



Washita Battlefield National Historic Site

Southern Plains Network and Southern Plains Fire Group 2013 Vegetation Monitoring Data Summary



Washita Battlefield National Historic Site

Southern Plains Network and Southern Plains Fire Group 2013 Vegetation Monitoring Data Summary

Authors

Tomye Folts-Zettner¹
Richard Gatewood²
Heidi Sosinski¹

¹National Park Service
Southern Plains Inventory and Monitoring Network
PO Box 329
Johnson City, Texas

²Fire Ecologist - National Park Service
Chihuahuan Desert & Southern Plains Ecoregions
PO Box 987
Artesia, NM 88211

ON THE COVER

Brome at Washita Battlefield NHS. NPS Photo.

Contents

	Page
Introduction	1
Grassland Monitoring Results	1
Exotic Monitoring Results.....	10
Literature Cited	27

Figures

	Page
Figure 1. Layout of plots within each permanent transect.	1
Figure 2. Location of each permanent plot at WABA monitored in 2013	2
Figure 3. Layout of Vector Blocks and Distance Classes along a vector.	10
Figure 4. Panel 2 numbered vector blocks monitored at WABA in both 2010 and 2013.	11
Figure 5. Comparison of exotics detected in 2010 and 2013 grassland monitoring permanent transects at WABA.....	13

Tables

	Page
Table 1. Plant community and sampling dates for each transect at Washita Battlefield NHS in 2013.....	1
Table 2. Ground strata type and percentage for each transect monitored at WABA in 2013.....	3
Table 3. Species cover sum and frequency for each permanent transect monitored at WABA in 2013. Exotic species are highlighted in pink.....	4
Table 4. All plant species detected during grassland monitoring in 2010 and exotic monitoring in 2010 and 2013 at WABA. Exotic species are highlighted in pink.	8
Table 5. Number and percentage comparison of unit detections of exotic species found in repeated monitoring of vector blocks and permanent transects at WABA.....	12
Table 6. A comparison of the number of blocks containing a given density in 2010 and 2013 in two Distance Classes.....	14
Table 7. Comparison of 2010 vs. 2013 detections for each individual Vector Block, detailing the given Density Code for each Distance Class.	16

Introduction

This report contains a data summary of results from all vegetation monitoring conducted by the Southern Plains Network (SOPN) and the Southern Plains Fire Group (SPFG) during 2013 at Washita Battlefield National Historic Site (WABA). Data summaries are used to impart current monitoring data until enough years of data have been collected to facilitate trend analysis. A more detailed synthesis report is scheduled to be produced in 2015.

Grassland Monitoring Results

Grassland monitoring occurred during early June of 2013 (Table 1). Data from nine (9) permanent transects (Figure 2) were collected following the established monitoring protocol *Grassland Monitoring Protocol and Standard Operating Procedures for the Southern Plains I&M Network and Fire Group* (Folts-Zettner et al.) (Figure 1). The protocol calls for a series of permanent 50-meter transects containing five 2x1-meter plots. Species composition, relative cover and ground strata are collected during annual visits.

Table 1. Plant community and sampling dates for each transect at Washita Battlefield NHS in 2013.

Group	Transect	Plant community	Date
Restoration	DIST-01	<i>Bromus tectorum</i> Semi-Natural Herbaceous	06/09
	RESTE-LT01	<i>Andropogon gerardii</i> - <i>Sorghastrum nutans</i> Herbaceous	06/10
	RESTE-LT02	<i>Andropogon gerardii</i> - <i>Sorghastrum nutans</i> Herbaceous	06/10
	RESTW-LT01	<i>Andropogon gerardii</i> - <i>Sorghastrum nutans</i> Herbaceous	06/09
	RESTW-LT02	<i>Iva annua</i> - (<i>Xanthium strumarium</i>) Temporarily Flooded	06/09
Upland	UPLAND-LT01	<i>Bromus tectorum</i> Semi-Natural Herbaceous	06/08
	UPLAND-LT02	<i>Andropogon hallii</i> - <i>Calamovilfa gigantea</i> Herbaceous	06/08
	UPLAND-LT03	<i>Bouteloua gracilis</i> - <i>Bouteloua curtipendula</i> Herbaceous	06/10
	UPLAND-LT04	<i>Schizachyrium scoparium</i> - <i>Bouteloua curtipendula</i> Herbaceous	06/11

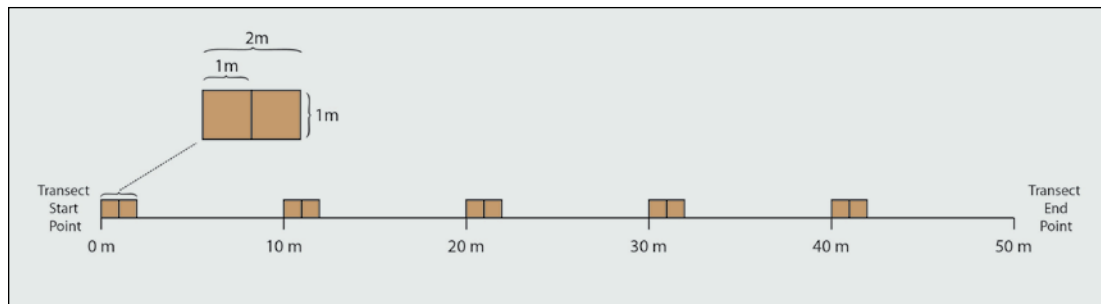


Figure 1. Layout of plots within each permanent transect.

Washita Battlefield NHS Grassland Monitoring
6/9 - 6/11/2013

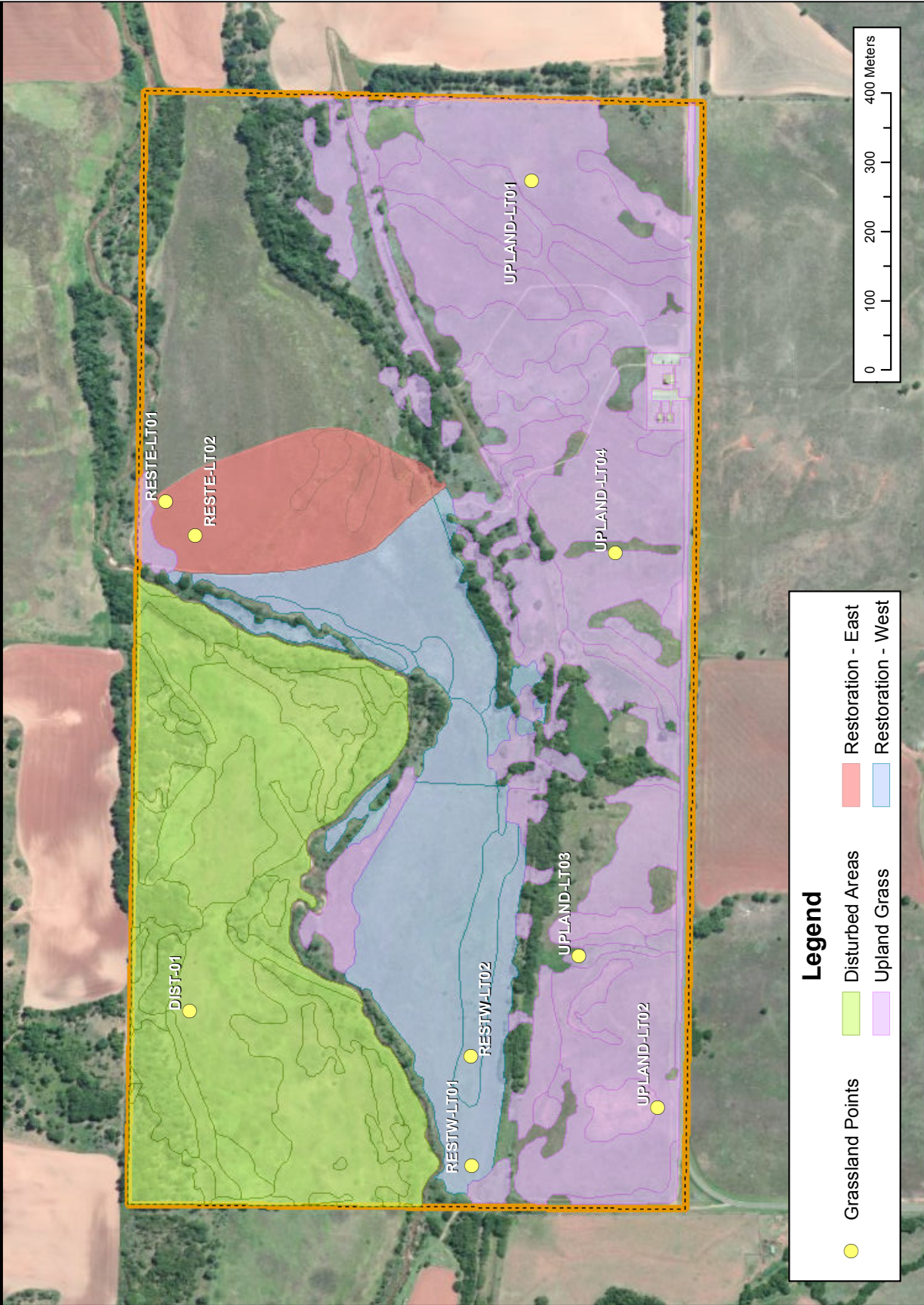


Figure 2. Location of each permanent plot at WABA monitored in 2013

The type and amount of ground strata (bare soil, litter, rock) influences many aspects of grassland health. The benefits of these influences vary along an east-west gradient. Litter accumulation, for example is considered more beneficial in the western parts of the Southern Great Plains because it protects the soil from erosion by wind and rain, and keeps soil root-zones cooler. These same benefits accrue in the eastern area, but because higher rainfall results in higher vegetative production, the greater accumulation of litter can negatively impact a grassland by limiting seedling recruitment. Ground strata estimates for each transect monitored at WABA in 2013 can be found in Table 2.

Table 3 contains numerical results of 2013 grassland monitoring at WABA. Each transect contains five plots. Frequency reflects the number of plots in each transect where a particular species was detected. Exotic plant species are highlighted in pink. Scientific and common names for each plant code, as well as that species attributes can be found in Table 4.

