

Report for Travel Management DEIS

Invasive Species Write-up

Prepared by:

Annette Joseph, Range Program Manager

Date

INVASIVE SPECIES

Current Conditions

The term invasive species is often used interchangeably with the term noxious weeds. National direction for management of invasive species on National Forest System Lands began with the Federal Noxious Weed Act of 1974 and is addressed in the Washington Office Amendment, amendment number 2000-95-5, Forest Service Manual (FSM) Zero Code 2080 – Noxious Weed Management. A regional directive was also approved for the Southwestern Region (R3) via an R3, FSM supplement dated 4/20/2009 to address policy for management of noxious weeds (R3 Supplement No. 2000-2009-1, FSM 2089 – Noxious Weed Management). At the present time, no current Gila National Forest directives exist for management of noxious weeds.

The 1996 Memorandum of Understanding (MOU) in cooperation with the NM State Highway and Transportation Department and Federal Highway Administration established procedures for coordinating matters related to state highways use and occupancy of National Forest System lands. In February 1999, Executive Order 13112 established the National Invasive Species Council to provide national leadership on managing invasive species. That order directs that invasive weeds be controlled on all Federal lands. In 1999, an Environmental Assessment (EA) was completed for Noxious Weed Management on the Gila National Forest, specifically to meet the requirements of the Federal Noxious Weed Act. In 2000, a second EA was completed for Noxious Weed Management on the Gila National Forest to implement a forest-wide noxious weed control program in cooperation with private landowners and other federal, state, and county agencies. The program focused on controlling and eradicating small infestations of noxious weeds. In 2006, a third EA was completed for Noxious Weed Management on the Gila National Forest, specifically to address saltcedar treatments along the Gila River and its tributaries on the Wilderness Ranger District.

Three categories of noxious weeds have been identified for the State of NM (Class A, B and C weeds). As of April 2009, approximately 21 species were identified as Class A category, 10 species as Class B category, 6 species as Class C category, and 8 species as Watch List category. Refer to “*Appendix*” for New Mexico Noxious Weed plant list by category. Many of these same invasive plant species are also addressed in detail in three additional publications: the 1999 New Mexico Invasive Weeds, the 2006 Troublesome Weeds of New Mexico, and the 2007 Roadside Weed Management.

Class A weeds, all of which are non-native to NM, are species currently not present or have limited distribution. Class B weeds, species limited to portions of the state, are species that should be treated as Class A weeds in uninfested areas but should have management plans developed and designed to contain the infestation and stop further spread in areas of severe infestations. Class C weeds, species that are wide-spread, are species that should have management decisions determined at the local level based on feasibility of control and level of infestations. Watch List was also used to identify species of concern in the state, and have the potential to become problematic. More data is needed to determine if these species should be listed, and when encountered should be documented and the appropriate authorities contacted.

Invasive species are those plants not native to a region which, when introduced either accidentally or intentionally, out-compete native plants for available resources, reproduce

prolifically, and potentially dominate regions and ecosystems. Their propagules may be carried by several means that include but are not limited to being transported by wind, in water or by animals and people in fur or feathers, clothing, or the tires of vehicles. Because they often arrive in new areas unaccompanied by their native predators, there are no natural agents to restrain their establishment and spread. Many have extensive root systems that may extend greater than 20 feet into the soil. Others have rhizomes that send up sprouts and establish new plants, especially when cut.

The Gila National Forest has focused on four major areas: 1) prevention, 2) detection, 3) control and 4) cooperation. Prevention is the most cost effective approach to combating invasive species and keeps weeds from becoming established and spreading. Detection is important to recognize these plants before they become established and also to recognize them in the seedling or immature stage rather than in the flowering or mature stage. Control or immediate action is necessary because a rapid response reduces the time and energy required to keep populations under control. Cooperation with Federal, state, counties, and weed control districts allows for collaboration to work towards the common goal, prevention of invasive species.

No invasive animal species are known to occur in the project area and the major invasive plants known to occur within the analysis area include bull thistle, cheatgrass, musk thistle, purple loosestrife, Russian olive, salt cedar, scotch thistle, Siberian elm, spotted knapweed, tree of heaven, and yellow starthistle. These species are generally associated with ground disturbance on utility corridors, roads, trails, developed campgrounds, timber sale areas, wildland burns, and developed rangeland structural improvements such as stock ponds and pipelines. Many of these invasive species are limited to specific areas, while others are common at all major river systems, and others are scattered across the entire analysis area.

