

GREATER WILLIAMS AREA COMMUNITY WILDFIRE PROTECTION PLAN

MARCH 2005



Pumpkin Fire, May 25, 2000 Williams Ranger District. Source: Kaibab National Forest

Table of Contents

I.	Introduction.....	5
II.	Purpose and Need.....	5
III.	Greater Williams Area CWPP Strategic Goals.....	10
IV.	Community Base Map Development.....	11
V.	Community Risk Assessment and Analysis Process.....	13
	A. Fuel Hazards.....	13
	B. Risk of Wildfire Occurrence.....	18
	C. Homes, Businesses, and Essential Infrastructure at Risk.....	21
	D. Other Community Values at Risk.....	21
	E. Local Preparedness and Firefighting Capability.....	24
VI.	Wildland Urban Interface Identification and Cumulative Risk Rating.....	26
VII.	Fuels Treatment Implementation Strategy and Priorities.....	28
	A. Fuels Treatment Options.....	30
	1. Thinning.....	30
	2. Hand Piling.....	33
	3. Machine Piling.....	33
	4. Lop and Scatter/Crushing.....	34
	5. Chipping.....	35
	6. Pile Burning.....	35
	7. Broadcast Burning.....	35
	8. Various Combinations.....	36
	9. Maintenance of Treatments.....	37
	B. Fuels Treatment Benefits.....	37
	C. Priority Treatment Area Identification.....	41
	D. Fuels Treatment Cost Estimates.....	43
	E. Funding Sources.....	43
	F. Forest Service Completed and Planned Projects.....	44
	G. Coconino County and Arizona State Land Projects.....	47
VIII.	Structure Ignitability.....	48
IX.	Community Education.....	52
X.	Monitoring.....	52
XI.	Summary.....	52
XII.	References and Literature Citations.....	53
XIII.	Appendices.....	53
	1. Wildland Fire Advisory Council Fire Equipment List.....	54
	2. Map Information Tables.....	57
	3. Fuels Treatment Cost Estimates.....	60
	4. Firewise Techniques and Tips.....	61

Listing of Maps in CWPP

1.	Arizona State Analysis Area Map.....	7
2.	Community Base Map.....	12
3.	Dominant Overstory Vegetation Map.....	16
4.	Crown Fire Risk Map.....	17
5.	20 Year Fire Occurrence Map.....	19
6.	Large Fire Occurrence Map.....	20
7.	Development Risk Map.....	23
8.	City of Williams and Fire Districts Map (ISO Ratings).....	25
9.	Cumulative Risk Rating Map.....	27
10.	Simulated Treatment Crown Fire Risk Map.....	39
11.	Crown Fire Risk Map.....	40
12.	Priority Area Treatment Map.....	42
13.	Completed Forest Service Projects Map.....	45
14.	Planned Forest Service Projects Map.....	46

Listing of Tables in CWPP

1.	Arizona State Land and Coconino County Projects.....	48
2.	Appendix 2, Map Information Tables.....	57

I. Introduction

The greater Williams area Community Wildfire Protection Plan (CWPP) is a collaborative effort between the City of Williams, Coconino County, Parks-Bellemont Fire District, Sherwood Forest Estates Fire District, Kaibab National Forest, Arizona State Land Department, and concerned citizens. Development of the CWPP was in response to the Healthy Forests Restoration Act (HFRA) of 2003. This legislation offered incentives and priority funding for communities to collaboratively develop a comprehensive wildfire protection plan. The HFRA is the legislative component of the Healthy Forests Initiative, introduced by President Bush in January 2003. Congress passed HFRA in November 2003 and the President signed it into law in December 2003.

Title I of the HFRA authorizes the Secretaries of Agriculture and Interior to expedite development and implementation of hazardous fuels reduction projects on lands managed by the USDA Forest Service and the Bureau of Land Management. The HFRA emphasizes the need for federal agencies to collaborate with communities in developing a CWPP as well as in implementing identified priority fuels treatment projects that will reduce the risk of destructive wildfires threatening those communities. Priority areas include the Wildland Urban Interface (WUI) as identified in the CWPP, municipal water supplies, and other high value areas identified through the CWPP development process.

In developing a CWPP, Title I of the HFRA requires the involvement and agreement among local governments and local fire districts; approval of a CWPP is given by the representative state entity, in this case, the Arizona State Land Department. The CWPP must also be developed in consultation with interested parties and the applicable federal agency managing the land surrounding the communities, in this case, the Kaibab National Forest.

The greater Williams area CWPP is a strategic plan developed to provide all land owners with a broad spectrum of treatment options as well as prioritize areas for treatment on federal, state, and private lands. Site specific planning and treatment is the responsibility of each land owner or jurisdictional agency and should be guided by this plan.

