

Arizona Water Protection Fund FY 2011 Grant Application Review

Application # WPF0389 Applicant: Coronado Resource Conservation & Development

Title of Project: Invasive Weed Control - Gila River, ^{Greenlee}~~Coconino~~ County

Additional materials were submitted with this application that could not be reproduced and distributed for review. These materials may be reviewed in person at the Arizona Water Protection Fund offices at (3550 N. Central Avenue, 2nd Floor, Phoenix). The additional materials available are the following:

Maps
 Photographs
 Disk
 Other

AUG 30 2010

**Arizona Water Protection Fund
Application Cover Page
FY 2011**

Water Protection Fund

Title of Project: Invasive Weed Control Gila River Corridor, Greenlee County											
Type of Project: <input checked="" type="checkbox"/> Capital or Other <input type="checkbox"/> Water Conservation <input type="checkbox"/> Research	Stream Type: <input checked="" type="checkbox"/> Perennial <input type="checkbox"/> Intermittent <input type="checkbox"/> Ephemeral										
Your level of commitment to maintenance of project benefits and capital improvements: <input type="checkbox"/> < 5 years <input type="checkbox"/> 5-10 years <input type="checkbox"/> 11-15 years <input checked="" type="checkbox"/> 16-20 years											
Applicant Information: Name/Organization: Coronado Resource Conservation & Development Area Address 1: 656 N Bisbee Ave. Address 2: City: Willcox State: AZ ZIP Code: 85643 Phone: 520-384-2229 x122 Fax: 520-384-2735 Tax ID No.: XXXXXXXXXX	Inside an AMA: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, which AMA: <input type="checkbox"/> Phoenix <input type="checkbox"/> Tucson <input type="checkbox"/> Prescott <input type="checkbox"/> Pinal <input type="checkbox"/> Santa Cruz										
Type of Application: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation											
Contact Person: Name: Kim Webb Title: Project Manager Phone: 520-384-2229 x 124 Fax: 520-384-2735 e-mail: kim.webb@rcdnet.net	Any Previous AWPf Grants: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please provide Grant #(s): 00-103,03-116,08-151, 09-164										
Arizona Water Protection Fund Grant Amount Requested: \$264,189.24 If the application is funded, will the Grantee intend to request an advance: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Matching Funds Obtained and Secured: <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Applicant/Agency/Organization:</u></th> <th style="text-align: right;"><u>Amount (\$):</u></th> </tr> </thead> <tbody> <tr> <td>1. Applicant</td> <td style="text-align: right;">2,130.50</td> </tr> <tr> <td>2. University of AZ Extension</td> <td style="text-align: right;">13,169.00</td> </tr> <tr> <td>3. AZ State Forestry</td> <td style="text-align: right;">27,000.00</td> </tr> <tr> <td align="right" colspan="2">Total: 43,299.50</td> </tr> </tbody> </table>	<u>Applicant/Agency/Organization:</u>	<u>Amount (\$):</u>	1. Applicant	2,130.50	2. University of AZ Extension	13,169.00	3. AZ State Forestry	27,000.00	Total: 43,299.50	
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3. AZ State Forestry	27,000.00										
Total: 43,299.50											
Has your legal counsel or contracting authority reviewed and accepted the Grant Award Contract General Provisions? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A											
Signature of the undersigned certifies understanding and compliance with all terms, conditions and specifications in the attached application. Additionally, signature certifies that all information provided by the applicant is true and accurate. The undersigned acknowledges that intentional presentation of any false or fraudulent information, or knowingly concealing a material fact regarding this application is subject to criminal penalties as provided in A.R.S. Title 13. The Arizona Water Protection Fund Commission may approve Grant Awards with modifications to scope items, methodology, schedule, final products and/or budget.											
Richard Searle	Vice President 520-384-2229 x123										
Typed Name of Applicant or Applicant's Authorized Representative	Title and Telephone Number										
											
Signature	Date Signed 8/25/10										

II. EXECUTIVE SUMMARY

The Gila River enters Arizona between Virden, New Mexico and Duncan, Arizona, crosses the lower portion of Greenlee County before moving north to transect the southern half of the state. It is a vital source of water for wildlife, recreation and agriculture. The riparian area through Greenlee County is home to a diverse population of wildlife and it is being threatened by highly aggressive invasive weeds. The River itself, also has the potential to be an economically devastating corridor for the spread of invasive weeds. The Southeast Arizona Weed Management Area with leadership from the U of A Cooperative Extension Service has identified the following invasives in the Gila River channel, riparian area and flood plain in Greenlee County: Russian knapweed, Hoary cress (white top), Yellow and Malta starthistle and Bull thistle. Once established, these plants create a monoculture, significantly altering the ecosystem, destroying wildlife habitat and agricultural land. These plants cannot be controlled by mechanical means as they have root systems that respond to cultivation by spreading, making herbicide the most effective control. Some landowners are not aware of the destruction invasive weeds can cause, others are not aware of the herbicides available and the cost of treatment is a factor.

Arizona Water Protection Fund (AWPF) funding is being requested for a four year project that will use a comprehensive, aggressive approach to address barriers to treatment and reach the project goal of restoring the native riparian area by eradicating invasive weeds from the thirty mile river corridor through Greenlee County. The project area will encompass as a minimum, the river bed and a ¼ mile corridor on each side, covering an approximate 9600 acres. Currently point data and preliminary estimates show that 1400 acres in the area have invasive weeds on them need to be treated. However, because a single plant can produce thousands of seeds in a growing season, eradicating the invasives from this entire area is key to the success of this project. In the Valley areas, the adjacent flood plain is farmed, with fields and irrigation ditches draining into the river. It is critical to address these areas to eliminate the seed sources there. The Southwest New Mexico Weed Management Area is a cooperator in this project and is aggressively treating invasive weeds in the river corridor on their side of the state line (No AWPf funds will be used outside Arizona).

Funding will be utilized to hire a part time project coordinator to lead work plan development, develop and deliver the information and education program, obtain all access and working agreements with landowners and partners, and recruit and train Early Detection-Rapid Response teams. In addition, a Weed Management Technician will be hired to survey and map the area, create the data base and shape files to track progress and assist with safety and application training. Funds will be used to purchase herbicide for the project and provide it to landowners in the project area at no cost to them. Landowner contribution to the project will be to donate labor hours for the application on mapped areas of their property and agree to monitor the infestation over the next five years. The digital data base will enable us to utilize follow up monitoring and mapping to track trend progress as well as adjust critical target areas as indicated. Early Detection Rapid Response Teams will be key to long term control through identification, tracking and trending of the invasives in order to proactively respond and eradicate any further outbreaks.

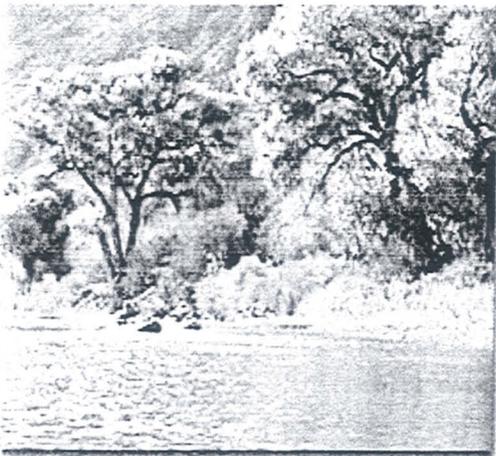
III. PROJECT OVERVIEW *Capital Project*

A. Background

The Gila is the storied river of the west, the ageless natural highway whose passage through the mountain and desert southwest has served people since prehistoric times. In the mid-19th century, the communities along the Gila grew up around stage and freight stations and military posts as settlers arrived to make their homes.

The Gila River enters Arizona from the bordering state of New Mexico, near the southeastern corner of Greenlee County. It creates a pastoral scene when viewed from the mountains above the Duncan Valley; the dark green of the river corridor winding through the valley, farm fields stretch in every direction, thickets of cottonwood trees shelter old farmhouses, and wildlife and livestock seem to outnumber people. The River and riparian area support diverse wildlife populations that have a significant economic impact through eco tourism. River water has supported agriculture since the first settlers arrived. This area is being threatened by invasive weeds that render both the riparian area and adjacent agriculture land worthless. This area is the gateway to the Gila River in Arizona, and is crucial that it be the focus of the first front to invasive weeds. Left unchecked, these weeds can cause millions of dollars in damage to natural and agricultural lands and become cost prohibitive to control.

The Gila Box Riparian National Conservation Area is one of the important resources of the Gila River that is being threatened. This 23,000-acre area that lies on the Greenlee/Graham County line is truly an oasis in the desert. It has four perennial waterways - the Gila and San Francisco rivers and Bonita and Eagle creeks, which are the lifeline for this remarkable place. The Gila River canyon section, known as the Gila Box, is composed of patchy mesquite woodlands, mature cottonwoods, sycamores and willows, sandy beaches, and grand buff-colored cliffs. The area is popular for birdwatching, with over 150 species of birds making their home there at some time of year. Raptors such as the uncommon zoned tailed hawk, black hawk, and peregrine falcon can be seen, along with many of the colorful neotropical birds that migrate to this area in the spring and summer.



Gila Box NCA- BLM photo

The Bureau of Land Management (BLM) has taken an aggressive approach to the treatment of invasive weeds that are threatening this area. They play an active role in the Southeastern Arizona Weed Management Area and support a coordinated weed control effort that will insure the health of the Gila Box and the rest of the Gila River.

Invasive weeds have entered the Gila River Corridor via a variety of sources. Local residents say that contaminated hay brought in and used for bank stabilization during the flooding in the 1970's was part of the problem. Others may have arrived in contaminated seed or on a vehicle passing through.

In the 1970's, when invasive weeds started showing up in fields along the Gila River in Greenlee County, little was known about the physiology of Yellow starthistle and how to control it. The same held true for Russian knapweed and Malta starthistle. Cultivation and traditional herbicides did not seem to eradicate it from farm fields. As farmers fought to deal with it in their fields, it grew largely unnoticed in the riparian area for several years. It was in the late 1990's that it was discovered how invasive and destructive these plants were. The University of Arizona took the lead on researching the physiology and control of the plant. As more information became available, the Southeastern Arizona Weed Management Area was formed to develop local, on-the-ground control strategies.

Research has now given us herbicides and cultural approaches that are effective in controlling these invasives. However, due to the tenacity and adaptability of these plants, a multi-organized approach must be utilized to facilitate total eradication and restoration of the areas to healthy ecosystems. Some of the barriers to address, maintain and monitor are unformed or absentee landowners, cost and availability of herbicides and the realization that to effect control, there must be persistent monitoring and treatment over time.

The University of Arizona Cooperative Extension, Natural Resources Conservation Service (NRCS) and the Southeastern Arizona Weed Management Area have gathered preliminary point data on infestations of weeds along the Gila River in Greenlee County. The point data notes the type of weed and where it is located but does not give the complete data needed for a treatment plan such as extent of infestation in acres, site conditions, and density of infestation. From preliminary data, it is estimated that there are approximately 1400 acres of invasive weeds in the Gila River Corridor of Greenlee County. Estimates indicate 800 acres of Russian knapweed in the Duncan Valley, 18 acres of Hoary cress(White top) and the remainder a combination of Yellow and Malta starthistle and Bull thistle that will need to be mapped. These invasives are found in the riparian area, adjacent floodplain and in irrigation ditches in flood irrigation systems that drain back into the river.

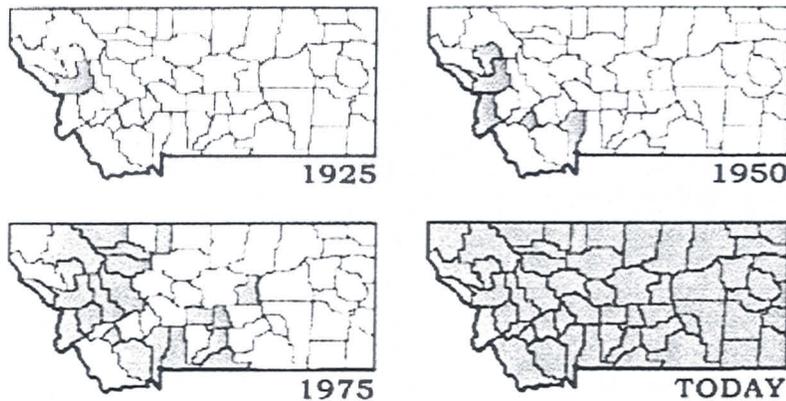
A plant is usually considered a weed when it (1) interferes with beneficial uses of land or water,(2) displaces native or desirable plants, or (3) affects human and/or animal health.

Weeds are non-native plants that have characteristics that make them troublesome, such as adaptation to a wide latitudinal range in the native habitat. Reproductive mechanisms that provide an advantage over native or desirable plants may include high seed production, the ability to reproduce without specialized pollinators, self-fertility, the ability to reproduce vegetatively, and/or the production of small seeds or seeds with appendages that facilitate transport.

Invasive weeds aggressively compete with surrounding desirable plants for moisture, nutrients, and space. The negative impacts of weeds are well known and profound. Left unchecked, noxious and invasive weeds can create monocultures that eliminate diverse plant communities. Watersheds dominated by noxious weeds tend to be less efficient in absorbing and storing water, resulting in increased soil erosion. Noxious weeds can diminish forage production for all classes of herbivores and reduce habitats for small birds and animals. In addition, the noxious weeds Russian knapweed and Yellow starthistle are poisonous to wildlife and domestic animals.

These plants are considered to be **invasive** if they are able to move into and dominate native or managed systems and disrupt the ability of those systems to function normally. Weeds are designated as **noxious** by state law because they cause, or can cause, negative economic and ecological impacts and because control is usually difficult and expensive.

Weeds typically spread by dispersal of seeds or plant parts in a variety of ways. Wind, water, animals, machinery, and people carry seed and plant parts from one location to another. Many weeds produce abundant seeds with barbs, hooks, or other attaching devices that easily adhere to people, animals, or equipment. Because society has become increasingly mobile, weed seeds can travel great distances quickly. Weeds usually become established and advance along highways, roads, trails, and river corridors. Noxious and invasive weeds are spreading at an alarming rate across the Western United States. An example of the spread of Russian knapweed in Montana is shown in the following figure.



Economic Costs due to Invasive Species

The estimated annual loss of productivity caused by noxious weeds in 64 crops grown in the U.S. is \$7.4 billion. The indirect costs to citizens of Arizona from the negative impacts of noxious weeds on plant diversity, wildlife habitat, watershed health, recreation, tourism, human life, and property are unknown. The state of Idaho estimates their losses in this category to exceed \$300 million. No estimates for Arizona were found however as the state relies heavily on a delicate ecosystem to maintain agricultural and tourist income the estimated cost to the state as well as individual landowners could well exceed that documented in other western states.

B. GOAL

Goal: Use an Integrated Weed Management program to protect the integrity of the Gila River by eradicating invasive weeds from the thirty mile river corridor through Greenlee County.

C. OBJECTIVES:

1. Quantify the extent of the infestation by mapping and maintaining a data base
2. Treat invasive weeds with appropriate herbicide to restore infested lands and waters to a healthy and resilient condition.
3. Educate the public and landowners along the river on the economic and biological impacts of invasive weeds, creating a community-based partnership that will focus on early detection and rapid response to maintain the benefits of this project over the long term.
4. Create Early Detection- Rapid Response teams to handle long term monitoring and maintenance of river segments. A priority in recruitment for Rapid Responders will be to have each landowner monitor their own land and community volunteers monitor public land. These Rapid Response teams will report to the local weed management area on the status of treated areas, and/or any new plants discovered in the area. Any follow up treatment required will be conducted in agreement with the landowner.

D. STATEMENT OF PROBLEM

Five different species of invasive weed have been identified in the Gila River corridor through Greenlee County. In areas where these plants have been found, they have rapidly created a monoculture, destroying the natural riparian ecology of the river. They pose a danger to the immediate areas they infest and to lands downstream as they are carried by the river flow. Infestations are relatively small at this time (approximately 1400 acres) which is still cost effective to control. Left alone, the environmental consequences will be devastating (using examples from California and Oregon) Problem Species identified in Greenlee County to be addressed by this project: Russian knapweed, Yellow and Malta starthistle, Hoary cress, Bull thistle.

E. STATEMENT OF SOLUTIONS

The development of a community-based partnership and the application of Integrated Weed Management practices are key to the long term control of invasive weeds in the Gila River Basin of Greenlee County. Several western states have been conducting research and implementing invasive weed control strategies for several years. Utilizing their efforts and the research information developed in Arizona over the past ten years, an Integrated Weed Management approach is considered the best approach to reducing the ecological, economic, and social impacts of noxious weeds on the area's human and natural resources. To implement Integrated Weed Management, the supporters and cooperators will unify resources, priorities and strategies of federal, state, and local agencies to halt or slow the spread of noxious weeds across the area.

Integrated Weed management strategies typically involve (1) prevention, (2) early detection and rapid response, (3) survey and mapping, (4) control, (5) monitoring, (6) restoration, and (7) education.

This project will entail a comprehensive mapping effort along the 30 mile Gila River Corridor through Greenlee County. This will allow the Applicant in conjunction with the Southeast Arizona Weed Management Area to obtain a complete data base of type of invasive weed, density of stand, and acreage of stand. This information will be used to work with landowners, educate them on the concerns of the plant, and provide them with free herbicide to treat the infestation on their property. The key to eradication of the invasives in the area is to continue to monitor, through landowners and community volunteers by creating Rapid Response teams that have the ability to implement controls while infestations are small and easy to control.

Left unchecked, the invasive weeds that have been identified in the River Corridor have the ability to destroy the riparian habitat through this entire reach of the River and beyond.

F. STATEMENT OF PROJECT YEARS OF BENEFIT

This project will benefit the Gila River for 20 years and beyond. This is a four year project that will use an Integrated Weed Management Approach to eliminate invasive weed competition in the riparian areas of the Gila River Corridor through Greenlee County. It was decided to develop the project over four years to allow adequate time for mapping, treatment and follow up which will include training community volunteers and landowners.

IV.

Project Location & Environmental Contaminant Information FY 2011

Project Location Information

1. County: <u>Greenlee</u>	2. Section: <u>see attached</u>	3. Township: <u>see attached</u>	4. Range: <u>see attached</u>
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5. Watershed: Upper Gila-Mangas

6. 8 or 10 Digit Hydrologic Unit Code (HUC): 15040002

7. Name of USGS Topographic Map where project area is located: York, Guthrie, Sheldon, Duncan

8. State Legislative District: 5

(Information available at:

<http://159.87.126.6/mapping/default2.asp?tname=Original.2009.Legislative.Map&org2009leg=on&service=ircmaps&init=true>)

9. Land ownership of project area: Private, state and federal

10. Current land use of project area: Agriculture

11. Size of project area (in acres): 9,600 (this is based upon a project area of 30 river miles with a quarter mile riparian floodplain corridor on each side of the river to be mapped and treated as necessary.

12. Stream Name: Gila River

13. Length of stream through project area: 30

14. Miles of stream benefited: 30 miles

15. Acres of riparian habitat: Approximately 1400 acres will be:

- Enhanced
- Maintained
- Restored
- Created

16. Provide directions to the project site from the nearest city or town. List any special access requirements:

Duncan, AZ is nearest town; the Gila River and US Hwy 70 run through it. All sites to be mapped and treated are on private or state land and will require access agreements for the project.

Environmental Contaminant Location Information

1. Does your project site contain known environmental contaminants? YES NO If yes, please identify the contaminant(s) and enclose data about the location and levels of contaminants:

2. Are there known environmental contaminants in the project vicinity? YES NO If yes, please identify the contaminant(s) and enclose data about the location and levels of contaminants:

3. Are you asking for Arizona Water Protection Fund monies to identify whether or not environmental contaminants are present? YES NO

IV B. ATTACHMENT

PROJECT LOCATION

York Quad

T6S, R 31E Sections 7, 18, 18, 29, 30, T6S R 30E Sections 1, 2

Guthrie Quad

T6S, R 30E, Sections 3, 4

T5S, R 30E, Sections 30, 31, 32, 33

T5S R 29E Sections 25, 26, 27, 28

Duncan Quad

T8S, R32E, Sections 13, 18, 19, 20, 28, 29, 33, 34

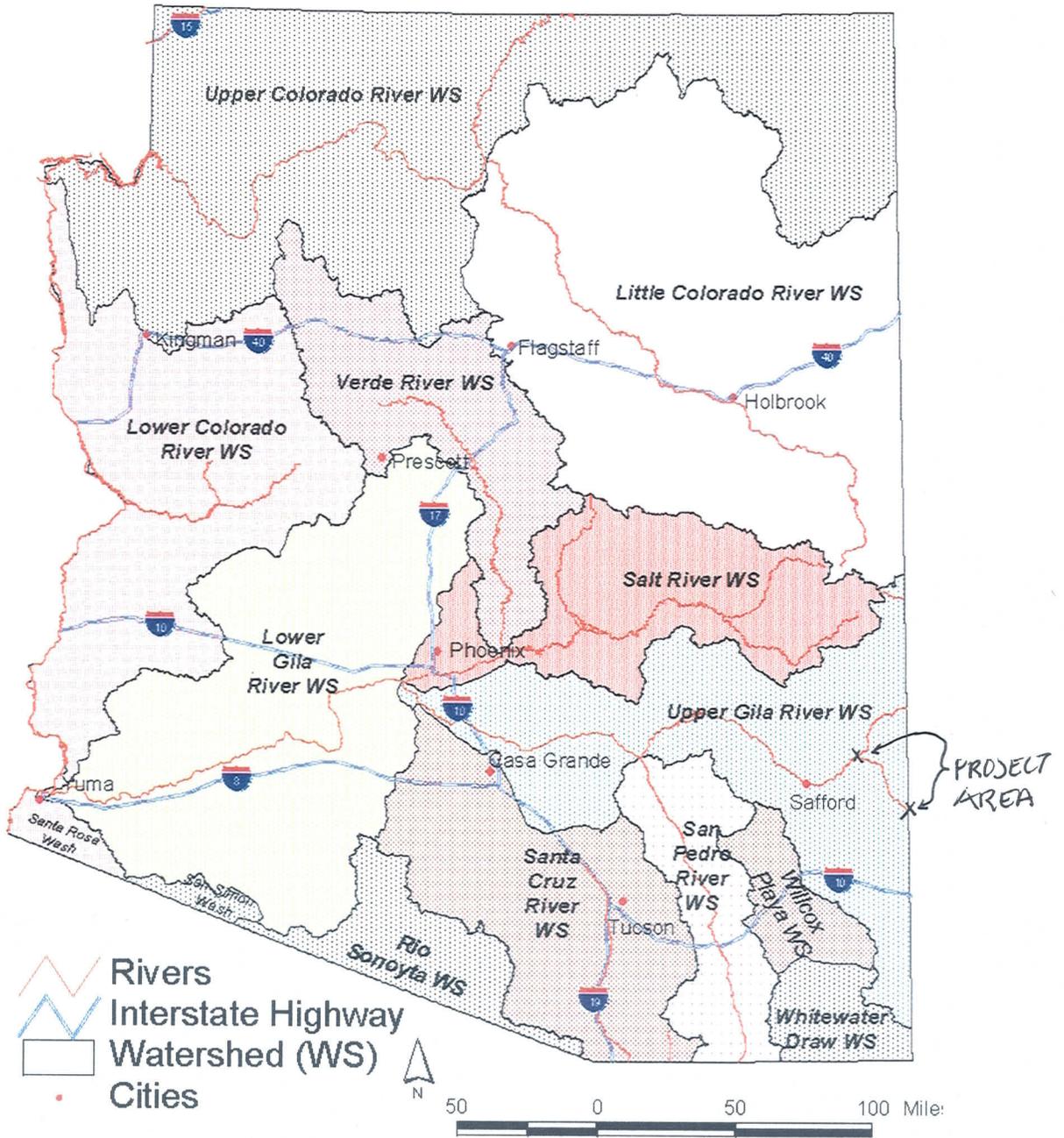
Sheldon Quad

T8S R32E Sections 2, 3, 11

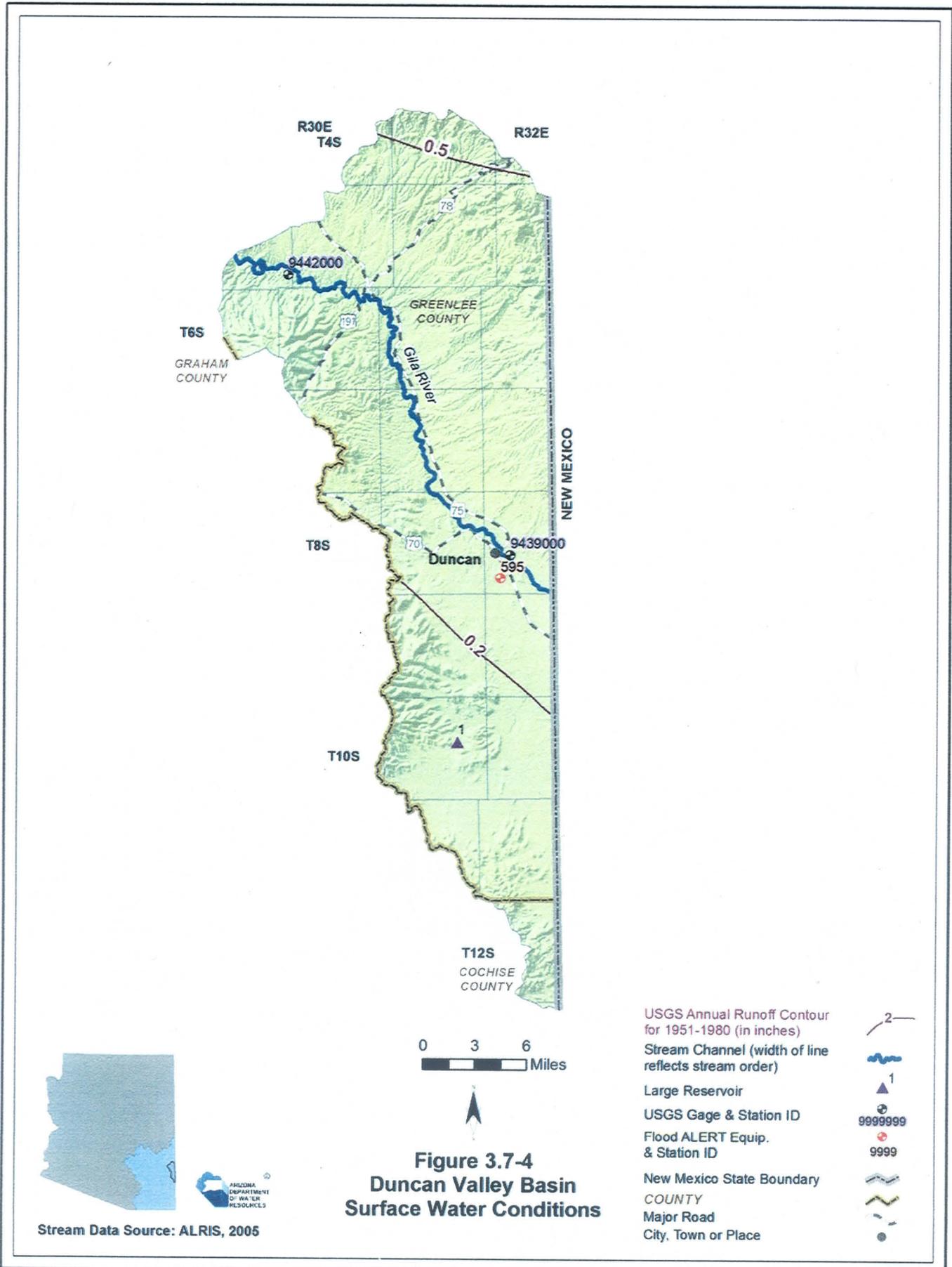
T7S R 32E, Sections 5, 8, 9, 16, 21, 27, 28, 33

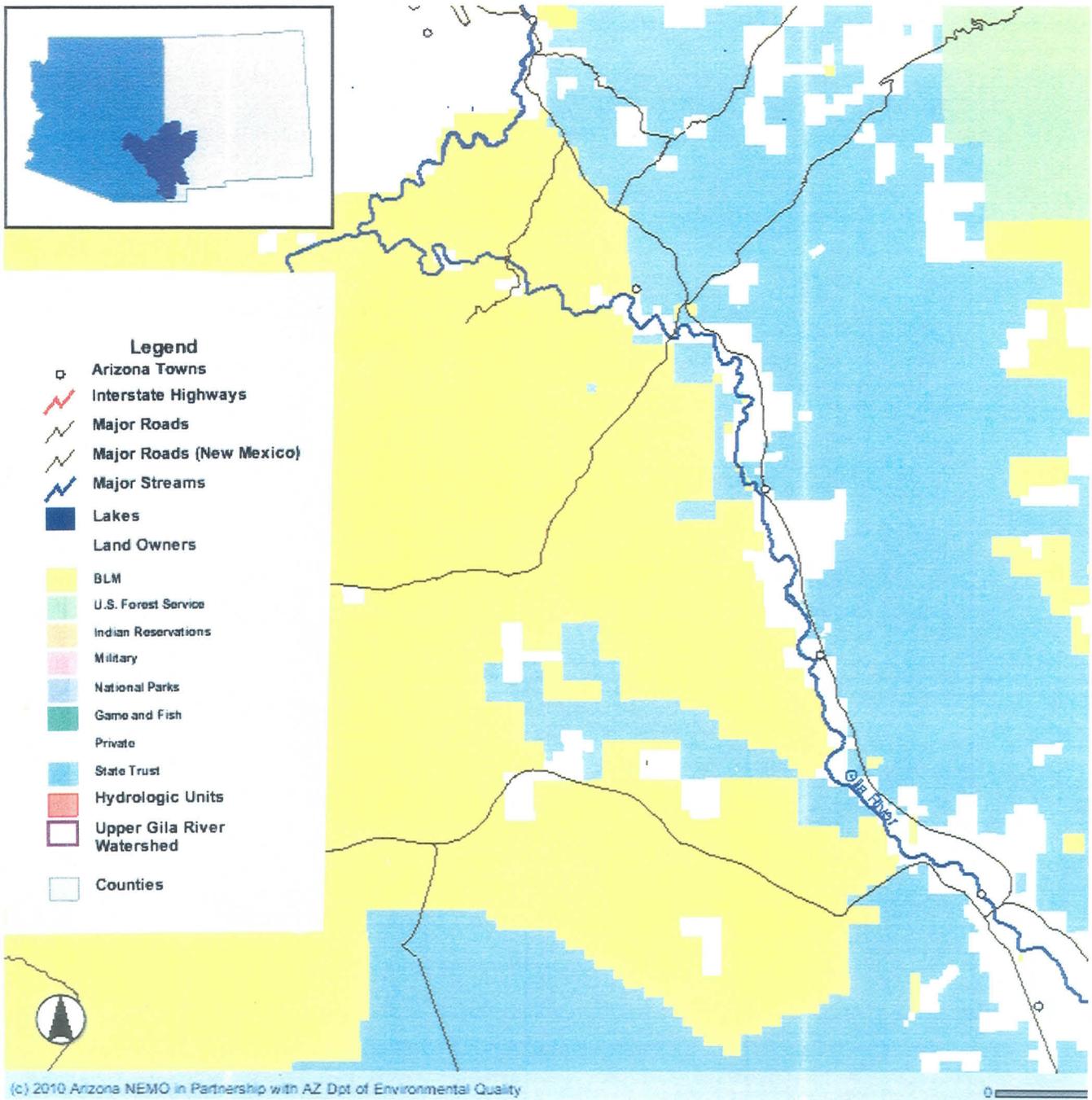
T6S R 32E, Section 32

Arizona Watershed Map FY 2011



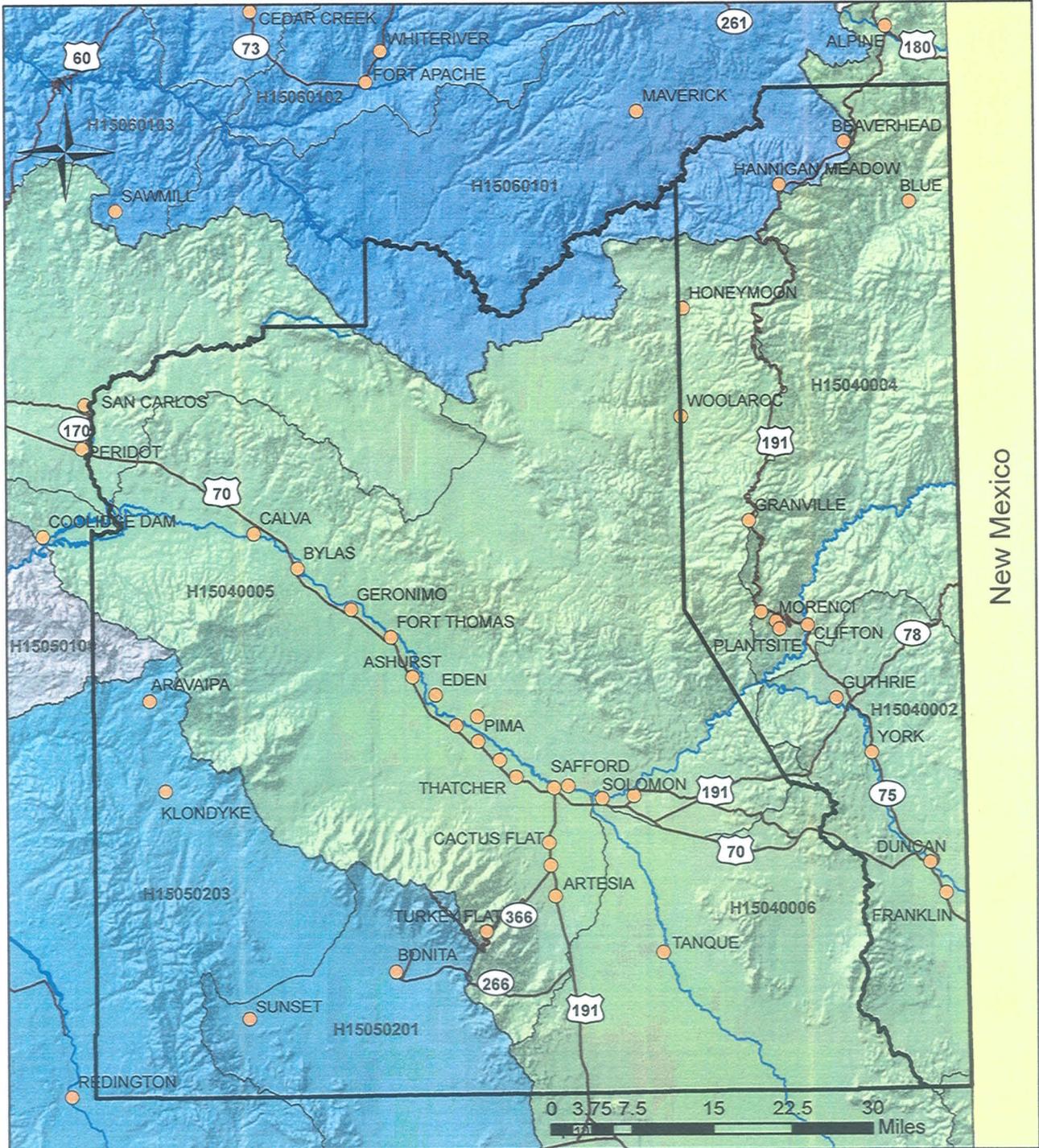
Title of Project: Invasive Weed Control Gila River Corridor, Greenlee County







