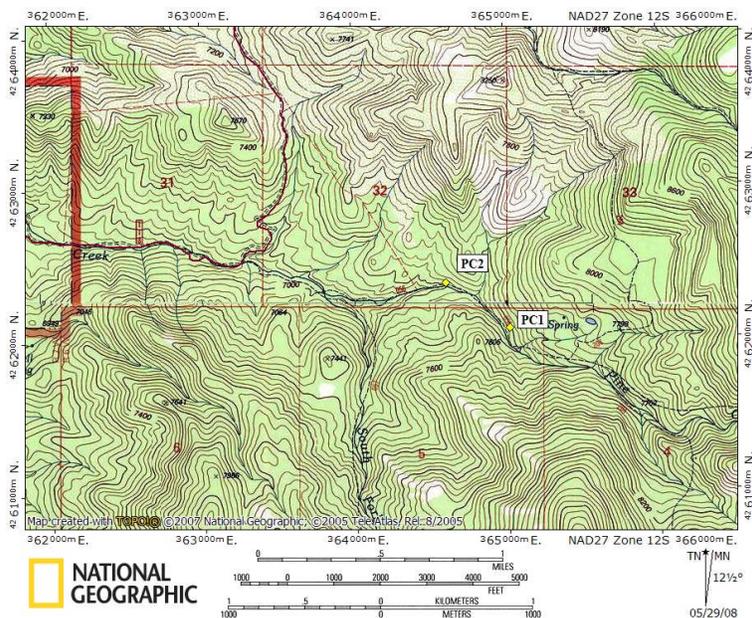


PINE CREEK #1
Riparian Browse Assessment
(1) May 7, 2008
(2) October 9, 2008
Mary O'Brien/Wayne Hoskisson

Pine Creek #1 is located along Pine Creek within the Pine Creek/Sulphurbeds Allotment (Fishlake NF) at the western edge of the Tushar Mountains and south of Sulphurdale. Pine Creek #1 includes a riparian cattle exclosure with narrowleaf cottonwood. The five transects ran north from Pine Creek, through the exclosure, and beyond, to the last narrowleaf cottonwood. The exclosure fence does not exclude elk, but browsing impacts are greater outside the exclosure. The cottonwood taller than 6' are large, old cottonwoods, the smallest being 20.5" diameter. There is little recruitment above 6'.

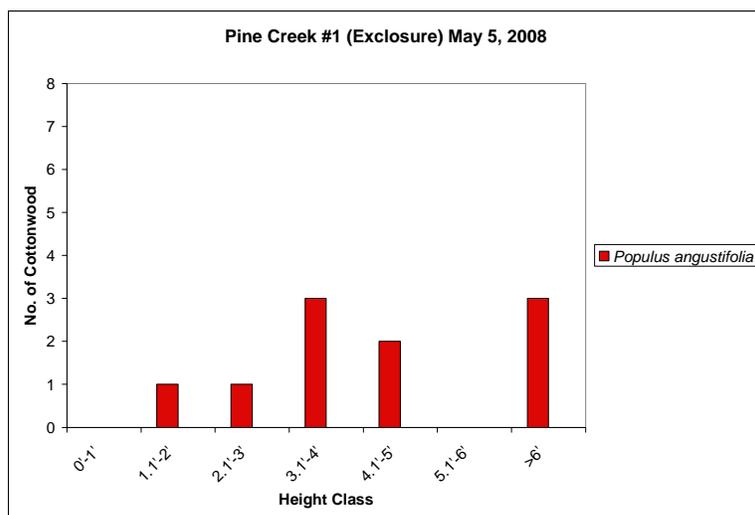
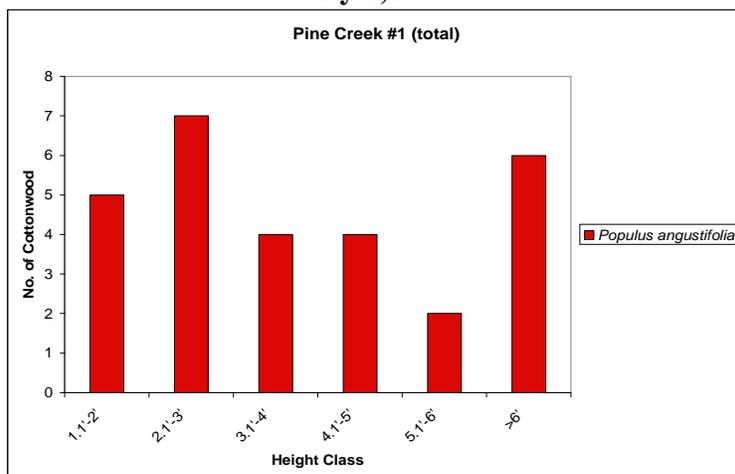
(1: May 7, 2008) As of May 7, those cottonwood <6' tall within the exclosure had nearly 50% fewer tall leaders browsed than outside (i.e., 14% and 27%, respectively) and a slightly smaller difference in browsed subleaders inside vs. outside (46% and 83%). However, the leaders on a patch of 4'-5' cottonwood outside the exclosure had not been browsed significantly (Fig. 1). Of those cottonwood <6', those inside the exclosure were dominated by 3'-5' cottonwood; those outside by 1'-3' cottonwood (see May 7 height charts below). Grass and forb cover differed significantly inside and outside the exclosure (Figs. 2-3) Cattle were scheduled to be present in the Pine Creek Pasture June 16 through August 16.

