

**Vegetation Monitoring Report – Pre-treatment**

**Greater Rio Grande Watershed Alliance**

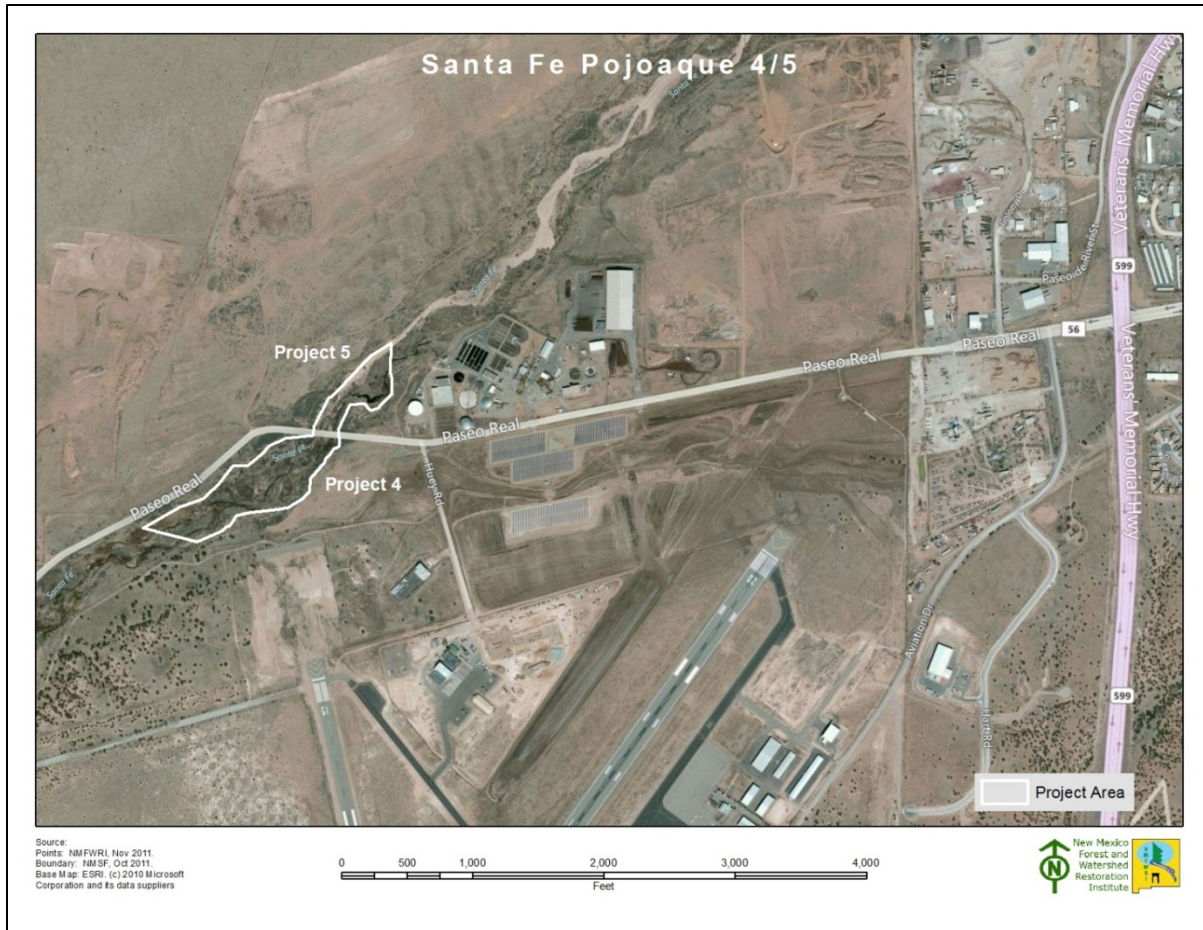
**Santa Fe - Pojoaque SWCD Project Sites 4 and 5**

