# Graham County
# Community Wildfire Protection Plan

Photo by Dan Eckstein

## Submitted for Approval
## November 12, 2005

# Chapter 1. Introduction

The Graham County Community Wildfire Protection Plan (GCCWPP) for the "at-risk" communities located in and around the Coronado National Forest (CNF) managed by the US Department of Agriculture (USDA), the Bureau of Land Management (BLM) managed by the Safford District Office, Arizona State Trust Lands managed by the Arizona State Land Commissioner through the Arizona State Forester, and the San Carlos Tribal Forests managed by the San Carlos Apache Nation and the Bureau of Indian Affairs in Graham County was developed in response to the Healthy Forests Restoration Act of 2003 (HFRA). This recent legislation established unprecedented incentives for communities to develop comprehensive wildfire protection plans in a collaborative, inclusive process. Furthermore, this legislation gives direction to the Departments of Interior and Agriculture to address local community priorities in fuel reduction treatments that impact non-Federal lands.

The HFRA represents the legislative component of the Healthy Forests Initiative, introduced by President Bush in January 2003. Congress passed the HFRA in November 2003 and the president signed it into law that December. When certain conditions are met, Title I of the HFRA authorizes the Secretaries of Agriculture and Interior to expedite the development and implementation of hazardous fuel reduction projects on lands managed by the Forest Service or the Bureau of Land Management. The HFRA emphasizes the need for Federal agencies to collaborate with communities in developing hazardous fuel reduction projects and places priority on treatment areas identified by communities themselves through development of a Community Wildfire Protection Plan (CWPP). Priority areas include the wildland-urban interface (WUI), municipal watersheds, areas impacted by wind throw or insect or disease epidemics, and critical wildlife habitat that would be negatively impacted by a catastrophic wildfire. In compliance with Title 1 of the HFRA, the CWPP requires agreement among local government, local fire departments, and the State agency responsible for forest management (in Arizona, the Arizona State Land Department [State Forester]). The CWPP must also be developed in consultation with interested parties and the applicable Federal agency managing the land surrounding the at-risk communities. The GCCWPP is developed to assist local government, fire departments, fire districts, and residents in the identification of lands—including Federal lands—at risk from severe wildfire threat and to identify strategies for reducing fuels on wildlands while improving forest health, supporting local industry and local economies, and improving firefighting response capabilities.

Guidance for development of the GCCWPP is based on Preparing a *Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities* (Communities Committee, Society of American Foresters, National Association of Counties, National Association of State Foresters 2004). The GCCWPP was collaboratively developed through consultation with the CNF, using *The Healthy Forests Initiative and Healthy Forests Restoration Act Interim Field Guide* (USDA Forest Service and Bureau of Land Management 2004). As additional guidance documents become available, any changes or amendments will be incorporated into the GCCWPP.

Encompassed by the State, Federal, and Tribal lands, at-risk communities are scattered throughout Graham County. The following sections detail these communities'

background and need for the GCCWPP, identify current policies, and provide overviews of the process and goals of the GCCWPP.

## A. Background

Recent Arizona snow packs have been below normal, with the 2004 winter being the first "normal" precipitation year in the Southwest's current nine year drought cycle. Continued extreme weather conditions, dry fuel conditions, and increasing fuel loading on Federal and nonFederal lands contribute to the potential for catastrophic wildland fires within the GCCWPP communities. Such conditions are prevalent today across the GCCWPP. The GCCWPP communities have developed this plan to increase preparedness, reduce natural fuel accumulations, and increase communication with local, County, State and Federal emergency response personnel by determining areas of high risk, developing mitigation measures to reduce risk, improving emergency response, and reducing structural ignitability throughout the WUI. Since the mid-1990s wildfires have occurred in or close to the GCCWPP planning area; these include the 2004 Gila River and Mount Graham Fires. Although, landscape scale fires have not been prevalent in the mixed conifer, pine, or pinyon-juniper habitats in the WUI, with the exception of 1997 and 2004, several hundred natural and human fire starts occur and are suppressed and contained in Southeast Arizona each year (GCCWPP Community Action Group, 2004). Because of the region's continued drought and fuel conditions, local fire districts, utilities companies, and governments are initiating fire preparedness enhancements and land treatment efforts (see Section I.D.3 Local Policies) to recognize and act on those current conditions that result in the accumulation of unacceptable levels and types of natural fuels that significantly threaten the communities with a catastrophic wildfire. Graham County recognizes the importance of managing the WUI, as well as developing and implementing landscape treatments in the interior forest, rangeland, and riparian corridors, to reduce fuel loads and restore natural ecosystems.

Graham County along with the Apache-Sitgreaves, Coronado, and Tonto National Forests; the Southwest Regional Director of the US Fish and Wildlife Service; the Arizona Game and Fish Department; Gila, Graham, Greenlee, and Navajo Counties; Governor Jane Hull; and the University of Arizona are signatories to the 1997 Cooperative Agreement formalizing cooperation on forest restoration demonstration activities.

Subsequent to Congressional approval and to take advantage of the provisions of the Healthy Forest Restoration Act (HFRA), the Graham County Community Action Group (CAG) focused on developing a CWPP to secure funding for community and critical watershed wildfire protection. During a series of meetings with community leaders and local government officials and in consultation with the CNF Supervisor, the BLM, the Bureau of Indian Affairs, the San Carlos Apache Tribe, the Arizona State Forester, the U.S. Fish and Wildlife Service, the Arizona Game and Fish Department, and local governments, the decision was made to produce a single CWPP for all at-risk communities in Graham County. This process has followed a localized adaptation of the approach used in developing the CWPPs for the at-risk communities in the Apache-Sitgreaves National Forest area of Apache, Navajo, and Coconino Counties.

To create a single GCCWPP that captured local interest and advanced understanding regarding the critical issues, a Community Action Group (CAG) was established to focus

on the at-risk communities of Graham County. The CAG included community leaders who asked that those with relevant expertise and individuals representing all community interests participate in the CAG. The intent was to share information on existing wildfire risk conditions, fire history, and current efforts to mitigate high wildfire risk and then to help recommend strategies needed to mitigate risk to communities from catastrophic wildland fire through fuel reduction treatments and enhanced fire response and preparedness. The local CAG meets all criteria of the collaborative guidance established by the Wildland Fire Leadership Council and has been the core of the public involvement process for the GCCWPP. In its deliberations, the CAG discussed contributions from the CAG technical experts and reviewed references and guidance documents.

## B. Wildland-Urban Interface

The WUI is commonly described as the area where structures and other features of human development meet and intermingle with undeveloped wildland vegetative fuels. Communities within the WUI often face substantial risk to life, property, and infrastructure. Wildland fire within the WUI is one of the most dangerous and complicated situations firefighters face. Both the National Fire Plan (NFP), and *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, 10-Year Comprehensive Strategy* (2001), place a priority on working collaboratively with communities in the WUI to reduce their risk from large-scale wildfires.

The HFRA builds on existing ecosystem restoration efforts in the WUI by empowering local communities, and by authorizing expedited environmental assessment, administrative appeal, and legal review for qualifying WUI projects on Federal land. The majority of lands surrounding these communities, defined in the HFRA as “Federal Land,” are in this GCCWPP, managed under the jurisdiction of CNF, BLM, BIA, and San Carlos Tribe. Arizona State Trust Land also surrounds several communities.

The City of Safford, and the Towns of Thatcher, and Pima are the incorporated communities located in the planning area. All other communities are under the jurisdiction of either Graham County or the San Carlos Apache Tribe. Private ownership of land is largely restricted to areas within incorporated and unincorporated communities outside of Tribal lands, with a scattering of private in-holdings throughout the County.

The WUI described in the GCCWPP includes private, County, State, Tribal, and Federal lands. Additional information on the process used to delineate the WUI boundaries and a description of those communities involved are in Section II.

## C. Fire Regime and Condition Class

In compliance with the HFRA, Federal lands within the WUI were evaluated for Fire Regime and current Condition Class. A natural fire regime is a general classification of the role a fire would play across a landscape in the absence of human intervention. The Forest Service (FS) has created five categories of natural (historic) fire regimes based on the number of years between fires (fire frequency) combined with the severity of fire on dominant overstory vegetation (*Development of Coarse-Scale Spatial Data for Wildland Fire and Fuel Management* [Forest Service 2002]). The majority of the GCCWPP’s WUI lands are composed of Natural Fire Regime 1, which is described as

forested lands where wildland fires have occurred at a 0–35-year frequency, with low severity of burn.

A Condition Class is a classification of the extent of departure from the natural fire regime. For example, land in Condition Class 1 is within its natural fire range and at low risk for losing ecosystems components in the event of a wildland fire. Condition Class 2 constitutes a moderate departure from a land area's historic fire occurrence range and has a moderate risk of losing habitat components. Condition Class 3 reflects a significant departure from a historic fire regime range, and the risk of ecological loss is high. The majority of land within the WUI, as shown in the map on page 5 is in Condition Class 2 and 3.

## D. Future Desired Condition and Relevant Fire Policies

The desired future condition of State, Tribal, and Federal WUI lands in the GCCWPP is a return to Condition Class I. Lands in this Condition Class can carry wildfire without modifications to forest components. Once in this condition class, natural processes such as fire can be incorporated to a certain degree into long-term management practices. The desired future condition of private lands in the WUI is to have private land owners voluntarily implement fire-safe standards recommended by local fire departments and communities. Residential and other structures that follow these standards significantly reduce the risk of fire igniting in the community and spreading. Additionally, structures that comply with fire-safe recommendations are much more likely to survive wildland fires that spread into the community.

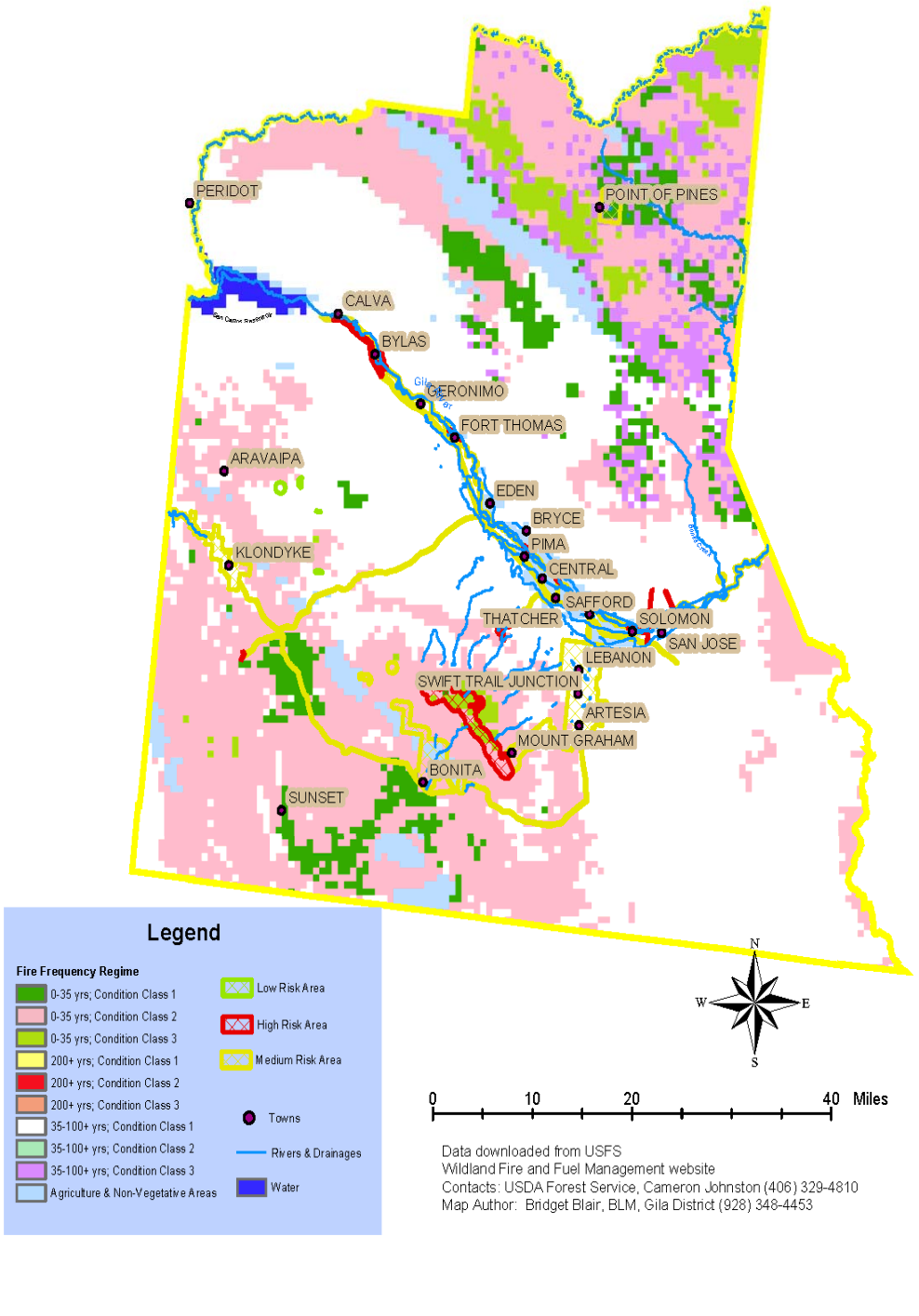
### 1. Federal Policies

Several existing Federal wildfire protection policies have been developed within recent years; one of the more significant is the 1995 Federal Wildland Fire Management Policy. The 1995 Report was the first single comprehensive Federal policy for the Departments of Interior and Agriculture and for the first time formally recognized the essential role of fire in maintaining natural systems. The 1995 Federal Wildland Fire Management Policy was reviewed and updated by the Interagency Federal Wildland Fire Policy Review Working Group in 2001. The Working Group found the 1995 Policy to be sound and appropriate and subsequently recommended changes and additions to the 1995 Federal Wildland Fire Management Policy to address ecosystem sustainability, science, education, and communication and to provide for adequate program evaluation.

Among the most prominent recent national policies is the National Fire Plan (NFP). The NFP incorporates A *CollaborativeApproach for Reducing Wildland Fire Risk to Communities and the Environment, 10-Year Comprehensive Strategy* (2001) developed by the Western Governors' Association, whose primary goals are to:

- improve fire prevention and suppression,
- reduce hazardous fuels,
- restore fire-adapted ecosystems, and
- promote community assistance.

# Current Condition by Historical Natural Fire Regine




Data downloaded from USFS
Wildland Fire and Fuel Management website
Contacts: USDA Forest Service, Cameron Johnston (406) 329-4810
Map Author: Bridget Blair, BLM, Gila District (928) 348-4453

Federal Wildfire Protection Policy is planned and administrated locally through the CNF, BLM, and the BIA, which are the governing agencies for the Federal lands associated in the GCCWPP planning area. Land management plans for these agencies include wildfire management guidelines for these Federal lands. CNF, BLM, BIA, and Tribal fire management activities include wildland fire suppression, fuels reduction, prescribed burns, and wildland fire use. The majority of the area's WUI is located in the following primary vegetation types:

- riparian scrub
- mesquite bosque
- tamarisk bosque
- scrub grassland
- chihuahuan desert scrub
- sonoran desert scrub
- oak-juniper
- pine-oak,
- mixed pine
- mixed conifer, and
- spruce-fir

On private lands, Firewise™ is a national program that helps communities reduce the risk of wildfires and provides them with information about organizing to protect themselves against catastrophic wildfires and mitigating losses from such fires. Additionally, *Arizona Firewise Communities* is published by the Arizona Interagency Coordinating Group (AICG, a partnership of Federal and State organizations in Arizona), in affiliation with the national Firewise™ Communities/USA program.

**2. State Policies**

Arizona has been proactive in assessing wildfire risk on a regional level. The Arizona Wildland Urban Interface Assessment (2004) is a statewide strategic report using aerial imagery and geographic information system (GIS) technology to identify and map wildfire risk. Using the categories of topography, wildfire risk, fire hazard, and structural density, the report addresses wildfire risk to residential areas in the WUI. In relation to the GCCWPP, the communities of Mount Graham and Point of Pines are rated "high" for potential wildfire impact. This community was also listed in the *Federal Register* as "at high risk from wildfire." Although not evaluated in The Arizona Wildland Urban Interface Assessment, the following communities are also considered by the CAG as high risk because of fuel type, fuel load, current Condition Class, proximity to Federal lands, and potential for wildfire occurrence.

- Lebanon and Artesia
- Cluff's Ranch South of Pima
- Safford, Solomon, and San Jose at those points where critical infrastructure crosses the Gila River, and where water is diverted into the Safford drinking water system.
- Peridot
- Calva
- Thatcher and Central at those points where critical infrastructure crosses the Gila River

- Pima, Ashurst, Eden, and Fort Thomas at those points where critical infrastructure intersects with Salt Cedar thickets along the Gila River
- Bonita and Fort Grant
- Klondyke, Aravaipa, and Sunset

Recognizing the significant effects of catastrophic wildfire on the biological, cultural, and economic value of Arizona's ponderosa pine forests, Governor Janet Napolitano convened the "The Annual Forest Health and Safety Conference: Building on Lessons Learned" in March 2003. This conference resulted in the creation of the science-based Forest Health Advisory Council, which provided recommendations to the governor on actions that can be taken now and in the future for improving the health of Arizona's forests. The Forest Health Advisory Council developed major principles for restoring forest health that were adopted by the Arizona Forest Health Oversight Council in November, 2003 and approved by the Governor. The Eastern Arizona Counties Organization represents Graham County on the Arizona Forest Health Oversight Council, and has, along with the CAG, reviewed these "Guiding Principles" to ensure that they were embedded in the goals of this GCCWPP. The principles focused on issues of integration, sustainable communities and economies, ecological integrity, land use and planning, funding and compliance, and practices that are effective and efficient with low environmental and socioeconomic impact.

During the Forty-sixth Legislative Session of 2004, legislation was passed governing the adoption of an "Urban-Wildland Interface Code" (Arizona Revised Statutes [ARS] 9-806 and ARS 11-861) and re-describes the State Forester as a position within the Executive Branch (ARS 37-621, 622). This legislation also created the "Healthy forest enterprise incentives" (ARS 41-1516) and established the "State urban-wildland fire safety committee" (ARS 41-2148).

**3. Local Policies**

The GCCWPP communities are aware that past approaches to land and wildfire management have produced extensive areas of high risk for catastrophic wildfire. These communities seek a restored, self-sustaining, biologically diverse forest, that contributes to a quality of life demanded by local citizens and expected by visitors. Acceptable, effective treatment prescriptions that will lead to the restoration of natural fire regimes must be developed, accepted by the community, and rigorously implemented. The communities that have developed the GCCWPP recognize that "stand-replacing" fires must be converted to "stand-enhancing fires." Local policy recognizes the multiple fire issues associated with the WUI and supports cooperative solutions for managing threats to community ecosystem health and the threats posed by catastrophic wildfire.

Graham County has a goal of reducing the danger of fire and the threat of catastrophic wildfires for all residents living within identified WUI boundaries. Graham County has adopted the *Graham County Emergency Management Operations* that describes emergency response, notification procedure, and needs for mass evacuations because of catastrophic situations within the County.

The appearance and health of the forests, rangelands, and riparian corridors within and surrounding the GCCWPP communities provide not only an economic base (recreation, forest products harvesting and processing) for the communities, but also provide a quality of life that citizens appreciate and expect. The communities recognize the need to inform and educate local citizens and visitors about needed restoration treatments on

private properties and to work with appropriate parties to determine accepted community based land management practices that provide protection from wildland fire threats.

## E. Grants/Current Projects

Financial commitments required to reduce the risk of catastrophic wildfire can be extensive for the land management agencies and for the small rural communities in high risk WUI areas. In 2001, the NFP created a funding process through which Congress provides grant monies to help reduce the vulnerability of WUI communities and to help fire departments improve their fire protection services for wildland fire suppression. According to the Fire Management Division of the Arizona State Land Department, grants awarded for the 2002/03 fiscal year totaled approximately $10.4 million. The Arizona State Land Department administers annual grants such as the Volunteer Fire Assistance (VFA) Grant Program, Department of Interior Rural Fire Assistance (RFA) Grant Program, and State Fire Assistance (SFA) Grants. Distribution of those grant monies has been on a competitive basis, with AICG evaluating submitted applications. To date, we are aware of two grants allocated within the GCCWPP planning area.

The GCCWPP communities are supportive of programs designed to stimulate local forest products-related industries that significantly reduce forest fuels within the WUI. Efforts are underway to encourage the economic use of hazard trees and other fuels following the White Mountain Stewardship Project (WMS) model.

Stewardship contracts for forest treatments are not new to the land management agencies, and have been used to accomplish smaller scale treatments. The U.S. Congress recently enacted legislation expanding National Forest stewardship contracting authority, allowing for long-term contracts (up to 10 years) for firms participating in programs that meet land management objectives.

The Eastern Arizona Counties Resource Advisory Committee (RAC), a Federal Advisory Committee established by the United States Secretary of Agriculture, administers grants funded under the authority of the Secure Rural Schools and Communities Self-Determination Act of 2000. The Act authorizes grants to Federal agencies, State and local governments, private and nonprofit entities that improve the maintenance of existing infrastructure, improve forest health, and restore and improve land health and water quality. Graham County has used this grant opportunity for fuel reduction treatments along Highway 366 (Swift Trail). Figure 1.2 identifies all the identified treatment areas for this project in the CNF on Mount Graham.

