



**Bosque Ecosystem Monitoring Program –**

**Vegetation Monitoring 2007**

*Photo - Osprey at Santo Domingo Site*

## **BEMP 2007 Vegetation Transect Summary Report**

Phil Tonne  
*Natural Heritage New Mexico*  
*University of New Mexico*  
*Department of Biology*  
*167 Castetter Hall*  
*Albuquerque, New Mexico 87131*  
*(505) 277-3822 ext 224*  
*ptonne@unm.edu*

Dena Odell & Steven Yanoff  
*263 White Oaks Canyon Road*  
*White Oaks, NM 88301-9602*  
*yanoff@tularosa.net*  
*dena\_o@yahoo.com*

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Dear BEMP staff,

This report from the plant crew is divided into three sections:

Section 1 is a discussion of changes in vegetation due to the fire at the Belen and Valencia sites.

Section 2 is a “New Taxa” table that lists the plant name, the acronym from the USDA Plants Database, and the site where the plant was recorded within vegetation transect.

Section 3 is a brief discussion of issues related to relocated or mower-damaged transects.

We, once again, enjoyed the opportunity to be a part of the BEMP project. If there are any questions about the data or report, please do not hesitate to contact us at the email addresses or phone numbers listed above. Thank you.

The Plant Crew,  
Phil Tonne, Dena Odell, Steven Yanoff

## Section 1. 2007 Field Observations.

The most obvious disturbance within the BEMP sites this year was the February 23 2007 fire that burned much of Valencia Forest and part of the Belen site. This fire removed much of the tree canopy from Belen, line G, and most of the Valencia Forest transects. While aerial portions of both native and non-native trees and shrubs were killed in the fire, many managed to resprout from the base. However, with some exceptions, non-native woody plants appear more likely to make a successful recovery within the burned area. Basal resprouting was prevalent among cottonwoods at both burn sites, including basal stem sprouts, root-crown sprouts, and root suckering. Mortality and severe stress were observed in many of these cottonwood resprouts, especially in those of higher diameter. Gooding's Willow and Three-leaf sumac resprouts looked more promising and many of these plants appeared to be making a vigorous comeback. Some of the smaller-diameter cottonwoods appeared to have a better chance than larger trees. Salt cedar and Russian olive have resprouted vigorously and appear to be making a rapid and vigorous resurgence.

The spread of saltgrass (*Distichlis spicata*) and scratchgrass (*Muhlenbergia asperifolia*) is apparent in many areas where they were already established. It will be interesting to monitor the grass and forb cover on transects now largely devoid of vegetation (these had little groundcover prior to the fire). These areas likely burned hot and suffered some soil sterilization and potential losses from the local seed bank. Unlike the grass-colonized areas that were capable of rapid vegetative expansion, the fire-scorched bare ground will likely be revegetated from seed. Some forbs have taken advantage of newly available resources following the fire, including common sunflower (native; *Helianthus annuus*), Texas croton (native; *Croton texensis*), bindweed heliotrope (native; *Heliotropium convolvulaceum*), and Chinese thornapple (exotic; *Datura quercifolia*).

Photos documenting some of these observations follow:







Charred cottonwood branches following a crown fire in the Valencia Forest BEMP site.



Scorched cottonwood trunks in foreground (Valencia Forest) contrast with unburned trees in the background (Valencia Cleared).





Valencia Forest - dead cottonwood trunks, sunflowers and resprouting salt cedar.



Valencia Forest - Large cottonwood resprouting from base. Sprouts appear stressed and unhealthy. Large-diameter trees appear less likely to resprout successfully than young trees.





Gooding's willow and Russian olive resprouting vigorously above expanding grasses in Valencia Forest.



Three-leaf sumac resprouting in Valencia Forest.





Texas croton thrives in post-fire Valencia Forest site.



*Muhlenbergia asperifolia* and *Distichlis spicata* take advantage of areas opened up by the fire at Valencia Forest.





The fire burned hot in Valencia Forest (left) but left most of Valencia Cleared unburned (right).



## Section 2. New Taxa.

No.	Scientific Name	Common name	PD_Acro	Location	Notes
1	<i>Atriplex micrantha</i>	twoscale saltbush	ATMI2	Ohkay Owingeh	Synonym: <i>Atriplex heterosperma</i> (ATHE). This plant has likely been listed as CHAL7 or CHENO in the past and our reading of transects will have to be refined in the future. While reported for the state, there are no herbarium specimens for comparison. The BEMP specimen fits this taxon's FNA description well, but in the absence of vouchered specimens for comparison the ID must be treated as tentative.
2	<i>Centaurium arizonicum</i>	Arizona centaury	CEAR12	Ohkay Owingeh	NOT on veg. transect but within line A veg. plot. The bright pink-to-red star-shaped corollas of this flower make it easy to spot.
3	<i>Sonchus asper</i>	spiny sowthistle	SOAS	Bobcat and HCC.	



*Centaurium arizonicum* growing at Ohkay Owingeh.



### **Section 3. Site Conditions.**

This year the BEMP staff worked hard to ensure that the vegetation transects were well marked prior to our reading them. It was quite useful to have new rebar in place with all four corners of the vegetation plot marked at some sites. These improvements allowed us to focus on vegetation work.

One problem that we encountered was that new transects had been established in new areas. In such instances we attempted to move new markers back to the original transects. This problem was most notable at the Montano and Diversion sites. We moved markers back to where they had previously been, based on memory and GPS coordinates. Moving transects should be avoided if at all possible, since it interrupts the vegetation monitoring. When vegetation transects are moved there is little if any relationship between readings preceding the move and those that follow.

Mowing at Montano presents a number of challenges. Our suggestion would be to use two markers for each corner of a vegetation plot. The rebar should be driven down until only four inches are above ground so as to avoid mower blades. The second marker could be a tall wooden lathe easily visible to BEMP staff and mower operators. As it is, tall exposed rebar gets thrown by mower blades and must be replaced. An example of a successfully double-marked line follows:



Montano, Line B. Transects are visible and avoidable by Open Space mower operators due to the tall painted wooden lathe marking transect ends. Low sunk rebar (not visible in photo) marks the line below blade height. This combination has survived several mowings while rebar alone is often thrown and bent.