

# Pecos River Riparian Monitoring Program

**Bureau of Land Management  
Roswell Field Office**



## Data Report 2008

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Cover photo: Allotment 5024 monitoring plot 1-2 looking downstream.

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Data Report 2008<sup>1</sup>

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**Introduction**

The Roswell Field Office of the Bureau of Land Management (BLM) initiated a riparian vegetation monitoring program in 1999<sup>2</sup> for its grazing allotments within the floodplain corridor of the Pecos River in southeast New Mexico. The intent of this program is to detect long-term trends in riparian plant communities in relation to grazing management practices and vegetation manipulation projects. In addition, the monitoring program is intended to help managers and ranchers effectively implement adaptive management techniques in response to trends indicated by the monitoring data. Beginning in 1999 and continuing through 2000, Natural Heritage New Mexico (NHNM) established a set of 47 high-resolution monitoring plots and reconnaissance surveys to collect the necessary baseline data for the 15 BLM allotments that are directly adjacent to the river. In July of 2008 21 of these plots were revisited and measured to provide data for assessing the impact of recent salt cedar removal treatments. This report provides the sampling methods and data collection locations which accompany the 2008 dataset.

**Methods**

Twenty-one monitoring plots were revisited in 2008, 15 of which were high-resolution monitoring plots with a pair of vegetation transects, and six of which were less intensive reconnaissance surveys to assess general condition (Table 1). A total of six allotments were visited in 2008, although not all monitoring plots within those six allotments were revisited. The distribution of all allotments sampled in 1999-2000 is shown in Figure 1. In 2008 allotments 4050, 4056, 5007, 5020, 5023, and 5024 were revisited.

In 1999 and 2000 at each monitoring site, two 30-meter-long transects were established parallel to the river, but separated from one another by at least ten meters. Where possible, transects were established parallel to one another to account for variation across the width of the

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<sup>1</sup> Final report submitted in fulfillment of Bureau of Land Management Agreement GDA 070010-03.

<sup>2</sup> Milford, E., E. Muldavin, S. Wood, and A. Kennedy. 2001. Pecos River monitoring program Bureau of Land Management, Roswell Field Office. Natural Heritage New Mexico, Biology Department, University of New Mexico, Albuquerque, NM; NHNM Publication No. 01-GTR-206. 118 p.

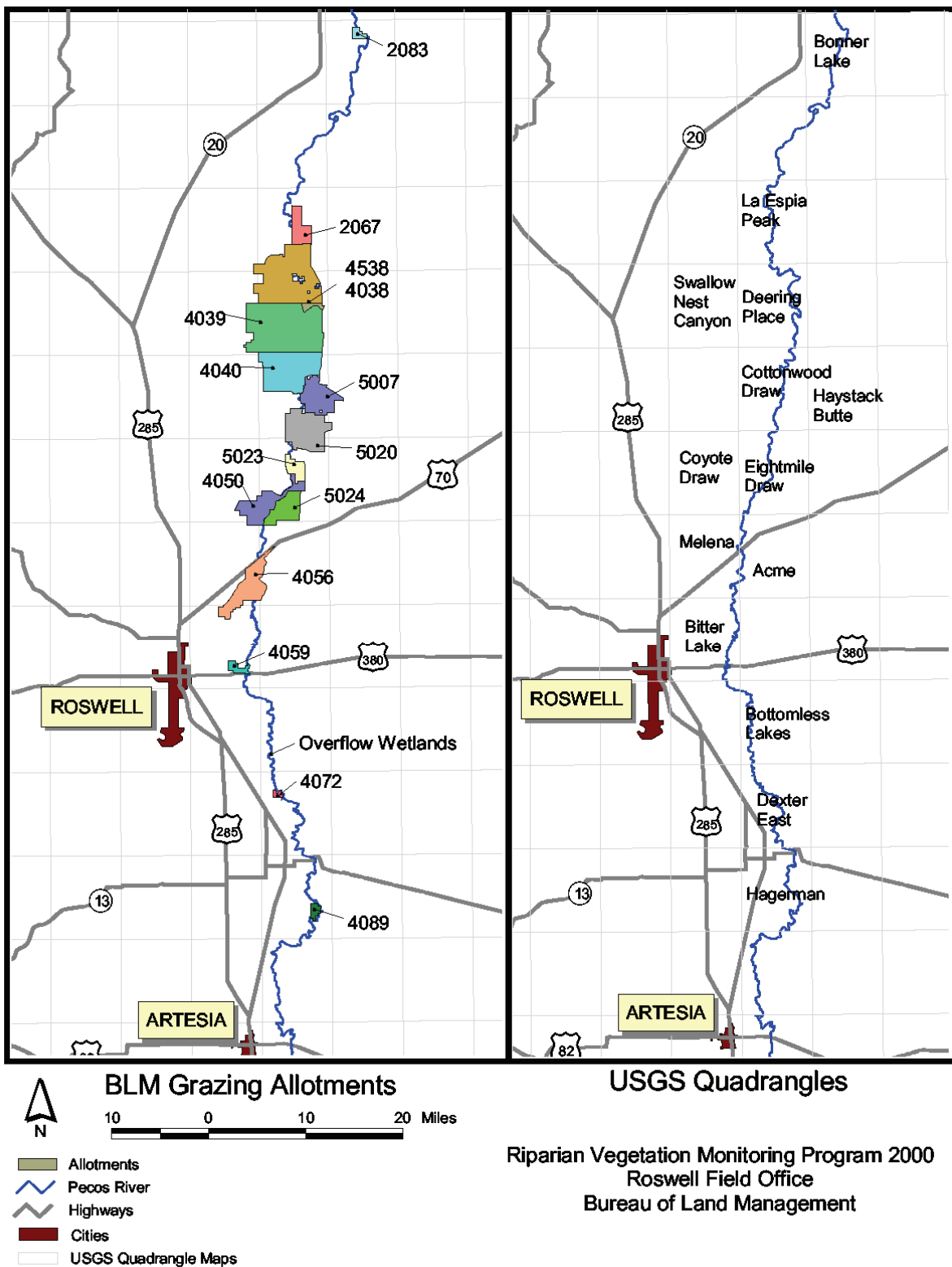
**Table 1.** Monitoring plots visited in 2008, organized by allotment number. Site-Plot = monitoring site and plot number; NHNM PlotID = plot identification number in NHNM plot database; Quadrat side = Right- or Left-hand side from 0 rebar looking at transect end/general compass direction.

