

**Control of Invasive Grasses - Tucson Basin**

**U.S. Bureau of Land Management  
Tucson Field Office  
3201 E Universal Way,  
Tucson, Arizona 85756  
August 27, 2013**

## Contents

1	Purpose and Need for Action.....	4
1.1	Introduction.....	4
1.2	Conformance with Land Use Plan: .....	4
1.3	Relationship to Statutes, Regulations, or Other Plans.....	5
1.4	Purpose of the Proposed Action.....	5
1.5	Need for Taking the Proposed Action.....	6
1.6	Scoping and Issues .....	9
2	Alternatives Including the Proposed Action.....	9
2.1	ENVIRONMENTAL IMPACTS.....	9
2.1.1	Alternative 1. No Action.....	9
2.1.2	Alternative 2. Physical Control and Removal.....	9
2.1.3	Alternative 3. Chemical (Herbicide) Removal of Exotic, Noxious Species and Re-establishing Native Plants .....	10
2.1.4	Alternative 4(Proposed Action). Chemical (Herbicide) and Physical control and Removal of Exotic, Noxious Species and Re-establishing Native Plants. ....	10
3	Affected Environment.....	11
4	Environmental Consequences.....	12
4.1	Non-Affected Resources .....	12
4.1.1	Alternative 1: No Action.....	12
4.1.2	Alternative 2. Physical Control and Removal.....	13
4.1.3	Alternative 3. Chemical (Herbicide) Removal of Exotic, Noxious Plant Species and Re-establishing Native Plants. ....	13
4.1.4	Alternative 4 (Proposed Action). Chemical (Herbicide) and Physical Control and Removal of Exotic, Noxious Plant Species and Re-establishing Native Plants. ....	14
4.1.5	Cumulative Impacts of the No Action Alternative: .....	15
4.1.6	Cumulative Impacts of Alternative 2: Physical Control and Removal.....	15
4.1.7	Cumulative Impacts of Alternative 3: Chemical (Herbicide) removal of exotic, noxious species and Re-establishing native plants.....	15
4.1.8	Cumulative Impacts of the Proposed Action: Chemical (Herbicide) and Physical Control and Removal of Exotic, Noxious Species and Re-establishing Native Plants. ....	15
5	Public Involvement.....	16
6	PREPARERS .....	16
7	Persons and Agencies Consulted: .....	16
8	References Cited .....	16
9	Appendix A.....	18

9.1 Label for Glyphosate (e.g. Roundup Pro) [N-(phosphonomethyl) glycine, in the form of its isopropylamine salt]..... 18

EA #: DOI-BLM-AZ-G020-2013-0038-EA

Project Name: Control of Invasive Grasses - Tucson Basin

Contact Person(s): Darrell Tersey

Legal Description: See Figure 1

Project Area Flagged: \_\_\_Yes No

# 1 Purpose and Need for Action

## 1.1 Introduction

Many partners are working together to control buffelgrass (*Pennisetum ciliare*) in the Tucson area to help control invasive and noxious grass. The goal of this project is to control buffelgrass and Bermuda grass (*Cynodon dactylon*) in the Tucson Basin and the Ironwood Forest National Monument, Arizona (IFNM). The project proposes to treat the grasses with an herbicide, Glyphosate (e.g. Roundup Pro or the generic equivalent) in the form of a liquid spray applied with backpack spraying units, vehicle-mounted units (along roads where possible), and by hand removal in areas deemed sensitive (i.e. near Nichol Turk's head cactus) or unsafe for backpack sprayer use. Control efforts (chemical and/or physical) of the grasses are planned or currently implemented in the Tucson basin by Saguaro National Park East and West districts, Coronado National Forest Tucson Field Office within the Ironwood Forest National Monument, Arizona Game and Fish Department, Pima Community College, Santa Cruz River (County) Park, and adjacent neighborhood and homeowner's associations. Longer-term efforts in Saguaro National Park West and Tucson Mountain Park are also near the proposed project location.

Should the treatment of the grasses not occur, its uncontrolled growth and constant threat as a fire hazard may result in the loss of native Sonoran Desert vegetation and the wildlife that depend on the Sonoran Desert ecosystem. Buffelgrass and Bermuda grass displace native plants, animals, and habitat by competing for space, sunlight, moisture, and nutrients. Dry buffelgrass leaves produce tinder-dry fuels that quickly carry hot wildfires. Native Sonoran Desert plants and wildlife have not evolved with fire and are seriously damaged by it. Buffelgrass evolved with frequent fire in the African savannah, and quickly moves in to space created by fires that kill native plants and damage wildlife habitat. Currently, buffelgrass has formed large and dense colonies in several locations in the IFNM and along the many roads and highways that link the IFNM with Saguaro National Park and the urban lands of the Tucson field Office, which provide continuous flashy fuel and have the potential to quickly carry wildfires. Multiple treatments will be required to effectively eliminate these stands of buffelgrass and Bermuda grass.

The highest priority area for treatment would be in the Waterman Mountains within the Waterman Mountain Vegetation Habitat Management Area (VHA) of the IFNM. The VHA was established to protect the federally endangered Nichol Turk's head cactus. The second priority area is on urban lands on the southwest side of the Tucson Mountains, such as Snyder and Saginaw hills and along Ajo Road. A wash on the north side of the IFNM's Ragged Top Mountain which is being invaded by Bermuda grass would be the third priority. This area has the highest diversity of plants (over 400 taxa) within the IFNM.

## 1.2 Conformance with Land Use Plan:

The proposed vegetation treatment conforms to the Eastern Arizona Grazing EIS (Bureau of Land Management 1986). According to this EIS

*BLM policy requires the use of protective measures during implementation of its rangeland programs to reduce or diminish adverse environmental impacts and enhance resources. The following measures apply to developments built in the EIS area and are common to all alternatives 1. An interdisciplinary team of resource specialists will review all rangeland development proposals to ensure the greatest multiple use benefit. 2. All proposals will be evaluated in an environmental study of appropriate scope to determine site-specific impacts. At a minimum, studies will address cultural resources, protected plants and animals, visual resources and wilderness values. Mitigating measures will be developed to reduce or eliminate site-specific impacts, if needed. Procedures for identifying and mitigating impacts on significant cultural resources are discussed in Appendix 4,*

and the Phoenix District Resource Management Plan (RMP/EIS (Bureau of Land Management 1991). According to this EIS, *The BLM would prepare a site-specific environmental analysis before actions in the approved RMP are implemented. The environmental analysis would provide a site-specific assessment of the impacts of implementing the actions. In addition, the BLM would conduct wildlife, protected plant and cultural resource clearances as a part of the environmental analysis process. The analysis would also identify mitigation necessary to reduce the impacts*

*of implementing an approved action. Actions that are not specifically identified in the approved RMP/FEIS would be analyzed through an environmental assessment or an EIS in accordance with National Environmental Policy Act (NEPA) and the RMP amendment (1610.5-5) portion of the planning regulations (43 CFR 1600).*

and is in conformance with the Ironwood Forest National Monuments Resource Management Plan (Bureau of Land Management 2013),

*VM-005: Limit the impact of invasive species and noxious weeds on natural resources and processes by reducing the distribution and abundance of these species. Reduce known infestations by 10 percent annually. VM-012: Pursue an integrated weed management approach to prevent the introduction of and control invasive species and noxious weeds using methods including mechanical, chemical, and biological treatments. Use biological control methods to control invasive plant species if appropriate safety measures are applied, and in coordination with appropriate Federal, State, County, municipal and tribal agencies. VM-013: Assign priority to the control of invasive species and noxious weeds that have a substantial and apparent impact on native plant communities and wildlife. When infestations are identified, they will be evaluated for their potential threat. Prioritize treatment of species that are identified as aggressive invasive species or are considered noxious weeds, and are located within priority vegetative habitats. Schedule other species for action in coordination with partners.*

## Relationship to Statutes, Regulations, or Other Plans

The proposed vegetation treatment conforms to the following statutes, regulations and plans:

- The Biological Opinion for Gila Districts Offices' Grazing Program (2-21-96-F-160) - 2012
- Arizona BLM Standards for Rangeland Health and Guidelines for Grazing Administration - 1997.
- Presidential Proclamation establishing the Ironwood Forest National Monument - June 09, 2000.
- Nichol Turk's head cactus Recovery Plan – 1986
- Federal Noxious Weed Act Of 1974 7 U.S.C. §§ 2801-2814, January 3, 1975, as amended 1988 and 1994.

