



Bent's Old Fort National Historic Site

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



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ON THE COVER

View of Bent's Old Fort through a cottonwood grove. NPS Photo.

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Introduction

This report contains a data summary of results from all vegetation monitoring conducted by Southern Plains Network (SOPN) and the Southern Plains Fire Group (SPFG) during 2013 at Bent's Old Fort National Historic Site (BEOL). 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 July of 2013 (Table 1). Data from the thirteen (13) 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 Bent's Old Fort NHS in 2013.

Group	Transect	Plant community	Date
Cottonwood	CWOOD-03	<i>Populus deltoides</i> Temporarily Flooded Woodland Alliance	07/05
	CWOOD-LT01	<i>Populus deltoides</i> Temporarily Flooded Woodland Alliance	07/06
	CWOOD-LT02	<i>Populus deltoides</i> Temporarily Flooded Woodland Alliance	07/07
	CWSALT-LT01	<i>Populus deltoides</i> / <i>Distichlis spicata</i> Woodland	07/04
Restoration	RESTE-LT01	<i>Sporobolus airoides</i> - <i>Distichlis spicata</i> Herbaceous	07/06
	RESTN-LT01	Reclaimed Agricultural Land	07/04
	RESTS-LT01	Blacktailed Prairie Dog Town Complex	07/05
Upland	BOUT-LT01	<i>Artemisia filifolia</i> / <i>Bouteloua (curtipendula, gracilis)</i> Shrubland	07/05
	BOUT-LT02	<i>Artemisia filifolia</i> / <i>Bouteloua (curtipendula, gracilis)</i> Shrubland	07/05
	BOUT-LT03	<i>Artemisia filifolia</i> / <i>Bouteloua (curtipendula, gracilis)</i> Shrubland	07/05
	SPOR-LT01	<i>Sporobolus airoides</i> - <i>Distichlis spicata</i> Herbaceous	07/07
	SPOR-LT02	<i>Sporobolus airoides</i> - <i>Distichlis spicata</i> Herbaceous	07/06
	SPOR-LT03	<i>Sporobolus airoides</i> - <i>Distichlis spicata</i> Herbaceous	07/04

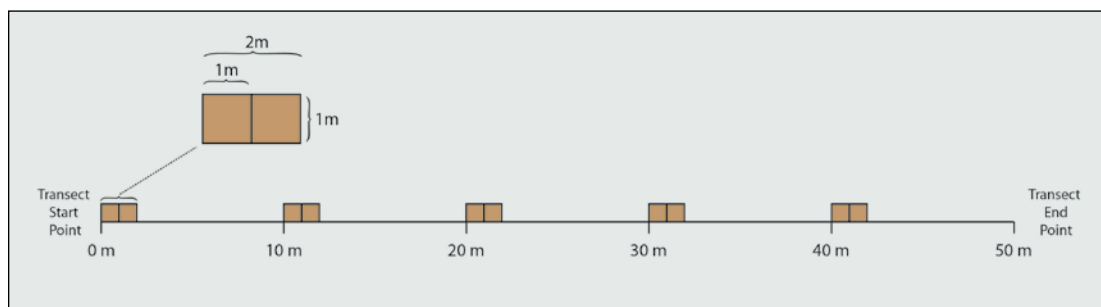


Figure 1. Layout of plots within each permanent transect.

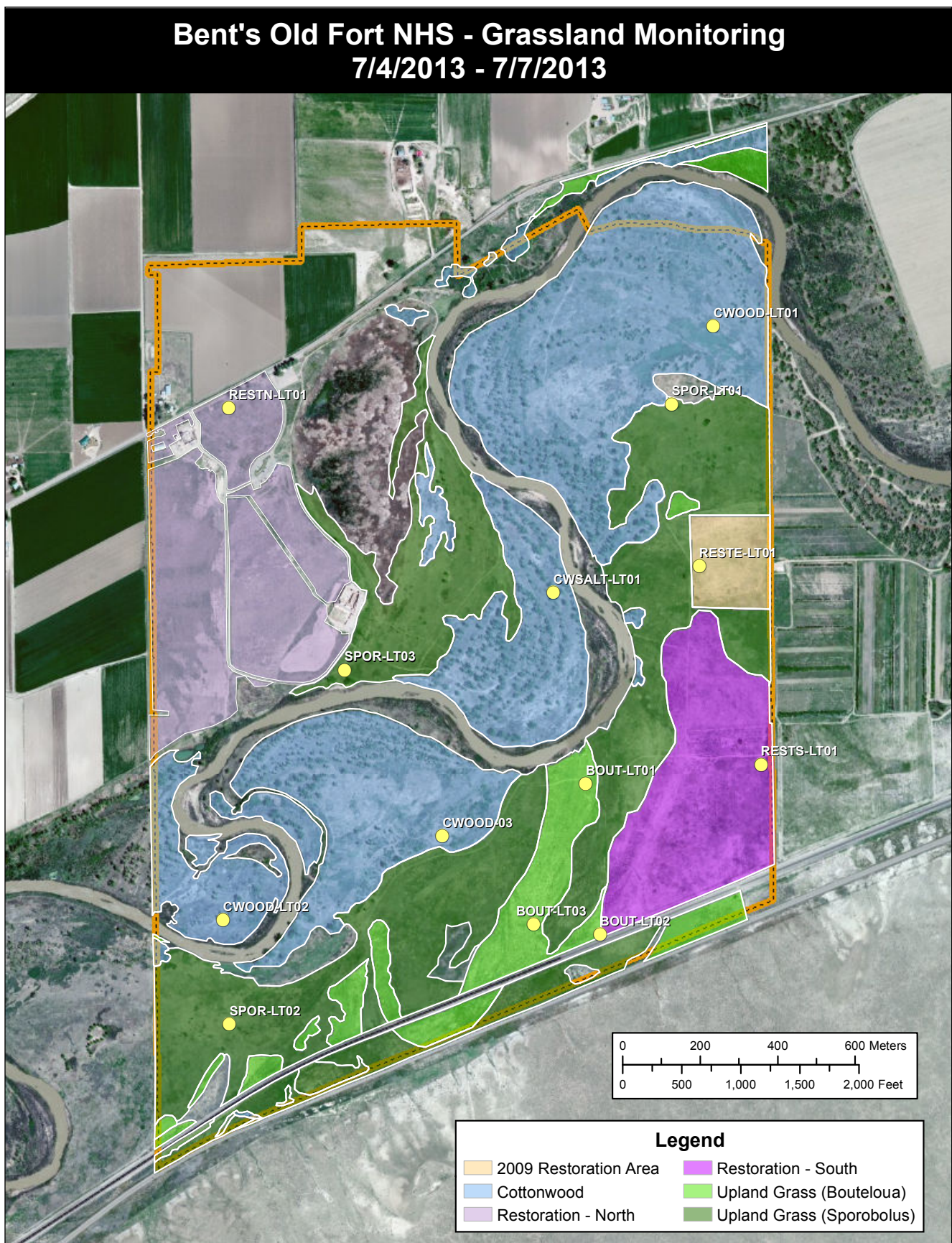


Figure 2. Location of each permanent grassland plot at BEOL monitored in 2013

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 BEOL in 2013 can be found in Table 2.

Table 3 contains numerical results of 2013 grassland monitoring at BEOL. 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 BEOL in 2013.

