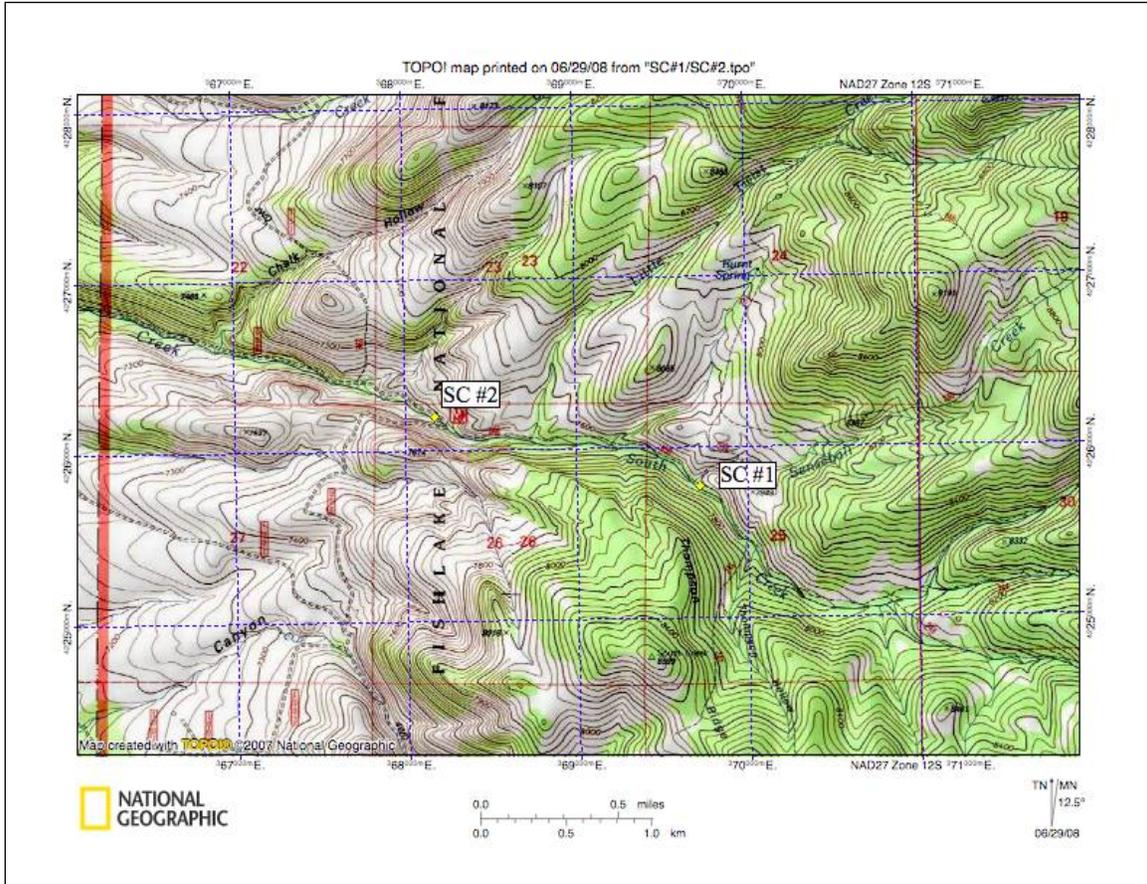


**South Beaver Allotment
SOUTH CREEK #1 (SC1)
Riparian Browse Assessment
(1) June 1, 2008
(2) October 17, 2010
(3) September 8, 2011**



<p>South Creek #1 (SC1) Approximately one mile from end of road</p>	<p>June 1, 2008 Landrigan/Hoskisson October 17, 2010 Hoskisson/Wheeler September 8, 2011 Hoskisson/Ratcliffe/Young</p>
<p>Fishlake NF/Beaver RD</p>	<p>Allotment: South Beaver Pasture: Big Twist</p>
<p>Stake: 12 S E 0369646 N4225978</p>	<p>Elevation: 7667'</p>