**[INSERT FIGURE 1.2 HERE]**

## F. Need for the Community Wildfire Protection Plan

As the GCCWPP communities continue to expand into the adjacent wildlands, more citizens and property will become at-risk from wildland fire. Graham County, National Forest, and Tribal records show that Graham County, including special use permit areas, contains lots ranging from 1/4 to 160+ acres in size. The Graham County CAG recognizes that the WUI is not static; it will continue to grow. Therefore, for community

wildfire protection planning and implementation to succeed, future growth must be factored into recommended actions.

The HFRA provides for community-based decision making and empowers local governments to determine the boundaries of the WUI that surrounds their community(ies). The communities within the GCCWPP recognize that while the costs of restoring WUI lands to a fire condition class 1 are high, the costs of inaction are catastrophic.

## G. Goals

To reduce the risks to life and property, the CAG has agreed on the following primary goals of the GCCWPP:

- improve fire prevention and suppression
- reduce hazardous fuels
- restore forest, rangeland, and riparian health
- promote community involvement
- recommend measures to reduce structural ignitability in the GCCWPP area
- encourage economic development in the community
- promote a development of wildfire emergency evacuation plans.

The GCCWPP meets all criteria of the HFRA. It has been collaboratively developed and agreed to by the applicable local governments, fire departments, and State agency responsible for forest management, along with other interested parties and the CNF, the primary, relevant Federal entity. The GCCWPP establishes a coordinated and collaborative, performance-based framework of recommendations to meet its outlined goals.

## H. Planning Process

Several County and municipal planning documents in addition to several planning documents and studies have incorporated wildfire management guidelines and standards for forests within the GCCWPP planning area. The goals, policies, and guidelines outlined in these documents, in addition to the above-mentioned public involvement process were all critical inputs into the development of the GCCWPP. The studies, plans, and documents reviewed include:

- *Graham County Emergency Operations Plan (2003)*
- *Graham County Land Use and Resource Policy Plan* (1995)
- *Graham County Comprehensive Plan (amended 2004)*
- *City of Safford General Plan (amended 2004)*
- *Town of Thatcher General Plan (amended 1997)*
- *Town of Pima General Plan (amended 2004?)*
- *Coronado National Forest Land and Resource Management Plan* (1986)
- *Bureau of Land Management Resource Management Plan (amended 1991*)
- *Bureau of Land Management Fire Management Plan* (amended 2004)
- *San Carlos Apache Indian Reservation Wildland Fire Management Plan (2003)*
- *Mt. Graham International Observatory, University of Arizona Emergency Response Contingency Plan (revised 2004)*
- *Cluff Ranch Wildlife Area (W-85-M) Management Plan. (1997)*

Successful implementation of the GCCWPP will require a collaborative effort among multiple layers of government and a broad range of special interest groups. The CAG seeks to develop processes and systems that ensure recommended treatments and actions of the GCCWPP comply with the HFRA, the National Environmental Policy Act, the Endangered Species Act, the National Historic Preservation Act, and other applicable Federal, State, and local environmental regulations.

Upon agreement of this GCCWPP by the City of Safford, Towns of Thatcher, and Pima, Graham County, and the local fire departments and fire districts, and after concurrence by the Coronado National Forest Supervisor, the Bureau of Land Management Arizona State Director, the San Carlos Apache Tribe, the Bureau of Indian Affairs, and the State Forester (Arizona State Land Department, Fire Management Division), it will be forwarded to the State Forester and CNF Supervisor for implementation funding of the priority action recommendations.

These communities' and governments' commitment to the successful implementation of the GCCWPP is an assurance that they will cooperate in developing any formal agreements necessary to ensure the plan's timely execution, monitoring, and reporting. It is the intent of Graham County, and the Cities of Safford, Thatcher, and Pima to designate Graham County to be responsible and accountable for the implementation of this GCCWPP. The designated agent is responsible to coordinate with interested parties and industry, accept grants, implement priority projects, and monitor and update the GCCWPP as necessary.

## Chapter 2. Wildland-Urban Interface and Community Description

A. Wildland-Urban Interface Delineation Process

The GCCWPP defines the WUI of the at-risk communities located in Graham County. These are all in the vicinity of Federal, Tribal, and State lands and are considered to be at high and moderate risk and/or hazard for wildfire damage.

The GCCWPP process of delineating WUI boundaries involved collaboration with local fire chiefs and the CAG, which represents the public interest through participating government officials, planners, and natural resource specialists. Additionally, resource specialists from local, State, Tribal, and Federal agencies assisted the CAG in the boundary-delineation process. Within the planning area, the CAG delineated WUI boundaries that surround at risk communities. This WUI is the area needed to provide corridors, public buildings, and critical communications infrastructure. The watershed in the WUI consists of both Federal and non-Federal lands in the riparian corridors of the San Simon River, San Carlos River, Marijilda Creek, Bonita Creek, Aravaipa Creek, Grant Creek, Frye Creek, Ash Creek, Cottonwood Wash, Fort Thomas water system, Black River, and the Gila River.

The WUI also includes ponds, lakes, and reservoirs. Additional interface for wildfire protection was identified for the area surrounding Heliograph, West Peak, Lady Bug Saddle, Guthrie Peak, Turnbull, and Point of Pines because of the critical communication facilities located on these peaks. The CAG developed a WUI that includes private, public, and Tribal lands.

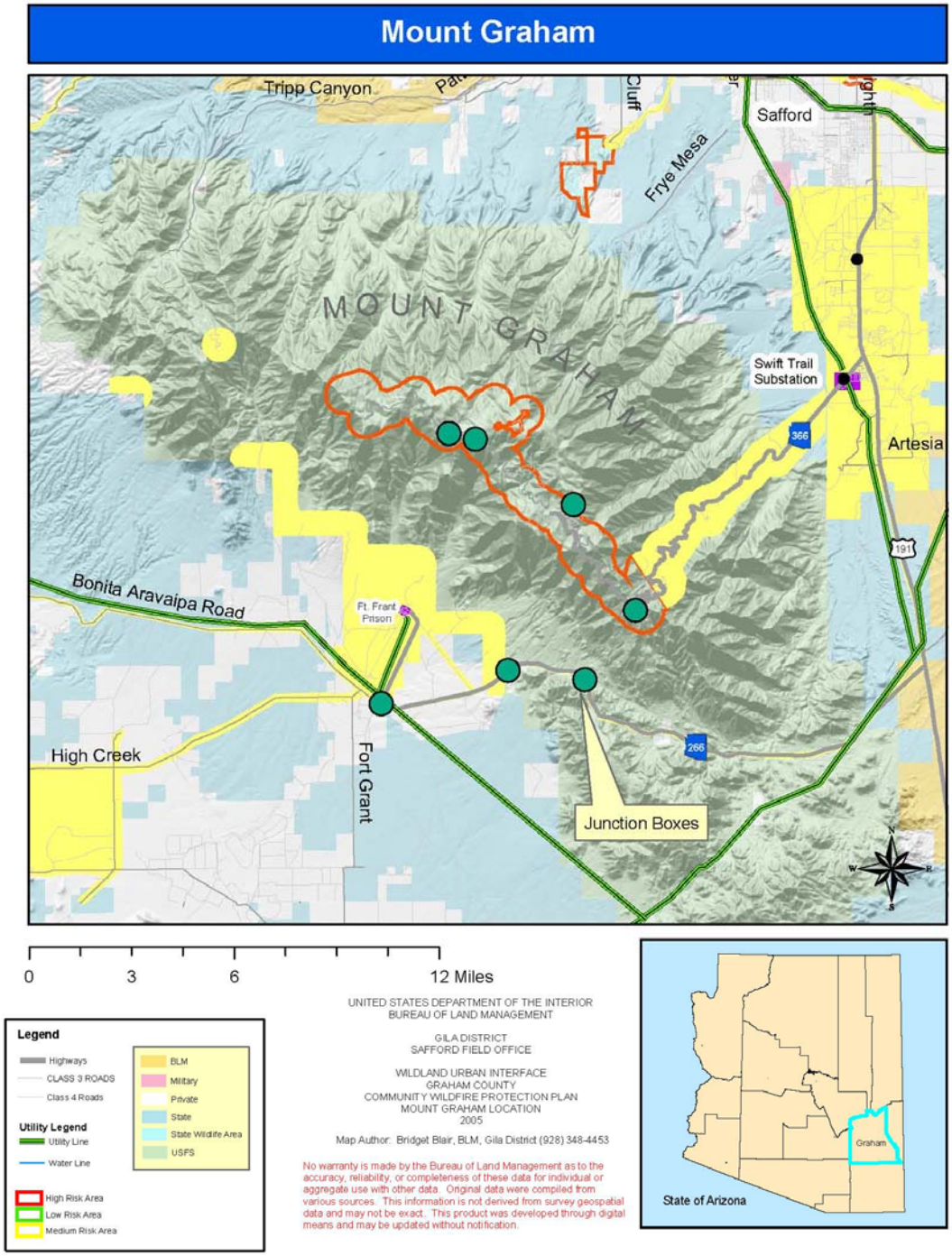
Participants in the WUI delineation meetings included representatives from the municipal fire departments of Safford and Thatcher, the Safford Rural Fire District, the Central-Jackson Heights Fire District, and Pima Rural Fire District, the Fort Thomas Rural Fire District, the San Carlos Fire Department, the Coronado National Forest, the Bureau of Land Management, the Bureau of Indian Affairs, San Carlos Tribal Forestry, the Arizona Department of Corrections, the U.S. Fish and Wildlife Service, the Arizona Game and Fish Department, the Safford, Thatcher, and the Pima Police Departments, Graham County Emergency Management and Bioterrorism personnel, the Gila Watershed Partnership of Arizona, the Graham County Electric Cooperative, the University of Arizona Cooperative Extension, the Graham County Natural Resource Conservation District, and interested citizens.

General elements used in creating the WUI for the communities included:

- Fuel hazards, consideration of local topography, fire history, vegetative fuels, and natural fire breaks
- Historical fire occurrence
- Community development characteristics
- Local fire fighting preparedness
- Municipal watershed protection

B. Community Description

General descriptions of the communities include land ownership, jurisdiction, development trends, population, infrastructure (roads, utilities, schools, hospitals, and community facilities), reservoirs, and existing emergency services. The WUI described for these communities includes significant watersheds and riparian corridors that provide drinking water to Safford, Thatcher, Pima, and Bonita irrigation waters to the Gila Valley Irrigation District, and substantial recreational fishing opportunities, all of great economic importance to the communities.


Mount Graham
Tripp Canyon
Frye Mesa
Safford
MOUNT GRAHAM
Swift Trail Substation
366
Artesia
191
Bonita Aravaipa Road
Ft. Frant Prison
High Creek
Fort Grant
266
Junction Boxes
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3
6
12 Miles
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Highways
CLASS 3 ROADS
Class 4 Roads
Utility Legend
Utility Line
Water Line
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Medium Risk Area
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UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
GILA DISTRICT
SAFFORD FIELD OFFICE
WILDLAND URBAN INTERFACE
GRAHAM COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN
MOUNT GRAHAM LOCATION
2005
Map Author: Bridget Blair, BLM, Gila District (928) 348-4453
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Graham
State of Arizona

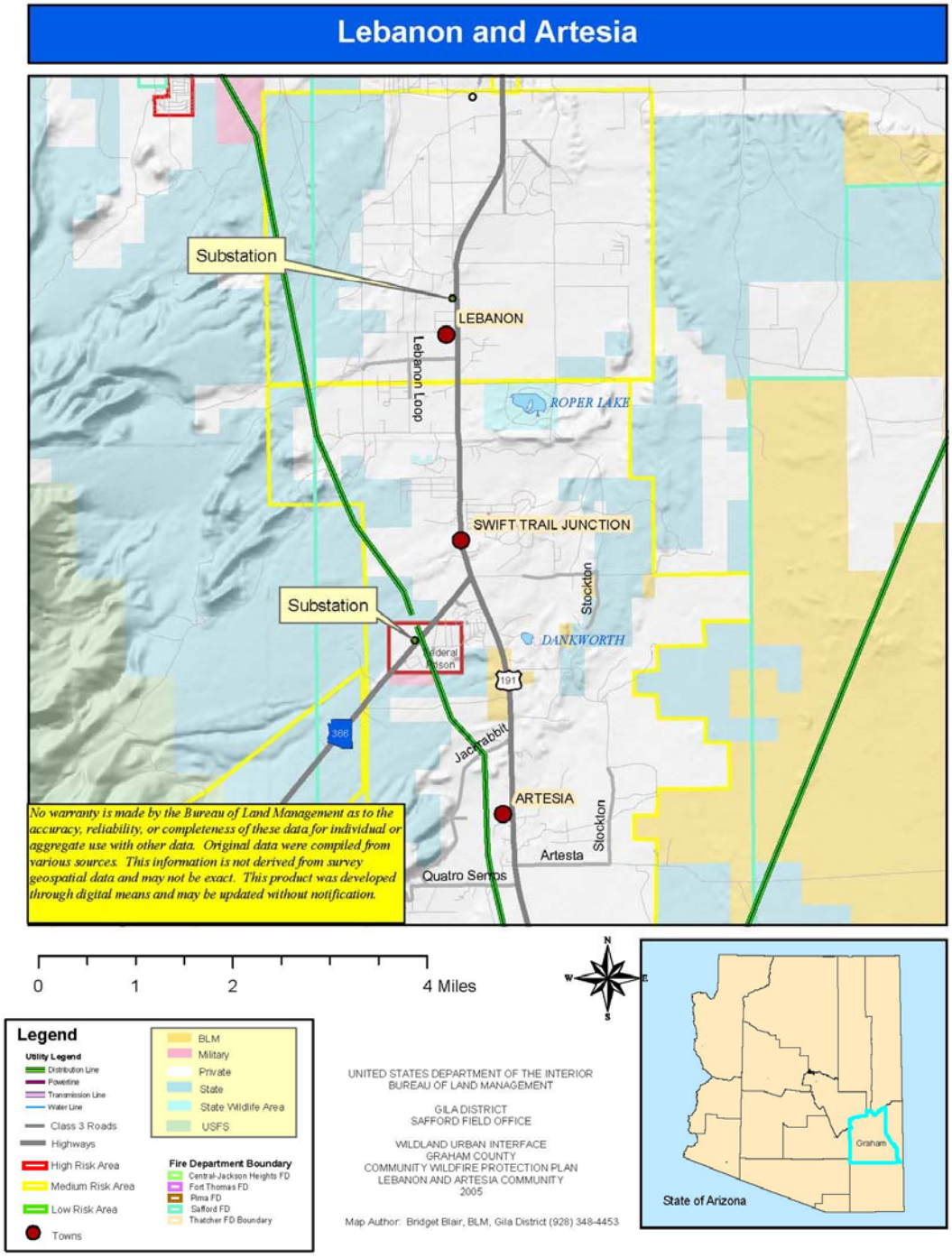
**1. Mount Graham**

Located in the Northeast portion of the CNF, the WUI consists of Turkey Flat cabins, private ranch parcels, municipal watersheds, transportation and utilities corridors and communication and Forest Service fire lookout facilities located on Heliograph, Webb Peak, West Peak, and Lady Bug Saddle on Mount Graham. The CAG considered the threat of wildfire from the forest lands in delineating this area of the WUI which extends one half mile into the CNF. To the North, the WUI extends to the Southern boundary of Artesia/Lebanon. The Northern boundary of the WUI has a change in vegetation type from oak/juniper woodland to desert scrub. The land in Turkey Flat, Heliograph Peak, Hawk Peak, Columbine, and West Peak is National Forest land, with several private structures located on CNF land by special use permit.

Current residential development includes approximately 88 constructed cabins, several of which are accompanied by detached accessory buildings (sheds, etc.). In addition, Columbine Work Center includes 9 administrative structures, the Columbine Bible Camp contains 5
structures, and Angle's Orchard contains both structures and commercial vegetation (fruit trees).

The area of the WUI also includes the Federal land surrounding Heliograph, West Peak, and Lady Bug Saddle. Heliograph Peak consists of communication towers and other structures under special use permit through the CNF. This site is a major communication site for Southeast Arizona and the Southwestern United States. The CNF also has a fire lookout tower on the site. The loss of this site would disrupt communications across the Southwest. Agencies that maintain communication facilities on Heliograph Peak include the Graham County Sheriff's Department, Graham County Emergency Services, Arizona Department of Corrections, Arizona Department of Public Safety, the U.S. Border Patrol, and many others.

A major site on Mount Graham is the Steward Observatory where biology cabins, astronomical telescopes, and other structure and infrastructure reside. Important corollaries to this site are electric power boxes placed in strategic locations on Mount Graham, and water line systems that service this site, Treasure Park, Columbine and Turkey Flat Cabins, the Columbine Bible Camp, and the Columbine Work Center.


Lebanon and Artesia
Substation
LEBANON
Lebanon Loop
ROPER LAKE
SWIFT TRAIL JUNCTION
Substation
Stockton
DANKWORTH
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366
Jackrabbit
ARTESIA
Stockton
Artesta
Quatro Semos
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State Wildlife Area
USFS
Fire Department Boundary
Central-Jackson Heights FD
Fort Thomas FD
Pima FD
Safford FD
Thatcher FD Boundary
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
GILA DISTRICT
SAFFORD FIELD OFFICE
WILDLAND URBAN INTERFACE
GRAHAM COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN
LEBANON AND ARTESIA COMMUNITY
2005
Map Author: Bridget Blair, BLM, Gila District (928) 348-4453
Graham
State of Arizona

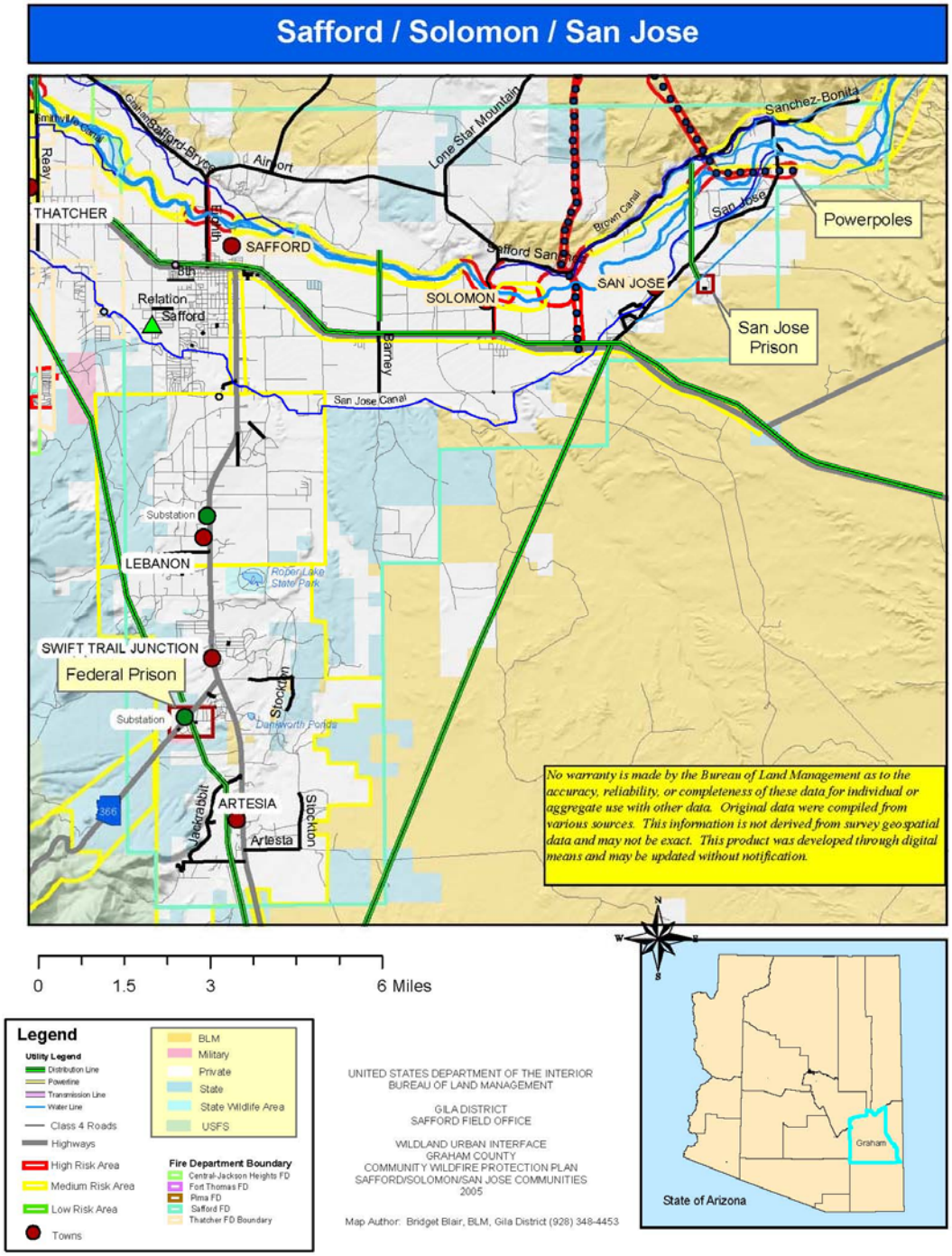
**2. Lebanon and Artesia**

Located in the central portion of Graham County, the unincorporated communities of Lebanon and Artesia have a modest annual population. The portion of the WUI associated with Lebanon and Artesia includes the non-Federal lands that encompass State Route 366 and US Highway 191 outside of the Safford City limits. The CAG has identified a high risk of wildfire from the upland desert vegetation surrounding these communities. The extensive WUI buffer area extends ½ mile East, West, and South of the community because of high community values and prevailing wind patterns. Roper Lake and Dankworth Pond provide important recreational fishing opportunities, and Arizona State Parks has developed facilities to support camping, fishing, and family/community outdoor festivities.

