

Noxious Weed Statement and Survey
for the
New Mexico Army National Guard



2004



Noxious Weed Statement and Survey for the New Mexico Army National Guard¹

Final Report² - December 2004

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Summary

Noxious or invasive weeds are a serious threat to both public and private lands. They have altered natural evolutionary and ecological processes by displacing native vegetation, damaging watersheds, and increasing soil erosion. To help counter this threat, the New Mexico Army National Guard, as part of its stewardship responsibilities and in accordance with the Federal Noxious Weed Act, Invasive Species Executive Order 131112, and New Mexico Noxious Weed Management Act, undertakes a yearly assessment of noxious and invasive weeds found on lands under its control and establishes weed prevention and eradication programs when feasible.

Working with Natural Heritage New Mexico, the New Mexico Army National Guard completed general floristic inventories at five training areas in New Mexico: the Camel Tracks Training Area, the Roswell Weekend Training Area, the Happy Valley Training Area, the Black Mountain Training Area, and the Las Vegas Training Area. Floristic surveys began in 1997 and continued until 2002. In 2003 additional surveys were conducted at the trainings areas for rare and introduced species.

Thirty-seven introduced species were detected on National Guard lands in New Mexico. However, only six, Malta starthistle (*Centaurea melitensis*), nodding plumeless thistle (*Carduus nutans*), field bindweed (*Convolvulus arvensis*), saltcedar (*Tamarix ramosissima*), Russian olive (*Elaeagnus angustifolia*), and Siberian elm (*Ulmus pumila*), are listed as noxious by the state of New Mexico. An additional ten species are listed as noxious by other states, but not by New Mexico.

Periodic monitoring is recommended for all training areas. In addition, the remaining stands of saltcedar and Siberian elm should be removed from the Roswell Weekend Training Area, Russian olive from the Camel Tracks Training Area, Malta starthistle from the Happy Valley Training Area, and nodding plumeless thistle and Siberian elm from the Las Vegas Training area. As the invasive trees at Camel Tracks are relatively limited, no monitoring program is necessary. At the Roswell Weekend Training Area a monitoring program should be considered for drainages requiring saltcedar eradication.

¹ Cover photo of abandoned drill pad north of firing range at HVTA with Malta starthistle.

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Introduction

Noxious or invasive weeds are a serious threat to both public and private lands. They have altered natural evolutionary and ecological processes by displacing native vegetation, damaging watersheds, and increasing soil erosion. They have reduced the recreational and commercial value of our natural resources and contributed to increased management costs. In addition, weeds have invaded approximately 17 million acres of public lands, quadrupling their range from 1985 to 1995. However, the rate of increase and total impact is likely to be far greater as the rate and impact on non-federal lands is not known (Lee, 1999). To help counter this threat, the New Mexico Army National Guard (NMARNG) undertakes a yearly assessment of noxious and invasive weeds found on lands under its control and establishes weed prevention and eradication programs when feasible.

Noxious or invasive weed management guidelines are not universal. Most states are primarily interested in plants considered threats to commerce, while others are also interested in plants not native to that state's ecosystems. A good working definition of a noxious or invasive species is "any plant or plant product that is not native to a particular ecosystem and can directly or indirectly injure or cause damage to the natural resources of the United States, the environment, the public health, crops (including nursery stock or plant products), livestock, poultry or other interests of agriculture, irrigation, or navigation" (Lee, 1999). In this report, we use this definition when discussing noxious or invasive weeds.

Species considered noxious or invasive vary across federal and state agencies. The federal government has compiled a species list to assist states in identifying plants that can be considered noxious and invasive (Appendix B), but has no specific state-by-state list. New Mexico's invasive weed program categorizes specific non-native plant species into three classes: A, B, and C (see Appendix A for a complete species list) (Ladyman, 1998; USDA, 2002). Class A weeds are currently either not present in New Mexico or have very limited distributions; Class B weeds are limited to particular areas; and Class C weeds are widespread throughout the state. Preventing new infestations of Class A species and eradicating existing infestations has the highest priority in the state's weed program. The management priority for Class B weeds is containment within currently occupied areas and prevention of new infestations. Management decisions for Class C species are to be determined at the local level and based on the feasibility of control and level of infestation. A long-term program of management and suppression of Class C species is encouraged.

This noxious weed statement assesses five NMARNG training areas for introduced plants considered by both the federal and state governments as noxious or invasive. In addition, the potential for noxious weed invasion is considered and control measures recommended for each training area.

Methods

As part of its stewardship responsibilities and in accordance with the Federal Noxious Weed Act (FNWA, 1974), Invasive Species Executive Order 131112 (ISEO, 1999), and the New Mexico Noxious Weed Management Act (NMNWA, 1978), NMARNG completed general

floristic inventories at five training areas in New Mexico. Floristic surveys provide an accurate and comprehensive collection of plant species, including noxious species. Working with NMARNG, Natural Heritage New Mexico (NHNM) conducted growing season floristic surveys at the Black Mountain (BMTA), Roswell Weekend (RWETA), Camel Tracks (CTTA), Happy Valley (HVTA), and Las Vegas (LVTA) training areas beginning in 1997 and continuing until 2002. These areas were surveyed again in 2003 specifically targeting rare and introduced species.

To develop a vegetative picture of a particular area NHNM floristic surveys employ a 400 m² vegetation plot. Within each plot a list of vascular plant species, stratified by lifeform (tree, shrub, dwarf shrub, grass, and forb), is compiled and plant cover estimated using a modified Domin-Krajina scale (Table 1). Site attributes including location, slope shape, grade, aspect, erosion type, ground cover (bare soil, gravel, rock, litter, total aerial vegetation, wood, and microvegetation), and parent material are also recorded. In addition, each plot has a narrative describing the overall vegetation character, site condition, landscape context, and impacts. Adjacent to each plot, the surrounding landscape within the plot's vegetation type is searched for any additional species not found in the plot. Additional areas are canvassed without plots to ensure that all vegetative communities and plant species within the training site are fully evaluated. These plots were established during the initial floristic inventories. The surveys in 2003 consisted of canvassing potential habitat at the training areas both on foot and by vehicle. Known locations of noxious weeds were confirmed during these surveys and any additional locations marked using a Global Positioning System (GPS) or mapped on a USGS topographical map.

Table 1. Modified Domin-Krajina cover-abundance scale.