NAD CONUS 27 NAD 83: 369581E 4226182N On east side of fence near creek, downstream end	
Aspect: SW	Animal sign: cattle, deer
Ave. Width of Riparian Area: 42'	
Dominant Vegetation: aspen, spruce, yarrow, clover, Kentucky bluegrass, dandelion, daisy, rose, <i>Juncus balticus</i>	
<p>Other notes: There is a steep cut bank on the opposite (south) side of the creek. During our visit we spoke with one ORV rider who reported a “bunch of dying aspen” up canyon from this transect. He said they were in an area called Ranger Pasture. While walking down the canyon after measuring the transect we spoke with a fisherman traveling on an ORV. He caught a fish as we spoke. He called it a “native trout.” The fish was easily identified as a brook trout (an exotic species in Utah that is native to the eastern U.S.)</p> <p>The transect was within reach A33-13 described in the 2003 Level II Riparian Inventory from Shell Valley Consulting (Petty, 2003). The report notes several problems. (1) “An ATV trail on the south-facing slope is unstable and contributing sediments to reaches A33-4 and A33-6.” (2) “All reaches showed “slight’ soil compaction.” (3) “The forage trend was “down” on reaches A33-5 and reaches A33-8 through A33-13. All survey areas along this creek experienced heavy grazing, and the stubble height was measured at 3-5 inches.” The report made specific recommendations for the ATV trail including rerouting and some closures. The report recommended grazing management changes. The reports stated, “The overall vegetation conditions of the watershed are not conducive to good ecological conditions. The upland slopes near the riparian area have poor herbaceous species composition and low ground cover. Cheatgrass and other annual plants dominate the uplands adjacent to the lower reaches, which lowers the soil’s ability to resist erosion. This increases sediment delivery to the stream, shortens the storm response time and increases peak flows, which have more erosive power on the stream channel. Vegetation on the stream is inadequate to maintain bank stability. There is a direct relationship between the low stubble height, and poor riparian vegetation vigor, composition and low plant basal cover... Better livestock management is required if the watershed is to recover to a healthy productive state... There was little evidence that the permittees have spent much time on their allotment herding cattle away from the riparian areas. However, upland forage was scarce as well, leading us to believe that the area is over stocked, especially in note of the past four year drought period.”</p>	

South Creek transect #1 lies along the creek where ORV route (068) parallels the stream. The ORV route diverges away from the stream at the eastern end of the transect. About 60 per cent of the northern bank of South Creek is a narrow opening or meadow. Near the bank the meadow is dominated by *Juncus*. The opposite bank is cutting into another small meadow that is about 30 inches higher than the transect meadow. Trailing and trampling are easily observed on the south side of the stream. The area is constrained by

steep canyon walls and an ORV route on the south side of the transect. Aspen are readily visible downstream of the transect but the spruce component dominates immediately upstream. Except for a few small aspen near the upstream terminus of the transect, there were no emergent ramets or seedlings. A spruce and a juniper tree protected the few young ramets near the upstream end of the transect.

(6/1/2008): We found few aspen ramets below 3' tall. The leaders of aspen between three feet and six feet the leaders were mostly dead or browsed. Many or all of those we categorized as dead were likely browsed. The leaders were dead for the last one to three inches. We saw only one instance of insect damage and that was a gall at the end of a browsed leader. Most of the aspen taller than 6' (as shown in photographs) were one to two inches DBH. The appearance is that something permitted a pulse of generation some time in the last five to 12 years. **Question: Did management change during 1998-2001 take place that would have allowed for this pulse in regeneration?** There is a huge gap in the size of aspens in the area of the transect. The only very young ramets grew only under the protection of the spruce and juniper (as photographed). **What grazing management changes have taken place since 2003?**

(10/17/2010): Although this pasture was to be rested in 2010, there were significant signs of recent cattle in the area (Figs 7 and 8). Stream banks in the area of the transect were clearly recently trampled, and herbaceous growth grazed. Leaders on aspen ramets were browsed 55% and 64% of these leaders were either browsed or dead. Furthermore, 79% of the aspen subleaders were browsed. The height distribution of aspen in this area continues to be bifurcate with little representation of trees between 2.1 and 6 feet tall. The combination of the continued use of this area by cattle and ORVs continues to reduce the health and functionality of this riparian area as was pointed out by Petty's Riparian Level II Inventory in 2002. This is also apparent in other areas along South Creek. Figs 8 and 9 show another closely grazed meadow as well as a trampled and hummocked area closer to the stream.