<b>Allotment Number</b>	<b>Site-Plot</b>	<b>NHNM PlotID</b>	<b>Year 1st Visit</b>	<b>Quadrat side</b>
4050	1-1	00RM012	2000	Right/N
4050	2-1	00RM013	2000	Left/SE
4050	2-2	00RM014	2000	Left/SE
4056	2-1	99RM017	1999	Right/W
4056	2-2	99RM018	1999	Right/W
5007	1-1	00RM015	2000	Left/N
5007	2-1	00RM017	2000	Left/W
5020	1-1	99RM006	1999	Left/E
5020	1-2	99RM007	1999	Left/E
5020	2-1	99RM008	1999	Left/E
5020	3-1	99RM009	1999	Left/E
5023	OPP1	00RM009	2000	
5023	OPP2	00RM010	2000	
5023	OPP3	00RM011	2000	
5023	OPP4	00RM027	2000	
5023	OPP5	00RM028	2000	
5024	1-1	99RM011	1999	Right/W
5024	1-2*	99RM012	1999	
5024	2-1	99RM013	1999	Right/W
5024	2-2	99RM014	1999	Right/W
5024	3-1	99RM010	1999	Right/W

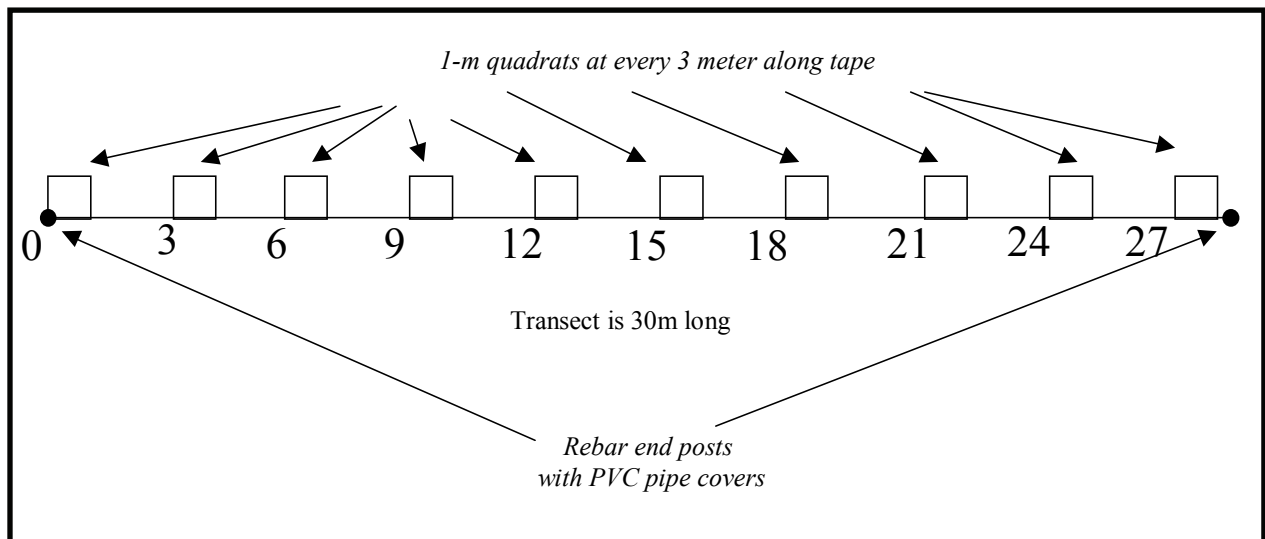
\* Visited as reconnaissance survey only, due to missing rebar and lack of time for resetting.

stand, but where stands were too narrow, transects were placed end to end with at least two meters between them. The start and end points of each transect were monumented with rebar with a white PVC pipe placed over the rebar to make them more visible (see Appendix A for updated directions to the monitoring plots and Appendix B for exact coordinates of transect end points). Each rebar was tagged with metal tags indicating the site number, transect, and transect position. Each rebar was located with a GPS to within five-meter accuracy.

To measure vegetation, a cloth meter-tape was stretched from the zero-end rebar to the 30-meter end and tied off tautly as close to the ground surface as possible. Beginning at the zero end, one-meter square PVC quadrat frames were positioned along the line at three-meter intervals (Figure 2). Quadrats occurred on either the right or left side of the line from the zero end depending on the plot; which side the quadrats occurred on is indicated in Table 1. There were ten quadrats per line for a total of 20 per monitoring site.



**Figure 1.** Allotments in the Roswell Pecos River Riparian Monitoring Program (left frame), and relevant USGS 7.5-minute quadrangles (right frame). Allotments 4050, 4056, 5007, 5020, 5023, and 5024 were visited in 2008.



**Figure 2.** Monitoring-plot transect layout.

In each quadrat, canopy cover of all species was evaluated to the nearest percent. For trees and shrubs, the number of stems were counted in each quadrat. In each quadrat the number of stems were counted, using standard size classes for all woody species except Emory's falsewillow (*Baccharis emoryi*) and southern jimmyweed (*Isocoma pluriflora*).