The communities of Lebanon and Artesia are located in an upper Sonoran Desert scrub ecosystem. The character of the community is centered on a rural family lifestyle, with a mixture of < 1 acre and one acre residential lots, small commercial enterprises, Federal prison facilities, and religious structures. The majority of land is privately owned, with State and Federally owned parcels surrounding the community. Recreation, and mixed-density residential development are the primary land uses in the community. The commercial developments are centered along the US Highway 191 and State Route 366 corridor.

Planning for these growth areas includes encouraging open space, controlling high-density uses in flood prone areas, enhancing aesthetics, encouraging single-family residences, resort uses, outdoor recreation (e.g. fishing, camping, and hiking) personal service, and retail uses to serve residents and visitors, maintaining rural community quality and image, and protecting the public safety.

Lebanon/Artesia experience a minimum influx of seasonal population growth associated with the recreational opportunities located in the region. Existing and continuing development of paved roads, utilities, and public buildings adds to the community's infrastructure. Fire protection is provided to the community by the Safford Fire Department through agreement with the Safford Rural Fire District.


Safford / Solomon / San Jose
THATCHER
SAFFORD
Relation
Safford
SOLOMON
SAN JOSE
Powerpoles
San Jose
Prison
Lone Star Mountain
Airport
Sanchez-Bonita
Brown Canal
San Jose
Safford San Jose
Barney
San Jose Canal
Substation
LEBANON
Roper Lake
State Park
SWIFT TRAIL JUNCTION
Federal Prison
Substation
Stockton
Dunsworth Ponds
ARTESIA
Artesia
Jackrabbit
Stockton
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information is not derived from survey geospatial data and may not be exact. This product was developed through digital means and may be updated without notification.
0
1.5
3
6 Miles
Legend
Utility Legend
Distribution Line
Powerline
Transmission Line
Water Line
Class 4 Roads
Highways
High Risk Area
Medium Risk Area
Low Risk Area
Towns
BLM
Military
Private
State
State Wildlife Area
USFS
Fire Department Boundary
Central-Jackson Heights FD
Fort Thomas FD
Pima FD
Safford FD
Thatcher FD Boundary
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
GILA DISTRICT
SAFFORD FIELD OFFICE
WILDLAND URBAN INTERFACE
GRAHAM COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN
SAFFORD/SOLOMON/SAN JOSE COMMUNITIES
2005
Map Author: Bridget Blair, BLM, Gila District (928) 348-4453
Graham
State of Arizona

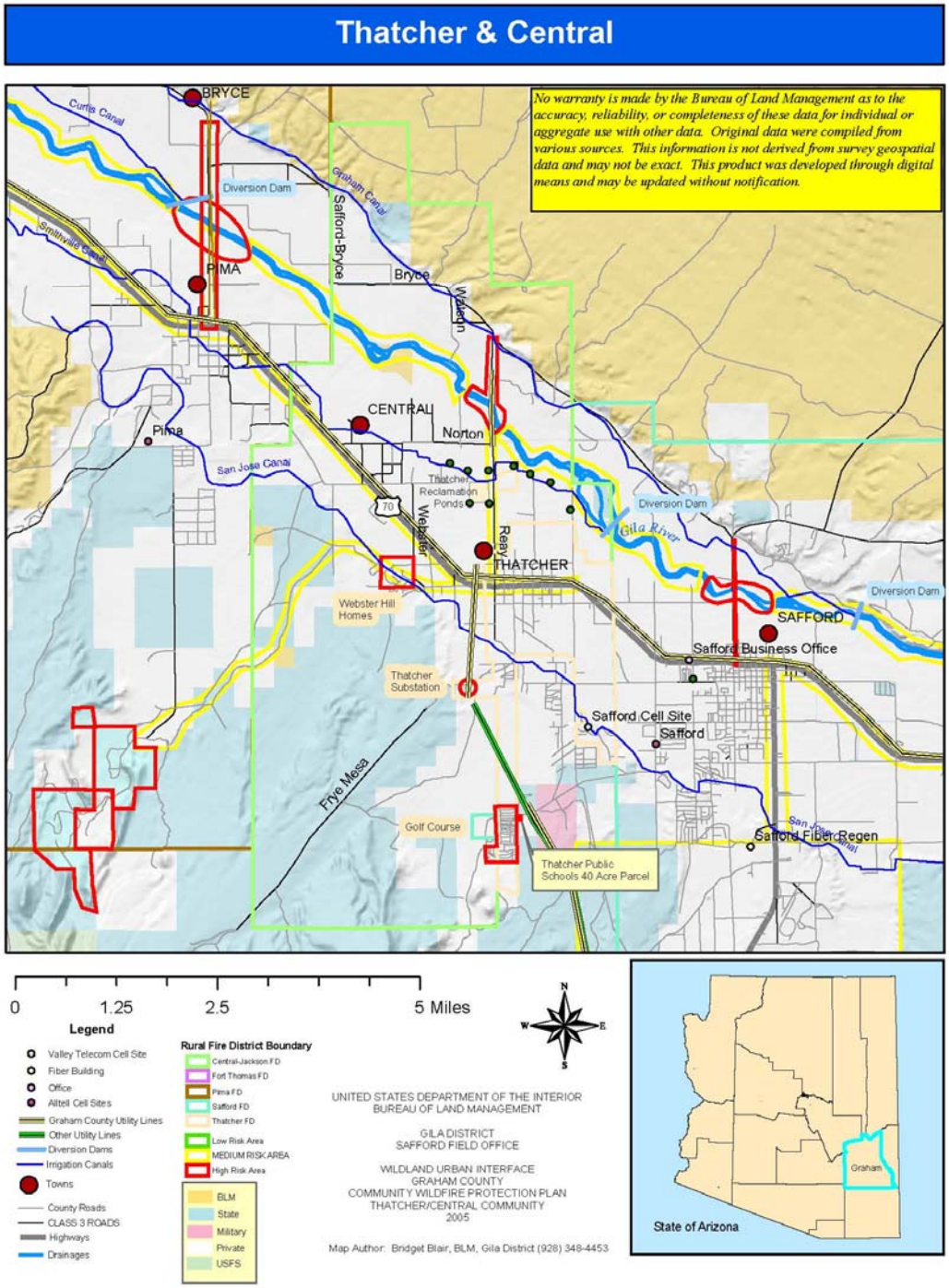
### 3. Safford / Solomon / San Jose

The portion of the WUI associated with Safford, Solomon, and San Jose includes the private, BLM, and Arizona State Trust lands that encompass US Highways 70 and 191. The CAG has identified the threat of wildfire from the upland desert and riparian vegetation surrounding these communities. The extensive WUI buffer area extends North, South, and East of the communities because of high community values, vegetation conditions, and prevailing wind patterns.

Safford, Solomon, and San Jose are upper Sonoran Desert communities in a desert, shrub, salt cedar, riparian woodland vegetation setting. The character of the community is centered on a rural family lifestyle, with a mixture of farmland, < 1 acre and one acre residential lots, small commercial enterprises, State prison facilities, religious structure, parcels located in the North, South and East portions of the community. Recreation/open space, retail commercial, and mixed-density residential development are the primary land uses in the community. The commercial developments are centered along US Highway 70 and 191 corridors.

Planning for these growth areas includes encouraging open space; controlling high-density uses in flood prone areas; enhancing aesthetics; encouraging single-family residences, resort uses, personal service, and retail uses to serve residents and visitors; maintaining rural community quality and image; and protecting the public safety.

With an estimated year-round population of slightly more than 25,232, Safford, Solomon, and San Jose experiences a **minimal** influx of seasonal population growth associated with the recreational opportunities and winter climate in the region. Maintenance and continuing development of paved roads, utilities, and public buildings supports the community's infrastructure. Fire protection is provided to the communities by the **Safford Fire Department.**


Thatcher & Central
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information is not derived from survey geospatial data and may not be exact. This product was developed through digital means and may be updated without notification.
BRYCE
Curtis Canal
Diversion Dam
Graham Canal
Safford-Bryce
Smithville Canal
PIMA
Bryce
Wilson
CENTRAL
Norton
Pima
San Jose Canal
Thatcher Reclamation Ponds
70
Webster
Reay
THATCHER
Diversion Dam
Gila River
Webster Hill Homes
SAFFORD
Safford Business Office
Thatcher Substation
Safford Cell Site
Safford
Frye Mesa
Golf Course
Safford Fiber Regen
Thatcher Public Schools 40 Acre Parcel
0
1.25
2.5
5 Miles
N
W
E
S
Legend
Valley Telecom Cell Site
Fiber Building
Office
Alltell Cell Sites
Graham County Utility Lines
Other Utility Lines
Diversion Dams
Irrigation Canals
Towns
County Roads
CLASS 3 ROADS
Highways
Drainages
Rural Fire District Boundary
Central-Jackson FD
Fort Thomas FD
Pima FD
Safford FD
Thatcher FD
Low Risk Area
MEDIUM RISK AREA
High Risk Area
BLM
State
Military
Private
USFS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
GILA DISTRICT
SAFFORD FIELD OFFICE
WILDLAND URBAN INTERFACE
GRAHAM COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN
THATCHER/CENTRAL COMMUNITY
2005
Map Author: Bridget Blair, BLM, Gila District (928) 348-4453
Graham
State of Arizona

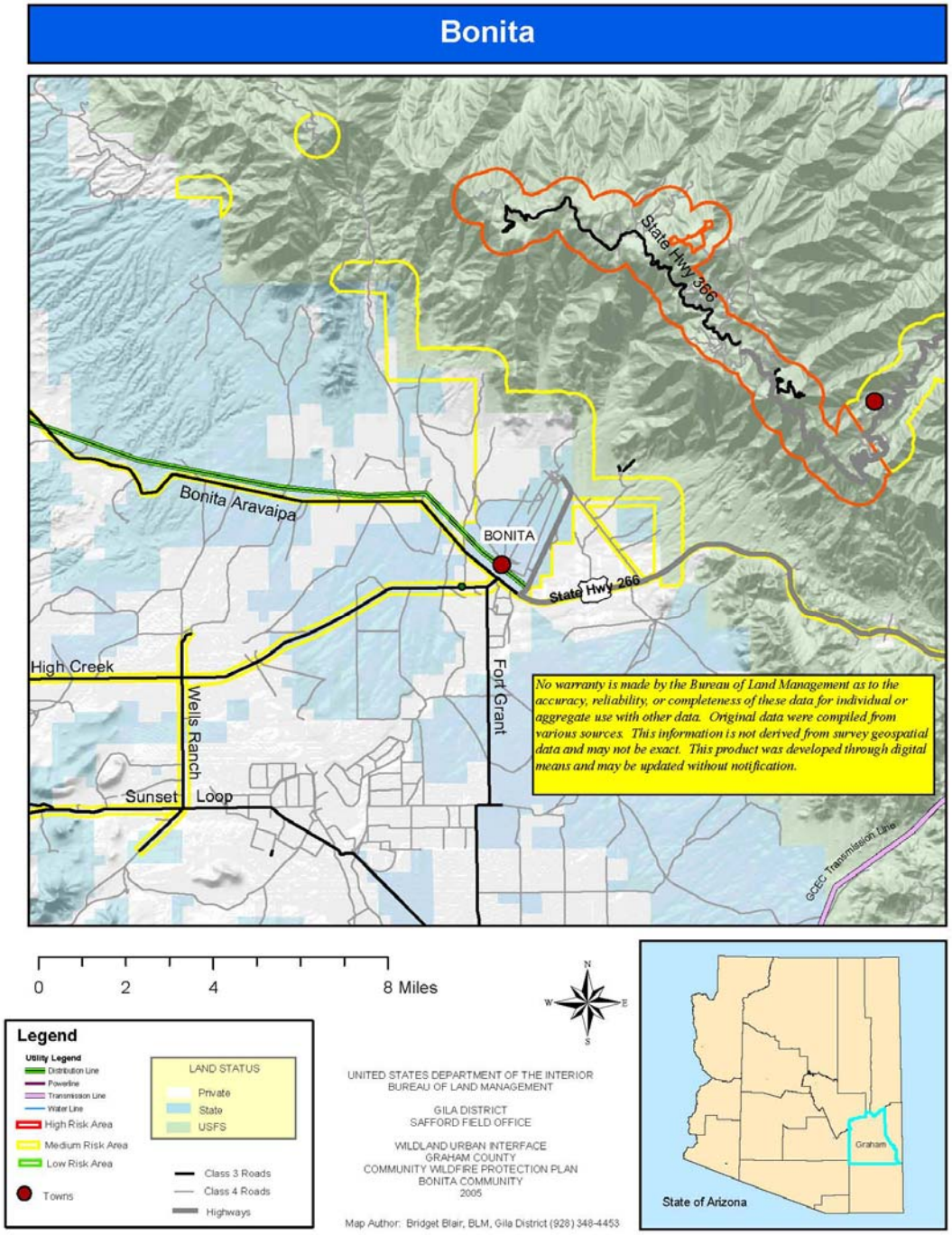
**4. Thatcher / Central**

Located in the central portion of Graham County, the communities of Thatcher and Central have a growing rural population. The portion of the WUI associated with Thatcher and Central includes the private lands that encompass US Highway 70, Reay Lane, and the Safford - Bryce Road. The CAG has identified the threat of wildfire from the upland desert and riparian vegetation surrounding these communities. The WUI buffer area extends North and South of the community because of high community values, vegetation conditions, and prevailing wind patterns.

Thatcher and Central are upper Sonoran Desert communities in a desert shrub, and salt cedar vegetative setting. The character of the community is centered on a rural family lifestyle, with a mixture of farmland, < 1 acre and one acre residential lots, small commercial enterprises, religious structures, and planned communities. The majority of land is privately owned, with State and Federally owned parcels located in the North and South portions of the community. Recreation, higher education, and mixed-density residential development are the primary land uses in the community. The commercial developments are centered along the US Highway 70 corridor.

Planning for these growth areas includes encouraging open space; controlling high-density uses in flood prone areas; enhancing aesthetics; encouraging single-family residences, resort uses, personal service, and retail uses to serve residents and visitors; maintaining rural community quality and image; and protecting the public safety.

Thatcher and Central experience a **moderate** influx of seasonal population growth associated with the recreational opportunities and winter climate in the region. Maintenance and continuing development of paved roads, utilities, and public buildings supports the community's infrastructure. Fire protection is provided by the **Thatcher Fire Department inside municipal boundaries and through** contract with the Central-Jackson Heights Fire District inside District boundaries.


Bonita
State Hwy 366
Bonita Aravaipa
BONITA
State Hwy 266
High Creek
Wells Ranch
Fort Grant
Sunset Loop
GCEC Transmission Line
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information is not derived from survey geospatial data and may not be exact. This product was developed through digital means and may be updated without notification.
0 2 4 8 Miles
N
W
E
S
Legend
Utility Legend
Distribution Line
Powerline
Transmission Line
Water Line
High Risk Area
Medium Risk Area
Low Risk Area
Towns
LAND STATUS
Private
State
USFS
Class 3 Roads
Class 4 Roads
Highways
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
GILA DISTRICT
SAFFORD FIELD OFFICE
WILDLAND URBAN INTERFACE
GRAHAM COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN
BONITA COMMUNITY
2005
Map Author: Bridget Blair, BLM, Gila District (928) 348-4453
Graham
State of Arizona

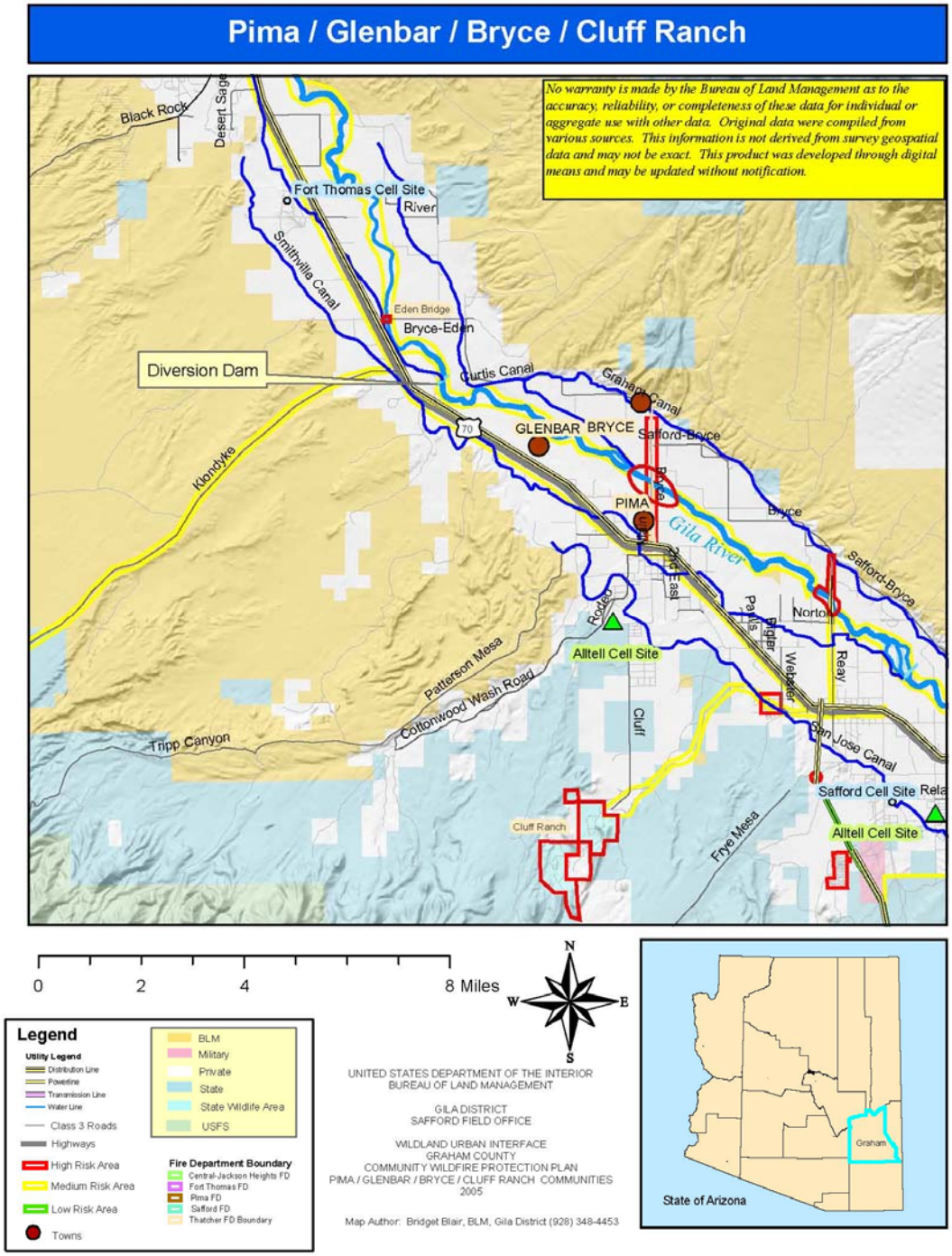
**5. Bonita**

The portion of the WUI associated with Bonita includes the private, CNF, and Arizona State Trust lands West of US Highway 191, and the Fort Grant Prison Complex. The CAG has identified the threat of wildfire from the upland desert vegetation surrounding the community . The extensive WUI buffer area extends North of the community because of high community values associated with Mount Graham, vegetation conditions, and prevailing wind patterns.

Bonita is an upper Sonoran Desert / Woodland community. The character of the community is centered around a rural ranching lifestyle, with ¼ acre plus private lots surrounded by CNF and Arizona State Trust lands. Outside of Fort Grant, recreation, agriculture, and livestock grazing are the primary land uses in the community.

Planning for this area includes promoting continued grazing and recreation uses, maintaining agricultural enterprises, and establishment of limited retail uses to service residents and visitors.

Bonita experiences a minimal influx of seasonal population growth associated with the recreational opportunities and winter climate in the region. Maintenance and containing development of paved roads, utilities, and public buildings supports the community's infrastructure. Wildland only fire protection is provided to the community by the Arizona State Land Department, with secondary wildland only fire protection by the CNF.


