

# LAND MANAGEMENT REPORT

## THE COLORADO COLLEGE Baca Campus



**Spring 2015**

**This is a follow up report to the Land Management Report of July 2007.**

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June 2015

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### Introduction:

Colorado College's Campus at Baca is located on approximately 300 acres near the town of Crestone, Colorado, along the west slope of the Sangre de Cristo Mountains. Its buildings are situated primarily adjacent to the South Crestone Creek watershed. Several different vegetation zones exist within these 300 acres, including a Narrowleaf cottonwood/rocky mountain juniper riparian zone, a shrub/grassland zone, and a piñon/juniper/ponderosa zone. Within each zone there are different fire regimes, elemental balances, and areas of biodiversity. This land management plan is designed to be adaptive in nature, and reflect sensitivity to each zone. At least, yearly reviews are recommended to determine if management objectives are being fulfilled. In addition, participation and integration of the faculty, staff, and student body is encouraged, as this location offers significant opportunities for study of successful human participation with the natural world.



## Land Management Plan Priorities

Life safety is the first priority, followed by incident stabilization, and property conservation. This system is referred to as LIPs. It is instituted when making decisions regarding land management strategies both during emergencies, non-emergencies, and daily activities. The most likely emergencies to occur at The Colorado College Baca Campus are fire and flooding. These two types of events could pose significant threats to life safety. **It is also highly important to keep focus on this specific hazard: the Narrowleaf cottonwood stand has a decadent component, and older trees are in a state of weakening, dying, and/or falling. Additionally, large limbs known as widow makers, can continue to fall or hang. Each of these situations present life safety concerns in areas of the Campus where students, faculty, and visitors walk and sit in Nature. It is highly recommended that this situation be monitored continuously, especially after snow, wind, and storm events.**



## Work Completed, Objectives Met:

Significant amounts of standing and fallen dead Narrowleaf cottonwood continued to be removed in order to increase health of the landscape, to restore native biodiversity, and to decrease hazardous fuel loading in the Baca Campus which reduced the overall fire danger in the area. The large diameter material generated was organized for firewood and seats at the campus fire pit. The smaller material was chipped and piled to the west, about ¼ mile from the campus buildings. Numerous Winter Start Orientation groups did service work on Campus to help accomplish these goals. Some tree snags remain as habitat trees.



Native plant species were restored on the Baca Campus during a BY100 Course, Conservation Biology and Spirituality, taught by Boyce Drummond and Peter May in Block C in 2011. Native plant species were also restored in May 2015 through a local program with the Crestone Charter School. During this planting event, the students used the Damanhur Music of the Plants MIDI to listen to the Narrowleaf cottonwood sing, as well as the wild rose they had just planted. To see the videos of their experience, go to these links:

<https://www.youtube.com/watch?v=9cdrJNH4R8s>

<https://www.youtube.com/watch?v=3VGqbmVWguA>

<https://www.youtube.com/watch?v=Zk6RWh2bqXk>



**Crestone Charter School students  
restoring native plant species  
on the Baca Campus**

### Costs

- Colorado College received grant funding through a matching program from Kundalini Fire Management (KFM) for hazardous fuel reduction for the past several years. This funding may continue into the future, provided that funding is available, and matching funds are available from Colorado College, if required.
- KFM applied for several grants that would have reduced the invasive weed species and restored native grass species on the Campus. Unfortunately, none of these grants were funded, and no treatments were implemented.
- Fire protection in the local area is transforming and in flux. It may be wise to initiate a conversation and arrange new formal agreements with the local fire agencies to help ensure adequate fire protection services.
- Several WSO groups and some NSO groups have been facilitated and directed through the support of KFM grants.

## Older Management Goals

- Increase life safety on Campus by removing hazardous standing trees (snags) and decreasing accumulated living and dead hazardous wildland fuels, as well as educating users of the Baca Campus about fire safety and landscape health.  
*Completed and ongoing.*
- Provide opportunities to adapt our human presence to and with this landscape and the elemental effects thereon and therein.  
*Completed and ongoing.*
- Continue student participation and increase program offerings at Baca Campus.  
*Completed and ongoing.*
- Utilize Baca Campus as a field laboratory and provide for successful land management.  
*Completed and ongoing.*
- Create and sustain monitoring program.  
*Ongoing.*
- Integrate use and stewardship of Baca Campus into curriculum of The Colorado College.  
*Completed and ongoing.*
- Incorporate elements orientated training program into student curriculum to provide foundational basis for successful land stewardship efforts.  
*Completed and proposed.*
- Create land management plan for the other vegetative zones on the Campus.  
*Ongoing; dependent on additional funding.*
- Complete status reports for each of the other identified vegetation zones.  
*Ongoing; dependent on additional funding.*
- Determine management objectives; implement strategies to fulfill objectives.  
*Completed and ongoing.*
- Utilize adaptive management.  
*Completed and ongoing.*