At the present time, infestations inventoried within the analysis area consist of approximately 2,800 acres. This include approximately 900 acres each for salt cedar and cheatgrass (or 32% for each of these plant species), approximately 400 acres for bull thistle (or 14%), approximately 200 acres each for Russian olive and Siberian elm (or 7% for each of these plant species), approximately 100 acres for yellow starthistle (or 4%), approximately 50 acres each for musk thistle and spotted knapweed (or 2% for each of these plant species), approximately 20 acres for scotch thistle (or 1%), approximately 10 acres for tree of heaven (or <1%), and approximately 5 acres for purple loosestrife (or <1%). Many of these invasive species may occur in greater densities within the analysis area but have not been inventoried and recorded for this environmental assessment document.

Treatment techniques are determined using a number of factors including the biology of the target weed species, composition of associated and surrounding vegetation, soils, water, fish, plus other wildlife concerns, and potential to the human environment. Herbicides are used to gain control over new and established weed infestations only where other treatment methods have proven unsuccessful. Once an infestation is reduced in size and density, non-herbicide tools are used as a secondary follow-up treatment where feasible and practical. An intensive noxious weed management program was implemented and exists within the analysis area to assist with eradication of small invasive plant species infestation areas and to assist with keeping larger populations of invasive plant species under control.

Motorized travel contributes to the spread of invasive plants within the analysis area via seed attachment to undercarriage of vehicles and tires, when seed gets mixed in with wet soil or mud. Another source of spread occurs via seed attachment to All Terrain Vehicle (ATV) rider’s clothes, pant legs and shoes, from invasive plant species when riding through infestation areas of invasive species.

Methodology to Estimate Effects

Electronic databases and forest files for invasive plant inventory and treatment records were reviewed for the analysis area. Professional judgment was used to estimate effects of the alternatives. The total amount of proposed miles for roads and trails was determined for this proposed project to compare the estimated effects for each alternative.

Direct and Indirect Effects

The direct and indirect effects identified for invasive plant species within the analysis area are displayed in the following table by alternative.

Table 1: Proposed Total Roads and Trails displayed in miles for each alternative.

Description	B	C	D	E	F	G
Proposed Total Roads (Miles)	4,602	4,269	2,980	2,334	3,346	3,325
Proposed Total Trails (Miles)	16	202	124	1	180	180
Proposed Combined Totals (Miles)	4,618	4,471	3,104	2,335	3,526	3,505
% Change from Alternative B		- 3%	-33%	-49%	-24%	-24%

The percent of change for Alternatives C through G is compared to the No Action Alternative (Alternative B). Different levels of authorized roads and trails use is proposed under each alternative as displayed in the table above. Cross country access would continue with all acres open for motorized travel under Alternative B (except for declared Wilderness and other areas restricted to motorized travel). Motorized dispersed travel would be restricted under Alternative E, and would be limited to 300 feet under Alternatives C, D, F and G. Authorized access for game retrieval of “1 mile” would be allowed for Alternative C, access for game retrieval of “½ mile” would be allowed for Alternative F, authorized access for game retrieval of “300 feet” would be allowed for Alternatives D and G, and no access for game retrieval would be allowed under Alternative E. Proposed “areas” would be recognized under Alternatives C, F and G, and would be restricted under Alternatives D and E.

Alternative B: (No Action)

Under this alternative, motorized travel within the analysis area would continue to occur at the current level on all National Forest System Lands acres for any activity, and would have the largest amount of potential invasive plant species that would occur within the analysis area when

compared to all the proposed alternatives. As a result, the number of invasive plant species that would go to seed and spread by motorized and non-motorized use is expected to remain about the same. The rate of establishment of new infestations would be expected to increase, since seed would continue to be spread via uncontrolled motorized travel within the analysis area. In summary, Alternative B would allow for the largest amount of potential for invasive plant species that would occur within the analysis area when compared to all the proposed alternatives.