Graham and Greenlee Watersheds



New Mexico

Legend

- Major Highways
- Major Streams
- Towns
- County Boundaries
- 8-digit HUC

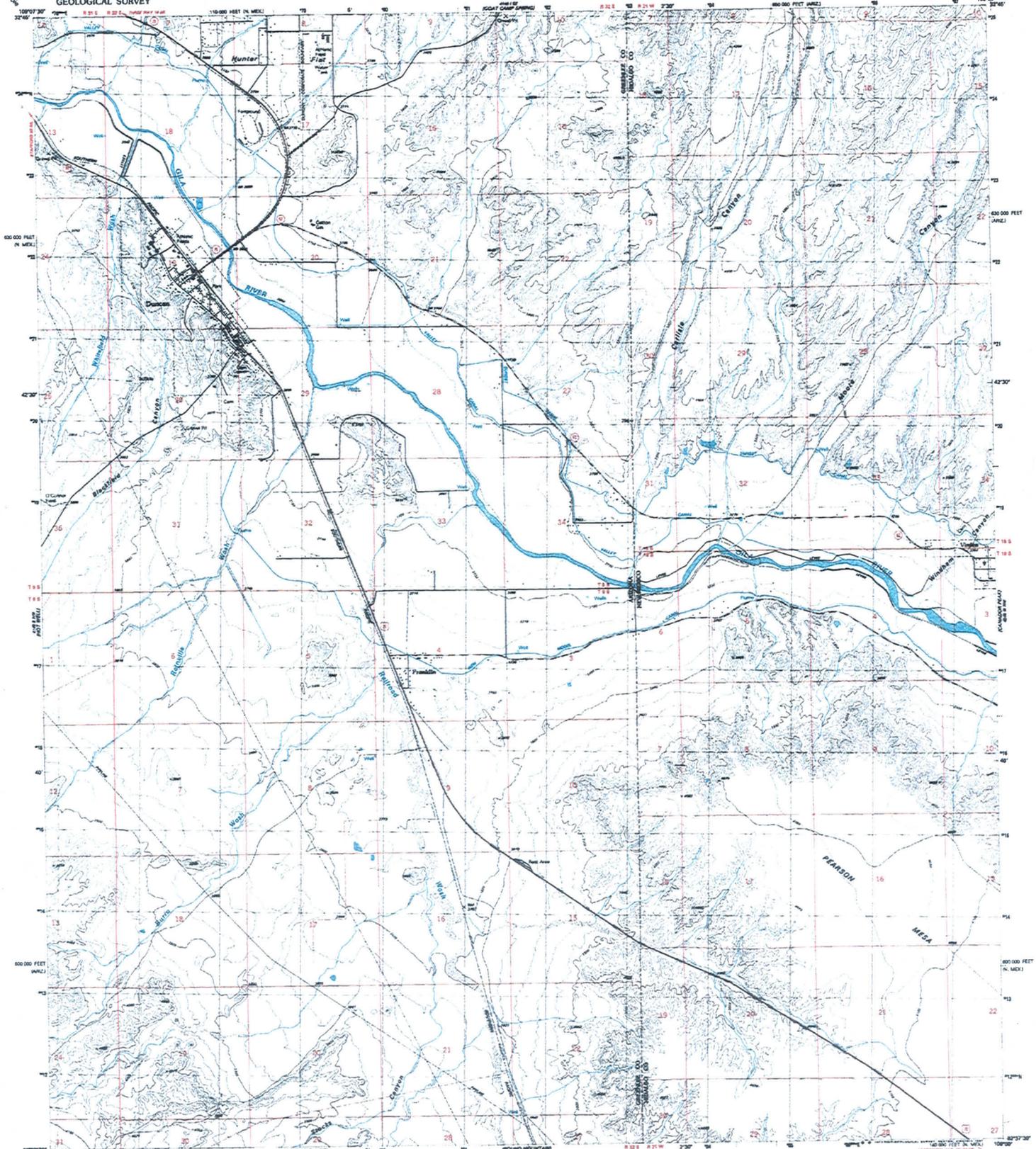
6 - digit HUC Names

- Middle Gila River (Local Drainage)
- Salt River
- San Pedro River
- Upper Gila River

NEMO - University of Arizona Cooperative Extension in partnership with the Arizona Department of Environmental Quality, Water Quality Division Data Sources: ALRIS, Arizona Department of Environmental Quality, United States Geological Survey Projection: Universal Transverse Mercator Projection and Coordinate System, Zone 12, North American Datum 1983, Horizontal Units Meters Cartographic Composition by Elisabeth vanderLeeuw, Advanced Resource Technology Group, The University of Arizona, December 19, 2005 [G_G_Co_HUC.mxd]

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DUNCAN QUADRANGLE
ARIZONA-NEW MEXICO
7.5 MINUTE SERIES (TOPOGRAPHIC)
NE4 DUNCAN 18' QUADRANGLE



Produced by the United States Geological Survey

Controlled by USGS and NOAA

Compiled by photogrammetric methods from aerial photographs taken 1961. Field checked 1963. Map edited 1966

Projection: Arizona coordinate system, east zone (Transverse Mercator)

10,000-foot grid ticks: Arizona coordinate system, east zone and New Mexico coordinate system, west zone

1987 North American Datum

To show on the projected North American Datum 1983

above the projection lines 6 meters south and 50 meters east on shores by dashed corner ticks

Blue red dashed lines indicate related fence and field lines generally visible on aerial photographs. This information is unclassified



TRUE NORTH AND 1984 MAGNETIC NORTH DECLINATION AT CENTER OF MAP DUNCAN IS APPROPRIATE



SCALE 1:24 000
CONTOUR INTERVAL 30 FEET
SUPPLEMENTARY CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1985
THIS MAP COMPLEYS WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80262, OR RESTON, VIRGINIA 20192
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



QUADRANGLE LOCATION

ROAD CLASSIFICATION

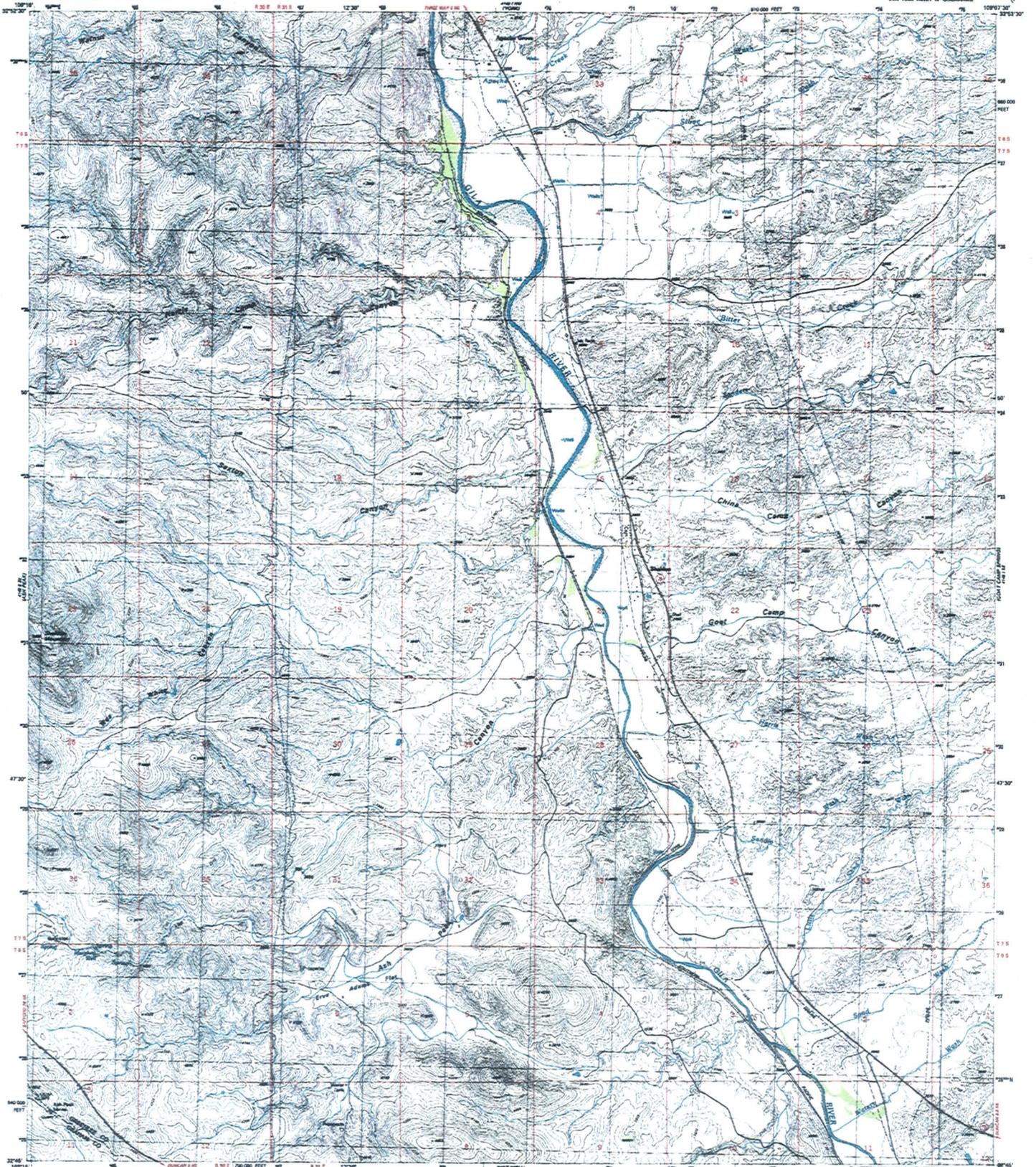
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Secondary Highway, hard surface	Unimproved road
Interstate Route	U. S. Route
	State Route

DUNCAN, ARIZ.-N. MEX.

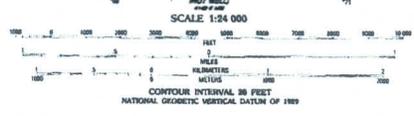
32199-F1-TT-006

1986

USGS 4109 D 100-SERIES 1986



Produced by the United States Geological Survey
Control by USGS and NOAA
Compiled by photogrammetric methods from aerial photographs
taken 1961. Field checked 1963. Map edited 1966
Projection and 10,000-foot grid (with Arizona coordinate
system, and zone 12 North American Datum)
1000-meter Universal Transverse Mercator grid, zone 12
1927 North American Datum
To place on the published North American Datum 1983
move the projection lines 6 meters south and
10 meters east as shown by dashed corner ticks.
True red dashed lines indicate selected fence and field lines
generally visible on aerial photographs. This information is unclassified

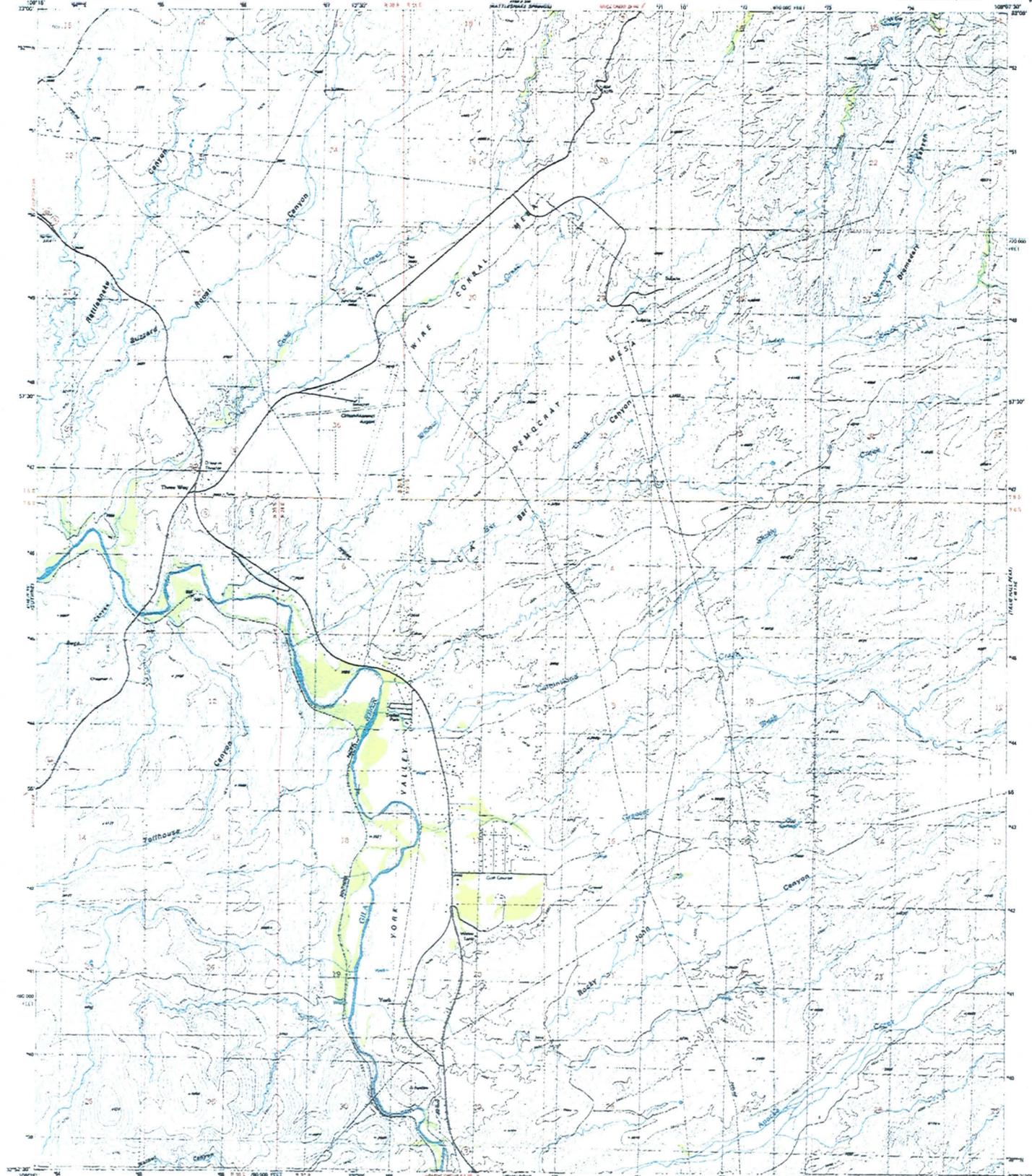


ROAD CLASSIFICATION

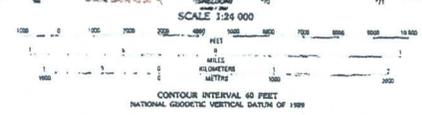
Primary highway, hard surface	Light-duty road, hard or improved surface
Secondary highway, hard surface	Unimproved road
Interstate Route	U. S. Route
	State Route

THIS MAP COMPLES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80260, OR RESTON, VIRGINIA 20192
A POLARIS DECIPHERING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

SHELDON, ARIZ.
DATA 6149 | 500-AGRES V008
1986



Produced by the United States Geological Survey
Control by USGS and NOAA
Compiled by photogrammetric methods from aerial photographs taken 1961. Field checked 1962. Map revised 1966.
Projection and 10,000-foot grid (after Arizona coordinate system, east zone (transverse Mercator))
1000-meter Universal Transverse Mercator grid, zone 13
1927 North American Datum
To place on the projected North American Datum 1983 move the projection lines 8 meters north and 28 meters east as shown by dashed corner ticks
Five red dashed lines indicate selected fence and field lines generally visible on aerial photographs. The information is unchecked



ROAD CLASSIFICATION

Primary highway, hard surface	Light-duty road, hard or improved surface
Secondary highway, hard surface	Unimproved road
Interstate Route	U. S. Route
	State Route



THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80260, OR BOSTON, VIRGINIA 22076 A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

YORK, ARIZ.
NEXT YORK VALLEY IV QUADRANGLE
3219-1B-TF-804
1986
DMA 4448 I 10P-SERIES 1989

VI. SCOPE OF WORK

This project will use a comprehensive approach to invasive weed control on the 30 mile reach of the Gila River that flows through Greenlee County, Arizona. The project area will extend from the New Mexico state line between Virden, NM and Duncan, AZ to the Greenlee and Graham County boundary line west of York, Arizona. It will address the Gila River, riparian corridor and adjacent flood plain through this reach. Efforts will focus on the River and a ¼ mile corridor on each side of the River on the average. If invasive weeds are found adjacent to but outside of this ¼ mile area, they will be mapped with the goal of treating them with herbicide. There may be a need to obtain additional funding from programs such as the NRCS Environmental Quality Incentives Program (EQIP) for treatment outside the scope of this project.

This area is significant in its location on the Arizona, New Mexico state line in relation to the work the Arizona-New Mexico Cooperative Weed Management Area has been doing in the area in the past four years. It is also the gateway to the Gila River in Arizona and can be a threshold that sends weed seeds downstream to infect the entire Gila River and riparian corridor or it can serve as a protective buffer for the River system. The ecologically important Bureau of Land Management Gila Box Area could be destroyed by an out of control infestation of invasive weeds.

The first step will be to map the extent of the invasion in the project area. The University of Arizona, Cooperative Extension, Greenlee County and Bureau of Land Management (BLM) and Natural Resources Conservation Service (NRCS) have been working with 12 landowners in the area on research plots for treatment of invasive weeds and have held informational workshops in the Duncan Valley Area. Access agreements will be updated to reflect the needs of this project. In addition, a complete public information program on the project will be used to gain access agreements to implement a comprehensive mapping program.

The mapping program will make use of existing point data of known infestations and also survey the entire area for invasive weeds. It is suspected that areas with existing point data will be sites with the largest infestations. Mapping will be conducted by a Weed Management Technician that has been trained to identify invasive weeds and map infestations. The Weed Management Technician currently works on two other grant funded projects conducting invasive weed mapping.

Cooperative Extension has been using Geospatial Tool Kits to map invasive weeds for the past several years. The toolkit includes a GPS receiver connected to a Personal Digital Assistant with modified Geographic Information System software. The software allows the user to map invasive weeds and saves the files as shape files that can easily be transferred to a desk top and maps can be made without file conversions. The user can also develop templates with drop down menus to select species while mapping and other meta data that may be needed. We propose to use this system to collect invasive weed data and develop maps to help prioritize weed management in the state. Cooperative Extension currently has this equipment in many of the county offices, and the units are available for check-out through the Geospatial Program on campus. Currently, the Southeastern Arizona Weed Management Area is using this technology to map weeds and develop a database. They are also working with New Mexico Department of Agriculture in developing a shared database for the two states. Invasive weed infestations can be looked at over time and by treatment from mapping information. Infestations are mapped prior to treatment and then again a year following treatment. Differences in acreage (from shape files) can be quantified to show reduction in acres infested.

The second step will be the actual treatment of the invasive weed infestation areas for the purpose of control. Treatment will take place in the second, third and fourth year of the project after mapping is in place. University of Arizona test plot herbicide trials and other research have led to the identification of herbicides that are capable of killing the targeted species in our arid ecosystem. Labels of herbicides that will be used for each of the specific weeds targeted in this project are attached. Application will be done by the landowner with the project providing the herbicide. Each landowner will sign a release of liability agreement (see sample attached). Application will be made using a hand application system of a back pack sprayer with wand or in open areas a quad equipped with a sprayer. All landowners participating in this project will be required to attend a half day training on weed identification and physiology, herbicide calibration and application and safety. The majority of farmers in this area hold a pesticide applicators license.

DESCRIPTION OF TASKS:

Task #1: Permits, clearances, authorizations and agreements

The Applicant shall obtain all permits, clearances, authorizations and agreements necessary to conduct work described in this Scope of Work. The Applicant shall also include written permission from each landowner and/or land manager to access all sites for monitoring purposes and for the duration of time that is needed for data collection.

Task#1 deliverables shall include, but shall not be limited to:

- Access agreements for each site that will be mapped and monitored during the course of this project.
- Sub-contractor agreements for project monitoring and/or analysis and outreach.
- Agreements necessary to obtain and use previously collected data for analyses, if necessary.

Task Purpose: To comply with all local, state, and federal permit requirements, and environmental laws and obtain legal access to the project area(s).

Deliverable description: Copies of all necessary permits, authorization, clearances, and environmental laws and demonstration of legal access to the project area.

Deliverable due date: Prior to initiation of field data collection

Reimbursable cost: \$ 0.00

Task #2: Develop Project Work Plans

The Applicant shall submit the following detailed plans:

- a) **Outreach Plan**-that will outline the target audiences, methods to be used with each and materials that will be developed.

b) Monitoring Plan -a detailed description of the field sampling methodology for the following: (1) preliminary infestation mapping that will include type of invasive weed, location, density, and the creation of shape files from that information to be used in a data base. (2) riparian vegetation types and condition in areas with invasive weed infestation, (3) annual monitoring after treatment (4) channel monitoring for new infestations

The monitoring site locations shall be noted on a map, identifying the current landowner and/or land manager. The sampling protocol shall include parameters to be measured, methodologies, frequency and timing of measurements and format for data collection, recording and maintenance of the database. The Applicant will describe the baseline data and data sources that will be obtained for review and final analyses, including but not limited to vegetation and site condition. In addition, the monitoring plan will include how data will be summarized and analyzed and how it will be compared to other available data and how patterns of change in the vegetation will be evaluated.

c) Treatment Plan- will identify type of invasive weeds in the project area, herbicides to be used, how landowners will be trained, and alternate methods for absentee landowners. Each type of invasive weed will have a separate treatment plan.

Task Purpose: To develop project work plans to describe the methodologies of project implementation and analyses that will be used to evaluate the measurable parameters that can be used for treatment and management decisions.

Deliverable description: Project Work Plans

Deliverable due date: Prior to initiation of field data collection

Reimbursable cost: \$3,018.75

Task #3: Implementation: Mapping of Invasive Weed Infestations

The Coronado RC&D in conjunction with the Southeastern Arizona Weed Management Area will hire an individual to serve as a Weed Management Technician that will be able to identify invasive weeds targeted in this project and others potential to the area, and utilize existing point data and GPS technology to map the infestations and establish photo points. Mapping will be conducted during the early spring as plants are emerging and easily identified, with technical staff doing the mapping prior to the Willow flycatcher breeding season.

Task Purpose: To obtain accurate maps of infestations that include the following: location, type of weed, density of infestation, and acres to be treated.

Deliverable description: Invoices, shape files, copies of mapping data obtained including photos.

Deliverable due date: September 30, 2011, September 30, 2012, September 30, 2013, September 30, 2014

Reimbursable cost: \$63,924.00

Task #4: Fieldwork Implementation: Treatment of Invasive Weeds with herbicide

Mapped areas will have treatment recommendations made by a certified pest control advisor. The herbicides expected to be used in this project are “Milestone” and “Habitat” both non restricted use, with extremely low toxicity to other than broad leaf weeds. Herbicide will be purchased as part of this project and provided to landowners who will then implement the treatment on their own acreage. In cases where the landowner is unable to apply the herbicide to their own property, the Applicant will sub contract with a licensed applicator to do the treatment. The University of Arizona Cooperative Extension will store all herbicides in a locked storage facility on their property in Duncan. There is currently a “check-out” system in place that was developed with BLM funding.

Task Purpose: To aggressively treat infestations of invasive weeds to allow for reestablishment of the riparian area and prevent further destruction of the riparian corridor downstream.

Deliverable description: Invoices, map and photos of treatment areas, liability release, certification of safety training, records of treatment, for all locations.

Deliverable due date: June 30, 2012, June 30, 2013, June 30, 2014

Reimbursable cost: \$123,938.00

Task #5: Fieldwork Implementation: Vegetation and Treatment Monitoring

Data will be collected **annually** at each of the monitoring sites beginning the year after establishment for the duration of the four year project. All monitoring will be conducted in accordance with a monitoring plan approved under Task #2.

Monitoring and data collection at each site will include (1) monitoring of infestation, density and impact of treatment (2) remapping of infestation (3) photos and (4) qualitative analysis of riparian species recovery . All vegetation monitoring data will be collected using a template in GIS-based software with a hand held computer. The GIS-based software creates .shp files that will be used to map infestations and calculate associated acreage. Maps will be downloaded from the hand helds and can be opened as Excel spreadsheets.

Task Purpose: To collect information on the vegetation structure and composition on key riparian habitat sites related to the removal of invasive species and to document short- and long-term indicators of change.

Deliverable description: Description and documentation of fieldwork to be provided in Progress Report

Deliverable due date: Annually beginning June 30, 2011

Reimbursable cost: \$9,119.25

Task #6: Data Entry

All vegetation monitoring data will be recorded and entered onto data sheets and compiled into Microsoft Excel spreadsheets. Mapping data will be recorded with shape files developed to track progress from a spatial perspective. The data base will be maintained by the Southeast Arizona Weed Management Area in conjunction with the Greenlee County Cooperative Extension. . Subsequent mapping will allow a comparison analysis to determine reduction of infestation.

Task Purpose: To allow for data analyses to be completed from the fieldwork data collection associated with Task #5.

Deliverable description: Excel spreadsheets and shape files.

Deliverable due date: Annually beginning September 30, 2011

Reimbursable cost: \$12,167.00

Task #7: Implementation of Outreach Plan

The Applicant and partners will implement one outreach activity each year as outlined in approved outreach plan (task #2) to train landowners and the public, highlight the project and share information with the interested public. Outreach activities will include but shall not be limited to: workshops, field days, brochures, fact sheets, news articles, presentations to professional associations and landholder and watershed groups.

Task Purpose: To educate landholders, agency personnel and the public on the impacts and influences of invasive weeds on riparian areas and provide evaluation tools for protection and preservation of these areas.

Deliverable description: Summary report of dates, locations and attendance at each activity/event and copies of all materials developed.

Deliverable due date: Annually beginning September 30, 2011

Reimbursable cost: \$34,072.50

Task #8: Progress Report

Semi annual written reports will be submitted on the activities implemented under all tasks #1-7. A detailed progress report shall include a narrative of all work completed at each monitoring site, photos and analysis of data and a summary of outreach activities for the reporting period.

Task Purpose: To report on the progress of practice implementation, fieldwork implementation for invasive weed mapping, treatment, and riparian vegetation recovery and any outreach activities.

Deliverable description: A detailed written progress report on all activities accomplished on the project during the reporting period.

Deliverable due date: June 30, September 30, 2011, June 30, September 30, 2012, June 30, September 30, 2013 and June 30, 2014

Reimbursable cost: \$11,830.87

Task # 9 Data Analyses and Final report

A comprehensive final report will be submitted that includes a summary of all methodologies used, outcomes of all Tasks, analysis of all project data, suggestions for any changes or future actions, and an evaluation of the success of meeting project objectives. In addition, the final report analyses will be in accordance with the Monitoring Plan (Task #2). A copy of all data generated during this project will be submitted with the final report.

Task Purpose: To provide a comprehensive analyses and final report for public distribution that gives a detailed description of the project and showcases its benefits to the State of Arizona.

Deliverable description: Final report

Deliverable due date: January 30, 2015

Fixed cost: \$6,118.87

VII. DETAILED BUDGET BREAKDOWN

Task 1: Permission, Agreements

Task 1 Budget						
	YR1 (2011)	YR2 (2012)	YR3 (2013)	YR 4 (2014)		Total
Direct Labor Costs	--				--	--
Other Direct Costs	--				--	--
Outside Services	--				--	--
Capital Outlay	--				--	--
Administrative Costs	--				--	--
Total	0.00	0.00	0.00	0.00		\$0.00

Task 2: Plans

Task 2 Budget						
	YR1 (2011)	YR2 (2012)	YR3 (2013)	YR 4 (2014)		Total
Direct Labor Costs	--				--	--
Project coordinator 40 hrs @ \$30/hr	\$1200.00					\$1200.00
Weed Management Technician 40 hrs @ \$25/hr	\$1,000.00					\$1,000.00
Clerical Assistance 20 hr @ \$15/hr.	\$ 300.00					\$300.00
FICA @ 15%	\$ 375.00					\$375.00
Other Direct Costs						
Outside Services	--				--	--

Capital Outlay	--				--	--
Administrative Costs	\$ 143.75				--	\$143.75
Total	\$ 3018.75	0.00	0.00	0.00		\$3018.75

Task 3 Mapping

Task 3 Budget	YR1 (2011)	YR2 (2012)	YR3 (2013)	YR 4 (2014)		Total
Direct Labor Costs	--				--	--
Project Coordinator 40 hrs/yr @ \$30	\$ 1,200.00	\$ 1200.00	\$ 1200.00	\$ 1200.00		\$ 4800.00
Weed Management Technician 400 hrs. @ \$25/hr. per year	\$10,000.00	\$10,000.00	\$10,000.00	\$10,000.00		\$40,000.00
Clerical Assistance 40 hrs per year @ \$15/hr	\$ 600.00	\$ 600.00	\$ 600.00	\$ 600.00		\$ 2,400.00
FICA @ 15%	\$ 1770.00	\$ 1770.00	\$ 1770.00	\$ 1770.00		\$ 7,080.00
Other Direct Costs	--				--	--
External hard drive for data storage	\$100.00					\$100.00
Field Note – Notebook computer for field mapping	\$500.00					\$500.00
Printer cartridges	\$300.00	\$ 300.00	\$300.00	\$300.00		\$1,200.00
Field supplies (shovels, gloves, flagging, rubber boots, first aid)	\$500.00	\$ 100.00	\$100.00	\$100.00		\$ 800.00

Travel 2000 mi/yr @ IRS rate \$.50	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00		\$ 4000.00
Outside Services	--				--	--
Capital Outlay	--				--	--
Administrative Costs @ 5%	\$ 798.50	\$ 748.50	\$ 748.50	\$ 748.50		\$3044.00
Total	\$16,768.50	\$15,718.50	\$15,718.50	\$15,718.50		\$63924.00

Task 4: Field Work Invasive Weed Treatment

Task 1 Budget	YR1 (2011)	YR2 (2012)	YR3 (2013)	YR4 (2014)		Total
Direct Labor Costs	--				--	--
Project coordinator 40 hrs/yr @ \$30/hr		\$ 1200.00	\$1200.00	\$1200.00		\$ 3600.00
Clerical Asst 40 hrs/yr @ \$15		\$ 600.00	\$ 600.00	\$ 600.00		\$ 1,800.00
FICA @ 15%		\$ 270.00	\$ 270.00	\$ 270.00		\$ 810.00
Other Direct Costs	--				--	--
Travel 500 mi @ \$.50		\$ 250.00	\$ 250.00	\$ 250.00		\$ 750.00
Herbicide +activator + marking dye @ \$77/AC		\$61,600.00	\$38,500.00	\$7,700.00	800ac yr2 500 yr3 100 yr4	\$107800.00
Disposable supplies		\$100.00	\$ 100.00	\$ 100.00		\$ 300.00

Measuring supplies, gloves, goggles						
Outside Services	--				--	--
Contractor for absentee or unable to apply, landowners @ \$50/AC (60 AC)		\$1,500.00	\$1,000.00	\$ 500.00		\$ 3000.00
Capital Outlay	--				--	--
Administrative Costs	--	\$3,276.00	\$2,096.00	\$ 506.00	--	\$ 5878.00
Total	\$ 0.00	\$68,796.00	\$44,016.00	\$11,126.00		\$123,938.00

Task 5: Monitoring

Task 5 Budget						
	YR1 (2011)	YR2 (2012)	YR3 (2013)	YR 4 (2014)		Total
Direct Labor Costs	--				--	--
Weed Management Technician 80 hr @ \$25/hr		\$2,000.00	\$2,000.00	\$2,000.00		\$6,000.00
Clerical Assistance 20 hr @ \$15/hr		\$ 300.00	\$ 300.00	\$ 300.00		\$ 900.00
FICA @ 15%		\$ 345.00	\$ 345.00	\$ 345.00		\$1,035.00
Other Direct Costs	--				--	--
Travel		\$ 250.00	\$ 250.00	\$ 250.00		\$ 750.00
Outside Services	--				--	--

Capital Outlay	--				--	--
Administrative Costs	--				--	--
		\$ 144.75	\$ 144.75	\$ 144.75		
Total		\$3,039.75	\$3,039.75	\$3,039.75		\$9,119.25

Task 6: Data Entry

Task6 Budget	YR1 (2011)	YR2 (2012)	YR3 (2013)	YR 4 (2014)		Total
Direct Labor Costs	--				--	--
Weed Management Technician 80 hr @ \$25/hr	\$2,000.00	\$2,000.00	\$2,000.00	\$2,000.00		\$8,000.00
Clerical Assistance 20 hr @ \$15/hr	\$ 300.00	\$ 300.00	\$ 300.00	\$ 300.00		\$1200.00
FICA @ 15%	\$ 345.00	\$ 345.00	\$ 345.00	\$ 345.00		\$1,380.00
Other Direct Costs	--				--	--
Outside Services	--				--	--
Capital Outlay	--				--	--
Administrative Costs	\$ 396.75	\$ 396.75	\$ 396.75	\$ 396.75	--	\$1,587.00
Total	\$3,041.75	\$3,041.75	\$3,041.75	\$3,041.75		\$12,167.00

Task 7 Implementation of Outreach Plan

Task 7 Budget	YR1 (2011)	YR2 (2012)	YR3 (2013)	YR 4 (2014)		Total
Direct Labor Costs	--				--	--
Project Coordinator 160 hr @ \$30/hr	\$4,800.00	\$4,800.00	\$4,800.00	\$4,800.00		\$19,200.00
Clerical Assistance 80 hr @ \$15/hr	\$1200.00	\$1200.00	\$1200.00	\$1200.00		\$4800.00
FICA @ 15%	\$ 900.00	\$ 900.00	\$ 900.00	\$ 900.00		\$3,600.00
Other Direct Costs	--				--	--
Travel Yr 2 & 3 include presentations at professional mtgs.	\$ 250.00	\$ 500.00	\$ 500.00	\$ 250.00		\$1,500.00
Supplies (booths, brochures, handouts)	\$1000.00	\$ 500.00	\$ 500.00	\$150.00		\$2150.00
Outside Services	\$ 300.00	\$ 300.00	\$ 300.00	\$ 300.00	--	\$1200.00
Capital Outlay	--				--	--
Administrative Costs	\$ 422.50	\$ 410.00	\$ 410.00	\$ 380.00		\$1622.50
Total	\$8872.50	\$8610.00	\$8610.00	\$7980.00		\$34,072.50

Task 8: Progress Reports

Task 8 Budget						
	YR1 (2011)	YR2 (2012)	YR3 (2013)	YR 4 (2014)		Total
Direct Labor Costs	--				--	--
Project Coordinator 80 hrs per year @ \$30	\$2400.00	\$2,400.00	\$2,400.00	\$1,200.00		\$8,400.00
Clerical Assistance @ \$15/hr	\$ 300.00	\$ 300.00	\$ 300.00	\$ 150.00		\$1,050.00
FICA @ 15%	\$ 405.00	\$ 405.00	\$ 405.00	\$ 202.50		\$1417.50
Other Direct Costs	--				--	--
Supplies	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00		\$ 400.00
Outside Services	--				--	--
Capital Outlay	--				--	--
Administrative Costs	- \$ 160.25	\$ 160.25	\$ 160.25	\$ 82.62	--	\$ 563.37
Total	\$3365.25	\$3365.25	\$3365.25	\$1735.12		\$11,830.87

Task 9 Data Analysis and Final Report

Task 9 Budget						
	YR1 (2011)	YR2 (2012)	YR3 (2013)	YR 4 (2014)		Total
Direct Labor Costs	--				--	--
Project Coordinator 80 hrs @ \$30/hr				\$2,400.00		\$2400.00
Weed Management Technician @ \$25/hr				\$ 2,000.00		\$2,000.00
Clerical Assistance 30 hrs @ \$15/hr				\$ 450.00		\$ 450.00
FICA @ 15%				\$ 727.50		\$ 727.50
Other Direct Costs	--				--	--
Supplies/copies				\$ 250.00		\$ 250.00
Outside Services	--				--	--
Capital Outlay	--				--	--
Administrative Costs	--				--	--
				\$291.37		\$291.37
Total				\$6118.87		\$6,118.87

Budget totals	\$35,066.75	\$102,571.25	\$77,791.25	\$48,759.99	\$264,189.24
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VIII. DETAILED MATCHING FUNDS BREAKDOWN

Budget	YR1 (2011)	YR2 (2012)	YR3 (2013)	YR 4 (2014)		Total
Direct Labor Costs	--				--	--
AZ State Forestry grant to assist with training rapid responders	\$27,000.00					\$27000.00
Cooperative Extension oversight	\$3000.00	\$3000.00	\$3000.00	\$3000.00		\$12,000.00
Other Direct Costs	--				--	--
Storage for herbicide, RC&D & Ext.	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00		\$2000.00
Outside Services	--				--	--
Capital Outlay	--				--	--
a) RC&D Equipment, 2 Quad sprayers, 5 back pack sprayers,	\$1130.50					\$1130.50
b)Cooperative Extension Equipment - computer, data logger, software	\$1169.00					\$1169.00
Administrative Costs	--				--	--
Total	0.00	0.00	0.00	0.00		\$43,299.50

- a) RC&D Equipment – The Coronado RC&D will provide the following equipment to landowners to check out as part of this project for the duration of the project. It is expected that the 4 year term of the project will be equal to expected life span of this equipment. The RC&D will provide any needed replacements, parts and maintenance during the project term.