Scalar	Cover Range	Concept	Midpoint Value	Data Value	m ² / 400m ²
+0	N/A	outside quadrat	0.001	.001	
+	<0.05%	solitary or very few	0.025	.025	<.2m ²
1	0.05- 0.124%	very scattered	0.0875	0.1	0.2m ² - <.5m ²
2	0.125- 0.99%	scattered	0.56	0.5	.5 m ² - <4 m ²
3	1.0 - 4.9%	common	3.0	3.0	4m ² - <20m ²
4	5.0 - 9.9%	well-represented	7.5	7.5	20m ² - <40m ²
5	10.0- 24.9%		17.5	17.5	40m ² - <100m ²
6	25.0- 32.9%	abundant	29.0	29.0	100m ² - <132m ²
7	33.0 - 49.9%		41.5	41.5	132m ² - <200m ²
8	50.0 -74.9%	luxuriant	62.5	62.5	200m ² - < 300m ²
9	75.0 - 94.9%		85.0	85.0	300m ² - <380m ²
10	95.0 -100.0%	full cover	97.5	97.5	380m ² - 400m ²

Plant voucher specimens are collected as necessary and their identity confirmed at the University of New Mexico Herbarium. Most specimens are identified by NHNM staff using a

combination of floras including: A Flora of New Mexico (Martin et al, 1980), Manual of the Vascular Plants of Texas (Correll et al, 1970), and various monographs available at the University of New Mexico Herbarium. Archival quality specimens are collected for accession into the University of New Mexico Herbarium and NMARNG plant collection.

The extensive NHNM vegetation plot database and herbarium collections, together with the federal and state noxious species lists, are used to assess NMARNG training areas for noxious weed impacts.

Results

Overall, 37 introduced species were detected on NMARNG lands in New Mexico (Appendix C). However, only six, Malta starthistle (*Centaurea melitensis*), nodding plumeless thistle (*Carduus nutans*), field bindweed (*Convolvulus arvensis*), saltcedar (*Tamarix ramosissima*), Russian olive (*Elaeagnus angustifolia*), and Siberian elm (*Ulmus pumila*), are listed as noxious by the state of New Mexico (Appendix A). An additional ten species are listed as noxious by other states, but not by New Mexico (Appendix D). Introduced species found on NMARNG training lands are listed below by training area.

Black Mountain Training Area

Six non-native (introduced, exotic) species were identified at BMTA during the initial surveys in 1997 and 1998: lambsquarters (*Chenopodium album*), oak-leaf thorn apple (*Datura quercifolia*), redstem stork's bill (*Erodium cicutarium*), prickly Russian thistle (*Salsola tragus*), Mediterraneangrass (*Schismus arabicus*), and the dried, uprooted remains of starthistle (*Centaurea sp.*). During a follow-up survey conducted in 2003, which was a drought year, only two non-native species were located, red brome (*Bromus rubens*) and prickly Russian thistle. Because of the drought conditions, the additional five species located during the initial surveys should still be considered as potential species for this site. While starthistle could be a Class A or B noxious weed, the others are currently not considered noxious by the federal government or the state of New Mexico. However, several of these species are considered noxious in other states (Appendix D).

Roswell Weekend Training Area

Saltcedar (*Tamarix ramosissima*), an introduced species that can be quite invasive, was found extensively in many of the drainages at RWETA during the initial surveys conducted in 1997 and 1998. In addition to the areas identified during the initial survey, seven new areas containing a total of 32 plants were located during the 2003 survey. Several Siberian elms (*Ulmus pumila*) were found in the developed areas (ISEO, 1999, Figure 1). Both are considered Class C noxious weeds by the state of New Mexico (Appendix A). In addition to saltcedar and Siberian elm there are nine introduced herbaceous species found at RWETA: creeping bentgrass (*Agrostis stolonifera*), lambsquarters, bermudagrass (*Cynodon dactylon*), barnyardgrass (*Echinochloa crus-galli*), stinkgrass (*Eragrostis cilianensis*), David's spurge (*Euphorbia davidii*) common kochia (*Kochia scoparia*), annual rabbitsfoot grass (*Polypogon monspeliensis*), and spiny sowthistle (*Sonchus asper*). While none of the herbaceous species are currently considered

noxious by the federal government or the State of New Mexico, several of these species are considered noxious in other states (Appendix D).

Camel Tracks Training Area

Russian olive (*Elaeagnus angustifolia*) is an invasive introduced species categorized as a Class C noxious weed in New Mexico (Appendix A). There are only a few Russian olive trees located in a small drainage in the southeast portion of the extension area just below vegetation plot 01YC006 (UTM's – Easting: 394779, Northing: 3936247, NAD27, Zone 13) (Figure 2). In addition to Russian olive, there are fifteen introduced herbaceous species at CTTA: rescuegrass (*Bromus catharticus*), cheatgrass (*Bromus tectorum*), lambsquarters, oak-leaf thorn apple, barnyardgrass, redstem stork's bill, common kochia, prickly lettuce (*Lactuca serriola*), horehound (*Marrubium vulgare*), prostrate knotweed (*Polygonum aviculare*), prickly Russian thistle, meadow salsify (*Tragopogon pratensis*), puncturevine (*Tribulus terrestris*), common mullein (*Verbascum thapsus*), and spiny cocklebur (*Xanthium spinosum*). While none of these plants are currently considered noxious by the federal government or the state of New Mexico, several of these species are considered noxious in other states (Appendix D).

Happy Valley Training Area

Several young Siberian elms and saltcedars found within the firing range during the initial surveys conducted in 1998 and 1999 have since been eradicated. Fruitless mulberry (*Morus alba*), a cultivar planted along the walkway of the firing range, is not reproductive and should not be considered a problem. In addition to these three species there are six introduced herbaceous species: rescuegrass, Malta starthistle (*Centaurea melitensis*), Lehmann's lovegrass (*Eragrostis lehmanniana*), common kochia, prickly Russian thistle, and puncturevine. Most of these have become more or less naturalized in the West during the last century. However, Malta starthistle has recently been listed as a Class B noxious weed by the state (Appendix A). Locations for the starthistle were recorded with a hand held GPS unit during the 2003 survey (Figure 3). While the other species are not currently considered noxious weeds by the federal government or the state of New Mexico, several of these species are considered noxious in other states (Appendix D).