Litter, rock, gravel, cryptogamic crust, and bare soil cover percentages were measured using the line-point intercept method. This method involves dropping a pin flag perpendicular to the ground at 30 cm intervals along the line and evaluating whether the end of the pin struck bare ground, litter, or live basal area of a grass or forb. The first point is randomly established somewhere in the 0 to 30 cm interval then 50 points are taken down the line. This was repeated twice on each line, for a total of 100 points per line and 200 per plot.

Photo points were established at both ends of the line looking at the transect giving four shots per monitoring plot. Photos were taken with a digital camera and are provided on the compact disk included with this report.

Data collected in the reconnaissance surveys was limited to a species list of common species in representative stands of vegetation, an evaluation of abundance of the dominant species, vegetation type identification and description, landscape features, plot conditions, GPS locations, and documentary photographs.

Vouchers of plant species were taken as necessary and have been archived at the herbarium of the University of New Mexico Museum of Southwest Biology. Special attention was paid during the surveys to locate populations of the puzzle sunflower, *Helianthus paradoxus*, but none were found. A comprehensive species list for the project is given in Appendix C.

The vegetation data was entered into NHNM's Microsoft Access® ecology database. Over the past decade this database has been developed and populated with over 10,000 plot records from around the state and the Southwest. Accordingly, there is a set of data entry protocols that have been implemented that ensure data quality which includes independently proofreading the data for accuracy. Included on the compact disk with this report are a set of Excel files containing the 2008 data exported from the ecology database, photo point files, and this report.