Pima / Glenbar / Bryce / Cluff Ranch
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Black Rock
Desert Sage
Fort Thomas Cell Site
River
Smithville Canal
Eden Bridge
Bryce-Eden
Diversion Dam
Curtis Canal
Graham Canal
GLENBAR
BRYCE
Safford-Bryce
Klondyke
PIMA
Gila River
Bryce
Safford-Bryce
Norton
Alltell Cell Site
Patterson Mesa
Cottonwood Wash Road
Tripp Canyon
Cluff
San Jose Canal
Safford Cell Site
Alltell Cell Site
Cluff Ranch
Frye Mesa
0
2
4
8 Miles
N
W
E
S
Legend
Utility Legend
Distribution Line
Powerline
Transmission Line
Water Line
Class 3 Roads
Highways
High Risk Area
Medium Risk Area
Low Risk Area
Towns
BLM
Military
Private
State
State Wildlife Area
USFS
Fire Department Boundary
Central-Jackson Heights FD
Fort Thomas FD
Pima FD
Safford FD
Thatcher FD Boundary
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
GILA DISTRICT
SAFFORD FIELD OFFICE
WILDLAND URBAN INTERFACE
GRAHAM COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN
PIMA / GLENBAR / BRYCE / CLUFF RANCH COMMUNITIES
2005
Map Author: Bridget Blair, BLM, Gila District (928) 348-4453
Graham
State of Arizona

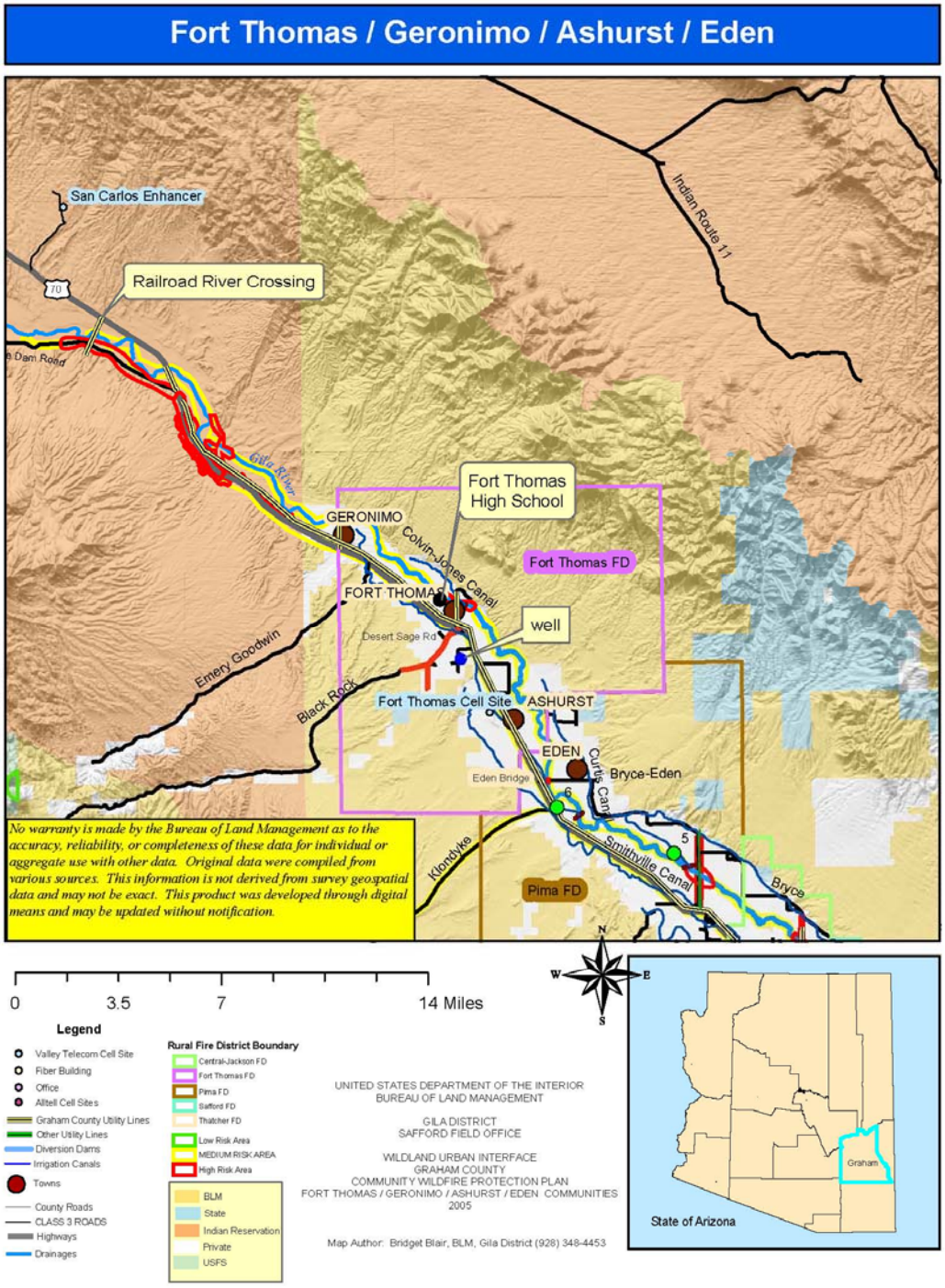
**6. Pima / Glenbar / Bryce / Cluff Ranch**

The portion of the WUI associated with the Pima, Glenbar, Bryce, and Cluff Ranch communities includes the private, BLM, and Arizona State Trust land accessed by US Highway 70, Cottonwood Wash (drinking water wells) and Cottonwood Wash Road, and the Safford-Bryce Road. The CAG has identified the threat of wildfire from the upland desert and riparian vegetation surrounding these communities. The extensive wUI buffer area extends North and South of the community because of high community values, vegetation conditions, and prevailing wind patterns.

Pima, Glenbar, Bryce, and Cluff Ranch are upper Sonoran Desert communities in a desert scrub, tamarisk bosque, and mesquite bosque setting. The character of the community is centered on a rural family lifestyle, with a mixture of < 1 acre and one acre residential lots, small commercial enterprises, religious structures, and resorts. The majority of land is privately owned, with State and Federally owned parcels located in the Northern, Southern, and Western portions of the community. Recreation, farming, and mixed-density residential development are the primary land uses in the community. The commercial developments are centered along the US Highway 70 corridor, and an Arizona Game and Fish recreation and wildlife area is located several miles South of Highway 70 in an area called Cluff Ranch.

Planning for these growth areas includes encouraging farming and recreational uses, single family residences, resort uses, and retail uses to serve residents and visitors.

Pima, Glenbar, Bryce, and Cluff Ranch experience a minimal influx of seasonal population growth associated with the recreational opportunities and winter climate in the region. Maintenance and continuing development of paved roads, utilities, and public buildings supports the community's infrastructure. Fire protection is provided to these communities by the Pima Rural Fire District.


Fort Thomas / Geronimo / Ashurst / Eden
San Carlos Enhancer
Railroad River Crossing
Indian Route 11
Gila River
GERONIMO
Colvin-Jones Canal
Fort Thomas High School
Fort Thomas FD
FORT THOMAS
well
Desert Sage Rd
Emery Goodwin
Black Rock
Fort Thomas Cell Site
ASHURST
EDEN
Eden Bridge
Bryce-Eden
Curtis Canal
Smithville Canal
Klondyke
Pima FD
Bryce
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information is not derived from survey geospatial data and may not be exact. This product was developed through digital means and may be updated without notification.
0
3.5
7
14 Miles
N
W
E
S
Legend
Valley Telecom Cell Site
Fiber Building
Office
Alltell Cell Sites
Graham County Utility Lines
Other Utility Lines
Diversion Dams
Irrigation Canals
Towns
County Roads
CLASS 3 ROADS
Highways
Drainages
Rural Fire District Boundary
Central-Jackson FD
Fort Thomas FD
Pima FD
Safford FD
Thatcher FD
Low Risk Area
MEDIUM RISK AREA
High Risk Area
BLM
State
Indian Reservation
Private
USFS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
GILA DISTRICT
SAFFORD FIELD OFFICE
WILDLAND URBAN INTERFACE
GRAHAM COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN
FORT THOMAS / GERONIMO / ASHURST / EDEN COMMUNITIES
2005
Map Author: Bridget Blair, BLM, Gila District (928) 348-4453
Graham
State of Arizona

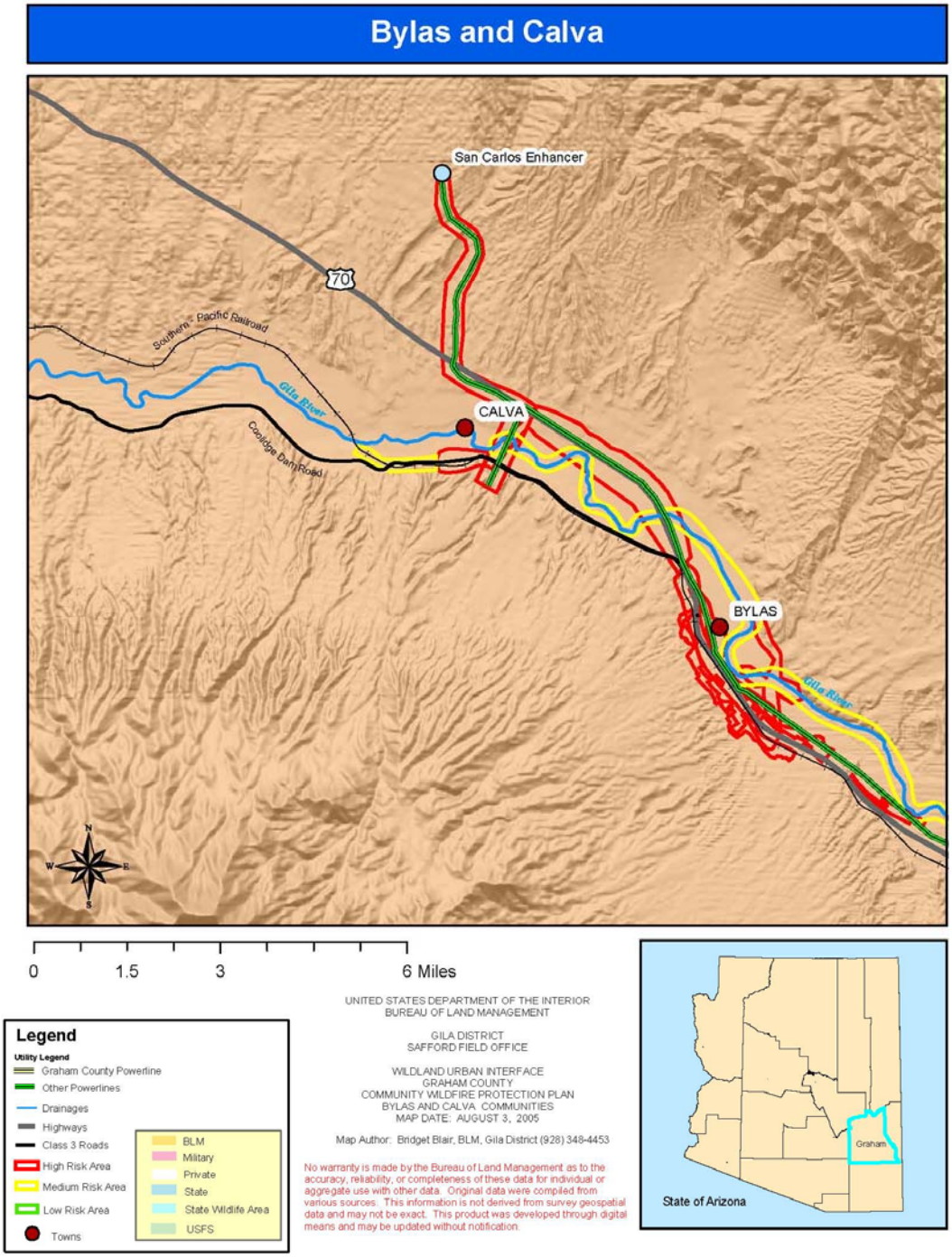
**7. Fort Thomas, Geronimo, Ashurst and Eden**

The portion of the WUI associated with the Fort Thomas, Geronimo, Ashurst, and Eden communities includes the private and BLM lands that surround US Highway 70. The CAG has identified the threat of wildfire from the Upland desert and riparian vegetation and surrounding these communities. Of special concern is the salt cedar near key infrastructure and public schools. The WUI buffer area extends both North and South of the WUI because of high community values, vegetation conditions, and prevailing wind patterns.

Fort Thomas, Geronimo, Ashurst, and Eden are upper Sonoran Desert communities in a dessert scrub, mesquite bosque, and tamarisk bosque setting. The character of the community is centered on a rural family lifestyle, with a mixture of < 1 acre and one acre residential lots, small commercial enterprises, religious structures, and farmland. The majority of land is privately owned, with Federally owned parcels located in the Northern and Southern portions of the community. Recreation, farming, and mixed-density residential development are the primary land uses in the community. The commercial developments are centered along the US Highway 70 corridor.

Planning for these areas includes personal service and retail uses to serve residents and visitors, maintaining rural community quality and image, and protecting the public safety.

Fort Thomas, Geronimo, Ashurst, and Eden experience a minimal influx of seasonal population growth associated with the recreational opportunities and winter climate in the region. Maintenance and continuing development of paved roads, utilities, and public buildings supports the community's infrastructure. Fire protection is provided to the communities by the Fort Thomas Rural Fire District, which is trained for wildland fire suppression.


Bylas and Calva
San Carlos Enhancer
70
Southern Pacific Railroad
Gila River
CALVA
Coolidge Dam Road
BYLAS
Gila River
N
W
E
S
0
1.5
3
6 Miles
Legend
Utility Legend
Graham County Powerline
Other Powerlines
Drainages
Highways
Class 3 Roads
High Risk Area
Medium Risk Area
Low Risk Area
Towns
BLM
Military
Private
State
State Wildlife Area
USFS
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
GILA DISTRICT
SAFFORD FIELD OFFICE
WILDLAND URBAN INTERFACE
GRAHAM COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN
BYLAS AND CALVA COMMUNITIES
MAP DATE: AUGUST 3, 2005
Map Author: Bridget Blair, BLM, Gila District (928) 348-4453
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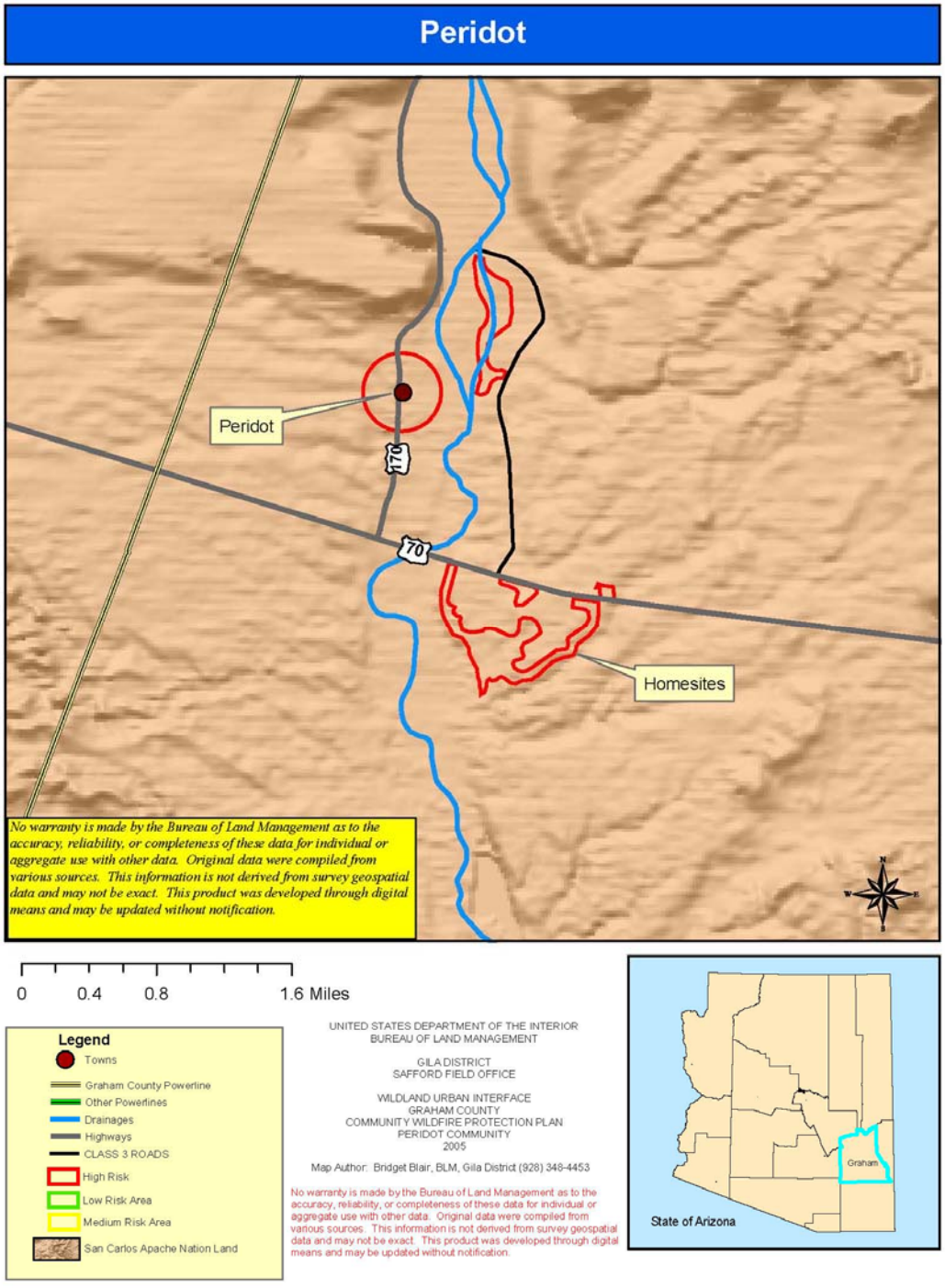
Graham
State of Arizona


Peridot
Peridot
170
70
Homesites
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information is not derived from survey geospatial data and may not be exact. This product was developed through digital means and may be updated without notification.
0 0.4 0.8 1.6 Miles
Legend
Towns
Graham County Powerline
Other Powerlines
Drainages
Highways
CLASS 3 ROADS
High Risk
Low Risk Area
Medium Risk Area
San Carlos Apache Nation Land
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
GILA DISTRICT
SAFFORD FIELD OFFICE
WILDLAND URBAN INTERFACE
GRAHAM COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN
PERIDOT COMMUNITY
2005
Map Author: Bridget Blair, BLM, Gila District (928) 348-4453
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Graham
State of Arizona

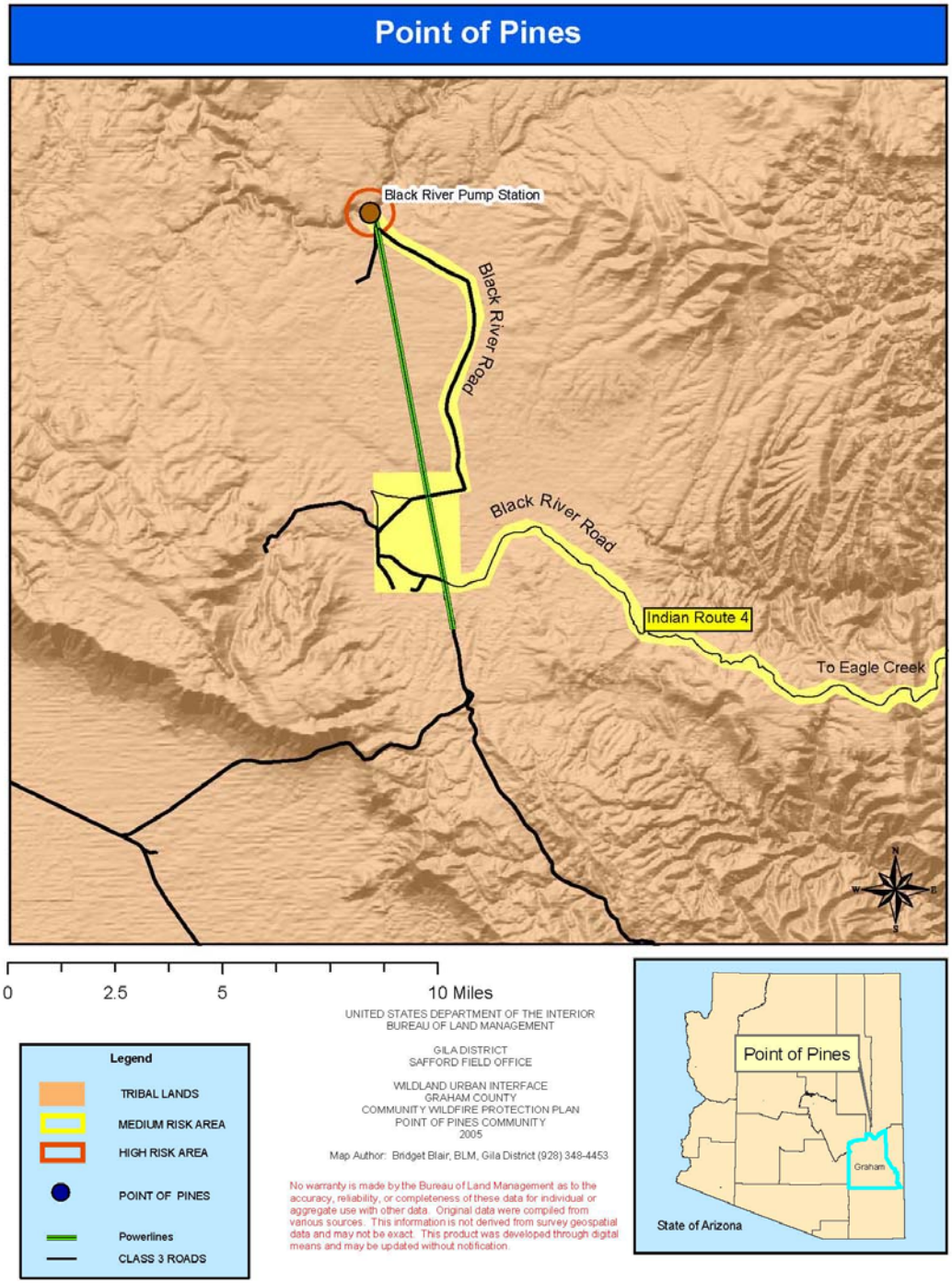
**8. Bylas, Calva and Peridot**

The portion of the WUI associated with the Bylas, Calva, and Peridot communities is located on the San Carlos Apache Reservation accessed by US Highway 70. The CAG has identified the threat of wildfire from the upland desert and riparian vegetation surrounding these communities. The extensive WUI buffer area extends North, South, and West of the communities because of high community values, vegetation conditions, and prevailing wind patterns.

