willow species never reach 6' at maturity, the willow of Pine Creek/Sulphurbeds allotment is mostly Booth's willow, which can grow to 15', and coyote willow (e.g., in North Wildcat Creek) can grow to 21' tall.

Ongoing recruitment of cottonwood is important because the lifespan of individual cottonwood trees is 100 years or less. Ongoing recruitment of willow is important to maintain dense willow and other riparian vegetation in riparian areas.<sup>5</sup>

It appears that recruitment of young willow and cottonwood into mature overstory is lacking under current management in the accessible reaches of the Pine Creek/ Sulphurbeds creeks.

**More Information:**

1. See <http://tushar.ecr.gov/?link=121> for detailed reports on measurements of browse and recruitment of riparian cottonwood, willow (and, in one site, aspen) at 12 sites on six creeks (Wildcat, North Wildcat, Pine, Twitchell, Grassy, and Little North Creeks). Reports are located at "Riparian Browse Surveys," under "Riparian Conditions".

---

<sup>5</sup> Both willow and cottonwood are key riparian species because their deep roots anchor creek banks during flooding and help banks resist trampling; and their height and canopy provide aquatic and riparian shade as well as wildlife niches for breeding, feeding, and cover. Cottonwood, a large, but not long-lived tree, is a source of large, woody debris for creeks, creating valuable creek complexity and stability during floods.

# APPENDIX G. EXISTING CONDITIONS SUMMARY

## REPORT-RANGE READINESS

---

*Authors: Jim Catlin and Chad Horman*

### **Range Readiness Pertinent to the Beaver Ranger District**

Jim Catlin, Wild Utah Project 2 April 2009

The time when livestock first enter a pasture in a grazing season is a critical management decision. For this reason, range managers have established a “range readiness” requirement. Once a pasture has been determined to be range ready, then livestock can be turned out. This report describes how to assess range readiness using the growth degree-day method. Based on 2006 weather data for Beaver Canyon, it appears that livestock turn out dates occur at a time that when the range should be ready for grazing for many native grasses in the Tushar Mountains.

One way to determine range readiness uses the growth degree day method to calculate the stage of growth for a species of grass in its growth cycle where livestock grazing (or harvest, in the case of agricultural use) can occur. Designed to ensure that production from one year to the next does not diminish, the growth degree day assessment uses the average of the high and low temperatures each day from a nearby weather station to estimate time when the range is ready for either grazing or harvest. Frank et al<sup>6</sup> offer a good explanation of this method.

In 1973, J.R. Haun developed a numbered stage system that describes each growth stage for grasses<sup>7</sup>. A perennial grass with four fully developed leaves on the stem is normally at Haun stage 4. For many cool-season wild perennial grasses, a Haun growth stage of 3.5 or 4 is assumed to be ready for grazing or harvest depending on the species.

---

<sup>6</sup> Frank, Albert B, Kevin K. Sedivec, and Lenat Hofmann. 1993. Determining grazing readiness for native and tame pastures. USDA Agricultural Research Service, Mandan North Dakota, R1061

<sup>7</sup> Haun, J.R. 1973. Visual quantification of wheat development. Agron J 65:116-119



The growth degree-day is the average of the daily maximum and minimum temperature minus 32 degrees Fahrenheit for cool season grasses or minus 40 degrees Fahrenheit for warm season grasses. For each day, the growth degree day is calculated by adding the daily maximum and the minimum temperature then dividing by two to get the average and then subtract 32 degrees for the Beaver Ranger District [ $GDD = ((\text{max temp} + \text{min temp}) / 2) - 32$ ]. The growth degree-day number is then added together for an accumulated growing degree day. The accumulation starts after the average temperature is above freezing for five consecutive days. The table below gives the recommended accumulated growth degree days needed for range readiness for a number of species:

Grass	Accumulated Growth Degree Day
Needle and thread	1159
Crested wheatgrass	516
Western wheatgrass	1386
Blue grama`	1296

The nearest weather station to the Pine Creek & Sulphur Beds and Ten Mile Creek allotments is in Beaver Canyon, Station Number 420527. Weather data can be downloaded online from: <http://www.wrcc.dri.edu/Climsum.html>. This is the Western Regional Climate Center that covers historic and current data for 2,800 sites. The Beaver Canyon Weather Station is at 7,275 feet elevation and latitude 38.2681 longitude -112.481.