Las Vegas Training Area

Several Siberian elms (*Ulmus pumila*) are located in the drainage just west of the buildings. Besides Siberian elm, there are eleven introduced herbaceous species: yellow bluestem (*Bothriochloa ischaemum*), rescuegrass, Japanese brome (*Bromus japonicus*), nodding plumeless thistle (*Carduus nutans*), field bindweed (*Convolvulus arvensis*), barnyardgrass, meadow fescue (*Festuca pratensis*), common kochia, black medick (*Medicago lupulina*), yellow sweetclover (*Melilotus officinalis*), and common mullein (*Verbascum thapsus*). While none of these plants are currently considered noxious weeds by the federal government, three are listed by the State of New Mexico (Appendix A). Nodding plumeless thistle is considered a Class B weed, while field bindweed and Siberian elm are Class C weeds (Figure 4). Three other species, barnyardgrass, common kochia, and common mullein, are considered noxious in other states (Appendix D).

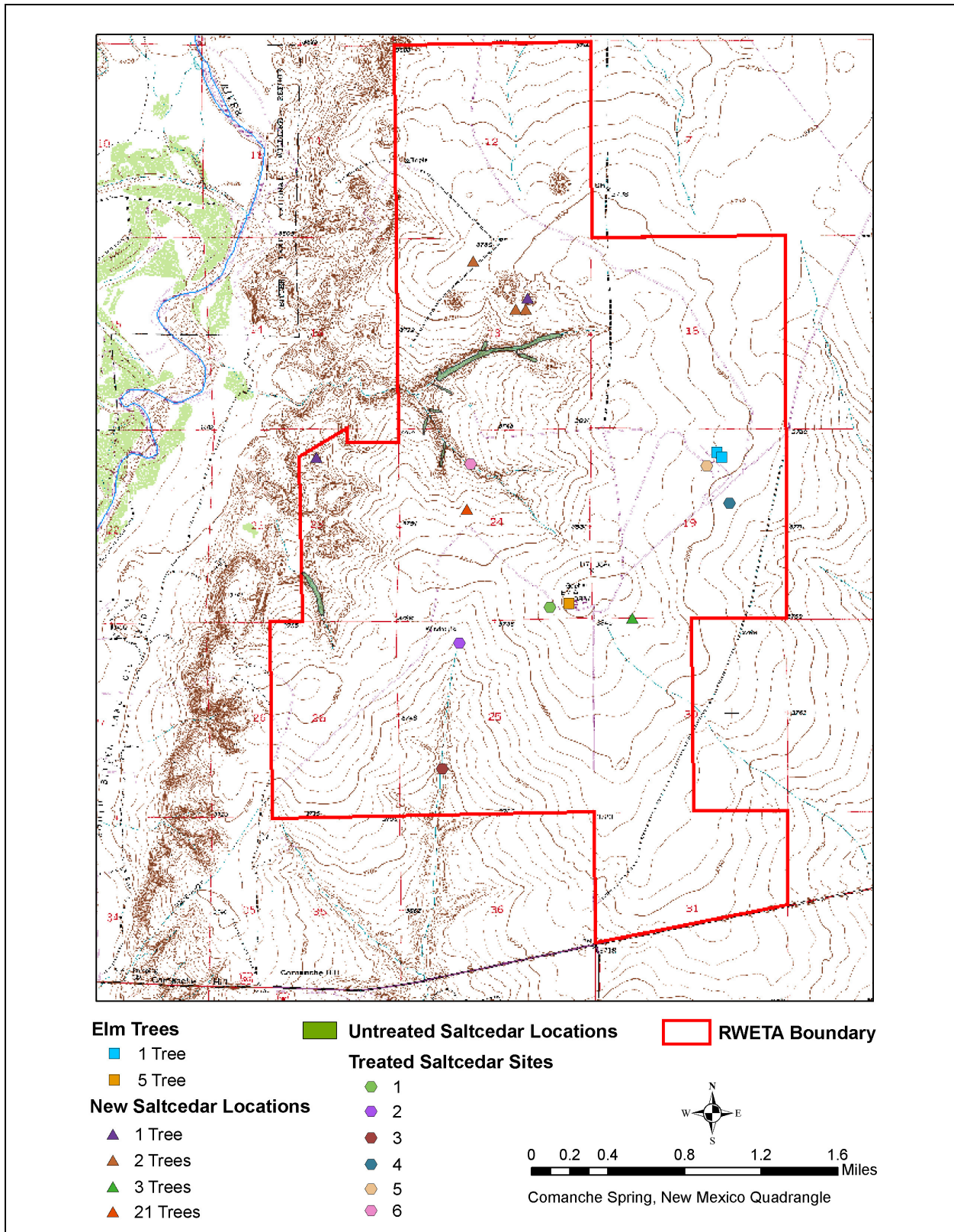


Figure 1. Drainages and uplands containing saltcedar and Siberian elm at RWETA. Sites 1 through 6 are currently undergoing saltcedar eradication. Monitoring was established at Sites 3 and 6.