25 gal ATV Sprayer	\$449.00
25 gal ATV Sprayer-boomless	\$389.00
Solo 428, 5 gallon back pack sprayers 5 @ \$58.50 each	\$ 292.50
<i>Total value = \$1,130.50</i>	

- b) U of A Cooperative Extension Equipment. The U of A Cooperative Extension has agreed to provide the following equipment to the project for the duration of the project and provide training to project staff on the use of it.

HPiPAQ PDA	\$ 299.00
Garmin eTrex GPS	\$150.00
Cables	\$ 20.00
HGIS software	\$700.00
<i>Total Value = \$1,169.00</i>	

Salary: Cooperative Extension Agent oversight 60 hours per year @ \$50/hr

IX. SUPPLEMENTAL INFORMATION

- A. State Historic Preservation Office (SHPO)**
- B. Key Personnel**
- C. Project Site Photographs**
- D. Description of Monitoring/Sampling Plans**
- E. Description of Revegetation /Restoration Plans**
- F. Existing Plans, Reports, Information Relevant to Project**
- G. Letters of Community Support**
- H. Evidence of control and Tenure of Land**
- I. Evidence of Physical and Legal Availability of Water**

STATE HISTORIC PRESERVATION OFFICE Review Form

In accordance with the State Historic Preservation Act (SHPO), A.R.S. 41-861 *et seq.*, effective July 24, 1982, each State agency must consider the potential of activities or projects to impact significant cultural resources. Also, each State agency is required to consult with the State Historic Preservation Officer with regard to those activities or projects that may impact cultural resources. Therefore, it is understood that **recipients of state funds are required to comply with this law** throughout the project period. All projects that affect the ground-surface that are funded by AWPf require SHPO clearance, **including those on private and federal lands.**

The State Historic Preservation Office (SHPO) must review each grant application recommended for funding in order to determine the effect, if any, a proposed project may have on archaeological or cultural resources. To assist the SHPO in this review, the following information **MUST** be submitted with each application for funding assistance:

- A completed copy of this form, and
 - A United States Geological Survey (USGS) 7.5 minute map
 - A copy of the cultural resources survey report if a survey of the property has been conducted, and
 - A copy of any comments of the land managing agency/landowner (i.e., state, federal, county, municipal) on potential impacts of the project on historic properties.
- NOTE: If a federal agency is involved, the agency must consult with SHPO pursuant to the National Historic Preservation Act (NHPA); a state agency must consult with SHPO pursuant to the State Historic Preservation Act (SHPA),
- OR**
- A copy of SHPO comments if the survey report has already been reviewed by SHPO.

Please answer the following questions:

1. Grant Program: Arizona Water Protection Fund
2. Project Title: Invasive Weed Control Gila River Corridor, Greenlee County
3. Applicant Name and Address: Coronado Resource Conservation & Development Area, 656 N Bisbee Ave, Willcox, AZ 85643
4. Current Land Owner/Manager(s): Private (list will be provided before any work is done)
5. Project Location, including Township, Range, Section: various in R
6. Total Project Area in Acres (or total miles if trail): 30 Gila River miles, project will address the river channel and a 1/4 mile riparian/floodplain corridor along this length.
7. Does the proposed project have the potential to disturb the surface and/or subsurface of the ground? YES NO
8. Please provide a brief description of the proposed project and specifically identify any surface or subsurface impacts that are expected: There will be NO surface or subsurface impacts. Project will map sites and extent of infestation by walking and use of GPS technology to create shape

files. Areas infested with invasive weeds will then be treated with herbicides labeled for such use by using a ground, hand held application.

9. Describe the condition of the current ground surface within the entire project boundary area (for example, is the ground in a natural undisturbed condition, or has it been bladed, paved, graded, etc.). Estimate horizontal and vertical extent of existing disturbance. Also, attach photographs of project area to document condition: Land is riparian area of the river, disturbance is natural erosion, flood plain is farmed and previously disturbed. This project will cause no disturbance to existing conditions.

10. Are there any known prehistoric and/or historic archaeological sites in or near the project area?
 YES NO

11. Has the project area been previously surveyed for cultural resources by a qualified archaeologist?
 YES NO UNKNOWN

If YES, submit a copy of the survey report. Please attach any comments on the survey report made by the managing agency and/or SHPO

12. Are there any buildings or structures (including mines, bridges, dams, canals, etc.), which are 50-years or older in or adjacent to the project area? YES NO

If YES, complete an Arizona Historic Property Inventory Form for each building or structure, attach it to this form and submit it with your application.

13. Is your project area within or near a historic district? YES NO

If YES, name of the district:

Please sign on the line below certifying all information provided for this application is accurate to the best of your knowledge.

[Signature] /Date 8/25/10

Applicant Printed Name

FOR SHPO USE ONLY

SHPO Finding:

- Funding this project will not affect historic properties.
- Survey necessary – further GRANTS/SHPO consultation required (*grant funds will not be released until consultation has been completed*)
- Cultural resources present – further GRANTS/SHPO consultation required (*grant funds will not be released until consultation has been completed*)

SHPO Comments

For State Historic Preservation Office:

Date:

B. KEY PERSONNEL

Dr. William McCloskey, Extension Specialist and Professor, Weed Science, University of Arizona School of Plant Sciences will serve as project advisor and assist with project work plans.

Dr. William McCloskey is a University of Arizona Cooperative Extension Specialist and faculty member in the School of Plant Sciences in the College of Agriculture and Life Sciences. Dr. McCloskey obtained MS and Ph.D. degrees in Plant Physiology from the University of California, Davis prior to coming to the University of Arizona. He has extensive experience in weed science research including herbicide application technology, use of adjuvants and evaluation of herbicide efficacy. For many years, his primary interests were agricultural weed management investigating herbicides and transgenic crop systems for efficacy in controlling weeds in Arizona crops (e.g., alfalfa, citrus, cotton, pecan, pistachio, wheat). Other interests/projects include using precision guidance technology (GPS), optical sensing and computerized application technology, mechanical cultivation, crop rotation, and cover crops to manage weed populations. He has also investigated weed management in new crops (e.g., lesquerella and guayule), conservation tillage production systems and weed management without tillage in irrigated desert production systems in addition to studying the effects and physiological mechanisms of weed competition in Arizona crop production systems. Recently Dr. McCloskey has been participating in the Southeastern Arizona-Southwestern New Mexico Weed Management Group and is studying the management of the invasive species Russian knapweed in southeastern Arizona, is initiating a project for the control of salt cedar along the Gila River in collaboration with the BLM, is participating in research on brush and tree management on rangeland in southeastern Arizona and is collaborating with other University of Arizona personnel, the NFS and the National Park Service to investigate various aspects of Buffelgrass management. In his role as Extension Specialist he presents numerous lectures, presentations, and workshops on weed management in Arizona crops, urban areas and range landscapes in support of Cooperative Extension educational programs. Dr. McCloskey also teaches PL S 405/505 Weed Science; an applied weed science course for upper division undergraduates and graduate students, advises graduate students pursuing M.S. or Ph.D. degrees and serves on thesis and dissertation graduate committees.

Kim McReynolds, Area Extension Agent, Natural Resources will coordinate technical resources for the project, assist with development of work plans and quality control of monitoring and play a lead role in the information education program.

Kim is an area agent in Cochise, Graham and Greenlee counties. Her program in noxious weeds includes teaching at workshops and trainings, developing and conducting research trials in the field, and evaluating program effectiveness. Kim also acts as a local resource in plant identification and is often called on to confirm the presence or absence of noxious weeds. She is active in the Southeastern Arizona Weed Management Area and was instrumental in joining efforts with the Southwestern New Mexico Cooperative Weed Management Area. Kim has secured funding from the Western Integrated Pest Management Center for several years to support the coordination between the two WMA areas.

David Arthun, Rangeland Management Specialist, Gila District, USDI Bureau of Land Management will work with the project staff and team to develop work plans, analyze data, and coordinate treatment efforts.

David has been treating noxious, invasive weeds for the Safford Field Office (BLM) since 2006, with the focus on salt cedar, Russian knapweed, and giant reed. He graduated from New Mexico State

University, Las Cruces. David has attended several noxious weed trainings provided by BLM and through the Noxious Weed Short Course held each year in Farmington.

Eddie Foster, District Conservationist, USDA Natural Resources Conservation Service has worked in the Safford Field Office the past 5 years, leading efforts in invasive weed monitoring and control. He has worked extensively to educate landowners on weed identification and control methods. He was instrumental in working with BLM to develop the first invasive weed treatment program that provided herbicides to cooperating landowners. In addition, Eddie is the lead administrator for NRCS programs in Graham and Greenlee County. He is active in the Southeastern Arizona Weed Management Area and has hosted informational workshops on weed identification and control. Eddie will provide technical assistance to this project, assist with field training of staff and producers and assist with and oversee outreach to other organizations and professional societies.

Donna Matthews, Coronado RC&D Coordinator, Natural Resources Conservation Service will serve as liaison between the project team, Arizona Water Protection Fund and other partners in the project.

Donna has served as the RC&D Coordinator in southeast Arizona for the past 17 years, working with multiple partners on grant funded projects. She has worked with the Southeastern Arizona Weed Management Area since its inception. She holds a degree in biology and chemistry from North Dakota State University and has attended numerous workshops and presentations related to the biology and control of the targeted species of this project. She provided assistance to Dr Larry Howery in developing the pocket sized field guide, "Non Native Invasive Plants of Arizona". She has been involved with the implementation of four Arizona Water Protection Fund funded projects during her career with Coronado RC&D.

David Clough, Coronado RC&D Weed Management Technician has been employed for two years working in Cochise County on the identification, mapping and assisting with treatment programs for invasive weeds. David is a recently retired soil conservation technician that worked with farmers and ranchers in Cochise, Graham and Greenlee counties during his tenure. He will provide training to the Weed Management Technician for this project and will provide on the ground assistance when needed to comply with timelines.

Kim Webb, Coronado RC&D program assistant will provide clerical assistance to this project, is experienced with a variety of computer software and very skilled in developing outreach materials such as brochures, fact sheets and power point presentations to support technical staff.

Kim McReynolds
The University of Arizona
Cochise County Cooperative Extension
450 S. Haskell, Willcox, Arizona 85643
(520) 384-3594
kimm@cals.arizona.edu

EDUCATION

M.S. (1985) & B.S. (1982) Environmental Resources in Agriculture, Arizona State University
Emphasis: Rangeland Management

CURRENT POSITION

Area Extension Agent, Natural Resources, The University of Arizona Cooperative Extension,
Willcox, Arizona. 2001-present.

Regional Specialist, Natural Resources, School of Natural Resources, The University of Arizona.
2005-present.

Acting County Extension Director, Greenlee County, The University of Arizona, Duncan, Arizona.
2010-present.

PAST POSITIONS

Associate Area Extension Agent, Natural Resources, The University of Arizona Cooperative
Extension, Willcox, Arizona. 1995-2001.

Range Conservationist, San Simon Resource Area, Safford District, Bureau of Land
Management, Safford, Arizona. 1986-1995.

Range Technician/Range Conservationist, Verde Ranger District, Prescott National Forest, Camp
Verde, Arizona. 1981-1986.

MAJOR PROGRAMS IN EXTENSION

I provide leadership in the development and implementation of research-based educational
programs in natural resource management. As an Area Agent, my program responsibilities cover
Cochise, Graham and Greenlee counties. Ten percent of my time is spent in youth programming.
Major educational program areas include:

- Rangeland management
- Noxious weeds
- Watershed management
- Water conservation
- Rural land use
- Science and Technology

As a Regional Specialist, my responsibilities include: participate and cooperate in appropriate
research and extension activities, participate in the teaching of courses and seminars, serve on
various faculty committees within the School, and other duties as requested by the Director of the
School.

SELECTED HONORS AND AWARDS

- Distinguished Service, National Association of County Agricultural Agents, 2009
- Outstanding Service, Arizona Section Society for Range Management, 2008
- Outstanding Contribution to the Arizona State Land Department, 2006
- Outstanding Service, Arizona Section Society for Range Management, 2006
- Silver Award - DVD, Discovering Hydrology at Kartchner Caverns State Park, Association of Natural Resource Extension Professionals, 2006
- Agricultural Research Service/Cooperative Extension Fellowship, 2005
- Certified Professional in Range Management

SELECTED PROFESSIONAL SERVICE

- *Rangelands* Editorial Board, Society for Range Management, 2003-present (Chair 2006-2007; Youth Editor, 2008-present).
- Natural Resource Conservation Workshop for Arizona Youth, Arizona Section Society for Range Management, 1982-present (Director, 1994-present).
- Arizona Agriculture Extension Association, Constitution Committee (2004-present, Chair 2008-present), Website and Listserv Manager (2000-present).

SELECTED PUBLICATIONS

McReynolds, K. and C. Dolan. 2010. Invasive Plants on Small Acreage Properties in Arizona. Arizona Cooperative Extension #AZ1510. 2 pp.

McReynolds, K. 2009. Arizona Native Plant Law. Arizona Cooperative Extension #AZ 1506. 2 pp.

McReynolds, K. 2009. Cooperative Weed Management Areas. In *Backyards and Beyond: Rural Living in Arizona*. The University of Arizona Cooperative Extension, 3 (4): 5.

McReynolds, K. 2008. Invasive Plants: Sweet Resinbush. In *Backyards and Beyond: Rural Living in Arizona*. The University of Arizona Cooperative Extension, 2 (3): 9.

S. Pater, K. McReynolds, G. Woodard (project planning and administration), et. al. 2006. Discovering Hydrology at Kartchner Caverns State Park. Arizona Cooperative Extension and SAHRA. DVD.

McReynolds, Kim. 2005. Natural Resources Conservation Workshop for Arizona Youth. *Rangelands* 27 (4): 10-11.

Pater, S., K. McReynolds and K. Uhlman. 2005. Geology, Geomorphology & Soils: Part I Geologic Processes. In *Arizona Watershed Stewardship Guide*. Arizona Cooperative Extension #AZ1378. 9 pp.

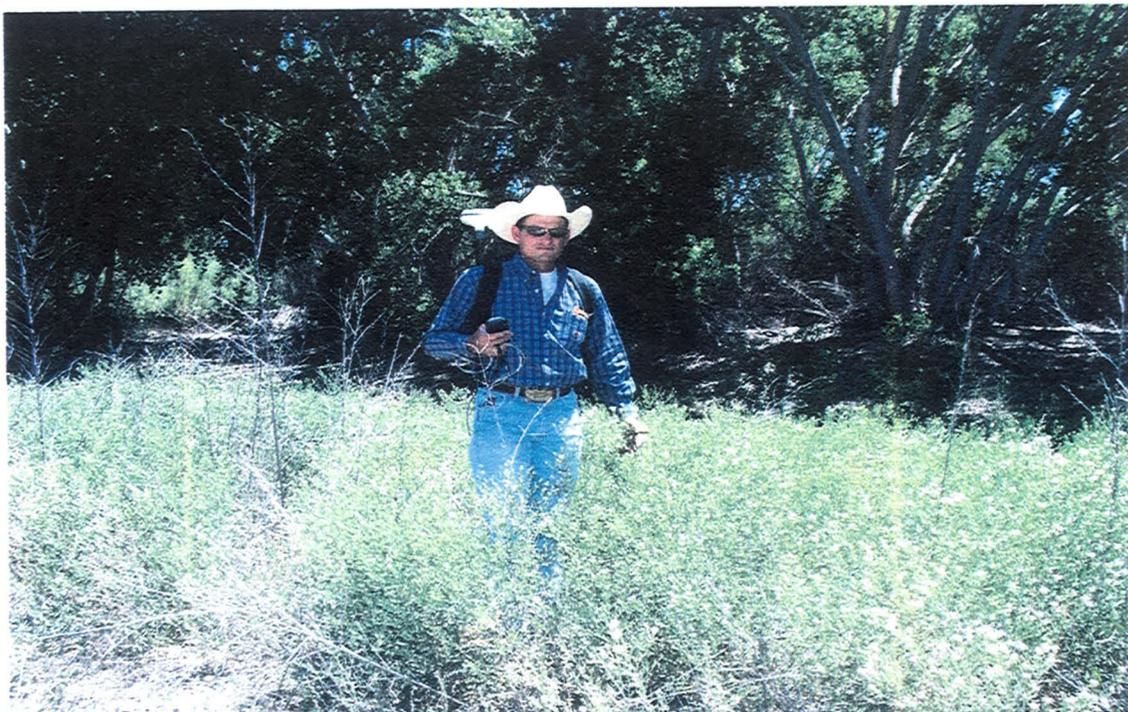
Pater, S., and K. McReynolds. 2005. Geology, Geomorphology & Soils: Part III Watershed Soils. In *Arizona Watershed Stewardship Guide*. Arizona Cooperative Extension #AZ1378. 16 pp.

McReynolds, K., S. Pater and K. Uhlman. 2005. Watershed Basics: Part I Water Resources. In *Arizona Watershed Stewardship Guide*. Arizona Cooperative Extension #AZ1378d. 6 pp.

Pater, S., K. McReynolds and R. Emanuel. 2005. Watershed Basics: Part II Hydrology & Watersheds. In *Arizona Watershed Stewardship Guide*. Arizona Cooperative Extension #AZ1378d. 9 pp.

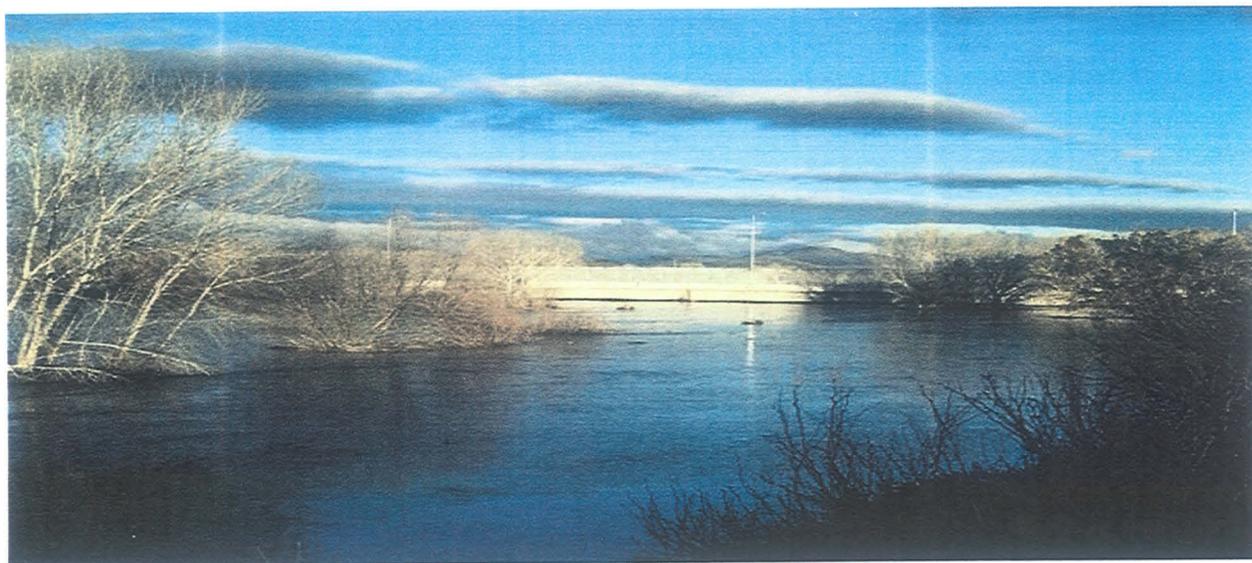
C. PROJECT SITE PHOTOGRAPHS

Russian knapweed Gila River riparian area near Duncan, Arizona



U of A Cooperative Extension photo Kim Mc Reynolds 2010

NRCS District Conservationist Eddie Foster stands in a riparian area of the Gila River where the understory is threatening to become a monoculture of Russian knapweed. Known infestations of Russian knapweed are estimated to cover 800 acres in the Duncan Valley. Below-floodwaters of the Gila have the potential to spread invasive weed seeds across the area.



Russian knapweed in irrigation ditch, Duncan Valley, AZ



U of A Cooperative Extension photo Kim McReynolds 2010

Cropland in the Duncan Valley is flood irrigated utilizing a combination of Gila River water and pumped ground water that is carried to fields through concrete lined irrigation ditches. Russian knapweed is a versatile and hardy plant that can live almost anywhere as illustrated by this one growing in the crack of the irrigation ditch. If this plant is allowed to produce seed during early June, it will send seeds down the irrigation ditch to fields where they can take root. Excess water or “tail water” not used by the crop is allowed to flow off of the fields and is carried by runoff ditches back to the Gila River. This process insures that invasive weed seeds produced in cropland adjacent to the river and riparian area have the opportunity to reach the river and reseed.



Russian knapweed, Gila River in Greenlee County U of A Extension photo Kim McReynolds 2010





Russian knapweed is invading the river bank and riparian area, outcompeting grasses and shrubs that are more effective at stabilizing the banks and controlling erosion. U of A Extension photo



D. DESCRIPTION OF MONITORING/SAMPLING PLANS

Monitoring to gather initial data on type, size and density of infestation of invasive weeds will begin the first season after the contract with the Arizona Water Protection Fund is completed. The University of Arizona Cooperative Extension, Natural Resources Conservation Service and Southeastern Arizona Weed Management Area have point data of weed infestations which will provide high priority locations for initial mapping. Optimum time for mapping of invasive weeds is in late spring summer March-late April. Mapping will be timed (March to mid May) to accommodate considerations necessary for Southwestern willow flycatcher nesting. The project team will work with US Fish & Wildlife Service in this area and will request a survey to determine nesting pairs in the area to insure that the monitoring plan tasks minimize impact to wildlife in the area.

A detailed Monitoring Plan will be developed by the project team as part of this project. It will include a detailed description of the field sampling methodology for the following:

- (1) preliminary infestation mapping that will include type of invasive weed, location, density, and the creation of shape files from that information to be used in a data base.
- (2) riparian vegetation types and condition in areas with invasive weed infestation,
- (3) annual monitoring after treatment
- (4) channel monitoring for new infestations

The monitoring site locations shall be noted on a map, identifying the current landowner and/or land manager. The sampling protocol shall include parameters to be measured, methodologies, frequency and timing of measurements and format for data collection, recording and maintenance of the database. The Applicant will describe the baseline data and data sources that will be obtained for review and final analyses, including but not limited to vegetation and site condition. In addition, the monitoring plan will include how data will be summarized and analyzed and how it will be compared to other available data and how patterns of change in the vegetation will be evaluated.

All vegetation monitoring data will be collected using a template in GIS-based software with a hand held computer. The GIS software creates .shp files that will be used to map infestations and calculate associated acreage. This will allow for the creation of maps to track project progress from a spatial perspective. Meta files that can be opened as Excel spreadsheets will be downloaded from the hand held units.

Revegetation of this project will be left to natural succession after eliminating the competition from invasive weeds. Areas treated, response to treatment, and rate and type of natural revegetation will be monitored in accordance with the plan that will be developed as part of this project.

E. DESCRIPTION OF REVEGETATION/RESTORATION PLANS

Revegetation will be left to natural succession as competition from invasive weeds is eliminated in the area. We will be dealing with a well watered riparian and floodplain area that has an adequate available natural seed source that should accommodate natural revegetation to native species. This aspect will be included in the monitoring plan and assessed annually.

F. EXISTING PLANS, REPORTS, INFORMATION RELEVANT TO PROJECT

1) Existing Plans and Reports

The following are existing plans and reports used as references in the development of this project:

Arizona Water Atlas, Volume 3, Southeastern Arizona Planning Area, ADWR, June 2009

A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher, Chapter 10, Section A, Biological Science Book 2, Collection of Environmental Data, USGS, 2010

NEMO Watershed Based Plan, Upper Gila Watershed of Arizona, University of Arizona, 2005

Duncan Area Russian knapweed Treatment Environmental Assessment, AZ-G010-2009-0065, Bureau of Land Management, Safford Field Office

Russian knapweed Management in Abandoned Fields, Pastures and Range, McCloskey, McReynolds, Foster and Munda, Research Report 2009.

2) Other Relevant Information

a. Herbicide labels attached

b. Herbicide “check out and monitoring form” sample attached

c. The following is a brief description of the five invasive weeds that will be targeted during this project:

Russian knapweed



Russian knapweed is a creeping perennial that reproduces from seed and vegetative root buds.

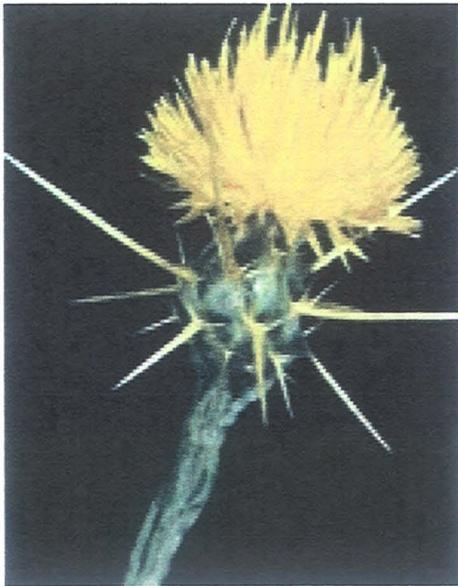
- Russian knapweed emerges in early spring, bolts in May to June, and flowers through the summer into fall.
- Russian knapweed is toxic to horses.
- The key to Russian knapweed control is to stress the weed and cause it to expend nutrient stores in its root system.
- The best management plan includes chemical controls combined with cultural control techniques

Russian knapweed flower; note smooth papery bracts that lack any spines.

Damage: The weed forms dense, single species stands over time due to competition and allelopathy (biochemicals it produces that inhibit the growth of other plants). Russian knapweed covers an estimated 800 acres in Greenlee County according to the University of Arizona and NRCS preliminary mapping. It is toxic to horses which can have a huge economic impact on that industry in Greenlee County.

Russian knapweed emerges in early spring, bolts in May to June (elevation dependent) and flowers through the summer into fall. It produces seeds sparingly, approximately 50 to 500 per shoot. Seeds are viable for two to three years in soil. Its primary method of reproduction is from vegetative propagation, with seed of secondary importance. Roots from a recently established plant expand rapidly and may cover up to 12 square yards in two growing seasons. It is a versatile plant, able to grow on a variety of soils and can occur in bottomlands, river banks, irrigation ditches, pastures, agronomic crops, roadsides, waste places and rangeland. Stands may survive 75 years or longer.

Yellow starthistle



heads

- Yellow starthistle, *Centaurea solstitialis*, is a pubescent winter annual, germinating in the fall and overwintering as a rosette.
- In general, the plants mature during early to late summer, and by September and October, the plants dry out, lose leaves, and turn to silvery-grey skeletons with white cottony terminal

- In some places and under certain conditions, yellow starthistle survives over the winter, regrows in the spring, and dries out by early summer (June).

Damage

Yellow starthistle poses a serious potential threat to nearly all semi-arid rangeland in the western U.S. due to its ability to colonize and spread rapidly on disturbed soils. In some cases it is palatable to livestock and is an important forage plant until it produces sharp spines on the flower head that deter grazing animals, causing poor pasture utilization. It also

forms smothering infestations and reduces the pasture production of other forage species through competition. Extensive roots grow much faster and deeper than annual grasses, forming dense monotypic infestations of Yellow starthistle.

Yellow starthistle has been known to cause problems in virtually every type of land use in California. Infestations of this invasive plant has the potential to reduce land values, reduce access to recreational areas and destroy wildlife habitat by out competing native plants.

When ingested by horses, Yellow starthistle causes a neurological disorder of the brain called nigropallidal encephalomalacia or "chewing disease". This interferes with the horse's ability to chew food and results in death from starvation or dehydration because there is no cure.

Malta starthistle



- Malta starthistle was introduced to the southwestern U.S. from Europe as a seed contaminant.
- It is very similar to yellow starthistle in appearance, with leaves that extend down the stems, giving the stem a winged appearance.
- A major difference between the two starthistles is length of spines on the flower bracts: those of yellow starthistle are usually approximately an inch in length, while Malta starthistle spines are normally less than 1/2 inch long.
- Unlike yellow starthistle, Malta starthistle seeds appear to have longer longevity in the soil with seeds remaining viable for over 3 years, making it potentially more difficult to eradicate.

Recent projects in Southeastern Arizona that Coronado RC&D, U of A Cooperative Extension and NRCS have been involved have shown Malta starthistle in a variety of areas, along highways, in urban settings along roadways and in increasing amounts in the Duncan areas.

Hoary cress (White top)

A newly discovered invader in Duncan, AZ 2010 U of A Extension photo



- Hoary cress has white flowers and blue green leaves which clasp the stem. It reproduces by root segments and seed.
- It was introduced from Europe in contaminated seed and is a rapidly spreading plant that grows well in cultivated fields and meadows
- For small infestations, digging within 10 days after plant emergence for 2-4 years can be effective.
- Long-term reductions must include planting with competitive grasses to occupy ground once infested by the weed.
- Due to its creeping rootstock nature, it out competes native vegetation

Bull thistle will be mapped as part of this project and treated.

Giant reed will be mapped and a plan developed with the Bureau of Land Management to develop a treatment plan.

The Bureau of Land Management is currently working on the control of these species within the Gila Box NCA, as they are identified during the mapping portion of this project, they will be mapped and a treatment plan developed. If infestations are small enough and it is economically feasible to treat them while treating the targeted species, it will be done at that time. On areas that are identified but not feasible, a separate monitoring and treatment plan will be developed by the Southeastern Arizona Weed Management Area.

PROJECT CONSIDERATIONS

Multiple Agency Coordination

Invasive weeds are an issue that have come to the forefront for the land management agencies that work in Greenlee County. These agencies have come together to form the Southeastern Arizona Weed Management Area for the purpose of addressing the multiple devastating consequences of these weeds. The following are working in partnership with private landowners in the Weed Management Area and in developing projects that take a proactive approach to protecting our landscape from invasive weeds.

