

**State and Private Forestry
FY 2010 Western Competitive
Resource Allocation
Single-State Project Proposal**

Filename	
AZ_buffelgrass	
Administration Information	
Dollar Amount Requested:	\$240,000
Matching Share:	\$240,700

Applicant Information	
State Forestry Agency:	Arizona State Forestry Division
Contact Person:	Al Hendricks
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Project Information			
Descriptive Title of Project:	Meeting the Invasives Challenge: Buffelgrass & Southern Arizona Forests		
Names of Partnering Agencies / Organizations:	Southern AZ Buffelgrass Coordination Center, Coronado National Forest, Saguaro National Park, Bureau of Land Management, US Fish & Wildlife Service, Tohono O'odham Nation, US Geological Survey, City of Tucson, Pima County, Pima Association of Governments, University of Arizona, AZ Department of Corrections, AZ State Parks, Sonoran Institute, Arizona-Sonora Desert Museum. AZ Landscape Contractors Association, Rural Metro Corporation, and Homeowner Associations (HOAs) of The Canyons, The Summit at Finger Rock, Milagrosa Hills, & Ventana Canyon Mountain Estates.		
State(s):	Arizona	Congressional Districts:	7 & 8
Counties:	Pima, Pinal	Forest Service Regions:	3

Total Leverage							
Please specify each 3 rd party contributor (partnering organizations and agencies, including other Federal) and the dollar value of each contribution. Please DO NOT show grant requested funds in this table.							
Contributors: (Please specify by name)	Pima County	USDA Forest Service	US Geological Service	Saguaro National Park	US Fish & Wildlife Service	USDI Bureau of Land Management	TOTAL
Value of Contributions:	\$930,000	\$140,000	\$120,000	\$105,000	\$65,000	\$60,000	\$1,420,000

Project Budget					
	Grant Share (\$ requested)	Applicant	Non-Federal Contributors	TOTAL	
		Cash ¹	In-Kind ²		
4	Personnel / Labor:	\$0	\$25,650	\$139,950	\$165,600
	Fringe Benefits:	\$0	\$8,550	\$25,050	\$33,600
	Travel:	\$0	\$0	\$0	\$ 0
	Equipment:	\$0	\$0	\$0	\$ 0
	Supplies:	\$0	\$0	\$1,500	\$1,500
	Contractual:	\$216,000	\$0	\$0	\$216,000
	Construction:	\$0	\$0	\$0	\$ 0
	Other:	\$0	\$40,000	\$0	\$40,000
	Indirect Costs:	\$24,000	\$0	\$0	\$24,000
	TOTAL:	\$240,000	\$74,200	\$166,500	\$480,700

Project Duration	
5	What is the duration of this project? <input type="checkbox"/> One Year <input type="checkbox"/> Two Years <input checked="" type="checkbox"/> Three Years

National Relevance	
6	Conserve Working Forest Landscapes <input checked="" type="checkbox"/> Protect Forests From Harm <input checked="" type="checkbox"/> Enhance Public Benefits From Trees and Forests <input checked="" type="checkbox"/>

Project Description	
7	<p>Maximum 5500 Characters Including Spaces – Clearly summarize the proposed project, including goals, objectives, measurable outputs, outcomes, and how grant funds will be used towards successful completion of the project.</p> <p>Consistent with the three national themes, Conserving Working Forest Landscapes, Protecting Forests From Harm, and Enhancing Public Benefits from Trees and Forests, this project will demonstrate high national relevance in the conservation of priority forest landscapes by identifying, managing, and reducing the threats posed by invasive buffelgrass (<i>Pennisetum ciliare</i>) in southern Arizona. The project will culminate in the development of a template for replication of multi-jurisdictional invasive species management by communities across the Southwest.</p> <p>The Forest Service Framework for Invasive Species (USDA Forest Service, 2003) notes that over 2,000 species of invasive exotic plants have infested millions of acres of lands across the nation, causing massive disruption in ecosystem function, reducing biodiversity, and degrading ecosystem health. “In the western United States alone, 17 million acres have been taken over by invasive species, with an additional 4,600 acres taken over by noxious weeds every day!” (Invasive Non-Native Plants That Threaten Wildlands in Arizona, August 2005) "Invading alien species in the United States cause major environmental damages and losses adding up to almost \$120 billion per year" and “About 42% of the species on the Threatened or Endangered species lists are at risk primarily because of alien-invasive species” (Pimentel and others, 2004)</p>

¹ ‘Cash’ is the value of any qualifying match the applicant pays for such as cash, staff time, supplies, or equipment.

² ‘In-Kind’ is the value of any qualifying match contributed by a non-federal 3rd party contributor such as donated time, supplies, or equipment.