Table 2. Ground strata type and percentage for each transect monitored at WABA in 2013.

Cover	Restoration Community				
	DIST-01	RESTE-LT01	RESTE-LT02	RESTW-LT01	RESTW-LT02
SOIOPEN	5.2	1	4.4	6	0.6
SOILUNDER	1	2	3.2	2.4	0.6
LITTER	93.8	97	91.8	90.2	96.4
WOOD	0	0	0	0	1.4
ROCKSM	0	0	0.2	0	0
ROCKLG	0	0	0	0	0
LICHEN	0	0	0	0	0
MOSS	0	0	0	0.2	0
CRUST	0	0	0.2	0.2	0

Cover	Upland Community			
	UPLAND-LT01	UPLAND-LT02	UPLAND-LT03	UPLAND-LT04
SOIOPEN	4.2	42	11.4	9.4
SOILUNDER	2.2	7.6	3.6	15
LITTER	93.2	46.2	84.4	75.6
WOOD	0	0	0.6	0
ROCKSM	0.2	3.2	0	0
ROCKLG	0	0	0	0
LICHEN	0	0	0	0
MOSS	0	0	0	0
CRUST	0.2	0.6	0	0

Table 3. Species cover sum and frequency for each permanent transect monitored at WABA in 2013. Exotic species are highlighted in pink.

Species Code	Restoration Community									
	DIST-01		RETE-LT01		RETE-LT02		RESTW-LT01		RESTW-LT02	
	Cover Sum	Frequency	Cover Sum	Frequency	Cover Sum	Frequency	Cover Sum	Frequency	Cover Sum	Frequency
Forb										
AMBPSI	2	3					14	3		
ARTLUD	3	1			1	2			0.5	1
CHAMAC					0.5	1				
CIRUND									0.5	1
CONARV										
CONCAN					4.5	3	1.5	2	0.5	1
CROTEX							1	2		
DALENN										
DESILL1	1	2	20.5	4	0.5	1			0.5	1
ERIANN2					0.5	1				
FRBLNG										
GAIPUL					0.5	1	1	1		
GAUMOL	0.5	1								
GRIPAP							0.5	1		
GUTSAR										
HELANN					0.5	1				
HETCAN										
HETVIL	3	1			0.5	1	3	1		
LACSER										
LINRIG										
MELOFF										
OENELA					0.5	1				
PHYCIN										
PHYLON									0.5	1
PLAPAT					0.4	1	0.5	1		
POLNUT									0.5	1
QUILOB										
SOLCAN									1	1
SOLDIM	16	2								
SOLELA	6	2								
SYMPRA							1	2	0.5	1
TRADUB	0.5	1					1	2		
URTDIO										
Grass										
ANDHAL	8.5	2	15	3	31	4				
ARIPUR										
BOTISC										
BOTLAG									0.5	1
BOUCUR			4.5	3	4	3	3.5	2		
BOUHIR					0.5	1				
BROCAT									0.5	1
BROJAP	16.5	5					6	5	6.5	5
CARNEB										

Table 3. Species cover sum and frequency for each permanent transect monitored at WABA in 2013. Exotic species are highlighted in pink (continued).

Species Code	Upland Community							
	UPLAND-LT01		UPLAND-LT02		UPLAND-LT03		UPLAND-LT04	
	Cover Sum	Frequency	Cover Sum	Frequency	Cover Sum	Frequency	Cover Sum	Frequency
Forb								
AMBPSI	20.5	5					9.5	4
ARTLUD	2	3	0.5	1				
CHAMAC								
CIRUND								
CONARV					3.5	2		
CONCAN							0.5	1
CROTEX								
DALENN			6	4				
DESILL1								
ERIANN2	1	2						
FRBLNG					0.5	1		
GAIPUL	5.5	2	0.5	1			0.5	1
GAUMOL								
GRIPAP								
GUTSAR							7.5	3
HELANN								
HETCAN							1	1
HETVIL	3.5	2						
LACSER					0.5	1	0.5	1
LINRIG			2	3				
MELOFF			13	5				
OENELA								
PHYCIN					7	3		
PHYLON					0.5	1		
PLAPAT	0.5	1						
POLNUT								
QUILOB					0.5	1		
SOLCAN								
SOLDIM								
SOLELA	4	2			2.5	3	0.5	1
SYMPRA							0.5	1
TRADUB							0.5	1
URTDIO					1	1		
Grass								
ANDHAL			15.5	2			1.5	2
ARIPUR	5.5	1						
BOTISC							36.5	3
BOTLAG								
BOUCUR			57.5	5			2.5	3
BOUHIR								
BROCAT								
BROJAP	54.5	5			90.5	4	21	3
CARNEB					6.5	3		

Table 3. Species cover sum and frequency for each permanent transect monitored at WABA in 2013. Exotic species are highlighted in pink (continued).

Species Code	Restoration Community									
	DIST-01		RETE-LT01		RETE-LT02		RESTW-LT01		RESTW-LT02	
	Cover Sum	Frequency	Cover Sum	Frequency	Cover Sum	Frequency	Cover Sum	Frequency	Cover Sum	Frequency
DICSSP	0.5	1								
DISSPI										
ELYVIR										
PANVIR	10	1	30.5	5	26	5	47	3	35	1
PASSMI									1.5	3
SCHSCO	20.5	1	16.5	5	13.5	5	15	4	0.5	1
SORHAL							5	1	76	5
SORNUT			3.5	5	4	1	5	3	15	4
SPOAIR	5.5	3								
SPOCRY			1	1						
VULOCT										
Subshrub										
OPUMAC										
Tree										
PRUANG	46	2								
SAPSAP										
ULMPUM	1	2	0.5	1			5.5	2	22	4
CUCFOE										

Table 3. Species cover sum and frequency for each permanent transect monitored at WABA in 2013. Exotic species are highlighted in pink (continued).

Species Code	Upland Community							
	UPLAND-LT01		UPLAND-LT02		UPLAND-LT03		UPLAND-LT04	
	Cover Sum	Frequency	Cover Sum	Frequency	Cover Sum	Frequency	Cover Sum	Frequency
DICSSP	0.5	1						
DISSPI	24	4						
ELYVIR					1	2		
PANVIR			4	3			0.5	1
PASSMI							6	2
SCHSCO	38	4	34.5	5	0.5	1	19	4
SORHAL					0.5	1		
SORNUT			2.5	4			0.5	1
SPOAIR								
SPOCRY	2	2					0.5	1
VULOCT			1	2				
Subshrub								
OPUMAC	7	1						
Tree								
PRUANG								
SAPSAP					10	1		
ULMPUM							3	1
CUCFOE							0.5	1

Table 4. All plant species detected during grassland monitoring in 2010 and exotic monitoring in 2010 and 2013 at WABA. Exotic species are highlighted in pink.

Species Code	LifeForm	Scientific Name	Common Name	Primary Duration
AEGCYL	Grass	<i>Aegilops cylindrica</i>	jointed goat grass	Annual
AMBPSI	Forb	<i>Ambrosia psilostachya</i>	western ragweed	Perennial
ANDHAL	Grass	<i>Peperomia hirtipetiola</i>	sand bluestem	Perennial
ARIPUR	Grass	<i>Aristida purpurea</i>	purple threeawn	Perennial
ARTLUD	Forb	<i>Artemisia ludoviciana</i>	louisiana sagewort	Perennial
BOTISC	Grass	<i>Bothriochloa ischaemum</i>	kr bluestem	Perennial
BOTLAG	Grass	<i>Bothriochloa laguroides</i>	silver bluestem	Perennial
BOUCUR	Grass	<i>Bouteloua curtipendula</i>	sideoats grama	Perennial
BOUHIR	Grass	<i>Bouteloua hirsuta</i>	hairy grama	Perennial
BROCAT	Grass	<i>Bromus catharticus</i>	rescue grass	Annual/Perennial
BROJAP	Grass	<i>Bromus japonicus</i>	japanese brome	Annual
BROTEC	Grass	<i>Bromus tectorum</i>	cheatgrass	Annual
CARNEB	Grass	<i>Carex nebrascensis</i>	nebraska sedge	Perennial
CHAMAC	Forb	<i>Chamaesyce maculata</i>	spotted sandmat	Annual
CHEALB	Forb	<i>Chenopodium album</i>	common lambsquarters	Annual
CIRUND	Forb	<i>Cirsium undulatum</i>	wavyleaf thistle	Biennial
CIRVUL	Forb	<i>Cirsium vulgare</i>	bull thistle	Biennial
CONARV	Forb	<i>Convolvulus arvensis</i>	field bindweed	Perennial
CONCAN	Forb	<i>Conyza canadensis</i>	canada horseweed	Annual
CROTEX	Forb	<i>Croton texensis</i>	texas croton	Annual
CUCFOE	Vine	<i>Cucurbita foetidissima</i>	buffalo gourd	Perennial
CYNDAC	Grass	<i>Cynodon dactylon</i>	Bermudagrass	Perennial
DALENN	Forb	<i>Dalea enneandra</i>	nine-anther dalea	Perennial
DESILL1	Forb	<i>Desmanthus illinoensis</i>	illinois bundleflower	Perennial
DESSOP	Forb	<i>Descurainia sophia</i>	flixweed	Annual
DICSSP	Grass	<i>Dichanthelium ssp.</i>	rosette grass	N/Annual
DISSPI	Grass	<i>Distichlis spicata</i>	inland saltgrass	Perennial
ELYVIR	Grass	<i>Elymus virginicus</i>	virginia wildrye	Perennial
ERIANN2	Forb	<i>Eriogonum annuum</i>	annual buckwheat	Annual/Biennial
EROCIC	Forb	<i>Erodium cicutarium</i>	red stem storksbill	Annual
EUPDEN	Forb	<i>Euphorbia dentata</i>	toothed spurge	Annual
FRBLNG	Forb	<i>Forb seedling</i>	forb seedling	N/Annual
GAIPUL	Forb	<i>Gaillardia pulchella</i>	indian blanket	Annual/Biennial/Perennial
GAUMOL	Forb	<i>Gaura mollis</i>	velvetweed	Annual
GRIPAP	Forb	<i>Grindelia papposa</i>	wax gumweed	Annual/Biennial
GUTSAR	Forb	<i>Gutierrezia sarothrae</i>	broom snakeweed	Perennial
HELANN	Forb	<i>Helianthus annuus</i>	common sunflower	Annual
HETCAN	Forb	<i>Heterotheca canescens</i>	gray goldenaster	Perennial
HETVIL	Forb	<i>Heterotheca villosa</i>	hairy false goldenaster	Perennial
KOCSCO	Forb	<i>Kochia scoparia</i>	kochia	Annual
LACSER	Forb	<i>Lactuca serriola</i>	prickly lettuce	Annual
LINRIG	Forb	<i>Linum rigidum</i>	orange flax	Annual/Perennial

Table 4. All plant species detected during grassland monitoring in 2010 and exotic monitoring in 2010 and 2013 at WABA. Exotic species are highlighted in pink. (continued).