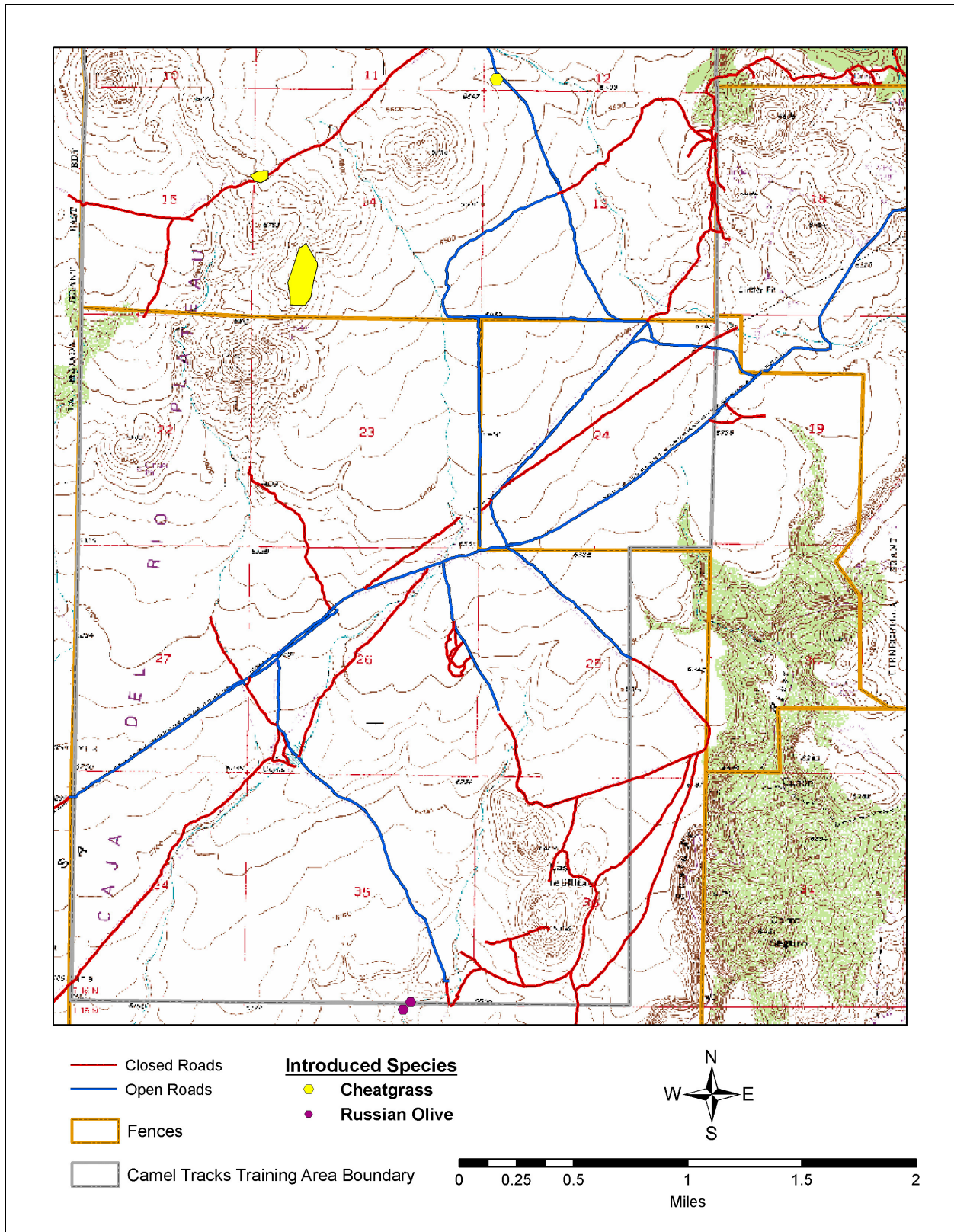


Figure 2. Cheatgrass and Russian olive locations at CTTA.

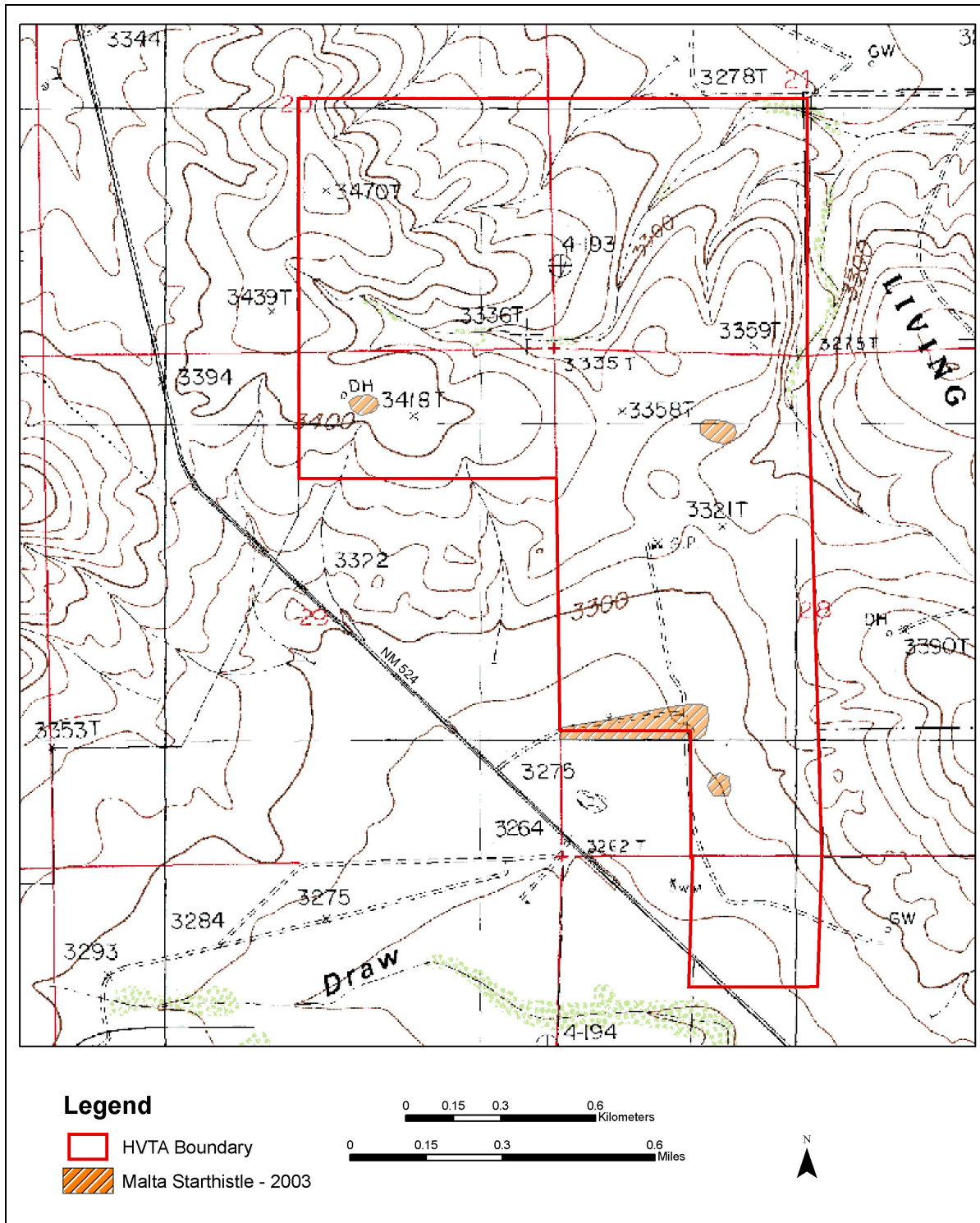


Figure 3. Malta starthistle locations at HVTA. Figure 3. Malta starthistle locations at HVTA.