According to the Arizona Invasive Plant Working Group, buffelgrass (*Pennisetum ciliare*) is one of 19 High Severity invasive plants that have severe ecological impacts on ecosystems, plant and animal communities, and vegetational structure, moderate to high rates of dispersal and establishment, and wide distribution among and within ecosystems. It grows in dense stands, crowds out native plants, and negatively impacts native wildlife species and their habitat. A very drought-tolerant perennial, buffelgrass can remain dense and even spread in dry years. This invasive has introduced a new wildfire risk into a full range of ecosystems in southern Arizona that are not fire adapted, including valuable riparian forests (ranked the highest priority in Arizona's Forest Legacy Program Assessment of Need), madrean oak woodlands, and mixed conifer forests. Lowland forests such as those in the Ironwood Forest National Monument are also threatened, where buffelgrass eradication has been a high priority for several years.

During 2007, shared concern over the buffelgrass invasion triggered a Buffelgrass Summit in Pima County. By 2008, heightened awareness and collaborative efforts resulted in development of the Southern Arizona Buffelgrass Strategic Plan and Memorandum of Understanding, followed by formation of the Southern Arizona Buffelgrass Coordination Center (SABCC), a 501 c 3 organization. This project will capitalize on the groundswell of commitment demonstrated by the collaborative partners, as well as the coordination skills of SABCC.

This project, which addresses a high-priority strategy of disrupting fuels connectivity between the Sonoran Desert/Woodlands and higher elevation coniferous forests, will begin with educational meetings between private landowners, representatives of Pima County, the Coronado National Forest, and Rural Metro Corporation (contract fire department). The purpose of these meetings will be to increase awareness and understanding of the problem, and to develop a plan for buffelgrass mitigation in the interface between private and public lands. Simultaneously, the regional inventory and mapping of buffelgrass infestations will be updated for the 200-acre treatment area using GIS technology. This mapping will provide the basis for development of strategies for mitigation and long-term management. Prior to the onset of treatment, training will be provided to private landowners, landscape companies, and Forestry Division Inmate Conservation Crews in identification, control methods, and treatment options.

The exact locations for removal will be determined and coordinated with the Coronado National Forest. Arizona State Forestry Division's Inmate Conservation Crews will be employed in mechanical removal of buffelgrass on both sides of the boundary, with funding from this grant for the private property and \$140,000 from the American Recovery & Reinvestment Act of 2009 for the public side. Training and treatment activity will develop useful knowledge and job skills to aid in the rehabilitation of these minimum security inmates. Interaction with landscaping companies will provide exposure to potential employers for the inmates after their release.

Measurable outputs will include 1) an updated GIS map of buffelgrass infestations and treatments for southern Arizona, 2) a plan for monitoring and future projects, and 3) 200 acres of completed treatment

Outcomes will include:

- 1) Creation of a grass-free 'buffer zone' abutting 200 acres of buffelgrass infestation along 10 miles of the National Forest boundary to limit fire spread up the mountain from the foothills and down the mountain from the forest
- 2) Active participation of multiple jurisdictions and private citizens in buffelgrass mitigation efforts
- 3) Sixty (60) trained personnel for future mitigation efforts
- 4) Facilitation of rehabilitation and development of job skills for minimum security inmates
- 5) A blueprint for replication of landscape-level invasive species mitigation in a multi-jurisdictional setting by communities across the Southwest

	<p>Maximum 1250 Characters Including Spaces</p> <p>This project will integrate an array of programs that address the broad range of challenges associated with the invasion of buffelgrass.</p> <p>Catalina-Rincon Firescape is a framework for fire management across a 350,000-acre landscape in the Santa Catalina and Rincon Mountains, abutting the Tucson metropolitan area, that is now inhabited by more than a million citizens. Firescape strives to restore ecosystem processes by restoring sustainable, more natural fire regimes across landscape and mountain-range scales.</p> <p>The Ecosystem Science Program of the Sonoran Institute, a southern Arizona NGO, is a key provider of education and training on invasives, including buffelgrass.</p> <p>Cooperative Fire Assistance efforts focus on education, rehabilitation, and fire prevention through the Firewise Program, with emphasis on the increased wildfire risk posed by buffelgrass infestations. The Forest Stewardship Program supports post-fire watershed rehabilitation, while the Urban & Community Forestry Program assists communities threatened by buffelgrass-related fire risk. The Forest Health Program supports thinning to enhance forest health, reforestation and “tree friendly” construction practices, and buffelgrass outreach and control efforts.</p>
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9	Collaboration
	<p>Maximum 1250 Characters Including Spaces</p> <p>In response to the escalating number of acres being infested in the region by non-native buffelgrass, a group of federal and state agency representatives, county and city leaders, university researchers, and staff from non-profit organizations formed a coalition in late 2006 to improve buffelgrass management across jurisdictions. A Buffelgrass Summit was held in February 2007 to mobilize government agencies and public officials, which led to a Buffelgrass Working Group that completed a Southern Arizona Buffelgrass Strategic Plan a year later. The completed Strategic Plan represents a starting point for on-the-ground implementation of a regional strategy, and signatories to the Strategic Plan MOU include the University of Arizona, the Arizona-Sonora Desert Museum, Arizona State Parks, the City of Tucson, the Saguaro National Park, Pima Association of Governments, Pima County, the Sonoran Institute, and the Coronado National Forest. Other partnering organizations include the Towns of Marana, Sahuarita, and Oro Valley, the Arizona Native Plant Society, the Arizona Department of Transportation, the Bureau of Land Management, the U.S. Fish & Wildlife Service, the U.S. Geological Survey, and the Tohono O’Odham Nation.</p>