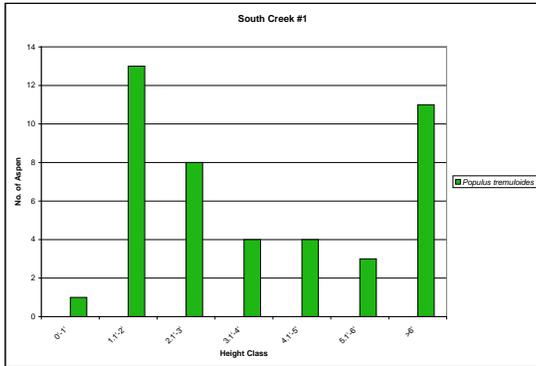
(9/8/2011): A new drift fence was built June 17 on the south side of South Creek to keep cattle out of the creek, but this new fence does not reach the area around South Creek #1. In 2011, however a permittee took non-use for personal convenience for 545 head months (121 head of cattle), a reduction 23%. The level of browse was lower in 2011 than 2010 (when the pasture was to be rested, but cattle used the area).

In 2011, tall leaders showed 27% browse (55% in 2010). Subleader browse was 53% in 2011 (79% in 2010). The reduced # of leaders (except in 5.1-6' height class) since 2010 would indicate that the cottonwood are being able to send an (unbrowsed) leader up. Height distribution has changed little, with continuing lack of recruitment.

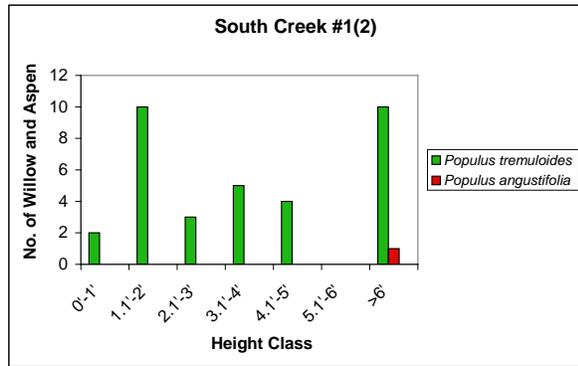
The streambank within South Creek #1 has excessive bare ground (Figs. 10 and 12) and the meadow below South Creek still appeared to be heavily used (Fig 13) and the ORV route next to the stream continues to erode and generate sediment into the stream.

Height Distribution

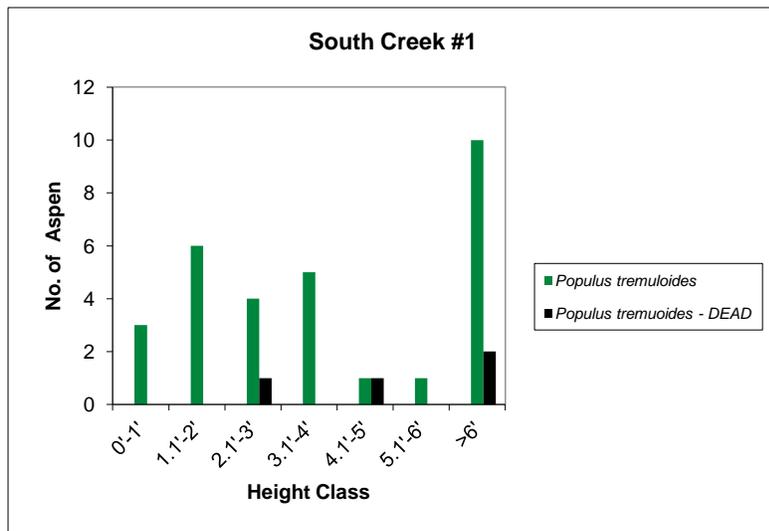
June 1, 2008



October 17, 2010



September 8, 2011



Browse

June 1, 2008

11 *Populus tremuloides* >6': Ave. DBH = 3.2"

South Creek #1	
Percent Browsed or Dead Leaders	
<i>33 Populus tremuloides</i> <6'	
	<i>Populus tremuloides</i>
% tall leaders browsed	10.0
% tall leaders browsed or dead	76.7
% subleaders browsed	35.8
% subleaders browsed or dead	83.6

October 17, 2010

10 *Populus tremuloides* >6': Ave. DBH 2.6"