Alternative C:

This alternative would be very similar to the No Action Alternative (Alternative B). Under this alternative, the amount of motorized travel would be reduced with the restriction of authorized cross country travel, and access for game retrieval limited to “1 mile” within the analysis area. As a result, a 3% difference from Alternative B would occur in the amount of invasive plant species that would continue to go to seed and spread. The rate of establishment of new infestations would be expected to continue to increase through other uses such as designated motorized and non-motorized travel, proposed “areas” would be recognized within the analysis area, restricted access of “1 mile” for game retrieval, and restricted access of motorized dispersed travel of “300 feet”. No cross country travel would be authorized. In summary, Alternative C would be very similar to Alternative B and when compared with all the proposed alternatives would have the second largest amount of potential for invasive plant species that would occur within the analysis area.

Alternative D:

This alternative displays a moderate amount of change when compared to the No Action Alternative (Alternative B). Under this alternative, the amount of motorized travel would be reduced with the restriction of authorized cross country travel. Access for game retrieval and motorized travel would be limited to “300 feet” within the analysis area. No proposed “areas” would occur under this alternative. As a result, a 33% difference from Alternative B would occur in the amount of invasive plant species that would continue to go to seed and spread. The rate of establishment of new infestations would be expected to decrease, since the amount of uncontrolled motorized travel within the analysis area would also be moderately decreased as compared to Alternative B including no cross country travel, no recognized “areas”, and restricted motorized dispersed travel and access for game retrieval limited to “300 feet”. In summary, Alternative D would have a moderate amount of invasive plant species compared to Alternative B and when compared with all the proposed alternatives would have the second smallest amount of potential for invasive plant species that would occur within the analysis area.

Alternative E:

This alternative displays the most amount of change when compared to the No Action Alternative (Alternative B). Under this alternative, no authorized cross country travel would be allowed within the analysis area. No proposed “areas”, motorized dispersed travel or access for game retrieval would occur. As a result, a 49% difference from Alternative B would occur in the amount of invasive plant species that would continue to go to seed and spread. The rate of establishment of new infestations would also be expected to decrease, since the amount of uncontrolled motorized travel within the analysis area would be decreased the most as compared to Alternative B including no cross country travel, no recognized “areas”, no motorized dispersed travel and no access for game retrieval. In summary, Alternative E would have the

least amount of invasive plant species compared to Alternative B and when compared with all the proposed alternatives would have the least amount of potential for invasive plant species that would occur within the analysis area.

Alternative F:

This alternative displays some change when compared to the No Action Alternative (Alternative B). Under this alternative, no authorized cross country travel would be allowed within the analysis area. Proposed “areas” would be recognized, motorized dispersed travel would be limited to “300 feet”, and access for game retrieval would be limited to “½ mile”. As a result, a 24% difference from Alternative B would occur in the amount of invasive plant species that would continue to go to seed and spread. The rate of establishment of new infestations would also be expected to decrease, since the amount of uncontrolled motorized travel within the analysis area would be decreased the most as compared to Alternative B including no cross country travel, authorized motorized dispersed travel restricted to “300 feet”, and authorized access for game retrieval restricted to “½ mile”. In summary, Alternative F would have a lower amount of invasive plant species compared to Alternative B and when compared with all the proposed alternatives would have a lower amount of potential for invasive plant species that would occur within the analysis area.

Alternative G:

This alternative displays the same amount of change as Alternative F, and some change when compared to the No Action Alternative (Alternative B). Under this alternative, no authorized cross country travel would be allowed within the analysis area. Proposed “areas” would be recognized, motorized dispersed travel and access for game retrieval would be limited to “300 feet”. As a result, a 24% difference from Alternative B would occur in the amount of invasive plant species that would continue to go to seed and spread. The rate of establishment of new infestations would also be expected to decrease, since the amount of uncontrolled motorized travel within the analysis area would be decreased the most as compared to Alternative B including no cross country travel, authorized motorized dispersed travel and authorized access for game retrieval restricted to “300 feet”. In summary, Alternative G would have a lower amount of invasive plant species compared to Alternative B and when compared with all the proposed alternatives would have a lower amount of potential for invasive plant species that would occur within the analysis area, except for Alternative E.