Species Code	LifeForm	Scientific Name	Common Name	Primary Duration
LOLPER	Grass	<i>Lolium perenne</i>	perennial ryegrass	Perennial
MEDLUP	Forb	<i>Medicago lupulina</i>	black medic clover	Annual
MEDMIN	Forb	<i>Medicago minima</i>	burr medic clover	Annual
MELOFF	Forb	<i>Melilotus officinalis</i>	yellow sweetclover	Annual
OENELA	Forb	<i>Oenothera elata</i>	hookers evening primrose	Biennial/Perennial
OPUMAC	Subshrub	<i>Opuntia macrorhiza</i>	twistspine pricklypear	Perennial
PANVIR	Grass	<i>Panicum virgatum</i>	switchgrass	Perennial
PASSMI	Grass	<i>Pascopyrum smithii</i>	western wheatgrass	Perennial
PHYCIN	Forb	<i>Physalis cinerascens</i>	smallflower groundcherry	Perennial
PHYLON	Forb	<i>Physalis longifolia</i>	longleaf groundcherry	Perennial
PLAPAT	Forb	<i>Plantago patagonica</i>	woolly plantain	Annual
POLNUT	Forb	<i>Polytaenia nuttallii</i>	nuttal's prairie parsley	Perennial
PRUANG	Tree	<i>Prunus angustifolia</i>	chickasaw plum	Perennial
QUILOB	Forb	<i>Quincula lobata</i>	purple groundcherry	Perennial
RUMCRI	Forb	<i>Rumex crispus</i>	curley dock	Perennial
SALTRA	Forb	<i>Salsola tragus</i>	prickly Russian thistle	Annual
SAPSAP	Tree	<i>Sapindus saponaria</i>	western soapberry	Perennial
SCHSCO	Grass	<i>Schizachyrium scoparium</i>	little bluestem	Perennial
SOLCAN	Forb	<i>Solidago canadensis</i>	canada goldenrod	Perennial
SOLDIM	Forb	<i>Solanum dimidiatum</i>	western horsenettle	Perennial
SOLELA	Forb	<i>Solanum elaeagnifolium</i>	silverleaf nightshade	Perennial
SONASP	Forb	<i>Sonchus asper</i>	spiny sowthistle	Annual
SORHAL	Grass	<i>Sorghum halepense</i>	johnsongrass	Perennial
SORNUT	Grass	<i>Sorghastrum nutans</i>	indiangrass	Perennial
SPOAIR	Grass	<i>Sporobolus airoides</i>	alkali sacaton	Perennial
SPOCRY	Grass	<i>Sporobolus cryptandrus</i>	sand dropseed	Perennial
SYMPRA	Forb	<i>Symphotrichum praealtum</i>	willowleaf aster	Perennial
TAMRAM	Tree	<i>Tamarix ramosissima</i>	saltcedar	Perennial
TAROFF	Forb	<i>Taraxacum officinale</i>	dandelion	Perennial
TRADUB	Forb	<i>Tragopogon dubius</i>	western salsify	Annual
TRITER	Forb	<i>Tribulus terrestris</i>	puncturevine	Annual
ULMPUM	Tree	<i>Ulmus pumila</i>	siberian elm	Perennial
URTDIO	Forb	<i>Urtica dioica</i>	stinging nettle	Perennial
VULOCT	Grass	<i>Vulpia octoflora</i>	sixweeks fescue	Annual

Exotic Monitoring Results

Exotic plant monitoring followed the protocol *Multi-Network Exotic Plant Monitoring Protocol and Standard Operating Procedures* (Folts-Zettner et al. 2013). Methodology requires a series of discreet 50-meter blocks along designated vectors chosen for high-probability of introduction. Exotic species detected within each block are assigned densities, and their proximity to the vector itself is divided into various Distance Classes (Figure 3).

Monitoring occurred May 24-29, 2013 and included the western loop trail and the two-track that runs along the river (Figure 4). These vectors have been previously monitored June 7-9, 2010. It should be noted that 2010 was a year of above average precipitation, followed by consecutive years of extreme drought, including 2013. Data summarized in this report compares the results of 2013 monitoring to that detected in 2010.

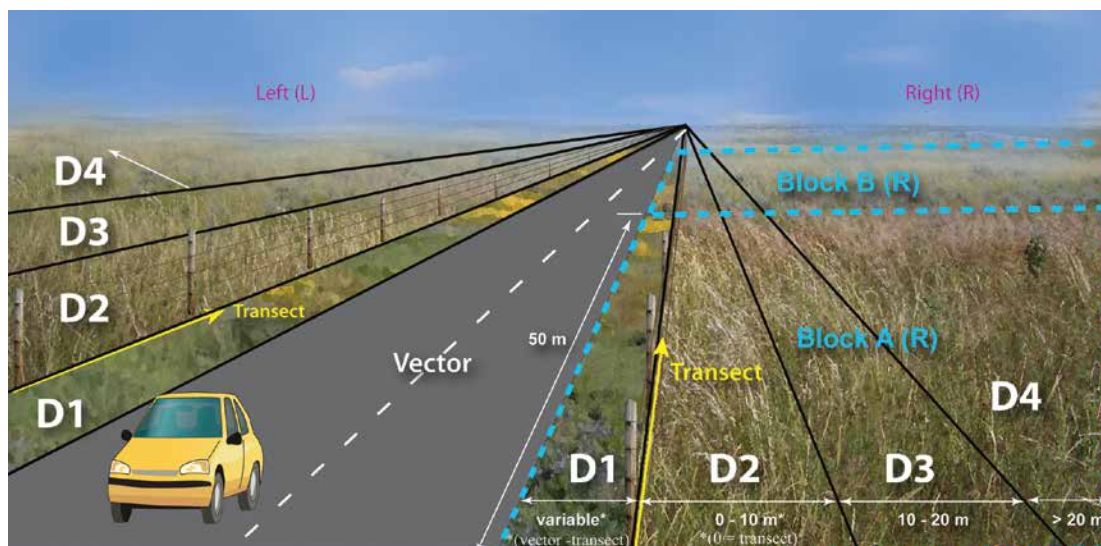


Figure 3. Layout of Vector Blocks and Distance Classes along a vector.

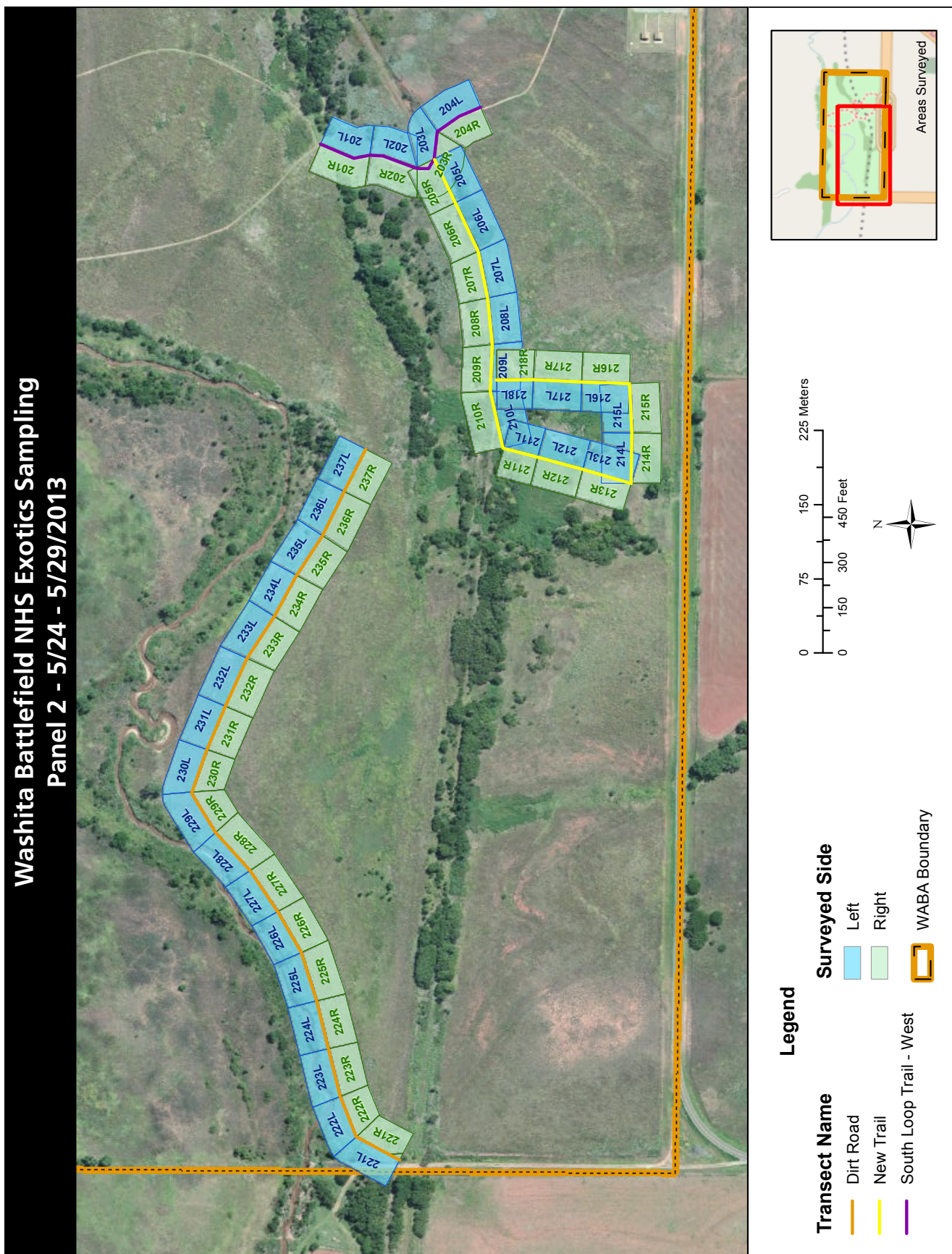


Figure 4. Panel 2 numbered vector blocks monitored at WABA in both 2010 and 2013.

