

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 LYJO for one day in early September. The vector sampled was a dirt maintenance road on the western boundary of the Johnson Settlement unit (Fig. 1). Eighteen vector blocks were monitored for

RESOURCE BRIEF



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KR bluestem (*Bothriochloa ischaemum*)

KR bluestem (*Bothriochloa ischaemum*), Bermudagrass (*Cynodon dactylon*), Japanese brome (*Bromus japonicus*) and Johnsongrass (*Sorghum halepense*) were observed in all vector blocks monitored (Table 1). Bermudagrass was prevalent only along the edges of the vector, moving less than 10 m into the landscape on two vector blocks. Its spread appears to be limited by the tenacious KR bluestem, a mat-forming exotic found in all distance classes in an even distribution to matrix. KR Bluestem was observed in one interior plot on one transect. Johnsongrass is also found deep into the landscape in scattered patches, generally along fencelines and in bar-ditch-

Table 1. The number and percentage of primary (N=18) and secondary (N=2) sample units that each species was detected at Lyndon B. Johnson NHP in 2009.

		Primary Sample Units		Secondary Sample Units	
Scientific Name	Common Name	No. Primary Vector Blocks	% Blocks Sampled (N=18)	No. Secondary Transects ¹	% Transects Sampled (N=2)
<i>Bothriochloa ischaemum</i>	KR Bluestem	18	100	1	50
<i>Sorghum halepense</i>	Johnsongrass	15	83	1	50
<i>Bromus japonicus</i>	Japanese brome	12	67	0	0
<i>Cynodon dactylon</i>	Bermudagrass	10	56	0	0
<i>Centaurea melitensis</i>	Malta starthistle	4	22	0	0
<i>Eragrostis barrelieri</i>	Mediterranean lovegrass	2	11	0	0
<i>Marrubium vulgare</i>	hoarhound	1	6	0	0
<i>Verbascum thapsus</i>	mullien	1	6	0	0

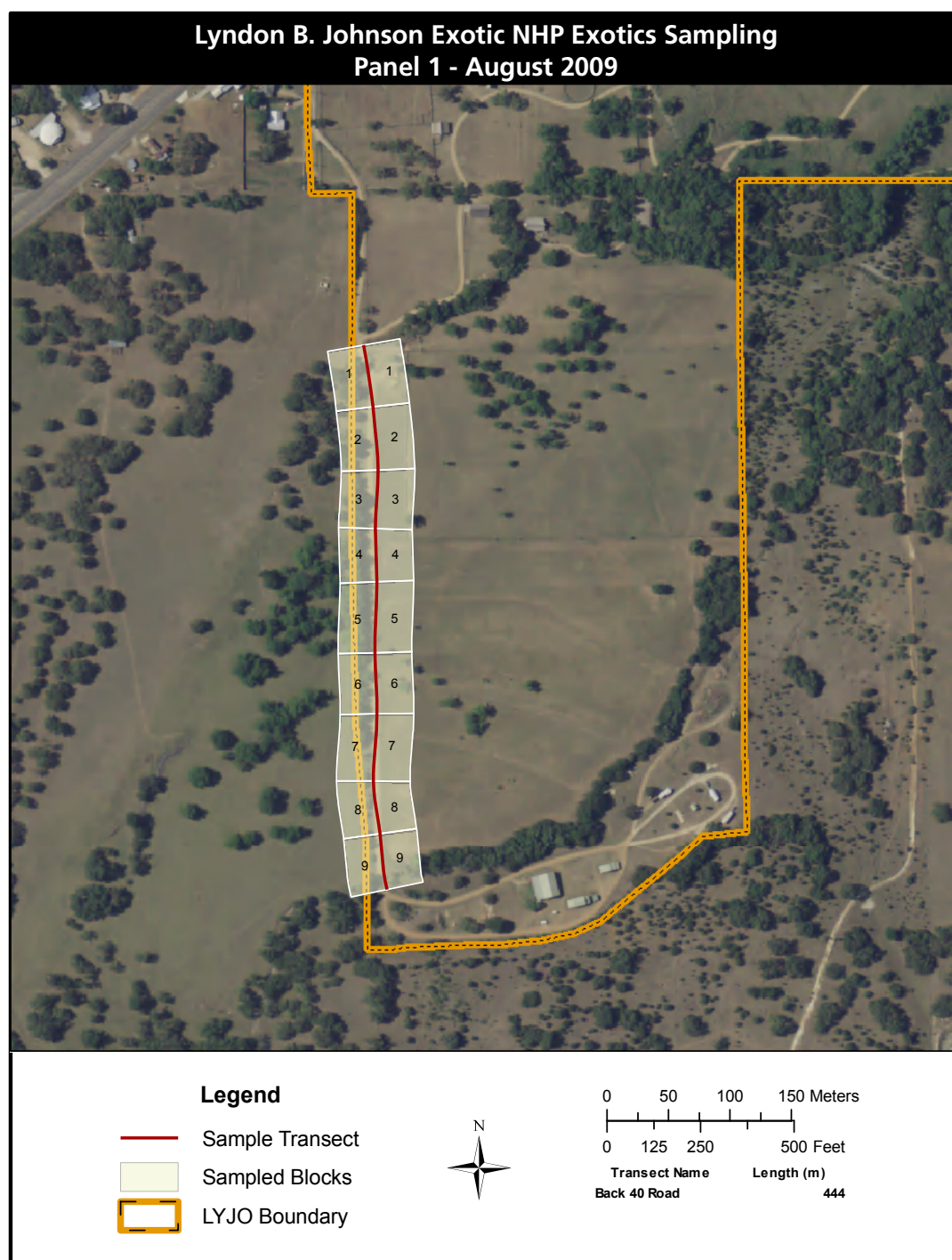


Figure 1. The 2009 panel (annual sample) at Lyndon B. Johnson NHP showing the individual vector blocks sampled.

es, although it was observed in only one interior plot of one transect. Johnsongrass occasionally forms even distributions. Japanese brome was quite prevalent from the vector up to 10 m into the landscape in scattered patches to an even distribution.

Maltese starthistle (*Centaurea melitensis*) continues to spread along vectors. This forb was observed in scattered patches

in over 20% of the vector blocks monitored in the unmowed portions nearest the vector. Mediterranean lovegrass (*Eragrostis barrelieri*), hoarhound (*Marrubium vulgare*) and mullein (*Verbascum thapsus*) appear in small enough numbers in this area to warrant control efforts. The mullein appeared to have been treated with herbicide.