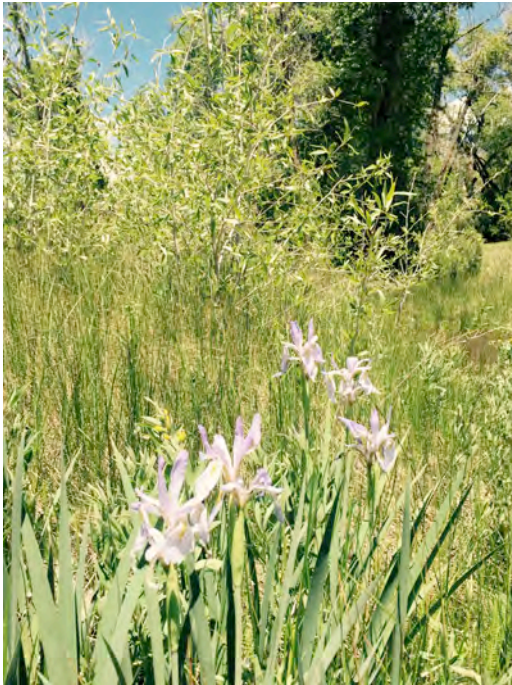


**Study Plot on Baca Campus**



## Future Management Goals

- Continue to restore native plant species along South Crestone Creek, especially Narrowleaf cottonwood and native wildflowers.
- Continue to look for opportunities to reduce the occurrence of invasive plant species on Campus.
- Monitor area in South Crestone Creek where water is incising into the streambed.
- Consider restoring native beaver species, and/or the effects of this keystone species, to this area in order to help provide for increased biodiversity, reduced stream incision, and restoration of local ecosystem.
- Continue to provide firewood for use at the Baca Campus Dorms and the campus fire circle.
- Continue to monitor and mitigate standing dead trees, widow makers, and other tree related hazards.
- Continue to monitor hazards regarding water levels, erosion, and flooding potential along South Crestone Creek.
- Continue to increase landscape's health, its resilience to disturbance.
- Continue reducing hazardous fuels.
- Continue monitoring erosion prone areas.
- Continue to find funding sources to achieve above goals.



**Wild iris and regenerating  
Narrowleaf cottonwood**



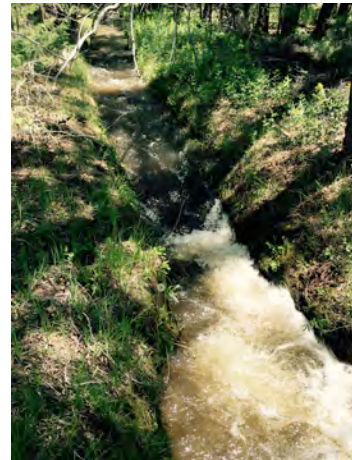
**Golden Banner wildflowers**

### **Fire and Safety Issues**

- Continue to develop and update fire management plan that includes both structural and wildland fire strategies and tactics. Coordination with local fire agencies is important as local fire management roles are in transition. Agreements may need to be renegotiated.

### **Water and Safety Issues**

- Monitor South Crestone Creek for incision and erosion in streambed: just upstream from the former location of the last wooden bridge, 37°59'01" N x 105° 42'24".
- Continue to support vegetation of area to be resilient to flooding through thinning and prescribed fires, native seeding and planting of species that are decadent or locally extinct.
- Continue to develop flooding safety protocols.
- Develop erosion mitigation plan.



### **Wind and Safety Issues**

- Identify, locate, and make known areas for shelter in case of high winds and/or tornadoes.
- Continue to mitigate aerial (tree) hazards (snags).

### **Earth Movements and Safety Issues**

- Continue to identify, locate, and make known areas for shelter in case of significant localized earthquake activity.

### **Forest Health Issues**

- Continue monitoring program.
- Continue to thin standing dead cottonwood to reduce hazardous fuel loading, leaving habitat trees and snags as appropriate.
- Continue to ascertain historic stand structure and balance of Narrowleaf cottonwood/rocky mountain juniper vegetative matrix.
- Determine vegetative objectives utilizing natural range of variability and Colorado College's goals for landscape management.
- Thin forest, according to determined vegetative objectives.
- Plan and execute low intensity prescribed fires to increase biodiversity of area, decrease hazardous fuel loading, and improve resilience of landscape to disturbance.
- Utilize ongoing adaptive management strategies, incorporating programs and courses that involve students, faculty, and staff of Colorado College.

## **Noxious Weeds**

Two invasive species continue to exist on the Colorado College Baca Campus, Russian knapweed and Canada thistle. Integrated management strategies are recommended to reduce the coverage and presence of these two species. These strategies may include mowing, burning, goat grazing, native seeding, and hand pulling. It is important that strategies be implemented as soon as possible in order to minimize the invasion and effects of these noxious weeds. This is an ongoing concern as there has been no treatment of these invasive species, due to a lack of funding.



## **Photo Point - Work Along South Crestone Creek**



**Before forest thinning – winter 2007**





**After forest thinning – summer 2007**



**After forest thinning - spring 2015**