

# Carmen Creek Riparian Grazing Study and Plan

## Monitoring and Grazing Plan

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# Study Overview

-USBWP fencing project located on Carmen Creek on the property of Brit and Brandon McFarland. 53 acre fenced pasture.

- Study is to examine the effects of a planned grazing regime on stream banks and vegetation with focus on steelhead habitat.

- Carmen creek is classified as Rosgen “B” channel type, woody dominated.

- Grazing plan: ~50 head of cattle for 10 to 14 days during late October to early November once a year. (More cattle fewer days, and conversely the fewer cattle more days- flexibility placed into plan)  
~ 16.1 AUMs



# Study Objectives and Attributes Measured

*Study objective:* To examine the effects of a planned livestock grazing regime on riparian vegetation and stream banks with the hypothesis that late fall grazing will maintain or improve long-term riparian health.

*Multiple Indicator Monitoring* protocol (MIM)

Attributes measured:

- Greenline species composition
- Woody species regeneration
- Stream-bank stability

MIM baseline data was collected in 2012 and 2015. Data collection will continue for the years of 2020 and 2026.

# Long-term Trend Monitoring Quantitative Data

## Objectives

- Stable stream-banks
- Greenline composition maintained or trending toward hydric stabilizing species
- Woody regeneration component of 15-20% sprouts and young, 60 – 70% mature, and 15 – 20% dead



Beginning MIM transect, upstream  
July 2011



# Trend Monitoring 2012 - 2015



# Trend monitoring 2012 – 2015

## Findings

### *No Significant Changes:*

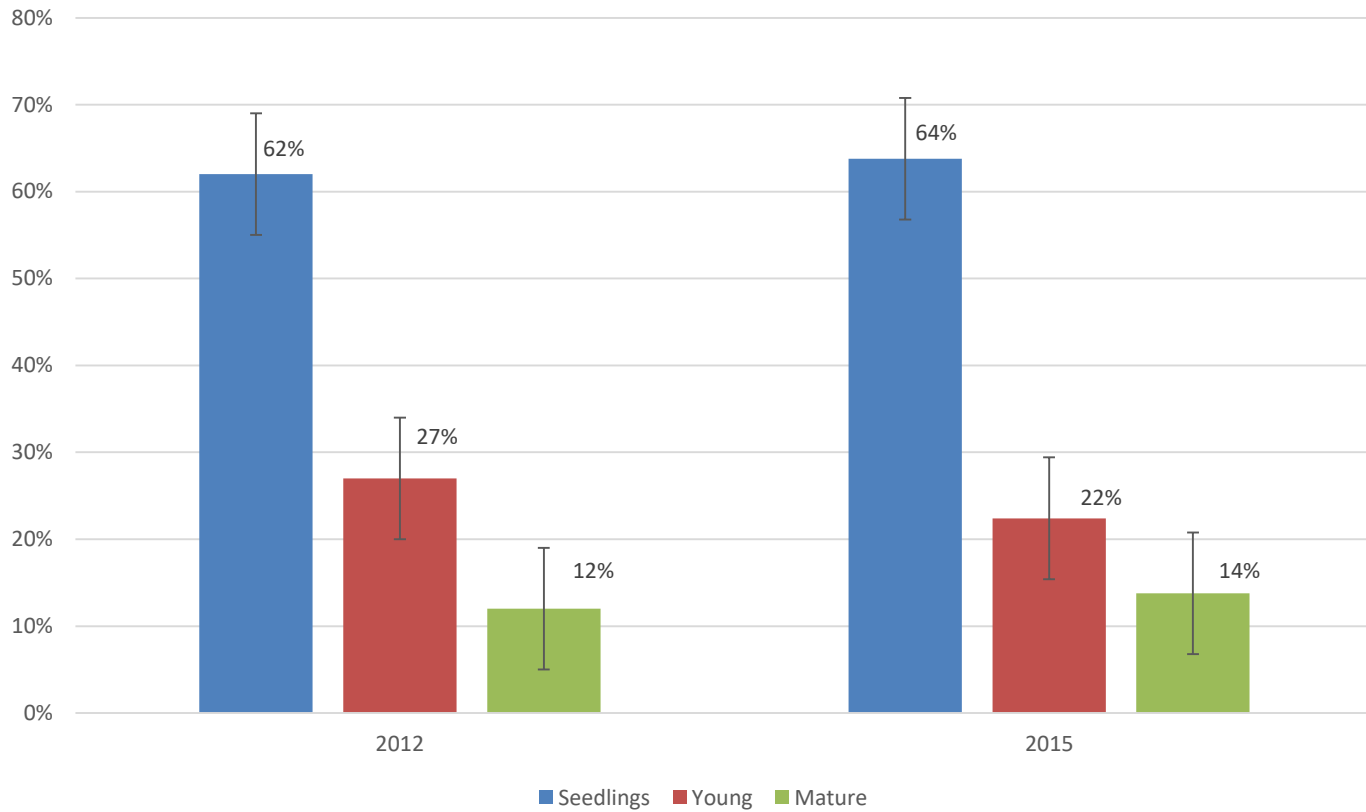
- Streambank stability
- Greenline composition
- Woody plant height
- Woody species age classes