Bylas, Calva, and Peridot are upper Sonoran Desert communities in a desert scrub, and tamarisk bosque setting. The character of each community is centered on a rural family lifestyle, with a mixture of < 1 acre and one acre residential lots, small commercial enterprises, as well as school, government, and religious structures. The land is owned by the San Carlos Apache Tribe. Recreation, agriculture, retail commercial, and mixed-density residential development are the primary land uses in the community. The commercial developments are centered along US Highway 70.

Planning for these areas includes retail development, personal service and retail uses to serve residents and visitors, and protecting the public safety.

Bylas, Calva, and Peridot experience a minimal influx of seasonal population growth associated with the recreational opportunities and winter climate in the region. Maintenance and continuing development of paved roads, utilities, and public buildings supports the community's infrastructure. Fire protection is provided to these communities by the San Carlos Fire Department.


Point of Pines
Black River Pump Station
Black River Road
Black River Road
Indian Route 4
To Eagle Creek
0
2.5
5
10 Miles
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
GILA DISTRICT
SAFFORD FIELD OFFICE
WILDLAND URBAN INTERFACE
GRAHAM COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN
POINT OF PINES COMMUNITY
2005
Map Author: Bridget Blair, BLM, Gila District (928) 348-4453
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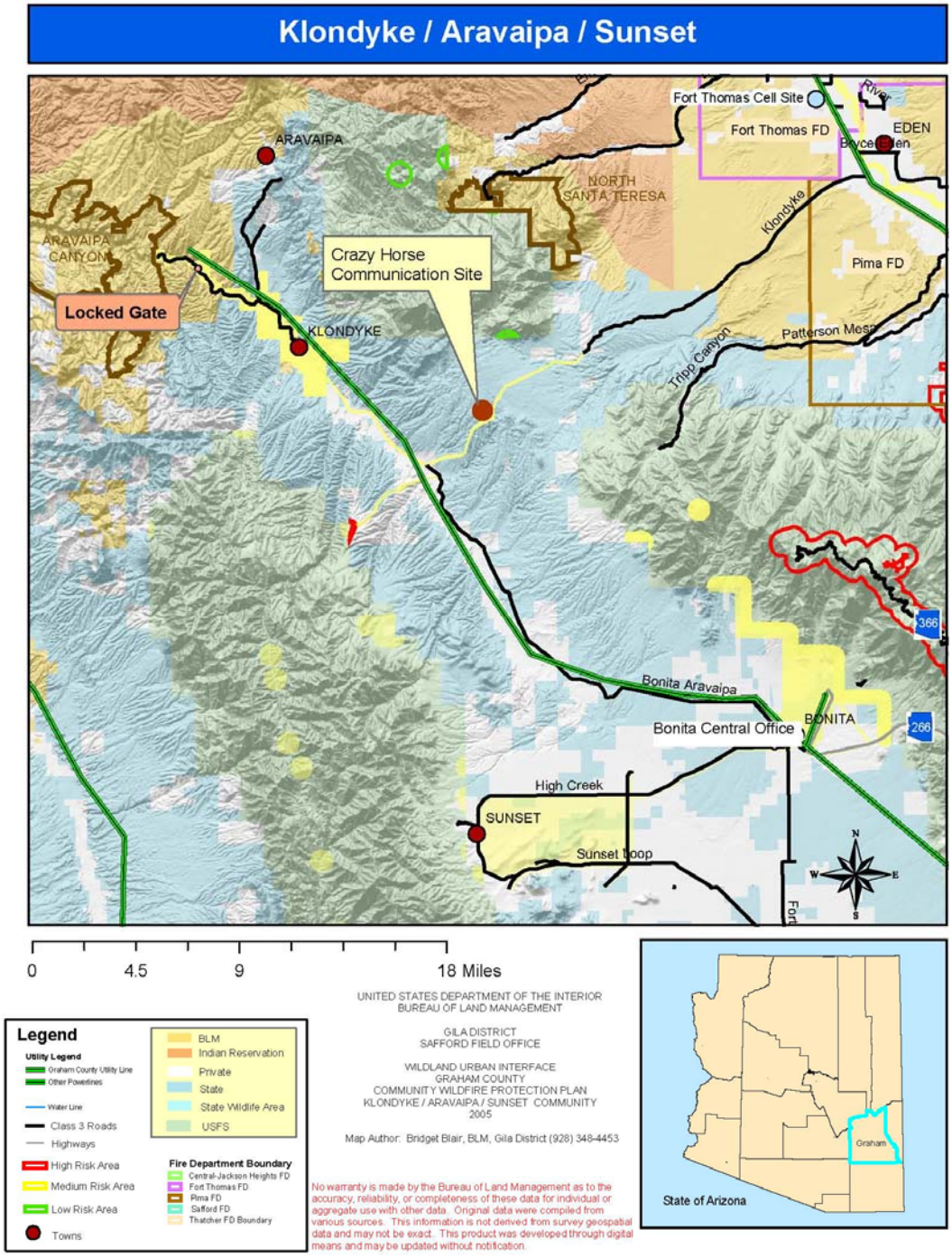
Legend
TRIBAL LANDS
MEDIUM RISK AREA
HIGH RISK AREA
POINT OF PINES
Powerlines
CLASS 3 ROADS
Point of Pines
Graham
State of Arizona

### 9. Point of Pines

The portion of the WUI associated with the Point of Pines community includes San Carlos Apache Tribal lands. The CAG has identified the threat of wildfire from the upland desert vegetation surrounding these communities. The extensive WUI buffer area extends around the entire community, because of high community values, vegetation conditions, and prevailing wind patterns.

Point of Pines is a Pine Forest community. The character of the community is centered on a rural recreation and ranching lifestyle. The land is owned by the San Carlos Apache Tribe and managed by San Carlos Tribal Forestry. Seasonal recreation and livestock grazing are the primary land uses in the community. Also important is the Black River pumping station.

Point of Pines experiences a highly transient influx of seasonal population growth associated with recreational opportunities. Maintenance and continuing development of roads, utilities, and seasonal use buildings supports the community's infrastructure. Fire protection is provided by the BIA and San Carlos Tribal Forestry.

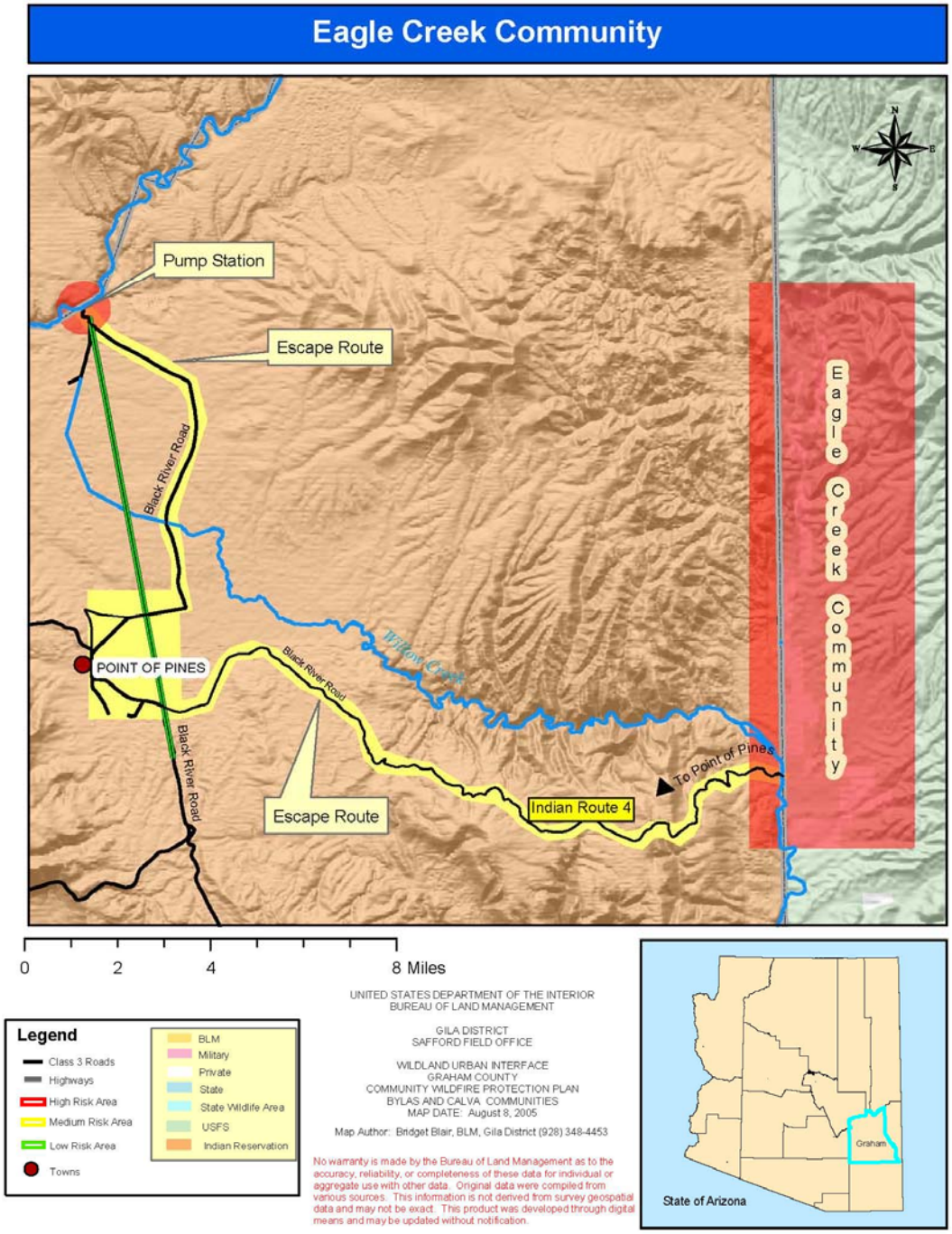

Klondyke / Aravaipa / Sunset
Fort Thomas Cell Site
Fort Thomas FD
EDEN
ARAVAIPA
NORTH SANTA TERESA
Klondyke
ARAVAIPA CANYON
Crazy Horse Communication Site
Pima FD
Locked Gate
KLONDYKE
Patterson Mesa
Tripp Canyon
366
Bonita Aravaipa
Bonita Central Office
BONITA
266
High Creek
SUNSET
Sunset Loop
N
W
E
S
0
4.5
9
18 Miles
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
GILA DISTRICT
SAFFORD FIELD OFFICE
WILDLAND URBAN INTERFACE
GRAHAM COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN
KLONDYKE / ARAVAIPA / SUNSET COMMUNITY
2005
Map Author: Bridget Blair, BLM, Gila District (928) 348-4453
Legend
Utility Legend
Graham County Utility Line
Other Powerlines
Water Line
Class 3 Roads
Highways
High Risk Area
Medium Risk Area
Low Risk Area
Towns
BLM
Indian Reservation
Private
State
State Wildlife Area
USFS
Fire Department Boundary
Central-Jackson Heights FD
Fort Thomas FD
Pima FD
Safford FD
Thatcher FD Boundary
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information is not derived from survey geospatial data and may not be exact. This product was developed through digital means and may be updated without notification.
Graham
State of Arizona

**10. Klondyke / Aravaipa / Sunset**

Located in the Southwest portion of Graham County, the portion of the WUI associated with the Klondyke, Aravaipa, and Sunset communities includes the private, CNF, BLM, and Arizona State Trust lands. The CAG has identified the threat of wildfire from the upland desert vegetation surrounding these communities. The extensive WUI buffer area extends North, South, East, and West of the community because of high community values, vegetation conditions, and prevailing wind patterns.

Klondyke, Aravaipa, and Sunset are upper Sonoran Desert communities in a mesquite bosque, desert scrub, and riparian woodland setting. The character of the community is centered on a rural family lifestyle, with a mixture of ranch land and multiple acre residential lots, small commercial enterprises, a small school, and resorts. The majority of land is privately owned, with State and Federally owned parcels located throughout the community. Recreation, open space, livestock grazing, mixed-density residential development are the primary land uses in the community.

Planning for this area centers around public safety, resort uses, agricultural use, and maintaining rural community quality and image. Maintenance and continuing development of paved roads, utilities, and public buildings supports the community's infrastructure. Fire protection is provided to the communities, for wildland fire suppression only, by the BLM, CNF, and Arizona State Land Department for wildland fires.


Eagle Creek Community
Pump Station
Escape Route
Black River Road
POINT OF PINES
Black River Road
Black River Road
Escape Route
Indian Route 4
To Point of Pines
Eagle Creek Community
N
W
E
S
0
2
4
8 Miles
Legend
Class 3 Roads
Highways
High Risk Area
Medium Risk Area
Low Risk Area
Towns
BLM
Military
Private
State
State Wildlife Area
USFS
Indian Reservation
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
GILA DISTRICT
SAFFORD FIELD OFFICE
WILDLAND URBAN INTERFACE
GRAHAM COUNTY
COMMUNITY WILDFIRE PROTECTION PLAN
BYLAS AND CALVA COMMUNITIES
MAP DATE: August 8, 2005
Map Author: Bridget Blair, BLM, Gila District (928) 348-4453
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Graham
State of Arizona

**11. Eagle Creek**

Located in the Northeast portion of Graham County and Northwest portion of Greenlee County, the Graham County portion of the WUI associated with Eagle Creek includes San Carlos Apache Reservation lands. The CAG has identified the threat of wildfire from the Pinyon-Juniper woodland and Ponderosa Pine forest vegetation surrounding this community.

The character of this community is centered on a rural family lifestyle, with a predominance of ranch land and multiple acre residential lots. Recreation, open space, livestock grazing, and mixed-density residential development are the primary land uses in the community.

Planning for this area centers around public safety, agricultural (livestock) use, and maintaining rural community quality and image. Maintenance and improvement of the secondary escape route (Indian Route 4) in Graham County aids the evacuation of the public during a wildland fire event. Fire protection is provided to the community, for wildland fire suppression in Graham County only, by San Carlos Tribal Forestry and the Bureau of Indian Affairs.

## Chapter 3. Community Assessment

The community assessment is an analysis of the risk of catastrophic wildfire to GCCWPP communities. This risk analysis incorporates the current Condition Class, wildfire fuel hazards, risk of ignition, fire occurrence, and the at-risk community values. Local preparedness and protection capabilities are also factors that contribute to delineation of areas of concern. The areas of concern for fuel hazards, risk of ignition and wildfire occurrence, and community values are evaluated and mapped, and then each is given relative and qualitative ratings of “high,” “moderate,” or “low.” A composite of these ratings, cumulative risk from wildfires for the communities, was then mapped.

### A. Fire Regime and Condition Class

Prior to European settlement of North America, fire played a natural (historical) role on the landscape. There are five historical regimes that have been identified during that time period based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant over-story vegetation. These five natural regimes include: The majority of the WUI lands consist of natural Fire Regime 1, as described in (*Development of Coarse-Scale Spatial Data for Wildland Fire and Fuel Management* (Forest Service 2002). The pine and mixed conifer Forests in the GCCWPP have a historic fire cycle of 1–10 years consistent with historic fire regime 1, and the spruce fir forest type has a historic fire cycle of 100-300 years, consistent with natural Fire Regime 3. The fire regime Condition Class of wildland habitats describes the degree to which the current fire regime has been altered from its historic range, the risk of losing key ecosystem components, and the vegetative attribute changes from historical conditions. There are three classes based on low (Condition Class 1), moderate (Condition Class 2), and high (Condition Class 3) departures from the natural (historical) regime. The majority of lands in the WUI are designated as currently being in Condition Class 2 or 3. Condition Class 3 lands in the WUI includes the spruce-fir, mixed conifer, and mixed Pine Cover Types, with forest canopy density ranging from 67 to 100 percent (see ). Condition Class 2 lands in the WUI also include the Oak-Juniper Woodland, Desert Scrub, mesquite bosque, and tamarisk Bosque Cover Types.

The desired future condition of Federal land is a return to Condition Class I as described in (*Fire Regime and Condition Class (FCC) Field Procedures—Standard & Scorecard Methods* (USDA Forest Service 2003).

### B. Fuel Hazards

The arrangement of fuel, relative flammability, and fire potential of vegetation varies greatly in the WUI. Fuel hazards depend on composition, type, arrangement, and/or condition of vegetation such that, if the fuel were ignited, an at-risk community or its community infrastructure could be threatened. Additionally, the existing topography in an area can provide natural fire breaks that help reduce the fuel hazard in communities.

Several fuel hazard components, including slope, aspect, vegetation type, vegetation density, ground fuel loads (in relation to vegetation type), and treated areas, were analyzed. Areas with dense growth (greater than 100 trees/acre) are shown on the map as having a high risk from fuel hazards. Areas with 35 percent slopes or greater and in an area of high or moderate ground fuels because of vegetation type and density, create

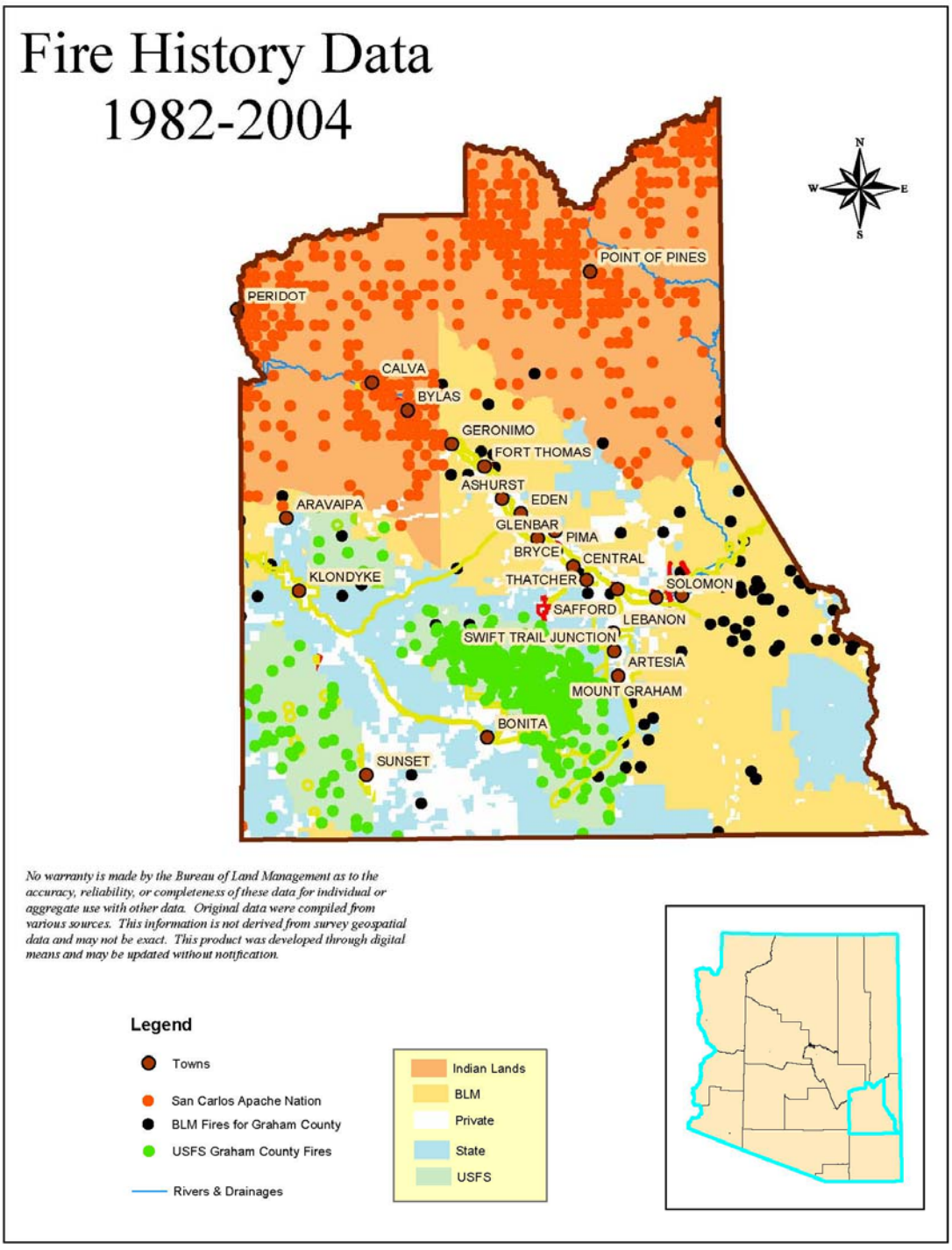
high risk from fuel hazards. Other untreated or unburned areas that fall under the category of moderate ground fuels and do not overlap with areas of steep slopes or with south, southwest, or west aspects are shown as moderate risk from fuel hazards. All other areas have low risk from fuel hazards, including the areas that have been previously treated or burned.

