

**U.S. Department of the Interior
Bureau of Land Management
White River Field Office
73544 Hwy 64
Meeker, CO 81641**

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-110-2006-108-EA

CASEFILE/PROJECT NUMBER (optional):

PROJECT NAME: Area Wide Tamarisk and Russian olive Treatment

LEGAL DESCRIPTION: White River Field Office

APPLICANT: USDI – BLM White River Field Office

ISSUES AND CONCERNS (optional): Tamarisk (*Tamarix ramosissima*), also known as salt cedar, and Russian olive (*Elaeagnus angustifolia*) are introduced species that are displacing native vegetation along many streams, reservoirs, canals, and drainages. These plants can form dense thickets that eventually displace native vegetation and dominate drainages. Tamarisk is a deciduous shrub or small tree that grows from 5 to 20 feet tall. Russian olive, which has no relation to olive trees, is also a deciduous tree which usually grows from 15 to 25 feet in height. Both species are listed on the state of Colorado noxious weed list for controlling populations and spread.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Background/Introduction: Infestations of tamarisk and Russian olive occur throughout the White River Field Office area, primarily associated with the White River and the lower ends of its associated tributaries. Many of these infestations are small isolated patches, generally occurring at livestock reservoirs or other isolated water sources, that functionally serve as extended seed sources increasing potential for further spread. The objective of the proposed action is to treat tamarisk and Russian olive infestations within the White River Field Office (WRFO) to curtail further spread and reduce the extent of, or eliminate current infestations. The majority of treatment areas will not involve surface water or will be at isolated reservoirs.

Vegetation communities associated with treatment areas will range from low salt desert vegetation, greasewood and sagebrush bottoms, and could potentially include the lower limits of some mountain shrub plant communities, where ever tamarisk and Russian olives are occurring. Understory in these areas would vary but generally would be expected to include wheatgrass, bluegrass, basin wildrye, and cheatgrass. Treatment could occur on a wide range of soil types though the majority would be on alkaline slope ecological sites with fine sandy loam soils on 0-

5% slopes. Implementation of the proposed action will lead to a greater knowledge for the treatment of these invasive species throughout the field office.

Proposed Action: To treat and control tamarisks (*Tamarix spp.*) and Russian olives (*Elaeagnus angustifolia*) in the White River Field Office. Treatment will occur throughout the White River Field Office area, primarily in areas associated with the White River corridor, the lower ends of its associated tributaries (e.g. Blacks Gulch, Scenery Gulch, Tschuddi Gulch, Red Wash, Wolf Creek, Spring Creek, Douglas Creek, Crooked Wash, Yellow Creek, etc.) and small isolated patches, generally occurring in association with livestock reservoirs or other isolated water sources. Treatment will mainly be a stump-cut treatment method that will be a two phase process. Initially plants will be treated using a cut stump method application of one of two herbicides approved for aquatic use in Colorado for cut stump application; Glyphosate with the brand name of Rodeo® by Dow AgroSciences or Isopropylamine salt of Imazapyr with the name brand of Habitat® by BASF-The Chemical Company. The second phase will include re-treatment of plants that re-sprout using a foliar application of either of these same chemicals, mixed according to the label directions and restrictions. Some spot treatments may be accomplished with a foliar application where plants will be sprayed using a Solo backpack sprayer to target plants individually.

Research by Dow AgroSciences has shown when used according to directions for cut stump application, Rodeo® will control, partially control or suppress most woody brush and tree species including tamarisk and Russian olive. Research by BASF has shown when used according to directions for cut stump application, Habitat® will also control, partially control or suppress most woody brush and tree species including tamarisk and Russian olive.

For best results, cutting with stump treatment, foliar treatment of re-sprouts and initial foliar treatments will take place during the fall active growth period. With stump treatment the tree is cut and the stump is treated by “painting” individual stumps with herbicide (ranging from a 50% solution to full strength). Cutting will be accomplished using the most appropriate tool including hand clippers, hand saws, chain saws, or battery powered saws. Necessary safety precautions for noise, eye, and hand protection as outlined by BLM safety protocol will be followed. Woody material left from cutting actions may be scattered, chipped, and/or burned depending on locality and feasibility of the work. No surfactant is recommended for stump treatments. Foliar treatments will be accomplished using backpack sprayers.

Treatments with herbicides would be under current Pesticide Use Proposals specific to the area targeted, chemical to be used and sensitive areas. All treatments will be under the supervision of a BLM Certified Pesticide Applicator and herbicide application will be made according to label directions and restrictions. Follow-up treatments in future years may be required depending on success rates.

Rodeo® (Glyphosate) is a water-soluble liquid herbicide that mixes readily with water and nonionic surfactants to be applied as a foliar spray for the control of many herbaceous and woody plants. Rodeo® is intended for control of annual and perennial weeds and woody plants in and around aquatic and other non-crop sites. It is also for use in wildlife habitat areas, for

perennial grass release, and grass growth suppression. The active ingredient in Rodeo® moves through the plant from the point of contact to and into the root system.

Habitat® (Isopropylamine salt of Imazapyr) is an herbicide for aquatic and vegetation control that inhibits a plant specific enzyme (acetohydroxyacid synthase, AHAS) that causes the plant to stop growing and slowly die as its food and energy reserves are exhausted. This enzyme is not found in animals or humans. Habitat® is an aqueous (water-based) solution, water soluble, nonvolatile, and has a low vapor pressure, thus it will not readily move from the application site to harm off-target plants via volatilization in the air. Habitat® dissipates rapidly in aquatic systems with very little dissipation into the sediment.

Mitigation and Stipulations Associated with the Proposed Action Alternative:

1. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

2. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

3. Only federally registered and BLM approved herbicides will be used.

4. Label directions would be followed even when additional restrictions are required.

5. Herbicides will be applied as per label instructions and restrictions.

6. All individuals associated with the handling or application of herbicides on public lands will be familiar with the chemicals used and emergency procedures to be used in case of herbicide spill.
7. The intake operation of water for mixing will be arranged so that an air gap or reservoir will be placed between the live water intake and the mixing tank to prevent back flow or siphoning of chemical into the water source.
8. Chemical containers will be disposed of as required by the Environmental Protection Agency (EPA).
9. Treatment within the following sensitive areas will be subject to interdisciplinary review as a supplement to this Environmental Assessment: Wilderness Areas, Wilderness Study Areas (WSA), Areas of Critical Environmental Concern (ACEC), Riparian Areas, Threatened or Endangered Species habitat, and important wildlife habitats. If the project area is located within a WSA or ACEC the proposal must be reviewed by the Wilderness/ACEC Specialist. Site specific mitigation would be incorporated into the Pesticide Use Proposal.
10. Affected riparian areas must be identified in site-specific Pesticide Use Proposal.
11. Potential for drift of herbicide during foliar application will be minimized by using spray pressures no greater than required to obtain adequate coverage of each target plants individually and with nozzle tips sized to produce large droplets. Potential for drift during stump cut applications is virtually non-existent because herbicide will be applied with a brush. For both foliar and stump-cut methods, herbicide application will not occur during precipitation or if there is an impending threat of precipitation or when wind velocity could carry herbicide beyond each target plant.
12. Use of ATVs to transport Solo backpack sprayers and herbicide will be considered depending on drainage width and topography.
13. Foliar application will only be used when some herbicide affect to vegetation species beneath the individual target plant is acceptable.
14. If found appropriate, plant desirable riparian species, (e.g. willows and cottonwoods) to mitigate soil erosion in treated areas that contain only undesirable plant species. Leave sufficient ground cover (woody debris) to provide bank stability more rapidly and minimize erosion.
15. In the event raptor nest activity is discovered near treatment areas, restrictions on motorized equipment use and approach to the nest site would be applied until nest functions are complete. In addition, standard activity restrictions, outlined in Appendix B of the White River ROD/RMP would be observed until nest functions are complete: Vehicular access by the public on important wildlife habitats and/or during sensitive functional use periods (e.g., big game severe winter range, critical summer use areas, raptor nesting areas, sage grouse reproductive habitats) would be subject to restrictions as directed by the Area Manager. Use of restricted road segments by authorized personnel (e.g., BLM personnel, law enforcement, permitted land users) may be

allowed for administrative and operational purposes. Methods used to restrict vehicular access may include: installing lockable gates, barricades or other forms of deterrents, signing, or reclaiming and abandoning roads or trails no longer necessary for management, or other methods prescribed by the Area Manager.