Cover	Cottonwood Community				Restoration Community		
	CWOOD-03	CWOOD-LT01	CWOOD-LT02	CWSALT-LT01	RESTE-LT01	RESTN-LT01	RESTS-LT01
SOIOPEN	6.2	25.5	2.8	19	69.4	46.6	45
SOILUNDER	15.4	3.75	9.2	14.4	14.6	2.4	23.8
LITTER	77.4	73.25	70	65.6	16	49.2	32.8
WOOD	0	0	18	1	0	1.4	0.4
ROCKSM	0	0	0	0	0	0	0
ROCKLG	0	0	0	0	0	0	0
LICHEN	0	0	0	0	0	0	0
MOSS	0	0	0	0	0	0	0
CRUST	0	0	0	0	0	0.4	0

Cover	Upland Community					
	BOUT-LT01	BOUT-LT02	BOUT-LT03	SPOR-LT01	SPOR-LT02	SPOR-LT03
SOIOPEN	47.2	70.75	33	6.2	1	1
SOILUNDER	4.8	3.5	24.8	24.8	1	34.6
LITTER	49	25	41.2	69	98	64.2
WOOD	1	0.25	1	0	0	0.2
ROCKSM	0	0.5	0	0	0	0
ROCKLG	0	0	0	0	0	0
LICHEN	0	0	0	0	0	0
MOSS	0	0	0	0	0	0
CRUST	0	0	0	0	0	0

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

Species Code	Cottonwood Community								Restoration Community					
	CWOOD-03		CWOOD-LT01		CWOOD-LT02		CWSALT-LT01		RESTE-LT01		RESTN-LT01		RESTS-LT01	
	Cover Sum	Fre-quency	Cover Sum	Fre-quency	Cover Sum	Fre-quency	Cover Sum	Fre-quency	Cover Sum	Fre-quency	Cover Sum	Fre-quency	Cover Sum	Fre-quency
Forb														
ACRREP					0.5	1								
APOCAN							1.5	2						
ASCSUB									0.5	1	1	2	1	2
ASTBIS					17	2					1.5	2	4.5	3
CHAGLY														
CHAPRO									0.5	1			1.5	2
CHEBER							0.5	1						
CONARV									84.5	5	26.5	5	19.5	5
DYSPAP														
GLYLEP					100.5	5	8	4						
HELANN			0.5	1									0.5	1
IPOLEX														
IVAAXI														
KOCSCO	30.5	4	22	5	3	1	1.5	3	23	4	25.5	2	36	4
LYGJUN														
MACPIN														
MIRLIN														
PHYVIR														
QUILOB													0.5	1
RATTAG					23.5	4							5	1
SALTRA					1	2	0.5	1	32.5	5			18.5	5
SOLROS											0.5	1		
SPHCOC													18	4
SYMERI									1.5	2			12	4
TRITER											0.5	1		
Grass														
ARIPUR														
BOUCUR											0.5	1		
BOUGRA											1	1		
DISSPI	86	3	50.5	4			16	5			12	2		
ELYELY														
PANOBT														
PASSMI	2.5	3			1	1	10	5			46	4		
PLEJAM							2	3			27.5	5		
SPOAIR					55.5	3	100.5	3						
SPOCRY	0.5	1			3.5	2					0.5	1		
Woody														
ARTFIL														
POPDEL	2	2												
SALEXI							11.5	2						

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

Species Code	Upland Community											
	BOUT-LT01		BOUT-LT02		BOUT-LT03		SPOR-LT01		SPOR-LT02		SPOR-LT03	
	Cover Sum	Fre-quency	Cover Sum	Fre-quency	Cover Sum	Fre-quency	Cover Sum	Fre-quency	Cover Sum	Fre-quency	Cover Sum	Fre-quency
Forb												
ACRREP												
APOCAN												
ASCSub							0.5	1				
ASTBIS												
CHAGLY	7.5	5			1.5	3	1.5	3				
CHAPRO			0.5	1	0.5	1						
CHEBER												
CONARV			16	3					21	3	1	2
DYSPAP	0.5	1										
GLYLEP												
HELANN	1.5	2										
IPOLAX	0.5	1										
IVAAXI											1	1
KOCSCO	0.5	1	0.5	1			0.5	1	0.5	1	3	1
LYGJUN	0.5	1										
MACPIN			2.6	5								
MIRLIN							1.5	2				
PHYVIR									0.5	1		
QUILOB												
RATTAG												
SALTRA	2	2	4	3	1	2						
SOLROS												
SPHCOC	3.5	2	5	5	0.5	1						
SYMERI									0.5	1		
TRITER												
Grass												
ARIPUR			13	2								
BOUCUR			0.5	1								
BOUGRA	18	5	0.5	1	3.5	2	10	2				
DISSPI			2.5	4	3	3	7	1	262	5	225	5
ELYELY			0.5	1								
PANOBT							16	3	4	2		
PASSMI							20	1	3	1	2	3
PLEJAM	3	1										
SPOAIR							158	4	27	2	50	1
SPOCRY	0.5	1	0.5	1	10	4	3	1			3.5	2
Woody												
ARTFIL	29	4	32	2	45	4						
POPDEL												
SALEXI												

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

Species Code	LifeForm	Scientific Name	Common Name	Primary Duration
ACRREP	Forb	<i>Acroptilon repens</i>	Russian knapweed	Perennial
APOCAN	Forb	<i>Apocynum cannabinum</i>	hemp dogbane	Perennial
AMARET	Forb	<i>Amaranthus retroflexus</i>	redroot pigweed	Annual
ARIPUR	Grass	<i>Aristida purpurea</i>	purple threeawn	Perennial
ARTFIL	Shrub	<i>Artemisia filifolia</i>	sand sagebrush	Perennial
ASCSUB	Forb	<i>Asclepias subverticillata</i>	horsetail milkweed	Perennial
ASPOFF	Forb	<i>Asparagus officinalis</i>	garden asparagus	Perennial
ASTBIS	Forb	<i>Astragalus bisulcatus</i>	two-grooved milkvetch	Perennial
BOUCUR	Grass	<i>Bouteloua curtipendula</i>	sideoats grama	Perennial
BOUGRA	Grass	<i>Bouteloua gracilis</i>	blue grama	Perennial
BROARV	Grass	<i>Bromus arvensis</i>	field brome	Annual
BROCOM	Grass	<i>Bromus commutatus</i>	meadow brome	Annual
BROTEC	Grass	<i>Bromus tectorum</i>	cheatgrass	Annual
CARDRA	Forb	<i>Cardaria draba</i>	whitetop	Perennial
CHAGLY	Forb	<i>Chamaesyce nutans</i>	rib-seed sandmat	Annual
CHAPRO	Forb	<i>Chamaesyce prostrata</i>	prostrate sandmat	Annual
CHEALB	Forb	<i>Chenopodium album</i>	common lambsquarters	Annual
CHEBER	Forb	<i>Chenopodium berlandieri</i>	pitseed goosefoot	Annual
CIRARV	Forb	<i>Cirsium arvense</i>	canada thistle	Perennial
CONARV	Forb	<i>Convolvulus arvensis</i>	field bindweed	Perennial
DISSPI	Grass	<i>Distichlis spicata</i>	inland saltgrass	Perennial
DYSPAP	Forb	<i>Dyssodia papposa</i>	fetid dogweed	Annual
ELAANG	Tree	<i>Elaeagnus angustifolia</i>	Russian olive	Perennial
ELYELY	Grass	<i>Elymus elymoides</i>	bottlebrush squirreltail	Perennial
EUPDEN	Forb	<i>Euphorbia dentata</i>	toothed spurge	Annual
GLYLEP	Forb	<i>Glycyrrhiza lepidota</i>	wild licorice	Perennial
HELANN	Forb	<i>Helianthus annuus</i>	common sunflower	Annual
IPOLEX	Forb	<i>Ipomopsis laxiflora</i>	iron ipomopsis	Annual
IWAAXI	Forb	<i>Iva axillaris</i>	poverty sumpweed	Perennial
KOCSCO	Forb	<i>Kochia scoparia</i>	kochia	Annual
LYGJUN	Forb	<i>Lygodesmia juncea</i>	rush skeletonplant	Perennial
MACPIN	Forb	<i>Machaeranthera pinnatifida</i>	lacy tansyaster	Perennial
MEDSAT	Forb	<i>Medicago sativa</i>	alfalfa	Annual/Perennial
MELOFF	Forb	<i>Melilotus officinalis</i>	yellow sweetclover	Annual
MIRLIN	Forb	<i>Mirabilis linearis</i>	narrowleaf four o'clock	Perennial
PANOBT	Grass	<i>Panicum obtusum</i>	vine mesquite	Perennial
PASSMI	Grass	<i>Pascopyrum smithii</i>	western wheatgrass	Perennial
PHYVIR	Forb	<i>Physalis virginiana</i>	lanceleaf groundcherry	Perennial
PLEJAM	Grass	<i>Pleuraphis jamesii</i>	james galleta grass	Perennial
POPDEL	Tree	<i>Populus deltoides</i>	plains cottonwood	Perennial
QUILOB	Forb	<i>Quincula lobata</i>	purple groundcherry	Perennial
RATTAG	Forb	<i>Ratibida tagetes</i>	green mexican hat	Perennial