## Results and Discussion

The data collected in 2008 from 21 transects among allotments 4050, 4056, 5007, 5020, 5023, and 5024 is provided as a series of spreadsheet and document files provided on a separate compact disk as follows:

1. Report: *RoswellMonitoringReportFinal2008.pdf*. This report in Adobe Acrobat format.
2. MS Excel file: *CalculatedGroundCoverPercents2008.xls*. Contains summarized percent ground cover values per plot created from the raw point-intercept data.
3. MS Excel file: *MonitoringFloristicData2008.xls*. Contains quad-level floristic data collected on the monitoring plots.
4. MS Excel file: *PhotoLogData2008.xls*. Contains detailed data for the photo files provided in the photo folder.
5. MS Excel file: *PointInterceptRawData2008.xls*. Contains the raw point-intercept data collected on the monitoring plots.
6. MS Excel file: *RebarLocations2008.xls*. Contains the UTM coordinates for all reconnaissance plot locations and all monitoring-plot rebar.
7. MS Excel file: *SummaryPlotFloristicData2008.xls*. Contains the complete floristic data for all plots. Cover values contained in this file were created by averaging quad-level data for the monitoring plots, and were estimated directly in the field for the reconnaissance plots.
8. Transect Photographs in jpg format. Each labeled with PlotID to match NHNM PlotID used in the various datasets and provided in the report. There may be more than one photo per PlotID which is followed by a brief description of photo location. More information on each photo, including location, azimuth, photographer and a short description are provided in the data file *PhotoLogData2008.xls* in the data folder.

Although data analysis is beyond the scope of this report, we feel it is important to report that there was one new noxious weed species of note observed on the transects in 2008. Ravenna grass (*Saccharum ravennae*) was added as a Class A species to the New Mexico Noxious Weed List in April of 2009. It was observed in 2008 in allotments 5020 and 5024 on the following six plots: 5020 1-1 (99RM006); 5024 1-1 (99RM011); 5024 1-2 (99RM012); 5024 2-1 (99RM013); 5024 2-2 (99RM014); and 5024 3-1 (99RM010).

**Appendix A: Updated 2008 Plot Directions.**

<b>Allotment Number</b>	<b>Site-Plot, NHNM</b>	<b>PlotID</b>	<b>Directions</b>
<b>4050</b>			
	<b>1-1</b>	<b>00RM012</b>	From US 285, approx. 7 mi N of US 70, turn E on CR 15 and go approx. 2.5 mi. Turn N on CR 26 (Cottonwood Rd). Continue for approx. 6.75 mi, then turn E on pipeline road towards Pecos R. Go approx. 3.2 mi to road heading S along Pecos. Head S for approx. 0.8 mi and walk E to plot.
	<b>2-1</b>	<b>00RM013</b>	
	<b>2-2</b>	<b>00RM014</b>	From US 285, approx. 7 mi N of US 70, turn E on CR 15 for approx. 2.5 mi. Then turn N on CR 26 (Cottonwood Rd.) for approx. 6.75 mi; turn E on pipeline road for approx. 2.8 mi. Turn N on road just E of gas pumping station. Continue for approx. 1.2 mi. Take road E towards Pecos R. for approx. 0.8 mi and walk E to plots.
<b>4056</b>			
	<b>2-1</b>	<b>99RM017</b>	
	<b>2-2</b>	<b>99RM018</b>	Take Old Clovis Hwy to crossing over railroad tracks, just S of underpass; cross railroad tracks and go 2.65 mi N on road just E of RR tracks. After 2.65 mi turn E, stay on road as it curves N 0.7 mi from jct, 0.5 mi after curve to N road will fork. Take right fork and follow 0.7 mi to pipeline road, then turn east onto pipeline road and follow out to river's edge.
<b>5007</b>			
	<b>1-1</b>	<b>00RM015</b>	From US 285 take US 70 E for approx. 14.5 mi; turn N on Aztec Rd (approx. 3.25 mi W of bridge over Pecos). At approx. 10 mi, road bends to E. After approx. 1 mi take road N at fork; after 1 mi take NE road at fork, road will bend N again after approx. 1 mi. Road continues N for 4 mi. Take road E at fork down to river floodplain and park at oil pad. Walk W about 0.5 mi to plot on riverside terrace.
	<b>2-1</b>	<b>00RM017</b>	From US 285 take US 70 E for approx. 14.5 mi; turn N on Aztec Rd (approx. 3.25 mi W of bridge over Pecos). At approx. 10 mi road bends to E. After approx. 1 mi take road N at fork; after 1 mi take NE road at fork, road will bend N again after approx. 1 mi. Road continues N for 4 mi. Take road E at fork down to river floodplain and park at oil pad. Walk approximately 1 mi N to plot.
<b>5020</b>			
	<b>1-1</b>	<b>99RM006</b>	
	<b>1-2</b>	<b>99RM007</b>	Take US 285 approx. 25.5 mi. N of US 70 jct, and turn E onto Cottonwood Rd (CR 26). CR 26 will go straight E for approximately 6.5 mi, then follow main road as it heads N for 0.6 mi, then E for 2 mi then SE for approx. 2.25 mi, and then due E again for 2.75 mi. When main road veers SE, take Roosevelt Rd, a smaller side road off to the NE, follow Roosevelt Rd as it heads due N 1.5 mi, then NE for 0.5 mi. At fork take road to the SE approx. 2 mi to the river's edge. Park and walk S approx. 200 m along riverbank to plot.