16. During preparation of the Pesticide Use Proposal, the project area would be reviewed for known populations of plant species of special concern or their potential habitats. Potential habitats would be inventoried for sensitive plants prior to any herbicide use. Given the treatment method of painting individual stumps, treatment in areas containing sensitive plants and habitats with likelihood of containing sensitive plants would be possible using extreme care and diligence. BLM will inventory potential habitat and confirm absence of sensitive plants prior to any herbicidal use.

17. If during the preparation of the Pesticide Use Proposal, the project area is located within a Wilderness Study Area the proposal would be reviewed by the Wilderness Specialist at least 10 working days prior to proposed application. Site specific mitigation would be incorporated into the Pesticide Use Proposal.

18. Coordination with livestock grazing permittees will take place to clarify when livestock can safely use areas that have been treated.

19. Efforts will be taken to avoid or minimize involvement of or damage to favorable woody riparian species.

20. Cut tamarisk and Russian olive material will be scattered on site unless, on a case by case basis, a different method would be better.

Safeguard Measures:

All individuals associated with the handling or application of herbicides on public lands would be familiar with the chemicals used and emergency procedures to be used in case of herbicide spill.

Safe use of herbicides includes precautionary measures to prevent accidental spills. The following written precautions describe measures that will be used to reduce the chance of such accidents.

- Applicable Federal regulations concerning the storage and disposal of herbicides and herbicide containers will be followed. These are described in the EPA's "Regulations for acceptance and Procedures for Disposal and Storage", Federal Register notices as amended.
- It is essential to prevent damage to containers so that leaks do not develop; care will be exercised so that containers will not be punctured or ruptured, and so that the lids or caps will not be loosened.

- Precautions will be taken when loading herbicide containers in transport vehicles to assure that containers are secured and will not tip over in transport.
- Open containers will not be transported. Partially used containers will be securely resealed before transportation.
- Each day after returning to the field office, all herbicide containers will be inspected for damage and leaks, and the vehicle will be examined for contamination.

No Action Alternative: Under this alternative there would be no attempt to treat tamarisk or Russian olives. The alternatives of No Use of Herbicides and No Action were considered in the Vegetation Treatment on BLM Lands in Thirteen Western States Environmental Impact Statement (EIS) (7/91).

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD: (Integrated Pest Management): Other means of noxious weed management/control include mechanical and biological control. Mechanical control (cultivation) is not appropriate in an extensive rangeland environment because both tamarisk and the Russian olive are deep-rooted perennial species. Advancements are being made in the biological treatment of tamarisk using the tamarisk leaf beetle, *Diorhabda elongata*. BLM has reviewed and commented (at the national level) on Animal and Plant Health Inspection Service (APHIS's) draft 2004 Environmental Assessment (EA) regarding the release of these beetles in the west and after consultation with the Bureau Integrated Pest Management (IPM) Specialist, the BLM's stance is favorable to the release. Though biological control may soon be a viable alternative to reduce or control large areas affected by tamarisks, effective beetle establishment in small isolated infestations is not likely. Neither mechanical nor biological control agents will be analyzed further in this document.

NEED FOR THE ACTION: Tamarisks (Salt Cedar) and Russian olives are alien noxious species that pose a significant threat to riparian plant communities in the White River Field Office. Once established on the landscape noxious weeds become a permanent problem resulting in long-term negative implications to overall land health. Tamarisk is well established throughout neighboring counties to the south. Russian olives exist extensively in neighboring counties as either planted or invasive species. Currently in Rio Blanco County the extent of tamarisk spp. and Russian olive infestations are limited enough that with diligent effort they could potentially be controlled in the White River Field Office area.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: Page 2-13, Noxious and Problem Weeds

Decision Language: Objective - Manage noxious weeds so that they cause no further negative environmental, aesthetic or economic impact.

RELATIONSHIP TO EXISTING NEPA DOCUMENTS:

This EA is tiered to and incorporates by reference, Vegetation Treatment on BLM Lands in Thirteen Western States, July 1991. The Vegetation Treatment EIS (1991) analyzed both the cumulative and generalized impacts of various methods of noxious weed treatment options. This EA will address the site-specific impacts of herbicidal treatment of Tamarisk (Salt Cedar) and Russian olive, fully recognizing that such treatment is but one part of the integrated pest management approach to noxious species treatment options. While we presently lack a suitable array of biological agents for sustainable management of any noxious weed species, we must pursue an approach that will arrest further spread of these species until an effective biological control approach is available.

AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

STANDARDS FOR PUBLIC LAND HEALTH: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in specific elements listed below:

CRITICAL ELEMENTS

AIR QUALITY

Affected Environment: The proposed actions will not be located within any special designated air sheds or non-attainment areas.

Environmental Consequences of the Proposed Action: Air quality will not be impacted by the proposed actions.

Environmental Consequences of the No Action Alternative: None

Mitigation: None

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Affected Environment: The White River ROD/RMP identified seventeen ACECs encompassing 99,120 acres. Specific information concerning these ACECs is contained in the White River ROD/RMP.

Environmental Consequences of the Proposed Action: Under the proposed action, a Pesticide Use Proposal would be prepared for treatment of tamarisk and/or Russian olive. If the infestation is within an ACEC the location would be identified and mitigation measures applied. Overall the weed control program is designed to benefit the resources for which an ACEC is designated by controlling noxious weeds and maintaining the native plant communities. If plant species of special concern are identified within the ACEC, mitigation would be as described in the threatened and endangered plant section. On those ACECs where special status animals are of concern, special consideration will be given to the control method as described in the threatened and endangered animal section.

Environmental Consequences of the No Action Alternative: Under this alternative there would be no treatment of tamarisk or Russian olive within ACECs. These species would have the opportunity to increase and spread on suitable habitats. This would degrade native plant communities and would negatively impact the resources for which several of the ACECs were designated.

Mitigation: See mitigation and stipulations outlined in the proposed action.

CULTURAL RESOURCES

Affected Environment: Inventory data for the area has been primarily driven by the need for compliance with historic preservation laws as a result of energy related development. As a result, inventory data is unevenly distributed and does not always cover areas where cultural resources might be regarded as most likely. Consequently only a relative few resources have been recorded to date. James Grady, in his Doctoral Dissertation (1980), presented the hypothesis that areas at the higher elevations in the Piceance Basin/Roan Plateau area of Northwest Colorado were only used for short periods in the summer months and then primarily as the prehistoric occupants hunted deer and elk for hides and meat, which was a major source of protein in aboriginal diets. If such was the case camp sites would be relatively scarce and located within one kilometer of so of reliable supplies of domestic water. Other sites would likely be kill/butchering sites which may be very fugitive and difficult to identify and/or evaluate.

Since the completion of Dr. Grady's studies a considerable body of additional inventory data has been acquired which has improved the understanding of the prehistoric occupation of the area. Specifically those areas below about 7500 feet mean sea level along areas of live water within a distance of 1.5 kilometers tend to have a much higher potential for site presence. Sites are

shown to range from single episode hunting events to long term and/or multiple episode camp sites.