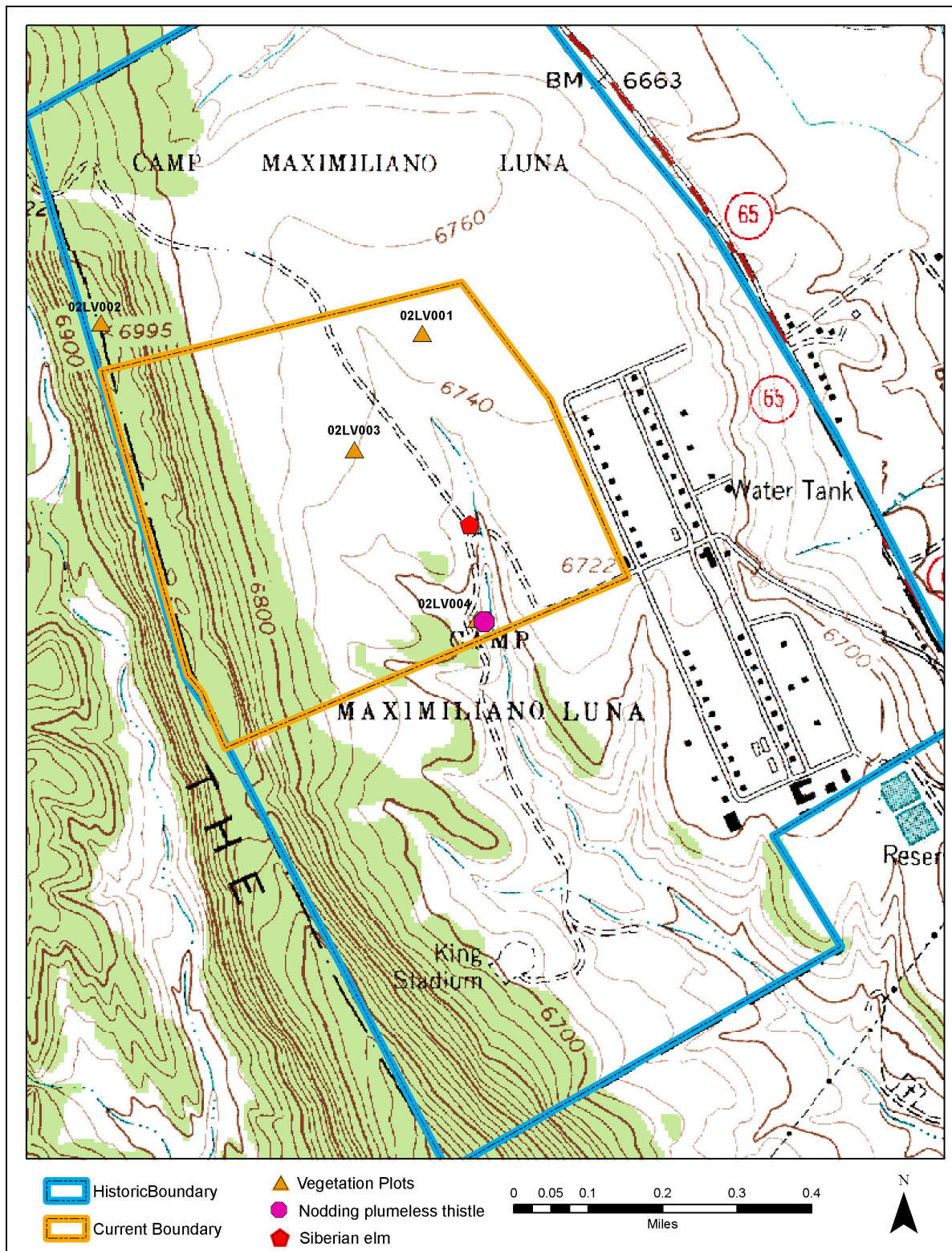


Figure 4. Nodding plumeless thistle and Siberian elm locations at LVTA.

Recommendations

Black Mountain Training Area

There were no noxious weeds found growing at BMTA; however, four introduced species – red brome, lambsquarters, redstem stork's bill, and prickly Russian thistle - are listed as noxious in other states (Appendix D). All these species have become more or less naturalized throughout the western states and eradication may not be feasible. In addition, the dried starthistle remains that were found during the initial survey in 1997 were not detected during the 2003 survey. These findings serve to emphasize the vigilance needed to combat noxious weed infestations. Regular monitoring is advised to prevent any new infestations.

Roswell Weekend Training Area

Four of the introduced species, lambsquarters, barnyardgrass, bermudagrass, and common kochia, are listed as noxious in other states (Appendix D). These species have become more or less naturalized throughout the western states and eradication may not be feasible. Saltcedar removal was recommended in the 1998 floristic inventory report (Ladyman et al, 1998), and as part of its management program, NMARNG removed saltcedar at sites 1, 2, 4, 5, and 6 in 2000 and site 3 in 2001 (Figure 1). Long-term monitoring to evaluate the effectiveness of removal procedures was established by NHPM in the fall of 2001 (Arbetan et al, 2002) and has continued yearly through 2004. Saltcedar has not been removed from several drainages nor from four new locations found during the 2003 survey (Figure 1). We recommend removal at the earliest convenience. A long-term monitoring program such as that being conducted at sites 3 and 6 should be considered, although a reduced program such as a re-sprout and recruitment census may be sufficient to assess eradication effectiveness. Such a reduced monitoring program would not, however, measure overall restoration success. In addition to saltcedar, several Siberian elms were located during the 2003 survey (Figure 1) at the Gopher Site and bunker area. Siberian elm can become quite invasive and removal is recommended. The most effective method of eliminating a tree is to cut the trunk or stem and immediately apply an herbicide to the cut surface (ROFS, 2002).

Camel Tracks Training Area

Six of the introduced herbaceous species found at CTTA - cheatgrass, lambsquarters, redstem stork's bill, common kochia, prickly Russian thistle, puncturevine, and common mullein - are considered noxious in other states (Appendix D). Most were introduced in the mid to late 1800's and have become more or less naturalized in the West during the last century. One example is cheatgrass, which has been slowly spreading from the Intermountain West, and has come to have a significant impact on rangeland ecosystems of the Great Basin and Colorado Plateau. Because it greens up early in the spring, it effectively competes with more desirable perennial warm-season grasses for moisture. After maturity it becomes a fire hazard (Whitson et al, 1992). Although not currently found in great abundance on CTTA (Figure 2), the spread of this species should be monitored over time. Because these species have become more or less naturalized throughout the western states, eradication may not be feasible. However, it may be feasible to stop the spread of Russian olive, as there were only two individuals, both of which are

found in one drainage (Figure 2). The individual just inside the boundary was removed 6/11/03 during the survey. The remaining individual, just south of the boundary, should also be removed to prevent re-infestation on the training area. The most effective method of eliminating a tree is to excavate, including the roots, or to cut the trunk and immediately apply an herbicide to the cut surface (ROFS, 2002). Seeds can remain viable for up to three years, so sites should be monitored for recruitment following treatment. The County Extension Agency should be consulted on which herbicides are permitted and most effective. No long-term monitoring program is required after removal.

