

Exotic Plants

2009

RESOURCE BRIEF

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 FOUN for two days in late August. The vector sampled was a dirt maintenance road around the fort ruins and to a rubble pile (Fig. 1). Seventy-eight vector blocks were monitored for a total of 1,950 linear meters sampled on both sides. This was the



kochia (*Kochia scoparia*)

greatest number of vector blocks completed this season, due primarily to the excellent weather conditions and the nature of the habitat – short vegetation combined with relatively flat terrain. This area is slated for monitoring again in 2012. There was no grassland monitoring at FOUN in 2009, thus no secondary exotic monitoring took place within the interior landscape.

Kochia (Kochia scoparia) was found in almost every vector block monitored and on both sides of the vector, primarily in scattered patches to even distributions, although the bench areas surrounding the old corals often exhibited matrix densities (Table 1). White sweetclover (*Melilotus alba*) was frequently observed scattered throughout the landscape. Its presence within the prairie is of concern and eradication efforts should be considered to prevent further spread. Common lambsquarters (*Chenopodium alba*) occurred almost exclusively between the vector and the fort and sutler's ruins in scattered patches, as did prickly Russian thistle (*Salsola tragus*) in occasionally even distributions.

Table 1. The number and percentage of primary (N=78) sample units that each species was detected at Fort Union N.M. in 2009.

Scientific Name	Common Name	Primary Sample Units	
		No. Primary Vector Blocks	% Blocks Sampled (N=78)
<i>Kochia scoparia</i>	kochia	74	95
<i>Melilotus alba</i>	white sweetclover	41	53
<i>Chenopodium album</i>	common lambsquarters	24	31
<i>Salsola tragus</i>	prickly Russian thistle	20	26
<i>Eupatorium davidi</i>	toothed spurge	16	21
<i>Marrubium vulgare</i>	hoarhound	10	13
<i>Convolvulus arvensis</i>	field bindweed	3	4
<i>Tragopogon dubius</i>	western salsify	1	1



Figure 1. The 2009 panel (annual sample) at Fort Union N.M. showing the individual vector blocks sampled.

Hoarhound (*Marrubium vulgare*) was observed exclusively growing around and on ruins, generally in scattered patches, but displayed an even distribution specifically around the hospital area. David's toothed spurge (*Eupatorium davidi*) was found in scattered patches up to 10 meters into the landscape. Of note is an extremely dense patch of this species in the vicinity of the rock rubble pile – it is seldom seen in these densities and this area bears watching to determine if it persists or

spreads.

A concerted effort has been made in parts of the park to control field bindweed (*Convolvulus arvensis*) and it appears that these efforts are making a difference. Field bindweed was found in three vector blocks monitored at the north end of the fort ruins – one a work area within the vector limits and the second on the prairie side of the vector. These scattered patches should be included in management control efforts to prevent further spread, especially into the prairie. Western salsify (*Tragopogon dubius*) was observed up to 20 meters into the landscape but in very limited numbers. This species will also spread easily if not controlled.