Environmental Consequences of the Proposed Action: Stump treatment or Solo backpack sprayer application of herbicides is expected to have little, if any, effect on cultural resources that might be present. Impacts would mostly be confined to compaction from vehicles and possible dislocation of surface artifacts during wet and muddy conditions.

The above losses would be inadvertent and irreversible. However, current data are inadequate to quantify the resultant permanent loss to the regional database.

Environmental Consequences of the No Action Alternative: There would be no impacts to cultural materials under the No Action Alternative.

Mitigation: 1. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

2. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: The WRFO contains a wide variety of plant communities ranging from salt-desert shrub to sub-alpine fir though the predominant plant communities are mid-elevation sagebrush and mountain shrub. Tamarix spp. and Russian olive are both invasive, non-

native species that have the ability to invade and spread through riparian areas, seeps, waterways, arroyos, and reservoirs. They are highly competitive and once established they supplant native vegetation and can form monoculture thickets. In many places within the resource area scattered tamarisks can be found in isolated reservoirs and drainages, sometimes forming large dense patches. Tamarisk is known to have negative effects on areas where it invades including high evapotranspiration rates, resulting in declining water tables at invaded sites; it extracts salt from the soil where they are then deposited creating a high salt environment favoring halophytic plant species; monoculture thickets of tamarisk support a lower diversity of bird species than native cottonwood or willow communities. In sections of the White River corridor Russian olives and tamarisk have become prevalent and are displacing native riparian species.

Environmental Consequences of the Proposed Action: The majority of infestations are currently on a manageable scale for treatment. Using the proposed chemicals and treatment methods, tamarisk and Russian olive populations could be eliminated in many areas where they are currently established. Treatment to remove isolated infestations would eliminate satellite seed sources and reduce potential for spread. Control of both tamarisk and Russian olives, especially along the White River corridor will result in desirable native species expanding into these areas formerly occupied by non-natives. Substantial improvements toward achieving and maintaining healthy and productive plant communities would be made under this proposed action.

Environmental Consequences of the No Action Alternative: With no treatment effort tamarisk and Russian olive would continue to spread. It is likely that they would eventually dominate many waterways and riparian areas throughout the WRFO. Failure to control these invaders now will significantly increase control costs in the future as populations continue to expand.

Mitigation: none

MIGRATORY BIRDS

Affected Environment: Tamarisk, Russian olive, and low-density cottonwood-dominated riparian communities associated with the lower White River support an assemblage of breeding birds during the months of May, June, and July that include the more specialized riparian associates: blue and black-headed grosbeak, yellow warbler, yellow-breasted chat, and song sparrow, as well as cavity-dwelling species that would be expected to occupy the site's scattered Fremont cottonwoods, including northern flicker, American kestrel, and European starling. The majority of the site above the first terrace is dominated by an open greasewood stand with an annual weed understory (primarily cheatgrass). These habitats support relatively depauperate breeding communities consisting of such generalists as blue-gray gnatcatcher and western meadowlark. None of the birds associated with the project area are categorized as having higher conservation interest by the Rocky Mountain Bird Observatory (i.e., Land Bird Conservation Plan).

Much of the vegetation communities within the White River's associated tributaries are comprised of tamarisk, greasewood, and Wyoming big sagebrush with an understory component of western wheatgrass, Sandberg bluegrass, inland saltgrass, and cheatgrass. Treatment of tamarisk- which provides little if any potential for migratory bird foraging and nesting - will be site specific. Russian olive are distributed at extremely low densities (scattered individuals) and typically not used for foraging or nesting purposes. Several migratory birds make use of the surrounding sagebrush shrublands during the breeding season (May – July), including Brewer's sparrow, a species of high conservation concern, Vesper's sparrow and green-tailed and spotted towhee.

Environmental Consequences of the Proposed Action: Both Rodeo® Glyphosate and Imazapyr are practically non-toxic to avian wildlife. Because of the relatively low toxicity of these chemicals, and the fact that they do not bioaccumulate, the treatment in the areas will be site-specific (e.g., targeted specifically towards Russian olive and tamarisk), and do not involve vegetation that associated bird species typically use for forage or nesting purposes, there is no reasonable probability that migratory bird species would be exposed to meaningful levels of these herbicides. All work associated with this project would take place during the fall months, well outside the breeding window for migratory bird species.

Environmental Consequences of the No Action Alternative: Under this alternative there would be no potential exposure of migratory bird species to herbicides. However, allowing invasive species to become well established along the White River and its associated tributaries would impede the expression of native vegetation, whose resources would be more beneficial to migratory bird species.

Mitigation: None

THREATENED, ENDANGERED, AND SENSITIVE ANIMAL SPECIES (includes a finding on Standard 4)

Affected Environment: The White River between Rio Blanco Lake and the Utah state line is formally designated critical habitat for the endangered Colorado pike-minnow. Maintenance of proper bank, channel, and floodplain function is specifically identified as essential to the continued existence of this fishery. Potential for direct involvement of occupied habitat is limited to the White River below Taylor Draw Dam, a reach adult and larger sub-adult Colorado pikeminnow use as post-spawning and over-winter habitat. No reproductive or rearing habitats are associated with the White River in Colorado.

The lower and especially the middle reaches of the White River support a warm water stream fisheries that includes a number of native fish populations considered sensitive by BLM, including: flannelmouth, mountain, and bluehead sucker, and roundtail chub. The project area is separated from occupied Colorado pikeminnow habitat by a minimum 47 river miles.

The White River corridor serves as an activity hub for nesting and wintering populations of threatened bald eagles. There are a number of identified nest and winter roost sites associated

with the lower White River's mature cottonwood galleries, but no special use features (i.e., identified winter roosts) are located within a minimum 4.5 river miles of the White River treatment site. The White River project area likely receives regular opportunistic foraging use by eagles from November through April.

Environmental Consequences of the Proposed Action: Both forms of chemical are practically non-toxic to aquatic organisms, vertebrate and invertebrate (i.e., $LC_{50s} > 100-1000$ mg/l), and none of the chemicals have been shown to bioaccumulate or display mutagenic, carcinogenic, or teratogenic effects. Because of low toxicity, very small and precise product delivery, and little capacity for offsite transport, it is inconceivable that aquatic communities in the White River would be exposed to herbicide at concentrations and duration capable of being measured or exerting adverse influence on aquatic plants, vertebrates or invertebrates.

Efforts to control exotic vegetation along the White River, although small in scale, would strongly complement recovery goals for both Colorado pikeminnow and bald eagle by promoting the redevelopment of native riparian vegetation and natural successional processes that would eventually provide mature cottonwood habitat for perch or nest use by bald eagle and accommodate proper functioning condition of the river's channel processes as pikeminnow habitat.

Control activities would take place outside the period of nesting and winter use functions of bald eagle.

BLM discussed this project with the US Fish and Wildlife Service (FWS) Grand Junction Field Office 6 September 2005. Based on proposed treatment techniques and project intent, USFWS concurred that the project poses no reasonable risk to pikeminnow or bald eagle populations or associated habitats and represents a small-scale benefit to the functional attributes of native riverine gallery forests as pikeminnow and bald eagle habitat. Unless the proposed action is altered, no further consultation with the USFWS is warranted for this project.