### 1.3 Purpose of the Proposed Action

The purpose of the proposed action is to control buffelgrass and Bermuda grass to mitigate the fire danger and allow for the natural re-colonization of native Sonoran Desert vegetation. The highest priority area for treatment would be in the Waterman Mountains within the Waterman Mountain Vegetation Management Area of the IFNM. The VMA was established to protect the federally endangered Nichol Turk's head cactus. The primary target areas will be areas with the highest density of buffelgrass and where buffelgrass has the highest potential to affect Threatened, Endangered, or Special Status species or high-priority vegetation areas. The second priority area is on urban lands on the southwest side of the Tucson Mountains, such as Snyder and Saginaw hills and along Ajo Road. Bermuda grass invading a wash on the north side of Ragged Top will be the third priority.

The project area is shown in Figure 1. Individual areas with buffelgrass stands have been inventoried and mapped through a contract with the Southern Arizona Buffelgrass Coordination Center, in addition to work done by the Arizona-Sonora Desert Museum and Sonoran Institute.

The goal of this project is to control buffelgrass and Bermuda grass, which should allow for the natural re-colonization of native Sonoran Desert plant species in the project area. Reducing stands along major roads passing through the urban lands from this project, will benefit other entities future projects in controlling the spread of buffelgrass on to their properties. The herbicide proposed for use is only effective on actively growing plants, and is translocated from the leaves to the roots where kills the plant by starving it for nutrients. It does not affect seeds that are already dispersed and are lying in the ground, thus multiple treatments will be necessary over a period of years to remove the invasive grasses from the system.

The term 'noxious' is a legal designation. Buffelgrass is an invasive exotic plant and is classified in Arizona as a regulated and restricted noxious weed. Transporting seed or a part of these plants, or allowing them to seed on one's property, is prohibited by Arizona Law (R3-4245). The Sonoran Desert Conservation Plan (SDCP) (2004) addresses conservation and biodiversity and addresses the control of buffelgrass in Pima County through implementing an adaptive management plan. Control of buffelgrass and establishment of beneficial native plant species will contribute to restoring the Sonoran Desert ecosystem, increasing biodiversity and decreasing risk of catastrophic fire in the area. The action proposed in this project supports this effort by controlling invasive exotic

grasses on BLM-administered land, thus allowing natural re-establishment of beneficial native vegetation in the area. Sufficient native seed sources exist in the project area to induce natural reseeding, therefore no supplemental re-seeding or planting will be performed.

#### **1.4 Need for Taking the Proposed Action**

The need for taking the proposed action is to take steps necessary to conserve native Sonoran Desert plants and the ecosystem by controlling buffelgrass and Bermuda grass. Buffelgrass was formally added to the Noxious Weed List for Arizona on December 6, 2005. It poses a threat to the Sonoran Desert ecosystem and increases the likelihood of ignition, as well as an increased rate of spread and greater intensity of fire; Therefore, steps to control the spread of buffelgrass are necessary. Conservation of Sonoran Desert plant species through eradication and control of invasive grasses is consistent with the SDCP. Current buffelgrass control efforts are underway at the Ironwood Forest National Monument, Tucson Mountain Park, Saguaro National Park, Organ Pipe Cactus National Monument, Coronado National Forest, and along Interstate Highways 10 and 19, and Highway 86. Control methods are primarily chemical (application of the herbicide Round Up or equivalent) with minimal physical removal at Saguaro National Park and Coronado National Forest. Physical methods such as using volunteer labor to pull buffelgrass, is used at the Ironwood Forest National Monument, Tucson Mountain Park and Organ Pipe Cactus National Monument. The BLM's involvement is an essential component to the larger regional control effort that includes ongoing activities of Pima County, Federal agencies such as Saguaro National Park and Coronado National Forest, and private individuals.