Guidance for developing the greater Williams area CWPP is based upon *Preparing a Community Wildfire Protection Plan: A Handbook for Wildland Urban Interface Communities (March 2004)*.

II. Purpose and Need

In September 2004 the City of Williams and Coconino County joined together to commission the development of the greater Williams area CWPP. The area of concern was the nearly 30,000 acres of private lands within or adjacent to the ponderosa pine and mixed conifer ecosystems of the Williams Ranger District, Kaibab National Forest. The majority of these private lands have some type of development ranging from a single cabin to the incorporated City of Williams. These private lands are spread throughout the area where one catastrophic wildfire could threaten and destroy several subdivisions in one daily wildfire burning period. The analysis area was

defined by the City and County as the timbered area of the Williams Ranger District to include all private inholdings potentially at risk. See Arizona State map for the planning area analyzed.



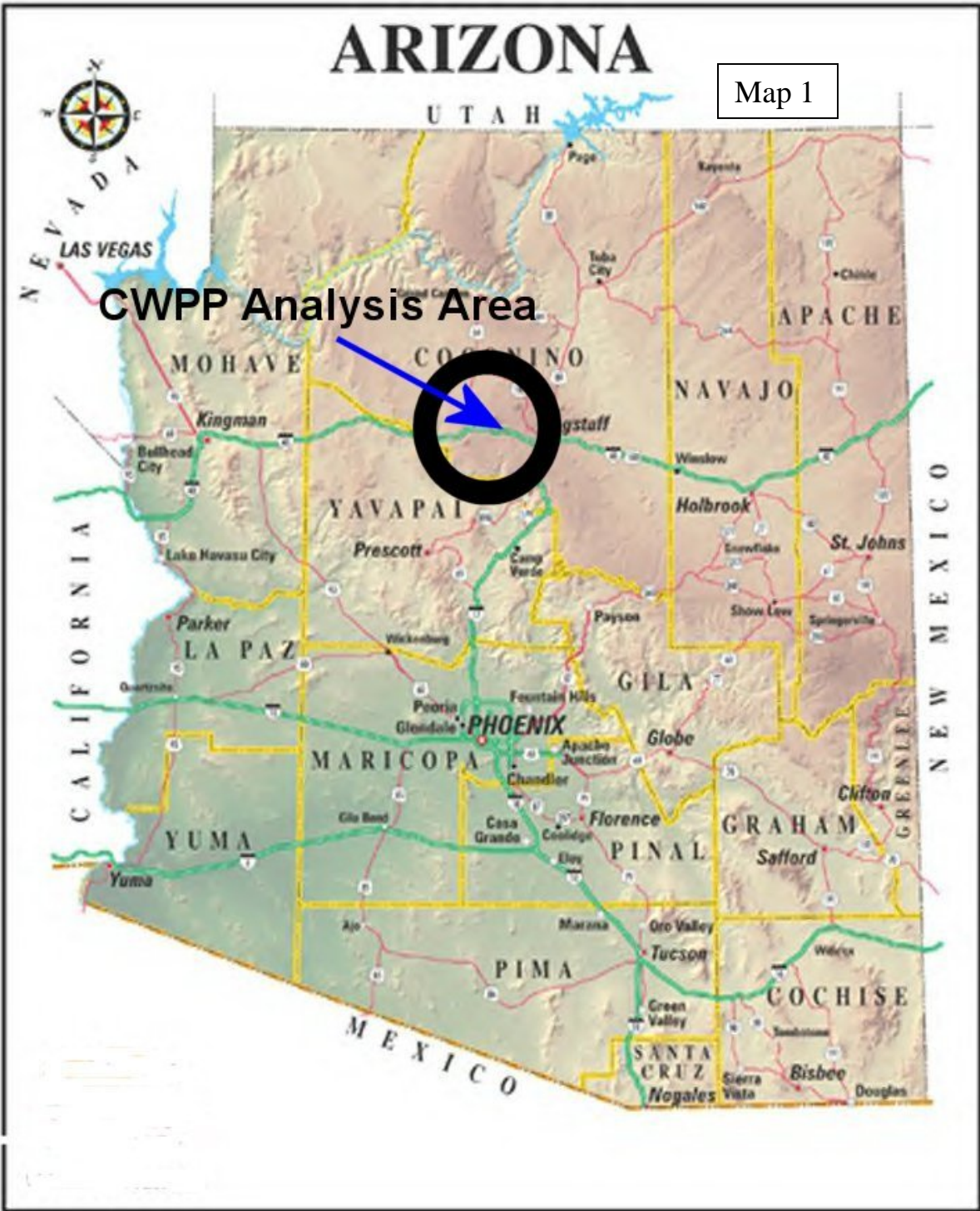
Initial attack snag falling. Source: G. Kleindienst