**Allotment Number**  
**Site-Plot, NHNM**  
**PlotID**

**Directions**

**5020 -  
cont.**

**2-1 99RM008**

Take US 285 approx. 25.5 mi N of US 70 jct, and turn E onto Cottonwood Rd (CR 26). CR 26 will go straight E for approx. 6.5 mi, then follow main road as it heads N for 0.6 mi, then E for 2 mi then SE for approx. 2.25 mi, and then due E again for 2.75 mi. When main road veers SE, take Roosevelt Rd, a smaller side road, off to the NE, follow this road as it heads due N 1.5 mi, then NE for 0.5 mi. At fork take road to the SE approx. 1.75 mi towards the river; at second fork take road to SW approx. 0.75 mi to well pad. Park and walk E approx. 150 m to plot.

**3-1 99RM009**

Take US 285 to One Horse Rd, take One Horse Rd NE to Cottonwood Rd, then Cottonwood Rd to NE to intersection with Roosevelt Rd. Go E on Roosevelt Rd 1.3 mi to three-way split. Take center road 0.8 mi to well pad. Park and walk approx. 0.2 mi to site.

**5023**

**OPP-1 00RM009**

From US 285, take One Horse Rd approx. 2.5 mi E, then NE approx. 8 mi. Take Adir Well Rd E approx. 2.7 mi, turn S at fork before the road descends to the floodplain (Adir Well Rd becomes pure sand in floodplain.). Go approx. 0.5 mi, then take E fork approx. 0.5 mi out to floodplain, then N approx. 0.1 mi to oil pad. Park and walk E to river's edge.

**OPP-2 00RM010**

From US 285, take One Horse Rd approx. 2.5 mi E, then NE approx. 8 mi. Take Adir Well Rd E approx. 2.7 mi, turn S at fork before the road descends to the floodplain (Adir Well Rd becomes pure sand in floodplain.). Go approx. 0.5 mi, then take E fork approx. 0.5 mi out to floodplain, then N approx. 0.1 mi to oil pad. Park and walk E to terrace just W of river's edge.

**OPP-3 00RM011**

From US 285, take One Horse Rd approx. 2.5 mi E, then NE approx. 8 mi. Take Adir Well Rd E approx. 2.7 mi, turn S at fork before the road descends to the floodplain (Adir Well Rd becomes pure sand in floodplain.). Go approx. 0.5 mi, then take E fork approx. 0.5 mi out to floodplain, then N approx. 0.1 mi to oil pad. Park and walk E to middle of old floodplain.

**OPP-4 00RM027**

From US 285, take One Horse Rd approx. 2.5 mi E, then NE approx. 8 mi. Take Adir Well Rd E approx. 2.7 mi, turn S at fork before the road descends to the floodplain (Adir Well Rd becomes pure sand in floodplain.). Go approx. 0.5 mi, then take E fork approx. 0.5 mi out to floodplain, then N approx. 0.1 mi to oil pad. Park and walk E onto floodplain.

**OPP-5 00RM028**

From US 285, take One Horse Rd approx. 2.5 mi E, then NE approx. 8 mi. Take Adir Well Rd E approx. 2.7 mi, turn S at fork before the road descends to the floodplain (Adir Well Rd becomes pure sand in floodplain.). Go approx. 0.5 mi, then take E fork approx. 0.5 mi out to floodplain, then N approx. 0.1 mi to oil pad. Park and walk E to edge of floodplain.