# Control of Invasive Grasses

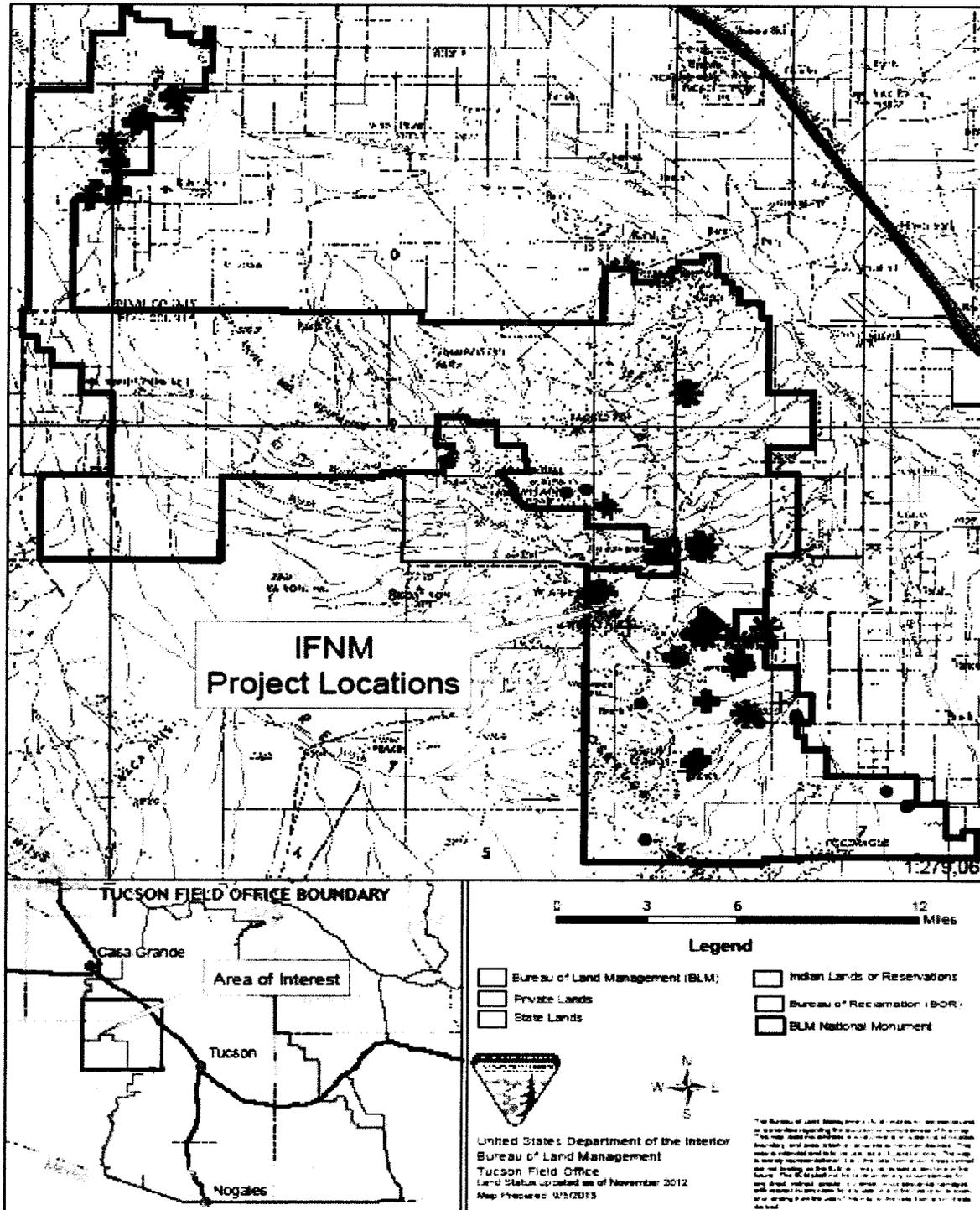


Figure 1 Map of Ironwood Forest National Monument project locations

# Control of Invasive Grasses

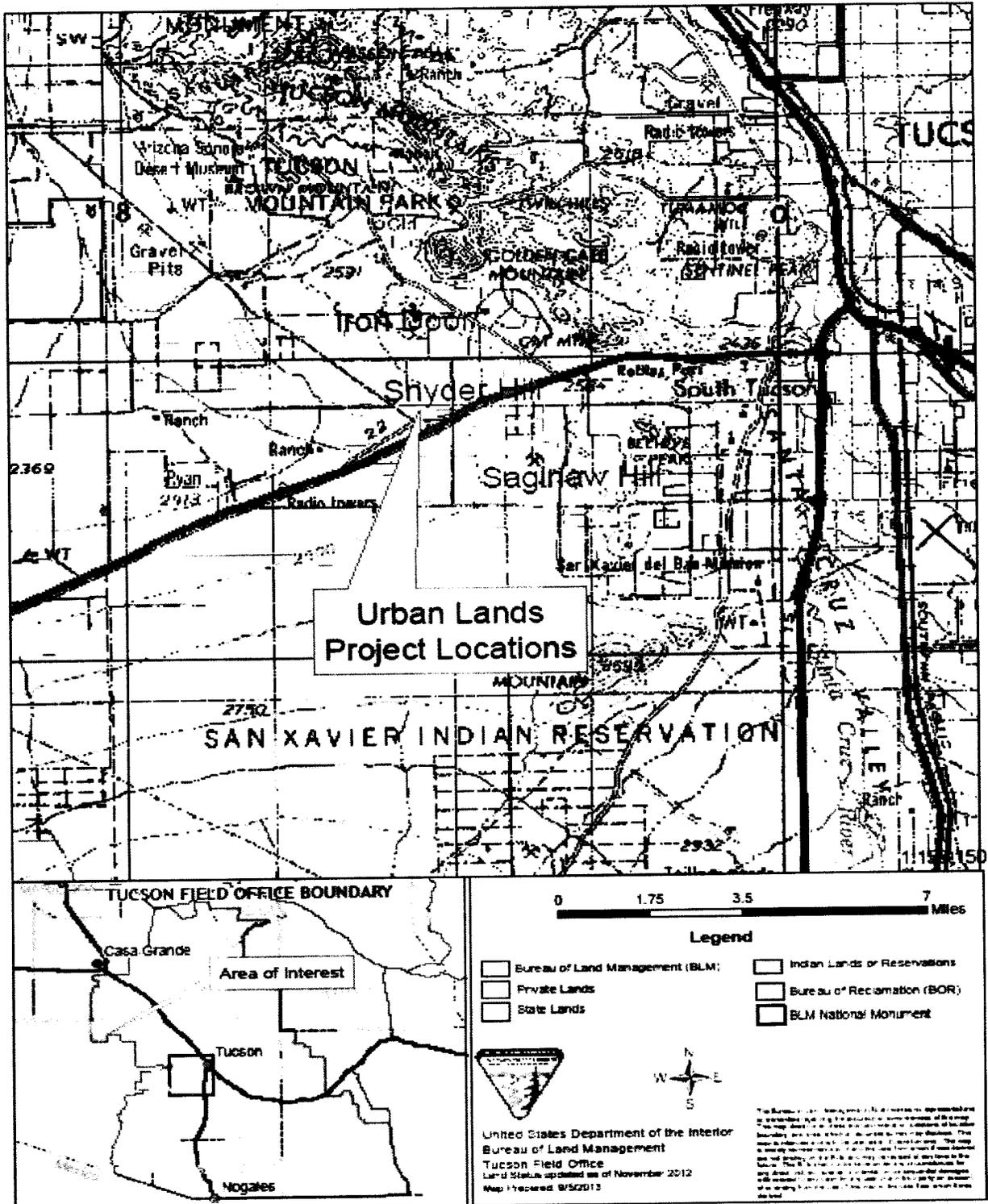


Figure 2 Map to Tucson Urban Lands

## 1.5 Scoping and Issues

The use of herbicides to treat stands of the invasive grass species, especially Buffelgrass, in the Tucson basin has been ongoing for about 8 years. Many partners in the Southern Arizona Buffelgrass Coordination Center (SABCC) have been effectively treating the grass with glyphosate and have analyzed those actions through the NEPA process for actions that have a federal nexus. Some of those NEPA documents have relevant analysis to the proposed action because they have previously analyzed the use of glyphosate to treat the targeted species on different parts of the project area.

Relevant analyses that are incorporated by reference in this EA are:

- DOI-BLM-AZ-G020-2011-0030-EA, Control of Invasive Grasses, Buffelgrass (*Pennisetum ciliare*) and Bermuda grass (*Cynodon dactylon*) in the Ironwood Forest National Monument.
- DOI-BLM-AZ-G030-2010-0005-DNA, Waterman's vegetation reclamation
- #AZ-420-2006-047-EA, Control of an Invasive Grass, Buffelgrass (*Pennisetum ciliare*) in the Ironwood Forest National Monument, 2007
- DOI-BLM-AZ-G020-2009-0052-DNA, Aerial spraying of buffelgrass research

These documents are incorporated by reference and are available through the Tucson Field Office for review. These documents involved scoping and review by many individuals and groups in the Tucson basin. Through those processes, two comments were received from the aerial spraying research. The first comment was from the researcher who originally planted buffelgrass in the area that questioned the effects of the invasion of an area by buffelgrass. That comment resulted in review of relevant recent research results dealing with buffelgrass invasion effects on Sonoran Desert vegetation. The DNA concluded that "all available information has been reviewed and it can be reasonably concluded that all new information and circumstances would not substantially change the analysis of the proposed action" The other comment dealt with the use of trade names and being "apparently" pre-decisional in selecting products to use in the projects. The EA's were adjusted appropriately for that comment.

## 2 Alternatives Including the Proposed Action

### 2.1 ENVIRONMENTAL IMPACTS

#### 2.1.1 Alternative 1. No Action

This alternative would not undertake additional actions to control buffelgrass or Bermuda grass on public lands in Pima and Pinal counties. Under this alternative, BLM would continue with current actions that include mapping stand locations and limited use of chemical and manual removal. Only very small patches of buffelgrass and Bermuda grass, (less than 5 acres at a time), would be treated. This intensity of treatment would not be sufficiently aggressive to exhaust the seed bank. This would allow for unchecked growth and spread of buffelgrass and Bermuda grass throughout the monument.

#### 2.1.2 Alternative 2. Physical Control and Removal

This alternative would implement the physical control of buffelgrass and Bermuda grass using manual removal and/or mowing. Transportation of grass removed by either method would include precautions being taken during transportation of these grasses to prevent the spread of these invasive plants through seed or rhizome taken during transportation. Disposal would be in landfill sites where buffelgrass and Bermuda grass could be contained on-site through burial of the debris.

Bermuda grass, because it is a sod grass with extensive root and rhizome systems, is not effectively treated with manual removal.

Manual removal would be used in Waterman Mountain VHA as a means of controlling some of the buffelgrass infestations, and would be applied to those infestations that are relatively small. Manual control and removal is costly because it is labor-intensive and requires a large workforce. Enlisting the help of volunteers could reduce the cost of physical control. However, the high cost and labor-intensiveness of physical methods may preclude control of buffelgrass that is already established in large and rapidly spreading stands. Manual removal would not be practiced in dense stands of buffelgrass on steep slopes, due to the high risk of soil erosion or mowing in areas where there are sensitive native plants species interspersed among the buffelgrass. Nor would manual removal occur

in archeologically sensitive areas. Due to these limitations, manual removal would not be practical on a large scale, and may not be insufficient to prevent further spread of these invasive exotic grasses.