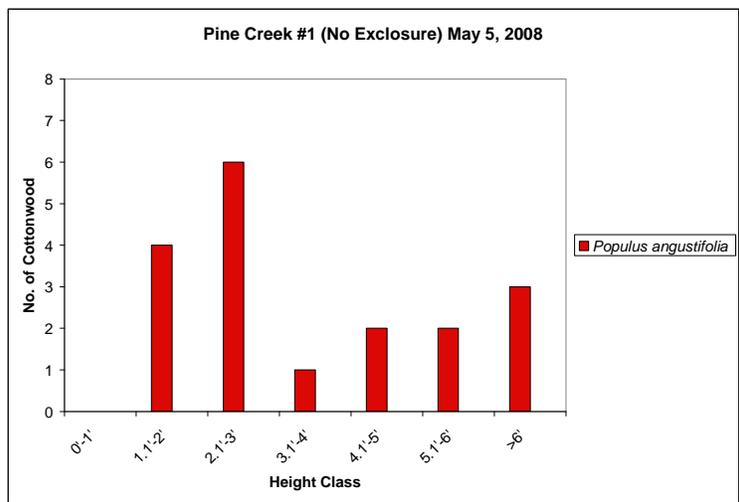
(2: October 9, 2008) At least one cow/bull had trespassed within the exclosure, with recent cow patties and grazing/browsing sign, and six cattle were observed on the trail to the exclosure. By October 9, while tall leaders within the exclosure were unbrowsed (0%); 66.7% of tall leaders outside the exclosure were browsed. Subleader browsing was also significantly different: 31.6% browsed inside v. 92.6% outside. Even the portions of an individual cottonwood differed between inside and outside the exclosure (Fig. 4).



PINE CREEK #1 (PC1) Inside/Outside Riparian Livestock Exclosure	May 7 and October 9, 2008 Hoskisson/O'Brien
Fishlake NF/Beaver RD	Allotment: Pine Creek/Sulphurbeds Pasture: Pine Creek
Stake: 12N E 0364909 N4262021 NAD CONUS 27 At base of cottonwood tree (P)	Elevation: 7,361'
Aspect: WSW 250°	Animal sign: Cattle, moles, wild ungulate
Ave. Width Riparian Area: 62.5'	
Dominant vegetation: Aspen, bigtooth maple, narrowleaf cottonwood, snowberry, rose, mullein, dandelion, Kentucky bluegrass, yarrow.	
Other notes: Transects extend through a narrow riparian exclosure, and beyond, outside of the exclosure. Almost 100% bank cover by grasses. <i>Hydrophyllum capitatum</i> is scattered inside exclosure, but dominant outside.	
The exclosure is in Reach A21-9 of the 2003 Level II Riparian Inventory (Shell Valley Consulting 2003), which noted "Riparian grazing exclosures on reaches A21-2 and A21-9 were examined, and vegetation inside this structure [sic] is meeting potential, although the condition of vegetation in surrounding riparian areas was less than desirable."	
Questions: When was the exclosure built? Cottonwoods inside exclosure appear stunted with recent good growth.	