10	Leverage
	<p>Maximum 1250 Characters Including Spaces</p> <p>Through the framework of the Southern Arizona Buffelgrass Coordination Center, which coordinates the efforts of multiple entities across the region, this project will maximize State & Private funding by leveraging \$1,420,000 in contributions from both federal & non-federal entities. Saguaro National Park, Ironwood Forest National Monument, and the Coronado National Forest are key collaborators in buffelgrass research, mapping, control, monitoring, and outreach efforts, and are contributing toward new technologies to control buffelgrass including rotary-wing aerial application of herbicides. They are performing environmental assessments for buffelgrass control efforts, which lay the groundwork for effective treatments on nonfederal lands. \$140,000 of American Reinvestment & Recovery Act of 2009 funds will be leveraged for treatment of buffelgrass on the Coronado National Forest. The U.S. Fish and Wildlife Service (FWS) is assisting with environmental assessments for chemical treatment of buffelgrass in natural areas. FWS is also providing \$65,000 for buffelgrass control projects on land in the 1,000,000-acre Tucson Basin that is owned or managed by Pima County, the Arizona State Land Department, and the University of Arizona.</p>

11	Meaningful Scale
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Maximum 1250 Characters Including Spaces
 Invasive species threaten forests throughout the United States. Too often, mitigation efforts occur after the invasive species has gained a substantial foothold in an area and become too much for localities to deal with. This is a test case for deploying resources across multiple jurisdictions in a significant locale with high priority and impact. Even though we are dealing with a single invasive, it has a regional impact and mitigation efforts must be tailored to differing terrain, biomes, jurisdictions, and land management policies. This project will integrate landscape-scale management strategies for the 1,000,000-acre Tucson Basin with site-specific treatments along the critical boundary between private and public lands that heretofore has not been addressed in invasives mitigation efforts. The boundary is significant both from a legal and ecological standpoint. Western public lands face increasing pressure from development and the challenge of maintaining multiple uses on public lands is becoming increasingly complex. This project will mitigate the threat of invasive species between the Coronado National Forest and private lands and refine our approach to the increasingly complex challenge of protecting western forests.

Sphere of Influence

12 **Maximum 1250 Characters Including Spaces**
 This project will protect and conserve wildland/urban interface areas that are at-risk from invasive species-induced fires using a combination of education, outreach, mapping, and on-the-ground control. Across the western states, invasive grass-fire cycles have converted millions of acres of native forest landscapes into abnormally fire-prone monocultures where watershed, wildlife, recreation, and tourism values are diminished. Conversely, wildfire risk to homes and vital infrastructure is increased exponentially. This project will tap a broad-base of stakeholder support including local governments, federal agencies, nonprofits, private industry, and the public-at-large who are already committed to buffelgrass control in southern Arizona. The model of public-private cooperation amongst mixed jurisdictions using the comprehensive adaptive management techniques employed here will be applicable to the countless communities faced with invasive species and fire issues in the West. An important outcome will be the development of a blueprint for landscape-level invasive species mitigation in multi-jurisdictional settings, with the expectation that this effort will be replicated by communities that face similar challenges.

Sustainability of Outcomes

13 **Maximum 1250 Characters Including Spaces**
 This project is part of a long-term, collaborative effort to preserve and protect a unique landscape of national importance in the West. As such, it feeds into a landscape-level mapping effort by the Southern Arizona Buffelgrass Coordination Center for strategic planning and long-term evaluation of mitigation efforts across southern Arizona. Collaboration with the Coronado National Forest and inclusion of the project area into the landscape-level map will ensure long-term commitment by documenting the status of mitigation efforts. Control efforts will protect the forest by limiting the ability of fires to spread from lower-to-higher elevation, thus conserving forest landscapes and protecting forests from harm. Management of buffelgrass on private land will be sustained by integrating the process into landscape-scale contracts with standardized language and deliverables, to assist homeowners and land managers in contracting with private firms for buffelgrass control. Establishing working relationships among private landholders and land management agencies builds a solid and durable foundation to ensure long-term protection of these national resources.