Environmental Consequences of the No Action Alternative: Under this alternative there would be no potential exposure of special status species to herbicides. However, delaying treatment or ignoring the continued proliferation of Russian olive and/or tamarisk on the banks and floodplains of the White River would pose an increasingly severe threat to the integrity of aquatic habitats that harbor special status species addressed in this document. Failure to treat these aggressive infestations, particularly those prone to proliferate in bank and floodplain situations, would fail to stem extensive dissemination of seed downstream. Weed proliferations along the river corridor would inevitably displace or thin erosion resistant bank vegetation, increase sediment yields, and slow or reverse channel/bank/floodplain restoration processes, and would, thereby contradict one of the major recovery goals for critical habitat established by the U.S. Fish and Wildlife Service for the Colorado pikeminnow below Piceance Creek, that is, maintenance of proper functioning condition on the river's 100-year floodplain. Once entrenched, subsequent control of these plants would necessitate more intensive and widespread use of herbicides in increasingly close association with occupied habitats – increasing the likelihood of direct toxicity to special status fish, native riparian vegetation, or other important aquatic constituents (e.g., amphibians, invertebrates). Such situations invariably necessitate

more costly resource tradeoffs to gain acceptable levels of control. Relatedly, maintenance of proper functioning riparian processes along the White River (i.e. BLM lands within the White River ACEC) is considered paramount in maintaining the long term suitability of these riverine galleries for bald eagle use (continued availability of sites for cottonwood regeneration).

Mitigation: None, resource concerns were integrated with the development of the proposed action.

Finding on the Public Land Health Standard for Threatened & Endangered species: Riverine habitats for bald eagle and Colorado pikeminnow currently meet the standard for special status species, but the proliferation of invasive plants represents incremental deterioration in the function and utility of cottonwood gallery forests as bald eagle roost substrate and properly functioning floodplains associated with pikeminnow habitat. The proposed action would complement recovery goals for each of these species as well as continued meeting of the land health standard by promoting the reestablishment of native riparian vegetation and natural successional processes that would eventually provide mature cottonwood habitat for perch or nest use by bald eagle and accommodate proper functioning condition of the river's channel processes, particularly its 100-year floodplain.

THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES (includes a finding on Standard 4)

Affected Environment: The WRFO contains a wide variety of plant communities ranging from salt-desert shrub to sub-alpine fir though the predominant plant communities are mid-elevation sagebrush and mountain shrub. Tamarix spp. and Russian olive are both invasive, non-native species that have the ability to invade and spread through riparian areas, seeps, waterways, arroyos, and reservoirs. They are highly competitive and once established they supplant native vegetation and can form monoculture thickets. Tamarisk is known to have negative effects on areas where it invades including high evapotranspiration rates, resulting in declining water tables at invaded sites; it extracts salt from the soil where they are then deposited creating a high salt environment favoring halophytic plant species; monoculture thickets of tamarisk support a lower diversity of bird species than native cottonwood or willow communities. All rare plant species can have negative effects associated with invasion from noxious species.

Environmental Consequences of the Proposed Action: The majority of infestations are currently on a manageable scale for treatment. Using the proposed chemicals and treatment methods, tamarisk and Russian olive populations could be eliminated in many areas where they are currently established. Treatment to remove isolated infestations would eliminate satellite seed sources and reduce potential for spread. Control of both tamarisk and Russian olives, especially along the White River corridor will result in desirable native species expanding into these areas formerly occupied by non-natives. Substantial improvements toward achieving and maintaining healthy and productive plant communities would be made under this proposed action.

Environmental Consequences of the No Action Alternative: With no treatment effort tamarisk and Russian olive would continue to spread. It is likely that they would eventually dominate many waterways and riparian areas throughout the WRFO. Failure to control these invaders now will significantly increase the chance of competition with rare plant species. This would degrade native plant communities and would negatively impact the resources for which the plants depend.

Mitigation: See mitigation and stipulations outlined in the proposed action.

Finding on the Public Land Health Standard for Threatened & Endangered species: There is no reasonable likelihood that the proposed action or no action alternative would have an influence on the condition or function of Threatened, Endangered, or Sensitive plant species. Thus there would be no effect on achieving the land health standard.

WASTES, HAZARDOUS OR SOLID

Affected Environment: No hazardous or other solid wastes are known to have been stored or disposed on the subject lands.

Environmental Consequences of the Proposed Action: Under the proposed action Rodeo® and Habitat® would be used for control of the Tamarisk spp. and Russian olive. These chemicals have been approved for use on public lands and were previously analyzed in the Vegetation Management EIS for 14 Western States. These two herbicides are approved for aquatic use in Colorado. The proposed application rates, ranging from a 0.5% - 10% solution (foliar application) and from 50% to full strength (stump treatment), will not result in a release of a reportable quantity (the active ingredients are not listed chemicals). Use of these herbicides in conformance with labeled instructions would not result in the generation of hazardous waste.

Impact of No Action Alternative: There would be no opportunity for development of hazardous waste.

Mitigation Measures: None

WATER QUALITY, SURFACE AND GROUND (includes a finding on Standard 5)

Affected Environment: The proposed action is located primarily in the greater White River watershed basin. A review of the Colorado's 1989 Nonpoint Source Assessment Report (plus updates), the 305(b) report, the 303(d) list, the White River ROD/RMP, and the Unified Watershed Assessment was done to see if any water quality concerns have been identified. It should be noted that the White River from Douglas Creek to the state line (segment 21) is listed on the states monitoring and evaluation list (M&E list) as being sediment impaired. In addition, the White River ROD/RMP has identified this portion of the White River as NOT meeting state water quality standards for suspended sediment, salinity, and nutrients. Some gulches in the WRFO have been listed in the White River ROD/RMP as proposed fragile watersheds.

The State has classified stream segment 9a of the White River Basin as "Use Protected". The antidegradation review requirements in the Antidegradation Rule are not applicable to waters designated use-protected. For those waters, only the protection specified in each reach will apply. Stream segment 21 has not been classified as "Use Protected" thus; the Antidegradation review requirements in the Antidegradation Rule are applicable to this segment.

Ground Water: Local water tables may be elevated in response to removal of tamarisk and Russian olive.

Environmental Consequences of the Proposed Action: Removal of tamarisk and Russian olive in areas where only these species exist will temporarily reduce the affected stream banks ability to withstand normal high flows (bankfull flows) until desirable native vegetation becomes re-established. However, in many of these areas, there is currently a heavy understory with down debris that would help withstand bankfull flows.

Local ground water tables may be elevated with removal of these non-desirable invasive plants. Elevated water tables will aid in recharging affected stream segments and help develop desirable riparian communities.

Environmental Consequences of the No Action Alternative: Tamarisk and Russian olive infestations will remain in the affected systems and continue to spread. Stream bank stability will persist as is.

Mitigation: If appropriate, plant desirable riparian species (e.g. willows and cottonwoods) to mitigate soil erosion in treated areas that contained only undesirable plant species. Leave sufficient ground cover (woody debris) to provide bank stability more rapidly and minimize erosion.

Finding on the Public Land Health Standard for water quality: Some segments of the White River Basin are listed as a perennial stream NOT meeting water quality standards set by the state. However, with suggested mitigation the proposed action will likely improve water quality in these stream segments.

WETLANDS AND RIPARIAN ZONES (includes a finding on Standard 2)

Affected Environment: Riparian and wetland areas make up less than one percent of the western landscape. They contain vegetation that requires a higher water table than the upland environment and they are some of the most productive, diverse areas within the overall landscape. Riparian areas are important in terms of water filtration and infiltration, sediment and erosion control, fisheries, wildlife, livestock and overall watershed health. The WRFO contains a number of riparian zones. Table 2-9, Appendix D, page 8 of the White River ROD/RMP shows the high priority riparian habitats, Functioning Condition, acres and ecological condition. Many of the riparian communities throughout the Field Office area are marginal occurring on alkaline soil conditions with fluctuating water tables. They are characterized by inland salt grass,

various facultative grasses and forbs with intermittent populations of sedges and rushes. These conditions are well suited for establishment of tamarisk.