### *Significant Changes:*

- Streambank cover (61% to 78%)

# 2012 – 2015 MIM Results

Woody Species Age Class Composition: 2012 and 2015





# Long-term trend monitoring

## Qualitative data

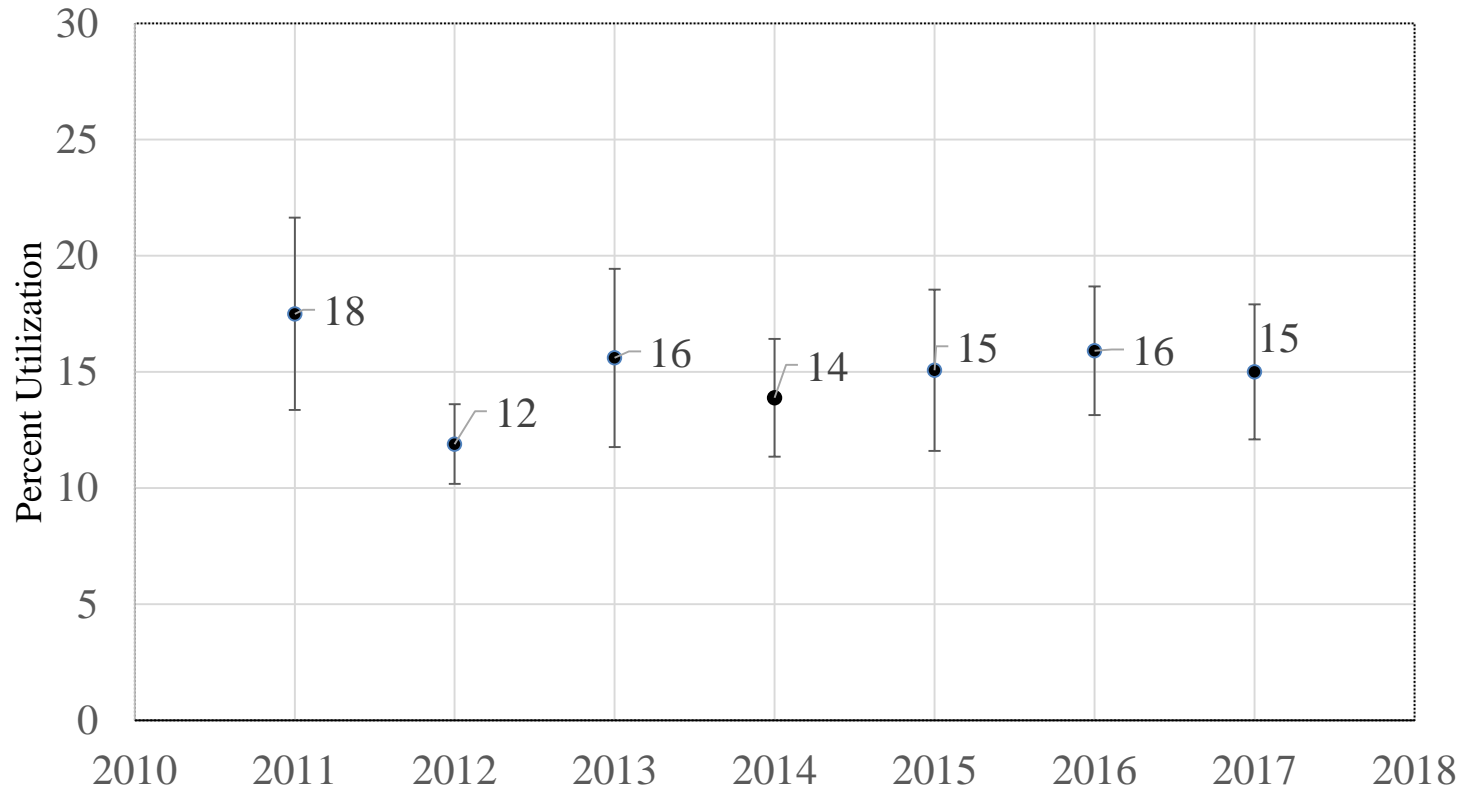
Three, 16 by 16ft semi-permanent exclosures were established in representative foraging areas and will serve as *qualitative* comparisons of species composition for grazed vs. ungrazed areas.