Project Partners:

Coronado Resource Conservation & Development Area
Southeastern Arizona Weed Management Area
University of Arizona Cooperative Extension
Greenlee County
Graham County
US Fish & Wildlife Service
USDA Natural Resources Conservation Service
USDI Bureau of Land Management
Gila Valley Natural Resource Conservation District
Gila Watershed Partnership
Town of Duncan
City of Safford
Franklin Irrigation District
Private landowners

Landownership

Ownership in the project area is a mixture of private, local, state and federal. To implement this project successfully, it will require access to the various lands for the purpose of mapping the invasive weeds and a cooperative working agreement to implement treatment. The University of Arizona Cooperative Extension, Southeast Arizona Weed Management Area, Bureau of Land Management, Natural Resources Conservation Service and Coronado RC&D have been working with several landowners in the area on weed control projects in the recent past, developing a cooperative approach. Access agreements for this project will be developed before any actions are implemented. Due to current working relationships, it is expected that access agreements will be able to be obtained. In the event that access to private property cannot be obtained for any particular parcel, mapping will be conducted from the river channel with estimates used. Existing point data and landowners currently working with the Weed Management Area indicates that this will not be a significant issue.

HABITAT CONSIDERATIONS:

Wildlife



The Gila River provides valuable habitat for the Southwestern Willow Flycatcher. Invasive weeds threaten the quality of that habitat. This project will work in conjunction with the US Fish & Wildlife Service to insure that the project has a positive rather than a negative impact on the species. The project timeline will be based upon guidance referring to nesting and breeding in the publication "A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher", Chapter 10 of Section A, Biological Science, Book 2,

Collection of Environmental Data, Techniques and Methods 2A-10, page 11, published by the US Department of Interior, US Geological Survey prepared in cooperation with the Bureau of Reclamation and the US Fish and Wildlife Service. According to this publication, southwestern willow flycatchers begin arriving at their nesting areas in late April and early May. We will plan to do project work within those areas after they depart in mid September and before the birds arrive for their breeding season.

This project will cause a minimum amount of disturbance to all wildlife species. Mapping will be conducted on the ground by a Weed Management Technician skilled and efficient at the process. We currently have point data that pinpoints locations where invasive weeds have been identified. This project will follow up on those points and map the extent of the infestation by identifying the perimeters. GPS units will be used to record those areas, information will be downloaded to ArcGIS to create shape files and calculate acres.

The following spring, before late April, the shape files will be used to identify the areas identified as

infested. Ground applications of recommended herbicide will then be used to treat the areas before the nesting season begins. This time period is also the ideal time to treat the targeted invasives as they are actively growing which allows for maximum uptake of the herbicide.

The Gila Watershed Partnership is currently working with the US Fish and Wildlife Service to develop a Safe Harbor Agreement for the Willow flycatcher in the Gila River. Part of the outreach component of this project will address what that entails and allow landowners to sign on to the agreement if they are interested.

Plants

This project will target the mapping and treatment of the following invasives that have been identified within the project area: Yellow and Malta starthistle, Russian knapweed, and Hoary cress (White top). If other invasives are identified during the mapping and treatment process, they will be included in the mapping data base and will be treated as funding allows. A key part of this project is the ongoing monitoring that will be in place by trained Rapid Response teams. This will ensure that areas along the river will be monitored at least annually in the spring for any weed infestations and treated immediately. The goal is to improve the riparian condition and habitat by treating invasive weeds and allowing the native vegetation, understory to reestablish. Ideally, this will be grasses, sedges and wetland forbs and shrubs. Since this is a dynamic river system, there is also the potential for salt cedar to move into the area. With Rapid Response teams in place to monitor plant populations, this invasive plant will be able to be treated before it becomes the problem that it is in other areas of the Gila River and other river systems in the southwest.

G. LETTERS OF COMMUNITY SUPPORT (attached)

DEBORAH K. GALE
County Administrator *(928) 865-2310
Clerk of the Board *(928) 865-2072

FACSIMILE # (928) 865-9332



BOARD OF SUPERVISORS
P.O. BOX 908
253 5TH STREET
CLIFTON, ARIZONA 85533

DAVID GOMEZ
District 1

HECTOR RUEDAS
District 2

RICHARD LUNT
District 3

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, AZ 85012

August 19, 2010

To Whom It May Concern:

I am writing a letter of support for the Coronado Resource Conservation Development Invasive Weed Project, as the Gila River runs through my district.

Invasive weeds are taking over riparian habitat of the Gila River. Left unchecked they will soon destroy the historical habitat of the river. Some of the invasive weeds are poisonous to wildlife and livestock. These invasive weeds can make farmland worthless. Much of the land along the river is owned by my family and friends, and this land has become infested with these invasive weeds.

This project would help stop the spread of invasive weeds downstream thus preventing damage to others property and causing a negative impact on the economy of our area.

Please give consideration to the funding of this grant as it will help all of Arizona.

Sincerely,

Richard G. Lunt
Supervisor, District 3



United States Department of the Interior

U.S. Fish and Wildlife Service
Arizona Ecological Services Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 Fax: (602) 242-2513



In reply refer to:

AESO/SE
22410-2010-TA-0499

August 23, 2010

Ms. Marie Light, Commission Chair
Arizona Water Protection Fund
3550 North Central Avenue
Phoenix, Arizona 85012

Dear Ms. Light:

The U.S. Fish and Wildlife Service (Service) appreciates the opportunity to provide this letter written in support of the Arizona Water Protection Fund Grant application by the Coronado Resource Conservation & Development Area. Their application, *Invasive Weed Control Gila River Corridor, Greenlee County*, proposes to treat invasive weeds that are growing along portions of the 30-mile reach of the Gila River in Greenlee County. This would be a four-year project and involve treatment of Russian knapweed, Yellow and Malta starthistle, and hoary cress with appropriate herbicides.

The invasive plants proposed for treatment threaten the existing riparian areas and floodplains along the upper Gila River. They reduce competition from other plants by allelopathy (production of biochemicals that inhibit the growth of other plants), thus are able to replace native plant species. In addition, Russian knapweed, Malta and yellow starthistle produce a neurotoxin which, when ingested, affects areas in an animal's brain causing necrosis, a condition referred to as chewing disease. These plants are poisonous to horses. Injury can also occur to livestock and wildlife that eat even small amounts of yellow starthistle. Once these invasive plants infest farmland, they render it worthless. The river provides a corridor for spreading plants and seeds downstream.

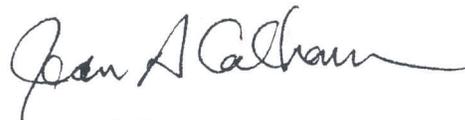
Greenlee County contains several species of migratory birds including the southwestern willow flycatcher (federally listed as endangered), yellow-billed cuckoo (federally listed as a candidate species) and common black hawk. The river itself contains several native fish species including, longfin dace (*Agosia chrysogaster*), speckled dace (*Rhinichthys osculus*), Sonora sucker (*Catostomus insignis*), and desert sucker (*Catostomus clarki*). Razorback sucker (*Xyrauchen texanus*) was historically stocked in this portion of the Gila River and critical habitat has been designated for the sucker within the entire 30-mile reach of the project area. There is also critical habitat designated for the southwestern willow flycatcher occurring from the New Mexico-Arizona border downstream to the town of Duncan.

Treating invasive plants will enhance riparian and floodplain vegetation which are important habitats for many of Arizona's native wildlife species. This project will involve multiple partners including the New Mexico Weed Management Area, which is doing similar work on the Gila River in New Mexico. Local landowners, the town of Duncan, and Greenlee County will also be involved. The project will provide information to educate local residents on identifying invasive weeds, thus building Rapid Response teams for long term control. For these reasons, the Service's Partners for Fish and Wildlife is also considering assisting this project financially and technically.

Although the project would ultimately benefit the riparian and floodplain vegetation as well as native fish, there may be short-term adverse effects, necessitating Endangered Species Act (ESA) section 7 consultation with our office. We will work with the Coronado RC&D to assist in identifying measures that would minimize potential adverse effects and complete ESA compliance for the project.

We support this project and the enhancement it will provide to the associated riparian habitat. It is anticipated that this project will reduce the spread of these invasive species. We appreciate the opportunity to provide this letter of support. If you would like additional comments concerning this project, please contact Kris Randall (602) 242-0210 (x250).

Sincerely,



Jean A. Calhoun
Deputy Field Supervisor

cc: Donna Matthews, Coronado RC&D Coordinator, Willcox, AZ



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Safford Field Office
711 14th Avenue
Safford, Arizona 85546
www.blm.gov/az/

4120

928-348-4400

August 7, 2010

Arizona Department of Water Resources
Arizona Water Protection Fund Commission
3550 N. Central Ave.
Phoenix, AZ 85012

Dear Commission:

The Gila District BLM has partnered with Coronado RC&D (Resource Conservation and Development), Arizona Department of Transportation, University of Arizona, and U.S. Forest Service in the control of noxious and invasive weeds. BLM contributed approximately \$25,000.00 in an effort to control Russian knapweed in and around Duncan, Arizona. The contribution was in the form of chemical, specifically Milestone VM (Dow AgroSciences).

This herbicide has been the subject of research by the University of Arizona (lead researcher, Dr. Bill McCloskey). BLM continues to deepen its involvement as an EA (Environmental Assessment) was recently completed to treat Russian knapweed. Our concern is that Russian knapweed will travel in the Gila River flood plain from New Mexico to the western boundary of the Gila Box National Riparian Conservation Area. Some BLM work (funded through ARRA) will be started this fall (2010).

BLM Management is committed to controlling noxious weeds in and adjacent to BLM land. Cooperation with University of Arizona and Coronado RC&D is essential in our efforts to control noxious weeds. For these reasons, we support the proposal to map and treat noxious weeds in the Gila River and riparian area.

Sincerely,

Dave Arthun
Rangeland Specialist,

Cc: *Coronado RC&D*
Donna Matthews
656 North Bisbee Ave.
Willcox, AZ 85643

United States Department of Agriculture



Natural Resources Conservation Service
305 E. 4th Street
Safford, Arizona 85546

phone 928-428-5537
fax 928-428-4284
www.az.nrcs.usda.gov

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, AZ 85012

August 18, 2010

To Whom It May Concern,

I am writing to inform you that the Safford Field Office of the USDA-NRCS fully supports the funding of the Coronado RC&D thru the Arizona Water Protection Fund. The proposal to address invasive weeds along the Gila River in Greenlee County goes hand in hand with work that is beginning to take place thru the cooperation of BLM, NRCS, and private land owners in Greenlee County. The threat of Russian Knapweed and Yellow starthistle spreading down the Gila River corridor is very real, and very scary. Monocultures, soil erosion, increased herbicide use, and damage to the agriculture base contributing to water quality and quantity issues are certain if these invasive and noxious weeds continue to spread.

The collaboration and cooperation taking place between federal, state, county and town governments as well as private land owners helps insure the RC&D will be successful if funded. Thank you.

Respectfully,

A handwritten signature in cursive script that reads "Eddie Foster".

Eddie Foster
District Conservationist, Safford Field Office

Helping People Help the Land

An Equal Opportunity Provider and Employer

1684 Fairgrounds Road • Duncan AZ 85534 • (928) 359-2261 • FAX: (928) 359-2079 • extension.arizona.edu/greenlee

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, Arizona 85012

August 5, 2010

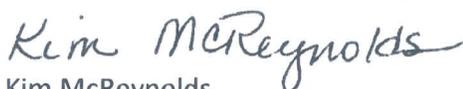
Dear Commission,

I am writing this letter of support for the proposal to control noxious, invasive weeds in and adjacent to riparian areas along the Gila River in Greenlee County. I have been working with noxious weeds in Greenlee County since 2002. In partnership with several federal, state and county governments, we provide public outreach awareness workshops, identification and control trainings for state and county road maintenance workers, and are actively working with private landowners and farmers to control noxious weeds on their land. We have spent time mapping Russian knapweed and have found about 800 acres of infestation in the county, some of which lies in the floodplain of the Gila River, in the understory of cottonwoods and willows. On-going research is being conducted in the Duncan area to assess the most effective and environmentally safe herbicides for future control of Russian knapweed.

Yellow starthistle has been found on the edge of the river, and this spring we confirmed whitetop in the river corridor. Some of the fields adjacent to the river also contain bull thistle and Malta starthistle. All of these infestations have yet to be mapped. Mapping of these infestations is one of the first important steps in Integrated Weed Management. Once infestations are mapped, we can prioritize treatment areas and control options.

The Gila River is an important resource to the people of Greenlee County. They rely on it not only for recreation and wildlife values, but many depend on it for their livelihoods. The threat to the river and associated riparian values from noxious, invasive weeds is very real. However, the infestations in most cases are spotty and relatively small enough to control at this point in time. Left uncontrolled, they will be a serious problem in the future. This grant proposal will prevent further damage to the river and provide for restoration of infested areas.

Sincerely,



Kim McReynolds
Acting Extension Director, Greenlee County
Area Extension Agent, Natural Resources





Town of Duncan

TOWN HALL

PO Box 916
506 SE Old West Highway
Duncan, AZ 85534
(928) 359-2791

ARIZONA RELAY SERVICE

TTY/ASCII
1 (800) 367-8939

ADMINISTRATION

506 SE Old West Highway
(928) 359-2791
FAX (928) 359-9146

WATER DEPARTMENT

216 East Avenue
Duncan, AZ 85534

STREET DEPARTMENT

505 4th Street
(928) 359-1471

SWIMMING POOL

106 Skyline Drive
(928) 359-9018

August 24, 2010

Arizona Water Protection Fund Commission
355 North Central Ave.
Phoenix, AZ 85012

Dear Arizona Water Protection Fund Commission:

This letter is being written to express the Town of Duncan's support for the Coronado Resource Conservation & Development Area project titled "Invasive Weed Control in the Gila River Corridor through Greenlee County". The Gila River runs through the Town of Duncan and is an important part of our heritage, natural resources and economy. This project will reverse the destruction of the riparian areas and croplands that are so important to the Town of Duncan and our rural area.

We urge you to fund this grant proposal. It will help our efforts to improve the health of our river.

Thank you for your consideration.

Sincerely,

MC Holliday
Mayor
Town of Duncan

"A NICE PLACE TO COME HOME TO"

DEBORAH K. GALE
County Administrator * 928 * 466-2300
Clerk of the Board * 928 * 466-2372

FACSIMILE # 928 466-0932



BOARD OF SUPERVISORS
P.O. BOX 908
253 5TH STREET
CLIFTON, ARIZONA 85533

DAVID GOMEZ
District 1

ROTOR RUEDAS
District 2

RICHARD LINT
District 3

August 17, 2010

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, Arizona 85012

RE: Letter of Support for Invasive weed grant

Dear Sir:

On behalf of the Greenlee County Board of Supervisors, please accept this letter of support for the proposed grant submitted by the Coronado RC&D in partnership with the Greenlee County Cooperative Extension program for funding to map and treat invasive weeds along the Gila River in Greenlee County.

Funding from the Arizona Water Protection Fund grant program would allow work to be done in conjunction with landowners in Greenlee County to map and then treat the invasive weeds in the river, riparian area, and adjacent flood plain. Treatment of the invasive Russian knapweed, Malta, and Yellow starthistle and Whitetop in the Greenlee County section of the river will greatly reduce the opportunity for seeds to travel down the river channel and destroy riparian areas, agricultural and recreation land downstream.

Greenlee County is very supportive of this project and certainly hope that it will receive the approval so that we can begin a program that can be nothing but successful. Please feel free to contact me should you have any questions.

Sincerely,


Deborah K. Gale
Greenlee County Administrator



717 Main Street
P.O. Box 272
Safford, AZ 85548-0272
Phone: (928) 348-3100
FAX: (928) 348-3111
TDD: (928) 428-0778

August 3, 2010

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, AZ 85012

Dear Sir/Madam:

The City of Safford supports the Coronado RC&D and the Greenlee County Cooperative Extension Service efforts to fight against invasive weeds in the Gila River and its riparian area and adjacent flood plain. This is an important river corridor providing much to the economy and natural beauty of the area. Treatment of the invasive weeds is necessary to inhibit the migration of seeds downstream and thus affecting farming and recreation in Graham County.

The City of Safford urges your support of this endeavor.

Sincerely,



David J. Kincaid
City Manager

To Arizona Water Protection Fund Commission
Arizona Dept. of water resources
3550 N. Central ave
Phoenix Az 85012

I support the Coronado R C + D
& Greenlee County Cooperative Extensions
invasive weed program here in
Duncan. As a small agricultural
producer & avid outdoorsman this
is of economic & recreational
importance to me.

Bill Cook
Harmony Gardens
PO box 106
Duncan Az 85534

August 17, 2010

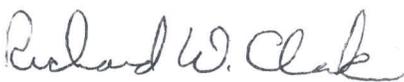
Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, AZ 85012

Dear Commissioners,

Our community's economy is dependant upon support from agriculture and tourism. Therefore, conserving and protecting our natural resources is a priority.

Over the past few years, invasive weeds have become a resource concern for our community. Invasive weeds destroy wildlife and agricultural crops which could have a devastating effect on our economy. The proposed project will assist the residents of Greenlee County to conserve our natural resources which will protect our community's economy and the livelihood of our residents.

I am in full support this project and encourage your consideration for funding.

Sincerely, 

Greenlee County Landowner/Farmer

August 17, 2010

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, AZ 85012

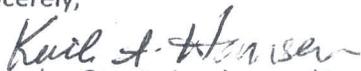
Dear Commissioners,

Our community's economy is dependant upon support from agriculture and tourism. Therefore, conserving and protecting our natural resources is a priority.

Over the past few years, invasive weeds have become a resource concern for our community. Invasive weeds destroy wildlife and agricultural crops which could have a devastating effect on our economy. The proposed project will assist the residents of Greenlee County to conserve our natural resources which will protect our community's economy and the livelihood of our residents.

I am in full support this project and encourage your consideration for funding.

Sincerely,


Karl A. Hansen
Greenlee County Landowner/Farmer



**GILA VALLEY NATURAL
RESOURCE CONSERVATION DISTRICT**

305 E. 4th Street - Safford, AZ 85546
Ph: (928) 428-5537 Ext 111
Fax: (928) 428-4284
amy.herbert@az.nacdnet.net

August 17, 2010

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, AZ 85012

Dear Commissioners,

The Gila River is an important resource in Southeastern Arizona, supporting our economy through diverse natural resources that support tourism and agriculture. The Gila Valley Natural Resource Conservation District is actively involved in maintaining this resource and supports the Coronado RC&D's proposal to map and treat invasive weeds in the Gila River Corridor through Greenlee County.

Invasive weeds destroy habitat for wildlife that depend upon the river and its riparian area and have a serious economic impact on agriculture in our river valleys. The section of the Gila River that flows through Greenlee County is the gateway to the Gila in Arizona. Weed seeds transported by river flows pose a threat to all of south and central Arizona. We support this project and encourage your consideration for funding.

Sincerely,

Dean Lunt, Chairman
Gila Valley NRCD

GILA
WATERSHED
PARTNERSHIP
OF ARIZONA



711 14th Avenue
Safford Arizona 85546
Phone 520-395-2499 – Cell 520-419-0374
Fax 520-829-3660
Email watershedholder@yahoo.com

August 23, 2010

Arizona Water Protection Fund Commission
3550 North Central Avenue
Phoenix, Arizona 85012

Dear Arizona Water Protection Fund Commission,

Please consider this letter in support of the Coronado Resource and Development Area and Greenlee County Cooperative Extension office's grant proposal for the mapping and treatment of the invasive weeds in Greenlee County.

This is an important project that will reduce the invasive weeds in the river, riparian area and flood plains in Greenlee County and will assist in the protection and restoration of our watershed.

Sincerely,

Jan Holder
Executive Director
Gila Watershed Partnership

FRANKLIN IRRIGATION DISTRICT
BOX 456
DUNCAN, ARIZONA 85534

August 17, 2010

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, Arizona 85012

Dear Commissioners,

The Franklin Irrigation District provides services to the irrigated agriculture lands of the Duncan Valley.

Agriculture is tied to the culture and economy of Greenlee County and invasive weeds threaten both agriculture and natural resources of our valley.

Sincerely,



Wilbur Lunt
President

August 17, 2010

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, AZ 85012

Dear Commissioners,

Our community's economy is dependant upon support from agriculture and tourism. Therefore, conserving and protecting our natural resources is a priority.

Over the past few years, invasive weeds have become a resource concern for our community. Invasive weeds destroy wildlife and agricultural crops which could have a devastating effect on our economy. The proposed project will assist the residents of Greenlee County to conserve our natural resources which will protect our community's economy and the livelihood of our residents.

I am in full support this project and encourage your consideration for funding.

Sincerely,



Dean Lunt

Greenlee County Landowner/Farmer



24 August 2010

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, Arizona 85012

Re: Invasive Weed Control Project in Greenlee County

Dear Commissioners:

I am writing in support of the grant application by Coronado Resource Conservation & Development Area for an expanded program addressing the invasive weeds along our reach of the Gila River. Thanks to efforts to date by the collaborators, I have become aware of the critical nature of our invasive weeds situation here in the Duncan Valley and of the scope of work needed to address the problems. I have no doubt that the kind of effort proposed by Coronado RC&D and its partners is what we need to prevent a catastrophic surge in the invasives populations.

I play a convener and instigator role in a citizen-driven economic development process here in the Duncan Valley. I am also a co-founder and the volunteer manager of our farmers' market, which serves all of Greenlee County. Between the two, I spend a lot of time talking with farmers and others who make their livings from the natural resources of our region. I have no doubt that the proposed program would be well-received and would attract the necessary citizen participation.

Helping the agricultural community of the Gila River at the New Mexico border control its invasive plants will help those downstream – including wildlife – as well!

Sincerely,

Deborah Mendelsohn
Owner-Manager
dmen@simpsonhotel.com
928 359-3590

August 18, 2010

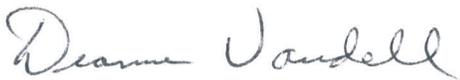
Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, Arizona 85012

**PROJECT TITLE: Invasive Weed Control Gila River
Corridor, Greenlee County**

I have been a member of Pride Society since 2003 and Treasurer for the past 6 years. The Society was formed in March 2001 and is committed to work with our town government, community leaders, and all area residents to preserve and enhance our towns overall image and historical values.

I believe this project is worthwhile doing in Greenlee County. The Gila River flows through the town of Duncan, so this would benefit the surrounding area of the Duncan Valley..

Thank you,

A handwritten signature in cursive script that reads "Dianne Vandell".

Dianne Vandell

Southeastern Arizona Weed Management Area

Cochise, Graham & Greenlee Counties

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, AZ 85012

August 6, 2010

Dear AWPFC Commission,

The Southeastern Arizona Weed Management Area (WMA) was formed in 1998 to work on controlling noxious weeds in Greenlee, Graham and northern Cochise counties. WMA members represent a variety of government agencies, municipalities, agricultural producers and interested citizens. Since 2007, there has been a major push by members of the WMA to control noxious weeds in Greenlee County because of the possibility of weeds moving to new areas via the Gila River. For this reason, we strongly support the proposal to work with landowners in Greenlee County to map and treat noxious, invasive weeds in the river, riparian area and adjacent flood plain.

The following noxious weeds are found in Greenlee County and are of concern in relation to the river and riparian area: Russian knapweed, Malta starthistle, yellow starthistle, bull thistle, and most recently, hoary cress (whitetop). Funding from the AWPFC would be helpful in controlling these weeds. The WMA has been providing leadership to noxious weed work in southeastern Arizona through educational workshops, developing a management plan, and applying for and receiving outside funds to implement on-the-ground projects. The WMA uses an Integrated Weed Management approach which involves prevention and early detection as the first line of defense against these weeds. We also have used biological controls, fire, and hand removal in addition to herbicides depending on the species and extent of infestation. Cultural control methods are also used as necessary.

The Southeastern Arizona Weed Management Area is in full support of the proposal to map and treat noxious weeds along the Gila River in Greenlee County.

Sincerely,

Alayna A. Sandford 8/6/2010

Alayna Sandford
Rangeland Management Specialist
USDA- NRCS Arizona
305 East 4th Street
Safford, AZ 85546
Phone: 928.428.5537 ext 113
Fax: 928.428.4284



*Graham County Board of Supervisors
921 Thatcher Blvd • Safford, Az 85546
Ph: (928) 428-3250 • Fx: (928) 428-5951*

*Mark C. Herrington, Chairman
James A. Palmer, Vice Chairman
Drew John, Member*

Terry Cooper, County Manager/Clerk

August 5, 2010

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 N. Central Avenue
Phoenix, Arizona 85012

Dear Sir/Madam:

Please consider this correspondence a show of support for the application being submitted by the Coronado RC&D and Greenlee County Cooperative Extension. The Graham County Board of Supervisors is certainly in support of their fight against invasive weeds along the Gila River and its riparian areas, flood plains, ect. through not only Greenlee County but Graham County as well. The Gila River is very important to the economy of Eastern Arizona as not only is it used for irrigation, but provides natural beauty to the area.

We understand that should the above referenced entities be successful with this application that invasive weeds along the river will be treated. Several of the species that will be treated are the Russian Knapweed, Malta and Yellow Starthistle and Whitetop. This will reduce the opportunity for these infested areas to travel down the Gila River and become an issue for Graham County as well.

We thank you for your positive consideration to this application and should you have any questions or if we could be of further service please contact us at 1-928-428-3250.

Sincerely,

A handwritten signature in cursive script that reads "Mark Herrington".

Mark Herrington
Graham County Board of Supervisors

cc: Coronado RC&D
656 N. Bisbee Avenue
Willcox, Arizona 85643

file

SOUTHWESTERN NEW MEXICO
COOPERATIVE WEED MANAGEMENT AREA

2610 N. Silver St.
Silver City, NM 88061
575-388-1559 or 575-313-2282

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 N. Central Ave.
Phoenix, AZ 85012

August 16, 2010

Dear Commission:

The Southwestern New Mexico Cooperative Weed Management Area (CWMA) announces its support of the Coronado RC&D and the Greenlee County Cooperative Extension Service in their fight against invasive weeds in the Gila River riparian area and adjacent flood plain within Greenlee County, Arizona.

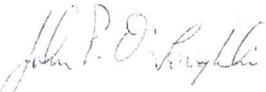
Under the authority of the Federal Noxious Weed Act, the CWMA was formed in 2006 and has been very active in addressing noxious weed issues in Hidalgo and Grant Counties of New Mexico in a partnership with federal, state and local governmental agencies, landowners, agricultural producers and interested individuals. We have current Memorandums of Understanding with Hidalgo County, Grant County, Silver Consolidated School District, Hidalgo and Grant County Fair Boards, New Mexico State University, Black Range Resource Conservation and Development, Natural Resource Conservation Service, Hidalgo and Grant Soil and Water Conservation Districts, New Mexico Department of Transportation, New Mexico Department of Agriculture, Bureau of Land Management, and the United States Forest Service.

In December of 2008 the CWMA began a partnership with Southeastern Arizona stakeholders who have an interest in management of noxious and invasive weeds. The CWMA began cooperating with the Arizona Cooperative Extension Service, University of Arizona, Arizona Department of Transportation, Coronado RC&D, Arizona BLM, Arizona NRCS and the counties of Cochise, Graham and Greenlee.

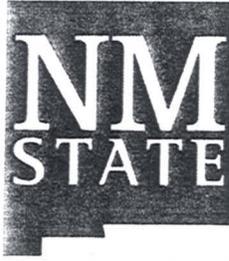
Since inception, the AZ-NM Stakeholder's Group has been addressing problems and solutions for noxious weeds across state lines in critical areas of concern. One area of great concern is the Gila River Valley corridor in Greenlee County. Preventing the spread of noxious and invasive weeds in that area is of great importance for maintaining the value of riparian ecosystems, agricultural lands and recreational opportunities.

Again, the CWMA fully supports the Coronado RC&D and Greenlee County Cooperative Extension Service in working with landowners and natural resource agencies to manage invasive weeds and protect the river corridor.

Sincerely,



John P. O'Loughlin, Noxious Weed Coordinator



NMSU COLLEGE OF AGRICULTURE AND HOME ECONOMICS
Cooperative Extension Service
Hidalgo County Office

524 East DeMoss, Suite 4
Lordsburg, NM 88045

Phone: (575)542-9291
Fax: (575)542-3550
chrblack@nmsu.edu

August 18, 2010

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 N. Central Ave.
Phoenix, AZ 85012

Dear Commission:

The Hidalgo County Cooperative Extension Service announces its support of the Coronado RC&D and the Greenlee County Cooperative Extension Service in their fight against invasive weeds in the Gila River riparian area and adjacent flood plain within Greenlee County, Arizona.

NMSU Hidalgo County Cooperative Extension Service has been in integral part of the formation and efforts of the Southwestern New Mexico Cooperative Weed Management Area (CWMA) since 2006. This CWMA covers Grant and Hidalgo counties in New Mexico which border Greenlee County Arizona and contain the headwaters of the Gila River which runs into Arizona at Greenlee County.

In December of 2008 the Agriculture Agent in Hidalgo County and the Natural Resource Agent in Cochise/Greenlee County partnered up with the SWNM CWMA board to start the Arizona/New Mexico Noxious weed Stakeholders Group. Meetings have been held since and have included cooperators such as: Arizona Cooperative Extension Service, University of Arizona, Arizona Department of Transportation, Coronado RC&D, Arizona BLM, Arizona NRCS and the counties of Cochise, Graham and Greenlee.

Since inception, the AZ-NM Stakeholder's Group has been addressing problems and solutions for noxious weeds across state lines in critical areas of concern. One area of great concern is the Gila River Valley corridor in Greenlee County. Preventing the spread of noxious and invasive weeds in that area is of great importance for maintaining the value of riparian ecosystems, agricultural lands and recreational opportunities.

Again, Hidalgo County Cooperative Extension Service, fully supports the Coronado RC&D and Greenlee County Cooperative Extension Service in working with landowners and natural resource agencies to manage invasive weeds and protect the river corridor.

Sincerely,

A handwritten signature in cursive script that reads 'Christina M. Rubio'.

Christina M. Rubio
Hidalgo County CES - Ag. Agent

. AUGUST 23, 2010

ARIZONA WATER PROTECTION FUND COMMISSION
ARIZONA DEPARTMENT OF WATER RESOURCES
3550 NORTH CENTRAL AVENUE
PHOENIX, AZ 85012

Re: Russian Knapweed- Invasive Weed Project

At this time I am writing to you for the control of the invasive weed that has been found in southeastern Arizona. These have been found in the Gila River and its riparian area and flood plain through Greenlee County.

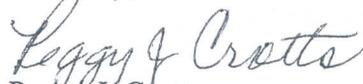
My background is of ranching and farming and we were taught to look for certain weeds when we were out with the cattle and horses. If an area had these weeds, it was blocked off and cleaned out before livestock could go back on it.

Not only does this invasive weed infest farmland and makes it worthless, but causes irreversible brain damage from a disorder called "chewing disease" in horses.

Treatment for the invasive weeds will greatly reduce the opportunity for seeds to travel down the river channel and destroy riparian areas, agricultural and recreation land downstream.

I urge you to provide the funding to help with this project to protect our river and land from these invasive weeds.

Sincerely,


Peggy J. Crofts

H. EVIDENCE OF CONTROL AND TENURE OF LAND

This project will work with individual landowners through access agreements and liability waivers developed between the Coronado Resource Conservation & Development Area and individual landowners. Each agreement will include a clause agreed upon with the Arizona Water Protection Fund that will hold them harmless in all project activities.

A sample access agreement below: .

CORONADO RESOURCE CONSERVATION & DEVELOPMENT AREA, INC.

656 N BISBEE AVENUE, WILLCOX, AZ 85643

AGREEMENT TO PROVIDE ACCESS

Purpose of Agreement: The Coronado Resource Conservation & Development Area, Inc (RC&D) and the University of Arizona Cooperative Extension, Greenlee County are in the process of seeking grant funding from the Arizona Water Protection Fund for the purpose of controlling invasive weeds in the Gila River and its riparian areas and adjacent flood plains through Greenlee County.

Should the above referenced project be funded, for the purpose of identifying and mapping invasive weeds in the targeted area:

Under this agreement, I _____ with the authority to represent _____,

grant access to consultants and/or employees of the Coronado RC&D for the purpose of conducting an on the ground survey and mapping of the type and extend of invasive weeds on the river, riparian area and flood plains on my property.

The treatment of any invasive weeds found on my property will be dealt with under a separate access agreement that is in compliance with the funder's requirements and in accordance with a voluntary plan developed by myself with technical assistance from the U of A Cooperative Extension and or the Natural Resources Conservation Service.

Any access in addition to that outlined in the contract will be discussed on a case by case basis and granted upon discretion of the landowner/manager.

