

Exotic Plants

2009

Importance

Invasive exotic plants have been consistently ranked as a top vital sign for long term monitoring as part of the NPS Inventory & Monitoring (I&M) Program. During final selection of SOPN vital signs in 2006, invasive exotic plant monitoring was recognized across all network parks as the most important shared monitoring need. Early detection is a key strategy for successful invasive exotic plant management. Therefore, the SOPN has incorporated the following objectives into its monitoring plan for Exotic Plants: (1) to detect the initial occurrence for any of a subset of high priority species in areas of high and low invasion probability, (2) to determine changes in the status and trend (density, abundance or extent) of a subset of high priority species in areas of high and low invasion probability, and (3) to determine changes in species composition of a subset of high priority species in areas of high and low invasion probability, taking into account any management treatments that occurred between sampling intervals. Following is an overview of results for the 2009 pilot monitoring season.

2009 Sampling

In 2009, exotic plant monitoring occurred at ALFL for one day in early August. Two monitoring teams worked simultaneously, providing similar man-hour effort as our normal two-day efforts. The vector sampled was the unpaved road from

RESOURCE BRIEF



kochia (*Kochia scoparia*)

the boundary with LAMR into the monument (Fig. 1). Sixty-two vector blocks were monitored for a total of 1,550 linear meters sampled on both sides. It is possible that a centrally located section of road was dropped out of the monitoring. This section, if indeed left out of the sample, will be included in the next monitoring period scheduled for 2012. Secondary exotic monitoring took place in areas of LAMR on 14 permanent transects for a total of 70 interior plots.

Kochia (Kochia scoparia) was observed in over half the vec-

Table 1. The number and percentage of primary (N=62) and secondary (N=14) sample units that each species was detected at Lake Meredith NRA and Alibates Flint Quarries NM in 2009.

		Primary Sample Units		Secondary Sample Units	
Scientific Name	Common Name	No. Primary Vector Blocks	% Blocks Sampled (N=62)	No. Secondary Transects ¹	% Transects Sampled (N=14)
<i>Kochia scoparia</i>	kochia	34	55	0	0
<i>Setaria viridis</i>	green bristlegrass	24	39	0	0
<i>Salsola tragus</i>	prickly Russian thistle	15	24	2	14
<i>Tragopogon dubius</i>	western salsify	5	8	0	0
<i>Digitaria sanguinalis</i>	hairy crabgrass	4	7	0	0
<i>Chenopodium glaucum</i>	oakleaf goosefoot	3	5	0	0
<i>Taraxacum officinale</i>	dandelion	1	2	0	0
<i>Chenopodium alba</i>	common lambsquarters	0	0	5	36
?? (possibly <i>Salsola</i>)	Tumbleweed	0	0	4	29