Over the last 10-20 years many riparian sites have become heavily populated with or dominated by tamarisk and/or Russian olive. In some cases they have formed monocultures effectively suppressing herbaceous ground cover and the regeneration of native woody riparian plants such as Fremont cottonwood and coyote willow. Additionally Russian olive has a growth form and root structure that offers inferior channel bank protection against bank-full or flood flows. All infestations, whether large and contiguous or small and remote, provide seed sources for the continued spread of these aggressive invaders.

Environmental Consequences of the Proposed Action: During preparation of a site-specific Pesticide Use Proposal, affected riparian areas would be identified along with precautions and measures to avoid impact to these sensitive areas. Precautions would be imposed, in addition to the buffer strips identified in the mitigation section. The proposed action should benefit riparian and wetland zones by decreasing the competition between tamarisk and Russian olives with the native riparian vegetation. Redevelopment of native plant community composition would be expected. Without native biological controls, these introduced plants have an advantage in terms of establishment along riparian and wetland zones. Ponds for livestock and wildlife also provide conditions where tamarisk and Russian olive readily become established. Eradication of any infestations at these sites will not only help control their spread but will eliminate extended isolated seed sources.

The herbicide Habitat® (an imazapyr formulation) is specifically intended for the control of undesirable emergent, shoreline, and woody wetland aquatic vegetation in and around standing and flowing water. Although imazapyr is somewhat persistent in water (2-15 day half-life) and soil (26-143 day half-life), water soluble and mobile through alkaline soils, and is non-selective, the methods of application and small quantities of product applied eliminates any reasonable risk of off-site transport or non-target vegetation effects. Similar to Habitat®, Rodeo® is a non-selective herbicide formulated for use in aquatic environments. A formulation of Glyphosate, the chemical is highly water soluble and moderately persistent in the environment, but because it is strongly adsorbed to clay soils it has no residual soil activity and displays little tendency to move offsite. For the same reasons as above, there is virtually no risk of off-site transport or non-target vegetation effects.

With foliar application of herbicide using Solo backpack sprayers it is conceivable that a small amount of herbicide is likely to affect the vegetation immediately beneath individual target plants. Because of small quantities of herbicide and the precise delivery methods associated with stump treatment and individual plant treatment, and there being little capacity for offsite transport of herbicide, it is inconceivable that aquatic or riparian communities in the White River Field Office, the White River corridor or its tributaries would be exposed to herbicide at concentrations capable of being measured or exerting adverse influence on non-target aquatic or riparian plants.

The small amount of dormant season trampling associated with Solo backpack spraying or the manual severing of Russian olive and tamarisk would have no substantive influence on herbaceous ground cover or soil stability within the project sites.

Environmental Consequences of the No Action Alternative: Under the no action alternative tamarisk and Russian olive would continue to spread unchecked throughout waterways, drainages and isolated reservoirs in the WRFO. They would become increasingly prevalent and have progressive detrimental impacts to riparian areas. Unabated proliferation of these species would allow progressive deterioration of riparian character and channel function (e.g. accelerated sedimentation, over-widened channels). As infestations become more extensive, control efforts made in the future will become far more complex, time consuming, difficult, and expensive. Under this alternative there would be no current opportunity for herbicides to contaminate riparian zones; however it is also likely that delayed treatments would subject downstream systems to increasingly heavy and persistent chemical loads since later control measures would ultimately necessitate more frequent and broader scale treatments.

Mitigation: See mitigation and stipulations identified in the proposed action.

Finding on the Public Land Health Standard for riparian systems: Noxious weeds are one of the greatest threats to the health of riparian communities. While some riparian systems currently do not meet land health standards for other reasons, proliferation and presence of exotic vegetation places all systems at risk of progressive deterioration (e.g., lack of proper functioning condition of channel features, excessive erosion and sedimentation, inappropriate plant communities). Timely control of tamarisk and Russian olive would better serve land health objectives and long term achievement of the standards.

WILDERNESS

Affected Environment: There are six Wilderness Study Areas (WSA) encompassing approximately 81,000 acres within the White River Resource Area. These areas are managed to allow for natural processes of native ecosystems.

Environmental Consequences of the Proposed Action: Although the proposed action does not fall within a Wilderness Study Area it should be noted that controlling Tamarisk spp. and Russian olive would maintain wilderness values by preventing these species from replacing native desirable species within adjacent WSAs. By controlling or limiting the spread of noxious weeds, the natural ecosystem would be able to progress within the WSA. To allow noxious weeds to spread would likely cause irrevocable change in the naturalness component of the wilderness character.

Environmental Consequences of the No Action Alternative: The no action alternative could allow degradation of wilderness values by allowing Tamarisk spp. and Russian olive to spread on suitable sites within Wilderness Study Areas.

Mitigation: If during the preparation of the Pesticide Use Proposal, the project area is located within a Wilderness Study Area the proposal would be reviewed by the Wilderness Specialist at least 10 working days prior to proposed application. Site specific mitigation would be incorporated into the Pesticide Use Proposal.

CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:

No flood plains, prime and unique farmlands, or Wild and Scenic Rivers, threatened, endangered or sensitive plants exist within the area affected by the proposed action. For threatened, endangered and sensitive plant species Public Land Health Standard is not applicable since neither the proposed nor the no-action alternative would have any influence on populations of, or habitats potentially occupied by, special status plants. There are also no Native American religious or environmental justice concerns associated with the proposed action.

NON-CRITICAL ELEMENTS

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

SOILS (includes a finding on Standard 1)

Affected Environment: The following data is a product of an order III soil survey conducted by the Natural Resource Conservation Service (NRCS). The accompanying table highlights important soil characteristics of the primary soils potentially affected by the proposed treatment. A complete summary of this information can be found at the White River Field Office.

Primary affected soils in potential treatment areas:

Soil Number	Soil Name	Slope	Ecological site	Salinity	Run Off	Erosion Potential	Bedrock
10	Blazon, moist-Rentsac Complex	6-65%	Pinyon-Juniper woodland	2-4	Rapid	Moderate to very high	20-Oct
14	Bulkley-Abor clay loams	5-30%	Clayey Foothills	<2	Rapid	Moderate to very high	50-60
33	Forelle loam	3-8%	Rolling Loam	<2	Medium	Moderate	>60
34	Forelle loam	8-15%	Rolling Loam	<2	Medium	Moderate to high	>60
36	Glendive fine sandy loam		Foothills Swale	2-4	Slow	Slight	>60
40	Hagga loam		Swale Meadow	2-8	Slow	Slight	>60
41	Havre loam	0-4%	Foothill Swale	<4	Medium	Slight	>60
45	Jerry-Thornburgh-Rhone complex	8-65%	Brushy Loam/Brushy Loam	<2	Medium to rapid	Moderate to high	>60
53	Moyerson stony clay loam	15-65%	Clayey Slopes	2-4	Rapid	Very high	10-20

Soil Number	Soil Name	Slope	Ecological site	Salinity	Run Off	Erosion Potential	Bedrock
70	Redcreek-Rentsac complex	5-30%	PJ woodlands/PJ woodlands	<2	Very high	Moderate to high	10-20
73	Rentsac channery loam	5-50%	Pinyon-Juniper woodlands	<2	Rapid	Moderate to very high	20-Oct
74	Rentsac-Moyerson-Rock Outcrop complex	5-65%	PJ Woodlands/Clayey Slopes	<2	Medium	Moderate to very high	20-Oct
78	Rock Outcrop	50-100%	None		Very high	Slight	0
89	Tisworth fine sandy loam	0-5%	Alkaline Slopes	>4	Rapid	Moderate	>60
90	Torrifluvents gullied		None		Rapid	Very high	>60
91	Torriorhents-Rock Outcrop complex	15-90%	Stoney Foothills		Rapid	Very high	20-Oct
96	Veatch channery loam	12-50%	Loamy Slopes	<2	Med	Moderate to very high	20-40
104	Yamac Loam	2-15%	Rolling Loam	<2	Med	Slight to moderate	>60