Considerable wildfire suppression efforts, coupled with the uninterrupted growth of small-diameter trees, created forest vegetative components that could not support the natural wildfire regime. Subsequently, wildfires became more frequent and severe than ever before in the region's modern history. Vegetated coniferous areas with higher densities create a greater risk for the spread of wildfire because of the potential crown-fire effect and fuel ladder-fire scenario. Areas of ponderosa pine were differentiated from areas of mixed conifer, spruce-fir woodland, and upper Sonoran vegetation associations, and meadowlands/grasslands. Wildland fuels have generally been categorized into four groups: grasses, brush, timber, and slash. The differences in fire behavior among these groups are basically related to fuel load and its distribution. The fuel load is a significant factor in determining whether a fire will be ignited, its rate of spread, and its intensity. Grasses and brush are vertically oriented fuels that enhance fire spread, while timber and slash are horizontally oriented fuel that enhance fire intensity. However, the configuration of live / dead fuels, moisture content, fuel load and type, and climate variability all influence fire hazard and risk and the effect of wildland fire (Covington and Moore, 1994; Garrett, 1995; Anderson, 1982; ).

Areas of the WUI adjacent to major stream channels are steep and heavily dissected, with many areas having slopes exceeding 35 percent. Areas with none of these fuel hazard characteristics and areas that have been treated or are proposed to be treated are identified as having less risk. Section E of this chapter summarizes identified hazards and values at risk for each community.

## C. Risk of Ignition and Wildfire Occurrence

Past regional wildfires are surmounted by the current potential for catastrophic wildfire destruction. Because of the combination of current drought conditions, inability to sufficiently reduce the density of small-diameter trees, and regional history of forest fires, the question is not "if" but "when" there will be a wildfire that threatens the WUI. Fire history for this region has come to the forefront because of the significant wildfires that occurred in or close to the GCCWPP area since 1984. **Figure 3.1 identifies fires in Graham County over the past 20 years.**




During the 2004 summer fire season, public use restrictions and closures were imposed by the CNF because of severe fire conditions**.** Still, the Nuttall Complex Fires started on June 26, 2004 and burned into the Heliograph communications site, within ½ mile of the Steward Observatory, ½ mile of the Turkey Flat Cabins, ¼ to ½ mile of the Columbine Bible Camp, and ¼ mile of the Columbine cabins. They burned approximately 29,400

acres, forcing the communities on Mount Graham to evacuate. The Nuttall Complex Fires were lightning-caused.

The common denominators for wildfire in Graham County include severe fire weather, high tree density, heavy winds, and drought. The lightning-fire season begins for in late spring and can continue until fall. The mid summer monsoon storms typically raise the humidity, reducing the risk of fire ignition.

**1. Pine, Mixed Conifer, and Spruce-Fir**

Over millennia, pine and mixed conifer forests have adapted to survive frequent low- to moderate-severity surface fires. Mature trees have thick bark, insulated buds, and a high capacity to recover from crown scorch, all of which contribute to the conifers' resistance to surface fires. These trees are self-pruning, which also protects the crowns from surface fire. Ponderosa pine seedlings become established in burned areas from seeds that survived the heat or are in areas that fire skipped over. Because of past management policies, many of today's pine and mixed conifer forests are unnaturally dense, with excessive understory growth and an accumulation of large quantities of forest litter instead of a grassy groundcover.

Fire exclusion/suppression has led to the build-up of fuels and to severe crown fires in Southwestern pine and mixed conifer forests. These forests contain an under-story of young spruce, pine, fir, juniper, and gambel oak—species that are less fire-resistant and more shade-tolerant than pines. The fire regime has changed from frequent surface fires to large, infrequent, stand-destroying crown fires (Howard 2004, Covington and Moore, 1994?).

**2. Pine-Oak and Oak-Juniper Woodlands**

"Extensive areas of pine-oak woodland occur along the east side of the continental divide in western Chihuahua. Along the western slope of the Sierra Madre Occidental the climate is generally somewhat wetter, with presumably milder winter temperatures, resulting in a more diverse flora with more tropical elements including Apache pine (*Pinus engelmannii*), Durango pine (*P. durangensis*), egg-cone pine (*P. oocarpa*), pino chino (*P. herrerae*), and Mexican tropical-montane oaks.

Towards southeastern Sonora and adjacent Chihuahua the pine-oak woodland is floristically and structurally akin to the Mexican pine-oak woodland of central and southern Mexico.

Pine-oak woodland is continuous with oak woodland at lower elevations. In pine-oak woodland the pines form the overstory while the oaks generally form an understory. There are extensive areas of pine-oak woodland in the mountains of our region. Pine-oak woodland is included within the concept of Madrean Evergreen Woodland (Brown 1982), and the pine forest has been called Madrean Montane Conifer Forest (Brown 1982). For our purposes of this study it is not practical to distinguish pine-oak woodland from pine forest. Especially in the southern part of our region oaks are a major part of the forests containing pines. The abundance of oaks may be in part a consequence of overharvesting of pines. However, especially in the northern part of the region a distinctive pine forest is distinguishable. In these communities Douglas Fir

(*Pseudotsuga menziesii*) is often locally common in an otherwise pinedominated forest, thus blurring the boundary with mixed conifer forest.

At higher elevations within the pine-oak zones the pines become increasingly conspicuous and the tree density increases so that the vegetation could be called forest rather than woodland. Pine forest is characteristically dominated by one species of pine, usually Arizona pine (*Pinus ponderosa* var. *arizonica*), ponderosa pine (*P. ponderosa* var. *scopulorum*, or white pine (*P. strobiformis*), with scattered individuals or small groups of oaks, especially Gambel oak (*Q. gambelii*) and net-leaf oak (*Q. rugosa*). Gambel oak is the only winter-deciduous oak in our region. Pine forest is more widespread in Chihuahua and Durango than in Sonora. Ponderosa pine replaces Arizona pine at the higher elevations in Chihuahua and on the northernmost sky islands. These closely-related pines can be found intermixed in the Santa Catalina Mountains in southern Arizona. Mountains ranges to the south have only Arizona pine, while the ranges to the north have only ponderosa pine" (http://www.biopark.org/sierramadre.html).

Oak-Woodland Associations (Madrean) Southern Arizona woodland communities dominated by mostly or wholly evergreen oaks. The primary species is Emory oak (*Quercus emoryi*), but other oaks like Arizona oak (*Q.arizonica*) and Mexican blue oak (*Q. oblon-,ifolia*) occur frequently with the often abundant alligator juniper (*Juniperus deppeana*) and sporadically-occurring one-seed juniper (*J. monosperma*) and Mexican pinyon (*Pinus cembroides*). These are normally (historically) open woodlands, with numerous associated species of grasses, dry-tropic shrubs, succulents, and some cacti (http://www.srnr.arizona.edu/uaaiug/docs/azgapappj_art.txt).

"Estimates of fuel wood consumption in a pine-oak woodland near Tombstone were made for 1880 to the present from data on fuel wood use by mines and census figures on domestic wood use for heating and cooking. Mining ended at the same time as forest reserves were established at the beginning of this century. Large juniper and oaks are now rare in the area, but the volume of standing fuel wood in the oak-juniper woodlands is probably greater now than in the preceding century because of reduced cutting since 1940. No major change in the area of oak-juniper woodland seems to have resulted from the historic consumption of large quantities of fuel wood" (http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=6937854).

**3. Mesquite Bosque**

"Bosque is a Spanish word for woodland and is used in the Desert Southwest to describe an often closed-canopy woodland that develops adjacent to desert streams and rivers. The most frequent trees are mesquites, especially Velvet Mesquite (*Prosopis juliflora*). These are mostly low trees rarely exceeding 15 meters and because there is rarely more than one canopy layer, the understory gets plenty of light. After periods of rain or during the winter months when the deciduous trees are leafless, a variety of lower shrubs and herbs can be found growing under the canopy.

The mesquite bosque is a highly productive habitat in terms of mammals, birds, insects and reptiles that make use of the shade and food resources... Other trees and shrubs

common here include desert hackberry, graythorn, blue palo verde, Mexican elder, virgin's bower, and indian root" (http://arizonensis.org/sonoran/fieldguide/bosque.html).

"Although the geographical distribution of mesquite in the southwestern United States has remained stable, densities within stands have increased since the late nineteenth century. This trend has been attributed to man's influence, either through suppression of natural fires or dissemination of mesquite seed by the herding and migration of domestic livestock" (Archer, 1989; as cited in Ansley, et. Al, "Mesquite Ecology", 1997 http://texnat.tamu.edu/symposia/SCULPTOR/8.htm ).

"Wright et al. (1976) observed that honey mesquite less than 2-3 years old were killed by fire, apparently because the bud zone meristem was still exposed. Older mesquites tolerate fire or other disturbances by re-sprouting from the bud zone if above ground parts are destroyed or damaged….

"To some degree, fire probably held mesquite density in check in pristine times (Archer 1989). Fire is known to have occurred periodically on rangelands prior to settlement, although frequencies are unknown. Fires are presumed to have been ignited naturally by lightning, in early spring (March) or mid- and late-summer (July-September), when grasses were dry and highly combustible. Indians also used fire to manipulate bison movement….Recent studies indicate that repeated summer or winter fires failed to kill adult mesquite (Ansley et al. 1995), suggesting that if fire played a role in regulating mesquite encroachment, it affected the plant at the seed or seedling growth stage (Ansley et. Al, 1997 http://texnat.tamu.edu/symposia/SCULPTOR/8.htm ).

**4. Desert Grassland and Shrub**

Grassland is a semiarid biome characterized by warm, humid summers with moderate rain and cold, dry winters. Grass is the dominant life form; scores of species form a nearly continuous cover over large areas. Other well-represented life forms are annuals and geophytes (herbaceous perennials such as bulbs that die to the ground each year). Populations of trees, shrubs, and succulents are kept at low levels by periodic fires during the dry season.

Most of the grasslands in the western States are intermediate between the true prairies of the American Midwest and deserts. They are called semi-desert or desert grasslands. Compared with prairie grassland, the grasses in desert grassland are shorter, less dense, and are more frequently interspersed with desert shrubs and succulents. Desert grassland or chaparral borders the northern Sonoran Desert on the east (http://www.desertmuseum.org/visit/exhibits_desertgrassland.html).

"In the Southwest, warm temperate grasslands are represented by a semi desert grassland with a more or less biseasonal to summer precipitation pattern. Since the 1970s, populations of woody plants, leaf succulents, and cacti have expanded, replacing perennial grass cover (Brown 1994). Factors attributed to changes in woody plant cover include regional climate shifts, increases in CO2 concentrations, changes in fire frequency, and herbivory (Brown and others 1997, Detling 1988, Pagani and others

1999). Semidesert grassland adjoins and largely surrounds the Chihuahuan Desert, and with the possible exception of some Sonoran Desert areas in west central Arizona, it is largely a Chihuahuan, semidesert grassland. Extensive areas of this grassland occur in the Southwest in Chihuahua, western Coahuila, Trans-Pecos Texas, the southern half of New Mexico, southeast Arizona, and extreme northeastern Sonora (Brown 1994)" (as cited in USDA Forest Service, 2004, " Southwestern Grassland Ecology, http://www.fs.fed.us/rm/pubs/rmrs_gtr135_vol1/rmrs_gtr135_vol1_018_048.pdf#search='desert%20grassland' ).

"The shrub life form that occurs in deserts is an adaptation from herbaceous forb ancestors. The herbaceous habitat has been modified to shrubs and half-shrubs having an aerial body that does not die down each year even though leaves may die and fall off in extremely dry periods and be replaced from new buds. The dominants are bushy shrubs, 60 to 120 centimeters tall, that stand far apart (often averaging 9 meters apart) but their roots spread widely and occupy the soil fully. If tops are killed, root sprouts emerge. Principal dominants in the area include Creosote Bush (*Larrea divaricata*), Spanishbayonet (*Yucca*), bursage (*Franseria dumosa*), Century Plant (*Agave*), Ocotillo (*Fouqueiria*), *Acacia* sp., Cacti (various genera),and Joshua Tree (*Yucca brevifolia*)" (http://spuds.agron.ksu.edu/sds.htm, 2005).

**5. Tamarisk / Riverine**

Tamarisk (salt cedar [*Tamarix ramosissima*]) is one of the most widely distributed and troublesome nonnative invasive plants along watercourses in the southwestern United Sates. Since its escape from cultivation saltcedar has spread primarily in the southwestern US and northern Mexico although its distribution extends to many parts of North America. It is especially pervasive in Arizona and has dominated low areas bordering the channel of the Gila River since the 1940s. More than 50% of the area covered by floodplain plant communities was dominated by saltcedar by 1970 (<www.fs.fed.us/database/feis/plants/tree/tamspp>). Saltcedar dominated communities are often monotypic, though arroweed and screwbean mesquite are common associates. Saltcedar communities can trap and stabilize alluvial sediments, reducing the width, depth and water-holding capacity of river channels.

Although there is little quantitative information on prehistoric frequency, seasonality, severity and spatial extent of fire in North American riparian ecosystems, fires in low- to mid-elevation southwestern riparian plant communities dominated by cottonwood, willow and/or mesquite are thought to have been infrequent. Increases in fire size or frequency have been reported for Gila River in recent decades. Fire appears to be less common in riparian ecosystems where tamarisk has not invaded. Increases in fire size and frequency are attributed to a number of factors including an increase in ignition sources, increased fire frequency in surrounding uplands, and increased abundance of fuels. The structure of saltcedar stands may be more conducive to repeated fire than that of native vegetation.

Saltcedar can contribute to increased vertical canopy density, creating volatile fuel ladders, thereby increasing the likelihood and impacts of wildfire. Tamarisk plants have many stems and high rates of stem mortality, resulting in a dense accumulation

of dead, dry branches vertically within the canopy as well as within the fuel bed. Large quantities of dead branches and leaf litter are caught in tamarisk branches above the ground surface, enhancing the crowns' flammability. In summary, the likelihood of fire in southwestern riparian ecosystems is greatest with the combination of flood suppression, water stress, and tamarisk presence. The presence of tamarisk in southwestern riparian ecosystems may favor its own propagation by further altering the natural disturbance regime, thereby further decreasing the already limited extent of native cottonwoods. Additionally, in the absence of flooding, regeneration of native trees is impeded, and organic matter accumulates, thus increasing chances for future fires. (www.fs.fed.us/database/fesi/plants/tree/tamspp/fire_ecology ).

Once established in large stands, tamarisk can rarely be controlled or eradicated with a single method, and many researchers and managers recommend combining physical, biological, chemical and cultural control methods. Removing tamarisk must also be accompanied by an ecologically healthy plant community that is weed resistant and meets other land use objectives such as wildlife habitat or recreational use benefits.

Use of fire alone to control saltcedar however is generally ineffective, only killing above ground portions of the plant leaving the root crown intact and able to produce vigorous sprouts. Saltcedar stands can burn hot with erratic fire behavior and numerous firebrands transported downwind from the headfire. Prescribe fire set-up requires poorly receptive fuels downwind from the headfire. Saltcedar in dense stands that have not burned in 25-30 years exhibit extreme fire behavior and crowning due to closed canopy at any time of the year. They can have flame lengths exceeding 140 feet, resulting in near complete fuel consumption. Stands reburned after 5 to 6 years show vastly different fire behavior, carrying fire only if there is adequate fine fuel load and continuity. Due to the ability to transport fire brands at least 500 feet downwind, blacklines should be at least 700 feet wide, headfires installed with temperatures 65 to 95 degrees Fahrenheit, relative humidity of 25 to 40 percent, and wind speeds less than 15 miles per hour. (From Zouhar, Kris. 2003 Tamarix spp. In: Fire Effects Information System[On Line]. US Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available http://www.fs.fed.us/database/feis/ (2004, November 30).

## D. Community Values at Risk

Valued, at-risk community resources include community structures (e.g., schools, hospital), retail, research and manufacturing centers, recreation areas, cultural/historic areas, sensitive wildlife habitat on public lands, water, gas, electric, and telephone utilities, municipal watersheds, natural resources, and air quality. All can be threatened by wildfire.

Community values include housing, education, government, and businesses structures, essential infrastructure, recreation areas, and wildlife habitat. Local preparedness and protection capabilities from the Insurance Services Office (ISO) rating of each fire department and district, were also mapped. Developed land and infrastructure are given the highest value in the community. Campgrounds, parks and trail systems, and wildlife

habitat are given a moderate value. The following information further describes the community values in the GCCWPP. Section E summarizes community values for each community.

**1. Housing, Businesses, and Essential Infrastructure**
The participating fire departments, fire districts, local governments personnel, and CAG members have identified high-risk areas including the retail, manufacturing, and research facilities that exist in the GCCWPP communities. Structures associated with housing and commercial development located in subdivisions and in more dispersed areas of the County are a higher risk for damage by catastrophic fire.

**2. Recreation Areas**
Recreational features, including lakes, reservoirs, rivers, designated campgrounds, parks and trail systems—both motorized and nonmotorized—are located on Federal, Tribal, State, municipal, and private lands. These features are environmental, economic, and aesthetic resources for the surrounding communities. These areas are analyzed as a community value because of the benefits that these recreation areas provide to the local citizens and community visitors. Fuel mitigation projects associated with trail systems will be evaluated for public use requirements, possibility of increased fire starts attributable to increased public use and suitability of the trail for inclusion in fire protection and response plans.

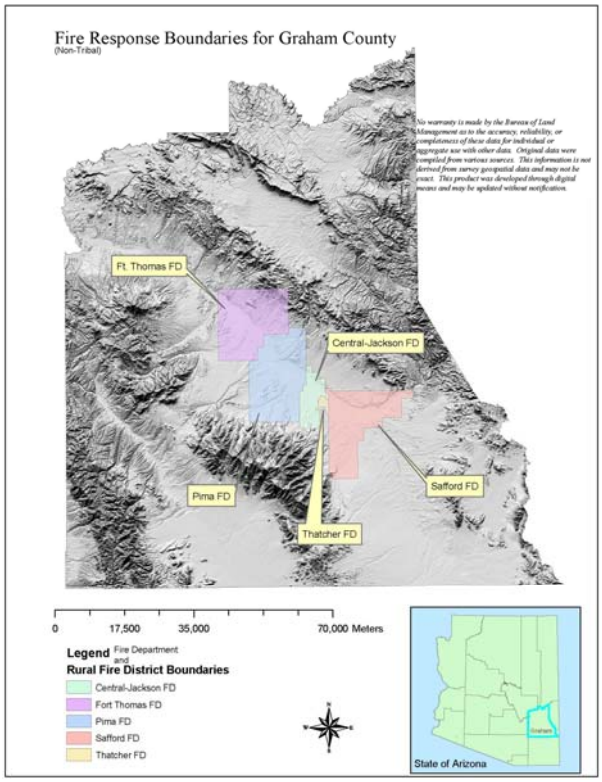
**3. Watersheds**
The WUI includes several significant watersheds that supply drinking and irrigation water, and provide substantial outdoor recreation opportunities in and adjacent to the communities. The watersheds within the WUI consist of Federal, Tribal, State, and private lands and include the Gila, San Simon, and San Carlos Rivers, as well as Bonita, Ash, Marijilda, Aravaipa, Grant, and Frye Creeks and Cottonwood Wash. These waterways provide municipal drinking water, irrigation waters for users in the Gila Valley Irrigation District, the San Carlos Reservoir that stores irrigation waters for downstream users, and recreational ponds and lakes. In accordance with Section 101.12. and Section 102.a.2. of HFRA, authorized projects should consider protection to municipal watersheds by implementing hazardous fuel reduction projects on Federal lands in proximity to municipal water systems and streams feeding these systems that are at risk from catastrophic wildfire. The majority of watersheds in the WUI are on Federal and Tribal lands, classified by the plan as Fire Condition Class 2, and, therefore, at risk from catastrophic wildfire.

Large-scale fire disturbance would have an adverse effect on the riparian corridors that support sensitive wildlife and native fish species, their habitats, and the recreational sport fisheries in the rivers, streams, and associated impoundments through inflows of sediment and ash. Increased erosion and sediment flows would also have significant adverse effects on water quality, distribution systems, and reservoir capacity. The communities of Safford and Thatcher receive domestic water from Bonita, Frye, and Marijilda creeks. Pima receives its water from wells near Cottonwood Wash. Wildland fire that creates increased erosion and decreased percolation abilities of the watershed would significantly affect the water supply to affected communities. Hazardous fuel reduction projects in the WUI will minimize fuels, making the WUI consistent with the Community Mitigation Plan. The fuel reduction treatments recommended in this CWPP are consistent with direction for protection of municipal watersheds by significantly lowering the risk of a catastrophic wildland fire.

**4. Local Preparedness and Protection Capability**

For many years the ISO (International Standards Organization) has conducted assessments and rated communities on available fire protection. The rating process grades each community's fire protection on a scale of 1–10, (1 being ideal and 10 being poor) based on ISO's Fire Suppression Rating Schedule. There are five factors that make up the ISO fire rating. Water supply, the most important single factor, accounts for 40 percent of the total rating. Type and availability of equipment, personnel, ongoing training, and the community's alarm and paging system account for the remaining 60 percent of the rating.

**Figure 3.2 identifies non-Tribal areas offered structural fire protection in Graham County. (Note that the San Carlos Fire Department provides service to the Bylas, Calva, and Peridot communities in Graham County.)**




Major concerns of the Community Action Group in the GCCWPP include an inadequate level of training for wildland fire fighting, education of residents in fire prone areas, distribution of water supply sources, and funding for firefighting equipment. Fire Hydrants are available in the communities of Safford, Solomon, San Jose, Thatcher, Central, Pima, Fort Thomas, Bylas (with unreliable water pressure), and Peridot. Reliable surface water supplies for drafting or aerial filling of drop buckets are available within flying distance of all at risk communities. Additionally, many community subdivisions and areas of denser development in the identified WUI were not designed with adequate ingress/egress or emergency vehicle access. Developments without adequate access and without readily available water supplies increase the risk of greater habitat and structural losses, as well as homeowner and firefighter injury during larger, higher intensity wildland fire events. Summary information is given in the *Graham County Emergency Operations Plans* (2004) with regard to developing evacuation

procedures, essential items needed in an emergency, the need to report to designated registration/reception centers, notification of evacuation routes, and transportation needs**.**

The Safford Fire Department, under contract with the Safford Rural Fire District, provides fire protection for the Lebanon, Artesia, San Jose, and Solomon communities in the GCCWPP. Fire fighters from the department are not wildland fire trained and certified. The Safford Fire Department provides primary protection throughout their service area. the current ISO rating for the City of Safford and the Safford Rural Fire District coverage area is either 4, 6 or 8b, depending on location.