**Thomas Property I & II**

**June 2012**

**Background:**

Vegetation monitoring was conducted at this site on November 17, 2011 as part of a restoration project targeting non-native phreatophytes scheduled for winter 2011 – 2012. The project consists of two adjacent project sites totaling 15 acre, located within Santa Fe County, NM, south of the city of Santa Fe (see Figure 1 below). The project was sponsored by the Santa Fe - Pojoaque Soil and Water Conservation District. Restoration goals are to restore the area for wildlife with a mix of native species, to restore the area to a more natural condition with a more open canopy, and to remove exotic high water consumption plants to increase water presence in low-lying areas and drainages. (Stropki et al., 2010).



*Figure 1. Project Location*

The specific treatment prescription is as follows (NMSF, undated):

Remove all invasive trees, including Juniper. Use appropriate herbicide on any stumps to prevent re-sprouting.

Remove approximately 10 standing dead Cottonwood.

Chop all slash, spread chips to < 2" out of high water flow area, larger woody material > 3" removed from high water flow area, placed outside fence along road for public removal.

**Persons contacted:**

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**Monitoring team:**

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**Procedures:**

Due to the short timeframe between project selection and implementation, only a narrow window was available to perform monitoring and that window was outside the optimum season for performing vegetation monitoring in this type of landscape. For that reason, a hasty monitoring protocol was developed. This protocol was based on placing photo point plots at locations distributed across the project area and representative of the diversity of the project area. In addition, an estimate of ground and canopy cover by percent within a 1/10 acre circular plot centered at the photo point was determined using ocular estimates. Overstory canopy was determined for a 1/10 acre circular area, also centered at the photo point. Finally, a Hink & Ohmart style vegetation structure assessment was performed. Vegetation species that were observed at each plot and in the project area were recorded. The plot size and density of observations limit the utility of this monitoring for describing overall site conditions or for generating any meaningful statistics.

Cover (%)											
Tree canopy	Seedlings/saplings <5'/5 - 15'		Shrubs		Gramanoid	Forbs	Litter	Bare Soil	Rock	Gravel	Water or wet soil

*Figure 2. Categories used for percent cover estimates.*

A base map of the project location was constructed using project boundary data provided by New Mexico State Forestry. Planned photo points were selected by visual inspection of May 2011 true-color digital orthorectified aerial photography obtained from the United States Department of Agriculture (<http://datagateway.nrcs.usda.gov/>). A GIS file for the photo point plots was created using ArcGIS software. Coordinates were derived from the GIS file and loaded into a Garmin GPSMAP 62sc Global Positioning System and a Trimble 2005 GeoXM Global Positioning System. The Garmin GPS was





and 3. Identification of forb, grass and some shrub species was impacted by the limited plant identification skills of the monitoring team and by the season. Ducks were observed in the area and there was evidence of historic beaver activity.