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

Species Code	LifeForm	Scientific Name	Common Name	Primary Duration
SALEXI	Tree	<i>Salix exigua</i>	coyote willow	Perennial
SALTRA	Forb	<i>Salsola tragus</i>	prickly russian thistle	Annual
SOLROS	Forb	<i>Solanum rostratum</i>	buffalobur	Annual
SPHCOC	Forb	<i>Sphaeralcea coccinea</i>	scarlet globemallow	Perennial
SPOAIR	Grass	<i>Sporobolus airoides</i>	alkali sacaton	Perennial
SPOCRY	Grass	<i>Sporobolus cryptandrus</i>	sand dropseed	Perennial
SYMERI	Forb	<i>Symphytotrichum ericoides</i>	white heath aster	Perennial
THIINT	Grass	<i>Thinopyrum intermedium</i>	intermediate wheatgrass	Perennial
THIPON	Grass	<i>Thinopyrum ponticum</i>	rush wheatgrass	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

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 June 21-24, 2013 and included two sections of dirt two-track road on the south side of the Arkansas River and a section of the same type of vector in the cottonwood gallery on the north side of the river (Figure 4). These vectors have been previously monitored June 30-July 3, 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.

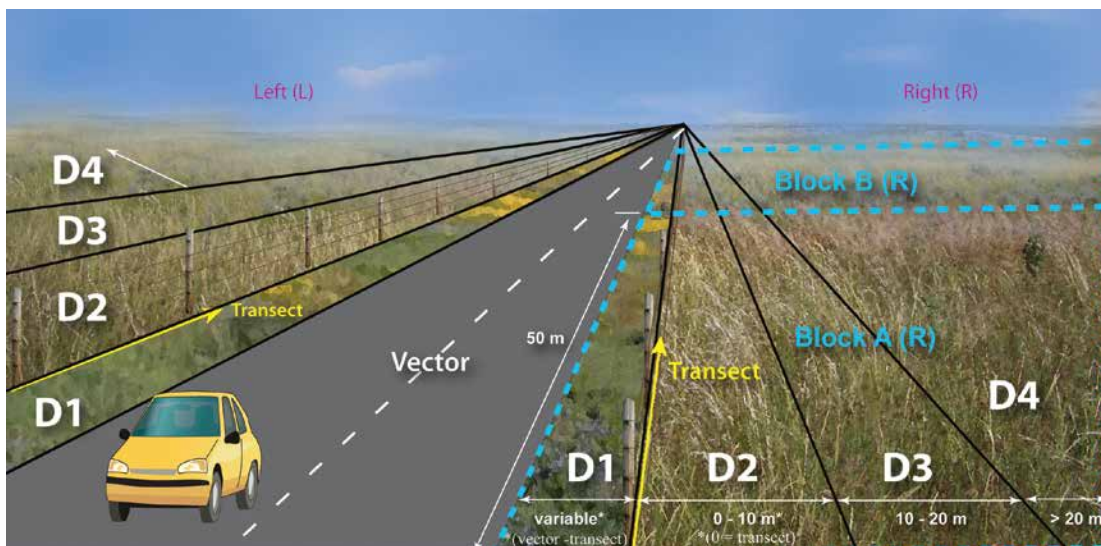


Figure 3. Layout of Vector Blocks and Distance Classes along a vector.

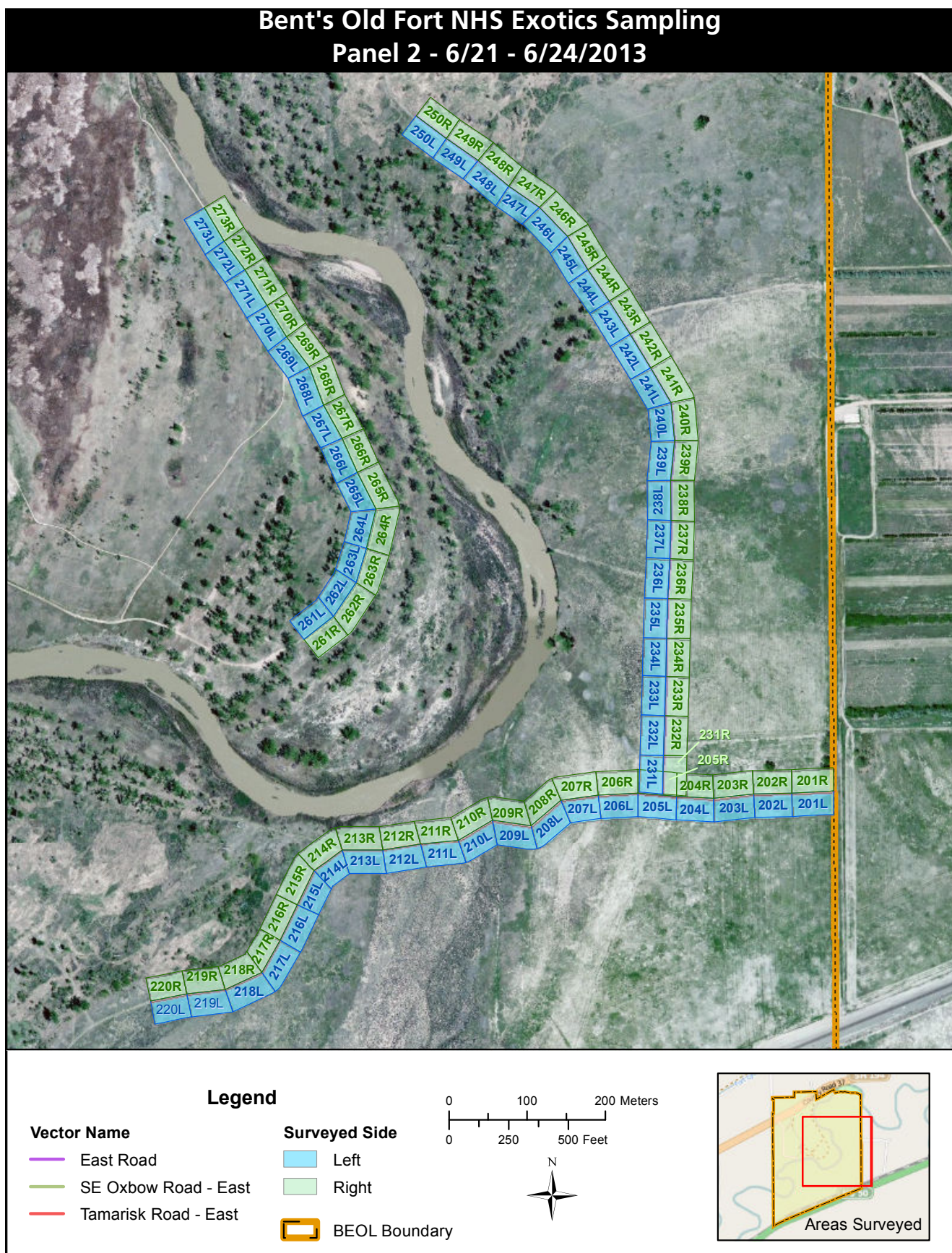


Figure 4. Panel 2 numbered vector blocks monitored at BEOL in both 2010 and 2013.

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=106) and transects (N=13)(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 BEOL.