Landowner/ Manager

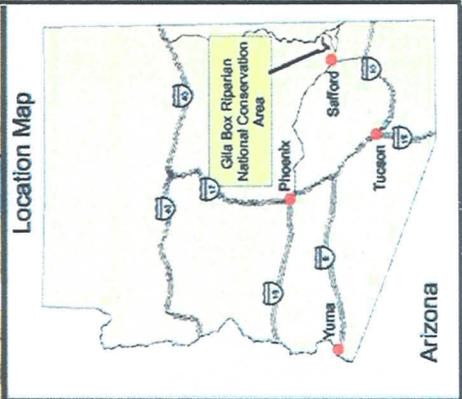
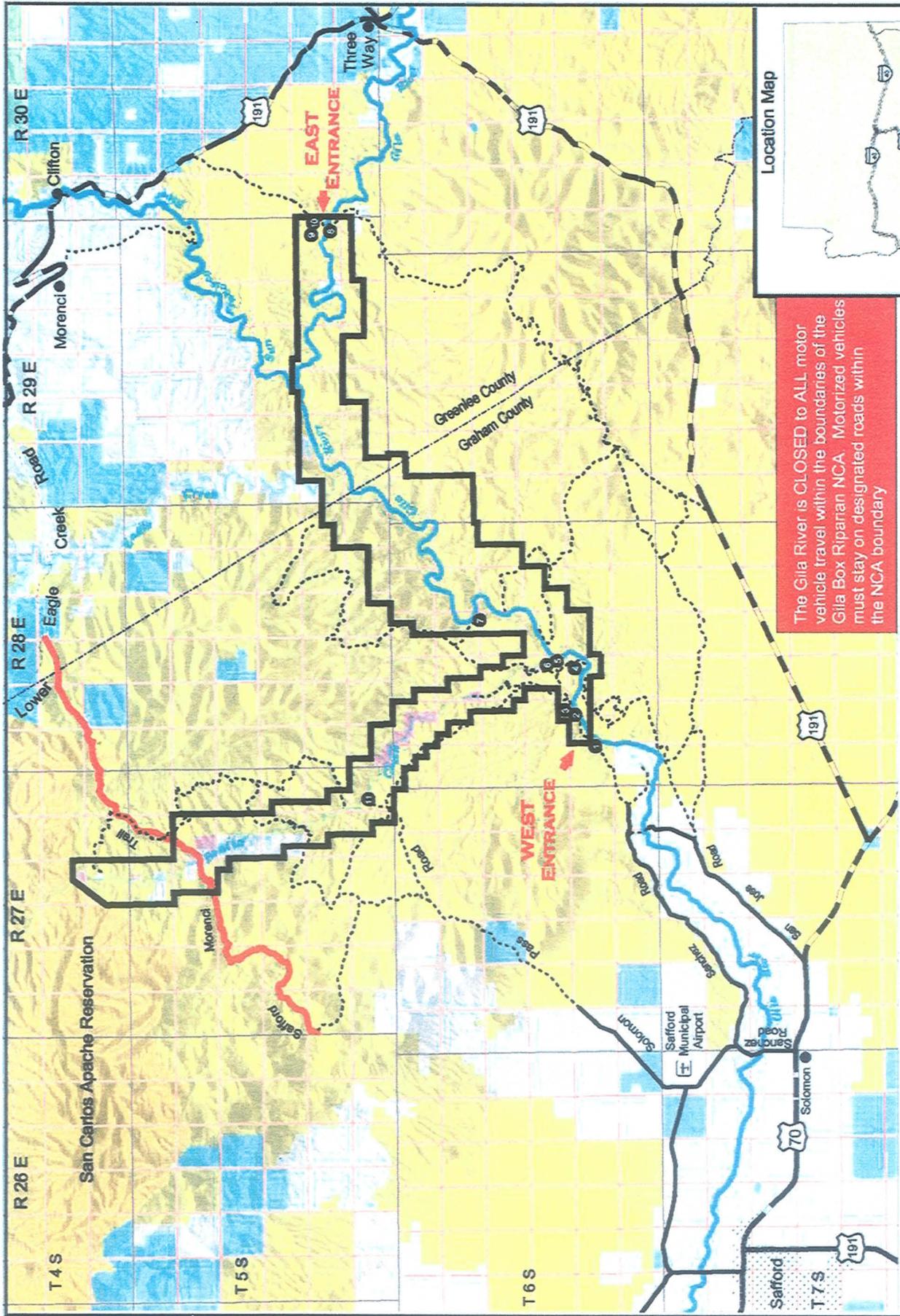
Date

I. EVIDENCE OF PHYSICAL AND LEGAL AVAILABILITY OF WATER

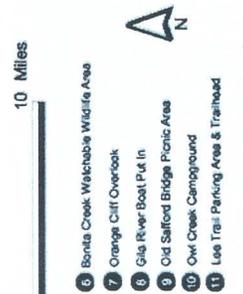
This project will not require the use of water resources from the river or large amount of ground water. The only water required will be a minimal amount from private wells for tank mixing of herbicides.

SUPPORT INFORMATION

- BLM Gila Box NCA Map
- Coronado RC&D Contract with State Forestry
- Landowner “check out” forms for herbicide (sample) currently being used for a project in Cochise County funded by US Fish & Wildlife Service
- Fact sheets developed by Coronado RC&D student intern to use in information/education programs on invasive weeds.



The Gila River is CLOSED to ALL motor vehicle travel within the boundaries of the Gila Box Riparian NCA. Motorized vehicles must stay on designated roads within the NCA boundary



- 1 West Entrance Information Kiosk
- 2 Dry Canyon Boat Take Out
- 3 Spring Canyon Picnic Area
- 4 River View Campground
- 5 Sama Cabin Picnic Area
- 6 Bonta Creek Watchable Wildlife Area
- 7 Orange Cliff Overlook
- 8 Gila River Boat Put In
- 9 Old Safford Bridge Picnic Area
- 10 Owl Creek Campground
- 11 Lee Trl - Parking Area & Trailhead

- BLM
- Indian Lands
- Private
- Slide
- USFS
- City of Safford Lands

- Paved Roads
- Unpaved Roads
- Highways
- Rivers
- Creeks
- RNCA Boundary
- Township Line
- Section Line

Gila Box Riparian National Conservation Area

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

ARIZONA
SAFFORD FIELD OFFICE

March 28, 2006



Office of the State Forester Grant Agreement
Cooperative Forestry Program Invasive Plants (SPS5) Grant
IPG-09-002

The Office of the State Forester, hereinafter "State Forester", enters into this Cooperative Forestry Program Invasive Plants (SPS5) Grant Agreement (hereinafter "Agreement") with the Coronado Resource Conservation & Development Area, Inc., hereinafter "Grantee", pursuant to the Cooperative Forestry Assistance Act of 1978, as amended and ARS ' 37-622, for general administrative expenses as described in the Grant Application (Attachment A) and addendum.

Coordination of this project will be provided by Kim Webb, for Grantee, and Bob Celaya for the State Forester.

Compensation is contingent upon Grantee fulfilling the project commitments as identified in the Grant Application (Attachment A) and amended by the addendum, the Request For Proposals, detailed project plan (Attachment B), and conformance with the General Provisions of this Grant Agreement (Attachment C). Compensation shall be reimbursement for fifty percent of eligible costs incurred during the Term of this Agreement. Costs submitted to the State Forester must be accompanied with detailed supporting Documentation of Expenses (Attachment D). Grantee will submit a Quarterly Performance Report (Attachment E) as defined by the Documentation of Expenses no later than 30 days after the close of each fiscal year quarter (Sept 30, Dec 31, Mar 31, and June 30). An invoice for reimbursement may be submitted with each Quarterly Performance Report or at the completion of the project. Payments will be made by check to the Grantee, normally within **ninety** days of receipt of the reimbursement request. Attachments A, B, C, D, E and the addendum are part of this Agreement. Also the attached project mapping form F and the required W-9 Authorization Form attachment G.

All payments are contingent upon the availability of funds and reimbursement by the United States Department of Agriculture, Forest Service, and if applicable, appropriation by the Arizona State Legislature.

All project expenditures are subject to the Single Audit Act of 1984, and all relevant Office of Management and Budget (OMB) Circulars. Grantees or sub grantees are subject to audit if their share of federal financial assistance is \$25,000 or more for a single fiscal year. Grantee must comply with ARS ' 35-181.03 provisions for financial and compliance audits.

This contract is subject to the Cooperative Forestry Assistance Act of 1978, as amended, and regulations promulgated thereunder.

Office of the State Forester Grant Agreement
Cooperative Forestry Program Invasive Plants (SPS5) Grant
IPG-09-002

Upon completion of the project the final ten percent of grant reimbursement shall be withheld until the State Forester certifies that the project is complete. Upon certification of completion, the ten percent withheld will be issued as the final payment. Total compensation under this agreement shall not exceed \$27,000 and shall not exceed fifty percent of the total eligible costs of the project. Invoices for eligible materials and work shall be submitted quarterly to the following address for reimbursement:

Bob Celaya
Office of the State Forester
1110 W. Washington, Suite 100
Phoenix, AZ 85007-2935

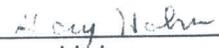
Term for this Agreement shall be a period beginning on the date of the State Forester's signature and ending on September 30, 2011.

This Grant is awarded under the Catalog of Federal Domestic Assistance Number 10.664 (United States Forest Service).

Please sign below indicating your acceptance of this Cooperative Forestry Program, Invasive Plants (SPS5) Grant Agreement. If you have any questions regarding this agreement, please call Bob Celaya at (602) 771-1415.

STATE OF ARIZONA

ACCEPTED BY GRANTEE


Gary Hahn
Procurement Officer


Richard Searle, Vice President

Date: 3/23/10

Date: 3-5-10


Vicki Christiansen, State Forester

Date: 3/23/2010

Office of the State Forester Grant Agreement
Cooperative Forestry Program Invasive Plants (SPS5) Grant

Attachments:

- A. Grant Application & Addendum
- B. Detailed Project Plan
- C. General Provisions
- D. Documentation of Expenses
- E. Quarterly Performance Report
- F. Project Mapping
- G. W-9 Authorization Form

Office of the State Forester Grant Agreement
Cooperative Forestry Program Invasive Plants (SPS5) Grant

Attachment A

Grant Application & Addendum

2009 Invasive Plants
Grant Application-ASFD

FOR OFFICIAL USE ONLY	
Dollar Amount Requested:	\$27,000
Matching Share:	\$27,000

Applicant Information	
Applicant:	Coronado Resource Conservation & Development Area Inc.
Contact Person:	Kim Webb
Address:	656 North Bisbee Ave
City/Zip Code:	Willcox, AZ 85643
Phone (Work/Cell):	520-384-2229 x 123
Email:	kim.webb@rcdnet.net
Fax:	520-384-2735

Community At Risk Information			
Name of Project:	Rapid Response Invasive Weed Treatment Program		
Community Name:	Southeast Arizona Sky Islands		
County:	Cochise & Graham,	Congressional District:	5 & 6
Latitude (decimal degrees):		Longitude (decimal degrees):	

Grant Contributors (Matching Share)							
(Applications will be disqualified if insufficient match is identified; federal dollars DO NOT qualify)							
Please specify each match contributor and the dollar amount of each contribution.							
Please DO NOT show grant requested funds in this table. This is for matching share only.							
Contributors: (Please specify)	Graham & Greenlee County	Gila & Eagle Crk Watersheds	Cochise County	Graham & Cochise Extension	5 NRCDs	Eastern AZ College	TOTAL
Dollars (Hard Match):	\$0	\$0	\$0	\$0	\$0	\$0	\$ 0
In-Kind (Soft Match):	\$4,500	\$2,000	\$5,000	\$5,000	\$5,000	\$5,500	\$27,000
TOTAL:	\$4,500	\$2,000	\$5,000	\$5,000	\$5,000	\$5,500	\$27,000

Program Budget (break down matching share totals from block three)				
	Grant Share (\$ Amount Requested)	Match (from block three)		TOTAL
		Dollars	In-Kind	
Personnel / Labor:	\$9,500	\$0	\$17,500	\$27,000
Operating:	\$3,500	\$0	\$7,000	\$10,500
Travel:	\$1,000	\$0	\$2,500	\$3,500
Contractual Services:	\$10,000	\$0	\$0	\$10,000
Equipment:	\$300	\$0	\$0	\$ 300
Indirect Costs:	\$2,700	\$0	\$0	\$2,700
TOTAL:	\$27,000	\$ 0	\$27,000	\$54,000

Project Summary (check all that apply and answer related questions)	
What is the duration of this project? (check one) <input type="checkbox"/> One Year <input checked="" type="checkbox"/> Two Years	
Is this a new project? (check one) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Does this project involve a CWMA? (Cooperative Weed Management Area) (check one) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Name of CWMA : Southeast Arizona	
Project Type (Check all that apply): <input checked="" type="checkbox"/> Prevention and early detection. <input checked="" type="checkbox"/> Inventory and mapping. <input checked="" type="checkbox"/> Eradication or control. <input checked="" type="checkbox"/> Monitoring and evaluation. <input checked="" type="checkbox"/> Information and Education. <input checked="" type="checkbox"/> Planning.	If applicable: Number of acres <u>assessed</u> : Estimated cost per acre: \$ Number of acres <u>treated</u> : 200 Estimated cost per acre: \$300
Number of communities directly affected by this project:	30
Number of landowners affected by this project:	350

Problem Statement	
All information for the project should fit into the allotted character space provided below. Addendum may be submitted if more space is needed.	
6	<p>Provide a clearly written statement of the problem and your approach with clearly stated goals & objectives. 2000 characters</p> <p>Problem: Increasing environmental and economic pressure on natural areas, grazing and farm lands due to growing populations of invasive weeds in southeastern Arizona counties of Graham, Greenlee and Cochise</p> <p>Approach:</p> <p>Goal 1: Establish Rapid Response Teams trained to identify and treat the following targeted invasive species: Onionweed, Malta and Yellow starthistle, Russian knapweed and African rue</p> <p>Objective 1: Use point data that now identifies a broad distribution of approximately 5000 acres of invasives in the tri county area as a basis for further mapping and detailed accounting of acres to be treated.</p> <p>Objective 2: Update and maintain data base for all 3 counties on invasives, share information with New Mexico</p> <p>Goal 2: Combine funding requested in this proposal with funding already received from the US Fish & Wildlife Service for Cochise County and APHIS to treat a total of 500 acres of targeted invasives. (Cost is calculated at \$300/AC on an average that included the Onionweed areas that are residential)</p> <p>Objective 1: Hold "Onionweed Control Workshops" that will provide information to 15 communities and utilize volunteer efforts for mechanical treatment.</p> <p>Objective 2: Use herbicide Escort to treat Onionweed on road ROW (APHIS to provide herbicide, Counties provide labor and equipment)</p> <p>Objective 3: Provide training and herbicide to private landowners to treat invasives on their land estimate 200 acres</p>

Methodology

All information for the project should fit into the allotted character space provided below.
Addendum may be submitted if more space is needed.

Briefly describe the methodology. Measurable activities & tasks, including weed species & who will perform work & monitoring plans, etc. 2000 characters

7

Target weed species: African rue, Yellow & Malta starthistle, Russian knapweed and Onionweed

Tasks:

1. Outreach- Expand outreach plan to include Graham & Greenlee Counties - Coronado RC&D outreach specialist will perform duties Deliverable: Copy of plan and all materials
2. Identification & Mapping: Landowners, public, units of govt will be able to call in with weed sightings. A technician will go to the site, make a positive identification of target species, gps the location and acreage and write a prescription for treatment.
3. Training-Landowners with sites identified will receive training on the program, herbicide application, safety and monitoring.
4. Treatment: Landowners will be able to take their written recommendation to the Conservation District Office in their area (Safford, Willcox, Douglas, Benson, Sierra Vista or Cascabel) and AT NO CHARGE, obtain the herbicide recommended along with application and safety equipment and instructions. If the herbicide recommended is non-restricted, a landowner can apply it without a license on their own property. If a restricted use herbicide is needed, the landowner must provide a copy of their applicator's license to obtain the herbicide. If the landowner does not have an applicators license or is otherwise unable to apply the herbicide, a trained and licensed applicator from the County will treat the area with the landowner's permission. All herbicide and application equipment and gear will be stored in County Highway yards in storage sheds donated by the county or purchased for this project.
5. Monitoring- Landowners will be given a monitoring form and training, will be required to provide before and after photos and sites will be checked by the technician 4 months after application and make recommendations for further follow up
6. Weed Control Community Days-The preferred method of control for Onionweed a residential invasive is pulling. Community work days will be used.

Provide a timeline for the project. 500 characters

This will be a two year project beginning in March 2010

- 2010- March- Develop outreach plan to include Graham & Greenlee Counties, distribute materials
April - Hold application & program workshops, technician visits to sites to map order herbicide and equipment
May- Implement treatment program (herbicide applications)
June & July-Onionweed treatment (pulling)
August- Follow up monitoring of treatment sites
Sept, Oct, Nov, Dec Continue outreach & Onionweed control efforts
- 2011 Jan, Feb Mar- Outreach & Project promotion
April - Training workshops
May -Implement treatment program
June & July Onionweed treatment
August- Follow up monitoring and Mapping
Sept/Oct- Project Evaluation & wrap up & Onion weed follow up
Dec Project close

*Milestone is the herbicide that will be used for treatment with the target treatment period limited to March, April & May when the plant is actively growing. Onion weed will primarily be treated by pulling because it is located in residential areas and control can only be sustained with an informed public that is willing to continually pull the plant.

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Partner Organizations

8

Specify the private, local, tribal, county, state, federal and/or non-governmental (501(C) (3) organizations that will contribute to or participate in the completion of this project. Describe briefly the contributions each partner will make (i.e. – donating time/equipment, funding, etc.).

2000 characters

Coronado Resource Conservation & Development Area- 501c3, will administer funds and coordinate project. Will provide project management, coordination, clerical, outreach assistance. (A portion of the RC&D work will be donated)

Gila Watershed Partnership, - 501c3 that covers Graham and Greenlee Counties- Will provide outreach and monitoring assistance

Eastern Arizona College -Will donate weed control labor

University of Arizona Cooperative Extension- Primary partner is Kim McReynolds, Agent that has worked extensively with Invasive weeds and associated projects in SE Arizona for the past 10 years. She has been instrumental in forming the SE Arizona Cooperative Weed Management Area and the Arizona/New Mexico Weed management Group. She will be the lead technical advisor on the project, will provide training, quality control and oversight.

(NRCS)-Federal Agency-contributions WILL NOT be used for match. Will provide technical staff assistance from Donna Matthews, for project oversight, training and monitoring assistance from Eddie Foster, Soil Conservationist, Jennifer Varin, District Conservationist (Graham & Greenlee Counties) Dave Matthews, District Conservationist Cochise County APHIS-also federal and will not be used as match will provide the lead technical oversight for Onionweed efforts

Graham, Greenlee & Cochise Counties- will promote the program, provide storage for herbicide and personell to apply herbicide on County property and for landowners unable to apply it themselves.

Gila Valley, Willcox-San Simon, San Pedro, Redington, Hereford & Whitewater Draw Natural Resource Conservation Districts will serve as contact points for landowners to call in invasive weeds, send a technician out and dispense herbicide, equipment and safety information.

Southeast Arizona and Arizona New Mexico Weed Management Areas will work with the project and maintain the overall data base, assist with outreach. This project fits within their overall long range plans.

Project Longevity / Maintenance

9

Clearly demonstrate how this project will remain effective over time. 2000 characters

This project will treat known infestations of the invasives and eradicate them. In addition, it will raise the awareness of invasives and establish Community Monitoring and control groups that will function as a Rapid Response group to identify and eradicate new infestations as they appear.

A goal of this project is to train County Supervisors and County highway and flood plain staff to raise their level of awareness and elevate the control of invasives to a higher priority. Once monitoring and control of invasives becomes a priority for highway and road crews, new infestations will be dealt with before they become great problems. Landowners will be able to report sightings of invasives to conservation districts and that information will be relayed to counties for treatment. Once the larger infestations are under control, treatments should be limited to a maintenance level.

The weed management groups and Cooperative Extension will continue to monitor and maintain the database of infestations. They along with the Conservation Districts that publish a newsletter will continue the outreach and education efforts. The weed management groups are committed to public education in their long range plans.

APHIS maintains a database of Onionweed infestations and has an ongoing educational program. This project will greatly enhance their efforts and move them forward to a level that they can maintain after the project is completed.

ADDENDUM: 2009 Invasive Plants Grant Application-*Rapid Response Invasive Weed Treatment Program Proposal*

Submitted to: Arizona State Forestry Division

Submitted by: Coronado Resource Conservation & Development Area, Willcox, AZ 85643

Purpose: The following information contained in this addendum is intended to **clarify** the assessment of the invasive weed problem in three southeast Arizona Counties and the approach this project will utilize to address it.

Southeast Arizona is a land of broad valleys, and beautiful grasslands that reach to the mountainous forests referred to as the "Sky Islands". It is also a busy transportation corridor from the Country of Mexico and the State of New Mexico. These highways bring goods and services, tourists to enjoy the area and invasive weeds that threaten to expand and destroy native vegetation that is key to the beauty and habitat of the area. Five key species are becoming an increasing threat to our native forests and grasslands: Russian knapweed, Onionweed, African rue, and Yellow and Malta starthistle. We lack public knowledge and the resources to halt the invasion.

The Coronado RC&D, five Natural Resource Conservation Districts, the University of Arizona Cooperative Extension, Natural Resources Conservation Service, USDA/Animal Plant Health Inspection Service (APHIS) and Cochise County have developed a partnership to implement a rapid response system to deal with invasive weeds in Cochise County and received start up funding (\$45,000.00) from the US Fish & Wildlife Service. We are requesting funding in this proposal to continue and expand the project in Cochise County and expand to include Graham and Greenlee Counties. Graham & Greenlee Counties, Gila Watershed Partnership, U of A Extension and the Gila Valley NRCD have joined the partnership. Relatively little mapping has been done in Graham and Greenlee Counties outside of the Resin bush on Frye Mesa and Russian knapweed along the Gila River in Duncan. Point data has estimates of 3,000 acres of the targeted species in Graham and Greenlee Counties and approximately 2000 in Cochise. in addition to the Resin bush that will NOT be addressed under this project.

Funding will be used to: a) outreach to citizens and local governments on plant identification, the problem with invasives and the details of how the program will work and create citizen monitoring & control groups. b) accurately map the extent of infestation and maintain a data base c) purchase herbicide and treat mapped acres ~200 est cost \$300/AC

Target weed species: African rue, Yellow & Malta starthistle, Russian knapweed and Onionweed

Tasks:

1. Outreach- Expand outreach plan to include Graham & Greenlee Counties - Coronado RC&D outreach specialist will perform duties Deliverable: Copy of plan and all materials
2. Identification & Mapping: Landowners, public, units of govt will be able to call in with weed sightings. A technician will go to the site, make a positive identification of target species, gps the location and acreage and write a prescription for treatment.
3. Training-Landowners with sites identified will receive training on the program, herbicide application, safety and monitoring.
4. Treatment: Landowners will be able to take their written recommendation to the Conservation District Office in their area (Safford, Willcox, Douglas, Benson, Sierra Vista or Cascabel) and AT NO CHARGE, obtain the herbicide recommended along with application and safety equipment and instructions. If the herbicide recommended is non-restricted, a landowner can apply it without a license on their own property. If a restricted use herbicide is needed, the landowner must provide a copy of their applicator's license to obtain the herbicide. If the landowner does not have an applicators license or is otherwise unable to apply the herbicide, a trained and licensed applicator from the County will treat the area with the

landowner's permission. All herbicide and application equipment and gear will be stored in County Highway yards in storage sheds donated by the county or purchased for this project.

4. Monitoring- Landowners will be given a monitoring form and training, will be required to provide before and after photos and sites will be checked by the technician 4 months after application and make recommendations for further follow up

5. Weed Control Community Days-The preferred method of control for Onionweed a residential invasive is pulling. Community work days will be used.

Notes on Tasks

❖ Acres assessed and treated: Currently we have about 500 acres detail mapped in Cochise County, another 2000 acres in Cochise and approximately 2500 acres with point data locations in Graham and Greenlee Counties. Point data has been used to date to give an estimate of where invasives are being found with only estimates on acreage rather than actual measurement of infestation size. This information has given us valuable information in regard to distribution but does not give us the complete picture of total acres. For example a point may have one plant and a second plant might be located 100 feet away or one point may have a 20 acre infestation. Mapping and actual measurement of acres is a very important next step in treatment. We are using a cost estimate of \$300/acre to treat based upon information obtained from limited field trials and County Highway Department information (this would include initial hand treatment, follow up monitoring and follow up treatment if needed) We are in the ongoing process of mapping as we teach more people about these targeted invasives so we expect the acres to increase. Although we have a US Fish & Wildlife Grant that will cover part of the expenses, those funds have been used primarily for mapping and education at this point. Note: Relatively little mapping has been done in Graham and Greenlee Counties outside of the Resin bush on Frye Mesa and the Knapweed along the Gila River in Duncan. Treatment has been limited to previously done trials. FWS funds haven't been used for treatment yet partly because the ideal treatment time for the majority of the targeted species is when they are actively growing, starting in April.

❖ We are using an integrated approach to control with mechanical treatment (hand grubbing) being the primary method for the control of Onionweed. The herbicide Escort has potential only in County Right of Ways along roads with mechanical being planned for the residential areas where onion weed is usually found. APHIS (federal agency) has been very involved in Onionweed control efforts, will provide herbicide for ROW treatments and will work with community efforts on education and mechanical control. Significant time will be spent in recruiting community volunteers to serve as rapid responders and control teams on the onion weed to get it under control and keep it that way. It is the most sustainable method of long term control. Other targeted species might be able to be controlled mechanically in some of the towns that are in the project area. Control of invasives is costly because they are hard to kill in the first place but also because each location needs to be evaluated and monitored for the best control methods to use. A large body of concerned citizens staying informed and armed with gloves, hoes and garbage bags can be a very effective treatment in the long term for residential areas. Herbicide can have more impact on areas like road right of ways that have great potential to spread. Working with County crews on the rapid response program will improve the potential of small areas being treated before they become large areas.

NOTE: There is significant federal agency involvement and support for this program in expertise, labor and funding. None of those contributions are included in any of the calculations used for the development of this proposal nor will they be used as matching contributions.

Office of the State Forester Grant Agreement
Cooperative Forestry Program Invasive Plants (SPS5) Grant

Attachment B

Detailed Project Plan

Milestone Check-Out Sheet

- Attended Safety and Calibration Training
- Copy of Milestone Label
- Gloves
- Eye Protection
- Sprayer
- Calibration Sheet
- Herbicide Quantity: _____
- Treatment Monitoring Form
- Milestone Use Agreement Form

Signature: _____ Date: _____

1. I understand that by participating in the Invasive Weed Treatment Program, I hold myself liable for my own actions. I will not hold an individual, entity, or government agency responsible or liable for any harm that may come from my participation.
Initial: _____
2. I will not hold on to the chemical or equipment as someone else may be waiting to use it. Do not hold on to the chemical or equipment as someone else may be waiting to use the original container you received it in, as soon as you have completed your treatment. Thoroughly clean all equipment and return it with any unused chemical in the original container.
3. I will not use the chemical or equipment in a way that is not intended or approved. I will use the chemical and equipment in a safe, secure area while you have them in your possession. You are responsible and liable for them and anything that may happen while they are in your possession.
4. I will not use the chemical or equipment in a way that is not intended or approved. I will use the chemical and equipment in a safe, secure area while you have them in your possession. You are responsible and liable for them and anything that may happen while they are in your possession.
5. I will not use the chemical or equipment in a way that is not intended or approved. I will use the chemical and equipment in a safe, secure area while you have them in your possession. You are responsible and liable for them and anything that may happen while they are in your possession.
6. I will not use the chemical or equipment in a way that is not intended or approved. I will use the chemical and equipment in a safe, secure area while you have them in your possession. You are responsible and liable for them and anything that may happen while they are in your possession.
7. I will not use the chemical or equipment in a way that is not intended or approved. I will use the chemical and equipment in a safe, secure area while you have them in your possession. You are responsible and liable for them and anything that may happen while they are in your possession.
8. I will not use the chemical or equipment in a way that is not intended or approved. I will use the chemical and equipment in a safe, secure area while you have them in your possession. You are responsible and liable for them and anything that may happen while they are in your possession.
9. I will not use the chemical or equipment in a way that is not intended or approved. I will use the chemical and equipment in a safe, secure area while you have them in your possession. You are responsible and liable for them and anything that may happen while they are in your possession.
10. Fill out monitoring form and return it when you return the equipment and/or unused Milestone. Provide access with notice to Colorado Resource Conservation and Development, Natural Resource Conservation Service, and University of Arizona Cooperative Extension employees for educational and record keeping purposes.

Date: _____
Signed: _____

Date: _____
Witness: _____

Milestone Use Agreement for Russian Knapweed, Yellow Starthistle and Malta Starthistle

I, _____, by participating in the noxious weed treatment program, and accepting the Milestone herbicide, will agree to and abide by the following rules and requirements:

1. Read the label completely and carefully.
2. Use the herbicide in accordance to the label. It is illegal to use an herbicide in any way inconsistent with the label.
3. Do not use higher dosages, higher concentrations, or more frequent applications than recommended on the label. Milestone shall be applied at a rate of 7 oz/acre, once a year.
4. Follow all directions for use, including directions concerning safety, mixing, dilution, storage, and disposal.
5. You must wear protective gloves when using Milestone.
6. Treat only Russian Knapweed, Yellow Starthistle, and Malta Starthistle and no other weeds.
7. Store provided chemical and equipment in a safe, secure area while you have them in your possession. You are responsible and liable for them and anything that may happen while they are in your possession.
8. Thoroughly clean all equipment and return it with any unused chemical, in the original container you received it in, as soon as you have completed your treatment. Do not hold on to the chemical or equipment as someone else may be waiting to use it.
9. I understand that by participating in the Invasive Weed Treatment Program, I hold myself liable for my own actions. I will not hold any individual, entity, or government agency responsible or liable for any harm that may come from my participation.
Initial: _____
10. Fill out monitoring form and return it when you return the equipment and/or unused Milestone. Provide access, with notice, to Coronado Resource Conservation and Development, Natural Resource Conservation Service, and University of Arizona Cooperative Extension employees for educational and record keeping purposes.

Signed, _____ Date, _____

Witness, _____ Date, _____

EXHIBIT A
Wildlife Habitat Agreement
Project Plan and Costs Estimated

Invasive Species Control in Desert Grasslands and Cienegas – Arizona (Coronado RC&D)

Planned Work:

Describe the work being done on the nonfederal landowner's property.

Project Summary	Restoration	Enhancement	Establishment	Total
Upland Acres:	_____	_____	_____	_____
Wetland Acres:	_____	_____	_____	_____
Riparian Miles:	_____	_____	_____	_____
Stream Miles:	_____	_____	_____	_____
Number of Structures:	_____	_____	_____	_____
Invasive Acres:	_____	_____	_____	_____

II. Contributions of Parties:

A. Coronado Resource Conservation & Development Area (RC&D):

1. Agrees to cost-share in practices specified in this agreement, thus enhancing the value of the area for resident and migratory wildlife species.
2. Agrees to inspect the work periodically during construction, if necessary, and provide technical assistance regarding management and maintenance of the works of improvement.
3. Agrees to annually evaluate the management techniques and provide guidance regarding their success and modify the management guidelines as necessary to ensure maximum benefits to wildlife.

B. Participating Landowner

1. Agrees to cost-share in the works of improvement for the property. Agrees to obtain the services of a competent contractor to ensure the practices are completed in a timely manner and meet the specifications of this agreement.
2. Agrees to maintain the site to the maximum benefit of wildlife for the term of this agreement.
3. Agrees to not begin the project until RC&D provides notice that all compliance documents are complete.
4. Agrees to obtain the necessary permits needed for project implementation. This includes submitting the Land Treatment Application to the Arizona State Land Department.
5. Agrees to provide annual maintenance of works completed to ensure that they are in good condition and function as agreed upon for the life of this agreement.

EXHIBIT D
Pesticide Product Provision

I. AUTHORITY:

This Pesticide Product Provision, which serves as an addendum to and is hereby incorporated into the attached Private Lands Agreement, is provided by the U.S. Fish and Wildlife Service (Service) to _____, private lands cooperator, pursuant to authority contained the Department of the Interior Departmental Manual, Part 517 (Pesticide Use Policy), and U.S. Fish and Wildlife Service Administrative Manual, 30 AM 12 (Pest Management Policy and Responsibilities).

II. PROVISION:

It is the responsibility of all persons using a pesticide product to read and follow the applicable label and to comply with all federal, state, and local laws and regulations relating to the use of such pesticide product. Before using any pesticide product, be sure it is registered for use in your state and locality.

Not applying a pesticide in accordance with the stipulations specified on the label is not only a violation of federal and state law but will render this Private Lands Agreement null and void.

When applying a pesticide it is necessary to fill out a Pesticide Usage Reporting Form [to be provided by the Service Project Officer] upon completion of the project. The completed form should be submitted with all pertinent invoices for reimbursement purposes. Failure to submit the completed form could result in the delay of reimbursement of funds.

AGREED AND ACCEPTED:

Cooperator

Date

NOXIOUS/INVASIVE WEED Treatment Monitoring Form

Name: _____ Date: _____

General location: _____ Site #: _____

Photo # or name: _____

Species treated: (Circle one) Russian Knapweed, Malta Starthistle,
Yellow Starthistle, African Rue, Onionweed

Property ownership or responsibility (check all that apply)

- Private County
 DOT State
 BLM USFS
 Other: _____

Land type (check all that apply)

- Rangeland
 Cropland (current crop: _____)
 Abandoned Cropland
 Roadways
 River or Stream bottom
 Residential
 Town
 Other _____

Treatment Date: _____

Treatment Used: _____

Number of acres treated: _____

Specimen Label



Milestone®

Specialty Herbicide

®Trademark of Dow AgroSciences LLC

- **For control of susceptible weeds and certain woody plants, including invasive and noxious weeds, on rangeland, permanent grass pastures (including grasses grown for hay), Conservation Reserve Program (CRP) acres, non-cropland areas (such as roadsides, non-irrigation ditch banks, natural areas (such as wildlife management areas, wildlife openings, wildlife habitats, recreation areas, campgrounds, trailheads and trails), and grazed areas in and around these sites.**

Not For Sale, Distribution, or Use in New York State.

GROUP	4	HERBICIDE
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Active Ingredient:

Triisopropanolammonium salt of 2-pyridine carboxylic acid, 4-amino-3,6-dichloro-	40.6%
Other Ingredients	59.4%
Total.....	100.0%

Acid Equivalent: aminopyralid (2-pyridine carboxylic acid, 4-amino-3,6-dichloro-) - 21.1% - 2 lb/gal

Container Use Directions

<p>1 - Tip</p>  <p>Tilt container to angle as shown and fill head to desired amount - use vertical scale for measuring. Container should be closed.</p>	<p>2 - Level</p>  <p>Hold container up-right and check the amount for accuracy. Add or subtract as needed, using pour-back scale as guide.</p>	<p>3 - Dispense</p>  <p>Remove cap on head and pour into sprayer or other devices. No fluid will pour from the main container. Replace cap for storage in sealed condition.</p>
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EPA Reg. No. 62719-519

Keep Out of Reach of Children

CAUTION

Precautionary Statements

Hazard to Humans and Domestic Animals

Causes Moderate Eye Irritation

Avoid contact with eyes or clothing.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

First Aid

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Environmental Hazards

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies elsewhere on this label. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994. If you wish to obtain additional product information, visit our web site at www.dowagro.com.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

It is permissible to treat non-irrigation ditch banks, seasonally dry wetlands (such as flood plains, deltas, marshes, swamps, or bogs) and transitional areas between upland and lowland sites. Milestone can be used to the waters edge. Do not apply directly to water and take precautions to minimize spray drift onto water.