The Thatcher Fire Department or Central / Jackson-Heights Fire District provides fire protection for the Thatcher and Central communities in the GCCWPP. Fire fighters from the department are not wildland fire trained and certified. The Thatcher Fire Department provides primary protection to houses throughout their service area. Properties within these communities have an ISO fire rating of 4 and 8b, depending on location.

The Pima Rural Fire District provides fire protection for the Pima, Glenbar, Bryce, and Cluff's Ranch communities in the GCCWPP. Fire fighters from the department are wildland fire trained and certified. The Pima Fire Department provides primary protection to houses throughout their service area.

The Ft. Thomas Rural Fire District provides fire protection for the Ft. Thomas, and Geronimo communities in the GCCWPP. Fire fighters from the department are wildland fire trained and certified. The Ft. Thomas Rural Fire District provides primary protection to houses throughout their service area.

The San Carlos Fire Department provides fire protection for the Bylas, Calva, and Peridot communities in the GCCWPP. Fire fighters from the department are wildland fire trained and certified. The San Carlos Fire Department provides primary protection to houses, ranch structures, and ceremonial sites throughout their service area. The current ISO rating for the San Carlos Fire Department coverage area is 7.

## E. Summary of Community Hazard Assessments

A summary of the community assessment as it relates to each of the described community's WUI follows below:

**1. Mount Graham**
Located in the northwestern-most portion of the WUI, the Mount Graham community is mostly composed of Condition Class 3 lands. Some Condition Class 2 lands occur in the northern area of Mount Graham, with Condition Class 1 lands occurring on treated acreage and severe burn areas on Mount Graham. The fuel hazards rating is high for most of the Mount Graham area; however, fuel hazards decrease in the northern portion because of changes in fuel type and density, lowering the fuel hazards rating to an overall medium for the unnamed structures in the northwest corner of the WUI. The principal fuel hazards for this portion of the WUI include thick stands of untreated conifers found on Federal lands generally to the south and west of the housing, recreation, and other developments on Mount Graham. Summer home special use permit fuel modification treatments are expected to increase on Mount Graham as landowners continue to treat user permitted structure locations to fire-safe conditions. In a rating for structure and infrastructure fire risk and hazard, Graham County (in conjunction with the Environmental Economic Communities Organization) has identified the following fire hazards for the Mount Graham community:

1. **Excessive dead and down fuels**
2. **Excessively dense tree stands**
3. **Wood decks and siding**
4. **Exposed propane tanks near structures**
5. **Limited fire suppression capability**
6. **Narrow, steep sloped, marginally maintained roadways**

The Mount Graham Cabin Owners Associations at Columbine and Turkey Flat, as well as the Steward Observatory, intend to apply for additional assistance through various grants to support fire hazard fuel modifications. There are several fuel reduction treatments in the planning stages on Federal lands in the vicinity of interface areas on Mount Graham.

High fuel loads along with thick forest stands create higher risk of wildfire ignition in high-use areas. Historic lightning and human-caused fire starts on Mount Graham have not been significantly frequent; however, fire starts from the south and southwest, as well as from within user permitted structure locations pose the greatest risk to the developments because of prevailing winds and extensive fuel loads. Treatments planned by the CNF for the Heliograph Peak area include fuels reduction. During the 2004 Nuttall Fire on Mt. Graham, flame lengths of 100+ feet were observed in the mixed conifer vegetation type on north and northeast slopes, and some communication structures were lost. As a result, the US Border Patrol was without radio communications for 24 hours. These treatments should adequately protect the significant communication facilities on Heliograph and West Peak.

Access to Mount Graham is provided by Arizona Highway 366 (Swift Trail), Forest Road 286 to West Peak. There are no commercial developments in this portion of the WUI.

Access to individual private parcels and residences is generally not adequate for simultaneous emergency evacuation and firefighting response.

There are no hydrants, but there is available surface water in this portion of the WUI. The closest lake conducive to aerial bucket or ground-vehicle drafting is Riggs Flat Lake, located at the southern fringe of the Mount Graham WUI, Snow Flat Lake, and Ash Creek near the Columbine cabins. Restricted access and limited water availability add to the threat of habitat and property loss for wildland fire. The Turkey Flat and Columbine cabin owners desire to acquire water holding for improved initial response to wildfire in their developments. In addition to homeowner response, fire protection for wildland fire suppression only is provided to Mount Graham by the CNF, with secondary protection provided by the BLM and Arizona State Forestry as requested by the CNF. However, since the community is not within a fire district, properties have an ISO rating of 10. Residents in this portion of the WUI would follow Graham County Emergency Management Evacuation Procedures in emergency situations.

**2. Lebanon and Artesia**

Located in the central portion of the WUI, the communities of Lebanon and Artesia are mostly composed of Condition Class 2 lands. Currently, there are no Federal decisions standing for fuel modification treatments in the Lebanon and Artesia area. Private-land fuel modification treatments are expected to increase in Lebanon and Artesia once landowners are educated about the importance of treating private parcels to fire-safe conditions. The principal fuel hazards for this portion of the WUI include thick, untreated high desert and woodland vegetation found on both private lands within the community and on both State and Federal lands surrounding the community.

Historic lightning and human-caused fire starts in the Lebanon and Artesia area occur in the community near high public-use areas **(campgrounds, lakes, and trails).** Fires starts from the south and southwest as well as from within the private parcels pose the greatest risk to the community of Lebanon and Artesia because of prevailing winds, and extensive fuel loads. High fuel loads, high public use, terrain consisting of south-southwest aspect**,** and areas of high historic fire starts, along with thick vegetative stands and housing density, create higher risk of wildfire ignition in the Lebanon and Artesia area.

Access to Lebanon and Artesia from the both north and south is provided by US Highway 191, the community's major transportation corridor and commercial development center. Community values identified in this portion of the WUI include wildlife, campgrounds, Roper Lake State Park and recreation area, Dankworth Pond, and hiking trails in the community and on Federal lands adjacent to the community. Community infrastructure includes the post office, water supply delivery systems, and retail outlets**.** While US Highway 191 is not the only hard-surfaced road in the Lebanon and Artesia area, access from US Highway 191 to individual private parcels and residences is generally not adequate for simultaneous emergency evacuation and firefighting response, particularly if campgrounds, consisting of over developed and undeveloped campsites, are involved in any emergency evacuation. Seasonal residents and tourists during peak summer months minimally increase the local population.

There are a limited number of fire hydrants in the communities of Lebanon and Artesia, and surface water is immediately available in this portion of the WUI from Roper Lake, Dankworth Pond, Graham County ponds, and private impoundments that can (with permission) provide nearby areas for aerial bucket or ground-vehicle drafting. Fire protection is provided to the community by the Safford Fire Department through an arrangement with the safford rural fire district. Properties within the community have an ISO fire rating of 6 and 8b.

**3. Safford / Solomon / San Jose**

Located in the central portion of the WUI, the community of Safford, Solomon, and San Jose is mostly composed of Condition Class 1 and 2lands. There are no current State or Federal decisions standing for fuel modification treatments in the Safford, Solomon, and San Jose area. Private-land fuel modification treatments are expected to increase in Safford, Solomon, and San Jose interface areas once landowners and governments are educated about the importance of treating private parcels to fire-safe conditions. The principal fuel hazards for this portion of the WUI include thick, untreated chaparral and salt cedar found on both private lands within the community and State and Federal lands adjacent to the community.

Historic lightning and human-caused fire starts in the Safford, Solomon, and San Jose area occur in the community river bottom corridor near bridges, utility lines, and public-use areas (trails, popular fishing spots). Fires starts in the Gila River drainage, as well as from private parcels pose the greatest risk to the community of Safford, Solomon, and San Jose because of proximity to utilities and bridges, prevailing winds, and extensive fuel loads. High public use, terrain, and areas of historic fire starts, along with thick stands of vegetation and housing density, create higher risk of wildfire ignition in selected areas of the Safford, Solomon, and San Jose communities.

Access to Safford, Solomon, and San Jose from the both north and south is provided by US Highways 70 and 191, the community's major transportation corridor and commercial development areas. Community values identified in this portion of the WUI include wildlife associated with riparian areas, undeveloped campgrounds, hiking trails, off highway vehicle areas, hunting, and residential developments in the community and on public lands adjacent to the community. Community infrastructure includes the post office, municipal water supply, and several retail outlets. While US Highways 70 and 191 are not the only hard-surfaced roads in the Safford, Solomon, and San Jose area, access to individual private parcels and residences is sometimes not adequate for simultaneous emergency evacuation and firefighting response .

There are numerous hydrants in the identified interface of the Safford, Solomon, and San Jose communities, and surface water may be available in this portion of the WUI from the Gila River. Fire protection is provided to the community by the Safford Fire Deparment or the Safford Rural Fire District. Properties within these communities have an ISO fire rating of 6 and 8b.

**4. Thatcher / Central**

Located in the central portion of the WUI, the communities of Thatcher and Central are largely composed of Condition Class 1 and 2 lands. there are no current Federal decisions standing for fuel modification treatments in the Thatcher / Central area**.** Private-land fuel modification treatments are expected to increase in interface areas once landowners and governments are educated about the importance of treating private parcels to fire-safe conditions**.** The principal fuel hazards for this portion of the WUI include thick Desert Shrub and salt cedar (tamarisk) found on private, State and Federal lands surrounding the community.

Historic lightning and human-caused fire starts in the community occur in the river bottom corridor near utilities and public-use areas (trails, OHV use areas, and popular fishing spots). Fire starts in the Gila River drainage, as well as from private parcels pose the greatest risk to the community because of prevailing winds, and extensive fuel loads**.** High fuel loads, proximity to structures and infrastructure, high public use, terrain, and areas of historic fire starts, along with thick stands of vegetation and housing density, create higher risk of wildfire ignition in selected areas of the community.

Access from both east and west is provided by US Highway 70, the community's major transportation corridor and a commercial development center. Community values identified in this portion of the WUI include wildlife associated with riparian areas, undeveloped campgrounds, fishing spots on the Gila River, OHV use areas, and hiking trails in the community and on public lands adjacent to the community. Community infrastructure includes the post office, electrical power lines, natural gas lines, municipal water supply, and several retail outlets. While US Highway 70 is not the only hard-surfaced road, access to individual private parcels and residences is sometimes not adequate for simultaneous emergency evacuation and firefighting response.

There are numerous hydrants in the Thatcher Town Limits, with a limited number in other portions of the WUI for these communities. Surface water may be available in this portion of the WUI from private impoundments that can provide nearby areas for aerial bucket or ground-vehicle drafting. Fire protection is provided to the community by the Thatcher Fire Deparment and the Central / Jackson-Heights Fire District. Properties within these communities have an ISO fire rating ranging from 4 to 8b.

**5. Bonita**

Located in the central portion of the WUI, the community of Bonita is mostly composed of Condition Class 2 and 3 lands. The CNF is analyzing some portions of this area of the WUI for fuel reduction treatments. However, there are no current Federal decisions standing for fuel modification treatments in the Bonita area. Private-land fuel modification treatments are expected to increase in Bonita interface areas once landowners and governments are educated about the importance of treating private parcels to fire-safe conditions. The principal fuel hazards for this portion of the WUI include thick, untreated desert shrub, mesquite bosque, and oak-juniper woodland.

Historic lightning and human-caused fire starts in the Bonita area occur in the community near public-use areas (undeveloped camp sites and trails). Fire starts burning from

private parcels onto National Forest lands pose the greatest risk to the CNF and the Mount Graham communities north of the community of Bonita because of prevailing winds, and extensive fuel loads. High fuel loads, high public use, terrain, and areas of historic fire starts, along with thick stands of vegetation, create higher risk of wildfire ignition in selected areas of the Bonita communities.

Access to Bonita is provided by Arizona Highway 266 and Fort Grant Road, the community's major transportation corridors. Community values identified in this portion of the WUI include significant wildlife habitats, undeveloped campgrounds, and hiking trails on public lands adjacent to the community. Community infrastructure includes the Fort Grant prison complex, the Bonita Schools, and Valley Telecom. Since there are limited hard-surfaced road in the Bonita area, access to individual private parcels and residences is not adequate for simultaneous emergency evacuation and firefighting response.

Outside of the Fort Grant prison complex, there are no fire hydrants in the identified interface of the Bonita community; however, surface water is occasionally available in this portion of the WUI from private impoundments that may provide nearby areas for aerial bucket or ground-vehicle drafting. Fire protection is provided to the community by the Arizona State Land Department. Properties within these communities have an ISO fire rating of 10.

**6. Pima / Glenbar / Bryce / Cluff's Ranch**

Located in the central portion of the WUI, the communities of Pima, Glenbar, Bryce, and Cluff's Ranch are mostly composed of Condition Class 2 lands. Currently, there are no known decisions standing for fuel modification treatments in the Pima, Glenbar, Bryce, and Cluff's Ranch area. Private-land fuel modification treatments are expected to increase in Pima, Glenbar, Bryce, and Cluff's Ranch interface areas once landowners and governments are educated about the importance of treating private parcels to fire-safe conditions. The principal fuel hazards for this portion of the WUI include thick, untreated desert shrub and salt cedar found on both private lands within the community and State and Federal lands surrounding the community.

Historic lightning and human-caused fire starts in the Pima, Glenbar, Bryce, and Cluff's Ranch area occur in the community river bottom corridor near public-use areas (trails, OHV use areas, and popular fishing spots). Fire starts in the Gila River drainage, as well as from private parcels pose the greatest risk to the community of Pima, Glenbar, Bryce, and Cluff's Ranch because of proximity to structures and infrastructure, prevailing winds, and extensive fuel loads. High fuel loads, high public use, terrain, and areas of historic fire starts, along with thick stands of vegetation and housing density, create higher risk of wildfire ignition in selected areas of the Pima, Glenbar, Bryce, and Cluff's Ranch communities.

Access to Pima, Glenbar, Bryce, and Cluff's Ranch from the both east and west is provided through US Highway 70 for Pima, Glenbar, and Bryce, and Main Street / Cluff's Ranch Road for Cluff's Ranch, the community's major transportation corridors. Community values identified in this portion of the WUI include wildlife associated with riparian areas, undeveloped campgrounds, hiking trails in the community and on public lands adjacent to the community, resort uses, and OHV use . Community infrastructure

includes the post office, municipal water supply, and several retail outlets. While US Highways 70 is not the only hard-surfaced road in these communities access to individual parcels and residences is sometimes not adequate for simultaneous emergency evacuation and firefighting response.

There are Fire hydrants in the incorporated boundaries of Pima, and in Bryce, but apparently not in Glenbar or Cluff's Ranch. Surface water is immediately available in this portion of the WUI from Cluff's Ponds, and possible private impoundments that can provide nearby areas for aerial bucket or ground-vehicle drafting. Fire protection is provided to the community by the Pima Rural Fire District.

**7. Ft. Thomas / Geronimo, Ashurst and Eden**

Located in the central portion of the WUI, the communities of Ft. Thomas, Geronimo, Ashurst, and Eden are mostly composed of Condition Class 2 and 3 lands. Currently, there are no known decisions standing for fuel modification treatments in the Ft. Thomas, Geronimo, Ashurst, and Eden area. Private-land fuel modification treatments are expected to increase in Ft. Thomas, Geronimo, and Ashurst interface areas once landowners and governments are educated about the importance of treating private parcels to fire-safe conditions. The principal fuel hazards for this portion of the WUI include thick, untreated desert shrub and salt cedar found on both private lands within the community and on State and Federal lands surrounding the community. Historic lightning and human-caused fire starts in these communities occur in the community river bottom corridor near public-use areas (schools, trails, popular fishing spots, and OHV use areas). Fires starts in the Gila River drainage, as well as from private parcels pose the greatest risk to the communities of Ft. Thomas, Geronimo, Ashurst, and Eden because of proximity to structures and infrastructure, prevailing winds, and extensive fuel loads. High fuel loads, high public use, terrain, and areas of historic fire starts, along with thick stands of vegetation and housing density, create higher risk of wildfire ignition in selected areas of these communities.

Access to Ft. Thomas, Geronimo, Ashurst, and Eden from the both east and west is provided by US Highway 70, Black Rock Road, Bryce-Eden Road, and Desert Sage Road, the community's major transportation corridors. Community values identified in this portion of the WUI include wildlife associated with riparian areas, undeveloped campgrounds, hiking trails, fishing along the Gila River, and OHV use in the community and on public lands adjacent to the community. Community infrastructure includes the post office, water, electric, and natural gas delivery systems, and several retail outlets. While US Highway 70 is not the only hard-surfaced road in the Ft. Thomas, Geronimo, and Ashurst area, access to individual private parcels and residences is sometimes not adequate for simultaneous emergency evacuation and firefighting response.

There are a limited number of hydrants in the identified interface of the Ft. Thomas, Geronimo, Ashurst, and Eden communities. Surface water is possibly available in this portion of the WUI from private impoundments that can provide nearby areas for aerial bucket or ground-vehicle drafting. Fire protection is provided to these communities by the Ft. Thomas Rural Fire District.

## 8. Bylas / Calva / Peridot

Located in the western portion of the WUI, the community of Bylas, Calva, and Peridot is mostly composed of Condition Class 2 lands. The Bureau of Indian Affairs and San Carlos Tribal Forestry are analyzing the WUI in these communities for fuel reduction treatments. However, there are no current decisions standing for fuel modification treatments in the Bylas, Calva, and Peridot area. Residential structure and land fuel modification treatments are expected to increase in Bylas, Calva, and Peridot interface areas once residents are educated about the importance of treating residential structures and surrounding land to fire-safe conditions. The principal fuel hazards for this portion of the WUI include thick, untreated chaparral and salt cedar found on both lands within and surrounding the communities.
Historic lightning and human-caused fire starts in the Bylas, Calva, and Peridot area occur in the community river bottom corridor near private homes and public-use areas **(religious ceremonial sites, campgrounds, lakes, and trails).** Fire starts in the Gila River drainage, as well as from lands near and inside communities, pose the greatest risk to the communities of Bylas, Calva, and Peridot because of proximity to structures and infrastructure, public use, prevailing winds, and extensive fuel loads. High fuel loads, high public use, terrain, and areas of historic fire starts, along with thick stands of vegetation and housing density, create higher risk of wildfire ignition in selected areas of the Bylas, Calva, and Peridot communities.

Access to Bylas, Calva, and Peridot from the both east and west is provided by US Highway 70 and Indian Route 3, the communities major transportation corridors. Community values identified in this portion of the WUI include significant wildlife habitats associated with riparian areas, and undeveloped campgrounds in the community and on lands adjacent to the community. Community infrastructure includes railroad lines, post offices, schools, water, electric, and natural gas delivery systems, and several retail outlets. While US Highway 70 is not the only hard-surfaced road in the Bylas, Calva, and Peridot area, access to individual private parcels and residences is sometimes not adequate for simultaneous emergency evacuation and firefighting response.

There are hydrants in the identified interface of Bylas and Peridot, with questionable water pressure. There are no hydrants in Calva. Surface water is immediately available in this portion of the WUI from San Carlos Lake that can provide nearby areas for aerial bucket or ground-vehicle drafting. Fire protection is provided to these communities by the San Carlos Fire Department.

## 9. Point of Pines

Located in the northwestern portion of the WUI, the community of Point of Pines is mostly composed of Condition Class 3 lands. there are no current decisions standing for fuel modification treatments in the Point of Pines area. Fuel modification treatments are expected to increase in Point of Pines. The principal fuel hazards for this portion of the WUI include thick, untreated pinyon-juniper woodlands and ponderosa pine stands found on lands within and surrounding the community.

Historic lightning and human-caused fire starts in the Point of Pines area occur in the community work centers, sleeping quarters, near private homes, the Black River

pumping station, and public-use areas (religious ceremonial grounds, government use areas, livestock association structures, campgrounds, lakes, and trails). Fires starts in areas of thick stand density and dead trees pose the greatest risk to the community of Point of Pines, because of proximity to public use areas, prevailing winds, and extensive fuel loads. High fuel loads, high public use, terrain, and areas of historic fire starts, along with thick stands of vegetation and structure density, create higher risk of wildfire ignition in selected areas of the Point of Pines community.

Access to Point of Pines from the both east and west is provided by San Carlos Indian Route 8, the community's major transportation corridor. Community values identified in this portion of the WUI include significant wildlife habitats, developed and undeveloped campgrounds, and developed hiking trails in the community and on lands adjacent to the community. Community infrastructure includes post water supply delivery systems, and ranchland structures. Access to individual structures and residences is largely adequate for simultaneous emergency evacuation and firefighting response.

There are no hydrants in the identified interface of the Point of Pines community. Surface water is immediately available in this portion of the WUI from Tribal waters such as Dry Lake, Point of Pines Lake, and the Black River that can provide nearby areas for aerial bucket or ground-vehicle drafting. Fire protection is provided to the community by the BIA and San Carlos Tribal Forestry for wildland fire. Properties within these communities have an ISO fire rating of 10.