May 7, 2008





Pine Creek #1 Inside/Outside Exclosure May 7, 2008		
Inside: 7 <i>Populus tremuloides</i> <6'		
Outside: 15 <i>Populus tremuloides</i> <6'		
Total: 22 <i>Populus tremuloides</i> <6'		
		<i>Populus angustifolia</i>
	Outside	26.7
	Total	22.7
% tall leaders browsed or dead	Inside	42.9
	Outside	46.7
	Total	45.7
% subleaders browsed	Inside	39.3
	Outside	83.0
	Total	67.9
% subleaders browsed or dead	Inside	46.4
	Outside	83.0
	Total	70.4

Total

6 *Populus angustifolia* >6': Ave. DBH 14"

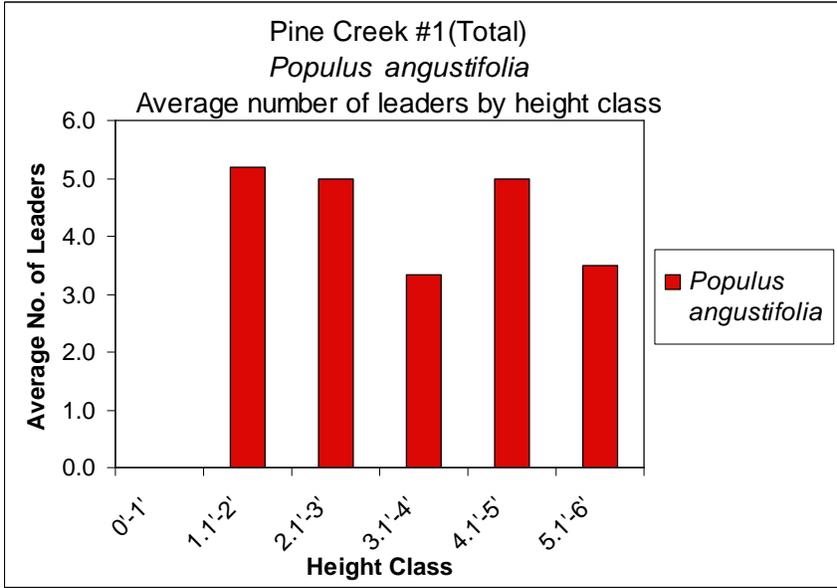
Inside Exclosure

3 *Populus angustifolia* >6': Ave. DBH 2.0"

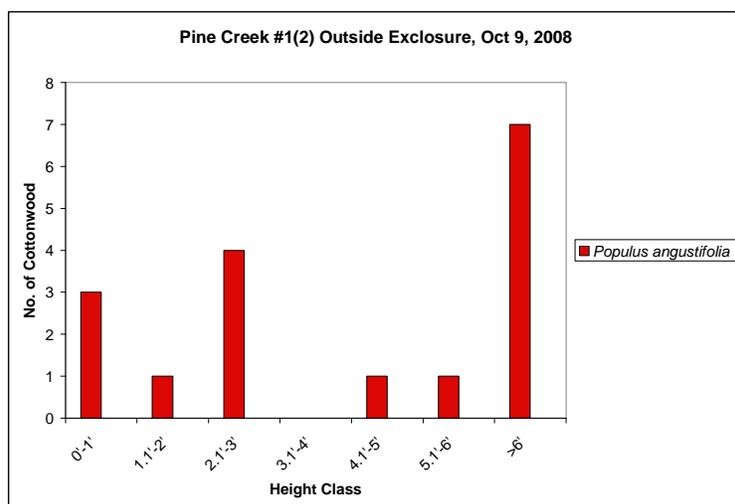
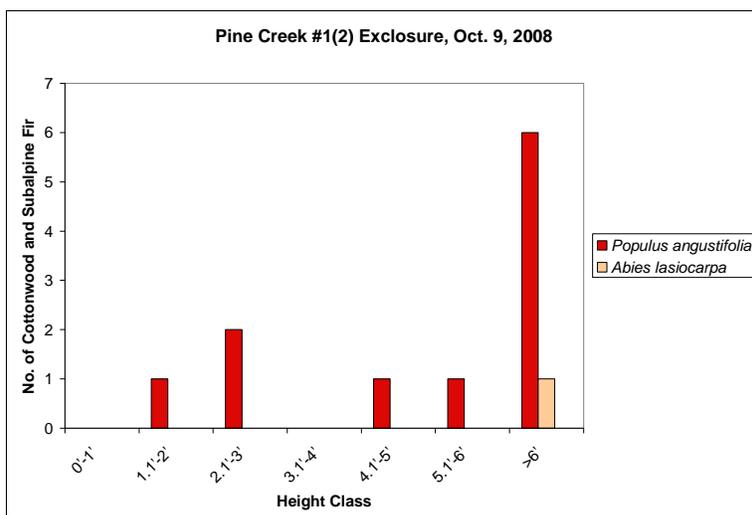
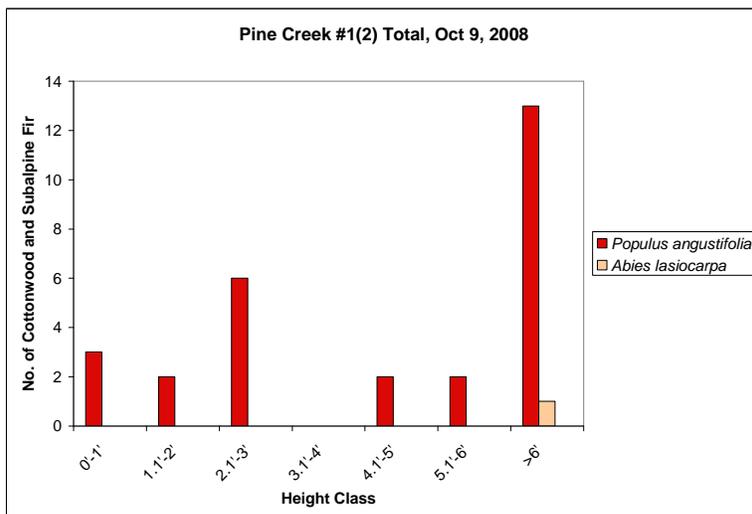
Outside Exclosure