Table 5 presents all exotic species detected during both exotic and grassland (secondary transects) monitoring in both years as well as the number and percentage of vector blocks (N=70) and transects (N=9)(Figure 5) in which these species were found. The effect of drought is easily seen.

Table 5. Number and percentage comparison of unit detections of exotic species found in repeated monitoring of vector blocks and permanent transects at WABA.

Scientific Name	Common Name	2010		2013		2010		2013	
		Primary Blocks (N=70)		Primary Blocks (N=70)		Secondary Transects (N=10)		Secondary Transects (N=9)	
		Total	% Blocks	Total	% Blocks	Total	% Blocks	Total	% Blocks
<i>Aegilops cylindrica</i>	jointed goat grass	–	–	2	3%	–	–	–	–
<i>Bothriochloa ischaemum</i>	kr bluestem	–	–	–	–	–	–	1	11%
<i>Bromus catharticus</i>	rescuegrass	–	–	8	11%	–	–	1	11%
<i>Bromus japonicus</i>	Japanese brome	68	97%	70	100%	5	50%	6	67%
<i>Bromus tectorum</i>	cheatgrass	58	83%	–	–	–	–	–	–
<i>Chenopodium album</i>	common lambsquarters	4	6%	–	–	–	–	–	–
<i>Cirsium vulgare</i>	bull thistle	33	47%	–	–	–	–	–	–
<i>Convolvulus arvensis</i>	field bindweed	–	–	–	–	2	20%	1	11%
<i>Cynodon dactylon</i>	Bermudagrass	2	3%	–	–	–	–	–	–
<i>Descurainia sophia</i>	flixweed	–	–	1	1%	–	–	–	–
<i>Erodium cicutarium</i>	redstem stork's bill	–	–	1	1%	–	–	–	–
<i>Euphorbia dentata</i>	toothed spurge	11	16%	–	–	1	10%	–	–
<i>Kochia scoparia</i>	kochia	47	67%	8	11%	1	10%	–	–
<i>Lactuca serriola</i>	prickly lettuce	3	4%	10	14%	–	–	2	22%
<i>Lolium perenne</i>	perennial ryegrass	1	1%	–	–	–	–	–	–
<i>Medicago lupulina</i>	black medic clover	1	1%	–	–	–	–	–	–
<i>Medicago minima</i>	burr medic clover	6	9%	9	13%	2	20%	–	–
<i>Melilotus officinalis</i>	yellow sweetclover	38	54%	1	1%	–	–	1	11%
<i>Rumex crispus</i>	curly dock	–	–	2	3%	–	–	–	–
<i>Salsola tragus</i>	prickly russian thistle	–	–	–	–	1	10%	–	–
<i>Sonchus asper</i>	spiny sowthistle	–	–	–	–	2	20%	–	–
<i>Sorghum halepense</i>	Johnsongrass	62	89%	46	66%	5	50%	3	33%
<i>Tamarix ramosissima</i>	saltcedar	3	4%	–	–	–	–	–	–
<i>Taraxacum officinale</i>	common dandelion	1	1%	1	1%	–	–	–	–
<i>Tragopogon dubius</i>	western salsify	34	49%	44	63%	–	–	3	33%
<i>Tribulus terrestris</i>	puncturevine	–	–	1	1%	–	–	–	–
<i>Ulmus pumila</i>	Siberian elm	26	37%	46	66%	6	60%	5	56%
<i>Urtica dioica</i>	stinging nettle	–	–	–	–	–	–	1	11%

Washita Battlefield NHS - Secondary Exotics 2010 vs. 2013

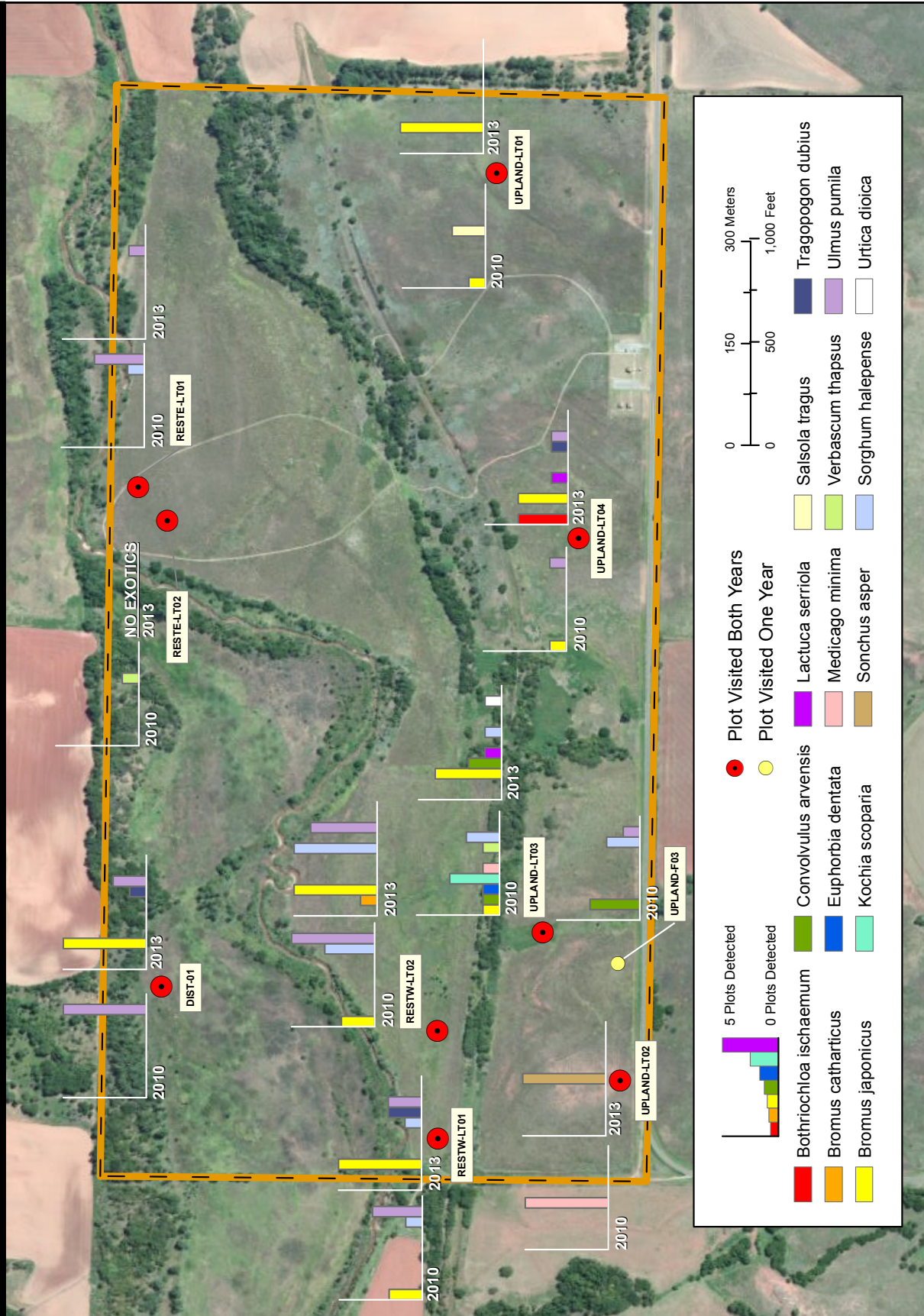


Figure 5. Comparison of exotics detected in 2010 and 2013 grassland monitoring permanent transects at WABA.

The density of a detection of any given exotic species informs us of the invasion stage of that area. A Density Code of 1 will point to either a new introduction in an area or a lack of suitable resources for that species to establish and spread. Conversely, a Density Code of 4 denotes a matrix of the exotic species that has successfully colonized the site and pushed out all native species. Table 6 is a comparison of the number of blocks containing that density in 2010 and 2013 in two Distance Classes. Distance Class 1 is from immediately along the vector to 2 meters into the landscape or the depth of the mowed verge (whichever is greater). Distance Class 2 is a constant 10 meters into the landscape beginning at the interior edge of Distance Class 1. This minimum depth of 12 meters will give the resource manager an idea of the ability of a given exotic species to invade into the interior of a landscape.

Table 6. A comparison of the number of blocks containing a given density in 2010 and 2013 in two Distance Classes.