### 10. Klondyke / Aravaipa / Sunset

Located in the southern portion of the WUI, the communities of Klondyke, Aravaipa, and Sunset is largely composed of Condition Class 2 and 3 lands. Currently, there are Federal and private decisions standing for fuel modification treatments (prescribed burns) in the Klondyke, Aravaipa, and Sunset area. Private and public land fuel modification treatments are expected to increase in Klondyke, Aravaipa, and Sunset interface areas once landowners and governments are educated about the importance of treating private parcels to fire-safe conditions. The principal fuel hazards for this portion of the WUI include thick, untreated Desert Shrub, Mesquite Bosque, and Woodland Thickets found on both private lands within the community and State / Federal lands surrounding the community.

Historic lightning and human-caused fire starts in the Klondyke, Aravaipa, and Sunset area occur in the community near public-use areas (campgrounds, trails, cultural sites, and OHV use areas). Fire starts on public lands both within and surrounding the communities pose the greatest risk to Klondyke, Aravaipa, and Sunset because of prevailing winds, and extensive fuel loads. High fuel loads, seasonally high public use, terrain, and areas of historic fire starts, along with thick stands of vegetation create higher risk of wildfire ignition in selected areas of the Klondyke, Aravaipa, and Sunset communities.

Access to Klondyke, Aravaipa, and Sunset from both east and west is provided by the Bonita-Klondyke Road, the community's major transportation corridor. Community values identified in this portion of the WUI include significant wildlife habitats associated with riparian areas, developed campgrounds, and developed hiking trails in the community and on public lands adjacent to the community. Community infrastructure

includes the post office, a local school, retail outlets, a religious structure, and resorts. Access to individual private parcels and residences is inadequate for simultaneous emergency evacuation and firefighting response.

It is unclear whether or not there are fire hydrants in the identified interface of the Klondyke, Aravaipa, and Sunset communities; however, surface water is immediately available in this portion of the WUI from Aravaipa Creek that can provide nearby areas for aerial bucket or ground-vehicle drafting. Fire protection is provided to the community by the BLM. Properties within these communities have an ISO fire rating of 10.

**11. Eagle Creek**

Historic lightning and human-caused fire starts in the Eagle Creek area occur in the community near public-use areas (campgrounds, trails, cultural sites, and OHV use areas). Fire starts on public lands both within and surrounding the communities pose the greatest risk to Eagle Creek because of prevailing winds, and extensive fuel loads. High fuel loads, seasonally high public use, terrain, and areas of historic fire starts, along with thick stands of vegetation create higher risk of wildfire ignition in selected areas of the Eagle Creek communities.

Access to Eagle Creek from Graham County is provided by Indian Route 4, a secondary escape route for residents and ranchers. Community values identified in this portion of the WUI include significant wildlife habitats associated with riparian areas, ranchlands, and residential areas. Access to private and Tribal parcels and residences is inadequate for simultaneous emergency evacuation and firefighting response.

There are no fire hydrants in the identified interface of the Eagle Creek community; however, surface water is immediately available in this portion of the WUI from Eagle Creek (in Greenlee County) that can provide nearby areas for aerial bucket or ground-vehicle drafting. Fire protection is provided to the Graham County portion of the community by San Carlos Tribal Forestry and the Bureau of Indian Affairs. Properties within these communities have an ISO fire rating of 10.

# Chapter 4. Mitigation Plan

Section I of the GCCWPP describes the collaborative process for developing this plan; Section II explains how the communities have identified and mapped the WUI within the CNF. Section III analyzes the lands within the WUI for current potential of wildland fire risk by assessing 1) land components that cumulatively elevate the ability of the landscape to support fire, 2) the community values that must be protected from wildland fire, and 3) the communities' preparedness for wildland fire suppression. Section 4 prioritizes the areas that need fuel treatment and recommends the type and method of treatment and/or management necessary to mitigate the potential for catastrophic wildland fire within the WUI. The GCCWPP communities' recommendations for enhanced wildland fire protection capabilities; public education, information, and outreach; and support for local wood products industries are also presented in this section.

## A. Administrative Oversight

Generally, the most efficient way to manage action recommendations for the Graham County WUI is through a single entity responsible for facilitating the collaborative process needed to implement the action recommendations within the GCCWPP. This will allow for enhanced coordination of management actions and reduced inconsistency among local, State, and Federal agencies. Implementation of the GCCWPP in a manner that ensures timely decision making at all levels of government and that provides for community protection and forest restoration are the highest GCCWPP priorities. Therefore, the primary recommendation of the GCCWPP is for Graham County to maintain oversight and coordination responsibilities for collaborative efforts with agencies and communities on action recommendations, communication, and funding support.

Once approved by the participating government entities and fire districts, the GCCWPP will be presented to the Arizona State Forester and the CNF Forest Supervisor for concurrence, and, subsequently, will be submitted for funding through HFRA.

## B. Fuel Reduction Priorities

To prioritize treatments, the WUI has been identified, analyzed, and categorized according to potential risk from wildfire; the analyses of community values, fuel hazards, and fire history were compiled into a single map that depicts areas of low, moderate, and high risk **(insert map).** Additionally, each site-specific area within the WUI was labeled based on the nearest community.

Treatment recommendations are described in this chapter, and consider commercial—and other—opportunities for utilizing small-diameter trees and woody material by products from treatments.

## C. Recommendations for Land Treatments in the WUI to Meet Fuel Reduction or Modification Objectives

To ensure compliance with §102(*f*) of HFRA, the GCCWPP focuses on treatment and thinning of overly dense tree stands to create defensible space, fuel breaks, and acceptable Fire Condition Classes for community protection from catastrophic wildland fire. The components of the GCCWPP are respectful of wildlife biodiversity and ecosystem health and restoration as well as watershed and groundwater enhancement. Trees are particularly considered in fuel reduction / modification if they are a fire or safety hazard.

On Federal, State, and Tribal lands, the silvicultural prescriptions and estimated costs per acre used in the GCCWPP vary by vegetation and treatment type. In general, costs may range from $250 to $1,000 per acre or more. Additionally, within most Federal land treatment areas, not all acres are involved. Therefore, costs to treat Federal land areas are based on average treatment costs/acre.

HFRA expedites administrative procedures for hazardous fuels reductions and restoration projects on Federal lands. Regardless of priority treatments selected for Federal lands, an environmental assessment must be conducted for forest health and fuel reduction projects. Although HFRA creates a streamlined and improved process for reviewing fuel reduction and restoration treatments, it still requires that appropriate environmental assessments be conducted and other collaborations be maintained. To meet conditions established within the Healthy Forest Initiative, the Departments of Agriculture and Interior adopted two new categorical exclusions from the normal review steps of an environmental assessment or the issuance of an environmental impact statement.

These exclusions are for hazardous fuels reductions and for rehabilitation of resources and infrastructure damaged by wildfire. For a hazardous fuels reduction project on Federal or State lands to be categorically excluded, a project must meet specific requirements:

- It must treat less than 4,500 acres, with mechanical slash treatment restricted to no more than 1,000 acres
- Its lands must be within Current Condition Class 2 or 3
- It must not be within a Wilderness or Wilderness Study Area
- It must not include the use of pesticides, herbicides, or extensive new road or infrastructure construction
- It may include the commercial use of trees removed for the purpose of reducing hazardous fuels.

For a project to be categorically excluded, its proposal must be satisfactorily reviewed to determine that no extraordinary circumstances exist. Section 104 of HFRA describes procedures for Federal agencies to employ when they conclude that an environmental assessment must be prepared because of such extraordinary circumstances. Fuel reduction projects in these instances must comply with all land management

plan requirements. For project proposals within the WUI, however, the CNF and the BLM are not required to analyze any alternative to the proposed action unless the at-risk community has adopted a CWPP and the proposed action does not implement the CWPP in terms of general location and treatment methods. If the proposed action does not implement a CWPP, the analysis must consider the CWPP proposal as an alternative to the proposed action. Conversely, if the proposed action does implement a CWPP, the action alternative could be the treatments described on the specific Federal lands within the WUI of the CWPP. Within Federal land management areas where an environmental assessment shows no additional documentation is warranted, the priority areas identified for treatment within the GCCWPP, and treatments recommended to meet fuel reduction or modification objectives, should be considered as the action alternative by managing agency.

Private land treatments within the WUI typically occur on small land parcels near power and natural gas lines, other utilities, and structures. In recent years the number of diseased, dying, and dead trees on private lands has increased. In many cases cut trees and slash cannot be piled and burned or it is not the preferred slash treatment by a landowner of a small residential lot. Chipping or removal and transportation of slash to a disposal site increases costs of treatments.

Treatments on private land parcels necessary to meet these recommendations have varied from less than $300/acre to over $1,900/acre and have averaged $1,200/acre in other Arizona's Northern Counties. Costs-per-acre vary greatly for treatment of private parcels, depending on vegetation, topography, and landowner needs. Site analysis shows that while land applications vary, vegetation removal will likely occur on no more than 60 percent of each acre. For example, within residential areas, home sites, streets, and other improvements are included with GIS-mapped estimates, but are areas not requiring treatment. Therefore cost/acre is modified at per-acre cost multiplied by 0.6.

It is recommended that private landowners have their fuel modification plans either prepared or certified by a professional forester, a certified arborist, or other qualified individual(s). Qualified individuals are provided at no cost to the homeowner through local fire departments, Arizona State Forestry Office, and County Agricultural Extension Agents.

An effective fuel modification plan must identify those actions that help reduce the spread of fire to adjacent property by establishing and maintaining defensible space. In new subdivisions, the action identified by the fuel modification should be completed prior to development of the property.

A fuel modification plan shall include the following information:

- A copy of the site plan
- Methods and timetables for controlling, changing, or modifying fuels on the property(-ies) in a timely and effective manner
- Elements of removal of slash, snags, and vegetation that may grow into overhead electrical lines; the removal of other ground fuels, ladder fuels, and diseased, dying, and dead trees; and the thinning of live trees.

- Methods, timetables, and estimated cost for control and elimination of diseased and/or insect-infested vegetation

- A plan for the ongoing maintenance of the proposed fuel reduction and of control measures for disease and insect infestations
- When a grouping of parcels in multiple ownership is proposed to achieve compliance with this section, the proposed vegetation management plan will need to be accepted by all of the owners of the property covered by the plan

## D. Prevention and Loss Mitigation

The GCCWPP is intended to be used as a resource to assist in the coordination of long-term interagency mitigation of catastrophic wildfire events in the at-risk communities of Graham County. As stated in Chapter 1, the CAG agreed upon seven primary goals for the
GCCWPP:

- improve fire prevention and suppression
- reduce hazardous fuels
- restore forest, rangeland, and riparian health
- promote community involvement
- recommend measures to reduce structural ignitability in the GCCWPP area
- encourage economic development in the community
- promote a development of wildfire emergency evacuation plans.

The GCCWPP should be periodically reviewed and updated as needed. Successful implementation of this plan will require a collaborative process among multiple layers of government as well as a broad range of special interests. Therefore, the communities within the GCCWPP area have put forward the following action recommendations.

### 1. Improved Protection Capability and Reduced Structural Ignitability

The risks of wildland fire igniting and spreading within the WUI has been recognized by the communities. Fire departments and fire response crews' performance can be leveraged through combined responses. In the wake of a large fire or in the case of multiple fires, however, it may not be possible to protect every home and structure in the WUI. Community leaders as well as private landowners must take seriously this call to action to reduce fire risks and promote effective responses to wildland fires. The following are recommendations to enhance protection capabilities within the GCCWPP communities:

a) Enormous amounts of slash are generated through the thinning process. Treatment of the estimated 20+ tons per acre of fuels that occur on forest and riparian lands within the WUI will require developing a process that allows land and cabin owners to remove and then transport slash to a disposal site. Untreated vacant lands within the WUI may contain approximately 60 cubic yards of biomass per acre in excess of that on treated vacant lands. Untreated developed parcels may contain between 15 and 30 cubic yards of biomass per acre. The annual maintenance of treated parcels could generate up to15 cubic yards of biomass per acre. The ability to handle this amount of biomass is, and will

continue to, create a disposal problem for communities. Therefore, communities should consider a partnership to purchase and operate at least two (2) industrial-sized chippers (consisting of a stationary grapple-feed and a portable manual-feed model) and a fluidized bed, air-curtain burner for incineration of slash to be located at an identified location.

b) The communities recommend adoption of a consistent preparedness planning model that analyzes cost-effective fire protection within all administrative boundaries. In developing this model, County and local protection needs and resources must be considered. The model must produce refined, common reference and coordinated suppression efforts among fire districts, State, Federal, and Tribal agencies, based upon the existence of Intergovernmental Agreements and / or a Joint Powers Agreement.

c) Through the coordinating agency (Graham County), at risk communities should maintain mapping in specific areas of high risk. These maps will depict resource needs and specific fire-fighting descriptions that narrowly focus on suppressing fires occurring within the high-risk areas. For example, within a specific neighborhood, there might be residents identified with special needs—a nursing home or a campsite—that, for evacuation, would require notifying specialized personnel, or there might be a propane distribution center or other defined responses within the high-risk area. Additionally, specific subdivisions that currently have only one way ingress / egress routes will be evaluated for evacuation and fire response.

e) Communities should incorporate high use recreational areas and facilities into fire protection and response plans.

f) Actively pursue effective fire hazard vegetation removal programs, including the use of natural and chemical defoliants or herbicides as appropriate, subject to compliance with existing laws and regulations. For example, Salt Cedar thickets occur dangerously near the Fort Thomas Schools.

g) Appropriate State agencies should provide additional comprehensive and frequent training for local fire fighters. The CNF, BLM, Arizona State Forestry, and the local fire districts will conduct a common training activity at least once a year prior to entry into fire season for the purpose of emphasizing tactics of WUI suppression and interagency coordination. Communities will support Fire Science and Emergency Medical Technology training programs at Eastern Arizona College. Specifically, continuing wildland/urban interface fire suppression training must be made available to volunteer and regular firefighters in each fire district.

h) Encourage the establishment and maintenance of emergency communication frequencies in Graham County.

i) Actively pursue completion of NEPA processes and wildlife consultation processes in at risk WUI areas.

k) Actively pursue funding to implement “ready to go” projects on Federal, State, Tribal, and private lands.

**2. Promote Community Involvement and Improved Public Education, Information, and Outreach**

The communities within the GCCWPP will develop and implement pubic outreach programs to help create an informed citizenry. The goal is to have residents support concepts of fire-safe landscaping, reduction of structural ignitability, and naturally functioning forest systems through restoration management and rapid response to wildland fire. The GCCWPP is intended to be a long-term strategic instrument to address hazardous fuels and enhance forest health. To effectively achieve these goals, a grass roots collaborative structure of individual citizens, supported by local governments as full partners, will provide the most effective long-term means to maintain community momentum. The components of such a structure include the following recommendations:

a) Encourage Defensible Landscaping and Fire Hazard Reduction which demonstrate actions that can be used to protect home and property from wildland fire.

b) Utilize video presentations describing treatments a homeowner can undertake to reduce ignitibility, through both structural and land treatment improvements.

e) Develop an open-house approach to community education by conducting tours of both residences that are fire-safe and of Federal lands in the WUI that have been treated to meet Condition Class I standards.

f) Encourage fire departments and fire districts (as appropriate) to schedule a series of community awareness seminars to inform and educate the citizenry regarding the need for fire-safe treatments of public, private, and Tribal lands. These seminars should be scheduled at least bi-annually to best accommodate year-round and part-time residents.

g) Encourage agencies and members of the CAG to act as “goodwill ambassadors” by passing on wildland fire and residential preparedness information at community activities and events. Information will be made available in both printed and oral formats that explain the need for fire awareness and the benefits of preparing private property for potential fire ignition.

h) Introduce fire safe, ecosystem restoration, and responsible harvest curricula into Graham County schools.

**3. Enhance Local Wood Product-Related Industries**

The GCCWPP communities will continue to support and promote private contractors who perform fire-safe mitigation work. The communities will support new businesses or expansion of existing businesses involved in the fuel reduction market. The communities are committed to employing all appropriate means to stimulate industries that will utilize all size-classes of wood products resulting from hazardous-fuel reduction activities. Recommendations include:

a) Support and promote responsible, qualified contractors who treat private land parcels, road rights of way and special use permit areas on Federal lands

b) Support the development of markets and industries that extract saleable material from fuel reduction management projects (e.g., biomass, pulpwood, firewood).

c) Support and promote a Forest Worker Certification program as appropriate.

# Chapter 5. CWPP Action Recommendations

The GCCWPP Community Action Group has developed action recommendations (Section 4) necessary to meet the plan's objectives. A set of land management prescriptions are expected to flow from these recommendations for fuel reduction treatments and restoration of forest health on both federal and nonfederal lands.

The GCCWPP expresses support from all participating communities for the local wood products industries and local wood products contractors. A unified effort to implement this collaborative plan requires timely decision making at all levels of government.

The plan now must be strategically implemented to ensure that 1) action is taken on the highest-priority recommendations and 2) communities can handle the logistical demands of meeting the goals of each recommendation. There should be accountability for measuring and monitoring performance and outcomes of each action recommendation. As Graham County monitors the implementation of each action recommendation and informs the communities, they will adaptively adjust their annual action recommendations accordingly.

To meet GCCWPP objectives for fiscal year 2005/06 and beyond, the CAG developed and prioritized the following action recommendations. At the end of the fiscal year, the projects that resulted from these action recommendations will be assessed for effectiveness in terms of meeting GCCWPP objectives. For the life of the GCCWPP, recommendations for projects will be made for each coming fiscal year based on project success in the prior fiscal year.

## A. Administrative Oversight

As stated previously, the communities concur that the most efficient way of implementing the action recommendations is through formal agreement to delegate accountability to a single entity. Establishing a unified effort to collaboratively implement the GCCWPP embraces adaptive management principles that enhance decision making at all levels of government. Therefore, Graham County's assumption of accountability for implementing the Plan is a primary action recommendation of the CAG.

## B. Priorities for Reduction of Hazardous Fuels

The WUI map displays the high risk areas, which are the priority treatment areas and projects recommended by the GCCWPP communities for fiscal year 2005/06 and beyond, as planning documents and necessary consultations are completed. These action recommendations will decrease vegetative fuels and thereby reduce wildfire intensity and potential impact to the communities and the surrounding landscape. All project areas recommended have at risk values.

An initial focus should be on funding for projects with a completed NEPA process in place, such as project areas on Mount Graham. A second focus should be on programmatic consultation with the U.S. Fish and Wildlife Service for hazardous fuels treatments.

## C. Priorities for Protection Capability and Reducing Structural Ignitibility

### Fiscal Year 2005/06

The communities within the CWPP area should evaluate, maintain, and where possible, upgrade community wildfire preparation and response facilities, capabilities, and equipment.

## D. Priorities for Promoting Community Involvement Through Education, Information, and Outreach

Utilizing existing resource, the GCCWPP communities will implement public outreach and education programs, as outlined in Chapter 4, for residents and visitors alike to heighten awareness and understanding of the threats and other issues that wildland fire pose to Graham County.

## E. Priorities for Enhancing Local Wood Product-Related Industry

The GCCWPP communities will continue to support and promote responsible, qualified private contractors who perform fire-safe mitigation work (e.g., fuel hazard reduction). The communities will also support and seek opportunities for local contractors to start new businesses or to expand existing businesses in the fire prevention/fuels reduction arena.

## F. Requested Funding for Mountain, River/Riparian, and Upland Community Treatments and GCCWPP Implementation

The GCCWPP communities will initially request from appropriate sources:

- $650,000 dollars or grant and other funds in each of fiscal years 2005/2006 and 2006/2007 to accomplish and monitor fire hazard reduction and hazard tree removal work on Mount Graham.

- $750,000 dollars in each of fiscal years 2005/2006 and 2006/2007 to assess, implement, and monitor fuel hazard projects in identified high risk areas along the Gila River corridor.

- $500,000 dollars in each of fiscal years 2005/2006 and 2006/2007 to assess, implement, and monitor fuel hazard projects in identified at risk areas in and around Graham County upland communities.

- $150,000 dollars in each of fiscal years 2005/2006 and 2006/2007 to cover the costs of implementing GCCWPP education, outreach, monitoring, and training recommendations.

- $100,000+ (depending on price) to purchase a Brush Truck for the Pima Fire Department.

# Chapter 6. Monitoring

Monitoring is essential to ensure that GCCWPP goals are met. Graham County, with the assistance and cooperation of GCCWPP communities and affected agencies, will actively monitor the progress of the GCCWPP action recommendations, and base recommendations for future projects on the effectiveness of the ongoing and completed projects.

In accordance with §102.g.5. of HFRA, the GCCWPP communities expect to participate in multiparty monitoring with state and federal agencies to assess progress toward meeting GCCWPP objectives.

## A. Administrative Oversight, Monitoring, and GCCWPP Reporting

Graham County will be responsible for implementing and monitoring the collaborative process necessary for successful implementation of the GCCWPP action recommendations. At the end of each fiscal year, a report will detail the success of GCCWPP project implementation and overall progress toward meeting GCCWPP goals. Each report will review and make recommendations to the signatories to update the Community Mitigation Plan and the Prevention and Loss Mitigation Plan portions of the GCCWPP. This information will ensure timely decision making for all levels of government, providing input necessary for the development of the next year's work plan and for prioritizing project recommendations both annually and for the next 5 years.

Graham County may present the annual work plan to the IGA signatories for their approval and submission to the State Forester and the Forest Service for funding through HFRA.