3 *Populus angustifolia* >6': Ave. DBH 26"

Pine Creek #1 22 <i>Populus angustifolia</i> <6'	
	<i>Populus angustifolia</i>
% tall leaders browsed	25.0
% tall leaders browsed or dead	40.0
% subleaders browsed	67.9
% subleaders browsed or dead	70.4



October 9, 2008



October 9, 2008

Total

13 *Populus angustifolia* >6': Ave. DBH 5.0"

Inside Exclosure

6 *Populus angustifolia* >6': Ave. DBH 0.8"

1 *Abies lasiocarpa* >6': DBH 4"

Outside Exclosure

7 *Populus angustifolia* >6': Ave. DBH 9.2"

Pine Creek #1(2) Oct. 9, 2008		
Inside: 5 <i>Populus angustifolia</i> <6'		
Outside: 10 <i>Populus angustifolia</i> <6'		
Total: 15 <i>Populus angustifolia</i> <6'		
		<i>Populus angustifolia</i>
% tall leaders browsed	Inside	0.0
	Outside	66.7
	Total	42.9
% tall leaders browsed or dead	Inside	0.0
	Outside	66.7
	Total	42.9
% subleaders browsed	Inside	31.6
	Outside	92.6
	Total	81.0
% subleaders browsed or dead	Inside	31.6
	Outside	92.6
	Total	81

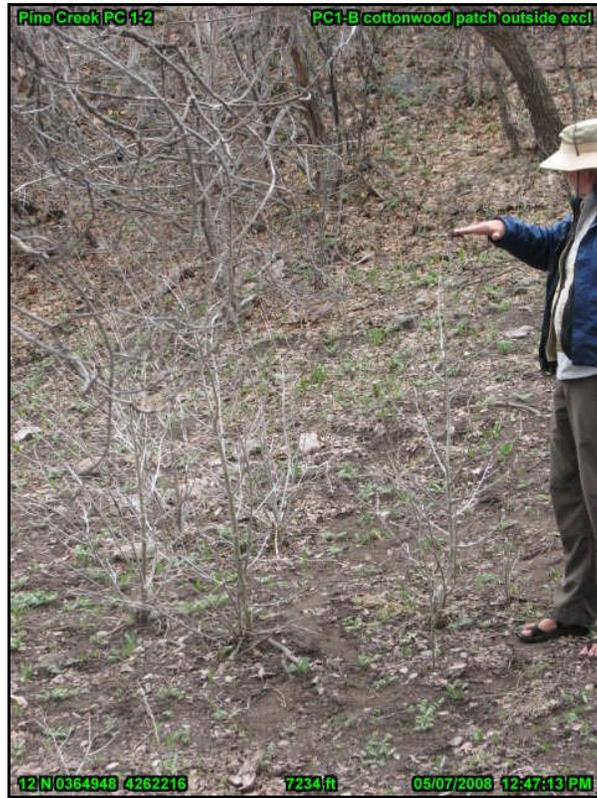


Fig. 1 (5/7/08) PC1-Transect B: Patch of 4'-5' cottonwood north of (outside) enclosure; leaders largely unbrowsed as of May 7



Fig. 2 (5/7/08) Nearly 100% grass cover on Pine Creek bank within the enclosure.



Fig.3 (5/7/08) *Hydrophyllum capitatum* sparse inside exclosure (left), but dominant outside exclosure (right)



Fig. 4 (10/9/08) Note differing condition on the cottonwood inside and outside the exclosure.



Fig. 6 (10/9/08) A 4" cottonwood browsed stump outside of the exclosure.