### 2.1.3 Alternative 3. Chemical (Herbicide) Treatment of Exotic, Noxious Species and Re-establishing Native Plants

Under this alternative only the herbicide Glyphosate (e.g. Roundup Pro) [N-(phosphonomethyl) glycine, in the form of its isopropylamine salt] and other ingredients including surfactant (a chemical added to improve absorption on the leaf surface) would be used for eradication of the targeted grasses, applied at a label rate of 0.25 gallons/surface acre (1 lb. active ingredient/acre). Adding adjuvants, other than the surfactant already contained in the Roundup Pro or its generic equivalent would not be necessary. See Appendix A for label. The chemical would be applied to green buffelgrass and Bermuda grass during periods of active growth. Active growth periods can occur from February to April and from July to November during the respective winter and summer monsoon rains. Glyphosate has an average half-life in soil of 47 days. It rapidly and readily adheres to soil, making its mobility/leaching potential low. Since it is bound by the soil, it is generally not absorbed by non-target plants through their roots. Degradation of Glyphosate in the soil occurs through microbial metabolism. Rainfall within six hours of application may reduce this herbicide's effectiveness. It does not volatilize. The product is readily translocated to roots through the plants' leaves. It is considered to be relatively non-toxic to animals because the amino acid pathways for plants (through which the chemical operates) are not present in animals.

Glyphosate acts effectively on a wide range of plants; therefore care must be taken to limit adverse effects on non-target plants, overspray/drift being the primary concern during application. The herbicide mixture would include an inert marker dye to ensure complete coverage and confirm that non-target species were not sprayed. Appropriate sized nozzles and tips would be used to minimize overspray onto native vegetation. All information and instructions on the herbicide label would be strictly followed. The herbicide would be mixed strictly according to labeled mixtures and uses. All herbicide containers would show the product label and would be leak- and spill- resistant. All application equipment and chemicals would be stored in appropriate storage facilities. Material Safety Data Sheets (MSDS) would be maintained on-site. The applicator(s) would have a State of Arizona pesticide applicator's certification obtained through the State Structural Pest Control Commission.

The herbicide mixture would be applied using a vehicle-mounted boom sprayer along roadsides, and using backpack sprayers on steeper terrain in areas away from roads. A backpack sprayer would also be used for spot treatment in areas where buffelgrass occurs in close proximity to non-target species. Multiple applications across several years would be required to exhaust buffelgrass and Bermuda grass from the seed bank.

Within the action areas, an intact native flora exists in areas not infested with the targeted grasses. These intact flora areas will provide a ready seed source for native re-vegetation in areas treated for buffelgrass eradication. Native species include: Palo verde, saguaro, mesquite, mixed native perennial grasses (three-awns, tanglehead, Arizona cottontop, tobosa, curly mesquite, etc.), creosote bush, and a variety of cactus, ephemeral grasses, forbs, and wildflowers.

### 2.1.4 Alternative 4 (Proposed Action). Chemical (Herbicide) and Physical Control and Removal of Exotic, Noxious Species and Re-establishing Native Plants.

Under this alternative the herbicide Glyphosate and other ingredients including surfactant, dye and water conditioning agents would be used for eradication of buffelgrass and Bermuda grass, applied so as to not exceed a label rate of 0.25 gallons/surface acre (1 lb. active ingredient/acre), plus physical removal of the plants would be implemented. The physical control of buffelgrass and Bermuda grass would use several methods, including mowing prior to spraying and/or manual removal. Mowing prior to spraying has been used to remove dead plant parts and to stimulate growth of buffelgrass, reducing the amount of product applied and increasing the efficiency of the herbicide. Manual removal of mature plants that are no longer actively growing is more effective than herbicide, and that manual removal can be used at times of year unsuitable to herbicide spraying, thus the combination allows more attack than spraying alone. Transportation of grass removed by either method would include precautions being taken during transportation of these grasses to prevent the spread of these invasive plants through seed or rhizome taken during transportation. Disposal would be in landfill sites where buffelgrass and Bermuda grass could be contained on-site through burial of the debris.

### 3 Affected Environment

The IFNM lies in the heart of the Sonoran Desert ecosystem in southern Arizona, and is a unique scenic area of rolling desert and ironwood woodlands including the Silverbell, Waterman, and Roskrige mountains. Much of the vegetation in this area is classic Sonoran desert upland habitat dominated by cacti such as saguaro, Bigelow's cholla, and staghorn cholla. Other common plants include ironwood, palo verde, creosote, brittlebush, triangle-leaf bursage, ocotillo, and white thorn acacia. The upper slopes of the Silverbell Mountains possess a chaparral community dominated by jojoba. The lower bajadas contain inter-braided streambeds that carry water after heavy rains. These desert wash habitats are characterized by large ironwood, blue palo verde, and mesquite trees. The IFNM encompasses most of the mountain ranges that are important to the diverse wildlife and plant communities associated with the ironwood/saguaro forest. In addition, the IFNM contains habitats for several endangered species and species of concern (e.g., desert tortoise), a Vegetation Habitat Management Area (VHA) to protect an endangered cactus, and a desert bighorn sheep Special Management Area. The IFNM also includes a site listed on the National Register of Historic Places (National Register), two archaeological districts on the National Register, historic mining camps, and other cultural resources that are eligible for the National Register. The IFNM is located in Pinal and Pima Counties, Arizona, approximately 80 miles south of Phoenix and 25 miles northwest of Tucson, Arizona. The IFNM is bordered by the Tohono O'odham Indian Reservation on the west and unincorporated county land otherwise. The closest population center is the Town of Marana to the east.

The other public lands in the Tucson basin (urban lands), consists of scattered parcels mainly on the southwest side of the Tucson Mountains in the vicinity of the intersection of Ajo and Kinney roads. The vegetation in the area is similar to the vegetation in the IFNM as they share the same climate and soils. Many of the urban lands are used for rights of ways, public recreation and camping in the winter months. The Snyder Hill parcel is crossed by a right of way to Kinder Morgan (El Paso Natural Gas) for two major interstate natural gas transportation pipelines. Because of previous mining activities on that parcel, the area is also very popular for people to camp in their motorhomes during the annual Gem Show in Tucson in February of each year.

There are no perennial waters or fish in the project area. Amphibians are known to occur in the area.

Precipitation in Tucson including the project area is bi-seasonal with an annual average precipitation of 12 inches that falls during winter and summer months. The months of April, May, and June are the driest months and a time of great moisture stress for native vegetation. Temperatures frequently exceed 100° F in summer and occasionally drop below freezing in winter. Depth to groundwater is over 100 feet below land surface.