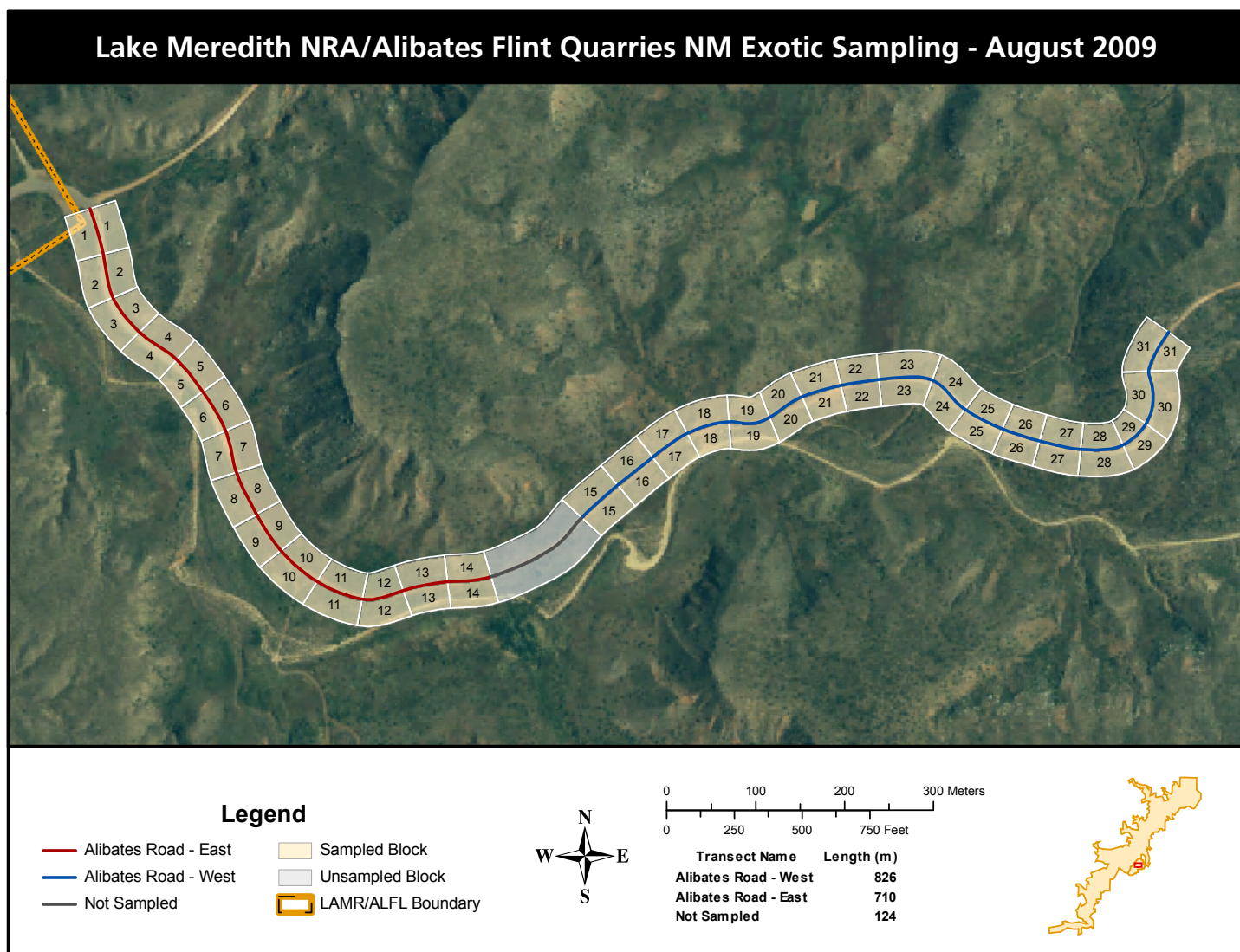


Figure 1. The 2009 panel (annual sample) at Lake Meredith NRA and Alibates Flint Quarries NM showing the individual vector blocks sampled.

tor blocks monitored (Table 1). This population was found in one continuous series of blocks, on both sides of the vector in scattered patches to even distributions up to 20 meters into the landscape. Green bristlegrass (*Setaria viridis*) is also well established along this vector, found deep into the landscape generally in scattered patches but occasionally in even distributions. Prickly Russian thistle (*Salsola tragus*) is also prevalent, but found only in the first 10 meters from the vector in scattered patches and in six interior plots on 14% of the transects. The grassland monitoring team also observed five interior plots containing “tumbleweed” on 29% of the transects. It has not been determined if they were referring to prickly Russian thistle, commonly called tumbleweed, or another species.

Several exotic plant species were found in numbers small enough to warrant quick eradication. Western salsify (*Tragopogon dubius*) is present up to 20 meters into the landscape

but only in scattered patches. Both hairy crabgrass (*Digitaria sanguinalis*) and oakleaf goosefoot (*Chenopodium glaucum*) were found up to 10 meters from the vector, also in scattered patches. Just a few plants of dandelion (*Taraxacum officinale*) were observed in only one vector block. Common lambs-quarters (*Chenopodium album*) was not seen along the ALFL vector, but was observed in ten interior plots on 36% of the transects.