Species Code	Scientific Name	Common Name	Density Code	Distance Class 1		Distance Class 2	
				2010	2013	2010	2013
AEGCYL	<i>Aegilops cylindrica</i>	jointed goat grass	1	-	1	-	-
			2	-	1	-	-
BROCAT	<i>Bromus catharticus</i>	rescue grass	1	-	2	-	-
			2	-	6	-	2
BROJAP	<i>Bromus japonicus</i>	Japanese brome	1	-	-	-	1
			2	53	67	50	60
			3	14	3	16	9
BROTEC	<i>Bromus tectorum</i>	cheatgrass	1	3	-	-	-
			2	31	-	36	-
			3	11	-	17	-
CHEALB	<i>Chenopodium album</i>	common lambsquarters	1	1	-	1	-
			2	1	-	3	-
CIRVUL	<i>Cirsium vulgare</i>	bull thistle	1	17	-	11	-
			2	6	-	14	-
CYNDAC	<i>Cynodon dactylon</i>	Bermudagrass	1	2	-	-	-
DESSOP	<i>Descurainia sophia</i>	flixweed	1	-	1	-	1
EROCIC	<i>Erodium cicutarium</i>	red stem storksbill	1	-	1	-	-
EUPDEN	<i>Euphorbia dentata</i>	toothed spurge	1	6	-	3	-
			2	1	-	4	-
KOCSCO	<i>Kochia scoparia</i>	kochia	1	13	-	4	-
			2	23	8	23	6
			3	-	-	4	-
			4	3	-	4	-
LACSER	<i>Lactuca serriola</i>	prickly lettuce	1	-	10	2	1
			2	-	-	1	-
LOLPER	<i>Lolium perenne</i>	perennial ryegrass	2	-	-	1	-
MEDLUP	<i>Medicago lupulina</i>	black medic clover	1	1	-	-	-
MEDMIN	<i>Medicago minima</i>	burr medic clover	1	-	3	-	-
			2	4	5	2	4
			3	2	1	1	-
MELOFF	<i>Melilotus officinalis</i>	yellow sweetclover	1	8	1	10	-
			2	13	-	22	-
			3	2	-	3	-

Density Code Key: 1 = one to five individual plants; 2 = scattered patches; 3 = evenly distributed patches; 4 = matrix; X = non-detect.

Table 6. A comparison of the number of blocks containing a given density in 2010 and 2013 in two Distance Classes (continued).

Species Code	Scientific Name	Common Name	Density Code	Distance Class 1		Distance Class 2	
				2010	2013	2010	2013
RUMCRI	<i>Rumex crispus</i>	curley dock	1	-	1	-	-
			2	-	-	-	1
SORHAL	<i>Sorghum halepense</i>	Johnsongrass	1	5	9	-	5
			2	38	29	41	34
			3	4	-	19	-
TAROFF	<i>Taraxacum officinale</i>	dandelion	1	1	1	-	-
TRADUB	<i>Tragopogon dubius</i>	western salsify	1	18	29	20	24
			2	2	3	9	7
ULMPUM	<i>Ulmus pumila</i>	Siberian elm	1	5	23	7	22
			2	7	8	17	19

Density Code Key: 1 = one to five individual plants; 2 = scattered patches; 3 = evenly distributed patches; 4 = matrix; X = non-detect.

Table 7 is included for the benefit of those resource managers with an active exotic management program. This table lists the specific species found in each vector block and the Density Code of that species in each Distance Class. The comparison of current detections to that those from 2010 underscores the current drought effect – the more herbaceous species have disappeared, while the drought tolerant exotics (ie: bindweed, kochia, prickly Russian thistle) appear and often have increased.

Table 7. Comparison of 2010 vs. 2013 detections for each individual Vector Block, detailing the given Density Code for each Distance Class.

Block	Scientific Name	Common Name	2010				2013			
			D1	D2	D3	D4	D1	D2	D3	D4
201L	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	2	0	0
	<i>Chenopodium album</i>	common lambsquarters	0	1	1	0				
	<i>Cynodon dactylon</i>	Bermudagrass	1	0	0	0				
	<i>Kochia scoparia</i>	kochia	2	0	2	2				
	<i>Melilotus officinalis</i>	yellow sweetclover	0	1	1	0				
	<i>Rumex crispus</i>	curly dock					1	0	0	0
	<i>Sorghum halepense</i>	Johnsongrass	0	2	2	0				
	<i>Taraxacum officinale</i>	common dandelion	1	0	0	0				
	<i>Tragopogon dubius</i>	western salsify	0	2	1	0	2	1	1	0
	<i>Ulmus pumila</i>	Siberian elm					1	1	1	0
201R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	3	3	0
	<i>Chenopodium album</i>	common lambsquarters	2	2	2	0				
	<i>Cynodon dactylon</i>	Bermudagrass	1	0	0	0				
	<i>Kochia scoparia</i>	kochia	2	1	0	0				
	<i>Medicago lupulina</i>	black medic clover	1	0	0	0				
	<i>Rumex crispus</i>	curly dock					0	2	0	0
	<i>Sorghum halepense</i>	Johnsongrass	0	2	2	2				
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0	1	2	1	0
	<i>Ulmus pumila</i>	Siberian elm					1	2	2	2
202L	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	3	3	3	3
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Euphorbia dentata</i>	toothed spurge	0	1	0	0				
	<i>Kochia scoparia</i>	kochia	1	2	0	0				
	<i>Lolium perenne</i>	perennial ryegrass	0	2	0	0				
	<i>Tragopogon dubius</i>	western salsify	1	1	0	0	1	1	0	0
202R	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	3	0	0
	<i>Bromus tectorum</i>	cheatgrass	1	2	2	0				
	<i>Euphorbia dentata</i>	toothed spurge	1	0	0	0				
	<i>Kochia scoparia</i>	kochia	2	0	0	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	0	0	1	0				
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0	1	1	0	0
	<i>Ulmus pumila</i>	Siberian elm					1	0	0	0
203L	<i>Bromus catharticus</i>	rescuegrass					2	0	0	0
	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	2	2	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				

Distance Class Key: D1 = edge of vector to 2 meters into the landscape (or inner edge of mow line); D2 = interior edge of D1 to 10 meters; D3 & D4 = each additional 10 meters into the landscape.

Density Code Key: 0 = no plants; 1 = 1–5 plants; 2 = scattered patches; 3 = even distributed patches; 4 = matrix; X = non-detect

Table 7. Comparison of 2010 vs. 2013 detections for each individual Vector Block, detailing the given Density Code for each Distance Class (continued).

Block	Scientific Name	Common Name	2010				2013			
			D1	D2	D3	D4	D1	D2	D3	D4
203L (cont.)	<i>Euphorbia dentata</i>	toothed spurge	1	1	0	0				
	<i>Kochia scoparia</i>	kochia	2	0	0	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	0	2	0	0				
	<i>Tragopogon dubius</i>	western salsify					0	1	0	0
203R	<i>Bromus catharticus</i>	rescuegrass					2	0	0	0
	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	3	3	2
	<i>Bromus tectorum</i>	cheatgrass	2	2	2	2				
	<i>Kochia scoparia</i>	kochia	2	2	0	0	2	0	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	2	2	3	2				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	2				
	<i>Tragopogon dubius</i>	western salsify					1	0	0	0
	<i>Ulmus pumila</i>	Siberian elm					1	1	1	0
204L	<i>Bromus catharticus</i>	rescuegrass					2	0	0	0
	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Cirsium vulgare</i>	bull thistle	0	2	0	2				
	<i>Melilotus officinalis</i>	yellow sweetclover	2	3	2	2	1	0	0	0
	<i>Tragopogon dubius</i>	western salsify					0	1	0	0
204R	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	2	0	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Kochia scoparia</i>	kochia	1	0	0	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	3	3	3	3				
	<i>Tragopogon dubius</i>	western salsify					0	1	0	0
205L	<i>Bromus japonicus</i>	Japanese brome	2	0	0	0	2	2	2	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Cirsium vulgare</i>	bull thistle	2	0	0	0				
	<i>Kochia scoparia</i>	kochia	0	2	0	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	2	2	3	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	0	2	2	0	0
	<i>Tragopogon dubius</i>	western salsify	1	1	0	0	1	1	1	0
205R	<i>Bromus japonicus</i>	Japanese brome	2	2	0	X	2	3	3	2
	<i>Bromus tectorum</i>	cheatgrass	0	2	2	X				
	<i>Euphorbia dentata</i>	toothed spurge	1	0	0	X				
	<i>Kochia scoparia</i>	kochia	1	0	0	X				
	<i>Melilotus officinalis</i>	yellow sweetclover	2	2	0	X				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	0	X	2	2	0	0
	<i>Taraxacum officinale</i>	common dandelion					1	0	0	0
	<i>Ulmus pumila</i>	Siberian elm					0	0	1	0
206L	<i>Bromus japonicus</i>	Japanese brome	2	2	X	X	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	2	2	X	X				
	<i>Euphorbia dentata</i>	toothed spurge	1	0	X	X				

Distance Class Key: D1 = edge of vector to 2 meters into the landscape (or inner edge of mow line); D2 = interior edge of D1 to 10 meters; D3 & D4 = each additional 10 meters into the landscape.

Density Code Key: 0 = no plants; 1 = 1–5 plants; 2 = scattered patches; 3 = even distributed patches; 4 = matrix; X = non-detect

Table 7. Comparison of 2010 vs. 2013 detections for each individual Vector Block, detailing the given Density Code for each Distance Class (continued).

Block	Scientific Name	Common Name	2010				2013			
			D1	D2	D3	D4	D1	D2	D3	D4
206L (cont.)	<i>Lactuca serriola</i>	prickly lettuce					1	1	0	0
	<i>Sorghum halepense</i>	Johnsongrass	2	3	X	X	2	2	0	0
	<i>Tragopogon dubius</i>	western salsify	1	0	X	X	1	1	0	0
206R	<i>Bromus japonicus</i>	Japanese brome	2	2	0	X	2	2	3	2
	<i>Erodium cicutarium</i>	redstem stork's bill					1	0	0	0
	<i>Kochia scoparia</i>	kochia	2	0	0	X				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	X	2	2	0	0
	<i>Tragopogon dubius</i>	western salsify					1	0	0	0
	<i>Ulmus pumila</i>	Siberian elm					1	1	0	0
207L	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	2	2	0
	<i>Bromus tectorum</i>	cheatgrass	0	0	2	0				
	<i>Cirsium vulgare</i>	bull thistle	1	2	0	0				
	<i>Kochia scoparia</i>	kochia	2	0	0	0				
	<i>Lactuca serriola</i>	prickly lettuce	0	1	0	0				
	<i>Medicago minima</i>	burr medic clover					1	0	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	2	2	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	2	2	2	0	0
	<i>Tamarix ramosissima</i>	saltcedar	0	0	0	2				
	<i>Tragopogon dubius</i>	western salsify	1	2	0	0	1	1	0	0
207R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	2	3	3
	<i>Bromus tectorum</i>	cheatgrass	0	0	2	2				
	<i>Cirsium vulgare</i>	bull thistle	1	0	0	0				
	<i>Kochia scoparia</i>	kochia	0	2	0	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	1	0	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	0	0	2	2	0	0
	<i>Ulmus pumila</i>	Siberian elm					1	1	0	0
208L	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	0	3	3	0				
	<i>Cirsium vulgare</i>	bull thistle	1	1	0	0				
	<i>Kochia scoparia</i>	kochia	1	1	0	0				
	<i>Lactuca serriola</i>	prickly lettuce	0	1	0	0				
	<i>Medicago minima</i>	burr medic clover	2	0	0	0	2	0	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	2	2	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	3	3	3	3	0	2	0	0
	<i>Tamarix ramosissima</i>	saltcedar	0	0	2	2				
	<i>Tragopogon dubius</i>	western salsify	2	2	0	0	1	1	0	0
208R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	2	3	3
	<i>Bromus tectorum</i>	cheatgrass	0	2	0	2				
	<i>Cirsium vulgare</i>	bull thistle	2	0	0	0				
	<i>Kochia scoparia</i>	kochia	2	3	0	0				
	<i>Lactuca serriola</i>	prickly lettuce	0	2	0	0				
	<i>Medicago minima</i>	burr medic clover	2	0	0	0				

Distance Class Key: D1 = edge of vector to 2 meters into the landscape (or inner edge of mow line); D2 = interior edge of D1 to 10 meters; D3 & D4 = each additional 10 meters into the landscape.