Resistance Management Guidelines

- Development of plant populations resistant to this herbicide mode of action is usually not a problem on rangeland, permanent grass pastures, Conservation Reserve Program (CRP), or non-cropland sites since these sites receive infrequent pesticide applications.
- In croplands, use an effective integrated pest management (IPM) program, integrating tillage or other mechanical methods, crop rotation or other cultural control methods into weed control programs whenever practical.
- Similar looking biotypes of a given weed species occurring in a treated area may vary in their susceptibility to a herbicide. Application of a herbicide below its labeled rate may allow more tolerant weeds to survive and a shift to more tolerant biotypes within the treated area.
- Where identified, spreading of resistant weeds to other fields may be prevented by cleaning harvesting and tillage equipment before moving to other areas and by planting weed-free seed.
- Contact your extension specialist, certified crop consultant, or Dow AgroSciences representative for the latest resistance management information.

Use Precautions and Restrictions

Maximum Application Rate: On all labeled use sites do not broadcast apply more than 7 fl oz per acre of Milestone per year. The total amount of Milestone applied broadcast, as a re-treatment, and/or spot treatment cannot exceed 7 fl oz per acre per year. Spot treatments may be applied at an equivalent broadcast rate of up to 0.22 lb acid equivalent (14 fl oz of Milestone) per acre per annual growing season; however, not more than 50% of an acre may be treated at that rate. Do not apply more than a total of 0.11 lb acid equivalent (7 fl oz per acre of Milestone per annual growing season as a result of broadcast, spot or repeat applications.

- **Avoiding Injury to Non-Target Plants:** Do not aerially apply Milestone within 50 feet of a border downwind (in the direction of wind movement), or allow spray drift to come in contact with, any broadleaf crop or other desirable broadleaf plants, including, but not limited to, alfalfa, cotton, dry beans, flowers, grapes, lettuce, potatoes, radishes, soybeans, sugar beets, sunflowers, tobacco, tomatoes or other broadleaf or vegetable crop, fruit trees, ornamental plants, or soil where sensitive crops are growing or will be planted. Avoid application under conditions that may allow spray drift because very small quantities of spray may seriously injure susceptible crops. Read and consider the "Precautions for Avoiding Spray Drift and Spray Drift Advisory" at the end of this label to help minimize the potential for spray drift.
- **Milestone is highly active against many broadleaf plant species.** Do not use this product on areas where loss of broadleaf plants, including legumes, cannot be tolerated.
- **Chemigation:** Do not apply this product through any type of irrigation system.
- **Do not contaminate water intended for irrigation or domestic purposes.** Do not treat inside banks or bottoms of irrigation ditches, either dry or containing water, or other channels that carry water that may be used for irrigation or domestic purposes.
- Milestone should not be applied on residential or commercial lawns or ornamental plantings.

- Trees adjacent to or in a treated can occasionally be affected by root uptake of Milestone. Do not apply Milestone within the root zone of desirable trees unless such injury can be tolerated. Use special caution near roses, and leguminous trees such as locusts, redbud, mimosa, and caragana.
- **Seeding grasses:**
 - **Preemergence:** Milestone may be applied in the spring or early summer, depending on the target weed species, and grass planted in the fall when conditions are favorable for grass establishment.
 - **Postemergence:** During the season of establishment, Milestone should be applied only after perennial grasses are well established (have developed a good secondary root system and show good vigor. Most perennial grasses are tolerant to Milestone at this stage of development. Milestone may suppress certain established grasses, such as smooth brome grass (*Bromus inermis*), especially when plants are stressed by adverse environmental conditions. Plants should recover from this transient suppression with the onset of environmental conditions favorable to grass growth and upon release from weed competition.
- **Seeding Legumes:** Do not plant forage legumes until a soil bioassay has been conducted to determine if aminopyralid concentration remaining in the soil will adversely affect the legume establishment.
- **Grazing and Haying Restrictions:** There are no restrictions on grazing or grass hay harvest following application of Milestone at labeled rates. Cutting hay too soon after spraying weeds will reduce weed control. Wait 14 days after herbicide application to cut grass hay to allow herbicide to work. Do not transfer grazing animals from areas treated with Milestone to areas where sensitive broadleaf crops occur without first allowing 3 days of grazing on an untreated pasture. Otherwise, urine and manure may contain enough aminopyralid to cause injury to sensitive broadleaf plants.
- **Aminopyralid in Plant Residues or Manure:**
 - ◆ Do not use aminopyralid-treated plant residues, including hay or straw from treated areas, or manure from animals that have grazed forage or eaten hay harvested from treated areas within the previous 3 days, in compost or mulch that will be applied to areas where commercially grown mushrooms or susceptible broadleaf plants may be grown.
 - ◆ Do not spread manure from animals that have grazed or consumed forage or eaten hay from treated areas within the previous 3 days on land used for growing susceptible broadleaf crops.
 - ◆ Manure from animals that have grazed forage or eaten hay harvested from aminopyralid-treated areas within the previous 3 days may only be used on pasture grasses, grass grown for seed, and wheat.
 - ◆ Do not plant a broadleaf crop in fields treated in the previous year with manure from animals that have grazed forage or eaten hay harvested from aminopyralid-treated areas until an adequately sensitive field bioassay is conducted to determine that the aminopyralid concentration in the soil is at level that is not injurious to the crop to be planted.
 - ◆ To promote herbicide decomposition, plant residues should be evenly incorporated in the surface soil or burned. Breakdown of aminopyralid in plant residues or manure is more rapid under warm, moist soil conditions and may be enhanced by supplemental irrigation.

Table 2: Application rates in the table below are based on treating an area of 1000 sq ft. An area of 1000 sq ft is about 10.5 by 10.5 yards in size. Mix the amount of Milestone (fl oz or milliliters) corresponding to the desired broadcast rate in 0.5 to 2.5 gallons of water, depending upon the spray volume required to treat 1000 sq ft. A delivery volume of 0.5 to 2.5 gallons per 1000 sq ft is equivalent to 22 to 109 gallons per acre.

Table 2: Amount of Milestone per 1000 sq ft to Equal Broadcast Rate

Amount of Milestone per 1000 sq ft to Equal Broadcast Rate		
Broadcast Rate (fl oz/acre)	Amount of Milestone per 1000 sq ft	
	(fl oz)	(Milliliters)
3	0.069	2
5	0.115	3.4
7	0.161	4.8

Note: 1 fluid ounce (fl oz) = 29.6 milliliters (mL) = 2 tablespoons = 6 teaspoons

To calculate the amount of Milestone for areas larger than 1000 sq ft: Multiply the table value (fl oz or milliliters) by the area to be treated in "thousands" of square feet. For example, if the area to be treated is 3500 sq ft, multiply the table value by 3.5 (3500 sq ft divided by 1000 sq ft = 3.5).

Mixing Instructions

Mixing with Water: To prepare the spray, add about half the required amount of water in the spray tank. Then, with agitation, add the specified amount of Milestone and other registered tank mix herbicides. Finally, with continued agitation, add the rest of the water and additives such as surfactants or drift control and deposition aids.

Addition of Surfactants or Adjuvants on All Labeled Use Sites: The addition of a high quality non-ionic surfactant (of at least 80% active ingredient) at 0.25 to 0.5 % volume per volume (1 to 2 quarts per 100 gallons of spray) is recommended to enhance herbicide activity under adverse environmental conditions (such as, high temperature, low relative humidity, drought conditions, dusty plant surfaces) or when weeds are heavily pubescent or more mature.

Tank Mixing with Other Herbicides: Milestone at rates of up to 7 fl oz per acre may be mixed with labeled rates of other herbicides registered for application on all labeled use sites. Milestone may be applied in tank mix combination with labeled rates of other herbicides provided: (1) the tank mix product is labeled for the timing and method of application for the use site to be treated and (2) mixing is not prohibited by the label of the registered tank mixed products, and (3) that the tank mix combination is physically compatible (see tank mix compatibility testing below). When tank mixing, use only in accordance with the restrictions, precautions and limitations on the respective product labels.

- Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels.
- Do not exceed specified application rates. If products containing the same active ingredient are mixed, do not exceed the maximum allowable active ingredient use rates.
- For direct injection or other spray equipment where the product formulations will be mixed in undiluted form, special care should be taken to ensure tank mix compatibility.
- Always perform a jar test to ensure the compatibility of products to be used in tank mixture.

Tank Mix Compatibility Testing: Perform a jar test prior to mixing in a spray tank to ensure compatibility of Milestone and other pesticides or carriers. Use a clear glass jar with lid and mix ingredients in the same order and proportions as will be used in the spray tank. The mixture is compatible if the materials mix readily when the jar is inverted several times. The mixture should remain stable after standing for 1/2 hour or, if separation occurs, should readily remix if agitated. An incompatible mixture is indicated by separation into distinct layers that do not readily remix when agitated and/or the presence of flakes, precipitates, gels, or heavy oily film in the jar. Use of an appropriate compatibility aid may resolve mix incompatibility. If the mixture is incompatible do not use that tank mix partner in tank mixtures.

Mixing with Sprayable Liquid Fertilizer Solutions: Milestone is usually compatible with liquid fertilizer solutions. It is anticipated that Milestone will not require a compatibility agent for mixing with fertilizers; however, a compatibility test (jar test) should be made prior to mixing. Jar tests are particularly important when a new batch of fertilizer or pesticide is used, when water sources change, or when tank mixture ingredients or concentrations are changed. Compatibility may be determined by mixing the spray components in the desired order and proportions in a clear glass jar before large scale mixing of spray components in the spray tank.

Note: The lower the temperature of the liquid fertilizer, the greater the likelihood of mixing problems. Use of a compatibility aid may be required if Milestone is mixed with a 2,4-D-containing product and liquid fertilizer. **Mixing Milestone and 2,4-D in N-P or N-P-K liquid fertilizer solutions is more difficult than mixing with straight nitrogen fertilizer and should not be attempted without first conducting a successful compatibility jar test.** Agitation in the spray tank must be vigorous to be comparable with jar test agitation. Apply the spray mixture the same day it is prepared while maintaining continuous agitation. Rinse the spray tank thoroughly after use.

Note: Foliar-applied liquid fertilizers themselves can cause yellowing of the foliage of forage grasses and other vegetation.

Use Rates and Timing

Milestone may be applied post emergence as a broadcast spray or as a spot application to control weeds including, but not limited to, those listed on this label. When a rate range is given use the higher rate to control weeds at advanced growth stages, or under less than favorable growing conditions, or for longer residual control. Best results are obtained when spray volume is sufficient to provide uniform coverage of treated weeds. For optimum uptake and translocation of Milestone, avoid mowing, haying, shredding, burning or soil disturbance in treated areas for at least 14 days following application.

Milestone also provides preemergence control of emerging seedlings of susceptible weeds, and re-growth of certain perennial weeds following application. Preventing establishment of weeds will depend upon application rate, season of application, and environmental conditions after application.

Milestone can provide long-term control of susceptible weeds. The length of control is dependent upon the application rate, condition and growth stage of target weeds, environmental conditions at and following application, and the density and vigor of competing desirable vegetation. Long-term weed control is most effective where grass vegetation is allowed to recover from overgrazing, drought, etc., and compete with weeds.

Common Name	Scientific Name	Rate Range (fl oz/acre)	Life Cycle	Plant Family
medic, black*	<i>Medicago lupulina</i>	4 to 7	perennial	Fabaceae
mimosa	<i>Albizia julibrissin</i>	7	woody perennial	Fabaceae
mullein (5)	<i>Verbascum spp.</i>	7	biennial	Scrophulariaceae
ox tongue, bristly	<i>Picris echioides</i>	5 to 7	biennial	Asteraceae
ragweed, common**	<i>Ambrosia artemisiifolia</i>	3 to 5	annual	Asteraceae
ragweed, western	<i>Ambrosia psilostachya</i>	4 to 7	perennial	Asteraceae
ragwort, tansy*, **	<i>Senecio jacobaea</i>	5 to 7	perennial	Asteraceae
redbud	<i>Cercis Canadensis</i>	7	woody perennial	Fabaceae
rush skeletonweed	<i>Chondrilla juncea</i>	5 to 7	perennial	Asteraceae
smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	3 to 5	annual	Polygonaceae
sneezeweed, bitter	<i>Helenium amarum</i>	4 to 7	annual	Asteraceae
soda apple, tropical (6)*, **	<i>Solanum viarum</i>	5 to 7	perennial	Solanaceae
sowthistle, perennial*, **	<i>Sonchus arvensis</i>	3 to 5	perennial	Asteraceae
spanishneedles	<i>Bidens bipinnata</i>	4 to 7	annual	Asteraceae
St. Johnswort, common	<i>Hypericum perforatum</i>	5 to 7	perennial	Clusiaceae
star-thistle, Malta (7)*, **	<i>Centaurea melitensis</i>	3 to 5	annual	Asteraceae
starthistle, purple (7)*, **	<i>Centaurea calcitrapa</i>	3 to 5	biennial	Asteraceae
star thistle, yellow (7)*, **	<i>Centaurea solstitialis</i>	3 to 5	annual	Asteraceae
sunflower, common	<i>Helianthus annuus</i>	4 to 7	annual	Asteraceae
teasel	<i>Dipsacus spp.</i>	4 to 7	biennial	Dipsacaceae
thistle, artichoke	<i>Cynara cardunculus</i>	5 to 7	perennial	Asteraceae
thistle, bull (8)*, **	<i>Cirsium vulgare</i>	3 to 5	biennial	Asteraceae
thistle, Canada (9)*, **	<i>Cirsium arvense</i>	5 to 7	perennial	Asteraceae
thistle, woolly distaff	<i>Carthamus lanatus</i>	4 to 7	annual	Asteraceae
thistle, Italian	<i>Carduus pycnocephalus</i>	7	annual	Asteraceae
thistle, musk (8)*, **	<i>Carduus nutans</i>	3 to 5	biennial	Asteraceae
thistle, plumeless (8)*, **	<i>Carduus acanthoides</i>	3 to 5	biennial	Asteraceae
thistle, Scotch*, **	<i>Onopordum acanthium</i>	5 to 7	biennial	Asteraceae
vetch	<i>Vicia spp.</i>	3 to 7	perennial	Fabaceae
wisteria	<i>Wisteria brachybotris</i>	7	woody perennial	Fabaceae
wormwood, absinth(10)*, **	<i>Artemisia absinthium</i>	6 to 7	perennial	Asteraceae
yarrow, common	<i>Achillea millefolium</i>	7	perennial	Asteraceae

*Invasive plants are introduced species that are indicated to be invasive in the USDA-NRCS, PLANTS Database (<http://plants.usda.gov/index.html>).

**Plants designated as noxious weeds in at least one state (PLANTS Database, USDA-NRCS, <http://plants.usda.gov/index.html>).

- (1) **Sulfur cinquefoil or oxeye daisy:** Apply Milestone at 4 to 6 fl oz per acre to plants in the prebud stage of development.
- (2) **Orange or yellow hawkweeds:** Apply Milestone at 4 to 7 fl oz per acre to plants in the bolting stage of development.
- (3) **Diffuse and spotted knapweeds:** Apply Milestone at 5 to 7 fl oz per acre when plants are actively growing with the optimum time of application occurring from rosette to the bolting stages of development or in the fall. Plants will be controlled by mid-summer and fall applications even though plants may not show any changes in form or stature the year of application.
- (4) **Russian knapweed:** Apply Milestone at 5 to 7 fl oz per acre to plants in the spring and summer to plants from early bud to flowering stage and to dormant plants in the fall.
- (5) **Mullein:** Apply to the rosette stage
- (6) **Tropical soda apple:** Apply Milestone at 5 to 7 fl oz per acre at any growth stage, but application by flowering will reduce seed production potential.
- (7) **Malta, purple, and Yellow starthistle:** Apply Milestone at 3 to 5 fl oz per acre to plants at the rosette through bolting growth stages.
- (8) **Bull, musk, and plumeless thistles:** Apply Milestone at 3 to 5 fl oz per acre in the spring and early summer to rosette or bolting plants or in the fall to seedlings and rosettes. Apply at 4 to 5 fl oz when plants are at the late bolt through early flowering growth stages. 2,4-D at 1 lb ae/acre should be tank-mixed with Milestone starting at the late bud stages
- (9) **Canada thistle:** Apply Milestone at 5 to 7 fl oz per acre either in the spring to plants in the prebud to early bud growth stage – the goal is to insure all plants have emerged. Applications are also effective in the fall before a killing frost.
- (10) **Absinth wormwood:** Apply 6 to 7 fl oz per acre before wormwood is 12 inches tall. When applying by air on CRP, coverage is important and a minimum of 3 GPA is specified. Remove old duff and litter by fire or mowing for best results

Temperature Inversions: Applications should not occur during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. Otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies.

Warranty Disclaimer

Dow AgroSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. Dow AgroSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Dow AgroSciences or the seller. All such risks shall be assumed by buyer.

Limitation of Remedies

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Dow AgroSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

Dow AgroSciences shall not be liable for losses or damages resulting from handling or use of this product unless Dow AgroSciences is promptly notified of such loss or damage in writing. In no case shall Dow AgroSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use, and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Dow AgroSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

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Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

Label Code: D02-879-002

Replaces Label: D02-879-001

LOES Number: 010-02112

EPA accepted 01-26-07

Revisions:

1. Updated Storage and Disposal
2. Added the following to the marketing claims: a) and certain woody plants; b) including grasses grown for hay
3. Use Precautions and Restrictions, added the following: a) overall Maximum Application Rate section; b) restrictions to residential or commercial lawns or ornamental plantings; c) precautions for adjacent trees; d) precautions for seeding grasses (preemergence, postemergence); e) grazing and haying restrictions; and deleted Crop Rotation
4. Aminopyralid in Plant Residues or Manure section: moved Field Bioassay Instructions and Sprayer Clean-Out instructions here
5. Application Method: All sections revised; added Table 1 for sprayer outputs
6. Moved Mixing Instructions section below Application Method
7. Added a general Use Rates and Timing to combine individual sections into one section, and removed the individual sections for Rangeland, Permatet Grass Pastures and CRP, Non-Cropland Areas, and Broadleaf Weed Management Practices
8. Weeds Controlled List: a) addition of the following pests: bedstraw, beggarticks, camelthorn, scentless chamomile, chickweed, clover, crownvetch, knapweeds, black locust, honey locust, mimosa, mullein, bristly oxtongue, redbud, rush skeletonweed, spanishneedles, common St. Johnswort, Malta star thistle, purple starthistle, artichoke thistle, Woolly distaff thistle, Italian thistle, Scotch thistle, vetch, wisteria; b) revised rate range for fleabane, orange hawkweed, Russian knapweed; c) revised footnote numbering for several pests; d) added footnote 5 for mullein and 10 for absinth wormwood

Table 1: Amount of Milestone™ herbicide (in cc) to mix in **1 gallon of water**

Milestone amount (in cc) to mix for various application rates			
GPA	5 fl oz/a	7 fl oz/a	14 fl oz/a
20	7.5	10.5	21.0
30	5.0	7.0	14.0
40	3.8	5.3	10.5
50	3.0	4.2	8.4
60	2.5	3.5	7.0
70	2.1	3.0	6.0
80	1.9	2.6	5.3
90	1.7	2.3	4.7
100	1.5	2.1	4.2

Conversions:

- 1 tsp = 5 cc
- 30 cc = 1 fluid ounce
- 1 cc = 1 ml
- 3 tsp = 1 Tbsp
- 2 Tbsp = 1 fluid ounce



Use a syringe to measure cc

Table 2: Amount of Milestone™ herbicide (in fluid ounces) to mix in **20 gallons of water**

Milestone amount (in fluid ounces) to mix for various application rates			
GPA	5 fl oz/a	7 fl oz/a	14 fl oz/a
20	5.0	7.0	14.0
30	3.3	4.7	9.3
40	2.5	3.5	7.0
50	2.0	2.8	5.6
60	1.7	2.3	4.7
70	1.4	2.0	4.0
80	1.3	1.8	3.5
90	1.1	1.6	3.1
100	1.0	1.4	2.8

Conversions:

- 8 fluid ounces = 1 cup
- 2 cups = 1 pint
- 2 pints = 1 quart



Quart has measuring spout for fluid ounces. See directions on container.

Table 3: Amount of Milestone™ herbicide (in fluid ounces) to mix in **100 gallons of water**

Milestone amount (in fluid ounces) to mix for various application rates			
GPA	5 fl oz/a	7 fl oz/a	14 fl oz/a
20	25.0	35.0	70.0
30	16.7	23.3	46.7
40	12.5	17.5	35.0
50	10.0	14.0	28.0
60	8.3	11.7	23.3
70	7.1	10.0	20.0
80	6.3	8.8	17.5
90	5.6	7.8	15.6
100	5.0	7.0	14.0

Conversions:

- 16 fluid ounces = 1 pint
- 32 fluid ounces = 1 quart

How much Milestone herbicide do I put in my 3 gallon tank?

For example, you went through the calibration procedure and applied 40 fluid ounces in the measured area. Therefore, your spray volume is 40 GPA. Look at Table 1 above for the amount to mix in 1 gallon of water. Assume you want to apply 5 fluid ounces of Milestone per acre; the amount listed for your volume (GPA) and this application rate is 3.8 cc. Take this times 3 for your 3 gallon tank and you would need to measure 11.4 cc (with a syringe) for your 3 gallon mix. Or, since there are 5 cc in a teaspoon, this would be 2 1/3 teaspoons in your mix. It doesn't take much!



Escort Check-Out Sheet

- Attended Safety and Calibration Training
- Copy of Escort Label
- Gloves
- Eye Protection
- Sprayer
- Calibration Sheet
- Herbicide Quantity: _____
- Treatment Monitoring Form
- Escort Use Agreement Form

Signature: _____

Date: _____

Escort Use Agreement for Onionweed

I, _____, by participating in the noxious weed treatment program, and accepting the Escort herbicide, will agree to and abide by the following rules and requirements:

1. Read the label completely and carefully.
2. Use the herbicide in accordance to the label. It is illegal to use an herbicide in any way inconsistent with the label.
3. Do not use higher dosages, higher concentrations, or more frequent applications than recommended on the label.
4. Follow all directions for use, including directions concerning safety, mixing, dilution, storage, and disposal.
5. You must wear protective gloves when using Escort.
6. Treat only Onionweed and no other weeds.
7. Store provided chemical and equipment in a safe, secure area while you have them in your possession. You are responsible and liable for them and anything that may happen while they are in your possession.
8. Thoroughly clean all equipment and return it with any unused chemical, in the original container you received it in, as soon as you have completed your treatment. Do not hold on to the chemical or equipment as someone else may be waiting to use it.
9. I understand that by participating in the Invasive Weed Treatment Program, I hold myself liable for my own actions. I will not hold any individual, entity, or government agency responsible or liable for any harm that may come from my participation.
Initial: _____
10. Fill out monitoring form and return it when you return the equipment and/or unused Escort. Provide access, with notice, to Coronado Resource Conservation and Development, Natural Resource Conservation Service, and University of Arizona Cooperative Extension employees for educational and record keeping purposes.

Signed, _____ Date, _____

Witness, _____ Date, _____

EXHIBIT A
Wildlife Habitat Agreement
Project Plan and Costs Estimated

Invasive Species Control in Desert Grasslands and Cienegas – Arizona (Coronado RC&D)

Planned Work:

Describe the work being done on the nonfederal landowner's property.

Project Summary	Restoration	Enhancement	Establishment	Total
Upland Acres:	_____	_____	_____	_____
Wetland Acres:	_____	_____	_____	_____
Riparian Miles:	_____	_____	_____	_____
Stream Miles:	_____	_____	_____	_____
Number of Structures:	_____	_____	_____	_____
Invasive Acres:	_____	_____	_____	_____

II. Contributions of Parties:

A. Coronado Resource Conservation & Development Area (RC&D):

1. Agrees to cost-share in practices specified in this agreement, thus enhancing the value of the area for resident and migratory wildlife species.
2. Agrees to inspect the work periodically during construction, if necessary, and provide technical assistance regarding management and maintenance of the works of improvement.
3. Agrees to annually evaluate the management techniques and provide guidance regarding their success and modify the management guidelines as necessary to ensure maximum benefits to wildlife.

B. Participating Landowner

1. Agrees to cost-share in the works of improvement for the property. Agrees to obtain the services of a competent contractor to ensure the practices are completed in a timely manner and meet the specifications of this agreement.
2. Agrees to maintain the site to the maximum benefit of wildlife for the term of this agreement.
3. Agrees to not begin the project until RC&D provides notice that all compliance documents are complete.
4. Agrees to obtain the necessary permits needed for project implementation. This includes submitting the Land Treatment Application to the Arizona State Land Department.
5. Agrees to provide annual maintenance of works completed to ensure that they are in good condition and function as agreed upon for the life of this agreement.

EXHIBIT D
Pesticide Product Provision

I. AUTHORITY:

This Pesticide Product Provision, which serves as an addendum to and is hereby incorporated into the attached Private Lands Agreement, is provided by the U.S. Fish and Wildlife Service (Service) to _____, private lands cooperator, pursuant to authority contained the Department of the Interior Departmental Manual, Part 517 (Pesticide Use Policy), and U.S. Fish and Wildlife Service Administrative Manual, 30 AM 12 (Pest Management Policy and Responsibilities).

II. PROVISION:

It is the responsibility of all persons using a pesticide product to read and follow the applicable label and to comply with all federal, state, and local laws and regulations relating to the use of such pesticide product. Before using any pesticide product, be sure it is registered for use in your state and locality.

Not applying a pesticide in accordance with the stipulations specified on the label is not only a violation of federal and state law but will render this Private Lands Agreement null and void.

When applying a pesticide it is necessary to fill out a Pesticide Usage Reporting Form [to be provided by the Service Project Officer] upon completion of the project. The completed form should be submitted with all pertinent invoices for reimbursement purposes. Failure to submit the completed form could result in the delay of reimbursement of funds.

AGREED AND ACCEPTED:

Cooperator

Date

NOXIOUS/INVASIVE WEED Treatment Monitoring Form

Name: _____ Date: _____

General location: _____ Site #: _____

Photo # or name: _____

Species treated: (Circle one) Russian Knapweed, Malta Starthistle,
Yellow Starthistle, African Rue, Onionweed

Property ownership or responsibility (check all that apply)

- Private County
 DOT State
 BLM USFS
 Other: _____

Land type (check all that apply)

- Rangeland
 Cropland (current crop: _____)
 Abandoned Cropland
 Roadways
 River or Stream bottom
 Residential
 Town
 Other _____

Treatment Date: _____

Treatment Used: _____

Number of acres treated: _____



DuPont™ Escort® XP

herbicide

IMPORTANT

DO NOT USE ON FOOD OR FEED CROPS EXCEPT AS SPECIFIED BY THIS LABEL OR SUPPLEMENTAL LABELING. Injury to or loss of desirable trees or other plants may result if the precautions listed below are not followed.

- Do not apply DuPont™ ESCORT® XP herbicide (except as directed), or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend or in locations where the product may be washed or moved into contact with their roots.
- Do not use on lawns, walks, driveways, tennis courts, or similar areas.
- Prevent drift of spray to desirable plants.
- Do not contaminate any body of water, including irrigation water.
- Keep from contact with fertilizers, insecticides, fungicides and seeds.

Low rates of ESCORT® XP can kill or severely injure most crops. Following an ESCORT® XP application, the use of spray equipment to apply other pesticides to crops on which ESCORT® XP is not registered may result in their damage. The most effective way to reduce this crop damage potential is to use dedicated mixing and application equipment.

GENERAL INFORMATION

ESCORT® XP herbicide is a dispersible granule that is mixed in water and applied as a spray by ground or aerial application.

ESCORT® XP is registered for the control of annual and perennial weeds and unwanted woody plants on private, public and military lands, on rights-of-way, industrial sites, non-crop areas, ditchbanks of dry drainage ditches, certain types of unimproved turf grass, and conifer and hardwood plantations, including grazed areas on these sites. Do not use on irrigation ditches.

ESCORT® XP controls weeds and woody plants primarily by postemergent activity. Although ESCORT® XP has preemergence activity, best results are generally obtained when ESCORT® XP is applied to foliage after emergence or dormancy break. Generally, for the control of annual weeds, ESCORT® XP provides the best results when applied to young, actively growing weeds. For the control of perennial weeds, applications made at the bud/bloom stage or while the target weeds are in the fall rosette stage may provide the best results. The use rate depends upon the weed species and size at the time of application.

The degree and duration of control may depend on the following:

- weed spectrum and infestation intensity
- weed size at application
- environmental conditions at and following treatment
- soil pH, soil moisture, and soil organic matter.

ESCORT® XP may be applied on conifer and hardwood plantations, and non-crop sites that contain areas of temporary surface water caused by the collection of water between planting beds, in equipment ruts, or in other

depressions created by management activities. It is permissible to treat intermittently flooded low lying sites, seasonally dry flood plains and transitional areas between upland and lowland sites when no water is present. It is also permissible to treat marshes, swamps and bogs after water has receded as well as seasonally dry flood deltas. DO NOT make applications to natural or man-made bodies of water such as lakes, reservoirs, ponds, streams and canals.

ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY

ESCORT® XP is absorbed primarily through the foliage of plants, and by the roots to a lesser degree. Plant cell division is generally inhibited in sensitive plants within a few hours following uptake. Two to 4 weeks after application, leaf growth slows followed by discoloration and tissue death. The final effects on annual weeds are evident about 4 to 6 weeks after application. The ultimate effect on perennial weeds and woody plants occurs in the growing season following application.

Warm, moist conditions following treatment promote the activity of ESCORT® XP, while cold, dry conditions may reduce or delay activity. Weeds and brush hardened off by cold weather or drought stress may not be controlled.

The use of a surfactant is recommended to enhance the control of susceptible plants, except where noted. Apply at a minimum rate (concentration) of 1/4% volume/volume (1 quart per 100 gallons of spray solution), or at the manufacturer's recommended rate. Use only EPA approved surfactants containing at least 80% active ingredient. Certain types of surfactants, such as those incorporating acetic acid (i.e. LI- 700), may not be compatible with ESCORT® XP and may result in decreased performance. Certain surfactants may not be suitable for use on desirable plants, such as turf and conifers, listed on this label. Consult the surfactant manufacturer's label for appropriate uses. Weed and brush control may be reduced if rainfall occurs soon after application.

RESISTANCE

When herbicides that affect the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field. Adequate control of these resistant weed biotypes cannot be expected. If weed control is unsatisfactory, it may be necessary to retreat the problem area using a product affecting a different site of action.

To better manage herbicide resistance through delaying the proliferation and possible dominance of herbicide resistant weed biotypes, it may be necessary to change cultural practices within and between crop seasons such as using a combination of tillage, retreatment, tank-mix partners and/or sequential herbicide applications that have a different site of action. Weed escapes that are allowed to go to seed will promote the spread of resistant biotypes.

It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes. Consult your agricultural

Without prior experience, it is recommended that other species be planted on a small scale to determine selectivity before large-scale plantings are made as unacceptable injury may occur. DuPont will not assume responsibility for injury to any conifer species not listed on this label.

Tank Mix Combinations—

For broader spectrum control, the following products may be used in combination with DuPont™ ESCORT® XP.

Glyphosate (4 pound active per gallon)

Tank mix 1 to 2 ounces of ESCORT® XP with 2 to 10 quarts of glyphosate per acre. Refer to the product container for a list of species controlled.

Imazapyr (4 pound active per gallon)

Tank mix 1 to 2 ounces of ESCORT® XP with 10 to 24 fluid ounces of imazapyr per acre. Loblolly and slash pines may be transplanted the planting season following application. This combination controls ash, black gum, cherry, hawthorn, honeysuckle, hophornbeam, persimmon, oaks (red, white and water), sassafras, sweetgum, Vaccinium species, and suppresses blackberry, dogwood, elms, myrtle dahoon, hickories, and red maple.

Glyphosate (4 pound active per gallon) + Imazapyr (4 pound active per gallon)

Tank mix 1/2 to 1 ounce of ESCORT® XP with 16 to 64 fluid ounces of glyphosate and 10 to 12 fluid ounces of imazapyr per acre. Slash and loblolly pines may be transplanted the planting season following application. This combination controls cherry, dogwood, elms, oaks (red and water), persimmon, sassafras, sweetgum and suppresses hickory.

DuPont™ VELPAR® L or VELPAR® DF

Tank mix 1 to 2 ounces of ESCORT® XP per acre with VELPAR® L or VELPAR® DF at the rates specified on the container for various soil textures. Loblolly and slash pines may be transplanted the planting season following application. Refer to the product container for a list of species controlled.

DuPont™ OUST® EXTRA

Tank mix 1/2 to 1 1/2 ounces of ESCORT® XP with 2 to 3 ounces of OUST® EXTRA per acre for herbaceous weed control. Refer to the product container and the "Weeds Controlled" section of this label for a listing of the weeds controlled. Loblolly and slash pines may be transplanted the planting season following application. Tank mix 2 ounces of ESCORT® XP with 3 ounces of OUST® EXTRA per acre for herbaceous weed control and early spring suppression of bull thistle and Canada thistle in the Coast Rangeland and western slope of the Cascade Mountains. Douglas fir may be transplanted at least 90 days following application.

Release--Hardwood Control and Suppression

ESCORT® XP may be used for application over the top of established slash and loblolly pine to control the species listed in "Weeds Controlled" and "Brush Species Controlled" section of this label. Apply 1 to 4 ounces per acre to control the species indicated, including kudzu.

Tank Mix Combinations—

For broader spectrum control the following products may be used in combination with ESCORT® XP.