Figure 1 displays a graph that shows the accumulated growth degree days for 2006 for the Beaver Canyon. On June 16<sup>th</sup>, the turn out day for the Pine Creek Sulphurbeds allotment, the total growth degree days was 1621. On June 11<sup>th</sup>, the turnout day for the Ten Mile allotment, the range readiness total growth degree day is 1437.

There are several things to say for this growth degree day method. This is a standard repeatable process that can be used to predict turnout based on weather data. It does not rely on the height of the plant which can vary among

species and due to site specific conditions. The growth degree day method uses a measure of the stage on a plant's growth cycle with is a better indicator.

There are some cautions to be observed when using this method. This is designed for agricultural applications. Plant production of annual grass is the key value that this method hopes to maintain from one year to the next. Scientific analysis of larger ecological considerations has yet to be conducted. Lastly, this is based on one weather station and more site specific circumstances may affect range readiness

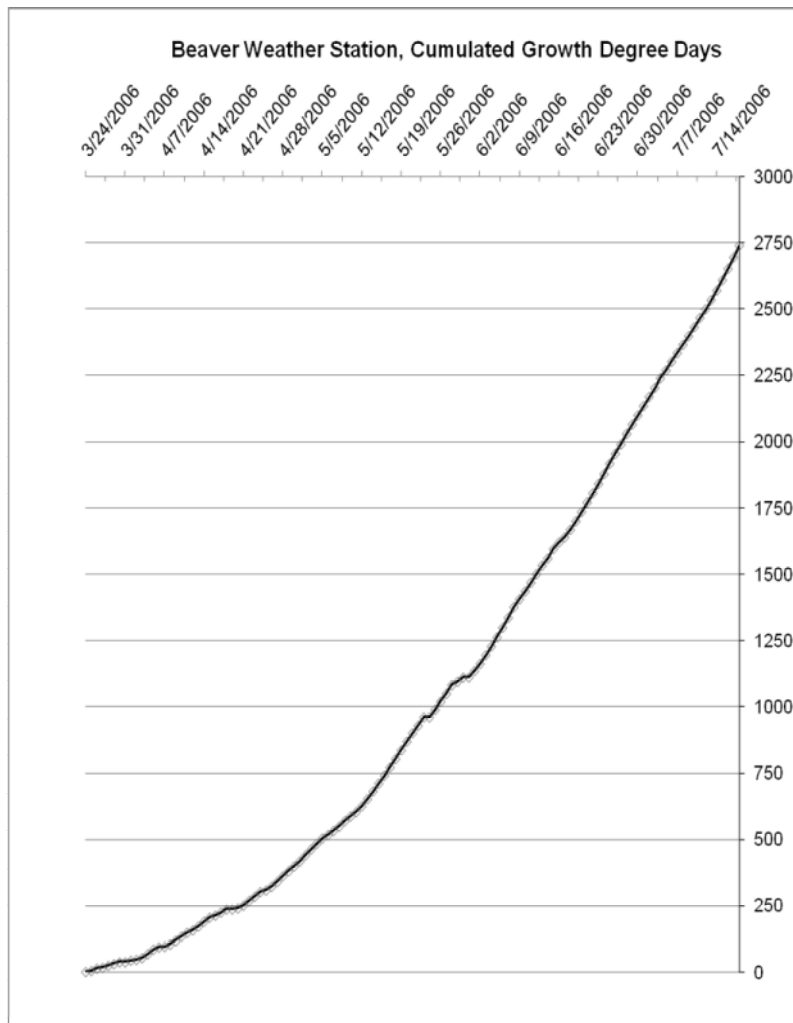


Figure 1

# APPENDIX H. EXISTING CONDITIONS SUMMARY

## REPORT-TOUR WITH PERMITTEES

---

### **Tushar Allotments Collaboration**

*Author: John Heyneman, Manager, North Rim Ranch*

Here is my recollection of changes/improvements of water distribution during the October 7-8 tour of the Tushar Allotments. Most of the definitive conversations took place during the first day.