Density Code Key: 0 = no plants; 1 = 1–5 plants; 2 = scattered patches; 3 = even distributed patches; 4 = matrix; X = non–detect

Table 7. Comparison of 2010 vs. 2013 detections for each individual Vector Block, detailing the given Density Code for each Distance Class (continued).

Block	Scientific Name	Common Name	2010				2013			
			D1	D2	D3	D4	D1	D2	D3	D4
208R (cont.)	<i>Melilotus officinalis</i>	yellow sweetclover	2	0	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	0	0	2	2	0	0
	<i>Tragopogon dubius</i>	western salsify	1	1	0	0	0	1	0	0
209L	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	1	2	3	3				
	<i>Cirsium vulgare</i>	bull thistle	2	0	0	0				
	<i>Kochia scoparia</i>	kochia	1	2	3	3				
	<i>Medicago minima</i>	burr medic clover	2	0	0	0	2	0	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	2	2	3	2				
	<i>Sorghum halepense</i>	Johnsongrass	3	3	3	3	0	2	0	0
	<i>Tragopogon dubius</i>	western salsify	1	2	0	0	1	1	0	0
209R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	3	3	3
	<i>Bromus tectorum</i>	cheatgrass	0	2	0	0				
	<i>Cirsium vulgare</i>	bull thistle	1	0	0	0				
	<i>Euphorbia dentata</i>	toothed spurge	1	0	0	0				
	<i>Kochia scoparia</i>	kochia	1	3	0	0				
	<i>Medicago minima</i>	burr medic clover					1	0	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	2	2	2	2				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	2	2	2	0	0
210L	<i>Tragopogon dubius</i>	western salsify	1	0	0	0				
	<i>Bromus japonicus</i>	Japanese brome	2	2	0	X	2	2	3	3
	<i>Bromus tectorum</i>	cheatgrass	2	3	3	X				
	<i>Kochia scoparia</i>	kochia	0	2	2	X				
	<i>Sorghum halepense</i>	Johnsongrass	3	3	0	X				
210R	<i>Tragopogon dubius</i>	western salsify	1	0	0	X				
	<i>Bromus japonicus</i>	Japanese brome	2	2	2	2	2	2	3	3
	<i>Bromus tectorum</i>	cheatgrass	3	3	3	3				
	<i>Cirsium vulgare</i>	bull thistle	1	0	X	X				
	<i>Kochia scoparia</i>	kochia					2	0	0	0
211L	<i>Sorghum halepense</i>	Johnsongrass	2	2	X	X				
	<i>Bromus catharticus</i>	rescuegrass					2	2	0	0
	<i>Bromus japonicus</i>	Japanese brome	3	3	3	3	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	3	3	3	3				
	<i>Euphorbia dentata</i>	toothed spurge	0	1	0	0				
	<i>Kochia scoparia</i>	kochia	2	4	4	4	2	2	2	0
211R	<i>Tragopogon dubius</i>	western salsify					0	1	0	0
	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	3	3	3	3
	<i>Bromus tectorum</i>	cheatgrass	2	3	3	0				
	<i>Chenopodium album</i>	common lambsquarters	0	2	0	0				
	<i>Kochia scoparia</i>	kochia	4	4	4	4	2	2	2	0
	<i>Sorghum halepense</i>	Johnsongrass	0	2	0	0	1	0	0	0
	<i>Tragopogon dubius</i>	western salsify					0	1	0	0

Distance Class Key: D1 = edge of vector to 2 meters into the landscape (or inner edge of mow line); D2 = interior edge of D1 to 10 meters; D3 & D4 = each additional 10 meters into the landscape.

Density Code Key: 0 = no plants; 1 = 1–5 plants; 2 = scattered patches; 3 = even distributed patches; 4 = matrix; X = non-detect

Table 7. Comparison of 2010 vs. 2013 detections for each individual Vector Block, detailing the given Density Code for each Distance Class (continued).

Block	Scientific Name	Common Name	2010				2013			
			D1	D2	D3	D4	D1	D2	D3	D4
212L	<i>Bromus japonicus</i>	Japanese brome	0	0	3	3	2	2	3	3
	<i>Bromus tectorum</i>	cheatgrass	0	0	3	3				
	<i>Kochia scoparia</i>	kochia	4	4	4	3	2	2	0	0
	<i>Medicago minima</i>	burr medic clover					2	0	0	0
	<i>Tragopogon dubius</i>	western salsify					1	0	0	0
212R	<i>Bromus japonicus</i>	Japanese brome					2	2	3	3
	<i>Kochia scoparia</i>	kochia	4	4	4	4	2	2	2	0
	<i>Tragopogon dubius</i>	western salsify					0	1	0	0
213L	<i>Bromus japonicus</i>	Japanese brome	3	3	3	3	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	3	3	3	3				
	<i>Cirsium vulgare</i>	bull thistle	0	2	2	0				
	<i>Kochia scoparia</i>	kochia	0	2	3	0				
	<i>Medicago minima</i>	burr medic clover	3	2	0	0	3	2	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	1	1	0				
	<i>Sorghum halepense</i>	Johnsongrass	0	2	2	2	0	0	2	0
	<i>Tragopogon dubius</i>	western salsify	2	2	2	0	1	2	2	0
213R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	2	2	2	3	3
	<i>Bromus tectorum</i>	cheatgrass	2	2	3	2				
	<i>Cirsium vulgare</i>	bull thistle	1	1	0	0				
	<i>Kochia scoparia</i>	kochia	2	2	2	2				
	<i>Medicago minima</i>	burr medic clover	3	3	3	0	2	2	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	3	2				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	0	0				
	<i>Tragopogon dubius</i>	western salsify	0	2	0	0	0	1	0	0
214L	<i>Bromus japonicus</i>	Japanese brome	3	3	3	0	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	0	2	3	0				
	<i>Cirsium vulgare</i>	bull thistle	2	2	2	0				
	<i>Kochia scoparia</i>	kochia	0	2	0	3				
	<i>Medicago minima</i>	burr medic clover					2	2	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	1	1	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	3	3	3	2	2	1	0
	<i>Tragopogon dubius</i>	western salsify	1	2	0	0	2	0	0	0
214R	<i>Bromus japonicus</i>	Japanese brome	3	3	3	X	2	3	3	2
	<i>Bromus tectorum</i>	cheatgrass	3	3	3	X				
	<i>Cirsium vulgare</i>	bull thistle	0	1	0	X				
	<i>Kochia scoparia</i>	kochia	0	0	2	X				
	<i>Lactuca serriola</i>	prickly lettuce					1	0	0	0
	<i>Medicago minima</i>	burr medic clover	2	2	0	X	1	2	0	0
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	X	2	2	0	0
	<i>Tragopogon dubius</i>	western salsify	0	1	0	X	1	1	0	0
215L	<i>Bromus japonicus</i>	Japanese brome	3	3	3	3	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	3	3	2	2				
	<i>Cirsium vulgare</i>	bull thistle	1	2	2	0				

Distance Class Key: D1 = edge of vector to 2 meters into the landscape (or inner edge of mow line); D2 = interior edge of D1 to 10 meters; D3 & D4 = each additional 10 meters into the landscape.

Density Code Key: 0 = no plants; 1 = 1–5 plants; 2 = scattered patches; 3 = even distributed patches; 4 = matrix; X = non-detect

Table 7. Comparison of 2010 vs. 2013 detections for each individual Vector Block, detailing the given Density Code for each Distance Class (continued).