Soils in the project area are primarily the product of the climate, the underlying bedrock lithology, and the landscape. The soils of the Project area are the subject of three Natural Resource Conservation Service Soil Surveys: Pinal County – Western Part (National Resources Conservation Service [NRCS] 1991); Pima County – Eastern Part (NRCS 2003); Tohono O'odham Nation – Parts of Maricopa, Pima, and Pinal Counties (NRCS 1999). The soils of this region complement some of the designated uses of public lands such as recreation, wildlife management, livestock grazing, and mining. The soil associations mapped by NRCS for the region are closely correlated to the various landforms of the Project area. Fan terraces compose more than half of the Project area. The soils in fan terraces are used primarily for rangeland; fan terrace landforms are relatively smooth alluvial fans that have been incised by drainages. Basin floors primarily cover the perimeter of the Project area and areas between mountain ranges of the Project area such as Avra Valley. Basin soils are very deep, well drained, with a moderately fine texture, formed in unconsolidated material or granite. Piedmont soils are prevalent in the rolling hills and mountains of the Project area, covering approximately one third of the Project area in Pima County. These soils are shallow and well drained, and often contain gravel. Prime farmland is a distinction made by the U.S. Department of Agriculture as necessary for the preservation of the Nation's domestic food and other supplies, specifically the capacity to preserve high yields of food, seed, forage, fiber, and oilseed, with minimal agricultural amendment of the soil, adequate water, and a sufficient growing season. The Project area does not contain soils that qualify as prime farmland. Biological soil crusts can be composed of cyanobacteria, green algae, lichens, mosses, micro fungi, and other bacteria Biological soil crusts lie dormant most of the time but are physiologically awakened" with rainfall, and these organisms typically remain active for only a day or two before the soil surface again dries. The properties of biological soil crusts make the soils less susceptible to erosion; however, they are easily damaged and slow to recover. Functionally, biological soil crusts tend to fix nitrogen and contribute to the sparse nutrients available to desert plants. Biological soil crusts occurrence in the Project area was noted in a geological survey performed for the BLM. Disturbance of biological soil crusts requires considerable time to re-vegetate. Damage caused by less frequent and less-intensive disturbance may be more easily corrected. Vehicle tires are particularly destructive to biological soil crusts.

Wildlife species observed in the area include mule deer, javelina, ringtail cat, rock squirrels, antelope squirrels, gray fox, bobcat, desert tortoise, diamondback rattlesnake, blacktail rattlesnake, tiger rattlesnake, gopher snake, whiptail lizards, red tailed hawk, turkey

vulture, kestrel, Copper's hawk, western screech owl, Gambel's quail, dove, verdins, canyon wren, cactus wren, mockingbird, and curve billed thrasher. There are two listed endangered or threatened species in the project area. These are the Nichol Turk's head cactus and the lesser Long-nosed bat.

## 4 Environmental Consequences

### 4.1 Non-Affected Resources

The following environmental values are not present or are not affected by the proposed action or no action alternatives:

- Air Quality: Field vehicles accessing the project sites for a period of less than 7 work days will create short term, localized, insignificant increases in particulate, airborne road dust;
- Farmlands (prime or unique): The planning area has no designated prime and unique farmlands;
- Wilderness: The project area has no designated wilderness areas and no public lands suitable for wilderness designation;
- Recreation Management: Activities vary from driving off-highway vehicles to camping, bird watching, studying nature and history, picnicking, horseback riding, and hunting. These activities will not be impacted by the proposed project;
- Riparian/Wetlands: No riparian or wetland areas occur in the project area;
- Environmental Justice: The community of Three Points AZ is approximately 17 miles southwest of the project site. The community of Marana, AZ is approximately 15 miles east of the project site. This project is not expected to impact either community. The proposed action will not disproportionately affect any low income or minority communities;
- Water Quality: The proposed project will not affect water quality because Glyphosate has an average half-life in soil of 47 days. It rapidly and readily adheres to soil, making its mobility/leaching potential low and will not significantly impact groundwater resources or availability of groundwater to vegetation.
- Wild and Scenic Rivers: No wild and scenic river resources occur in or near the project area.
- Visual Resource Management: No visually obtrusive structures are associated with this project. The change in the vegetation composition will not alter the visual resources of the project area.
- Floodplain management: At most, only a few individual plants occur on floodplains, the treatment of these plants will have a negligible and insignificant effect on the management of the floodplains.
- Waste, Hazards or Solids: Any waste generated by this project will be disposed of properly and in conformance with all Laws, Rules and Regulations dealing with waste at commercial landfill sites outside of the Monument.
- There will be no adverse energy impact.

#### 4.1.1 Alternative 1: No Action

##### **Impacts on Cultural Resources and Native American Religious Concerns**

This alternative will not affect Cultural Resources and Native American religious concerns as there will not be any physical impact to sites.

##### **Impacts on Wildlife Habitat**

The no action alternative, where existing buffelgrass infestations are not treated, would have major adverse and long-term impacts to native wildlife and their habitat through continued competition for space, water and nutrients, and a change in native habitat's structure and composition from the introduction and continued threat of fire. Without buffelgrass and Bermuda grass control, native vegetation would be replaced with invasive exotic plants and result in little or no beneficial native habitat for wildlife.

##### **Impacts to T&E**

The no action alternative would have a major adverse, long-term impact on the Nichol Turk's head cactus. Uncontrolled buffelgrass infestations would continue to spread, serving as a fuel for wildfires with the potential to destroy the population of the cactus within the Waterman Mountain ACEC.

##### **Impacts to Noxious Weeds**

The no action alternative would not control buffelgrass, therefore would the buffelgrass infestations would continue to spread, serving as a fuel source for wildfires that are destructive to native vegetation and that allow noxious weeds to thrive.

#### 4.1.2 Alternative 2: Physical Control and Removal

##### **Impacts on Cultural Resources and Native American Religious Concerns**

The Physical Control and Removal alternative could impact cultural sites through the disturbance of the soil in areas where the plants are removed. Archaeological clearances would be required before each project is implemented to ensure that no sites would be impacted, and if sites are found they would be avoided. That would allow those plants that occur in cultural sites to continue to produce and spread seed.

##### **Impacts on Wildlife Habitat**

This alternative would have minor, beneficial, localized, short-term impacts to native wildlife and their habitat by reducing the competition for space, water and nutrients, and reducing the introduction of fire. These impacts would be localized and short-term because of the time and cost constraints of physical removal and limited area of treatment. At locations where this alternative may be implemented, manual removal or mowing treatment will restore localized, small areas of native vegetation. This alternative may have negligible, localized, short-term adverse impacts when pulling up buffelgrass damages the root structure of adjacent native vegetation. Physical control and removal may also have a short-term, negligible adverse effect on vertebrate or invertebrate species inhabiting areas where buffelgrass would be removed. Short-term displacement of wildlife may occur during removal; however the impact is expected to be negligible.

##### **Impacts to T&E**

Physical control of the buffelgrass would have an adverse, long-term impact on the Nichol Turk's head cactus. Uncontrolled buffelgrass and Bermuda grass infestations would continue to spread, serving as fuel for wildfires with the potential to destroy the population of the cactus within the Waterman Mountain ACEC.

##### **Impacts to Noxious Weeds**

The Physical Control and Removal alternative would not completely control buffelgrass, therefore the buffelgrass infestations would continue to spread, serving as a fuel source for wildfires that are destructive to native vegetation and that allow noxious weeds to thrive.

Bermuda grass, because it is a sod grass with extensive root and rhizome systems, is not effectively treated with manual removal.

#### 4.1.3 Alternative 3: Chemical (Herbicide) Removal of Exotic, Noxious Plant Species and Re-establishing Native Plants.

##### **Impacts on Cultural Resources and Native American Religious Concerns**

The chemical treatment of invasive exotic plants that may occur on cultural sites would not have an effect on the sites as there would not be any surface disturbance of the sites associated with the chemical treatment.

##### **Impacts on Wildlife Habitat**

Herbicides can injure or kill non-target plants, with short-term, negligible, localized, adverse impacts. However, chemical control of the target grasses would have long-term, moderate beneficial impacts on native vegetation and wildlife habitat. Glyphosate acts on plant-specific enzyme pathways, thus its impact to wildlife habitat under normal application conditions would be negligible. Native plant communities and wildlife habitat would be restored by killing the buffelgrass and Bermuda grass, and allowing the limited water and nutrients to become available to surrounding established and newly recruiting native vegetation. To the degree that glyphosate effectively removes buffelgrass, this alternative method will have moderate, long-term, beneficial impacts to native plant and wildlife habitat by reducing competition and reducing wildfire in plant and wildlife habitat communities not adapted to fire. Glyphosate has an average half-life in soil of 47 days. It rapidly and readily adheres to soil, making its mobility/leaching potential low. Since it is bound by the soil, it is generally not absorbed by non-target plants through their roots. Degradation of glyphosate in the soil occurs through microbial metabolism. Rainfall within six hours of application may reduce this herbicide's effectiveness. It does not volatilize. The product is readily translocated to roots through the plants' leaves. It is considered to be relatively non-toxic to animals because the amino acid pathways for plants (through which the chemical operates) are not present in animals.