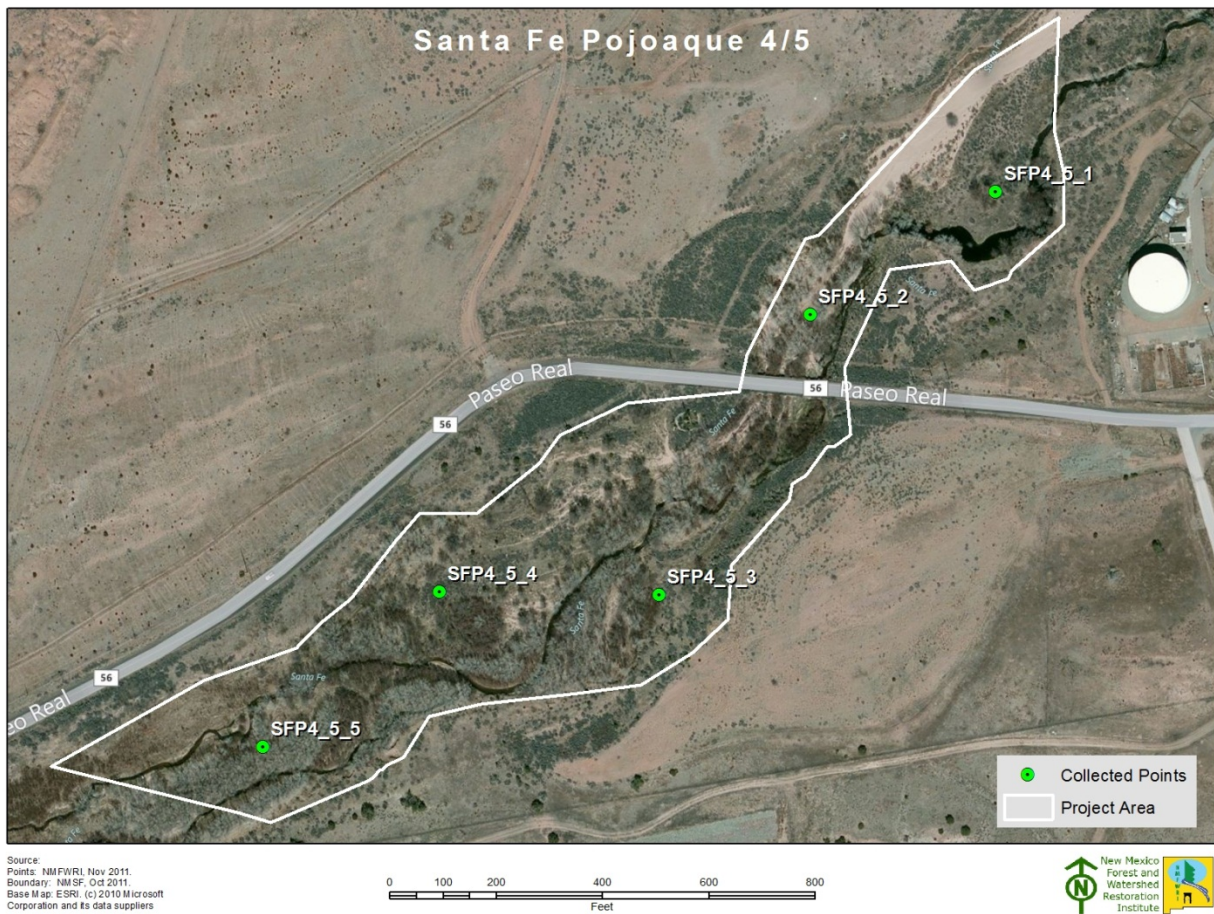


Figure 4. Close up view of Project Area 4/5 (pre-treatment) showing plot locations.

PT_ID	Horz_Prec (meters)	Std_Dev	Northing	Easting	Longitude	Latitude
SFP4_5_1	1.2	0.000294	3943523	401285	-106.090249	35.630719
SFP4_5_2	2.5	0.003353	3943453	401179	-106.091337	35.629913
SFP4_5_3	1.5	0.000789	3943292	401092	-106.092287	35.628494
SFP4_5_4	1.3	0.000306	3943294	400966	-106.093699	35.628442
SFP4_5_5	1.9	0.002041	3943205	400865	-106.094787	35.627630

Northing and easting; NAD 1983 UTM Zone 13  
 Longitude and Latitude: World Geodetic System 1984 (WGS 84)  
 Data collected with Trimble GeoExplorer 2005 GeoXM, post-processed with Trimble Pathfinder Office software.

Figure 5. Project Area 4/5 Plot coordinates.