**Allotment Number**  
**Site-Plot, NHNM**  
**PlotID**

**Directions**

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**5024**

<b>1-1</b>	<b>99RM011</b>
<b>1-2</b>	<b>99RM012</b>
<b>2-1</b>	<b>99RM013</b>
<b>2-2</b>	<b>99RM014</b>
<b>3-1</b>	<b>99RM010</b>

From US 285 take US 70 E for approx. 14.5 mi; turn N on Aztec road (approx. 3.25 mi W of bridge over Pecos). Approx. 2 mi N is jct with oil pipeline road. Take pipeline road NE for approx. 2.25 mi to river's edge. Park and walk S along riverbank to plot.

**Appendix B:** Location of monitoring-plot transect-line endpoints and reconnaissance survey plots, grouped by allotment. Coordinates are in UTM (Universal Transverse Mercator) NAD-27, zone 13.

<b>Allotment</b>	<b>Site-Plot</b>	<b>NHNM PlotID</b>	<b>Line/rebar</b>	<b>Survey Type</b>	<b>Easting</b>	<b>Northing</b>
4050	1-1	00RM012	line 1- 0m	Monitoring	559111	3721349
4050	1-1	00RM012	line 1- 30m	Monitoring	559082	3721355
4050	1-1	00RM012	line 2- 0m	Monitoring	559107	3721340
4050	1-1	00RM012	line 2- 30m	Monitoring	559078	3721344
4050	2-1	00RM013	line 1- 30m	Monitoring	560252	3723549
4050	2-1	00RM013	line 1- 0m	Monitoring	560233	3723526
4050	2-1	00RM013	line 2- 30m	Monitoring	560281	3723579
4050	2-1	00RM013	line 2- 0m	Monitoring	560260	3723560
4050	2-2	00RM014	line 1- 0m	Monitoring	560275	3723607
4050	2-2	00RM014	line 2- 30m	Monitoring	560314	3723664
4050	2-2	00RM014	line 1- 30m	Monitoring	560294	3723629
4050	2-2	00RM014	line 2- 0m	Monitoring	560292	3723637
4056	2-1	99RM017	line 2- 0m	Monitoring	556967	3709023
4056	2-1	99RM017	line 1- 0m	Monitoring	556932	3709012
4056	2-1	99RM017	line 1- 30m	Monitoring	556904	3709005
4056	2-1	99RM017	line 2- 30m	Monitoring	556942	3709015
4056	2-2	99RM018	line 1- 0m	Monitoring	556946	3709058
4056	2-2	99RM018	line 2- 0m	Monitoring	556961	3709087
4056	2-2	99RM018	line 2- 30m	Monitoring	556937	3709077
4056	2-2	99RM018	line 1- 30m	Monitoring	556918	3709050
5007	1-1	00RM015	line 1- 30m	Monitoring	565044	3741058
5007	1-1	00RM015	line 2- 0m	Monitoring	565005	3741033
5007	1-1	00RM015	line 2- 30m	Monitoring	565035	3741033
5007	1-1	00RM015	line 1- 0m	Monitoring	565016	3741049
5007	2-1	00RM017	line 2- 30m	Monitoring	565483	3742121
5007	2-1	00RM017	line 1- 0m	Monitoring	565471	3742092
5007	2-1	00RM017	line 1- 30m	Monitoring	565475	3742121
5007	2-1	00RM017	line 2- 0m	Monitoring	565487	3742089
5020	1-1	99RM006	line 1- 30m	Monitoring	563725	3737024
5020	1-1	99RM006	line 2- 0m	Monitoring	563736	3737052
5020	1-1	99RM006	line 1- 30m	Monitoring	563731	3737046
5020	1-1	99RM006	line 1- 0m	Monitoring	563742	3737072
5020	1-2	99RM007	line 1- 0m	Monitoring	563709	3737048
5020	1-2	99RM007	line 2- 0m	Monitoring	563714	3737071
5020	1-2	99RM007	line 2- 30m	Monitoring	563714	3737047
5020	1-2	99RM007	line 1- 30m	Monitoring	563704	3737019
5020	2-1	99RM008	line 1- 0m	Monitoring	563329	3736483
5020	2-1	99RM008	line 2- 30m	Monitoring	563327	3736436
5020	2-1	99RM008	line 1- 30m	Monitoring	563339	3736455
5020	2-1	99RM008	line 2- 0m	Monitoring	563315	3736466
5020	3-1	99RM009	line 1- 0m	Monitoring	564190	3735168
5020	3-1	99RM009	line 1- 30m	Monitoring	564201	3735149
5020	3-1	99RM009	line 2- 30m	Monitoring	564210	3735117
5020	3-1	99RM009	line 2- 0m	Monitoring	564199	3735149