Burning out on Dutton fire, Grand Canyon N.P. 1988. Source: G. Kleindienst

ARIZONA

Map 1



Wildfire is a natural occurrence within the southwestern ponderosa pine and Douglas fir ecosystems. Abundant research has identified the changes in these ecosystems over the past 130 years. Ponderosa pine forests of the Southwest have gone through extensive structural and compositional changes in the last century. Many references document the open, park like appearance of historic ponderosa pine stands, where herbaceous vegetation was vigorous and abundant. The dense thickets of stagnant small ponderosa pine common throughout the Southwest today are due to a combination of events in the early 1900's. Many of the thickets originated around 1919, when a rare combination of factors occurred. A good seed production year in 1918 was followed by unusually moist springs for a few years that benefited the establishment and growth of pine seedlings. Along with the good pine seed crop years, intensive livestock grazing was also a factor in the establishment of dense stands of ponderosa pine. Intensive grazing caused drastic declines in the coverage of herbaceous vegetation. This decline led to four subsequent changes: (1) fire spread was reduced because of the decrease in fine fuels, (2) ponderosa pine regeneration was increased because of reduced competition with herbaceous vegetation, (3) fire mortality to seedlings was reduced and, (4) mineral seedbeds for the establishment of seedlings was increased. Past resource demands and land management practices additionally added to our current overgrown forests, resulting in a dramatic trend towards uncharacteristic catastrophic wildfires.



Old growth & open park-like appearance with abundant grasses. Source: G. Kleindienst



Dog-hair thicket, likely from 1918 seed crop. Source: G. Kleindienst



Towering old growth or presettlement trees with abundant understory.
Source: G. Kleindienst

In the greater Williams area, the recent pine bark beetle infestation and resulting pine mortality, coupled with a ten year drought, have further increased the fuels available for combustion and substantially increased likely fire behavior and fire intensity in these overgrown ponderosa pine and Douglas fir ecosystems. The need to thin these forests, treat the slash, and reintroduce wildfire in to these ecosystems is well documented in the research records.



Bug killed ponderosa pine hillside. Source: Kaibab National Forest

The HFRA provides for community-based decision-making and empowers local governments to determine the boundaries of the WUI that surround their communities. In recognition of the cost of no action and high fire suppression costs versus the costs of hazardous fuels treatments, the City of Williams and Coconino County identified catastrophic wildfire as one of the highest costs and threats to the communities in this area and in Northern Arizona. The development of the CWPP is a direct response to their priorities and will help mitigate the potential loss of lives, homes, infrastructure, and irreplaceable natural resources.

III. Greater Williams Area Community Wildfire Protection Plan Strategic Goals

Guidance from the City of Williams, Coconino County, and the core team agencies led to development of the following strategic goals.

- Create the greater Williams area community base map, define the wildland urban interface at risk, and perform a risk analysis to identify priority areas for treatment on federal, state, and private lands.
- Offer a wide range of treatment options for use on federal, state, and private lands.
- Educate the public in firewise treatments around their homes as well as ways to reduce structural ignitability through fuels treatment, defensible space, and use of fire resistant building materials.
- Educate the public in hazardous fuels treatments needed in the wildland urban interface to not only protect lives and infrastructure, but also to protect the ecosystems that are so valuable in the Williams area.
- Improve fire prevention and suppression efforts.
- Reduce hazardous forest fuels.
- Promote community involvement in the CWPP process and fuels treatments.

- Provide options for the City and Fire Districts to reduce structure ignitability.
- Encourage development of small wood processing businesses to aid in funding the necessary fuels treatments as well as promote economic development in the area.



Greater Williams area WUI residence. Source: G. Kleindienst

IV. Community Base Map Development

After developing the overall strategic goals of the CWPP, a community base map was needed and developed. The initial focus of the CWPP included all of the Williams Ranger District with further direction from the City and County to analyze and assess the private lands in or adjacent to the ponderosa pine and Douglas fir ecosystems. Map 2 provides a visual information baseline for core team members and the community to assess and make recommendations regarding protection and risk reduction priorities. The community base map depicts the entire District and clearly shows the scattering of private lands throughout the District.

COMMUNITY BASE MAP & WUI BOUNDARY

Kaibab National Forest
Williams Ranger District
Coconino County

WUI ACRES

294,258	Kaibab National Forest
1,516	Coconino National Forest
29,776	State of Arizona Land
650	Private Ownership
326,200	WUI Boundary

Map 2