Happy Valley Training Area

Two tree species found within the firing range, Siberian elm and saltcedar, were removed. Malta starthistle is located along the firing range main road and at an old drill pad just north of the firing range. Although the distribution of Malta starthistle is limited to a few areas at the training area, the eradication of this species may be difficult because the highway right-of-way leading into the area is also infested. To be most effective an eradication plan should be coordinated with the State Highway Department. For eradication methods for Malta starthistle range from manual removal to herbicide treatment see:

<http://wric.ucdavis.edu/yst/manage/management.html>. No long-term monitoring program is required after removal.

Las Vegas Training Area

Nodding plumeless thistle and Siberian elm can both become quite invasive. According to the New Mexico noxious weed list guidelines the limited distribution of nodding plumeless thistle on the training area (Figure 4), warrants its removal as a priority.⁴ There is good information on musk thistle (another common name for nodding plumeless thistle) control prepared by Oklahoma State University, which is available online (Stritzke et al, 2000). As the effectiveness of noxious weed programs varies with the target species, NHNM recommends that NMARNG develop a noxious weed plan suitable to the site and in consideration of current state recommendations. Removal of Siberian elm along the drainage (Figure 4) is also recommended. Cutting the trunks and treating with herbicide is an effective means of control (ROSF, 2002). Three other species, barnyardgrass, common kochia, and common mullein, are listed as noxious in other states (Appendix D). Along with field bindweed, all these species have become more or less naturalized throughout the western states and eradication may not be feasible.

⁴ Class B weeds are species that are limited to portions of the state. In areas that are not infested, these species should be treated as class A weeds. In areas with severe infestations, management plans should be designed to contain the infestation and stop any further spread.

References

- Arbetan, P., Y. Chauvin, and E. Muldavin. 2002. Report of Vegetation Monitoring After Tamarisk Removal at the New Mexico Army National Guard Roswell Weekend Training Site, Final Report. Unpublished.
- Correll, D. S. and H. B. Johnston. 1970. Manual of the vascular plants of Texas. Texas Research Foundation, Renner. xiii + 1881 pp.
- Federal Noxious Weed Act (FNWA) of 1974 (7 USC 2801 et seq.).
- Invasive Species Executive Order (ISEO) 131112. Federal Register/Vol. 64, No. 25/Monday, February 8, 1999/Presidential Documents.
- Ladyman, J. A. R. and Y. Chauvin. 1998. A floristic study and survey of rare and sensitive species at the New Mexico Army National Guard Roswell (WETS) and Black Mountain Training Areas. Unpublished.
- Lee, Richard D. 1999. New Mexico's Invasive Weeds. New Mexico State University, College of Agriculture and Home Economics Cooperative Extension Service.
- Martin, W. C., and C. R. Hutchins. 1980, 1981 (Vols. 1 & 2 respectively). A Flora of New Mexico. J Cramer, Germany. xiii + 2591 pp.
- New Mexico Noxious Weed Act (NMNWA) of 1963 [76-7-23 to 76-7-30 NMSA 1978].
- Russian Olive Fact Sheet (ROFS). 2002. Invasive Exotic Plants of Canada Fact Sheet No. 14. (<http://infoweb.magi.com/~ehaber/factoliv.html>).
- Stritzke, J., B. Stacey, and G. Cuperus. 2000. Integrated Control of Musk Thistle in Oklahoma. Oklahoma Cooperative Extension Service, OSU Extension Facts 7318. <http://pearl.agcomm.okstate.edu/plantsoil/weeds/f7318.htm>
- USDA, NRCS. 2002. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
- Whitson, T.D. (Ed.) et al. 1992. Weeds of the West. Western Society of Weed Science in cooperation with Cooperative Extension Services, University of Wyoming. Laramie, Wyoming. 630 pp.

Appendix A

New Mexico Noxious Weed List

Table A-1. Plant species selected by the New Mexico Department of Agriculture to be targeted as noxious weeds for control or eradication pursuant to the Noxious Weed Management Act of 1998.*

Scientific Name	Common Name	Origin
Class A Weeds		
<i>Alhagi maurorum</i>	Camelthorn	Asia
<i>Asphodelus fistulosus</i>	Onionweed	Mediterranean
<i>Cardaria draba</i>	Hoary Cress	Europe
<i>Centaurea biebersteinii</i>	Spotted Knapweed	Eurasia
<i>Centaurea calcitrapa</i>	Purple Starthistle	Europe
<i>Centaurea diffusa</i>	Diffuse Knapweed	Mediterranean
<i>Centaurea solstitialis</i>	Yellow Starthistle	Europe
<i>Cirsium arvense</i>	Canada Thistle	Eurasia
<i>Drymaria arenarioides</i>	Alfombrilla	Mexico
<i>Euphorbia esula</i> – all varieties	Leafy Spurge	Eurasia
<i>Hydrilla verticillata</i>	Hydrilla	South Africa
<i>Hyoscyamus niger</i>	Black Henbane	Europe
<i>Isatis tinctoria</i>	Dyer's Woad	Europe
<i>Lepidium latifolium</i>	Perennial Pepperweed	South Europe
<i>Linaria dalmatica</i> ssp. <i>dalmatica</i>	Dalmatian Toadflax	Europe
<i>Linaria vulgaris</i>	Yellow Toadflax	Eurasia
<i>Lythrum salicaria</i>	Purple Loosestrife	Europe
<i>Myriophyllum spicatum</i>	Eurasian Watermilfoil	Eurasia
<i>Onopordum acanthium</i>	Scotch Thistle	Europe
Class B Weeds		
<i>Acroptilon repens</i>	Russian Knapweed	Eurasia
<i>Carduus nutans</i> – all subspecies	Musk Thistle	South Europe
<i>Centaurea melitensis</i>	Malta Starthistle	Europe
<i>Cirsium vulgare</i>	Bull Thistle	Eurasia
<i>Conium maculatum</i>	Poison Hemlock	L. Europe
<i>Dipsacus fullonum</i> ssp. <i>fullonum</i> and ssp. <i>sylvestris</i>	Teasel	Europe
<i>Halogeton glomeratus</i>	Halogeton	Asia
<i>Peganum harmala</i>	African Rue	North Africa
Class C Weeds		
<i>Aegilops cylindrica</i>	Jointed Goatgrass	South Europe
<i>Convolvulus arvensis</i>	Field Bindweed	L. Europe
<i>Elaeagnus angustifolia</i>	Russian Olive	L. Europe
<i>Tamarix</i> spp. – all species	Saltcedar	Europe
<i>Ulmus pumila</i>	Siberian Elm	Europe