# Endpoint Indicators (annual use)

- The MIM protocol was modified in assessing only woody species use on sprouts and young shrubs accessible to cattle.
- Goal is to have *moderate use and less* of willow, alder, birch, dogwood, aspen, and cottonwood.
- Stubble height and bank alteration were precluded.

## Average Woody Species Utilization: 2011 - 2017



The graph depicts average woody species utilization for the study site to date. Numbers corresponding to dots represent the average for the year. Error bars represent a 95% confidence interval.




# Estimated forage consumption

Year	Head Count	No. of Days	AUMs
2011	36	20	23.4
2012	39	26	31.4
2013	32	33	34.6
2014	32	24	25.0
2015	60	21	40.3
2016	45	21	30.2
2017	40	25	32.8
AVG	41	24	31.1

Table depicts by year the number of cattle, the number of days, and the total amount of estimated forage consumed by cattle (AUMs) on the Carmen Creek Grazing Plan and Study area.

# Photo Monitoring



Upper Carmen  
Riparian Grazing  
08/05/2012  
Stream Start - DM  
SOUTH  
Ungrazed





Alder

Carmen Cr. Study  
DMA stream start  
16 Aug 2017  
South



Upper Carmen  
Riparian Grazing  
08/05/2012  
Stream Start - DM  
NORTH  
Ungrazed



Carmen Cr. Study  
DMA Stream Start  
16 Aug 2017  
North







Upper Carmen  
Riparian Grazing  
08/05/2012  
Stream End - UM  
Southwest  
Ungrazed





Carmen Cr. Study  
DMA stream End  
16 Aug. 2017  
Southwest



Carmen Cr. Study  
Upper Exclosure  
14 Aug 2012  
Southeast  
Ungrazed

24


18

12

6

Carmen Cr.





Carmen C. Study  
Upper Exclosure  
16 Aug 2017  
Southeast







10000 G. 2000  
L. 1000  
14 Aug 2002  
A. 1000  
1000





16. Pink (10/11)  
17. Yellow (10/11)  
18. Purple (10/11)



Cornell Co Study  
Middle Exlosure  
14-Aug 2012  
Ungrazed



Carmen Cr Study  
Middle Enclosure  
16 Aug 2017  
Northwest



Carmen Cr. Study  
Upper Exclosure  
17-Aug 2015  
North  
Ungrazed



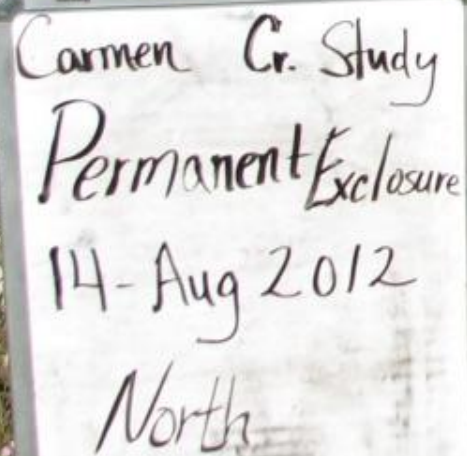
Carmen Cr. Study  
Upper Exclosure  
15-Aug 2016  
North  
UNGRAZED





Carmen C. Study  
Upper Exclosure  
16 Aug 2017  
North





Carmen Cr. Study  
Permanent Exclosure  
14-Aug 2012  
North

24

The image shows a white rectangular sign with a black border, mounted on a wooden post. The sign contains handwritten text in black ink. The background is a lush green forest with tall trees and dense undergrowth. A large, weathered log lies on the ground to the left of the sign. The ground is covered in grass and small purple flowers.



Carmen Cr. Study  
Permanent  
Exclosure  
16 Aug 2017  
North



**Questions ?**