Imazapyr (4 pound active per gallon)

Tank mix 1 to 2 ounces of ESCORT® XP with 8 to 16 fluid ounces of imazapyr per acre for application to loblolly pine. Refer to the imazapyr label regarding the use of surfactants and the appropriate application timing with respect to the age and development stage of the pines. This combination controls ash, black gum, cherry, hawthorn, honeysuckle, hophornbeam, oaks (red, white and water), sassafras, sweetgum, Vaccinium species, and suppresses blackberry, dogwood, elms, myrtle dahoon, hickories, persimmon, and red maple.

VELPAR® L or VELPAR® DF

Tank mix 1 to 2 ounces of ESCORT® XP with VELPAR® L or VELPAR® DF at the rates specified on the container for various soil textures. This combination may be applied to loblolly and slash pines.

Release--Herbaceous Weed Control

ESCORT® XP may be applied to transplanted loblolly and slash pine for the control of herbaceous competition. Consult the "Weeds Controlled" for a listing of the susceptible species and application rates. Best results are obtained when ESCORT® XP is applied just before weed emergence until shortly after weed emergence.

Tank Mix Combinations—

For broader spectrum control the following products may be used in combination with ESCORT® XP.

Imazapyr (4 pound active per gallon)

Tank mix 1/2 to 1 ounce of ESCORT® XP with 4 fluid ounces of imazapyr per acre. The tank mix may be used on loblolly pine.

VELPAR® L or VELPAR® DF

Tank mix 1/2 to 1 ounce of ESCORT® XP with VELPAR® L or VELPAR® DF at the rates specified on the container for various soil textures. This combination may be applied to loblolly and slash pines.

Release - Directed Spray in Conifers

Western US

To release conifers from competing brush species, such as, blackberry, salmonberry, snowberry, thimbleberry and wild roses, mix 2 to 4 ounces of ESCORT® XP per 100 gallons of spray solution. Direct spray onto the foliage of competing brush species using a knapsack or backpack sprayer. For best results, apply any time after the brush species have reached full leaf stage but before autumn coloration. At application, the majority of the brush species should be less than six feet in height to help ensure adequate spray coverage. Thorough coverage of the target foliage is necessary to optimize results. Care should be taken to direct the ESCORT® XP spray solution away from the conifer foliage.

buffalograss, green sprangletop, indiagrass, kleingrass, lovegrasses (atherstone, sand, weeping, wilman), orchardgrass, sideoats grama, switchgrass (blackwell), wheatgrass (bluebunch, intermediate, pubescent Siberian, slender, streamband, tall, thickspike, western), and Russian wildrye are established. It may also be applied over these species in the seedling stage, except for orchardgrass and Russian wildrye.

Application Information

Apply DuPont™ ESCORT® XP at the rate of 1/10 ounce per acre for the control and suppression* of bur buttercup (testiculate), common purslane, common sunflower*, cutleaf eveningprimrose*, flixweed*, lambsquarters* (common and slimleaf), marehail*, pigweed (redroot and tumble), snow speedwell, tansymustard* and tumble mustard (Jim Hill mustard).

* Suppression is a visual reduction in weed competition (reduced population or vigor) as compared to untreated areas. Degree of suppression will vary with the size of weed and environmental conditions following treatment.

Application Timing

For established grasses, apply when weeds are in the seedling stage.

For grasses in the seedling stage, apply preplant or preemergence where the soil (seed bed) has been cultivated.

IMPORTANT PRECAUTIONS

—NATIVE GRASSES

- Grass species or varieties may differ in their response to various herbicides. If no information is available, limit the initial use of ESCORT® XP to a small area. Components in a grass seed mixture will vary in tolerance to ESCORT® XP, so the final stand may not reflect the seed ratio.
- Under certain conditions such as heavy rainfall, high pH, prolonged cold weather, or wide fluctuations in day/night temperatures prior to or soon after ESCORT® XP application, temporary discoloration and/or grass injury may occur. ESCORT® XP should not be applied to grass that is stressed by severe weather conditions, drought, low fertility, water-saturated soils, disease, or insect damage as grass injury may result. Severe winter stress, drought, disease, or insect damage before or following application also may result in grass injury.

GRASS REPLANT INTERVALS

Following an application of ESCORT® XP to non-crop areas, the treated sites may be replanted with various species of grasses at the intervals listed below.

For soils with a pH of 7.5 or less, observe the following replant intervals:

Species	Rate (ounces per acre)	Replant Interval (months)
Brome, Meadow	1/2—1	2
	1—2	3
Brome, Smooth	1/2—1	2
	1—2	4
Fescue, Alta	1/2—1	2
	1—2	4
Fescue, Red	1/2—1	2
	1—2	4
Fescue, Sheep	1/2—1	1
	1—2	4
Foxtail, Meadow	1/2—1	2
	1—2	4
Green Needlegrass	1/2—2	1
Orchardgrass	1/2—1	2
	1—2	4
Russian wildrye	1/2—1	1
	1	2
	2	3
Switchgrass	1/2—1	1
	1—2	3
Timothy	1/2—1	2
	1—2	4
Wheatgrass, Western	1/2—1	2
	1—2	3

For soils with a pH of 7.5 or greater observe the following replant intervals:

Species	Rate (ounces per acre)	Replant Interval (months)
Alkali Sacaton	1/2—1	1
	1—2	3
Bluestem, Big	1/2—2	3
Brome, Mountain	1/2—1	1
	1—2	2
Grama, Blue	1/2—2	1
Grama, Sideoats	1/2	2
	>1/2	>3
Switchgrass	1/2	2
	>1/2	>3
Wheatgrass, Thickspike	1/2—2	1
Wheatgrass, Western	1—2	2
	1/2—1	3

The specified intervals are for applications made in the Spring to early Summer. Because ESCORT® XP degradation is slowed by cold or frozen soils, applications made in the late Summer or Fall should consider the intervals as beginning in the Spring following treatment. Testing has indicated that there is considerable variation in response among the species of grasses when seeded into areas treated with ESCORT® XP. If species other than those listed above are to be planted into areas treated with ESCORT® XP, a field bioassay should be performed, or previous experience may be used, to determine the feasibility of replanting treated sites.

In no injury occurs throughout the season, larger acreage may be treated the following season.

Broadleaf forage species, such as alfalfa and clover, are highly sensitive to DuPont™ ESCORT® XP and will be severely stunted or injured by ESCORT® XP.

CROP ROTATION

Before using ESCORT® XP, carefully consider your crop rotation plans and options.

Minimum Rotational Intervals

Minimum rotation intervals* are determined by the rate of breakdown of ESCORT® XP applied. ESCORT® XP breakdown in the soil is affected by soil pH, presence of soil microorganisms, soil temperature, and soil moisture. Low soil pH, high soil temperature, and high soil moisture increase ESCORT® XP breakdown in soil, while high soil pH, low soil temperature, and low soil moisture slow ESCORT® XP breakdown.

Of these 3 factors, only soil pH remains relatively constant. Soil temperature, and to a greater extent, soil moisture, can vary significantly from year to year and from area to area.

For this reason, soil temperatures and soil moisture should be monitored regularly when considering crop rotations.

* The minimum rotation interval represents the period of time from the last application to the anticipated date of the next planting.

Soil pH Limitations

ESCORT® XP should not be used on soils having a pH above 7.9, as extended soil residual activity could extend crop rotation intervals beyond normal. Under certain conditions, ESCORT® XP could remain in the soil for 34 months or more, injuring wheat and barley. In addition, other crops planted in high-pH soils can be extremely sensitive to low concentrations of ESCORT® XP.

Checking Soil pH

Before using ESCORT® XP, determine the soil pH of the areas of intended use. To obtain a representative pH value for the test area, take several 0" to 4" samples from different areas of the field and analyze them separately. Consult local extension publications for additional information on recommended soil sampling procedures.

BIOASSAY

A field bioassay must be completed before rotating to any crop or grass species/variety not listed in the Rotation Intervals Table, or if the soil pH is not in the specified range, or if the use rate applied is not specified in the table. To conduct a field bioassay, grow test strips of the crop(s) or grass(es) you plan to grow the following year in fields previously treated with ESCORT® XP. Crop or grass response to the bioassay will indicate whether or not to rotate to the crop(s) or grass(es) grown in the test strips. If a field bioassay is planned, check with your local Agricultural dealer or DuPont representative for information detailing the field bioassay procedure.

When used as directed, there is no grazing or haying restriction for use rates of 1 2/3 ounce per acre or less. At use rates greater than 1 2/3 ounce per acre and up to 3 1/3 ounce per acre, forage grasses may be cut for hay, fodder or green forage and fed to livestock, including lactating animals, 3 days after treatment.

IMPORTANT PRECAUTIONS

- Grass species or varieties may differ in their response to various herbicides. If no information is available, limit the initial use of ESCORT® XP to a small area.
- Components in a grass seed mixture will vary in tolerance to ESCORT® XP so the final stand may not reflect the seed ratio.
- Under certain conditions such as heavy rainfall, high pH, prolonged cold weather, or wide fluctuations in day/night temperatures prior to or soon after ESCORT® XP application, temporary discoloration and/or grass injury may occur. ESCORT® XP should not be applied to grass that is stressed by severe weather conditions, drought, low fertility, water-saturated soils, disease, or insect damage as grass injury may result. Severe winter stress, drought, disease, or insect damage before or following application also may result in grass injury.
- Applications of ESCORT® XP to lands undersown with legumes may cause injury to the legumes. Legumes in a seeding mixture may be severely injured or killed following an application of ESCORT® XP.
- The control of weeds in wheel track areas may be reduced if ground applications are made when dry, dusty field conditions exist. The addition of 2,4-D or MCPA should improve weed control under these conditions.

WEEDS CONTROLLED

1/3 to 1/2 ounce per acre

Annual sowthistle	Goldenrod
Aster	Lambsquarters
Bahiagrass	Marestail/horseweed****
Beebalm	Maximillion sunflower
Bittercress	Miners lettuce
Bitter sneezeweed	Pennsylvania smartweed
Blackeyed-susan	Plains coreopsis
Blue mustard	Plantain
Bur buttercup	Redroot pigweed
Chicory	Redstem filaree
Clover	Rough fleabane
Cocklebur	Shepherd's purse
Common chickweed	Silky crazyweed (locoweed)
Common groundsel	Smallseed falseflax
Common purslane	Smooth pigweed
Common yarrow	Sweet clover
Conical catchfly	Tansymustard
Corn cockle	Treacle mustard
Cow cockle	Tumble mustard
Crown vetch	Wild carrot
Dandelion	Wild garlic
Dogfennel	Wild lettuce
False chamomile	Wild mustard
Fiddleneck tarweed	Woolly croton
Field pennycress	Wood sorrel
Flixweed	Yankeweed

1/2 to 1 ounce per acre

Blackberry	Honeysuckle
Black henbane	Multiflora rose and other wild roses
Broom snakeweed*	Musk thistle***
Buckhorn plantain	Oxeye daisy
Bull thistle	Plumeless thistle
Common crupina	Prostrate knotweed
Common sunflower	Rosering gaillardia
Curly dock	Seaside arrowgrass
Dewberry	Sericea lespedeza
Dyer's woad	Tansy ragwort
Garlic mustard	Teasel
Gorse	Wild caraway
Halogeton	
Henbit	

ground application, low volume ground application and ultra-low volume ground application. Except as noted for multiflora rose, DuPont™ ESCORT® XP should be applied as a spray to the foliage.

The application volume required will vary with the height and density of the brush and the application equipment used. Generally, aerial applications will require 15 to 25 gallons of water per acre; high volume ground application will require 100 to 400 gallons of water per acre; low volume ground application will require 20 to 50 gallons of water per acre; and ultra-low volume ground application will require 10 to 20 gallons of water per acre.

Regardless of the application volume and equipment used, thorough coverage of the foliage, particularly the terminal growing points, is necessary to optimize results.

BRUSH SPECIES CONTROLLED

Species	High Volume Rate (ounces/100 gallon)	Broadcast Rate (ounces/acre)
Ash	1—2	1—3
Aspen	1—2	1—3
Black locust	1—2	1—3
Blackberry	1—2	1—3
Camelthorn	1—2	1—3
Cherry	1—2	1—3
Cottonwood	1—2	2—3
Eastern red cedar	1—2	2—3
Elder	1—2	2—3
Elm	1—2	1—3
Firs	3	1—2
Hawthorn	1—2	1—3
Honeysuckle	1—2	1/2—1
Mulberry	1—2	2—3
Multiflora rose	1—2	1—3
Muscadine (wild grape)	1—2	2—3
Oaks	1—2	1—3
Ocean spray (<i>Holodiscus</i>)	1—2	2—3
Osage orange	1—2	2—3
Red maple	1—2	2—3
Salmonberry	1/2—1	1—3
Snowberry	1/2—1	1—3
Spruce (black and white)	3	2—3
Thimbleberry	1/2—1	1—3
Tree of heaven (<i>Ailanthus</i>)	1—2	1—2
Wild roses	1/2—1	1—3
Willow	1/2—1	1—3
Yellow poplar	1/2—1	1—3

For low volume and ultra-low volume ground applications, mix 4 to 8 ounces of ESCORT® XP per 100 gallons of spray solution.

Application Timing

Make a foliar application of the specified rate of ESCORT® XP during the period from full leaf expansion in the spring until the development of full fall coloration on deciduous species to be controlled. Coniferous species may be treated at anytime during the growing season.

Spot Treatment

ESCORT® XP may be used for the control of many species of weeds including noxious/invasive weeds in certain established grasses growing on non-crop areas.

Refer to the "Weeds Controlled" section for a listing of

susceptible weed species and the application rate per acre per the target weed.

Or, mix one gram of ESCORT® XP per one gallon of water along with a surfactant. Spray to the point of wetting the entire surface of the target weeds, approximately 40 gallons of solution per acre.

Tank Mix Combinations—

ESCORT® XP may be tank mixed with any product labeled for non-crop brush control at the application rates specified on the companion product's label for the pests specified on the product's companion label. Read and follow the label instructions of both products when tank mixing. Follow the most restrictive limitations of any of the product labels being tank mixed.

Low Rate Applications

Imazapyr (2 pound active per gallon)

Combine 1 to 2 ounces of ESCORT® XP with 1 to 4 pints of imazapyr herbicide per acre and apply as a broadcast spray. Aerial applications should use a minimum of 15 gallons per acre spray volume. In addition to species listed above controlled by ESCORT® XP, this combination controls black gum, hophornbeam, sassafras, sweetgum, Vaccinium species, dogwood, myrtle dahoon, hickories, and persimmon.

Picloram (2 pound active per gallon) + Imazapyr (2 pound active per gallon)

Combine 1 to 1 1/2 ounce of ESCORT® XP with 2 to 8 fluid ounces of imazapyr and 1 to 2 pints of picloram per 100 gallons of water. Apply as a high volume spray. This tank mix controls cherry, elms, box elder, maples, hackberry, redbud, ash, oaks (including shingle oak), black locust and sassafras.

*Picloram is a restricted use pesticide.

Spotgun Basal Soil Treatment

For control of multiflora rose, prepare a spray suspension of ESCORT® XP by mixing 1 ounce per gallon of water. Mix vigorously until the ESCORT® XP is dispersed and agitate periodically while applying the spray suspension.

Apply the spray preparation with an exact delivery handgun applicator. Apply at the rate of 4 milliliters for each 2 feet of rose canopy diameter. Direct the treatment to the soil within 2 feet of the stem union. When treating large plants and more than one delivery is required, make applications on opposite sides of the plant.

Applications should be made from early spring to summer.

IMPORTANT PRECAUTIONS

—NON-CROP BRUSH ONLY

- When using tank mixtures of ESCORT® XP with companion herbicides, read and follow all use instructions, application rates, warnings and precautions appearing on the labels. Follow the most restrictive label instructions for each of the herbicides used.

SPRAY EQUIPMENT

Low rates of ESCORT® XP can kill or severely injure most crops. Following an ESCORT® XP application, the use of spray equipment to apply other pesticides to crops on which ESCORT® XP is not registered may result in their damage.

Treated soil should be left undisturbed to reduce the potential for DuPont™ ESCORT® XP movement by soil erosion due to wind or water.

- Do not use on lawns, walks, driveways, tennis courts or similar areas.
- Do not apply through any type of irrigation system.
- When used as directed, there is no grazing or haying restriction for use rates of 1 2/3 ounce per acre or less. At use rates greater than 1 2/3 ounce per acre and up to 3 1/3 ounce per acre, forage grasses may be cut for hay, fodder or green forage and fed to livestock, including lactating animals, 3 days after treatment.
- Do not use this product in the following counties of Colorado: Saguache, Rio Grande, Alamosa, Costilla and Conejos.
- Do not use this product in California.

SPRAYER CLEANUP

Spray equipment must be cleaned before ESCORT® XP is sprayed. Follow the cleanup procedures specified on the labels of previously applied products. If no directions are provided, follow the six steps outlined below.

At the End of the Day

When multiple loads of ESCORT® XP herbicide are applied, it is recommended that at the end of each day of spraying, the interior of the tank be rinsed with fresh water and then partially filled, and the boom and hoses flushed. This will prevent the buildup of dried pesticide deposits that can accumulate in the application equipment.

1. Drain tank; thoroughly rinse spray tanks, boom, and hoses with clean water. Loosen and physically remove any visible deposits.
2. Fill the tank with clean water and 1 gal of household ammonia* (contains 3% active) for every 100 gal of water. Flush the hoses, boom, and nozzles with the cleaning solution. Then add more water to completely fill the tank. Circulate the cleaning solution through the tank and hoses for at least 15 min. Flush the hoses, boom, and nozzles again with the cleaning solution, and then drain the tank.
3. Remove the nozzles and screens and clean separately in a bucket containing cleaning agent and water.
4. Repeat step 2.
5. Rinse the tank, boom, and hoses with clean water.
6. If only ammonia is used as a cleaner, the rinsate solution may be applied back to the crop(s) listed on this label. Do not exceed the maximum labeled use rate. If other cleaners are used, consult the cleaner label for rinsate disposal instructions. If no instructions are given, dispose of the rinsate on site or at an approved waste disposal facility.

* Equivalent amounts of an alternate-strength ammonia solution or a DuPont-approved cleaner can be used in the cleanout procedure. Carefully read and follow the individual cleaner instructions. Consult your agricultural dealer, applicator, or DuPont representative for a listing of approved cleaners.

Notes:

1. **Attention:** Do not use chlorine bleach with ammonia, as dangerous gases will form. Do not clean equipment in an enclosed area.
2. Steam-cleaning aerial spray tanks is recommended prior to performing the above cleanout procedure to facilitate the removal of any caked deposits.
3. When ESCORT® XP is tank mixed with other pesticides, all required cleanout procedures should be examined and the most rigorous procedure should be followed.
4. In addition to this cleanout procedure, all precleanout guidelines on subsequently applied products should be followed as per the individual labels.

SPRAY DRIFT MANAGEMENT

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions.

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

IMPORTANCE OF DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets (>150 - 200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. **APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS!** See **Wind, Temperature and Humidity**, and **Temperature Inversions** sections of this label.

Controlling Droplet Size - General Techniques

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. **WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.**
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles.

Controlling Droplet Size - Aircraft

- **Number of Nozzles** - Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.

Nonrefillable Plastic and Metal Containers, e.g., Intermediate Bulk Containers [IBC] (Size or Shape Too Large to be Tipped, Rolled or Turned Upside Down): Nonrefillable container. Do not reuse or refill this container. Pressure rinse as follows: Empty the remaining product contents into application equipment or a mix tank. Insert pressure rinsing nozzle in the container, and rinse at about 40 PSI for at least 30 seconds. Drain rinsate for 10 seconds after the flow begins to drip. Pour or pump rinsate into application equipment or rinsate collection system. Then, (a) for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning; if burned, stay out of smoke, or (b) for Metal Containers, offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Nonrefillable Paper or Plastic Bags, Fiber Sacks including Flexible Intermediate Bulk Containers (FIBC) or Fiber Drums With Liners: Nonrefillable container. Do not reuse or refill this container. Completely empty paper or plastic bag, fiber sack or drum liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Then offer for recycling if available or dispose of empty paper or plastic bag, fiber sack or fiber drum and liner in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Refillable Fiber Drums With Liners: Refillable container (fiber drum only). Refilling Fiber Drum: Refill this fiber drum with DuPont™ ESCORT® XP containing metsulfuron methyl only. Do not reuse this fiber drum for any other purpose. Cleaning before refilling is the responsibility of the refiller. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Disposing of Fiber Drum and/or Liner: Do not reuse this fiber drum for any other purpose other than refilling (see preceding). Cleaning the container (liner and/or fiber drum) before final disposal is the responsibility of the person disposing of the container. Offer the liner for recycling if available or dispose of liner in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke. If drum is contaminated and cannot be reused, dispose of it in the manner required for its liner. To clean the fiber drum before final disposal, completely empty the fiber drum by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Then offer the fiber drum for recycling if available or dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

All Other Refillable Containers: Refillable container. Refilling Container: Refill this container with ESCORT® XP containing metsulfuron methyl only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn out threads and closure devices. Check for leaks after refilling and before transporting. Disposing of Container: Do not reuse this container for any other purpose other than refilling (see preceding). Cleaning the container before final disposal is the responsibility of the person disposing of the container. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then, (a) for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning; if burned, stay out of smoke, or (b) for Metal Containers, offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Outer Pouches of Water Soluble Packets (WSP): Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or, dispose of the empty outer foil pouch in the trash as long as WSP is unbroken. If the outer pouch contacts the formulated product in any way, the pouch must be triple rinsed with clean water. Add the rinsate to the spray tank and dispose of the outer pouch as described previously.

Do not transport if this container is damaged or leaking. If the container is damaged, leaking or obsolete, or in the event of a major spill, fire or other emergency, contact DuPont at 1-800-441-3637, day or night.

NOTICE TO BUYER: Purchase of this material does not confer any rights under patents of countries outside of the United States.

The DuPont Oval Logo, DuPont™, ESCORT® and VELPAR® are trademarks or registered trademarks of E.I. duPont de Nemours & Company.

“Embark” is a registered trademark of PBI Gordon Corporation.

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Backpack Spot-Spray Measuring Guide

for low-volume water and ultralow-volume THINVERT applications

DuPont™ Escort® XP and Telar® XP herbicides

Escort® XP and Telar® XP herbicides gram tube conversion table

Approximate rate in grams per backpack size

Herbicide rate/ 100 gal	Grams/ 1 gal	Grams/ 2 gal	Grams/ 3 gal	Grams/ 4 gal
½ oz	—	¼	½	¾
1 oz	¼	½	¾	1
2 oz	½	1	1¾	2¼
3 oz	¾	1¾	2½	3½
4 oz	1	2¼	3½	4½
6 oz	1¾	3½	5	6¾
8 oz	2¼	4½	6¾	9

- Using gram measurement tubes give approximate weight. For precise measurement, product should be weighed using a scale. Amounts are rounded to the closest ¼ gram increment as measured with the Escort® XP or Telar® XP gram measurement tubes.
- Use quality adjuvants to ensure coverage and compatibility of the mixture.
- To ensure proper label use for a given sprayer, the sprayer must be calibrated prior to use. Refer to the DuPont Calibration Guide.



The Chemical Company

Habitat[®]

herbicide

Supplemental Label

For the control of undesirable vegetation growing within specified aquatic, pasture/rangeland, industrial noncropland sites, and rights-of-way, fence rows, nonirrigation ditchbanks, establishment and maintenance of wildlife openings, for the release of unimproved Bermudagrass and Bahiagrass, for bareground weed control, and for use under certain paved surfaces

This supplemental label expires December 31, 2010.

EPA Reg. No. 241-426

Active Ingredient:

isopropylamine salt of imazapyr: (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid)* 28.7%

Other Ingredients: 71.3%

Total: 100.0%

* Equivalent to 22.6% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon.

Follow all applicable directions, restrictions, Worker Protection Standard requirements, and precautions on the EPA-approved container label for Habitat[®] herbicide, EPA Reg. No. 241-426.

This supplemental label must be in the possession of the user at the time of application.

Directions For Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

Observe all cautions and limitations on this label and on the labels of products used in combination with Habitat. **DO NOT** use Habitat other than in accordance with the instructions set forth on this label. Keep containers closed to avoid spills and contamination.

Read and follow the **First Aid, Precautionary Statements, Environmental Hazards, and Storage and Disposal** statements on the Habitat container label.

General Use Precautions and Restrictions

Applications may be made for the control of undesirable vegetation growing within specified aquatic,

pasture/rangeland, industrial noncropland sites, and railroad, utility, and highway rights-of-way, and fence rows. Aquatic sites consist of standing and flowing water, estuarine/marine, wetland and riparian areas. Industrial noncropland sites include utility plant sites, petroleum tank farms, pumping installations, fence rows, storage areas, and nonirrigation ditchbanks. Habitat may also be used for the establishment and maintenance of wildlife openings, for the release of unimproved Bermudagrass and Bahiagrass, for bareground weed control, and for use under certain paved surfaces.

Noncropland Sites

- **DO NOT** apply more than 1.5 lbs acid equivalent (ae) imazapyr (equivalent to 96 ozs of Habitat) per acre per year.

Pasture/Rangeland Sites

- For spot treatment only.
- **DO NOT** treat more than 1/10 of the available area to be grazed or cut for hay.
- **DO NOT** apply more than 0.75 lb ae imazapyr (equivalent to 48 ozs of Habitat) per acre per year.

**FOR THE SELECTIVE CONTROL OF
UNDESIRABLE WEEDS IN UNIMPROVED
BERMUDAGRASS AND BAHIAGRASS**

Habitat[®] herbicide may be used on unimproved Bermudagrass and Bahiagrass turf such as roadsides, utility rights-of-way, and other noncropland industrial sites. The application of **Habitat** on established common and coastal Bermudagrass and Bahiagrass provides control of labeled broadleaf and grass weeds. Competition from these weeds is eliminated, releasing the Bermudagrass and Bahiagrass. Treatment of Bermudagrass with **Habitat** results in a compacted growth habit and seed-head inhibition.

Uniformly apply with properly calibrated ground equipment using at least 10 gallons of water per acre.

IMPORTANT: Temporary yellowing of grass may occur when treatment is made after growth commences.

DO NOT add surfactant in excess of the recommended rate (1 oz per 25 gallons of spray solution). **DO NOT APPLY** to grass during its first growing season.

DO NOT APPLY to grass that is under stress from drought, disease, insects, or other causes.

DOSAGE RATES AND TIMING

Bermudagrass. Apply **Habitat** at 6 to 12 ozs per acre when the Bermudagrass is dormant. Apply **Habitat** at 6 to 8 ozs per acre after the Bermudagrass has reached full green-up. Applications made during green-up will delay green-up. Include a surfactant in the spray solution (see **IMPORTANT** note above).

For additional preemergence control of annual grasses and small-seeded broadleaf weeds, add **Pendulum**[®] **AquaCap**[™] herbicide at the rate of 3.1 to 6.3 pints per acre. Consult the **Pendulum AquaCap** label for weeds controlled and for other use directions and precautions.

For control of Johnsongrass in Bermudagrass turf, apply **Habitat** at 8 ozs per acre, plus **Roundup**[®] herbicide at 12 ozs per acre, plus surfactant. For additional control of broadleaves and vines, **Garlon**[®] **3A** may be added to the above mix at the rate of 1 to 2 pints per acre. Observe all precautions and restrictions on the **Garlon 3A** and **Roundup** labels.

Bahiagrass. Apply **Habitat** at 4 to 8 ozs per acre when the Bahiagrass is dormant or after the grass has initiated green-up but has not exceeded 25% green-up. Include a surfactant in the spray solution. (see **ADJUVANTS** section for specific recommendations on surfactants).

Weeds Controlled in Unimproved Bermudagrass and Bahiagrass:

Bedstraw (*Gallium* spp.)
Bishopweed (*Ptilimnium capillaceum*)
Buttercup (*Ranunculus parviflorus*)
Carolina geranium (*Geranium carolinianum*)
Fescue (*Festuca* spp.)
Foxtail (*Setaria* spp.)
Little barley (*Hordeum pusillum*)

Seedling Johnsongrass (*Sorghum halepense*)
Wild carrot (*Daucus carota*)
White clover (*Trifolium repens*)
Yellow woodsorrel (*Oxalis stricta*)

GRASS GROWTH AND SEED-HEAD SUPPRESSION

Habitat may be used to suppress growth and seed-head development of certain turfgrass in unimproved areas. When **Habitat** is applied to desirable turf, it may result in temporary turf damage and/or discoloration. Effects to the desirable turf may vary with environmental conditions. For optimum performance, application should be made prior to culm elongation. Applications may be made before or after mowing. If applied prior to mowing, allow at least 3 days of active growth before mowing. If applied following a mowing, allow sufficient time for the grasses to recover before applying this product or injury may be amplified.

DO NOT APPLY to turf under stress (drought, cold, insect damaged, etc.) or severe injury or death may occur.

Bermudagrass. Apply **Habitat** at 6 to 8 ozs per acre from early green-up to prior to seed-head initiation.

DO NOT add a surfactant for this application.

Cool Season Unimproved Turf. Apply **Habitat** at 2 ozs per acre plus 0.25% nonionic surfactant. For increased suppression, **Habitat** may be tank mixed with such products as **Campaign**[®] (24 ozs per acre) or **Embark**[®] (8 ozs per acre). Tank mixes may increase injury to desired turf. Consult each product label for recommended turf species and other use directions and precautions. Tank mixes with 2,4-D or products containing 2,4-D may decrease the effectiveness of **Habitat**.

**TOTAL VEGETATION CONTROL WHERE
BAREGROUND IS DESIRED**

Habitat is an effective herbicide for preemergence or postemergence control of many annual and perennial broadleaf and grass weeds where bare ground is desired. **Habitat** is particularly effective on hard-to-control perennial grasses. **Habitat** at 1.5 to 6 pints per acre can be used alone or in tank mix with herbicides approved for use in bare ground. The degree and duration of control are dependent on the rate of **Habitat** used, tank mix partner, the volume of carrier, soil texture, rainfall, and other conditions.

Consult manufacturer labels for specific rates and weeds controlled. Always follow the more restrictive label restrictions and precautions for all products used when making an application involving tank mixes.

Applications of **Habitat** may be made any time of the year. Use equipment calibrated to deliver desired gallons per acre spray volume and uniformly distribute the spray pattern over the treated area.

Postemergence Applications. Always use a spray adjuvant (see **ADJUVANTS** section of this label) when

- Other organizations or individuals must operate under a habitat conservation plan if threatened or endangered plants are known to be present on the land to be treated.

See the appropriate section(s) of this label for specific use directions for the desired rangeland vegetation management objective.

Habitat® herbicide should only be applied to a given rangeland acre as specific weed problems arise. Long-term control of undesirable weed species ultimately depends on the successful use of land management practices that promote the growth and sustainability of desirable rangeland plant species.

Rotational Crop Instructions

Rotational crops may be planted 12 months after applying **Habitat** at the specified pasture and rangeland rate. Following 12 months after a **Habitat** application and before planting any crop, a successful field bioassay must be completed. The field bioassay consists of a test strip of the intended rotational crop planted in the previously treated area in the grass pasture/rangeland and grown to maturity. The test strip should include low areas and knolls and include variations in soil type and pH within the treated area. If no crop injury is evident in the test strip, the intended rotational crop may be planted the following year.

Use of **Habitat** in accordance with label directions is expected to result in normal growth of rotational crops in most situations; however, various environmental and agronomic factors make it impossible to eliminate all risks associated with the use of this product and, therefore, rotational crop injury is always possible.

Habitat[®]

SPECIMEN

herbicide

Applications may only be made for the control of undesirable emergent and floating aquatic vegetation in and around standing and flowing water, including estuarine and marine sites. Applications may be made to control undesirable wetland, riparian and terrestrial vegetation growing in or around surface water when applications may result in inadvertent applications to surface water.

Active ingredient:

Isopropylamine salt of Imazapyr (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid)*.....28.7%

Inert ingredients.....71.3%

Total.....100.0%

* Equivalent to 22.6% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridinecarboxylic acid or 2 pounds acid per gallon.

EPA Reg. No. 241-426

U.S. Patent No. 4,798,619

EPA Est. No.

**KEEP OUT OF REACH OF CHILDREN.
CAUTION/PRECAUCIÓN**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

**In case of an emergency endangering life or property involving this product, call day or night,
800-832-HELP.**

See Next Page for Additional Precautionary Statements

Net contents: _____

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709

 **BASF**
The Chemical Company

except as described in **APPLICATION TO WATERS USED FOR IRRIGATION** section of this label. Keep from contact with fertilizers, insecticides, fungicides and seeds. **DO NOT** drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the treated soil may be washed or moved into contact with their roots. **DO NOT** use on lawns, walks, driveways, tennis courts, or similar areas. **DO NOT** side trim desirable vegetation with this product unless severe injury and plant death can be tolerated. Prevent drift of spray to desirable plants.

Clean application equipment after using this product by thoroughly flushing with water.

GENERAL USE PRECAUTIONS AND RESTRICTIONS

Applications may only be made for the control of undesirable emergent and floating aquatic vegetation in and around standing and flowing water, including estuarine and marine sites. Applications may be made to control undesirable wetland, riparian and terrestrial vegetation growing in or around surface water when applications may result in inadvertent applications to surface water.

Do not apply more than 6 pints of product (1.5 lbs. acid equivalent) per acre per year.

Aerial application is restricted to helicopter only.

Application of **HABITAT® herbicide** can only be made by federal or state agencies, such as Water Management District personnel, municipal officials and the U.S. Army Corps of Engineers, or those applicators who are licensed or certified as aquatic pest control applicators and are authorized by the state or local government.

Treatment to other than non-native invasive species is limited to only those plants that have been determined to be a nuisance by a federal or state government entity.

Applications to private waters: Applications may be made to private waters that are still, such as ponds, lakes and drainage ditches where there is minimal or no outflow to public waters.

Application to public waters: Applications may be made to public waters such as ponds, lakes, reservoirs, marshes, bayous, drainage ditches, canals, streams, rivers, and other slow-moving or quiescent bodies of water for control of aquatic weeds or for control of riparian and wetland weed species.

Consult local state fish and game agency and water control authorities before applying this product to public water. Permits may be required to treat such water.

Recreational Use of Water in Treatment Area: There are no restrictions on the use of water in the treatment area for recreational purposes, including swimming and fishing.

