Argenta Allotment – Review of MIM Baseline Data 2016



Fire Creek

Greenline Composition



Stabilizers – 49% Early-seral, weakly-rooted plants \$3

Fire Creek

Streambank summary						
	Streambank Alteratior	า	Streambank Stability		Streambank Cover	
(%)	26		73		94	
n =	86		85		85	
95% C.I.	7		5		5	
			Vegetation Ratin	igs		
Gree	Greenline Ecological Status Site		te Wetland Rating Winw		ward greenline stability rating	
	Early		Fair		Mid	

Resource Issues
 Greenline Ecological Status – Early
 Streambank Stability – Moderate (73%)

Fire Creek



Concern over knickpoints
 Management objectives:

 Increase stabilizers
 Increase bank stability

 Management objectives should be easily reached with proposed fence/water projects

Ferris Creek

Greenline Composition



Resource Issues
 Dominance (>60%) of early seral species
 Many young willows, but browse on youngest/lowest plants highest

Ferris Creek

	Streambank Alteration	Streambank Stability	Streambank Cover	Greenline-to-greenline Width (meters)
%	5	72	80	1.9
n =	82	82	82	81
95% C.I.	5	5	5	0.2

Vegetation Ratings			
Greenline Ecological Status	Site Wetland Rating	Winward greenline stability rating	
Early	Fair	Low	

Woody plant heights							
	0 – 0.5 m	0.5 – 1 m	1 – 2 m	2 – 4 m	4. – 8 m	> 8 m	
%	21	18	21	31	10	0	
n =	8	7	8	12	4	0	

Early ecological status
 Low greenline stability rating
 High greenline-to-greenline width (m)
 All indicative of high, chronic bank alteration
 Control seasonal browse pressure until woodies establish

Ferris Creek

• Management objectives:

- Increase stabilizers
- Increase bank stability
- □ Increase recruitment/establishment of woody plants to 2 m height class
- Objectives should be easily reached with proposed R2 fence project



Indian Creek



Resource Issues

78% early-seral, weakly-rooted plants
 <15% stabilizers

Indian Creek

	Streambank Alteration	Streambank Stability	Streambank Cover	Greenline-to-greenline Width (meters)
%	11	73	94	1.7
n =	87	88	88	88
95% C.I.	5	5	5	0.1

Vegetation Ratings				
Greenline Ecological Status	Site Wetland Rating	Winward greenline stability rating		
Mid	Fair	Mid		

Middle ecological statusMiddle greenline stability

Indian Cr.



High value reach with fish

- Mix of herbaceous (high water table) and shrubs (on streambank)
- Early seral plants provide little forage

 Need growing-season deferment to improve plant composition and increase composition of bank stabilizers and good forage plants

Corral Canyon



Resource Issues

Stabilizers about 25%

□ Early-seral, weakly-rooted plants ~65%

Corral Canyon

	Streambank Alteration	Streambank Stability	Streambank Cover	Greenline-to-greenline Width (meters)
%	0	87	99	1.0
n =	82	82	82	82
95% C.I.	4	5	5	0.1

Vegetation Ratings			
Greenline Ecological Status	Site Wetland Rating	Winward greenline stability rating	
Early	Fair	Low	

Resource Issues
 Early ecological status
 Low greenline stability
 Management Objectives
 Increase woody stabilizers
 Control grazing during hot season; manage fall grazing when woody plants are most susceptible to browse

Corral Cyn.



Ratfink

Lots of sediment and raw banks









Ratfink

- Channel and uplands were severely eroded in 2015 by high-magnitude summer storm and runoff.
- Riparian exclosure (which includes the DMA) was constructed in 2016.
- Wood's rose growing profusely from rhizomes through reach.
- Small patches of Artic rush and rabbitsfootgrass reestablishing in reach.
- Baseline (long-term) data should be collected in May to early June 2017.

 Exclosure is good bet for promoting riparian recovery following high-magnitude event

Slaven

Greenline Composition



Resource Issues

- Early-seral, weakly-rooted plants ~70% of greenline composition
- No real stabilizers along greenline

Slaven

	Streambank Alteration	Streambank Stability	Streambank Cover	Greenline-to-greenline Width (meters)
%	0	79	96	0.9
n =	80	80	80	80
95% C.I.	4	5	5	0.1

Vegetation Ratings				
Greenline Ecological Status	Site Wetland Rating	Winward greenline stability rating		
Early	Fair	Low		

Resource Issues

- □ Early ecological status
- □ Low greenline stability
- Management Objectives
 - □ Increase bank stability and forage value

Exclosure fence should achieve management objectives in relatively short time frameRiparian exclosure (which includes the DMA) was constructed in 2016.

Riparian vegetation composition reflects chronic high disturbance.
 Might take several years before desired riparian plants establish and

express well at this site.

Slaven



Rock Creek



Rock Creek

- The DMA was established in 2016 following extensive stratification work in both 2015 and 2016.
- Currently fence is contributing to resource damage upstream of the fence.
- Need to manage drift fence so it is a tool that improves conditions on each side of the fence.
- Baseline (long-term) data should be collected in May to early June 2017.