<b>Allotment</b>	<b>Site-Plot</b>	<b>NHNM PlotID</b>	<b>Line/rebar</b>	<b>Survey Type</b>	<b>Easting</b>	<b>Northing</b>
5023	OPP1	00RM009	Observation point	Reconnaissance	562980	3729161
5023	OPP2	00RM010	Observation point	Reconnaissance	562883	3729144
5023	OPP3	00RM011	Observation point	Reconnaissance	562799	3729152
5023	OPP4	00RM027	Observation point	Reconnaissance	562662	3729137
5023	OPP5	00RM028	Observation point	Reconnaissance	562516	3729117
5024	1-1	99RM011	line 2- 0m	Monitoring	559727	3722285
5024	1-1	99RM011	line 1- 30m	Monitoring	559721	3722393
5024	1-1	99RM011	line 2- 30m	Monitoring	559722	3722245
5024	1-1	99RM011	line 1- 0m	Monitoring	559718	3722324
5024	1-2	99RM012	Observation point	Reconnaissance	559708	3722253
5024	2-1	99RM013	line 2- 0m	Monitoring	559695	3721989
5024	2-1	99RM013	line 2- 30m	Monitoring	559688	3721959
5024	2-1	99RM013	line 1- 0m	Monitoring	559709	3722015
5024	2-1	99RM013	line 1- 30m	Monitoring	559700	3721987
5024	2-2	99RM014	line 1- 30m	Monitoring	559684	3721981
5024	2-2	99RM014	line 2- 0m	Monitoring	559679	3721982
5024	2-2	99RM014	line 2- 30m	Monitoring	559675	3721953
5024	2-2	99RM014	line 1- 0m	Monitoring	559693	3722014
5024	3-1	99RM010	line 2- 30m	Monitoring	559629	3721660
5024	3-1	99RM010	line 1- 0m	Monitoring	559624	3721701
5024	3-1	99RM010	line 1- 30m	Monitoring	559621	3721673
5024	3-1	99RM010	line 2- 0m	Monitoring	559628	3721687

**Appendix C:** Plant species list for Pecos River Riparian Monitoring Program. Origin refers to native (N) or introduced (I) species. NHNM Acronym is the Natural Heritage New Mexico codes used in the associated database. NRCS Plants Symbol is the symbol used in the NRCS Plants Database.