Participants in two-day tour: John Heyneman, Wyatt Barnson (Ten Mile), Joe Yardley (Pine Creek), Doug Sorensen (USFS), John Keeler (UT Farm Bureau)

#### Pine Creek / Sulphurbeds

Sulphurbeds Pasture – All assembled agreed that the pasture was overused. We discussed the merits (and ownership questions) of accessing the nearby pipeline to provide stock water across the fence into the Cove Creek pasture. This would help mitigate livestock's desire to return to Sulphurbeds for water.

Cove Creek Pasture – Spent a fair amount of time discussing logistics and agreed on the importance of fencing out Dipping Vat spring and the downstream wetlands/riparian area and piping stock water into a drinking trough away from the wetlands/riparian.

Pine Creek Pasture – Aside from noting the difficulty of managing the riparian areas, we discussed potential of expanding the network of grazing exclosures, so that livestock had access to less of the creek. Discussed potential benefit of a volunteer effort to both create public goodwill and decrease expense.

#### Ten Mile

Price/Cougar Pasture – Briefly discussed opportunity to fence aspen grove at head of spring that runs by new corral. Further into the pasture, the riparian meadow was clearly over used, but we did not come to any obvious water manipulation solutions to the erosion and channeling taking place along the

stream. We did discuss ways to mitigate overall grazing pressure throughout the allotment by changing cattle numbers and/or time of use.

12-1-08

# APPENDIX I. MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

---

## **SUBJECT: Transparency and Open Government**

My Administration is committed to creating an unprecedented level of openness in Government. We will work together to ensure the public trust and establish a system of transparency, public participation, and collaboration. Openness will strengthen our democracy and promote efficiency and effectiveness in Government.

Government should be transparent. Transparency promotes accountability and provides information for citizens about what their Government is doing. Information maintained by the Federal Government is a national asset. My Administration will take appropriate action, consistent with law and policy, to disclose information rapidly in forms that the public can readily find and use. Executive departments and agencies should harness new technologies to put information about their operations and decisions online and readily available to the public. Executive departments and agencies should also solicit public feedback to identify information of greatest use to the public.

Government should be participatory. Public engagement enhances the Government's effectiveness and improves the quality of its decisions. Knowledge is widely dispersed in society, and public officials benefit from having access to that dispersed knowledge. Executive departments and agencies should offer Americans increased opportunities to participate in policymaking and to provide their Government with the benefits of their collective expertise and information. Executive departments and agencies should also solicit public input on how we can increase and improve opportunities for public participation in Government.

Government should be collaborative. Collaboration actively engages Americans in the work of their Government. Executive departments and agencies should use innovative tools, methods, and systems to cooperate among themselves, across all levels of Government, and with nonprofit organizations, businesses, and individuals in the private sector. Executive departments and agencies should solicit public feedback to assess and improve their level of collaboration and to identify new opportunities for cooperation.

I direct the Chief Technology Officer, in coordination with the Director of the Office of Management and Budget (OMB) and the Administrator of General Services, to coordinate the development by appropriate executive departments and agencies, within 120 days, of recommendations for an Open Government Directive, to be issued by the Director of OMB, that instructs executive departments and agencies to take specific actions implementing the principles set forth in this memorandum. The independent agencies should comply with the Open Government Directive.

This memorandum is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by a party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

This memorandum shall be published in the Federal Register.

BARACK OBAMA

January 21, 2009