**Species observed:**

Grasses		Forbs	
<i>Scientific name</i>	Common name	<i>Scientific name</i>	Common name
		<i>Cylindropuntia imbricata</i>	Cholla
		<i>Cucurbita foetidissima</i>	Buffalo Gourd
		<i>Verbascum thapsus</i>	Mullein
		<i>Kochia scoparia</i>	Kochia

Shrubs		Trees	
<i>Scientific name</i>	Common name	<i>Scientific name</i>	Common name
<i>Salix exigua</i> Nutt.	Coyote Willow	<i>Populus deltoides</i>	Cottonwood
<i>Ericameria nauseosa</i>	Chamisa	<i>Elaeagnus angustifolia</i>	Russian Olive
		<i>Juniperus monosperma</i>	One-seed Juniper
		<i>Ulmus pumila</i>	Siberian Elm
		<i>Robinia pseudoacacia</i>	Black Locust
		<i>Salix gooddingii</i>	Goodding's Black Willow

*Figure 6. Species observed.*

**Conclusions and Recommendations:**

Monitoring of this and other Greater Rio Grande Watershed Alliance project sites was constrained by time and resource availability. Due to these constraints, it was determined that the hasty method described in the Procedures section above would provide the minimum information necessary to determine the effectiveness of these treatments. Plot photos, in particular, will provide a good reference for assessing post treatment conditions. Monitoring crew members had limited skills in plant identification and Hink & Ohmart Structure Class determination. Vegetation identification was further complicated by the fact that most of the grasses and forbs were dormant. Despite these limitations, the monitoring adequately described the tree species variety and the overall site characteristics.

New, more robust monitoring protocols are being developed by the New Mexico Forest and Watershed Restoration Institute. These new protocols will be used for post-treatment monitoring and on future Greater Rio Grande Watershed Alliance projects. Monitoring crews will be provided training in the use of these new protocols. Future crews should also be provided with training in riparian plant identification and Hink & Ohmart structure class determination.

**References:**

Cartron, J.-L., D.C. Lightfoot, J.E. Mygatt, S.L. Brantley, and T.K. Lowrey. 2008. *A Field Guide to the Plants and Animals of the Middle Rio Grande Bosque*. University of New Mexico Press, Albuquerque.

Horizon Environmental Services, Inc. 2012. *Claunch-Pinto Soil and Water Conservation District Greater Rio Grande Watershed Alliance Riparian Restoration Projects Final Report*.

New Mexico Energy Mineral and Natural Resources Department, Forestry Division (NMSF). 2011. *Description and Scope of Work for Santa Fe – Pojoaque SWCD Projects 1, 2, 4, 5, 10*. New Mexico State Forestry.

Stropki, C., V. Williams, and M. Pease. 2010. *East Rio Arriba Soil and Water Conservation District Riparian Restoration Conservation Plan*. SWCA Environmental Consultants.

United States Department of Agriculture, Natural Resources Conservation Service. 2012. *Plants Database* (<http://plants.usda.gov>)

**Project:** Thomas Property I & II  
**Project Unit:** n/a  
**Plot:** SFP4\_5\_1

<b>Date:</b>	11/17/2011
<b>Time:</b>	1430
<b>Plot size:</b>	1/100

Cover (%)											
Tree canopy	Seedlings/saplings		Shrubs <5'/5 - 15'		Gramanoid	Forbs	Litter	Bare Soil	Rock	Gravel	Water or wet soil
21	0	0	30	20	0	20	60	20	0	0	0

**Hink & Ohmart Class:** 3

**Species observed:**

Grasses	Forbs	Shrubs	Trees
	<i>Kochia scoparia</i>	<i>Ericameria nauseosa</i>	<i>Salix gooddingii</i>
			<i>Elaeagnus angustifolia</i>

**Comments:**

None.



## SFP 4\_5\_1 Plot Photos



Mar 2011 Aerial View, Circle = 1/10 acre



Plot Center from North



Looking East from Plot Center



Looking South from Plot Center



Looking West from Plot Center



Looking North from Plot Center



**Project:** Thomas Property I & II  
**Project Unit:** n/a  
**Plot:** SFP4\_5\_2

<b>Date:</b>	11/17/2011
<b>Time:</b>	1448
<b>Plot size:</b>	1/100

<b>Cover (%)</b>											
Tree canopy	Seedlings/saplings <5'/5 – 15'		Shrubs		Gramanoid	Forbs	Litter	Bare Soil	Rock	Gravel	Water or wet soil
94	0	0	1	10	1	0	90	6	3	0	0

**Hink & Ohmart Class:** 3

**Species observed:**

Grasses	Forbs	Shrubs	Trees
		<i>Salix exigua Nutt.</i>	<i>Elaeagnus angustifolia</i>
			<i>Populus deltoides</i>

**Comments:**

None.