##### **Impacts to T&E**

This alternative would control the buffelgrass; therefore the buffelgrass infestations would not continue to spread, eliminating it as a fuel source for wildfires within monument that could destroy the population of the Nichol Turk's head cactus and the saguaro cactus that serve as an important food resource for the Lesser Long-nosed bats.

#### **Impacts to Noxious Weeds**

This alternative would control the buffelgrass and Bermuda grass; therefore the buffelgrass infestations would not continue to spread, eliminating it as a fuel source for wildfires. The control of invasive exotic grasses will allow native plants to better compete with other plant species, and will slow the spread of noxious weeds by removing a source of disturbance.

### **4.1.4 Alternative 4 (Proposed Action). Chemical (Herbicide) and Physical Control and Removal of Exotic, Noxious Plant Species and Re-establishing Native Plants.**

#### **Impacts on Cultural Resources and Native American Religious Concerns**

The chemical treatment of plants that may occur on cultural sites would not have an effect on the sites as there would not be any surface disturbance of the sites associated with the chemical treatment. The Physical Control and Removal could impact cultural sites through the disturbance of the soil in areas where the plants are removed. Archaeological clearances would be required before each project is implemented to ensure that no sites would be impacted. If sites are found they would be avoided. That would allow those plants that occur in cultural sites to continue to produce and spread seed. The use of both methods would allow the option of allowing the use of herbicides in areas where ground disturbance would be problematic, and physical control in isolated areas with very small populations of buffelgrass.

#### **Impacts on Wildlife Habitat**

Herbicides can injure or kill non-target plants, with short-term, negligible, localized, adverse impacts. However, chemical control of buffelgrass and Bermuda grass would have long-term, moderate beneficial impacts on native vegetation and wildlife habitat. Glyphosate acts on plant-specific enzyme pathways, thus its impact to wildlife habitat under normal application conditions would be negligible. Native plant communities and wildlife habitat would be restored by killing the buffelgrass and allowing the limited water and nutrients to become available to the surrounding established and newly recruiting native vegetation. To the degree that Glyphosate effectively removes buffelgrass, this alternative method will have moderate, long-term, beneficial impacts to native plant and wildlife habitat by reducing competition and reducing wildfire in plant and wildlife habitat communities not adapted to fire. Glyphosate has an average half-life in soil of 47 days. It rapidly and readily adheres to soil, making its mobility/leaching potential low. Since it is bound by the soil, it is generally not absorbed by non-target plants through their roots. Degradation of Glyphosate in the soil occurs through microbial metabolism. Rainfall within six hours of application may reduce this herbicide's effectiveness. It does not volatilize. The product is readily translocated to roots through the plants' leaves. It is considered to be relatively non-toxic to animals because the amino acid pathways for plants (through which the chemical operates) are not present in animals. This alternative would have minor, beneficial, localized, short-term impacts to native wildlife and their habitat by reducing the competition for space, water and nutrients, and reducing the introduction of fire. These impacts would be localized and short-term because of the time and cost constraints of physical removal and limited area of treatment. At locations where this alternative may be implemented, manual removal or mowing treatment will restore localized, small areas of native vegetation. This alternative may have negligible, localized, short-term adverse impacts when buffelgrass is pulled that is adjacent to native vegetation due to damage to the adjacent plant's root structure. Physical control and removal may also have a short-term, negligible adverse effect on vertebrate or invertebrate species inhabiting areas where buffelgrass would be removed. Short-term displacement of wildlife may occur during removal; however the impact is expected to be negligible.

#### **Impacts to T&E**

This alternative would control the buffelgrass and Bermuda grass; therefore the buffelgrass infestations would not continue to spread, eliminating it as a fuel for wildfires within monument that could destroy the population of the Nichol Turk's head cactus and the Saguaro cactus that serve as an important food resource for the Lesser Long-nosed bats.

#### **Impacts to Noxious Weeds**

This alternative would control the buffelgrass; therefore the buffelgrass infestations would not continue to spread, eliminating it as a fuel source for wildfires within the Waterman Mountain ACEC that could destroy the population of the cactus.

This alternative would control the buffelgrass and Bermuda grass; therefore the infestations would not continue to spread, eliminating invasive exotic grasses as a fuel for wildfires. The control of invasive exotic grasses will allow native plants to better compete with other plant species, and will slow the spread of noxious weeds by removing a source of disturbance.

#### 4.1.5 Cumulative Impacts of the No Action Alternative:

This alternative will not treat the invasion by buffelgrass which is posing a severe threat to the entire vegetative community of the Sonoran desert. The buffelgrass is doubling the size of the area that it covers each year. This rate of increase will cause a projected doubling each year in the cost to effectively treat the problem. The result will be in the loss of the health and function of the Sonoran Desert Ecosystem as we know it now. The native cacti and leguminous trees will be burned or crowded out and the fire adapted grasses will take over the landscape. This alternative will also not treat the invasion of Bermuda grass, which will also increase in patch size in the riparian and xeroriparian zones crowding out the native grasses and sedges. The Bermuda grass does provide some bank stabilization and retention of soils during flood events.

#### 4.1.6 Cumulative Impacts of Alternative 2: Physical Control and Removal

This alternative will not effectively treat the invasion by buffelgrass which is posing a severe threat to the entire vegetative community of the Sonoran desert. The buffelgrass is doubling the size of the area that it covers each year. The rate of increase while untreated will cause a projected doubling each year in the cost to effectively treat the problem. The current effort to manually remove the buffelgrass through the use of volunteers does not keep up with the expansion of the grass within the Waterman ACEC. This may lead to the buffelgrass out-competing the Nichol Turk's head or inducing a wildland fire of the intensity that the Nichol Turk's head Cactus population is destroyed. Mowing or large scale mechanical removal from previously disturbed sites such as mine quarries and roadsides would reduce the risk of fires starting from well-traveled areas, but would not treat the expansion of buffelgrass into the undisturbed desert areas. The result will be in the loss of the Sonoran Desert Ecosystem as we know it now. The native cacti and leguminous trees will be burned or crowded out and the fire adapted grasses will take over the landscape.

This alternative will also not treat the invasion of Bermuda grass, which will also increase in patch size in the riparian and xeroriparian zones crowding out the native grasses and sedges. The Bermuda grass does provide some bank stabilization and retention of soils during flood events.

#### 4.1.7 Cumulative Impacts of Alternative 3: Chemical (Herbicide) removal of exotic, noxious species and Re-establishing native plants.

This alternative would control the buffelgrass and Bermuda grass; therefore the treated infestations would not continue to spread, eliminating the target grasses as a fuel for wildfires within the action areas. Small areas would not receive treatment due to the difficulty of reaching the sites with a heavy back pack sprayer; these areas would serve as a seed source for the continued spread of exotic invasive grasses. The effective time of treatment is short and dependent on local weather conditions, which may prevent the consecutive years of treatment that are sometimes necessary to reduce the seed bank in the soil that allows regeneration of the buffelgrass stands.

#### 4.1.8 Cumulative Impacts of the Proposed Action: Chemical (Herbicide) and Physical Control and Removal of Exotic, Noxious Species and Re-establishing Native Plants

This alternative would control the buffelgrass and Bermuda grass; therefore the infestations would not continue to spread, eliminating these grasses as a fuel for wildfires within the Ironwood Forest National Monument and the urban lands around Tucson.