Cumulative Effects

An assortment of past and present ground disturbing activities such as utility corridors, roads, trails, developed campgrounds, livestock grazing, timber removal, recreation uses, wildland burning, road construction and developed rangeland structural improvements such as stock ponds and pipelines have contributed to the spread of invasive plants. These types of ground disturbance in conjunction with other forest uses and activities from other vectors (such as animals, hiking, mountain biking and motorized use) will cumulatively affect the spread of invasive plant species within the analysis area. Alternative B would contribute the most towards cumulative effects because it provides the most favorable conditions for the spread and establishment of invasive plants because of uncontrolled motorized use, and Alternative E would contribute the least. Alternatives C, D, F and G would continue to contribute to cumulative effects for invasive species but at a much lower level when compared with the No Action Alternative because of reduced number of authorized roads and trails associated with forest uses and activities.

APPENDIX - New Mexico Noxious Weeds
(Updated April 2009)

Class A - species currently not present or have limited distribution. Preventing new infestations of these species and eradicating existing infestations is the highest priority.

<u>Common Name</u>	<u>Scientific Name</u>
Alfombrilla	<i>Drymaria arenariodes</i>
Black Henbane	<i>Hyoscyamus niger</i>
Camelthorn	<i>Alhagi psuedalhagi</i>
Canada thistle	<i>Cirsium arvense</i>
Dalmation toadflax	<i>Lineria dalmatica</i>
Diffuse knapweed	<i>Centaurea diffusa</i>
Dyer's woad	<i>Isatis tinctoria</i>
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Giant salvinia	<i>Salvinia molesta</i>
Hoary cress	<i>Cardaria spp.</i>
Hydilla	<i>Hydrilla verticillata</i>
Leafy spurge	<i>Euphorbia esula</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Parrotfeather	<i>Myriophyllum aquaticum</i>
Purple loosestrife	<i>Lythrum salicaria</i>
Purple starthistle	<i>Centaurea calcitrapa</i>
Ravenna grass	<i>Saccharum ravennae</i>
Scotch thistle	<i>Onopordum acanthium</i>
Spotted knapweed	<i>Centaurea biebersteinii</i>
Yellow starthistle	<i>Centaurea solstitialis</i>
Yellow toadflax	<i>Linaria vulgaris</i>

Class B - species that should be treated as Class A weeds in uninfested areas but should get management plans developed and designed to contain the infestation and stop further spread in areas of severe infestations.

<u>Common Name</u>	<u>Scientific Name</u>
African rue	<i>Peganum harmala</i>
Chicory	<i>Cichorium intybus</i>
Halogeton	<i>Halogeton glomeratus</i>
Malta starthistle	<i>Centaurea melitensis</i>
Musk thistle	<i>Carduus nutans</i>
Perennial pepperweed	<i>Lepidium latifolium</i>
Russian knapweed	<i>Acroptilon repens</i>
Poison hemlock	<i>Conium maculatum</i>
Teasel	<i>Dipsacus fullonum</i>
Tree of heaven	<i>Ailanthus altissima</i>

APPENDIX - New Mexico Noxious Weeds (Continued)
(Updated April 2009)

Class C - species that should be treated as Class A weeds in uninfested areas but should get management plans developed and designed to contain the infestation and stop further spread in areas of severe infestations.

<u>Common Name</u>	<u>Scientific Name</u>
Bull thistle	<i>Cirsium vulgare</i>
Cheatgrass	<i>Bromus tectorum</i>
Jointed goatgrass	<i>Aegilops cylindrica</i>
Russian olive	<i>Elaeagnus angustifolia</i>
Saltcedar	<i>Tamarix spp.</i>
Siberian elm	<i>Ulmus pumila</i>

Watch List - species that should be treated as Class A weeds in uninfested areas but should get management plans developed and designed to contain the infestation and stop further spread in areas of severe infestations.

<u>Common Name</u>	<u>Scientific Name</u>
Crimson fountaingrass	<i>Pennisetum setaceum</i>
Giant cane	<i>Arundo donax</i>
Meadow knapweed	<i>Centaurea pratensis</i>
Pampas grass	<i>Cortaderia sellonana</i>
Quackgrass	<i>Elytrigia repens</i>
Sahara mustard	<i>Brassica yournefortii</i>
Spiny cocklebur	<i>Xanthium spinosum</i>
Wall rocket	<i>Diplotaxis tenuifolia</i>

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