Block	Scientific Name	Common Name	2010				2013			
			D1	D2	D3	D4	D1	D2	D3	D4
215L (cont.)	<i>Euphorbia dentata</i>	toothed spurge	2	2	2	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	1	2	2	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	3	3	3	2	2	0	0
	<i>Tragopogon dubius</i>	western salsify					1	1	1	0
	<i>Ulmus pumila</i>	Siberian elm					0	1	1	1
215R	<i>Bromus japonicus</i>	Japanese brome	3	3	3	X	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	2	2	2	X				
	<i>Cirsium vulgare</i>	bull thistle	1	2	0	X				
	<i>Euphorbia dentata</i>	toothed spurge	0	2	0	X				
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	2	X				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	X	1	2	0	0
	<i>Tragopogon dubius</i>	western salsify					1	1	0	0
	<i>Ulmus pumila</i>	Siberian elm					1	2	2	0
216L	<i>Bromus japonicus</i>	Japanese brome	2	3	3	3	2	2	0	0
	<i>Bromus tectorum</i>	cheatgrass	0	0	3	2				
	<i>Cirsium vulgare</i>	bull thistle	2	2	0	0				
	<i>Kochia scoparia</i>	kochia	2	2	3	4				
	<i>Melilotus officinalis</i>	yellow sweetclover	1	2	2	0				
	<i>Sorghum halepense</i>	Johnsongrass	0	3	3	3	2	2	2	0
	<i>Tragopogon dubius</i>	western salsify					1	2	1	0
	<i>Ulmus pumila</i>	Siberian elm					0	1	1	1
216R	<i>Bromus japonicus</i>	Japanese brome	3	3	3	3	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	3	3	3	3				
	<i>Melilotus officinalis</i>	yellow sweetclover	1	2	2	1				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	2	2	0	2	2
	<i>Tragopogon dubius</i>	western salsify					0	2	2	0
	<i>Ulmus pumila</i>	Siberian elm	2	2	2	2	1	2	2	2
217L	<i>Bromus japonicus</i>	Japanese brome	3	3	3	3	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	2	3	3	2				
	<i>Kochia scoparia</i>	kochia	0	2	3	4				
	<i>Melilotus officinalis</i>	yellow sweetclover	3	3	3	0				
	<i>Sorghum halepense</i>	Johnsongrass	3	3	3	3	0	0	0	2
	<i>Tragopogon dubius</i>	western salsify					1	1	1	0
	<i>Ulmus pumila</i>	Siberian elm					0	1	1	0
217R	<i>Bromus japonicus</i>	Japanese brome	3	3	3	3	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	3	3	3	3				
	<i>Melilotus officinalis</i>	yellow sweetclover	2	2	2	2				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	2	1	2	2	2
	<i>Tragopogon dubius</i>	western salsify					1	2	2	0
	<i>Ulmus pumila</i>	Siberian elm	2	2	2	2	1	2	2	2
218L	<i>Bromus japonicus</i>	Japanese brome	3	3	X	X	3	3	3	3
	<i>Bromus tectorum</i>	cheatgrass	3	3	X	X				

Distance Class Key: D1 = edge of vector to 2 meters into the landscape (or inner edge of mow line); D2 = interior edge of D1 to 10 meters; D3 & D4 = each additional 10 meters into the landscape.

Density Code Key: 0 = no plants; 1 = 1–5 plants; 2 = scattered patches; 3 = even distributed patches; 4 = matrix; X = non-detect

Table 7. Comparison of 2010 vs. 2013 detections for each individual Vector Block, detailing the given Density Code for each Distance Class (continued).

Block	Scientific Name	Common Name	2010				2013			
			D1	D2	D3	D4	D1	D2	D3	D4
218L (cont.)	<i>Kochia scoparia</i>	kochia	1	2	X	X				
	<i>Sorghum halepense</i>	Johnsongrass	2	3	X	X				
	<i>Tragopogon dubius</i>	western salsify					0	1	0	0
	<i>Ulmus pumila</i>	Siberian elm					0	1	0	0
218R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	1	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	2	2	2	2				
	<i>Melilotus officinalis</i>	yellow sweetclover	1	2	1	1				
	<i>Sorghum halepense</i>	Johnsongrass	1	2	2	2	1	2	1	1
	<i>Tragopogon dubius</i>	western salsify					1	1	0	0
	<i>Ulmus pumila</i>	Siberian elm	2	2	2	2	1	2	1	1
221L	<i>Aegilops cylindrica</i>	jointed goat grass					1	0	0	0
	<i>Bromus catharticus</i>	rescuegrass					1	0	0	0
	<i>Bromus japonicus</i>	Japanese brome	3	3	3	0	2	2	2	0
	<i>Bromus tectorum</i>	cheatgrass	3	3	3	3				
	<i>Kochia scoparia</i>	kochia	2	3	0	0	2	2	2	0
	<i>Sorghum halepense</i>	Johnsongrass	2	2	3	3	2	2	2	0
221R	<i>Aegilops cylindrica</i>	jointed goat grass					2	0	0	0
	<i>Bromus catharticus</i>	rescuegrass					2	2	0	0
	<i>Bromus japonicus</i>	Japanese brome	3	3	2	2	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	3	3	2	2				
	<i>Descurainia sophia</i>	flixweed					1	1	0	0
	<i>Kochia scoparia</i>	kochia	2	2	2	0	2	2	0	0
	<i>Lactuca serriola</i>	prickly lettuce					1	0	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	1	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	1	2	2	2	1	2	2	2
	<i>Tragopogon dubius</i>	western salsify	0	2	0	0	0	1	0	0
	<i>Ulmus pumila</i>	Siberian elm					0	1	2	2
222L	<i>Bromus japonicus</i>	Japanese brome	3	3	3	0	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	3	3	3	3				
	<i>Cirsium vulgare</i>	bull thistle	1	1	0	0				
	<i>Kochia scoparia</i>	kochia	2	3	3	0				
	<i>Lactuca serriola</i>	prickly lettuce					1	0	0	0
	<i>Sorghum halepense</i>	Johnsongrass	2	3	3	0	2	2	2	0
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0	1	0	0	0
	<i>Ulmus pumila</i>	Siberian elm	0	1	1	0	1	1	0	0
222R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	2	2	2	0	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	2	2				
	<i>Cirsium vulgare</i>	bull thistle	0	1	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	2	1	2	2	2
	<i>Tragopogon dubius</i>	western salsify	1	1	0	0	1	0	0	0
	<i>Ulmus pumila</i>	Siberian elm					1	2	2	1
223L	<i>Bromus japonicus</i>	Japanese brome	2	2	2	2	2	2	2	X

Distance Class Key: D1 = edge of vector to 2 meters into the landscape (or inner edge of mow line); D2 = interior edge of D1 to 10 meters; D3 & D4 = each additional 10 meters into the landscape.

Density Code Key: 0 = no plants; 1 = 1–5 plants; 2 = scattered patches; 3 = even distributed patches; 4 = matrix; X = non-detect

Table 7. Comparison of 2010 vs. 2013 detections for each individual Vector Block, detailing the given Density Code for each Distance Class (continued).

Block	Scientific Name	Common Name	2010				2013			
			D1	D2	D3	D4	D1	D2	D3	D4
223L (cont.)	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Euphorbia dentata</i>	toothed spurge	1	2	0	0				
	<i>Kochia scoparia</i>	kochia	2	2	0	0				
	<i>Lactuca serriola</i>	prickly lettuce					1	0	0	X
	<i>Sorghum halepense</i>	Johnsongrass	0	3	3	0	2	2	2	X
	<i>Tragopogon dubius</i>	western salsify					1	0	0	X
	<i>Ulmus pumila</i>	Siberian elm	0	2	0	0	1	1	0	X
223R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	2	0	0
	<i>Bromus tectorum</i>	cheatgrass	0	2	0	0				
	<i>Cirsium vulgare</i>	bull thistle	0	0	2	0				
	<i>Kochia scoparia</i>	kochia	2	2	0	0				
	<i>Lactuca serriola</i>	prickly lettuce					1	0	0	0
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	2	2	2	2	2
	<i>Ulmus pumila</i>	Siberian elm	0	0	0	1	2	2	2	2
224L	<i>Bromus japonicus</i>	Japanese brome	2	3	3	0	2	2	2	X
	<i>Bromus tectorum</i>	cheatgrass	2	3	3	0				
	<i>Euphorbia dentata</i>	toothed spurge	0	2	0	0				
	<i>Kochia scoparia</i>	kochia	1	2	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	0	3	3	0	2	2	2	X
	<i>Tragopogon dubius</i>	western salsify	1	1	0	0	1	0	0	X
	<i>Ulmus pumila</i>	Siberian elm	0	1	1	0	2	1	0	X
224R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	2	0	0
	<i>Bromus tectorum</i>	cheatgrass	2	0	0	0				
	<i>Cirsium vulgare</i>	bull thistle	0	2	0	0				
	<i>Kochia scoparia</i>	kochia	2	2	0	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	0	1	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	1	2	2	2	2	2	2	2
	<i>Tragopogon dubius</i>	western salsify	1	0	0	0				
	<i>Ulmus pumila</i>	Siberian elm	1	1	0	1	2	2	2	2
225L	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	2	0	X
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Cirsium vulgare</i>	bull thistle	1	2	0	0				
	<i>Kochia scoparia</i>	kochia	2	0	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	3	3	3	2	2	2	X
	<i>Ulmus pumila</i>	Siberian elm	0	2	2	0	1	1	0	X
225R	<i>Bromus japonicus</i>	Japanese brome	3	3	2	0	2	2	0	0
	<i>Bromus tectorum</i>	cheatgrass	0	2	2	0				
	<i>Cirsium vulgare</i>	bull thistle	1	2	0	0				
	<i>Kochia scoparia</i>	kochia	1	2	0	0				
	<i>Lactuca serriola</i>	prickly lettuce					1	0	0	0
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	2	2	2	2	2
	<i>Ulmus pumila</i>	Siberian elm	0	2	0	0	2	2	2	2

Distance Class Key: D1 = edge of vector to 2 meters into the landscape (or inner edge of mow line); D2 = interior edge of D1 to 10 meters; D3 & D4 = each additional 10 meters into the landscape.

Density Code Key: 0 = no plants; 1 = 1–5 plants; 2 = scattered patches; 3 = even distributed patches; 4 = matrix; X = non-detect

Table 7. Comparison of 2010 vs. 2013 detections for each individual Vector Block, detailing the given Density Code for each Distance Class (continued).