Primary affected soils in the potential treatment areas along the White River and tributaries:

Soil Number	Soil Name	Slope	Ecological site	Salinity	Run Off	Erosion Potential	Bedrock
5	Badland	50-100%	None		Very rapid	Very high	0-10
8	Billings-Torrifluvents complex gullied	0-5%	Alkaline Slopes/None	2-8	Rapid	High	>60
16	Chipeta silty clay loam	3-25%	Clayey Salt-desert	4-16	Rapid	High	10-20
17	Chipeta silty clay loam eroded		Clayey Salt-desert	4-16	Rapid	Very high	10-20
21	Cliffdown-Cliffdown Variant complex	5-65%	Salt-desert Breaks	<2	Medium to slow	Slight to moderate	>60
25	Colorow sandy loam		Sandy Salt-desert	<2	Medium	Slight	>60

Environmental Consequences of the Proposed Action: Removal of tamarisk and Russian olive in riparian areas may temporarily reduce stream bank stability leaving the affected soils more susceptible to erosion. However, under the proposed action, areas targeted for treatment will be primarily small infestations and lopped plant litter will likely be scattered through the site to minimize rain drop impact, and serve as flow deflectors and sediment traps. In some instances excess material could be removed by piling and burning but in these instances some lopped material would be left through the site to maintain site soil stability.

Environmental Consequences of the No Action Alternative: None

Mitigation: If appropriate, plant desirable riparian species (e.g. willows and cottonwoods) to mitigate soil erosion in treated areas containing only undesirable plant species. Leave sufficient ground cover (woody debris) to minimize erosion.

Finding on the Public Land Health Standard for upland soils: Soils within affected areas are generally meeting standards set by the state. Implementation of the proposed actions will not negatively change this status.

VEGETATION (includes a finding on Standard 3)

Affected Environment: Tamarisks and Russian olives are non-native, invasive plant species that are highly competitive and are well adapted to a range of habitats from salt desert shrub to mountain browse associations. Most occurrences in the WRFO occur in association with water sources, ephemeral drainages, or perennial waterways. Especially along the White River corridor they have displaced or are displacing desired native plant communities. The area addressed by the proposed action could potentially contain many of the plant communities (ecological sites) in the WRFO. Predominant vegetation associated with most tamarisk infestations in most drainages and associated uplands consists mainly of greasewood, Wyoming sagebrush, and tamarisks with an understory of western wheatgrass, Sandberg bluegrass, and cheatgrass, an invasive non-native grass. Along the White River corridor vegetation is mainly dominated by cottonwoods, willows, tamarisks and Russian olives with an understory of western wheatgrass, alkali sacaton, and inland saltgrass. Russian olives are typically located on the channel terraces.

Throughout the WRFO most drainages with tamarisk or Russian Olive infestations have intermittent seasonal surface flows usually associated with spring runoff or isolated storm cell events. There are roads throughout the WRFO and many areas are subject to substantial vehicle traffic related to oil and gas development. Expanse and density of infestations vary but eradication of these species is only possible if all areas are treated.

Environmental Consequences of the Proposed Action: Under the proposed action tamarisk and Russian olive would be controlled by cutting and application of herbicide to the stump or spraying foliage using Solo backpack sprayers. Using these methods there is minimal soil disturbance and generally no post treatment seeding would be needed. With no seeding and limited soil disturbance, there would be no new opportunity for introduction of non-native plant species.

The herbicides listed in the proposed action are effective against woody vegetation and can be applied to site specific areas associated with cut stumps of tamarisks and Russian olives or foliar treatment of small infestations of these species. Surrounding non-target vegetation communities will have little to no negative impact as a result of the proposed action. Reducing dominance and competitive ability of tamarisks and Russian olives will enhance the ability of native vegetation to re-establish and thrive.

Environmental Consequences of the No Action Alternative: Under the no action alternative, tamarisk and Russian olive would not be controlled. Forage production of healthy herbaceous understories and the benefits of healthy plant communities would be foregone. There would be limited opportunity for establishment of native species. There would be high potential for continued expansion of affected plant communities and continued displacement of native vegetation.

Mitigative Measures: None.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): Currently, the presence of tamarisks and Russian olives are effecting the ability of the public lands to fully meet health standards as these species are invasive and non-native components of the landscape. Under the proposal controlling tamarisks and Russian olives would enhance the ability of the rangelands to meet health standards for plant communities.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: See discussion in TES section.

Environmental Consequences of the Proposed Action: See discussion in TES section.

Environmental Consequences of the No Action Alternative: See discussion in TES section.

Mitigation: None

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): See discussion in TES section.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: The section along the White River, immediately north of Rangely is surrounded by residential and industrial areas and most likely assumes incidental use by big game. The large cottonwoods along the White River corridor may provide nesting substrate for species such as bald eagle (see TES section), red-tailed hawk and great-horned owl. There are no cliff-dwelling species that make use of the area.

Much of the associated tributaries are broadly encompassed by big game severe winter range. These ranges are used by big game primarily during the late fall through early spring months. The availability and quality of winter forage within these areas is low (i.e., dominated by greasewood and big sagebrush) and predominantly annual-based herbaceous forage provides an abundant, but short duration forage source in spring. Vegetation within the channels themselves (e.g., inland saltgrass) provides little forage for big game species. Douglas fir, located in the

upper reaches of several drainages (particularly Blacks, Tschuddi, and Scenery) may provide nesting substrate for raptors. There are no cliff-dwelling species that derive important use from these areas.

Small mammal populations are poorly documented, however, the species that are likely to occur in this area display broad ecological tolerance and are widely distributed throughout the Rocky Mountain regions. No narrowly distributed or highly specialized species or subspecific populations are known to inhabit this area.

Environmental Consequences of the Proposed Action: The proposed action is not expected to result in any adverse effects to terrestrial wildlife. Both Imazapyr and Rodeo® Glyphosate are practically non-toxic to avian and terrestrial wildlife. Label consistent application of these chemicals as proposed poses no conceivable toxic threat or chronic exposure level to resident birds and mammals owing to the chemical's relative nontoxic character, and limited extent of application. The proposed action specifically targets tamarisk and Russian olive, neither of which provides a valuable source of forage or cover for big game or raptor species. Actions associated with vegetation treatments would occur outside the primary period of big game occupation. There would be no negative impacts on nesting raptors as all work is scheduled to take place outside of the breeding season.

Environmental Consequences of the No Action Alternative: Under this alternative there would be no potential exposure of terrestrial wildlife species to herbicides. However, failure to implement this action would result in the continued suppression of native vegetation, both woody and herbaceous, which provide valuable forage and cover for terrestrial species.

In the absence of effective control, it is inevitable that resultant declines in forage availability and diversity (i.e. associated seeds, fruit and substrate for invertebrate prey) and widespread reduction in suitable shrub cover attending control would also reduce both nongame bird and small mammal breeding pair density and reproductive performance.

Mitigation: None

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): The project area currently meets the land health standard for terrestrial wildlife communities. However, the absence of effective control would result in the continued proliferation of these invasive species (tamarisk and Russian olive), putting the community at risk. Implementation of the proposed action would result in the promotion of native vegetation, and be consistent with meeting the land health standard for terrestrial wildlife and associated habitats.