*This list does not include every plant species with a potential to negatively impact the state's environment and economy. Vegetation managers are also encouraged to recognize plant species listed on the federal noxious weed list or other western states noxious weed lists as potentially having negative impacts and to manage them accordingly.

Appendix B

Federal Noxious Weed List as of 09/08/2000

Aquatic/Wetland

Azolla pinnata (Azollaceae) (mosquito fern, water velvet)
Caulerpa taxifolia (Caulerpaceae)(Mediterranean clone of caulerpa)
Eichhornia azurea (Pontederiaceae) (anchored waterhyacinth)
Hydrilla verticillata (Hydrocharitaceae) (hydrilla)
Hygrophila polysperma (Acanthaceae) (Miramar weed)
Ipomoea aquatica (Convolvulaceae) (Chinese waterspinach)
Lagarosiphon major (Hydrocharitaceae) (Oxygen weed)
Limnophila sessiliflora (Scrophulariaceae) (ambulia)
Melaleuca quinquenervia (Myrtaceae) (melaleuca)
Monochoria hastata (Pontederiaceae) (monochoria)
Monochoria vaginalis (Pontederiaceae) (pickerel weed)
Ottelia alismoides (Hydrocharitaceae) (duck-lettuce)
Sagittaria sagittifolia (Alismataceae) (arrowhead)
Salvinia auriculata (Salviniaceae) (giant salvinia)
Salvinia biloba (Salviniaceae) (giant salvinia)
Salvinia herzogii (Salviniaceae) (giant salvinia)
Salvinia molesta (Salviniaceae) (giant salvinia)
Solanum tampicense (Solanaceae)(wetland nightshade)
Sparganium erectum (Sparganiaceae) (exotic bur-reed)

Parasitic

Aeginetia spp. (Orobanchaceae)
Alectra spp. (Scrophulariaceae)
Cuscuta spp. other than native or widely distributed species (Cuscutaceae)(dodders)
Orobanche spp. other than native or widely distributed species (Orobanchaceae) (broomrapes)
Striga spp. (Scrophulariaceae) (witchweeds)

Terrestrial

Ageratina adenophora (Asteraceae) (crofton weed)
Alternanthera sessilis (Amaranthaceae) (sessile joyweed)
Asphodelus fistulosus (Liliaceae) (onionweed)
Avena sterilis L. (Poaceae) (animated or wild oat)
Spermacoce alata (Rubiaceae) (borreria)
Carthamus oxyacanthus (Asteraceae) (wild safflower)
Chrysopogon aciculatus (Poaceae) (pilipiliula)
Commelina benghalensis (Commelinaceae) (Benghal dayflower)
Crupina vulgaris (Asteraceae) (common crupina)
Digitaria abyssinica (=D. *scalarum*) (Poaceae) (African couch grass)
Digitaria velutina (Poaceae) (velvet fingergrass)
Drymaria arenarioides (Caryophyllaceae) (lightening weed, alfombrilla)
Emex australis (Polygonaceae) (three-cornered jack)
Emex spinosa (Polygonaceae) (devil's thorn)
Galega officinalis (Fabaceae) (goatsrue)
Heracleum mantegazzianum (Apiaceae) (giant hogweed)
Homeria spp. (Iridaceae) (Cape tulip)
Imperata brasiliensis (Poaceae) (Brazilian satintail)
Imperata cylindrica (Poaceae) (cogongrass)
Ischaemum rugosum (Poaceae) (murrain-grass)
Leptochloa chinensis (Poaceae) (Asian sprangletop)
Lycium ferocissimum (Solanaceae) (African boxthorn)
Melastoma malabathricum (Melastomataceae) (no common name)
Mikania cordata (Asteraceae) (mile-a-minute)

Appendix B continued – Federal Noxious Weed List as of 09/08/2000

Mikania micrantha (Asteraceae) (mile-a-minute)

Mimosa invisa (Fabaceae) (giant sensitive plant)

Terrestrial

Mimosa pigra (Fabaceae) (catclaw mimosa)

Nassella trichotoma (Poaceae) (serrated tussock)

Opuntia aurantiaca (Cactaceae) (jointed prickly pear)

Oryza longistaminata (Poaceae) (red rice)

Oryza punctata (Poaceae) (red rice)

Oryza rufipogon (Poaceae) (red rice)

Paspalum scrobiculatum (Poaceae) (Kodo-millet)

Pennisetum clandestinum (Poaceae) (kikuyugrass)

Pennisetum macrourum (Poaceae) (African feathergrass)

Pennisetum pedicellatum (Poaceae) (kyasuma-grass)

Pennisetum polystachion (Poaceae) (missiongrass)

Prosopis alapataco (Fabaceae) (*Prosopis* spp. are mesquites)

Prosopis argentina

Prosopis articulata

Prosopis burkartii

Prosopis caldenia

Prosopis calingastana

Prosopis campestris

Prosopis castellanosi

Prosopis denudans

Prosopis elata

Prosopis farcta

Prosopis ferox

Prosopis fiebrigii

Prosopis hassleri

Prosopis humilis

Prosopis kuntzei

Prosopis pallida

Prosopis palmeri

Prosopis reptans

Prosopis rojasiana

Prosopis ruizlealii

Prosopis ruscifolia

Prosopis sericantha

Prosopis strombulifera

Prosopis torquata

Prosopis velutina

Rottboellia cochinchinensis (Poaceae) (itchgrass)

Rubus fruticosus (Rosaceae) (wild blackberry complex)

Rubus moluccanus (Rosaceae) (wild blackberry)

Saccharum spontaneum (Poaceae) (wild sugarcane)

Salsola vermiculata (Chenopodiaceae) (wormleaf salsola)

Setaria pallide-fusca (Poaceae) (cattail grass)

Solanum torvum (Solanaceae) (turkeyberry)

Solanum viarum (Solanaceae) (tropical soda apple)

Tridax procumbens (Asteraceae) (coat buttons)

Urochloa panicoides (Poaceae) (liverseed grass)

Appendix C

Table C-1. Alphabetical list of exotic species found at five NMARNG training areas and state status.