Block	Scientific Name	Common Name	2010				2013			
			D1	D2	D3	D4	D1	D2	D3	D4
226L	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	2	2	X
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Cirsium vulgare</i>	bull thistle	1	1	0	0				
	<i>Kochia scoparia</i>	kochia	1	0	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	3	3	3	2	2	2	X
	<i>Tragopogon dubius</i>	western salsify					1	0	0	X
	<i>Ulmus pumila</i>	Siberian elm	2	2	2	0	0	0	1	0
226R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	2	0	0
	<i>Bromus tectorum</i>	cheatgrass	0	2	0	0				
	<i>Cirsium vulgare</i>	bull thistle	0	0	1	0				
	<i>Kochia scoparia</i>	kochia	2	2	2	2				
	<i>Lactuca serriola</i>	prickly lettuce					1	0	0	0
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	2	2	2	2	2
	<i>Ulmus pumila</i>	Siberian elm	1	2	2	2	1	2	2	1
227L	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	2	2	X
	<i>Cirsium vulgare</i>	bull thistle	1	1	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	0	2	3	3				
	<i>Ulmus pumila</i>	Siberian elm	2	2	2	0	2	1	1	X
227R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	2	0	0
	<i>Cirsium vulgare</i>	bull thistle	0	1	0	0				
	<i>Lactuca serriola</i>	prickly lettuce					1	0	0	0
	<i>Sorghum halepense</i>	Johnsongrass	0	2	2	0	1	1	0	1
	<i>Ulmus pumila</i>	Siberian elm	0	2	0	1	1	2	2	1
228L	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	2	2	X
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Cirsium vulgare</i>	bull thistle	1	2	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	0	3	3	0	2	2	0	X
	<i>Ulmus pumila</i>	Siberian elm	2	2	2	0	0	1	0	X
228R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	2	2	1	0	0
	<i>Cirsium vulgare</i>	bull thistle	1	1	0	0				
	<i>Kochia scoparia</i>	kochia	1	0	1	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	0	1	1	0	0
	<i>Tragopogon dubius</i>	western salsify					1	0	0	0
	<i>Ulmus pumila</i>	Siberian elm	1	1	0	0	1	1	2	2
229L	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	2	2	0
	<i>Bromus tectorum</i>	cheatgrass	0	2	2	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	3	3	2	2	0	0	0
	<i>Ulmus pumila</i>	Siberian elm	0	2	2	0	1	1	1	1
229R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	2	2	2	2	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	1	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	2	1	1	0	0
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0	1	0	0	0
	<i>Ulmus pumila</i>	Siberian elm	0	1	0	0	2	2	2	1

Distance Class Key: D1 = edge of vector to 2 meters into the landscape (or inner edge of mow line); D2 = interior edge of D1 to 10 meters; D3 & D4 = each additional 10 meters into the landscape.

Density Code Key: 0 = no plants; 1 = 1–5 plants; 2 = scattered patches; 3 = even distributed patches; 4 = matrix; X = non-detect

Table 7. Comparison of 2010 vs. 2013 detections for each individual Vector Block, detailing the given Density Code for each Distance Class (continued).

Block	Scientific Name	Common Name	2010				2013			
			D1	D2	D3	D4	D1	D2	D3	D4
230L	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	1	2	2	0				
	<i>Sorghum halepense</i>	Johnsongrass	0	0	3	3				
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
	<i>Ulmus pumila</i>	Siberian elm	0	2	2	0	0	1	1	1
230R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	2	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	2	2	2	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	2	0				
	<i>Ulmus pumila</i>	Siberian elm	0	1	0	0	1	2	2	0
231L	<i>Bromus japonicus</i>	Japanese brome					2	2	2	2
	<i>Melilotus officinalis</i>	yellow sweetclover	1	2	2	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	3	3				
	<i>Tamarix ramosissima</i>	saltcedar	0	0	0	1				
	<i>Ulmus pumila</i>	Siberian elm	0	2	2	2	0	1	1	1
231R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	2	2	2	0	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	2	2	2	2				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	0	0				
	<i>Tragopogon dubius</i>	western salsify	0	1	1	0				
	<i>Ulmus pumila</i>	Siberian elm					0	2	2	2
232L	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	2	2	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Kochia scoparia</i>	kochia	1	2	0	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	0	1	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	1	2	3	3	0	0	0	2
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
	<i>Ulmus pumila</i>	Siberian elm	0	2	3	0	0	0	1	1
232R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	2	2	2	0	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Cirsium vulgare</i>	bull thistle	0	1	0	0				
	<i>Kochia scoparia</i>	kochia	2	2	0	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	0	1	1	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	3	2	0	0	1	0	0
	<i>Tragopogon dubius</i>	western salsify	0	1	1	1				
	<i>Ulmus pumila</i>	Siberian elm					0	2	2	2
233L	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	2	2	0
	<i>Cirsium vulgare</i>	bull thistle	2	2	0	0				
	<i>Kochia scoparia</i>	kochia	1	1	0	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	1	1	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	3	3	0	0	0	2
	<i>Tragopogon dubius</i>	western salsify	1	1	0	0				
	<i>Ulmus pumila</i>	Siberian elm					0	1	1	1

Distance Class Key: D1 = edge of vector to 2 meters into the landscape (or inner edge of mow line); D2 = interior edge of D1 to 10 meters; D3 & D4 = each additional 10 meters into the landscape.

Density Code Key: 0 = no plants; 1 = 1–5 plants; 2 = scattered patches; 3 = even distributed patches; 4 = matrix; X = non-detect

Table 7. Comparison of 2010 vs. 2013 detections for each individual Vector Block, detailing the given Density Code for each Distance Class (continued).

Block	Scientific Name	Common Name	2010				2013			
			D1	D2	D3	D4	D1	D2	D3	D4
233R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	2	2	2	0	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Cirsium vulgare</i>	bull thistle	1	2	0	0				
	<i>Kochia scoparia</i>	kochia	2	2	0	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	0	0				
	<i>Tragopogon dubius</i>	western salsify	1	1	0	0				
	<i>Ulmus pumila</i>	Siberian elm	1	1	2	1	1	2	2	2
234L	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	2	2	0
	<i>Cirsium vulgare</i>	bull thistle	1	2	0	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	2	2	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	0	0	3	3				
	<i>Tragopogon dubius</i>	western salsify	1	1	0	0	1	0	0	0
	<i>Ulmus pumila</i>	Siberian elm	1	2	2	0	1	1	1	0
234R	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	2	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	2	2	2	2				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	0	2				
	<i>Tragopogon dubius</i>	western salsify	1	2	0	0	2	2	1	0
	<i>Ulmus pumila</i>	Siberian elm	0	0	1	0	1	2	2	2
235L	<i>Bromus catharticus</i>	rescuegrass					1	0	0	0
	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	2	2	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	3	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	0	1	1	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	0	0	2	0	0
	<i>Tragopogon dubius</i>	western salsify	1	0	0	0	0	1	0	0
235R	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	2	2	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Lactuca serriola</i>	prickly lettuce					1	0	0	0
	<i>Sorghum halepense</i>	Johnsongrass	2	2	2	2				
	<i>Tragopogon dubius</i>	western salsify	1	1	1	0	1	2	1	0
	<i>Tribulus terrestris</i>	puncturevine					0	0	1	2
236L	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	2	2	2
	<i>Bromus tectorum</i>	cheatgrass	2	2	2	0				
	<i>Cirsium vulgare</i>	bull thistle	0	1	0	0				
	<i>Kochia scoparia</i>	kochia	2	0	0	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	0	3	3	0	2	2	0	0
	<i>Ulmus pumila</i>	Siberian elm					1	0	0	0
236R	<i>Bromus catharticus</i>	rescuegrass					2	0	0	0
	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	2	0	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Kochia scoparia</i>	kochia	2	2	0	0				

Distance Class Key: D1 = edge of vector to 2 meters into the landscape (or inner edge of mow line); D2 = interior edge of D1 to 10 meters; D3 & D4 = each additional 10 meters into the landscape.

Density Code Key: 0 = no plants; 1 = 1–5 plants; 2 = scattered patches; 3 = even distributed patches; 4 = matrix; X = non-detect

Table 7. Comparison of 2010 vs. 2013 detections for each individual Vector Block, detailing the given Density Code for each Distance Class (continued).

Block	Scientific Name	Common Name	2010				2013			
			D1	D2	D3	D4	D1	D2	D3	D4
236R (cont.)	<i>Sorghum halepense</i>	Johnsongrass	1	2	2	2	2	1	0	0
	<i>Tragopogon dubius</i>	western salsify					1	0	0	0
	<i>Ulmus pumila</i>	Siberian elm					0	1	1	2
237L	<i>Bromus japonicus</i>	Japanese brome	2	2	2	0	2	2	3	3
	<i>Bromus tectorum</i>	cheatgrass	2	3	3	0				
	<i>Sorghum halepense</i>	Johnsongrass	2	3	3	3	2	2	0	0
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
	<i>Ulmus pumila</i>	Siberian elm	2	2	2	0	2	2	0	0
237R	<i>Bromus japonicus</i>	Japanese brome	2	2	0	0	2	2	0	3
	<i>Bromus tectorum</i>	cheatgrass	2	2	2	2				
	<i>Chenopodium album</i>	common lambsquarters	1	2	0	0				
	<i>Kochia scoparia</i>	kochia	0	1	0	0				
	<i>Sorghum halepense</i>	Johnsongrass	0	2	2	2	2	2	0	0
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
	<i>Ulmus pumila</i>	Siberian elm					2	2	2	2

Distance Class Key: D1 = edge of vector to 2 meters into the landscape (or inner edge of mow line); D2 = interior edge of D1 to 10 meters; D3 & D4 = each additional 10 meters into the landscape.

Density Code Key: 0 = no plants; 1 = 1–5 plants; 2 = scattered patches; 3 = even distributed patches; 4 = matrix; X = non-detect

Literature Cited

Folts–Zettner, T., R. Gatewood, R. Bennetts and K. Cherwin No date. Grassland monitoring protocol and standard operating procedures for the Southern Plains I&M Network and Fire Group. Natural Resource Technical Report. National Park Service, Fort Collins, Colorado. In review.

Folts–Zettner, T., R. Bennetts, K. Gallo, S. Studd, M. Powell, K. Beaupre, and H. Sosinski. 2013. Multi–Network Exotic Plant Monitoring Protocol and Standard Operating Procedures : A collaboration among the Southern Plains, Chihuahuan Desert and Sonoran Desert Networks Natural Resource Technical Report NPS/SOPN/NRTR—2013/XXX. National Park Service, Fort Collins, Colorado.

National Park Service
U.S. Department of the Interior



Southern Plains Inventory and Monitoring Network

100 Ladybird Lane (physical)

P.O. Box 329 (mailing)

Johnson City, TX 78636

<http://science.nature.nps.gov/im/units/sopn/index.cfm>