OTHER NON-CRITICAL ELEMENTS: For the following elements, only those brought forward for analysis will be addressed further.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access and Transportation			X
Cadastral Survey	X		
Fire Management	X		
Forest Management			X
Geology and Minerals	X		
Hydrology/Water Rights		X	
Law Enforcement		X	
Noise		X	
Paleontology			X
Rangeland Management			X
Realty Authorizations	X		
Recreation			X
Socio-Economics		X	
Visual Resources			X
Wild Horses	X		

ACCESS AND TRANSPORTATION

Affected Environment: In general on proposed treatment sites within the WRFO motorized travel is limited to existing routes from October 1 through May 1 and is open to cross country motorized travel the remainder of the year. On proposed treatment sites associated with the White River corridor motorized travel is limited to existing routes year-round and no motorized off road cross-country travel is permitted.

Environmental Consequences of the Proposed Action: None.

Environmental Consequences of the No Action Alternative: None.

Mitigation: None.

FOREST MANAGEMENT

Affected Environment: The resource areas predominant vegetation type is pinyon/juniper. Cottonwood stands are found along the White River, Douglas creek and some other primary tributaries to the White River. Native tree species associated with riparian corridors including Fremont cottonwood, coyote willows, and silver leaf buffalo berry are being displaced by tamarisk and Russian olive infestations throughout the WRFO.

Environmental Consequences of the Proposed Action: Under this alternative tamarisk and Russian olives would be removed allowing the existing cottonwoods to remain as a seed source for reestablishing cottonwoods on site. Willows are expected to increase on stream banks and provide competition against the establishment of tamarisks and Russian olives.

Environmental Consequences of the No Action Alternative: Over time Russian olive and tamarisk would completely dominate stream banks of most riparian areas in the WRFO. Restoring these areas, after tamarisk and Russian olives are the dominant vegetation, would be cost prohibitive.

Mitigation: none

PALEONTOLOGY

Affected Environment: Within the Field Office area the BLM has classified the Chinle, Glen Canyon, Morrison, and Cedar Mountain. Mowry Shale, Parachute Creek Member of the Green River Formation, Wasatch and Brown's Park formation have been classified as Category I formations meaning that they are known to produce scientifically important fossil resources. These formations are exposed throughout the field office area and could potentially be affected by cultivation control techniques.

Environmental Consequences of the Proposed Action: Impacts to paleontological resources would generally be similar to those described for cultural resources where the rock matrix is highly eroded and fossils are exposed on the surface. Fossils still embedded within the rock matrix would probably not be affected by the proposed action.

Environmental Consequences of the No Action Alternative: There would be no impacts to paleontological resources under the No Action Alternative.

Mitigation: See the mitigation described in the proposed action.

RANGELAND MANAGEMENT: (This includes any vegetation information related to Public Land Health Standard 3 not addressed in other sections.)

Affected Environment: The majority of the WRFO is included in defined grazing allotments which are used by ranchers for grazing livestock. This area wide proposed action contains a variety of vegetation types and intermixes. Throughout the field office permitted grazing by sheep or cattle can occur at any time during the year though the generally the majority of use occurs during the spring, summer, and fall. Most allotments have range improvements such as fences, ponds, or springs constructed to improve livestock distribution and management. In most cases roads or ways were developed to access these improvements or aid in overall livestock management activities. Grazing management is required to be in compliance with the Colorado Standards for Rangeland Health and Livestock Grazing Guidelines. Tamarisk and Russian olive are well adapted to a range of habitats from salt desert shrub to mountain browse associations though most occurrences in the WRFO occur in association with livestock water sources, ephemeral drainages, or perennial waterways.

Environmental Consequences of the Proposed Action: Overall, implementation of the proposed action will have a positive impact to range management. Livestock will benefit from the removal of Russian olives and tamarisks as these plants are displacing native vegetation. Tamarisks readily uptake significant amounts of water so with a reduction of tamarisks at livestock watering sites, more water will be available for livestock consumption. As the pest plants are removed native plant species should increase in dominance resulting in a healthier more productive and desirable plant community. Maintaining or improving forage condition and production is a benefit to livestock operations.

The herbicide Habitat® (Isopropylamine salt of Imazapyr) manufactured by BASF - The Chemical Company, has no restrictions on livestock consumption of water from the treatment area. Imazapyr and Glyphosate (Roundup) is practically non-toxic to mammals. Imazapyr is rapidly excreted by mammals. There is little opportunity for livestock consumption and digestion as the herbicides will be applied on a site specific basis by either “painting” the stumps of cut tamarisks and Russian olives or precise foliar application to individual target plants.

Environmental Consequences of the No Action Alternative: Without direct control efforts tamarisk and Russian olives will continue to spread readily and increase their range. As competition with these invaders increases, composition, cover, and production of native plant communities will decrease dramatically and where monocultures develop, will be entirely supplanted. At livestock watering sites affected by tamarisks there will be an escalating reduction in the amount of water available for livestock. This will correspondingly reduce the length of time livestock can graze areas where ponds are the primary source of water. This scenario would likely result in decreases in permitted livestock numbers and negatively impact the operators on affected allotments.

Mitigation: Coordination with the affected permittee(s) prior to specific treatment projects would reduce impacts to the permittee(s). See mitigation and stipulations identified in the proposed action.

RECREATION

Affected Environment: The proposed action occurs within the White River Extensive Recreation Management Area (ERMA). BLM custodially manages the ERMA to provide for unstructured recreation activities such as hunting, fishing, dispersed camping, hiking, horseback riding, wildlife viewing and off-highway vehicle use.

Environmental Consequences of the Proposed Action: By removing tamarisk and Russian olives especially along the White River corridor, an increase in recreation use could be expected, especially in areas where invasive vegetation currently precludes recreational use of river bottoms and stream banks.

Environmental Consequences of the No Action Alternative: Areas affected by tamarisk and Russian olive infestations would be expected to continue to spread, resulting in less and less area remaining suitable for recreational uses.

Mitigation: None.

VISUAL RESOURCE

Affected Environment: The vast majority of the WRFO potentially affected by the proposed action are within a VRM class III area. The objective of class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities especially at the time of treatment may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. Areas along the White River corridor potentially affected by the proposed treatment are within a VRM class II area. The objective of class II is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Environmental Consequences of the Proposed Action: The proposed action is small in scale relative to the surrounding landscape and will not change the basic elements found in the predominant landscape; therefore, any modifications will be unseen to the casual observer, and VRM class II and III objectives will continue to be met. Furthermore, any disturbed native vegetation will return or re-populate treatment areas making the action virtually unnoticeable within a period of a few years.

Environmental Consequences of the No Action Alternative: No impact on visual resources.

Mitigation: None.

CUMULATIVE IMPACTS SUMMARY: The management of noxious, invasive plant species as is proposed is essential to both the short and long term maintenance of ecosystem function and integrity. The use of herbicides is carefully controlled to protect the environment, public, and the applicators. This environmental assessment provides flexibility to use the method which best meets the treatment site and environmental considerations. The actual treated acres are expected to increase, while the pounds of chemical / acre used is expected to decrease on a yearly basis. The reason for this is as acres are controlled the amount of chemical used for maintenance decreases. With the mitigation proposed in this environmental assessment and the pesticide labels for Rodeo® and Habitat® there are no known adverse cumulative impacts to any of the resources discussed in this document.

The No Action Alternative would not allow for control of the tamarisk and/or Russian olive by herbicides. Acres dominated by these species would continue to increase and proportionally degrade the rangeland resources. Degradation of habitat would negatively impact aquatic and terrestrial wildlife habitat, and livestock management. At some point, the cost of control would

require a significantly higher dollar amount and quantities of chemical applied to the public lands due to the increased noxious, invasive species population. Broad herbicide application would inescapably involve severe, long term wildlife concessions manifested by the loss of forage and cover provided by broadleaf woody vegetation including sagebrush, willow and serviceberry.