This action would be part of a coordinated effort between State and Local entities control buffelgrass before it becomes cost prohibitive to effectively control this invasive species. This treatment effort would demonstrate that many people working together can effectively control this invasive species.

#### Description of Mitigation Measures:

- 1) Prior to initiating treatment, BLM will survey, assess, and flag each area to identify any individual plants, nests, or animals to avoid while spraying.

- 2) Prior to applying the herbicide, personnel will shake the larger bunches of buffelgrass to allow wildlife to leave the cover of the plant.
- 3) All Federal authorizations to carry out land use activities on Federal lands or tribal lands, including all leases and permits, must include a requirement for the holder of the authorization to notify the appropriate Federal or tribal official immediately upon discovery of human remains, funerary objects, sacred objects or objects of cultural patrimony pursuant to BLM regulations.

## **5 Public Involvement**

Public participation in the National Environmental Policy Act (NEPA) process for this proposed project was conducted consistent with the BLM's NEPA procedures. The current public involvement and notification process is as follows:

- 1) This EA will be posted on the Bureau of Land Management NEPA website and will be available for public review.
  - 2) A previous project review that dealt with the aerial application of the herbicide Glyphosate on the Snyder hill parcel as part of a larger research project was sent to 40 individuals for distribution soliciting comments on this EA during a 30-day public comment period. This was a multi-jurisdictional research project that involved federal funding of a research project on county and BLM lands. The project review included two public meetings. All comments received were considered in the final EA and accompanying decision. Two public meetings were held as part of the scoping for the spraying project. There were no protest or appeals of that project.
  - 3) A previous EA dealt with the use of herbicides to treat buffelgrass and Bermuda grass within the Ironwood Forest National Monument. That EA was sent out to interested publics and a coalition of local environmental groups. Several comments were received and incorporated into the EA. There were no protests or appeals on that EA. In general, the local people have been supportive of treatments to control invasive grasses within the community.
  - 4) Post cards will be sent out notifying the local neighbors of the Urban lands parcels before they are treated.
- 2) Public comments received from the two previous EA's have been evaluated and considered in this document, BLM expects to finalize the EA and release a decision.

## **6 PREPARERS**

Darrell Tersey, Natural Resource Specialist, Ironwood Forest National Monument  
Claire Crow, Manager, Ironwood Forest National Monument

## **7 Persons and Agencies Consulted:**

Neal Kittelson, Ph.D. Invasive Species Project Manager Southern Arizona Buffelgrass Coordination Center

## **8 References Cited**

Arizona Department of Agriculture. Prohibited, Regulated and Restricted Noxious Weeds.

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  - Pima County – Eastern Part (NRCS 2003);
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- U.S.G.S. 2011. Buffelgrass—Integrated Modeling of an Invasive Plant

# 9 Appendix A

## 9.1 Label for Glyphosate (e.g. Roundup Pro) [N-(phosphonomethyl) glycine, in the form of its isopropylamine salt].

Material Safety Data Sheet

MONSANTO CHEMICAL CO -- ROUNDUP PRO HERBICIDE; MON 65005

=====  
MSDS Safety Information  
=====

FSC: 6840  
NIIN: 00-598-7327  
MSDS Date: 11/01/1995  
MSDS Num: CFMQV  
Product ID: ROUNDUP PRO HERBICIDE; MON 65005  
MFN: 02  
Responsible Party  
Cage: 6H252  
Name: MONSANTO CHEMICAL CO  
Address: 800 N LINDBERGH BLVD M/C G5NC  
City: SAINT LOUIS MO 63141  
Info Phone Number: 314-622-1507  
Emergency Phone Number: 314-694-4000 (COLLECT)  
Review Ind: Y  
Published: Y

=====  
Preparer Co. when other than Responsible Party Co.  
=====

Cage: 6H252  
Name: MONSANTO CHEMICAL CO  
Address: 800 N LINDBERGH BLVD M/C G5NC  
City: SAINT LOUIS MO 63141

=====  
Contractor Summary  
=====

Cage: 6H252  
Name: MONSANTO CHEMICAL CO  
Address: 800 N LINDBERGH BLVD M/C G5NC  
City: SAINT LOUIS MO 63141  
Phone: 314-694-4000 (COLLECT)  
Cage: 3Y784  
Name: MONSANTO CO, FIBERS BUSINESS UNIT  
Address: 800 N LINDBERGH BLVD  
City: SAINT LOUIS MO 63167  
Phone: 314-694-1000

=====  
Item Description Information  
=====

Item Manager: S9G  
Item Name: DISINFECTANT-DETERGENT, GENERAL PURPOSE  
Specification Number: A-A-1439  
Unit of Issue: CN  
Quantitative Expression: 0000000005GL  
UI Container Qty: 0

Type of Container: CAN

=====  
Ingredients  
=====

Cas: 38641-94-0

RTECS #: MC1080000

Name: GLYPHOSATE,N-(PHOSPHONOMETHYL)GLYCINE, IN THE FORM OF ITS ISOPROPYLAMINE  
SALT

% Wt: 41.0

Other REC Limits: NONE RECOMMENDED

OSHA PEL: NOT ESTABLISHED

ACGIH TLV: NOT ESTABLISHED  
-----

Name: INERT INGREDIENTS (INCLUDING SURFACTANT) INCLUDING INGREGS #3.

% Wt: 59.0

Other REC Limits: NONE RECOMMENDED

OSHA PEL: NOT ESTABLISHED

ACGIH TLV: NOT ESTABLISHED  
-----

Name: PHOSPHATE ESTER NEUTRALIZED POLYETHOXYLATED TALLOWAMINE

% Wt: 14.5

Other REC Limits: NONE RECOMMENDED

OSHA PEL: NOT ESTABLISHED

ACGIH TLV: NOT ESTABLISHED  
=====

Health Hazards Data  
=====

LD50 LC50 Mixture: ORAL, RAT LD50>5000MG/KG

Route Of Entry Inds - Inhalation: YES

Skin: YES

Ingestion: NO

Carcinogenicity Inds - NTP: NO

IARC: NO

OSHA: NO

Effects of Exposure: EYE:MAY CAUSE PAIN,REDNESS,TEARING BASED ON TOXICITY  
STUDIES.SKIN:IS NO MORE THAN SLIGHTLY TOXIC & NO MORE THAN SLIGHTLY IRRIT  
BASED ON TOXICITY STUDIES.INGEST:IS NO MORE THAN SLIGHTLY TOXIC BASED ON  
TOXICITY STUDIES.NO SIGNIFICANT ADVERSEHEALTH EFFECTS EXPECTED TO DEVELOP IF  
ONLY SM AMTS(<MOUTHFUL) SWALLOWED. (SUPPLEM)

Signs And Symptions Of Overexposure: EYE:PAIN,REDNESS,TEARING.SKIN:SLIGHT  
TOXIC,SLIGHTLY IRRIT.INGEST:SLIGHTLY TOXIC,GI DISCOMFORT W/IRRIT OF  
MOUTH/NAU,VOMIT,DIARRHEA,HYPOTENSION,LUNG EDEMA.

Medical Cond Aggravated By Exposure: NONE SPECIFIED BY MANUFACTURER.

First Aid: EYE:FLUSH W/PLENTY OF WATER.GET MED ATTN IF IRRIT PERSISTS.NOTE:FOR  
ADDN HUMAN EMERGENCY 1ST AID OR TREATMENT GUIDANCE CALL COLLECT ANYTIME  
DAY/NIGHT 314-691-4000.  
=====

Handling and Disposal  
=====

Spill Release Procedures: OBSERVE ALL PROT/SAF PRECAUT WHEN CLEANING  
UP.SM:<1GAL ON FLOOR/IMPERV SURF SOAKUP W/TOWELS/ABSORBENT AMTL.DISCARD  
INT RASH.CLEAN AREA W/SOAP/H2O;RINSE WELL.LG:DIKE/CONTAIN.ABSORB  
W/ATTAPUIGITE,BENTON ITE/OTHER CLAYS.COLLECT,PLACE IN METAL DR(OTHEPRE)

Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.