The Park

Greenline composition



Dominated by early seral plants

 Good remnants and patches of stabilizers (Arctic rush and Nebraska sedge)

The Park

	Streambank Alteration	Streambank Stability	Streambank Cover		Greenline-to-greenline Width (meters)	
%	15	91	99		1.4	
n =	80	81	81		81	
95% C.I.	6	5	5		0.1	
	Vegetation Ratings					

vegetation ratings			
Greenline Ecological Status	Site Wetland Rating	Winward greenline stability rating	
Early	Fair	Mid	

□ Resource issues

- □ Early-seral community
- □ Low streambank stability
- Management Objectives
 Increase stabilizers
 Increase bank stability

Control hot-season grazing, especially when upland vegetation loses palatability

The Park

□ High annual use is chronic along the riparian area.

- More riding, continued use of supplements, and seasonal limits on use should be continued or expanded.
- Pressure on riparian area appears to become especially high mid-way through the hot-season when upland vegetation loses palatability.
- Terrain is well suited to electric fence. Also options for offstream water site could be explored to draw and keep livestock off riparian area.

Crippen Creek

Greenline Composition



Resource issues

50% stabilizers – mostly riparian woody plants
 20% early-seral, weakly-rooted plants

Crippen Creek

Streambank summary					
	Streambank Alteration	Streambank Stability	Streambank Cover		Greenline-to-greenline Width (meters)
%	6	60	69		1.7
n =	86	86	86		85
95% C.I.	5	5	5		0.1

Vegetation Ratings					
Greenline Ecological Status	Site Wetland Rating	Winward greenline stability rating			
Early	Fair	Mid			

□ Early seral community; moderate stability

□ High annual use is chronic along the riparian area.

DMA located along high-energy transport reach with coarse substrate in channel and banks.

Potential is for shrub-dominated riparian community; currently around one-third of greenline is vegetated with woody stabilizers.

Herbaceous community should decline in importance if woody plants continue to establish and grow at this site – at some point could drop stubble height and monitor exclusively on woody browse.

Crippen Creek



Trout Creek

Greenline Composition



Resource Issues

~70% early seral, weakly-rooted plants
 Nebraska sedge and Arctic rush (species tolerant of grazing) lost from site

Trout Creek

Streambank summary						
	Streambank Alteration	Streambank Stability	Str	reambank Cover		Greenline-to-greenline Width (meters)
%	0	100		100		0.1
n =	85	85		85		83
95% C.I.	4	5		5		0.1
Vegetation Ratings						
	Greenline Ecological Status	Site Wetland	Site Wetland Rating		Winward greenline stability rating	
Early		Good		Low		

Resource Issues
 Early seral community
 Low Stability rating

Management objectivesIncrease stabilizers

Limit hot-season grazing when upland plants lose palatability

Trout Creek



 Species composition reflects chronic heavy grazing and inadequate growing-season deferment for plant recovery.
 Pressure on riparian area appears to become especially high mid-way through the hot-season when upland vegetation appears to lose palatability.

N Fk Mill Cr.



□ 84% weakly-rooted, non-stabilizers and 5% stabilizers

N Fk Mill Cr.

	Streambank Alteration	Streambank Stability	Streambank Cover	Greenline-to-greenline Widt (meters)
%	40	84	93	1.1
n =	88	88	88	87
95% C.I.	9	5	5	0.09

Vegetation Ratings					
Greenline Ecological Status	Site Wetland Rating	Winward greenline stability rating			
Very early (-8)	Good (66)	Low (3.07)			

Resource issues
 Very early seral condition
 Low stability rating
 Management objectives:
 Increase stabilizers
 Increase bank stability
 Construction of approved R2 fence should easily achieve management objectives

N Fk Mill Cr.



- The DMA and a 3/4—mile stretch of N Fk Mill Cr are expected for protection by a riparian exclosure.
- NEPA for exclosure was scheduled for completion in April 2016, but decision was not issued until mid-October 2016.
- Stockmanship plan for 2016 was not followed. Livestock entered use area early and riparian triggers were exceeded by early June.
- Need to determine when riparian exclosure can be built.

Mill Creek



Mill Creek

- Riparian exclosure (which includes 90m of the 110 m of the DMA) was constructed in 2016.
- Fence does appear to have reduced, but not entirely eliminated, practice of grading road metal into the channel
- Chronic overgrazing has led to a loss of desired stabilizing riparian plants and an increase in early-seral, weakly-rooted plants.
- Much evidence that the exclosure is not working properly and livestock accessed exclosure throughout 2016. Gap in bottom rail at lower stream crossing appears to be one possible entry/egress point for livestock.
- Baseline (long-term) data should be collected in May to early June 2017.

Harry Canyon



Harry Canyon

- Site reviewed throughout 2016 and appears to violate a few site selection criteria (see review by Gonzalez 2016).
- At best, the current site may function as a <u>critical DMA</u>, but <u>not as a representative DMA</u>.
- Not appropriate for measurement of residual stubble height.
- Marginally acceptable for measurement of woody browse.
- Perennial reaches in Harry Canyon extremely limited.
 Probably best to control livestock access to perennial reaches and provide off-stream water source.

Alteration and Vegetation Response



- Good composition
- Stabilizers
- Good forage high vigor



- Alterations/disturbance
- Root/rhizome damage





- Composition shift
- Lost vigor and forage potential
- Lower stability