1 *Populus angustifolia* >6': Width 12"

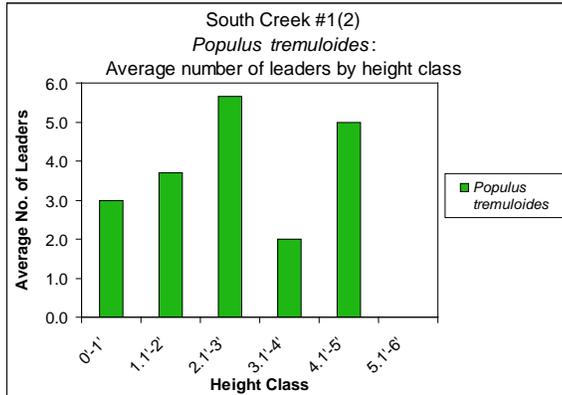
South Creek #1(2)	
<i>24 Populus tremuloides</i> <6'	
	<i>Populus tremuloides</i>
% tall leaders browsed	54.5
% tall leaders browsed or dead	63.6
% subleaders browsed	79.4
% subleaders browsed or dead	79.4

September 8, 2011

South Creek #1(3)	
<i>20 Populus tremuloides</i> <6'	
10 <i>Populus tremuloides</i> >6' Ave dbh- 12"	
4 dead <i>Populus tremuloides</i>	
	<i>Populus tremuloides</i>
% tall leaders browsed	27.3
% tall leaders browsed or dead	40.9
% subleaders browsed	35.3
% subleaders browsed or dead	35.3

Leaders by Height Class

October 17, 2010



September 8, 2011

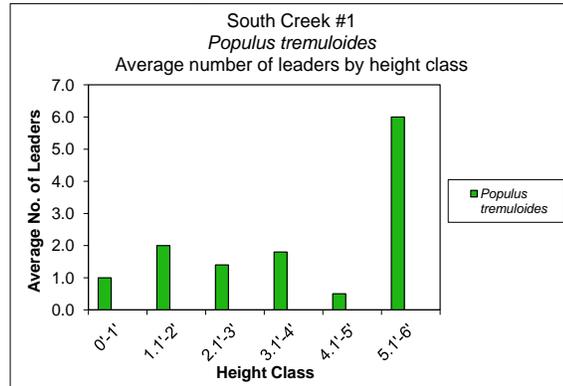


Fig. 1 (2008). A few aspen under 3' tall are growing in the protection of juniper and spruce trees. (UTM 12 S 369653 4225980)



Fig. 2 (2008). Small meadow along the stream shows wire grass dominance in wet zone. Many large sapling size aspen can be seen. No smaller aspen can be seen in the meadow. To the right the cut bank can be seen. (UTM 12 S 369653 4225980)



Fig. 3 (2008) Trampling of the stream bank can be seen on the left in this picture. Again sapling aspen can be seen with no very young aspen visible. The stream has a slightly milky appearance. (UTM 12 S 369664 4225980)



Fig. 4 (2008). View downstream from the transect. The stream is cutting towards the ORV route (068). The horizontal distance between the motorized route and the stream is only a few inches.



Fig. 5 (2008). The ORV route (068) and stream approach closely at another point below South Creek transect #1. (UTM 12 S 368770 4226261)



Fig 6 (10/17/2010) Browsed aspen and cow patties along South Creek #1.



Fig 7 (10/17/2010) Multiple hoof prints on bank along South Creek #1 during a “rest” year.



Fig 8 (10/17/2010) Grazed meadow downstream from South Creek #1



Fig 9 (10/17/2010) Trampled and hummocked area at edge of meadow in Fig 8. Note sedges are < 4".



Fig 10 (9/8/2011) South Creek 1 main transect



Fig 11 (9/8/2011) Transect E on South Creek #1



Fig 12 (9/8/2011) Excessive bare ground along transect D



Fig 13 (9/8/2011) Meadow below South Creek 1 with very short stubble height



Fig 15 (9/8/2011) ORV route taken slightly away from creek (likely due to erosion and ORV's not being able to use old route???)

Reference

Petty, Jeff. 2003. Big Twist Creek Area Level II Riparian Inventory. Shell Valley Consulting: Shell, WY.