Species Name	Common Name	NHNM Acronym	NRCS Plants Symbol	Origin
<b>Trees</b>				
<i>Celtis laevigata</i> var. <i>reticulata</i>	netleaf hackberry	CELLAER	CELAR	N
<i>Elaeagnus angustifolia</i>	Russian olive	ELAANG	ELAN	I
<i>Populus deltoides</i> ssp. <i>wislizeni</i>	Rio Grande cottonwood	POPDELW	PODEW	N
<b>Shrubs</b>				
<i>Allenrolfea occidentalis</i>	iodinebush	ALLOCC	ALOC2	N
<i>Artemisia filifolia</i>	sand sagebrush	ARTFIL	ARFI2	N
<i>Atriplex canescens</i>	fourwing saltbush	ATRCAN	ATCA2	N
<i>Baccharis emoryi</i>	Emory's falsewillow	BACEMO	BAEM	N
<i>Isocoma pluriflora</i>	southern jimmyweed	ISOPLU	ISPL	N
<i>Opuntia imbricata</i>	tree cholla	OPUIMB		N
<i>Prosopis glandulosa</i>	honey mesquite	PROGLA	PRGL2	N
<i>Salix exigua</i>	coyote willow	SALEXI	SAEX	N
<i>Tamarix ramosissima</i>	saltcedar	TAMRAM	TARA	I
<b>Sub-Shrubs</b>				
<i>Escobaria vivipara</i>	spiny star	ESCVIV	ESVI2	N
<i>Gutierrezia sarothrae</i>	broom snakeweed	GUTSAR	GUSA2	N
<i>Opuntia phaeacantha</i>	tulip pricklypear	OPUPHA	OPPH	N
<i>Suaeda nigra</i>	bush seepweed	SUANIG	SUNI	N
<b>Graminoids</b>				
<i>Aristida purpurea</i>	purple threeawn	ARIPUR	ARPU9	N
<i>Bothriochloa</i> spp.	beardgrass	BOTHRI	BOTHR	
<i>Bothriochloa laguroides</i> ssp. <i>torreyana</i>	silver beardgrass	BOTLAGT	BOLAT	N
<i>Bouteloua barbata</i>	sixweeks grama	BOUBAR	BOBA2	N
<i>Bouteloua curtipendula</i>	sideoats grama	BOUCUR	BOCU	N
<i>Buchloe dactyloides</i>	buffalograss	BUCDAC	BUDA	N
<i>Cenchrus spinifex</i>	sandbur	CENSPI	CESP4	N
<i>Cyperus</i> spp.	flatsedge	CYPERU	CYPER	
<i>Distichlis spicata</i>	inland saltgrass	DISSPI	DISP	N
<i>Eleocharis rostellata</i>	beaked spikerush	ELEROS	ELRO2	N
<i>Elymus canadensis</i>	Canada wildrye	ELYCAN	ELCA4	N
<i>Juncus arcticus</i>	arctic rush	JUNARC	JUAR2	N
<i>Juncus arcticus</i> var. <i>mexicanus</i>	Mexican rush	JUNARCM	JUME4	N
<i>Muhlenbergia asperifolia</i>	alkali muhly	MUHASP	MUAS	N
<i>Muhlenbergia repens</i>	creeping muhly	MUHREP	MURE	N
<i>Panicum capillare</i>	witchgrass	PANCAP	PACA6	N
<i>Panicum obtusum</i>	vine mesquite	PANOBT	PAOB	N
<i>Phragmites australis</i>	common reed	PHRAUS	PHAU7	N
<i>Polypogon monspeliensis</i>	annual rabbitsfoot grass	POLMON	POMO5	I
<i>Saccharum ravennae</i>	ravenna grass	SACRAV	SARA3	I
<i>Schoenoplectus pungens</i>	common threesquare	SCHPUN	SCPU10	N
<i>Setaria leucopila</i>	streambed bristlegrass	SETLEU	SELE6	N
<i>Sorghastrum nutans</i>	Indiangrass	SORNUT	SONU2	N
<i>Sporobolus airoides</i>	alkali sacaton	SPOAIR	SPAI	N
<i>Sporobolus cryptandrus</i>	sand dropseed	SPOCRY	SPCR	N
<i>Sporobolus wrightii</i>	giant sacaton	SPOWRI	SPWR2	N

Species Name	Common Name	NHNM Acronym	NRCS Plants Symbol	Origin
<b>Forbs</b>				
Ambrosia psilostachya	Cuman ragweed	AMBPSI	AMPS	N
Apocynum cannabinum	Indianhemp	APOCAN	APCA	N
Chamaesyce albomarginata	whitemargin sandmat	CHAALB	CHAL11	N
Chamaesyce glyptosperma	ribseed sandmat	CHAGLY	CHGL13	N
Chamaesyce missurica	prairie sandmat	CHAMIS	CHMI8	N
Chloracantha spinosa	spiny chloracantha	CHLSPI	CHSP11	N
Croton texensis	Texas croton	CROTEX	CRTE4	N
Cucurbita foetidissima	buffalo gourd	CUCFOE	CUFO	N
Dalea lanata	woolly prairieclover	DALLAN	DALA3	N
Equisetum laevigatum	smooth horsetail	EQULAE	EQLA	N
Eriogonum annuum	annual buckwheat	ERIANN	ERAN4	N
Gaura coccinea	scarlet beeblossom	GAUCOC	GACO5	N
Glycyrrhiza lepidota	American licorice	GLYLEP	GLLE3	N
Helianthus ciliaris	Texas blueweed	HELCIL	HECI	N
Hoffmannseggia glauca	Indian rushpea	HOFGLA	HOGL2	N
Kochia scoparia	common kochia	KOCSCO	KOSC	I
Melilotus officinalis	yellow sweetclover	MELOFF	MEOF	I
Oenothera pallida	pale eveningprimrose	OENPAL	OEPA	N
Portulaca oleracea	common purslane	POROLE	POOL	N
Rumex spp.	dock	RUMEX	RUMEX	
Salsola tragus	prickly Russian thistle	SALTRA	SATR12	I
Solanum elaeagnifolium	silverleaf nightshade	SOLELA	SOEL	N
Verbesina encelioides	golden crownbeard	VERENC	VEEN	N
Xanthium strumarium	rough cocklebur	XANSTR	XAST	N