# SFP 4\_5\_2 Plot Photos



Mar 2011 Aerial View, Circle = 1/10 acre



Plot Center from North



Looking East from Plot Center



Looking South from Plot Center



Looking West from Plot Center



Looking North from Plot Center



**Project:** Thomas Property I & II  
**Project Unit:** n/a  
**Plot:** SFP4\_5\_3

<b>Date:</b>	11/17/2011
<b>Time:</b>	1553
<b>Plot size:</b>	1/100

Cover (%)											
Tree canopy	Seedlings/saplings <5'/5 – 15'		Shrubs		Gramanoid	Forbs	Litter	Bare Soil	Rock	Gravel	Water or wet soil
42	2	0	10	25	35	8	40	15	2	0	0

**Hink & Ohmart Class:** 3

**Species observed:**

Grasses	Forbs	Shrubs	Trees
		<i>Salix exigua</i> Nutt.	<i>Elaeagnus angustifolia</i>
		<i>Ericameria nauseosa</i>	<i>Juniperus monosperma</i>
			<i>Populus deltoides</i>

**Comments:**

Juniper seedlings.



# SFP 4\_5\_3 Plot Photos



Mar 2011 Aerial View, Circle = 1/10 acre



Plot Center from North



Looking East from Plot Center



Looking South from Plot Center



Looking West from Plot Center



Looking North from Plot Center

**Project:** Thomas Property I & II  
**Project Unit:** n/a  
**Plot:** SFP4\_5\_4

<b>Date:</b>	11/17/2011
<b>Time:</b>	1513
<b>Plot size:</b>	1/100

<b>Cover (%)</b>											
Tree canopy	Seedlings/saplings <5'/5 – 15'		Shrubs		Gramanoid	Forbs	Litter	Bare Soil	Rock	Gravel	Water or wet soil
2	0	0	50	10	55	5	25	15	0	0	0

**Hink & Ohmart Class:** 3

**Species observed:**

Grasses	Forbs	Shrubs	Trees
	<i>Verbascum thapsus</i>	<i>Salix exigua</i> Nutt.	<i>Elaeagnus angustifolia</i>
		<i>Ericameria nauseosa</i>	<i>Salix gooddingii</i>
			<i>Ulmus pumila</i>
			<i>Juniperus monosperma</i>

**Comments:**

None.



# SFP 4\_5\_4 Plot Photos



Mar 2011 Aerial View, Circle = 1/10 acre



Plot Center from North



Looking East from Plot Center



Looking South from Plot Center



Looking West from Plot Center



Looking North from Plot Center



**Project:** Thomas Property I & II  
**Project Unit:** n/a  
**Plot:** SFP4\_5\_5

<b>Date:</b>	11/17/2011
<b>Time:</b>	1534
<b>Plot size:</b>	1/100

<b>Cover (%)</b>											
Tree canopy	Seedlings/saplings <5'/5 – 15'		Shrubs		Gramanoid	Forbs	Litter	Bare Soil	Rock	Gravel	Water or wet soil
94	0	0	1	20	85	0	10	5	0	0	1

**Hink & Ohmart Class:** 2

**Species observed:**

Grasses	Forbs	Shrubs	Trees
		<i>Salix exigua Nutt.</i>	<i>Populus deltoides</i>

**Comments:**

None.

# SFP4\_5\_5 Plot Photos



Mar 2011 Aerial View, Circle = 1/10 acre



Plot Center from North



Looking East from Plot Center



Looking South from Plot Center



Looking West from Plot Center



Looking North from Plot Center