Waste Disposal Methods: WASTES RESULTING FRM PROD USE CANT BE USED/CHEM  
REPROCESSED SHOULD BE DISPO OF IN LANDFILL APRPOV FOR PESTICIDE DISPO OR IAW  
APPLIC FED/STATE/LOC PROCEDURES.EMPT CNTNR RETAIN VAP/RESIDUE.OBSERVE ALL L

ABEL TIL CLEAN/ETC.NO COMPO SARA 313 REPORT REQMT.  
Handling And Storage Precautions: AVOID EYE/CLOTH CONTACT.DONT APPLY DIRECTLY  
TO H2O/AREAS WHERE SURF H2O PRES/INTERTIDAL AREA BEL MEAN HI H2O MARK.DONT  
CONT H2O WHEN DISP EPMT WASHH2O  
Other Precautions: EPA REG#:524-475.KEEP OUT OF REACH OF CHILDREN.CAUT!CAUSES  
EYE IRRIT.REFORMULATION PROHIBITED.SEE INDIVIDUAL CNTNR LABEL FOR REPKG  
LIMITATIONS.SPILL:DISPO IAW INSTRUCTIONS PROVIDED.SCRUB FLOOR/SURF WE LL  
W/STRONG INDUSTR DETGT/RINSE W/H2O.

=====  
Fire and Explosion Hazard Information  
=====

Flash Point Method: PMCC  
Flash Point Text: >200F,>93C  
Autoignition Temp Text: N/DETR  
Extinguishing Media: WATER SPRAY,FOAM,DRY CHEMICAL,CO2,ANY CLASS B  
EXTINGUISHING AGENT.  
Fire Fighting Procedures: FIREFIGHTERS/OTHERS THAT MAY BE EXPO TO  
VAP/MIST/COMBUST PROD SHOULD WEAR FULL PROT CLOTH/SELF-CONTAIN BREATH  
APPARATUS.EQMPMT SHOULD BE THOROUGHLY CLEAN AFT USE  
Unusual Fire/Explosion Hazard: NONE

=====  
Control Measures  
=====

Respiratory Protection: CONC:AVOID BREATH VAP/MIST.PROD CONC NOT LIKELY TO POSE  
AIRBONRE EXPO CONCERN DURNING MFG/PKG.ABNORMAL EXPO CONDITIONS USE NIOSH/MSHA  
APPROV EPMT.AIR PURIFY RESP APPROP USE FULLFACE RESP W/PURI PROT A GAINS ORG  
VAP/DUST/MIST FOR PESTICIDES.  
Ventilation: NO SPECIAL PRECAUT ARE RECOMMENDED.  
Protective Gloves: NONE SPECIFIED BY MANUFACTURER.  
Eye Protection: CHEM SAF GOGG FOR HNDLG PKG CONC  
Other Protective Equipment: LONG SLEEVE SHIRT, LONG  
PANTS, SHOES+SOCKS.CLEAN/MAINT PPE.SEE 29CFR1910.134.IAW INSTRUCTIONS NO  
RESP/GLOVE/EYE PROT NEEDE  
Work Hygienic Practices: WASH HANDS BEF EAT/DRINK/CHEW GUM/USE TOBAC OR  
TOIL.REMOVE CLOTH IMMED IF MATL GETS INSIDE-WASH WELL.DONT CONT H2O,FOODS  
Supplemental Safety and Health: HEALTH:INGEST SIMILAR FORMULATIONS HAS BEEN  
REPORTED TO PRODUCE GI DISCOMFT W/IRRIT OF MOUTH,NAU,VOMIT,DIARR.ORAL INGEST  
OF LG QUANT OF ONE SIMILAR PRODUCT HAS BEEN REPORTED TO RESULT IN HYPOTENSION  
& LUNG EDEMA.INHAL:NO MORE THAN SLIGHTLYTOXIC IF INHAL BASED ON TOXICITY  
STUDIES.

=====  
Physical/Chemical Properties  
=====

HCC: T5  
Spec Gravity: 1.17  
PH: 4.9 1%  
Appearance and Odor: CLEAR,VISCOUS AMBER-COLORED SOLN,PRACTICALLY ODORLESS TO  
SLIGHT AMINE-LIKE ODOR

=====  
Reactivity Data  
=====

Stability Indicator: YES  
Stability Condition To Avoid: STABLE @LEAST 5YRS UNDER NORM CONDITIONS OF  
WAREHOUSE STORAGE.NONE.MIX/STORE/APPLY W/SS,AL,FIBERGLASS,PLAST,PLAST LINER  
Materials To Avoid: GALVANIZED/UNLINED STEEL-PROD H2 GAS(EXPLO HAZ).RXS  
W/CAUSTIC(BASIC)MATLS-LIBERATE HEAT.  
Hazardous Decomposition Products: NONE

Hazardous Polymerization Indicator: NO  
Conditions To Avoid Polymerization: RXS W/CAUSTIC(BASIC)MATLS TO LIBERATE  
HEAT.THIS IS NOT POLYMERIZATION BUT RATHER CHEM NEUTRALIZATION IN ACID BASE  
RX.

=====  
Toxicological Information  
=====

=====  
Ecological Information  
=====

=====  
MSDS Transport Information  
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=====  
Regulatory Information  
=====

=====  
Other Information  
=====

=====  
Transportation Information  
=====

Responsible Party Cage: 6H252  
Trans ID NO: 79124  
Product ID: ROUNDUP PRO HERBICIDE; MON 65005  
MSDS Prepared Date: 11/01/1995  
Review Date: 11/10/1997  
MFN: 2  
Net Unit Weight: 292.6 LBS  
Multiple KIT Number: 0  
Review IND: Y  
Unit Of Issue: CN  
Container QTY: 0  
Type Of Container: CAN  
Additional Data: PER MSDS:DOT PROPER SHIPPING NAME/HAZ CLASS/ID#/LABEL:NOT  
APPLICABLE;SURF FREIGHT CLASSIFICATION:WEE D KILLING CMPD,NOIBN.

=====  
Detail DOT Information  
=====

DOT PSN Code: ZZZ  
DOT Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION  
=====

=====  
Detail IMO Information  
=====

IMO PSN Code: ZZZ  
IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION  
=====

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Detail IATA Information  
=====

IATA PSN Code: ZZZ  
IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION  
=====

=====  
Detail AFI Information  
=====

AFI PSN Code: ZZZ  
AFI Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION  
=====

HAZCOM Label

=====  
Product ID: LABEL COVERED UNDER EPA REGS - HAZCOM LABEL NOT AUTHORIZED  
=====

Disclaimer (provided with this information by the compiling agencies): This information is formulated for use by elements of the Department of Defense.

The United States of America in no manner whatsoever expressly or implied warrants, states, or intends said information to have any application, use or viability by or to any person or persons outside the Department of Defense nor any person or persons contracting with any instrumentality of the United States of America and disclaims all liability for such use. Any person utilizing this instruction who is not a military or civilian employee of the United States of America should seek competent professional advice to verify and assume responsibility for the suitability of this information to their particular situation regardless of similarity to a corresponding Department of Defense or other government situation.

Las Cienegas NCA:

Section 1, Budget information breaking out 1711 base, 1711 one-time, and all Other subactivity funding (combined) so that it adds up to the FY2012 Total.

Section 6, date for Interpretive signs accomplishment  
LCNCA

Section 6

Interpretive signs/waysides

Installed 10/15/2011

Interpretation of Empire  
Ranch

<http://www.empireranchfoun>

Section 7, Project's status for all three projects; Contributed Funds was blank so I entered \$0-please correct if different

Section 8, anything to put in the Manager's Corner?