Scientific Name	Common Name	2010		2013		2010		2013	
		Primary Blocks (N=106)		Primary Blocks (N=106)		Secondary Transects (N=13)		Secondary Transects (N=13)	
		Total	% Blocks	Total	% Blocks	Total	% Blocks	Total	% Blocks
<i>Acroptilon repens</i>	Russian knapweed	—	—	8	8%	—	—	1	8%
<i>Amaranthus retroflexus</i>	redroot amaranth	8	8%	—	—	—	—	—	—
<i>Asparagus officinalis</i>	garden asparagus	19	18%	23	22%	—	—	—	—
<i>Bromus arvensis</i>	field brome	11	10%	—	—	—	—	—	—
<i>Bromus commutatus</i>	meadow brome	—	—	4	4%	—	—	—	—
<i>Bromus tectorum</i>	cheatgrass	22	21%	1	1%	—	—	—	—
<i>Cardaria draba</i>	whitetop	—	—	8	8%	—	—	—	—
<i>Chenopodium album</i>	lambsquarters	8	8%	2	2%	—	—	—	—
<i>Cirsium arvense</i>	canada thistle	2	2%	—	—	—	—	—	—
<i>Convolvulus arvensis</i>	field bindweed	66	62%	68	64%	6	46%	6	46%
<i>Elaeagnus angustifolia</i>	Russian olive	—	—	3	3%	—	—	—	—
<i>Euphorbia dentata</i>	toothed spurge	10	9%	—	—	2	15%	—	—
<i>Kochia scoparia</i>	kochia	27	25%	84	79%	11	85%	12	92%
<i>Lactuca serriola</i>	prickly lettuce	—	—	—	—	6	46%	—	—
<i>Medicago sativa</i>	alfalfa	—	—	1	1%	—	—	—	—
<i>Melilotus albus</i>	white sweetclover	—	—	—	—	2	15%	—	—
<i>Melilotus officinalis</i>	yellow sweetclover	44	42%	—	—	—	—	—	—
<i>Rumex crispus</i>	curley dock	—	—	—	—	4	31%	—	—
<i>Salsola tragus</i>	prickly Russian thistle	57	54%	72	68%	7	54%	7	54%
<i>Thinopyrum intermedium</i>	intermediate wheatgrass	—	—	9	8%	—	—	—	—
<i>Thinopyrum ponticum</i>	crested wheatgrass	8	8%	—	—	—	—	—	—
<i>Tragopogon dubius</i>	western salsify	37	35%	—	—	1	8%	—	—
<i>Tribulus terrestris</i>	puncturevine	5	5%	—	—	—	—	1	8%
<i>Ulmus pumila</i>	Siberian elm	—	—	3	3%	—	—	—	—

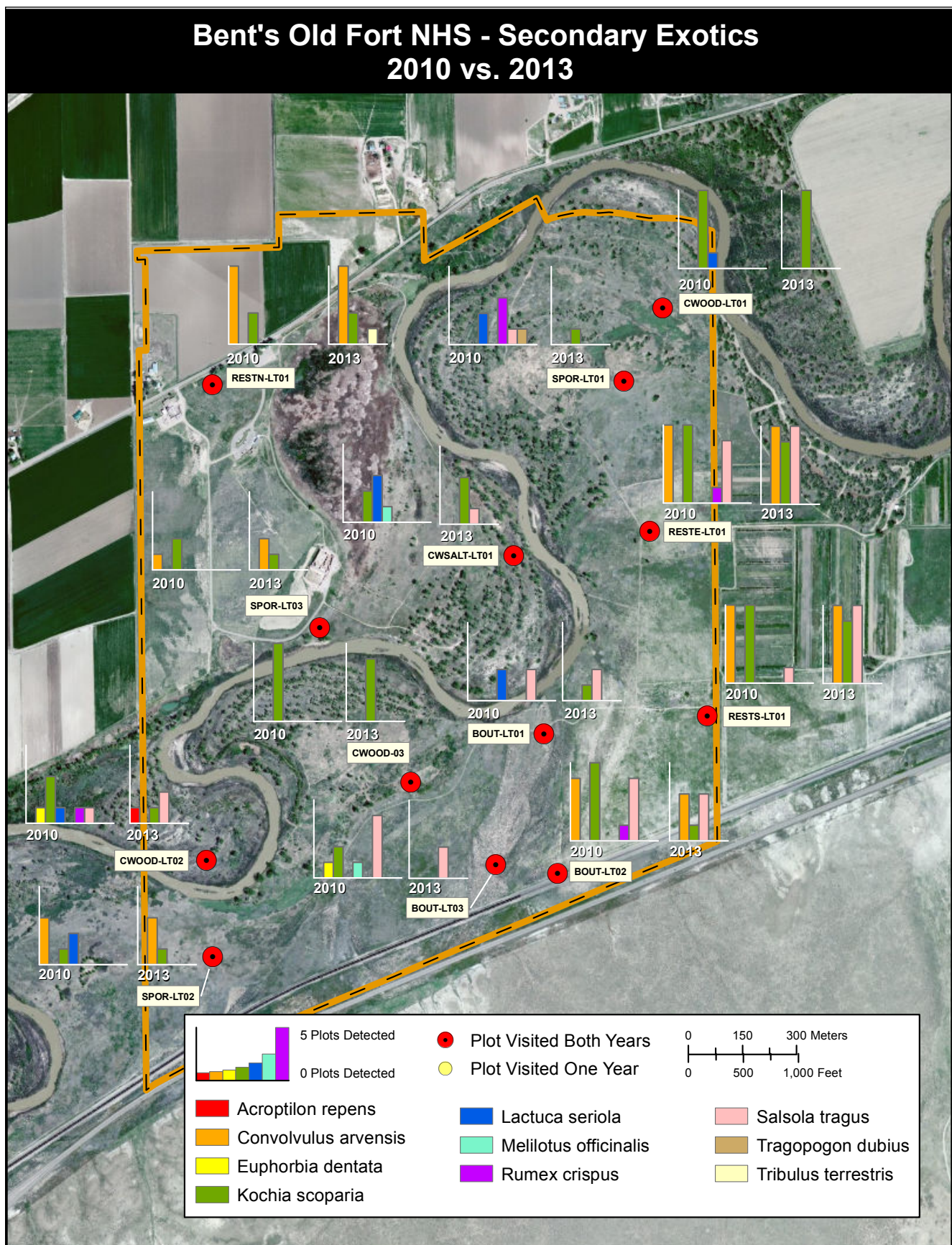


Figure 5. Comparison of exotics detected in 2010 and 2013 grassland monitoring permanent transects at BEOL.

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
ACRREP	<i>Acroptilon repens</i>	Russian knapweed	2	–	1	–	2
AMARET	<i>Amaranthus retroflexus</i>	redroot pigweed	1	1	–	6	–
			2	1	–	1	–
ASPOFF	<i>Asparagus officinalis</i>	garden asparagus	1	2	3	13	6
			2	–	–	5	12
BROARV	<i>Bromus arvensis</i>	field brome	1	–	–	2	–
			2	2	–	9	–
BROCOM	<i>Bromus commutatus</i>	meadow brome	2	–	3	–	4
BROTEC	<i>Bromus tectorum</i>	cheatgrass	1	1	–	2	–
			2	12	–	18	1
CARDRA	<i>Cardaria draba</i>	whitetop	1	–	2	–	2
			2	–	–	–	3
CHEALB	<i>Chenopodium album</i>	common lambsquarters	1	1	1	6	–
			2	–	1	1	–
CIRARV	<i>Cirsium arvense</i>	canada thistle	1	–	–	1	–
			2	–	–	1	–
CONARV	<i>Convolvulus arvensis</i>	field bindweed	1	6	2	5	4
			2	36	60	33	55
			3	18	5	21	6
			4	1	–	1	–
ELAANG	<i>Elaeagnus angustifolia</i>	russian olive	1	–	–	–	1
EUPDEN	<i>Euphorbia dentata</i>	toothed spurge	1	3	–	5	–
			2	1	–	4	–
KOCSCO	<i>Kochia scoparia</i>	kochia	1	6	19	10	16
			2	3	60	14	42
			3	–	–	1	–
MEDSAT	<i>Medicago sativa</i>	alfalfa	1	–	1	–	–
MELOFF	<i>Melilotus officinalis</i>	yellow sweetclover	1	6	–	11	–
			2	2	–	23	–
			3	–	–	1	–
SALTRA	<i>Salsola tragus</i>	prickly Russian thistle	1	19	7	23	10
			2	21	61	21	57
			3	1	–	–	–

Density Code (DC) 1 = one to five individual plants; DC2 = scattered patches; DC 3 = evenly distributed patches; DC 4 = matrix.