PERSONS / AGENCIES CONSULTED: None

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility
Nate Dieterich	Hydrologist	Air Quality
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern
Tamara Meagley	Natural Resource Specialist	Threatened and Endangered Plant Species
Michael Selle	Archeologist	Cultural Resources Paleontological Resources
Mary Taylor	Rangeland Mgmt Specialist	Invasive, Non-Native Species
Lisa Belmonte	Wildlife Biologist	Migratory Birds
Lisa Belmonte	Wildlife Biologist	Threatened, Endangered and Sensitive Animal Species, Wildlife
Melissa J. Kindall	Range Technician	Wastes, Hazardous or Solid; Wild Horses
Nate Dieterich	Hydrologist	Water Quality, Surface and Ground Hydrology and Water Rights
Mary Taylor	Rangeland Mgmt Specialist	Wetlands and Riparian Zones
Chris Ham	Outdoor Recreation Planner	Wilderness
Nate Dieterich	Hydrologist	Soils
Mary Taylor	Rangeland Mgmt Specialist	Vegetation
Lisa Belmonte	Wildlife Biologist	Wildlife Terrestrial and Aquatic
Chris Ham	Outdoor Recreation Planner	Access and Transportation
Ken Holsinger	Natural Resource Specialist	Fire Management
Robert Fowler	Forester	Forest Management
Paul Daggett	Mining Engineer	Geology and Minerals
Mary Taylor	Rangeland Mgmt Specialist	Rangeland Management
Penny Brown	Realty Specialist	Realty Authorizations
Chris Ham	Outdoor Recreation Planner	Recreation
Chris Ham	Outdoor Recreation Planner	Visual Resources

**Finding of No Significant Impact/Decision Record
(FONSI/DR)**

CO-110-2006-108-EA

FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE: The environmental assessment and analyzing the environmental effects of the proposed action have been reviewed. The approved mitigation measures (listed below) result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

DECISION/RATIONALE: It is my decision to approve implementation of the Area Wide Tamarisk and Russian olive Treatment project as described in the proposed action incorporating the mitigation measures recommended by the individual specialists.

MITIGATION MEASURES:

Mitigation has been integrated into the proposed action.

COMPLIANCE/MONITORING:

NAME OF PREPARER: Mary Taylor

NAME OF ENVIRONMENTAL COORDINATOR: Caroline Hollowed

SIGNATURE OF AUTHORIZED OFFICIAL:



Field Manager

DATE SIGNED:

08/08/06

ATTACHMENTS: Pesticide Use Proposal

COLORADO BLM PESTICIDE USE PROPOSAL

PROPOSAL NUMBER: 06-CO-110-36
REFERENCE NUMBER: CO-110-06-108-EA

FIELD OFFICE CO-11000 (White River Field Office) **COUNTY** Rio Blanco, Moffat, Garfield

DATE July 31, 2006

LOCATION: White River Field Office area

DURATION OF PROPOSAL: July 21, 2009

I. PESTICIDE APPLICATION (including mixtures and surfactants):

TRADE NAME(s): Rodeo®
Habitat®

COMMON NAME(s): Rodeo®: glyphosate: N-(phosphonomethyl)glycine,
isopropylamine salt

Habitat®: isopropylamine salt of Imazapyr (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid

EPA REGISTRATION NUMBER(s): Rodeo®: #62719-324
Habitat®: #241-426

MANUFACTURER(s): Rodeo®: Dow AgroSciences
Habitat®: BASF - The Chemical Company

FORMULATION: Liquid Rodeo® Granular
Liquid Habitat® Granular

Surfactant will not be used at this time. If it is decided that such an addition is warranted an amendment to the environmental assessment and pesticide use proposal will be done at that time.

METHOD OF APPLICATION:

Cutting and stump treatment: Stump treatment will be done by "painting" individual stumps with herbicide. Cutting of the target brush and tree species will be done with hand clippers, hand saws, battery powered saws, or chainsaws using any necessary safety precautions for hearing, eye, and hand protection. Foliar treatment will be done using Solo backpack sprayers targeting plants individually.

MAXIMUM RATE OF APPLICATION:

USE UNIT ON LABEL:

Stump treatment:

Rodeo®: 50 to 100 Percent Solution

Habitat®: Dilute Solution: 8 to 12 oz to 1 gallon water.

Foliar treatment:

Rodeo®: 5 to 10 percent solution

Habitat®: 0.5 to 5 percent solution

POUNDS ACTIVE INGREDIENT/ACRE: Rodeo®: 5.4 pounds/gallon
Habitat® 2 pounds/gallon

PROPOSAL NUMBER: 06-CO-110-36
REFERENCE NUMBER: CO-110-06-108-EA

INTENDED RATE OF APPLICATION: We would like approval to use various rates of each chemical to test efficiency of the treatment. Rates of use would be under the maximum rate of application. The treatments and locations would be monitored and documented through the pesticide application report.

Stump treatment:

Rodeo®: 50 to 100 Percent Solution

Habitat®: Dilute Solution: 8 to 12 oz to 1 gallon water.

Foliar treatment:

Rodeo®: 5 to 10 percent solution

Habitat®: 0.5 to 5 percent solution

APPLICATION DATE(S): Fall Treatment Only: 2006, 2007, 2008

NUMBER OF APPLICATIONS: One per year.

II. **PEST (List specific pest(s) and reason(s) for application):** Tamarisk (salt cedar), *Tamarisk spp.*; and Russian Olive (*Elaeagnus angustifolia*)

III. **MAJOR DESIRED PLANT SPECIES PRESENT:** Native grasses, forbs, shrubs with potential for regeneration of riparian species such as yellow or coyote willows, and cottonwood.

IV. **TREATMENT SITE: (Describe land type or use, size, stage of growth of target species, slope and soil type):** Site best described as rangelands with treatment located mainly in drainage bottoms and at isolated reservoir sites.

ESTIMATED ACRES: 60 max per year

V. **SENSITIVE ASPECTS AND PRECAUTIONS: (Describe sensitive areas [e.g., marsh, endangered, threatened, candidate and sensitive species habitat] and distance to treatment site. List measures taken to avoid impact to sensitive areas:** Affected drainage bottoms generally do not have perennial flow but have occasion for riparian influences from snow melt run-off and seasonal rain showers. Some private land in-holdings have associated riparian and wetland areas from perennial spring sources but these areas will not be a part of this treatment program. Private land owners will address treatment of noxious weed infestations associated with their private in-holdings. Treatment of plants individually will essentially prevent impacts to or in sensitive areas.

V. **NON TARGET VEGETATION: (Describe the impacts, cumulative impacts, and mitigations to non target vegetation that will be lost as a result of this chemical application):** Use of the proposed control method reduces or nearly eliminates risk to non target vegetation. Healthy and productive plant communities will not be impacted by the proposed treatment method.

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VII. **INTEGRATED PEST MANAGEMENT:** (Describe how this chemical application fits into your overall integrated pest management program for the treatment area: Other means of noxious weed management/control include mechanical and biological control. Mechanical control (cultivation) is not appropriate in an extensive rangeland environment because both tamarisk and the Russian olive are deep-rooted perennial species. Biological control species (insects) are not currently available in the United States to either control or reduce the current infestation level. Neither of these alternatives will be analyzed further in this document.

Resource Area Coordinator Signature: _____ **Date:**
Robert J. Fowler

Certified Pesticide Applicator's Signature: _____ **Date:**
Mary E Taylor

BLM Manager's Approval: _____ **Date:**
Kent E. Walter

COSO PUP Coordinator: _____ **Date:**

Acting DSD, Lands and Renewable Resources **Date:**

- _____ CONCUR OR APPROVED
- _____ NOT CONCUR OR DISAPPROVED
- _____ CONCUR OR APPROVED WITH MODIFICATION