Scientific Name	Family	Common Name	Present at Training Site					NM Status
			BMTA	CTTA	HVTA	LVTA	RWETA	
<i>Agrostis stolonifera</i>	Poaceae	creeping bentgrass					Yes	None
<i>Bothriochloa ischaemum</i>	Poaceae	yellow bluestem				Yes		None
<i>Bromus catharticus</i>	Poaceae	rescuegrass		Yes	Yes	Yes		None
<i>Bromus japonicus</i>	Poaceae	Japanese brome				Yes		None
<i>Bromus rubens</i>	Poaceae	foxtail brome	Yes					None
<i>Bromus tectorum</i>	Poaceae	cheatgrass		Yes				None
<i>Carduus nutans</i>	Asteraceae	nodding plumeless thistle				Yes		Class B
<i>Centaurea</i>	Asteraceae	starthistle	Yes					
<i>Centaurea melitensis</i>	Asteraceae	Malta starthistle			Yes			Class B
<i>Chenopodium album</i>	Chenopodiaceae	lambsquarters	Yes	Yes			Yes	None
<i>Convolvulus arvensis</i>	Convolvulaceae	field bindweed				Yes		Class C
<i>Cynodon dactylon</i>	Poaceae	bermudagrass					Yes	None
<i>Datura quercifolia</i>	Solanaceae	oak-leaf thorn apple	Yes	Yes				None
<i>Echinochloa crus-galli</i>	Poaceae	barnyardgrass		Yes		Yes	Yes	None
<i>Elaeagnus angustifolia</i>	Elaeagnaceae	Russian olive		Yes				Class C
<i>Eragrostis cilianensis</i>	Poaceae	stinkgrass					Yes	None
<i>Eragrostis lehmanniana</i>	Poaceae	Lehmann's lovegrass			Yes			None
<i>Erodium cicutarium</i>	Geraniaceae	redstem stork's bill	Yes	Yes				None
<i>Euphorbia davidii</i>	Euphorbiaceae	David's spurge					Yes	None
<i>Festuca pratensis</i>	Poaceae	meadow fescue				Yes		None
<i>Kochia scoparia</i>	Chenopodiaceae	common kochia		Yes	Yes	Yes	Yes	None
<i>Lactuca serriola</i>	Asteraceae	prickly lettuce		Yes				None
<i>Marrubium vulgare</i>	Lamiaceae	horehound		Yes				None
<i>Medicago lupulina</i>	Fabaceae	black medick				Yes		None
<i>Melilotus officinalis</i>	Fabaceae	sweetclover				Yes		None
<i>Morus alba</i>	Moraceae	white mulberry			Yes			None
<i>Polygonum aviculare</i>	Polygonaceae	prostrate knotweed		Yes				None
<i>Polyogon monspeliensis</i>	Poaceae	annual rabbitsfoot grass					Yes	None
<i>Salsola tragus</i>	Chenopodiaceae	prickly Russian thistle	Yes	Yes	Yes			None
<i>Schismus arabicus</i>	Poaceae	Mediterranean grass	Yes					None
<i>Sonchus asper</i>	Asteraceae	spiny sowthistle					Yes	None
<i>Tamarix ramosissima</i>	Tamaricaceae	saltcedar, tamarisk			Yes		Yes	Class C
<i>Tragopogon pratensis</i>	Asteraceae	meadow salsify		Yes				None
<i>Tribulus terrestris</i>	Zygophyllaceae	puncturevine		Yes	Yes			None
<i>Ulmus pumila</i>	Ulmaceae	Siberian elm		Yes	Yes	Yes	Yes	Class C
<i>Verbascum thapsus</i>	Scrophulariaceae	common mullein		Yes		Yes		None
<i>Xanthium spinosum</i>	Asteraceae	spiny cocklebur		Yes				None

Appendix D

Table D-1. Plants listed as noxious in states other than New Mexico.

Scientific Name	Common Name	State	Listing
<i>Bromus rubens</i>	red brome	California	Invasive
<i>Bromus tectorum</i>	downy brome/cheatgrass	Colorado	Noxious weed
<i>Cynodon dactylon</i>	bermudagrass	California	C list (noxious weeds)
		Utah	Noxious weed
<i>Echinochloa crus-galli</i>	barnyardgrass	Arkansas	Noxious weed
<i>Erodium cicutarium</i>	redstem filaree	Colorado	Noxious weed
<i>Kochia scoparia</i>	kochia	Colorado	Noxious weed
		Minnesota:	Secondary noxious weed
		Oregon	B designated weed
		Washington	Class B noxious weed
<i>Salsola tragus</i> *	prickly Russian thistle	California	C list (noxious weeds)
		Colorado	Noxious weed
		Ohio	Prohibited noxious weed
<i>Tribulus terrestris</i>	puncturevine	Arizona	Regulated noxious weeds
		California	C list (noxious weeds)
		Colorado	Noxious weed
		Idaho	Noxious weed
		Iowa	Secondary noxious weed
		Nevada	Noxious weed
		North Carolina	Class B noxious weed
		Oregon	B designated weed
Washington	Class B noxious weed		
<i>Verbascum thapsus</i>	common mullein	Colorado	Noxious weed
		Hawaii	Noxious weed
		Washington	Class C noxious weed
<i>Xanthium spinosum</i>	spiny cocklebur	Arkansas	Noxious weed
		Oregon	B designated weed, Quarantine
		Washington	Class C noxious weed

*Plant Synonyms:

<u>Current</u>	<u>Old</u>
<i>Salsola tragus</i>	<i>Salsola australis</i>
	<i>Salsola iberica</i>
	<i>Salsola kali</i> L. ssp. <i>ruthenica</i>
	<i>Salsola kali</i> L. ssp. <i>tenuifolia</i>
	<i>Salsola kali</i> L. ssp. <i>tragus</i>
	<i>Salsola pestifer</i>
	<i>Salsola ruthenica</i>