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
THIINT	<i>Thinopyrum intermedium</i>	intermediate wheatgrass	1	–	3	–	3
			2	–	–	–	4
THIPON	<i>Thinopyrum ponticum</i>	rush wheatgrass	1	2	–	4	–
			2	–	–	2	–
TRADUB	<i>Tragopogon dubius</i>	western salsify	1	6	–	26	–
			2	2	–	8	–
TRITER	<i>Tribulus terrestris</i>	puncturevine	1	3	–	–	–
			2	2	–	–	–
ULMPUM	<i>Ulmus pumila</i>	Siberian Elm	1	–	–	–	1

Density Code (DC) 1 = one to five individual plants; DC2 = scattered patches; DC 3 = evenly distributed patches; DC 4 = matrix.

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>Euphorbia dentata</i>	toothed spurge	0	1	0	0				
	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	0	0
	<i>Tribulus terrestris</i>	puncturevine	2	0	0	0				
201R	<i>Asparagus officinalis</i>	garden asparagus					0	1	0	0
	<i>Convolvulus arvensis</i>	field bindweed	4	4	4	4	3	3	3	3
	<i>Euphorbia dentata</i>	toothed spurge	1	2	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	2	2
	<i>Tribulus terrestris</i>	puncturevine	2	0	0	0				
202L	<i>Convolvulus arvensis</i>	field bindweed	2	3	3	3	2	2	2	2
	<i>Kochia scoparia</i>	kochia					2	2	2	0
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	2	0
202R	<i>Convolvulus arvensis</i>	field bindweed	3	3	3	3				
	<i>Kochia scoparia</i>	kochia					2	2	1	0
	<i>Salsola tragus</i>	prickly Russian thistle	1	0	0	0	2	2	2	2
	<i>Tribulus terrestris</i>	puncturevine	1	0	0	0				
203L	<i>Convolvulus arvensis</i>	field bindweed	3	3	3	3	3	2	2	2
	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Salsola tragus</i>	prickly Russian thistle					2	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
203R	<i>Convolvulus arvensis</i>	field bindweed	3	3	3	3	2	2	2	2
	<i>Kochia scoparia</i>	kochia					2	2	2	0
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	2	2
204L	<i>Convolvulus arvensis</i>	field bindweed	3	3	3	3	2	2	2	2
	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	1	1	0	0	2	2	2	0
	<i>Tribulus terrestris</i>	puncturevine	1	0	0	0				
204R	<i>Convolvulus arvensis</i>	field bindweed	3	3	3	3	2	2	2	2
	<i>Kochia scoparia</i>	kochia					2	2	2	2
	<i>Salsola tragus</i>	prickly Russian thistle	1	0	0	0	2	2	2	2
	<i>Tribulus terrestris</i>	puncturevine	1	0	0	0				
205L	<i>Bromus tectorum</i>	cheatgrass	0	1	0	0				
	<i>Convolvulus arvensis</i>	field bindweed	3	3	3	3	3	3	3	3
	<i>Euphorbia dentata</i>	toothed spurge	0	2	2	0				
	<i>Kochia scoparia</i>	kochia					0	2	2	0
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	0	0
205R	<i>Convolvulus arvensis</i>	field bindweed	3	3	3	3	2	2	2	2
	<i>Euphorbia dentata</i>	toothed spurge	1	0	0	0				
	<i>Kochia scoparia</i>	kochia					2	2	2	0
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	2	0
206L	<i>Convolvulus arvensis</i>	field bindweed	3	3	3	3	2	2	2	2
	<i>Euphorbia dentata</i>	toothed spurge	2	2	2	0				
	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	1	1	0	0	2	2	2	0
206R	<i>Convolvulus arvensis</i>	field bindweed	2	3	2	2	2	2	0	0
	<i>Euphorbia dentata</i>	toothed spurge	1	1	0	0				
	<i>Kochia scoparia</i>	kochia					2	2	2	0
	<i>Salsola tragus</i>	prickly Russian thistle	2	2	1	0	2	2	2	0
207L	<i>Convolvulus arvensis</i>	field bindweed	2	3	3	3	2	2	2	2
	<i>Euphorbia dentata</i>	toothed spurge	0	1	1	0				
	<i>Kochia scoparia</i>	kochia					2	2	2	0
	<i>Salsola tragus</i>	prickly Russian thistle	1	1	0	0	2	2	0	0
207R	<i>Convolvulus arvensis</i>	field bindweed	2	2	0	0	2	2	2	0
	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	1	0	0	0	2	2	2	0
208L	<i>Convolvulus arvensis</i>	field bindweed	3	3	3	3	2	2	2	2
	<i>Euphorbia dentata</i>	toothed spurge	0	2	2	0				
	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	1	1	0	0	2	0	0	0
208R	<i>Convolvulus arvensis</i>	field bindweed	2	2	2	0	2	2	2	0
	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	1	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle	1	0	0	0	2	2	1	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
209L	<i>Bromus tectorum</i>	cheatgrass	0	2	2	0				
	<i>Convolvulus arvensis</i>	field bindweed	2	0	3	3	2	2	2	2
	<i>Euphorbia dentata</i>	toothed spurge	0	1	0	0				
	<i>Kochia scoparia</i>	kochia					2	0	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	1	1	0	0	2	2	0	0
209R	<i>Convolvulus arvensis</i>	field bindweed	2	2	0	0	2	2	0	0
	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	2	1	0	0				
210L	<i>Convolvulus arvensis</i>	field bindweed					1	1	0	0
	<i>Euphorbia dentata</i>	toothed spurge	0	1	0	0				
	<i>Kochia scoparia</i>	kochia					2	0	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	1	1	0	0	2	2	0	0
210R	<i>Kochia scoparia</i>	kochia					2	1	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	2	1	0	0	2	1	1	0
211L	<i>Kochia scoparia</i>	kochia					2	1	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	1	1	0	0	2	2	0	0
	<i>Tragopogon dubius</i>	western salsify	0	1	1	0				
211R	<i>Kochia scoparia</i>	kochia					2	1	0	0
	<i>Mellilotus officinalis</i>	yellow sweetclover	1	2	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle	2	1	0	0	2	2	1	0
212L	<i>Kochia scoparia</i>	kochia					2	0	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	2	2	0	0	2	2	2	0
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
212R	<i>Kochia scoparia</i>	kochia					2	0	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	2	0	0	0	2	2	2	0
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
213L	<i>Convolvulus arvensis</i>	field bindweed	2	2	2	0	2	2	2	2
	<i>Kochia scoparia</i>	kochia					2	1	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	2	2	0	0	2	2	0	0
	<i>Thinopyrum intermedium</i>	intermediate wheatgrass					0	2	2	1
	<i>Thinopyrum ponticum</i>	rush wheatgrass	0	2	2	0				