Pine Creek #1
Riparian Grass/Grasslike Utilization
October 9, 2008

Allotment: Pine Creek/Sulphurbeds

Pasture: Pine Creek

Creek/Stream: Pine Creek

2008 Annual Operating Instructions dates of livestock entry/exit: 6/16-8/16

Surveyors: Hoskisson/O'Brien

Pine Creek #1 is located along Pine Creek within the Pine Creek/Sulphurbeds Allotment (Fishlake NF) at the western edge of the Tushar Mountains and south of Sulphurdale. Pine Creek #1 includes a riparian cattle enclosure with narrowleaf cottonwood. This riparian grass/grasslike transect went from 0' at creek edge to 48', all of it but four of the 250 points remaining within the enclosure. Kentucky bluegrass is the dominant grass within the enclosure, and no sedges or rushes were encountered in the five transects perpendicular to the creek.

At least one cow had trespassed within the enclosure by Oct 9, as clear from recent cow patties and grazed grass/sedges (Fig. 7, below). Grasses that were deemed "inaccessible" due to position beneath a shrub or against a rock often appear shorter than they are due to the measurement of grasses at droop height. Those growing in inaccessible spots often lay down at a height of 2"-4", though the leaves can be as long as 10"-12". This was generally not the case for grasses growing in the open. Accessible Kentucky bluegrass averaged 2.8" with 75% of the plants grazed (grazed KY bluegrass averaged 1.9" height; ungrazed 4.1"). Other grasses (20% of the grasses encountered) averaged 4.9" height.

Both the Kentucky bluegrass and other grasses within the enclosure met their respective utilization standard (1.5" and 4", respectively).

Grass/Grasslike Utilization: 10/9/08											
Kentucky Bluegrass (<i>Poa pratensis</i>)				Other Grasses				Sedges and/or Rushes			
Ave. ht(in) Accessible	N	Ave. ht(in) Inaccessible	N	Ave. ht(in) Accessible	N	Ave. ht(in) Inaccessible	N	Ave. ht(in) Accessible	N	Ave. ht(in) Inaccessible	N
2.8"	56	6.1"	15	4.9"	7	4.9"	9	NA	0	NA	0

Methodology note

The average height (inches) of a grass was measured every 2' from 0' - 48' along the right side of the 10/9/08 riparian browse transect (see accompanying cottonwood riparian assessment). The grass/grasslike species nearest to, but no farther than 3" from, the transect point was recorded. Kentucky bluegrass was recorded separately from other grasses, as a different Fishlake NF utilization standard (1.5") is applied to Kentucky bluegrass as opposed to hydric grasses/grasslike species (4")ⁱ

The height of grass/grasslike plants accessible to large ungulate grazing was recorded separately from the height of grass/grasslike plants inaccessible to grazing, e.g., inside the base of a large willow, in a channel of water).

Photo



Fig. 7. Recent cow pie within enclosure; grazed Kentucky bluegrass.

ⁱ The four inch stubble height for hydric (i.e., adapted to a wet, but not flooded habitat) plants is part of the allowable forage utilization criteria that were revised through a Fishlake National Forest Plan amendment in 2002. These revised forage utilization criteria prescribe allowable use levels for both upland and riparian sites. As the Fishlake NF explains this: “The description for riparian areas is a uniform 4” stubble height. Reaching the 4” stubble height triggers the time to move livestock, either between units or off the allotment. These criteria allow no manipulation to plan use of expected regrowth—once the 4” stubble height is reached, livestock are moved, without the opportunity for twice-over use. Livestock are moved to the next pasture or removed from the allotment when any utilization threshold (upland forage utilization, stream bank alteration, riparian forage utilization, riparian vegetation stubble height, or riparian woody

browse utilization) is reached. Meeting or exceeding one of these threshold levels initiates a move of livestock.” (USFS 2006)

Fishlake National Forest riparian utilization standards include (USFS 2006):

Riparian hydric species:

4” triggers the time to move livestock between units or off the allotment

Riparian Emphasis Management Areas

6” triggers the time to move livestock between units or off the allotment

Non-hydric Sod-Forming Grass Species in Riparian Areas

1 ½ “ Primarily Kentucky bluegrass--Triggers the time to move livestock between units or off the allotment

References:

Shell Valley Consulting. 2003. Fishlake National Forest 2003 Level II Riparian Inventory: Little North Creek Area. Shell, WY.

US Forest Service, Fishlake National Forest, Beaver Ranger District. 2006. *Final Environmental Impact Statement Reissuance Of Term Grazing Permits On Eight Cattle Allotments Beaver Mountain Tushar Range*. Beaver, UT.