Livestock Use of Water in/from Treatment Area: There are no restrictions on livestock consumption of water from the treatment area.

Precautions for Potable Water Intakes: Do not apply **HABITAT** directly to water within one-half mile upstream of an active potable water intake in flowing water (i.e., river, stream, etc.) or within one-half mile of an active potable water intake in a standing body of water such as lake, pond or reservoir. To make aquatic applications around and within one-half mile of active potable water intakes, the water intake must be turned off during application and for a minimum of 48 hours after the application. These aquatic applications may be made only in the cases where there are alternative water sources or holding ponds, which would permit the turning off of an active potable water intake for a minimum period of 48 hours after the applications. Note: Existing potable water intakes which are no longer in use, such as those replaced by connections to wells or a municipal

water system, are not considered to be active potable water intakes. This restriction does not apply to intermittent, inadvertent overspray of water in terrestrial use sites.

APPLICATION TO WATERS USED FOR IRRIGATION

Water treated with **HABITAT** may not be used for irrigation purposes for 120 days after application or until **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less.

Seasonal Irrigation Waters: **HABITAT** may be applied during the off-season to surface waters that are used for irrigation on a seasonable basis, provided that there is a minimum of 120 days between **HABITAT** application and the first use of treated water for irrigation purposes or until **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less.

Irrigation Canals/Ditches: DO NOT apply **HABITAT** to irrigation canals/ditches unless the 120-day restriction on irrigation water usage can be observed or **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less. DO NOT apply **HABITAT** to dry irrigation canals/ditches.

Quiescent or Slow Moving Waters: In lakes and reservoirs DO NOT apply **HABITAT** within one (1) mile of an active irrigation water intake during the irrigation season. Applications less than one (1) mile from an inactive irrigation water intake may be made during the off-season, provided that the irrigation intake will remain inactive for a minimum 120 days after application or until **HABITAT** residue levels are determined by laboratory analysis, or other appropriate means of analysis, to be 1.0 ppb or less.

Moving water: DO NOT apply within one-half mile downstream of an active irrigation water intake. When making applications upstream from an active irrigation water intake, the intake must be turned off for a period of time sufficient to allow the upstream portion of treated water to completely flow past the irrigation intake before use can resume. Shut off time will be determined by the speed of water flow and the distance and length of water treated upstream from the intake. Consult local, state and/or federal authorities before making any applications upstream from an active irrigation water intake.

GENERAL INFORMATION

Use Sites: **HABITAT** is an aqueous solution to be mixed with water and a surfactant and applied as a spray solution to control floating and emergent undesirable vegetation (see **AQUATIC WEEDS CONTROLLED** section and the **ADDITIONAL WEEDS CONTROLLED BY HABITAT** section) in or near bodies of water which may be flowing, non-flowing, or transient. **HABITAT** may be applied to aquatic sites that include lakes, rivers, streams, ponds, seeps, drainage ditches, canals, reservoirs, swamps, bogs, marshes, estuaries, bays, brackish water, transitional areas between terrestrial and aquatic sites and seasonal wet areas. See **AQUATIC USE** section of this label for precautions, restrictions, and instructions on aquatic uses.

Read and observe the following directions if aquatic sites are present in terrestrial noncrop areas and are part of the intended treatment area:

Herbicidal Activity: **HABITAT** will control most annual and perennial grasses and broadleaf weeds in addition to many brush and vine species with some residual control of undesirable species that germinate above the waterline. **HABITAT** is readily absorbed through emergent leaves and stems and is translocated rapidly throughout the plant, with accumulation in the meristematic regions. Treated plants stop growing soon after spray application. Chlorosis appears first in the newest leaves, and necrosis spreads from this point. In perennials, the herbicide is translocated into, and kills, underground or submerged storage organs, which

equipment (e.g. aircraft, ground) upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller droplets, etc.).

WIND

Drift potential is lowest between wind speeds of 3-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 3 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud, which can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

WIND EROSION

Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.

AERIAL APPLICATION METHODS AND EQUIPMENT HELICOPTERS ONLY

Water Volume: Use 2 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

Managing spray drift from aerial applications: Applicators must follow these requirements to avoid off-target drift movement: 1) boom length - the distance of the outermost nozzles on the boom must not exceed $\frac{3}{4}$ the length of the rotor, 2) nozzle orientation - nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees, and 3) application height - without compromising helicopter safety, applications should be made at a height of 10 feet or less above the crop canopy or tallest plants. Applicators must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.

GROUND APPLICATION (BROADCAST)

Water Volume: Use 5 or more gallons of water per acre. The actual minimum spray volume per acre is determined by the spray equipment used. Use adequate spray volume to provide accurate and uniform distribution of spray particles over the treated area and to avoid spray drift.

ADJUVANTS

Postemergence applications of **HABITAT® herbicide** require the addition of a spray adjuvant. Only spray adjuvants that are approved or appropriate for aquatic use should be utilized.

Nonionic Surfactants: Use a nonionic surfactant at the rate 0.25% v/v or higher (see manufacturer's label) of the spray solution (0.25% v/v is equivalent to 1 quart in 100 gallons). For best results, select a nonionic surfactant with a HLB (hydrophilic to lipophilic balance) ratio between 12 and 17 with at least 70% surfactant in the formulated product (alcohols, fatty acids, oils, ethylene glycol or diethylene glycol should not be considered as surfactants to meet the above requirements).

Methylated Seed Oils or Vegetable Oil Concentrates: Instead of a surfactant, a methylated seed oil or vegetable-based seed oil concentrate may be used at the rate of 1.5 to 2 pints per acre. When using spray volumes greater than 30 gallons per acre, methylated seed oil or vegetable based seed oil concentrates should be mixed at a rate of 1% of the total spray volume, or alternatively use a nonionic surfactant as described above. Research indicates that these oils may aid in **HABITAT** deposition and uptake by plants under moisture or temperature stress.

Silicone Based Surfactants: See manufacturer's label for specific rate recommendations. Silicone-based surfactants may reduce the surface tension of the spray droplet, allowing greater spreading on the leaf surface as compared to conventional nonionic surfactants. However, some silicone-based surfactants may dry too quickly, limiting herbicide uptake.

Invert emulsions: **HABITAT** can be applied as an invert emulsion. The spray solution results in an invert (water-in-oil) spray emulsion designed to minimize spray drift and spray runoff, resulting in more herbicide on the target foliage. The spray emulsion may be formed in a single tank (batch mixing) or injected (in-line mixing). Consult the invert chemical label for proper mixing directions.

Other: An antifoaming agent, spray pattern indicator or drift reducing agent may be applied at the product labeled rate if necessary or desired.

TANK MIXES

HABITAT may be tank-mixed with other aquatic use herbicides for the control of emergent and floating aquatic vegetation.

Consult manufacturer's labels for specific rates and weeds controlled. Always follow the more restrictive label when making an application involving tank-mixes.

AERIAL APPLICATIONS

All precautions should be taken to minimize or eliminate spray drift. Helicopters can be used to apply **HABITAT**; however, DO NOT make applications by helicopter unless appropriate buffer zones can be maintained to prevent spray drift out of the target area, or when spray drift as a result of helicopter application can be tolerated. Aerial equipment designed to minimize spray drift, such as a helicopter equipped with a Microfoil™ boom, Thru-Valve™ boom or raindrop nozzles, must be used and calibrated. Except when applying with a Microfoil boom, a drift control agent may be added at the recommended label rate. To avoid drift, applications should not be made during inversion conditions, when winds are gusty, or any other conditions which allow drift. Side trimming is not recommended with **HABITAT** unless death of treated tree can be tolerated.

Uniformly apply the recommended amount of **HABITAT** in 5 to 30 gallons of water per acre; include in the spray solution a nonionic surfactant or methylated seed oil or manufacturer's label rate of a silicone-based surfactant (See the **Adjuvants** section of this label for specific recommendations). A foam reducing agent may be added at the recommended label rate, if needed.

IMPORTANT: Thoroughly clean application equipment, including landing gear, immediately after use of this product. Prolonged exposure of this product to uncoated steel (except stainless steel) surfaces may result in corrosion and failure of

- To prepare a dilute solution, mix 8 to 12 fluid ounces of **HABITAT® herbicide** with one gallon of water. The use of a surfactant or penetrating agent may improve uptake through partially callused cambiums.
- To prepare a concentrated solution, mix 2 quarts of **HABITAT** with no more than 1 quart of water.

Cut stump treatments:

- Dilute Solution- spray or brush the solution onto the cambium area of the freshly cut stump surface. Insure that the solution thoroughly wets the entire cambium area (the wood next to the bark of the stump).

Cut stem (injection, hack & squirt) treatments:

- Dilute Solutions- Using standard injection equipment, apply 1 milliliter of solution at each injection site around the tree with no more than one-inch intervals between cut edges. Insure that the injector completely penetrates the bark at each injection site.
- Concentrate Solutions- Using standard injection equipment, apply 1 milliliter of solution at each injection site. Make at least one injection cut for every 3 inches of Diameter at Breast Height (DBH) on the target tree. For example, a 3-inch DBH tree will receive 1 injection cut and a 6-inch DBH tree will receive 2 injection cuts. On trees requiring more than one injection site place the injection cuts at approximately equal intervals around the tree.

Frill or girdle treatments:

- Using a hatchet, machete, or chainsaw, make cuts through the bark and completely around the tree to expose the cambium. The cut should angle downward extending into the cambium enough to expose at least two growth rings. Using a spray applicator or brush, apply a 25% to 100% solution of **HABITAT** into each cut until thoroughly wet. Avoid applying so much herbicide that runoff to the ground or water occurs.

AQUATIC SPECIES CONTROLLED (continued)

COMMON NAME	SCIENTIFIC NAME	BASF RECOMMENDATION
Terrestrial/Marginal		
*Soda Apple, aquatic; Nightshade	<i>Solanum tampicense</i>	2 pts./acre applied to foliage
*Bamboo, Japanese	<i>Phyllostachys spp.</i>	3 to 4 pints/acre applied to the foliage when plant is actively growing. Before setting seed head. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Brazilian Pepper; Christmasberry	<i>Schinus terebinthifolius</i>	2 - 4 pints/acre applied to foliage
Cattail	<i>Typha spp.</i>	2-4 pints (1% solution) applied to actively growing, green foliage after full leaf elongation. Lower rates will control cattail in the north; higher rates are needed in the south.
Chinese Tallow Tree	<i>Sapium sebiferum</i>	16 to 24 oz applied to foliage
Cogon Grass	<i>Imperata cylindrica</i>	Burn foliage, till area, that fall spray 2 qt./acre HABITAT® herbicide + MSO applied to new growth.
Cordgrass, prairie	<i>Spartina spp.</i>	4-6 pints applied to actively growing foliage
*Cutgrass	<i>Zizaniopsis miliacea</i>	4-6 pints applied to actively growing foliage
*Elephant Grass; Napier Grass-	<i>Pennisetum purpureum</i>	3 pts./acre applied to actively growing foliage
*Flowering rush	<i>Butumu typla</i>	2-3 pints applied to actively growing foliage
Giant Reed, Wild Cane	<i>Arundo donax</i>	4 to 6 pints/acre applied in spring to actively growing foliage
*Golden Bamboo	<i>Phyllostachys aurea</i>	3 to 4 pints/acre applied to the foliage when plant is actively growing. Before setting seed head. More foliage will result in greater herbicide uptake, resulting in greater root kill.
Junglerice	<i>Echinochloa colonum</i>	3-4 pints applied to actively growing foliage
Knapweeds	<i>Centaurea species</i>	Russian Knapweed - 2 to 3 pints + 1 qt./acre MSO fall applied after senescence begins
Knotweed, Japanese (see Fallopia japonica)	<i>Polygonum cuspidatum</i>	3 to 4 pts./acre applied postemergence to actively growing foliage
Melaleuca; Paperbark Tree	<i>Melaleuca quinquenervia</i>	For established stands, apply 6 pints/acre HABITAT + 6 pints/acre glyphosate + spray adjuvant. For best results use 4 qt./A methylated seed oil as an adjuvant. For ground foliar application, uniformly apply to ensure 100% coverage. For broadcast foliar control, apply aerially in a minimum of two passes at 10 gallons/acre applied cross treatment. For spot treatment use a 25% HABITAT + 25% solution of + glyphosate + 1.25% MSO in water applied as a frill or stump treatment.
*Nutgrass; Kill'p'opu	<i>Cyperus rotundus</i>	2 pints HABITAT + 1 qt./acre MSO applied early postemergence
*Nutsedge	<i>Cyperus spp.</i>	2 to 3 pints postemergence to foliage or pre-emergence incorporated, non-incorporated preemergence applications will not control.

* Not approved for use in California

GRASSES

COMMON NAME	SPECIES	GROWTH HABIT ²
Apply 2-3 pints per acre¹		
Annual bluegrass	(<i>Poa annua</i>)	A
Broadleaf signalgrass	(<i>Brachiaria platyphylla</i>)	A
Canada bluegrass	(<i>Poa compressa</i>)	P
Downy brome	(<i>Bromus tectorum</i>)	A
Fescue	(<i>Festuca</i> spp.)	A/P
Foxtail	(<i>Setaria</i> spp.)	A
Italian ryegrass	(<i>Lolium multiflorum</i>)	A
Johnsongrass	(<i>Sorghum halepense</i>)	P
Kentucky bluegrass	(<i>Poa pratensis</i>)	P
Lovegrass	(<i>Eragrostis</i> spp.)	A/P
*Napier grass	(<i>Pennisetum purpureum</i>)	P
Orchardgrass	(<i>Dactylis glomerata</i>)	P
Paragrass	(<i>Brachiaria mutica</i>)	P
Quackgrass	(<i>Agropyron repens</i>)	P
Sandbur	(<i>Cenchrus</i> spp.)	A
Sand dropseed	(<i>Sporobolus cryptandrus</i>)	P
Smooth brome	(<i>Bromus inermis</i>)	P
Vaseygrass	(<i>Paspalum urvillei</i>)	P
Wild oats	(<i>Avena fatua</i>)	A
Witchgrass	(<i>Panicum capillare</i>)	A

Apply 3-4 pints per acre¹

Barnyardgrass	(<i>Echinochloa crus-galli</i>)	A
Beardgrass	(<i>Andropogon</i> spp.)	P
Bluegrass, Annual	(<i>Poa annua</i>)	A
*Bulrush	(<i>Scirpus validus</i>)	P
Cheat	(<i>Bromus secalinus</i>)	A
Crabgrass	(<i>Digitaria</i> spp.)	A
Crowfootgrass	(<i>Dactyloctenium aegyptium</i>)	A
Fall panicum	(<i>Panicum dichotomiflorum</i>)	A
Goosegrass	(<i>Eleusine indica</i>)	A
Itchgrass	(<i>Rottboellia exaltata</i>)	A
Lovegrass	(<i>Eragrostis</i> spp.)	A
*Maidencane	(<i>Panicum hemitomon</i>)	A
Panicum, Browntop	(<i>Panicum fasciculatum</i>)	A
Panicum, Texas	(<i>Panicum texanum</i>)	A
Prairie threeawn	(<i>Aristida oligantha</i>)	P
Sandbur, Field	(<i>Cenchrus incertus</i>)	A
Signalgrass	(<i>Brachiaria platyphylla</i>)	A
Wild barley	(<i>Hordeum</i> spp.)	A
Wooly Cupgrass	(<i>Eriochloa villosa</i>)	A

Apply 4-6 pints per acre¹

Bahiagrass	(<i>Paspalum notatum</i>)	P
Bermudagrass ³	(<i>Cynodon dactylon</i>)	P
Big bluestem	(<i>Andropogon gerardii</i>)	P
Dallisgrass	(<i>Paspalum dilatatum</i>)	P
Feathertop	(<i>Pennisetum villosum</i>)	P
Guineagrass	(<i>Panicum maximum</i>)	P
Saltgrass ³	(<i>Distichlis stricta</i>)	P
Sand dropseed	(<i>Sporobolus cryptandrus</i>)	P

GRASSES (CONT)

COMMON NAME	SPECIES	GROWTH HABIT ²
Sprangletop	(<i>Leptochloa</i> spp.)	A
Timothy	(<i>Phleum pratense</i>)	P
Wirestem muhly	(<i>Muhlenbergia frondosa</i>)	P

BROADLEAF WEEDS

COMMON NAME	SPECIES	GROWTH HABIT ²
-------------	---------	---------------------------

Apply 2-3 pints per acre¹

Burdock	(<i>Arctium</i> spp.)	B
Carpetweed	(<i>Mollugo verticillata</i>)	A
Carolina geranium	(<i>Geranium carolinianum</i>)	A
Clover	(<i>Trifolium</i> spp.)	A/P
Common chickweed	(<i>Stellaria media</i>)	A
Common ragweed	(<i>Ambrosia artemisiifolia</i>)	A
Dandelion	(<i>Taraxacum officinale</i>)	P
Dog fennel	(<i>Eupatorium capillifolium</i>)	A
Filaree	(<i>Erodium</i> spp.)	A
Fleabane	(<i>Erigeron</i> spp.)	A
Hoary vervain	(<i>Verbena stricta</i>)	P
Indian mustard	(<i>Brassica juncea</i>)	A
Kochia	(<i>Kochia scoparia</i>)	A
Lambsquarters	(<i>Chenopodium album</i>)	A
*Lespedeza	(<i>Lespedeza</i> spp.)	P
Miners lettuce	(<i>Montia perfoliata</i>)	A
Mullein	(<i>Verbascum</i> spp.)	B
Nettleleaf goosefoot	(<i>Chenopodium murale</i>)	A
Oxeye daisy	(<i>Chrysanthemum leucanthemum</i>)	P
Pepperweed	(<i>Lepidium</i> spp.)	A
Pigweed	(<i>Amaranthus</i> spp.)	A
Puncturevine	(<i>Tribulus terrestris</i>)	A
Russian thistle	(<i>Salsola kali</i>)	A
Smartweed	(<i>Polygonum</i> spp.)	A/P
Sorrell	(<i>Rumex</i> spp.)	P
Sunflower	(<i>Helianthus</i> spp.)	A
Sweet clover	(<i>Mellilotus</i> spp.)	A/B
Tansymustard	(<i>Descurainia pinnata</i>)	A
Western ragweed	(<i>Ambrosia psilostachya</i>)	P
Wild carrot	(<i>Daucus carota</i>)	B
Wild lettuce	(<i>Lactuca</i> spp.)	A/B
Wild parsnip	(<i>Pastinaca sativa</i>)	B
Wild turnip	(<i>Brassica campestris</i>)	B
Woollyleaf bursage	(<i>Franseria tomentosa</i>)	P
Yellow woodsorrel	(<i>Oxalis stricta</i>)	P

Apply 3-4 pints per acre¹

Broom snakeweed ⁴	(<i>Gutierrezia sarothrae</i>)	P
Bull thistle	(<i>Cirsium vulgare</i>)	B
Burclover	(<i>Medicago</i> spp.)	A
Chickweed, Mouseear	(<i>Cerastium vulgatum</i>)	A
Clover, Hop	(<i>Trifolium procumbens</i>)	A
Cocklebur	(<i>Xanthium strumarium</i>)	A

DISCLAIMER

The label instructions for the use of this product reflect the opinion of experts based on research and field use. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Turf injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the use of, or application of the product contrary to label instructions, all of which are beyond the control of BASF Corporation (BASF). All such risks shall be assumed by the user.

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Supersedes NVA 2005-04-246-0027

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709



The Chemical Company

Invasive and Noxious Weeds Fact Sheet



Russian Knapweed

Russian Knapweed

(*Acroptilonrepens*) (L.) is an invasive and noxious weed found in northeastern and southeastern Arizona. Like Yellow starthistle, it can cause “chewing disease” in horses. Its deep, perennial root system makes control efforts difficult once established. Since it is invasive, it takes over the native species and destroys grazing pastures.



Characteristics

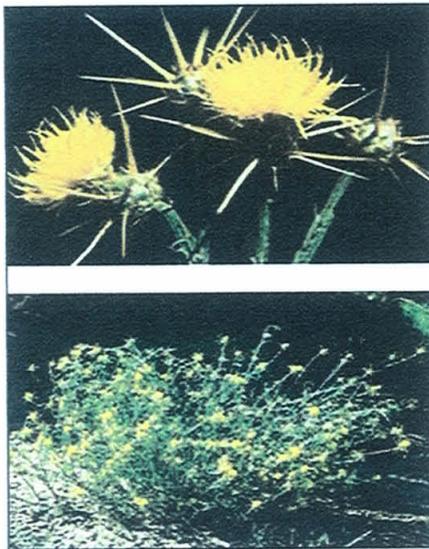
- Creeping perennial forb
- Deep spreading root system
- Roots typically are dark brown or black
- Plants can grow up to 4 ft. tall
- Lower leaves range from entire to lobed
- Upper leaves are smaller, entire, and are directly attached to the stem
- Cone shaped, pink, white, or lavender flower heads are up to 1/2 inch in diameter



Funding Provided by: US Fish & Wildlife Service, AZ State Land-Forestry, US Forest Service

Project Partners: Coronado RC&D, U of A Cooperative Extension, SE Arizona Weed Management Area, NRCS, Whitewater Draw NRCD, Willcox San-Simon NRCD, Hereford NRCD, Gila Valley NRCD, Redington NRCD, San Pedro NRCD, and the counties of Cochise, Graham, and Greenlee.

Yellow Starthistle Fact Sheet: An Invasive and Noxious Weed



Key Characteristics

- Annual
- About 3 feet tall
- Deeply lobed basal leaves
- Leaves tapered at both ends
- "Winged" appearance
- Flowers yellow with sharp, long spines



Description: Yellow Starthistle (*Centaurea solstitialis*) is an aggressive, winter annual forb. It germinates during cooler temperatures and usually grows to about 3 feet tall. The flowers are yellow and are held by bracts that produce very stiff and sharp spines. The spines can grow to as long as 1 inch. This weed can cause "chewing disease" in horses. It destroys native desirable plants. It can cause huge infestations, contaminate harvest, and lower the value and quality.

NOXIOUS



INVASIVE

Funding provided by: US Fish & Wildlife Service and Arizona State Land-Forestry and US Forest Service.

Project Partners: Coronado RC&D, U of A Cooperative Extension, SE Arizona Weed Management Area, NRCS, Whitewater Draw NRCD, Willcox-San Simon NRCD, Hereford NRCD, Gila Valley NRD, Redington NRCD, San Pedro NRCD, and the counties of Cochise, Graham and Greenlee.



Invasive and Noxious Weed Fact Sheet: Malta Starthistle



Malta starthistle (*Centaurea melitensis*) is a close relative of yellow starthistle. It is from the Mediterranean region. This plant is an annual or biennial and readily infests disturbed sites. It is especially problematic along roadsides in and around Tucson, in the upper sonoran Desert, semi-desert grasslands, and interior chaparral. Like so many invasive weed species, Malta starthistle will rapidly displace diverse native vegetation and create a monoculture, or pure stand of the weed. When this occurs, range forage value is lost, as it is low in palatability. Its root structure is ineffective at protecting soil against erosion. The spiny flower head on Malta starthistle guarantees that recreationists will avoid infested areas.



Malta Starthistle Rosette

Key Characteristics

- Cool-season forb
- Grows 1-3 feet tall
- Short stalked, lobed basal leaves form a rosette
- Upper leaves are narrow and pointed
- Stems are erect, branched, rough, and hairy
- Yellow flowers develop with floral bracts that are tipped with many slender, but short spines that may appear yellow, brown, or purple in color

Funding Provided By: US Fish & Wildlife Service, AZ State Land-Forestry, US Forest Service
Project Partners: Coronado RC&D, U of A Cooperative Extension, SE Arizona Weed Management Area, NRCS, Whitewater Draw NRCD, Willcox-San Simon NRCD, Hereford NRCD, Gila Valley, Redington NRCD, San Pedro NRCD, and the counties of Cochise, Graham, and Greenlee



Whitetop Fact Sheet



• An invasive and noxious weed •



Whitetop, or Hoary cress (*Cardaria draba*) (L. Desv.) is an invasive and noxious weed found throughout the U. S. The flowers are an off-white cream color. They usually bloom from late April to early June. Whitetop infests pasture areas, roadsides, and waste areas. It originally came from Eurasia. It started its infestation late in the 1900's along the East Coast, and gradually spread to the West. It is a very aggressive perennial. This plant competes with the native plants and eventually eliminates the desirable plants completely. It increases soil erosion and decreases desirable plants. It also pushes out the native plants and takes over. This weed favors alkaline soil (soil that is laden with mineral salts), disturbed soils (soil that has been turned and/or cultivated), overgrazed areas, and other areas where the native plants are having problems growing.

- Wide spreading roots that penetrate deeply
- Grows from 1.5 feet to 3 feet and is slightly hairy
- Stems are medium thick and branch out toward the top of the plant
- The leaves are blue-green or gray-green in color
- Flowers are small and four-petaled
- The upper leaves clasp the stem with two lobes
- The flowers are compact with many flower branches
- The leaves are serrated, or have jagged edges



Funding Provided by: US Fish & Wildlife Service, AZ State Land-Forestry, US Forest Service

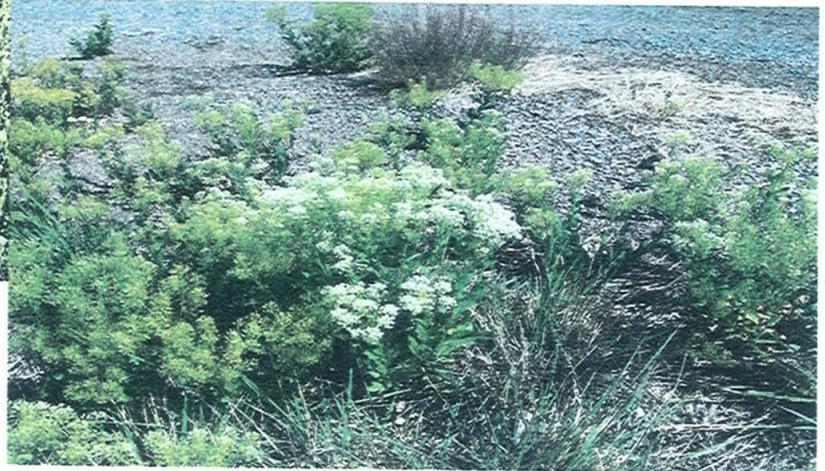
Project Partners: Coronado RC&D, U of A Cooperative Extension, SE Arizona Weed Management Area, NRCS, Whitewater Draw NRCD, Willcox-San Simon NRCD, Hereford NRCD, Gila Valley NRCD, Redington NRCD, San Pedro NRCD, and the counties of Cochise, Graham, and Greenlee

Treatment and Prevention of **WHITETOP**



"Invasive Weeds"

are non-indigenous plants that take over and destroy native species.



"Noxious Weed" means any species of plant which is, or likely to be, detrimental or destructive and difficult to control or eradicate.

If you have **Whitetop** on your property or find it as you are out and about, what can you do to help eradicate this noxious weed?

IDENTIFY

TREAT

MONITOR

1. Notify your local Natural Resources Conservation Service (NRCS) and bring in the plant for identification.
2. You can use a non-restricted broad-leaf herbicide and apply it to the plant as soon as possible. The key to stopping the plant from spreading is to kill it before it blooms and seeds out!
3. The first and most important step to be considered is prevention—keeping weeds from becoming established. Seeds can stay in the ground for long periods of time. To eradicate it completely, you must continue to monitor and treat any new seedlings you see.
 - ◆ Plant and maintain desirable plant species to compete with Whitetop.
 - ◆ Avoid driving in weed-infested areas.
 - ◆ To avoid transporting seeds, remove weed seeds from clothing after walking in infested areas.
 - ◆ Clean farm equipment, including herbicide sprayers, when moving between fields or pastures.
 - ◆ After livestock have grazed a weed-infested area, feed them weed-free forage and wait at least five days before moving them to weed-free areas. It may be necessary to clean their hair of invasive weed seeds, as well.
 - ◆ Be well informed and tell others of the potential problem.
 - ◆ Observe and obey all noxious plant warning signs.
 - ◆ Report any new infestations of these invasive weeds to your local NRCS Office, Coronado RC&D, U of A



United States Department of the Interior

U.S. Fish and Wildlife Service
Arizona Ecological Services Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951



Telephone: (602) 242-0210 Fax: (602) 242-2513

In reply refer to:

AESO/SE
22410-2010-TA-0499

August 23, 2010

Ms. Marie Light, Commission Chair
Arizona Water Protection Fund
3550 North Central Avenue
Phoenix, Arizona 85012

Dear Ms. Light:

The U.S. Fish and Wildlife Service (Service) appreciates the opportunity to provide this letter written in support of the Arizona Water Protection Fund Grant application by the Coronado Resource Conservation & Development Area. Their application, *Invasive Weed Control Gila River Corridor, Greenlee County*, proposes to treat invasive weeds that are growing along portions of the 30-mile reach of the Gila River in Greenlee County. This would be a four-year project and involve treatment of Russian knapweed, Yellow and Malta starthistle, and hoary cress with appropriate herbicides.

The invasive plants proposed for treatment threaten the existing riparian areas and floodplains along the upper Gila River. They reduce competition from other plants by allelopathy (production of biochemicals that inhibit the growth of other plants), thus are able to replace native plant species. In addition, Russian knapweed, Malta and yellow starthistle produce a neurotoxin which, when ingested, affects areas in an animal's brain causing necrosis, a condition referred to as chewing disease. These plants are poisonous to horses. Injury can also occur to livestock and wildlife that eat even small amounts of yellow starthistle. Once these invasive plants infest farmland, they render it worthless. The river provides a corridor for spreading plants and seeds downstream.

Greenlee County contains several species of migratory birds including the southwestern willow flycatcher (federally listed as endangered), yellow-billed cuckoo (federally listed as a candidate species) and common black hawk. The river itself contains several native fish species including, longfin dace (*Agosia chrysogaster*), speckled dace (*Rhinichthys osculus*), Sonora sucker (*Catostomus insignis*), and desert sucker (*Catostomus clarki*). Razorback sucker (*Xyrauchen texanus*) was historically stocked in this portion of the Gila River and critical habitat has been designated for the sucker within the entire 30-mile reach of the project area. There is also critical habitat designated for the southwestern willow flycatcher occurring from the New Mexico-Arizona border downstream to the town of Duncan.

Treating invasive plants will enhance riparian and floodplain vegetation which are important habitats for many of Arizona's native wildlife species. This project will involve multiple partners including the New Mexico Weed Management Area, which is doing similar work on the Gila River in New Mexico. Local landowners, the town of Duncan, and Greenlee County will also be involved. The project will provide information to educate local residents on identifying invasive weeds, thus building Rapid Response teams for long term control. For these reasons, the Service's Partners for Fish and Wildlife is also considering assisting this project financially and technically.

Although the project would ultimately benefit the riparian and floodplain vegetation as well as native fish, there may be short-term adverse effects, necessitating Endangered Species Act (ESA) section 7 consultation with our office. We will work with the Coronado RC&D to assist in identifying measures that would minimize potential adverse effects and complete ESA compliance for the project.

We support this project and the enhancement it will provide to the associated riparian habitat. It is anticipated that this project will reduce the spread of these invasive species. We appreciate the opportunity to provide this letter of support. If you would like additional comments concerning this project, please contact Kris Randall (602) 242-0210 (x250).

Sincerely,



Jean A. Calhoun
Deputy Field Supervisor

cc: Donna Matthews, Coronado RC&D Coordinator, Willcox, AZ



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Safford Field Office
711 14th Avenue
Safford, Arizona 85546
www.blm.gov/az/

928-348-4400

4120

RECEIVED

AUG 9 2010

August 7, 2010

WATER MGM

Arizona Department of Water Resources
Arizona Water Protection Fund Commission
3550 N. Central Ave.
Phoenix, AZ 85012

Dear Commission:

The Gila District BLM has partnered with Coronado RC&D (Resource Conservation and Development), Arizona Department of Transportation, University of Arizona, and U.S. Forest Service in the control of noxious and invasive weeds. BLM contributed approximately \$25,000.00 in an effort to control Russian knapweed in and around Duncan, Arizona. The contribution was in the form of chemical, specifically Milestone VM (Dow AgroSciences).

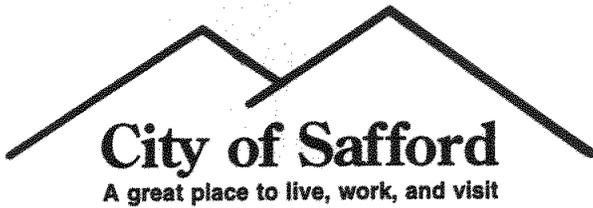
This herbicide has been the subject of research by the University of Arizona (lead researcher, Dr. Bill McCloskey). BLM continues to deepen its involvement as an EA (Environmental Assessment) was recently completed to treat Russian knapweed. Our concern is that Russian knapweed will travel in the Gila River flood plain from New Mexico to the western boundary of the Gila Box National Riparian Conservation Area. Some BLM work (funded through ARRA) will be started this fall (2010).

BLM Management is committed to controlling noxious weeds in and adjacent to BLM and. Cooperation with University of Arizona and Coronado RC&D is essential in our efforts to control noxious weeds. For these reasons, we support the proposal to map and treat noxious weeds in the Gila River and riparian area.

Sincerely,

Dave Arthun
Rangeland Specialist,

Cc: *Coronado RC&D*
Donna Matthews
656 North Bisbee Ave.
Willcox, AZ 85643



717 Main Street
P.O. Box 272
Safford, AZ 85548-0272
Phone: (928) 348-3100
FAX: (928) 348-3111
TDD: (928) 428-0778

August 3, 2010

Arizona Water Protection Fund Commission
Arizona Department of Water Resources
3550 North Central Avenue
Phoenix, AZ 85012

Dear Sir/Madam:

The City of Safford supports the Coronado RC&D and the Greenlee County Cooperative Extension Service efforts to fight against invasive weeds in the Gila River and its riparian area and adjacent flood plain. This is an important river corridor providing much to the economy and natural beauty of the area. Treatment of the invasive weeds is necessary to inhibit the migration of seeds downstream and thus affecting farming and recreation in Graham County.

The City of Safford urges your support of this endeavor.

Sincerely,

David J. Kincaid
City Manager