213R	<i>Convolvulus arvensis</i>	field bindweed	2	2	2	0	2	2	2	0
	<i>Kochia scoparia</i>	kochia					2	0	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	2	0	0	0	2	2	0	0
	<i>Thinopyrum intermedium</i>	intermediate wheatgrass					1	2	2	0
	<i>Thinopyrum ponticum</i>	rush wheatgrass	1	1	0	0				
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
214L	<i>Convolvulus arvensis</i>	field bindweed	2	2	2	0	2	2	2	0
	<i>Kochia scoparia</i>	kochia	0	1	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle	2	2	0	0				
	<i>Thinopyrum intermedium</i>	intermediate wheatgrass					0	0	0	1
	<i>Thinopyrum ponticum</i>	rush wheatgrass	0	1	1	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
214R	<i>Acroptilon repens</i>	Russian knapweed					0	2	2	0
	<i>Cirsium arvense</i>	canada thistle	0	2	0	0				
	<i>Convolvulus arvensis</i>	field bindweed	2	2	0	0	2	2	0	0
	<i>Kochia scoparia</i>	kochia	0	1	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle	2	0	0	0	1	2	1	0
	<i>Thinopyrum intermedium</i>	intermediate wheatgrass					1	1	1	0
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
215L	<i>Convolvulus arvensis</i>	field bindweed	0	2	2	0	2	2	2	2
	<i>Kochia scoparia</i>	kochia					0	1	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	2	2	0	0	0	1	0	0
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
215R	<i>Convolvulus arvensis</i>	field bindweed	0	2	0	0	2	2	2	0
	<i>Salsola tragus</i>	prickly Russian thistle	2	1	0	0				
216L	<i>Convolvulus arvensis</i>	field bindweed	2	2	2	0	2	2	2	2
	<i>Kochia scoparia</i>	kochia	0	1	0	0				
	<i>Thinopyrum ponticum</i>	rush wheatgrass	0	0	1	0				
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
216R	<i>Convolvulus arvensis</i>	field bindweed	2	2	0	0	2	2	2	0
217L	<i>Convolvulus arvensis</i>	field bindweed	2	2	2	0	2	2	2	2
	<i>Tragopogon dubius</i>	western salsify	0	1	1	0				
217R	<i>Convolvulus arvensis</i>	field bindweed	2	2	0	0	2	2	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	1	0	0	0				
218L	<i>Convolvulus arvensis</i>	field bindweed	2	2	0	0	2	2	2	2
	<i>Salsola tragus</i>	prickly Russian thistle	2	2	0	0				
218R	<i>Convolvulus arvensis</i>	field bindweed	2	0	0	0	2	2	2	0
	<i>Salsola tragus</i>	prickly Russian thistle	1	0	0	0				
219L	<i>Convolvulus arvensis</i>	field bindweed	2	2	2	0	2	2	2	0
	<i>Kochia scoparia</i>	kochia	0	2	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle					2	0	0	0
	<i>Tragopogon dubius</i>	western salsify	0	1	1	0				
219R	<i>Convolvulus arvensis</i>	field bindweed	2	1	0	0	2	2	0	0
	<i>Kochia scoparia</i>	kochia	1	2	0	0	1	0	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	1	0	0	0				
220L	<i>Convolvulus arvensis</i>	field bindweed					0	0	0	2
	<i>Kochia scoparia</i>	kochia	0	2	2	0	2	0	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	2	2	0	0				
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
220R	<i>Convolvulus arvensis</i>	field bindweed	1	0	0	0	2	2	0	0
	<i>Kochia scoparia</i>	kochia	0	2	0	0	2	0	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	2	0	0	0	2	1	0	0
231L	<i>Convolvulus arvensis</i>	field bindweed	2	2	2	0	2	2	2	2
	<i>Kochia scoparia</i>	kochia					1	0	0	0
	<i>Salsola tragus</i>	prickly Russian thistle					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
231R	<i>Convolvulus arvensis</i>	field bindweed	3	3	4	3	2	2	2	2
	<i>Kochia scoparia</i>	kochia					2	2	2	0
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	2	2
232L	<i>Convolvulus arvensis</i>	field bindweed	2	2	2	0	2	2	2	0
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	2	0
232R	<i>Convolvulus arvensis</i>	field bindweed	3	3	3	3	3	3	3	3
	<i>Kochia scoparia</i>	kochia					1	1	0	0
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	2	2
233L	<i>Convolvulus arvensis</i>	field bindweed	2	2	0	0	2	2	2	2
	<i>Kochia scoparia</i>	kochia					1	0	0	0
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	2	0
233R	<i>Convolvulus arvensis</i>	field bindweed	3	3	3	3	2	2	2	2
	<i>Kochia scoparia</i>	kochia					1	1	0	0
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	2	2
234L	<i>Convolvulus arvensis</i>	field bindweed	2	2	2	0	2	2	2	0
	<i>Kochia scoparia</i>	kochia					1	0	0	0
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	2	0
234R	<i>Convolvulus arvensis</i>	field bindweed	3	3	3	3	3	3	3	2
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	2	2
235L	<i>Convolvulus arvensis</i>	field bindweed	2	2	2	0	2	2	2	2
	<i>Kochia scoparia</i>	kochia					0	2	2	2
	<i>Salsola tragus</i>	prickly Russian thistle	0	2	0	0	2	2	0	0
235R	<i>Convolvulus arvensis</i>	field bindweed	3	3	3	3	2	3	3	3
	<i>Kochia scoparia</i>	kochia					2	2	2	0
	<i>Salsola tragus</i>	prickly Russian thistle	0	1	0	0	2	2	2	2
236L	<i>Convolvulus arvensis</i>	field bindweed	2	2	2	0	2	2	2	2
	<i>Kochia scoparia</i>	kochia					0	2	2	0
	<i>Salsola tragus</i>	prickly Russian thistle	0	2	2	0	2	2	2	0
236R	<i>Convolvulus arvensis</i>	field bindweed	3	3	3	3	2	3	3	3
	<i>Kochia scoparia</i>	kochia					2	2	2	1
	<i>Salsola tragus</i>	prickly Russian thistle	1	1	0	0	2	2	2	2
237L	<i>Amaranthus retroflexus</i>	redroot amaranth	0	1	0	0				
	<i>Bromus arvensis</i>	field brome	0	2	3	3				
	<i>Bromus commutatus</i>	meadow brome					2	2	0	0
	<i>Convolvulus arvensis</i>	field bindweed	2	2	0	0	2	2	2	2
	<i>Kochia scoparia</i>	kochia	0	2	0	0	2	2	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	2	0				
	<i>Salsola tragus</i>	prickly Russian thistle	0	2	0	0	2	2	0	0
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
	<i>Ulmus pumila</i>	Siberian elm					0	0	1	0
237R	<i>Amaranthus retroflexus</i>	redroot amaranth	1	2	0	0				
	<i>Bromus arvensis</i>	field brome	2	2	0	0				
	<i>Bromus commutatus</i>	meadow brome					2	2	0	0

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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
237R (cont.)	<i>Bromus tectorum</i>	cheatgrass	2	2	2	0				
	<i>Convolvulus arvensis</i>	field bindweed	3	3	2	3	2	2	2	2
	<i>Kochia scoparia</i>	kochia	1	2	1	0	1	2	2	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	1	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle	0	2	0	0	2	2	2	2
	<i>Ulmus pumila</i>	Siberian elm					0	0	0	1
238L	<i>Amaranthus retroflexus</i>	redroot amaranth	0	1	0	0				
	<i>Bromus arvensis</i>	field brome	0	2	3	3				
	<i>Bromus commutatus</i>	meadow brome					0	2	0	0
	<i>Chenopodium album</i>	lambsquarters					2	0	0	0
	<i>Convolvulus arvensis</i>	field bindweed	2	2	2	0	2	2	2	2
	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	2	0				
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	0	0
	<i>Thinopyrum intermedium</i>	intermedium wheatgrass					0	0	0	2
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
	<i>Ulmus pumila</i>	Siberian elm					0	1	1	1
238R	<i>Amaranthus retroflexus</i>	redroot amaranth	2	1	0	0				
	<i>Bromus arvensis</i>	field brome	2	2	2	0				
	<i>Bromus commutatus</i>	meadow brome					2	2	0	0
	<i>Bromus tectorum</i>	cheatgrass	0	2	2	0				
	<i>Cirsium arvense</i>	canada thistle	0	1	0	0				
	<i>Convolvulus arvensis</i>	field bindweed	2	2	2	0	2	2	2	2
	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	0	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle	0	2	2	0				
	<i>Thinopyrum intermedium</i>	intermediate wheatgrass					0	2	1	0
	<i>Tragopogon dubius</i>	western salsify	1	1	0	0				
239L	<i>Bromus arvensis</i>	field brome	0	2	3	3				
	<i>Convolvulus arvensis</i>	field bindweed	2	2	0	0	2	2	2	2
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	2	0				
	<i>Salsola tragus</i>	prickly Russian thistle					2	0	0	0
	<i>Thinopyrum ponticum</i>	rush wheatgrass	0	0	1	1				
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
239R	<i>Bromus arvensis</i>	field brome	0	2	0	0				
	<i>Chenopodium album</i>	lambsquarters	1	0	0	0				
	<i>Convolvulus arvensis</i>	field bindweed	2	2	2	2	2	2	2	2
	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	1	1	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle	0	1	0	0	2	2	2	2
	<i>Thinopyrum intermedium</i>	intermediate wheatgrass					1	2	2	0
	<i>Thinopyrum ponticum</i>	rush wheatgrass	1	2	2	1				
	<i>Tragopogon dubius</i>	western salsify	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
240L	<i>Convolvulus arvensis</i>	field bindweed	2	2	0	0	2	2	2	2
	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	1	1	0	0	2	2	0	0
240R	<i>Convolvulus arvensis</i>	field bindweed	3	2	2	2	2	2	2	2
	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	2	1	0	0	1	2	2	0
241L	<i>Bromus arvensis</i>	field brome	0	1	0	0				
	<i>Chenopodium album</i>	lambsquarters	0	1	0	0				
	<i>Convolvulus arvensis</i>	field bindweed	2	0	0	0	2	2	2	2
	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	2	2	0	0	2	2	0	0
241R	<i>Convolvulus arvensis</i>	field bindweed	2	3	3	3	2	2	2	2
	<i>Elaeagnus angustifolia</i>	Russian olive					0	0	0	1
	<i>Kochia scoparia</i>	kochia	0	1	1	0	2	0	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	3	2	0	0	2	2	2	2
242L	<i>Chenopodium album</i>	lambsquarters	0	1	0	0				
	<i>Kochia scoparia</i>	kochia	0	0	1	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	0	0	2	0				
	<i>Salsola tragus</i>	prickly Russian thistle	2	2	0	0	0	2	0	0
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
242R	<i>Convolvulus arvensis</i>	field bindweed	0	0	2	0				
	<i>Salsola tragus</i>	prickly Russian thistle	2	2	0	0	2	2	2	2
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
243L	<i>Convolvulus arvensis</i>	field bindweed	0	1	0	0	2	2	0	0
	<i>Kochia scoparia</i>	kochia	0	1	1	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	0	0	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle	2	2	0	0	2	2	0	0
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
243R	<i>Convolvulus arvensis</i>	field bindweed					2	2	0	0
	<i>Kochia scoparia</i>	kochia	2	2	2	0				
	<i>Medicago sativa</i>	alfalfa					1	0	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	0	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	2	0
	<i>Thinopyrum ponticum</i>	intermediate wheatgrass	0	1	0	0				
244L	<i>Kochia scoparia</i>	kochia	0	2	0	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	2	0				
	<i>Salsola tragus</i>	prickly Russian thistle					0	2	0	0
	<i>Tragopogon dubius</i>	western salsify	0	2	0	0				
244R	<i>Bromus arvensis</i>	field brome	0	1	0	0				
	<i>Elaeagnus angustifolia</i>	Russian olive					0	0	0	1
	<i>Kochia scoparia</i>	kochia	2	3	2	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	1	1	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
244R (cont.)	<i>Salsola tragus</i>	prickly Russian thistle					1	1	0	0
	<i>Tragopogon dubius</i>	western salsify	2	2	2	0				
245L	<i>Bromus arvensis</i>	field brome	0	2	0	0				
	<i>Convolvulus arvensis</i>	field bindweed	2	2	0	0	2	1	0	0
	<i>Kochia scoparia</i>	kochia					1	0	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	0	1	0				
	<i>Salsola tragus</i>	prickly Russian thistle					2	1	0	0
	<i>Tragopogon dubius</i>	western salsify	0	2	0	0				
245R	<i>Bromus arvensis</i>	field brome	0	2	2	0				
	<i>Convolvulus arvensis</i>	field bindweed	1	2	0	0	2	2	0	0
	<i>Elaeagnus angustifolia</i>	Russian olive					0	1	1	1
	<i>Kochia scoparia</i>	kochia	0	2	0	0	0	2	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	2	2				
	<i>Salsola tragus</i>	prickly Russian thistle	0	1	0	0	1	2	0	0
	<i>Tragopogon dubius</i>	western salsify	1	2	1	0				
246L	<i>Asparagus officinalis</i>	garden asparagus					0	0	1	0
	<i>Bromus arvensis</i>	field brome	0	2	0	0				
	<i>Bromus tectorum</i>	cheatgrass	0	2	0	0				
	<i>Convolvulus arvensis</i>	field bindweed	1	2	0	0	2	2	2	0
	<i>Kochia scoparia</i>	kochia	0	2	0	0	2	1	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	1	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	0	0
	<i>Tragopogon dubius</i>	western salsify	0	2	0	0				
246R	<i>Convolvulus arvensis</i>	field bindweed	1	0	0	0	2	2	2	0
	<i>Kochia scoparia</i>	kochia	0	2	0	0	1	2	2	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	1	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle	1	0	0	0	2	2	2	2
	<i>Thinopyrum ponticum</i>	intermediate wheatgrass	0	1	0	0				
	<i>Tragopogon dubius</i>	western salsify	1	1	0	0				
247L	<i>Amaranthus retroflexus</i>	redroot amaranth	0	1	0	0				
	<i>Kochia scoparia</i>	kochia	0	1	0	0	2	0	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	2	2	2	0	2	1	0	0
	<i>Tragopogon dubius</i>	western salsify	0	2	1	0				
247R	<i>Convolvulus arvensis</i>	field bindweed	1	1	0	0	2	2	0	0
	<i>Kochia scoparia</i>	kochia	0	2	0	0	2	1	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	0	1	0	0	2	2	2	0
248L	<i>Chenopodium album</i>	lambsquarters	0	1	0	0				
	<i>Kochia scoparia</i>	kochia					2	1	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	0	2	3	3	2	0	0	0
248R	<i>Bromus tectorum</i>	cheatgrass	1	0	0	0				
	<i>Chenopodium album</i>	lambsquarters	0	1	0	0				
	<i>Kochia scoparia</i>	kochia	0	1	2	0	2	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
248R	<i>Salsola tragus</i>	prickly Russian thistle	0	1	0	0				
(cont.)	<i>Thinopyrum intermedium</i>	intermediate wheatgrass					0	1	2	0
249L	<i>Acroptilon repens</i>	Russian knapweed					0	0	2	0
	<i>Asparagus officinalis</i>	garden asparagus					0	0	0	2
	<i>Convolvulus arvensis</i>	field bindweed	2	1	0	0				
	<i>Kochia scoparia</i>	kochia					2	2	2	0
	<i>Salsola tragus</i>	prickly Russian thistle	0	2	3	3	1	1	0	0
249R	<i>Amaranthus retroflexus</i>	redroot amaranth	0	0	1	0				
	<i>Chenopodium album</i>	lambsquarters	0	1	1	0				
	<i>Convolvulus arvensis</i>	field bindweed	0	2	0	0	2	2	0	0
	<i>Kochia scoparia</i>	kochia	1	2	0	0	2	2	2	0
	<i>Salsola tragus</i>	prickly Russian thistle	0	1	0	0	2	1	0	0
	<i>Thinopyrum intermedium</i>	intermediate wheatgrass					0	1	2	0
250L	<i>Acroptilon repens</i>	Russian knapweed					0	0	2	2
	<i>Asparagus officinalis</i>	garden asparagus					0	0	0	2
	<i>Convolvulus arvensis</i>	field bindweed	1	2	0	0	2	0	0	0
	<i>Kochia scoparia</i>	kochia	0	1	0	0	2	2	2	0
250L	<i>Melilotus officinalis</i>	yellow sweetclover	0	1	0	0				
(cont.)	<i>Salsola tragus</i>	prickly Russian thistle	0	2	3	3				
250R	<i>Amaranthus retroflexus</i>	redroot amaranth	0	1	0	0				
	<i>Asparagus officinalis</i>	garden asparagus					0	1	1	0
	<i>Convolvulus arvensis</i>	field bindweed	2	1	0	0	2	1	0	0
	<i>Kochia scoparia</i>	kochia	2	2	0	0	2	2	2	0
	<i>Salsola tragus</i>	prickly Russian thistle					1	1	0	0
261L	<i>Acroptilon repens</i>	Russian knapweed					0	2	0	0
	<i>Asparagus officinalis</i>	garden asparagus	0	1	1	0	0	2	2	0
	<i>Bromus tectorum</i>	cheatgrass	0	2	2	0	0	2	0	0
	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	1	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle	1	1	0	0	2	2	2	0
261R	<i>Asparagus officinalis</i>	garden asparagus	0	2	1	0	1	2	2	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	2	2				
	<i>Cardaria draba</i>	whiteweed					0	1	0	0
	<i>Kochia scoparia</i>	kochia	1	1	0	0	2	2	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	2	0
262L	<i>Asparagus officinalis</i>	garden asparagus	0	1	1	0	0	1	0	0
	<i>Cardaria draba</i>	whiteweed					1	0	0	0
	<i>Kochia scoparia</i>	kochia					1	1	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	0	0				
	<i>Salsola tragus</i>	prickly Russian thistle	0	1	0	0	2	2	2	0
262R	<i>Acroptilon repens</i>	Russian knapweed					0	1	1	0
	<i>Asparagus officinalis</i>	garden asparagus	1	2	0	0	0	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
262R (cont.)	<i>Bromus tectorum</i>	cheatgrass	2	2	2	2				
	<i>Kochia scoparia</i>	kochia	1	1	0	0	1	1	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	0	2				
	<i>Salsola tragus</i>	prickly Russian thistle					2	2	0	0
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
263L	<i>Asparagus officinalis</i>	garden asparagus	0	1	1	0	0	0	2	2
	<i>Bromus tectorum</i>	cheatgrass	0	2	0	0				
	<i>Kochia scoparia</i>	kochia					1	0	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	0	0				
263R	<i>Asparagus officinalis</i>	garden asparagus	0	2	0	0	0	2	0	0
	<i>Bromus tectorum</i>	cheatgrass	0	2	2	2				
	<i>Kochia scoparia</i>	kochia					2	0	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	0	0	2				
	<i>Salsola tragus</i>	prickly Russian thistle					0	1	0	0
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
264L	<i>Asparagus officinalis</i>	garden asparagus	0	0	2	0	0	2	0	0
	<i>Bromus tectorum</i>	cheatgrass	0	1	0	0				
	<i>Chenopodium album</i>	lambsquarters	0	1	0	0				
	<i>Kochia scoparia</i>	kochia					2	0	0	0
	<i>Salsola tragus</i>	prickly Russian thistle					1	0	0	0
264R	<i>Asparagus officinalis</i>	garden asparagus	1	2	0	0	1	2	0	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	2	0				
	<i>Kochia scoparia</i>	kochia					1	1	0	0
	<i>Salsola tragus</i>	prickly Russian thistle	1	0	0	0				
265L	<i>Asparagus officinalis</i>	garden asparagus	0	1	1	0	1	2	2	1
	<i>Kochia scoparia</i>	kochia					1	0	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	0	1	0				
265R	<i>Acroptilon repens</i>	Russian knapweed					2	1	0	0
	<i>Asparagus officinalis</i>	garden asparagus	0	1	0	0	0	2	1	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Kochia scoparia</i>	kochia					2	0	0	0
266L	<i>Asparagus officinalis</i>	garden asparagus	0	1	2	2	0	2	2	1
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Cardaria draba</i>	whitetop					0	0	1	0
	<i>Kochia scoparia</i>	kochia					1	0	0	0
266R	<i>Acroptilon repens</i>	Russian knapweed					0	1	0	0
	<i>Asparagus officinalis</i>	garden asparagus	0	2	0	0	0	2	1	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	2	0				
	<i>Melilotus officinalis</i>	yellow sweetclover	0	0	1	0				
267L	<i>Asparagus officinalis</i>	garden asparagus	0	1	0	0	0	0	2	1
	<i>Bromus tectorum</i>	cheatgrass	0	2	2	0				
	<i>Cardaria draba</i>	whitetop					0	2	2	0
	<i>Kochia scoparia</i>	kochia					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
267R	<i>Asparagus officinalis</i>	garden asparagus	0	1	0	0	0	2	2	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Kochia scoparia</i>	kochia	1	0	0	0	1	2	0	0
268L	<i>Acroptilon repens</i>	Russian knapweed					0	0	2	0
	<i>Asparagus officinalis</i>	garden asparagus	0	1	0	0				
	<i>Kochia scoparia</i>	kochia					2	0	0	0
	<i>Tragopogon dubius</i>	western salsify	0	1	0	0				
268R	<i>Asparagus officinalis</i>	garden asparagus	0	1	0	0	0	1	0	0
	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Kochia scoparia</i>	kochia					1	1	0	0
	<i>Tragopogon dubius</i>	western salsify	1	0	0	0				
269L	<i>Kochia scoparia</i>	kochia					2	2	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	1	0	0				
269R	<i>Asparagus officinalis</i>	garden asparagus	0	1	0	0	0	1	X	X
	<i>Bromus tectorum</i>	cheatgrass	2	0	0	0				
	<i>Cardaria draba</i>	whitetop					0	1	X	X
270L	<i>Kochia scoparia</i>	kochia					2	0	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	3	3				
	<i>Tragopogon dubius</i>	western salsify	0	2	2	0				
270R	<i>Asparagus officinalis</i>	garden asparagus	0	1	0	0	0	2	0	X
	<i>Kochia scoparia</i>	kochia					1	1	0	X
	<i>Salsola tragus</i>	prickly Russian thistle	0	1	0	0				
271L	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Cardaria draba</i>	whitetop					1	0	0	0
	<i>Chenopodium album</i>	lambsquarters					1	0	0	0
	<i>Kochia scoparia</i>	kochia					2	0	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	3	3				
	<i>Tragopogon dubius</i>	western salsify	0	2	2	0				
271R	<i>Bromus tectorum</i>	cheatgrass	2	2	0	0				
	<i>Kochia scoparia</i>	kochia					1	1	X	X
	<i>Tragopogon dubius</i>	yellow salsify	0	1	0	0				
272L	<i>Kochia scoparia</i>	kochia					2	0	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	2	0				
	<i>Tragopogon dubius</i>	western salsify	1	0	0	0				
272R	<i>Amaranthus retroflexus</i>	redroot amaranth	0	1	0	0				
	<i>Kochia scoparia</i>	kochia					2	2	X	X
273L	<i>Asparagus officinalis</i>	garden asparagus	0	1	0	0				
	<i>Cardaria draba</i>	whitetop					0	2	2	0
	<i>Convolvulus arvensis</i>	field bindweed					2	1	0	0
	<i>Kochia scoparia</i>	kochia					2	0	0	0
	<i>Melilotus officinalis</i>	yellow sweetclover	0	2	2	0				
	<i>Tragopogon dubius</i>	western salsify	0	1	1	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
273R	<i>Asparagus officinalis</i>	garden asparagus					0	1	X	X
	<i>Cardaria draba</i>	whitetop					0	2	X	X
	<i>Chenopodium album</i>	lambsquarters	0	2	0	0				
	<i>Convolvulus arvensis</i>	field bindweed					1	0	X	X
	<i>Kochia scoparia</i>	kochia					2	2	X	X
	<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

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