



and the
Southwest Interface Project

Strategic Fire Protection
in
Southern Tuolumne and Northern
Mariposa County, California

Community Wildfire Protection Plan
CWPP



**WORKING TOGETHER
AND MAKING A DIFFERENCE
THROUGH LOCAL COLLABORATION**

The Southwest Interface Project

Community Wildfire Protection Plan

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Executive Summary

The **Southwest Interface Project** was initiated in March of 1999 as an effort to provide a higher level of wildfire protection in an area of repeated catastrophic wildfire history. The area located in southern Tuolumne and northern Mariposa counties in California had experienced significant losses to property and natural resources, and five firefighters had lost their lives over the last few decades fighting wildfires. Twelve concentrated human population areas along with twelve high value watersheds are located within the 132,000 acre project area.

The collaborative partnership that makes up the **Southwest Interface Team** known as **SWIFT**, continues after five years of work on it's primary objective of protecting communities and the valuable watersheds from wildfire. There are two key elements utilized by **SWIFT** that allow wildfire protection planning and implementation activities in the project area to be identified as "**Strategic**". **Strategic Fire Defense Systems** and **Pre-Fire Planning** actions are based on team identification of the best way to protect communities and watersheds under today's environmental, economic, political, and social constraints and regulations. Dollars and actions are directed strategically at the highest priority areas.

Nine fire and land management agencies and two Fire Safe Councils that are affiliated with the collaborative partnership have developed the strategic fire protection plan and approved a coordinated program of work to insure implementation accountability. A number of key planning, implementation, and authoritative documents attest to the creation of a local stakeholder approved plan that should meet the criteria for the **HFRA Community Wildfire Protection Plan**. Resolution from both County Boards of Supervisor's, Memorandums of Understanding, formal Communication Plans, a multi-year coordinated Program of Work, and the Strategic Fire Protection Plan for the project area are all documented.

The communities covered under this plan are identified as the **Highway 120 Community Protection Area** in Tuolumne County. This area covers Groveland, Moccasin, Big Oak Flat, Second Garrotte, Big Creek Shaft, Yosemite Vista Estates, Hells Hollow, Smith Station, Buck Meadows, and Pine Mountain Lake. The other area in Mariposa County is identified as the **J132 Community Protection Area** which covers Greeley Hill and Coulterville.

ACKNOWLEDGMENTS

For over five years SWIFT has worked to provide an aggressive strategic program of wildfire protection to the people, their property, and natural resources in southern Tuolumne and northern Mariposa counties. The SouthWest InterFace Team or SWIFT a collaborative partnership initiated in March of 1999 continues to work on it's primary objective within the project area of protecting communities and high value watersheds from catastrophic wildfire. Agency leaders, Boards of Supervisors, Fire Safe Councils, and others continue to provide active participation in the protection effort or ensure that their support is evident. We wish to acknowledge this outstanding support and participation.

We also wish to thank those at the Hetch Hetchy Water & Power facility at Moccasin that have hosted our monthly SWIFT meetings over a number of years. Special thanks to Maxine Musante for the outstanding refreshments provided at each meeting.

Agencies/Councils/Participants

The following is a listing of the agencies and Fire Safe Councils involved in the SWIFT effort and the people that are still on the team or participated over past years.

California Department of Forestry & Fire Protection

Tuolumne/Calaveras Ranger Unit

Jim Carroll

Steve Hollett

Bill Schultz

Dave Degrendele

Renny LeRoy

Rich Strazzo

Julie Henriques

Mike Noonan

Madera/Mariposa/Merced Ranger Unit

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Roscoe Rowney

Bill Hodson

Roger Maybee

Kevin Smith

United States Department of Agriculture

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United States Department of Interior

Bureau of Land Management – Folsom Resource Area
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City and County of San Francisco

Hetch Hetchy Water and Power
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Mariposa County

District II County Supervisor
Doug Balmain
Mariposa County Fire Department
Art Laursen Jim Middleton Blaine Shultz

Tuolumne County

District IV County Supervisor
Mark Thornton
County Administrative Analyst
Steve Boyack
Tuolumne County Fire Department
Mike Noonan Andy McMurry

United States Department of Agriculture

Central Sierra Resource Conservation & Development
Dick McCleery

Natural Resource Conservation Service
Jerry Progner

Mariposa County Fire Safe Council

Kimberly Bullock Jan Hamilton
Greeley Hill Fire Safe Committee
Meg Hamre Dawn Leitzell

Yosemite Foothills Fire Safe Council

Deborah DeGrendele Nancy Longmore

University of California – Agriculture & Natural Resources

Cooperative Extension – Tuolumne County
Jay Norton

Community Wildfire Protection Plan

and the

Southwest Interface Project

AGENCY

Plan Approval Page

Date: _____

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Unit Chief

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Date: _____

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Date: _____

Jim Wilson

Mariposa County Fire Chief

Mariposa County Fire Department

P.O. Box 162

Mariposa, CA 95338

Date: _____

Julie Henriques

Assistant County Fire Warden

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Sonora, CA 95370

Date: _____

Susan Skalski

Forest Supervisor

Stanislaus National Forest

United States Forest Service

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Sonora, CA 95370

Date: _____

Bill Haigh

Field Manager

Folsom Resource District

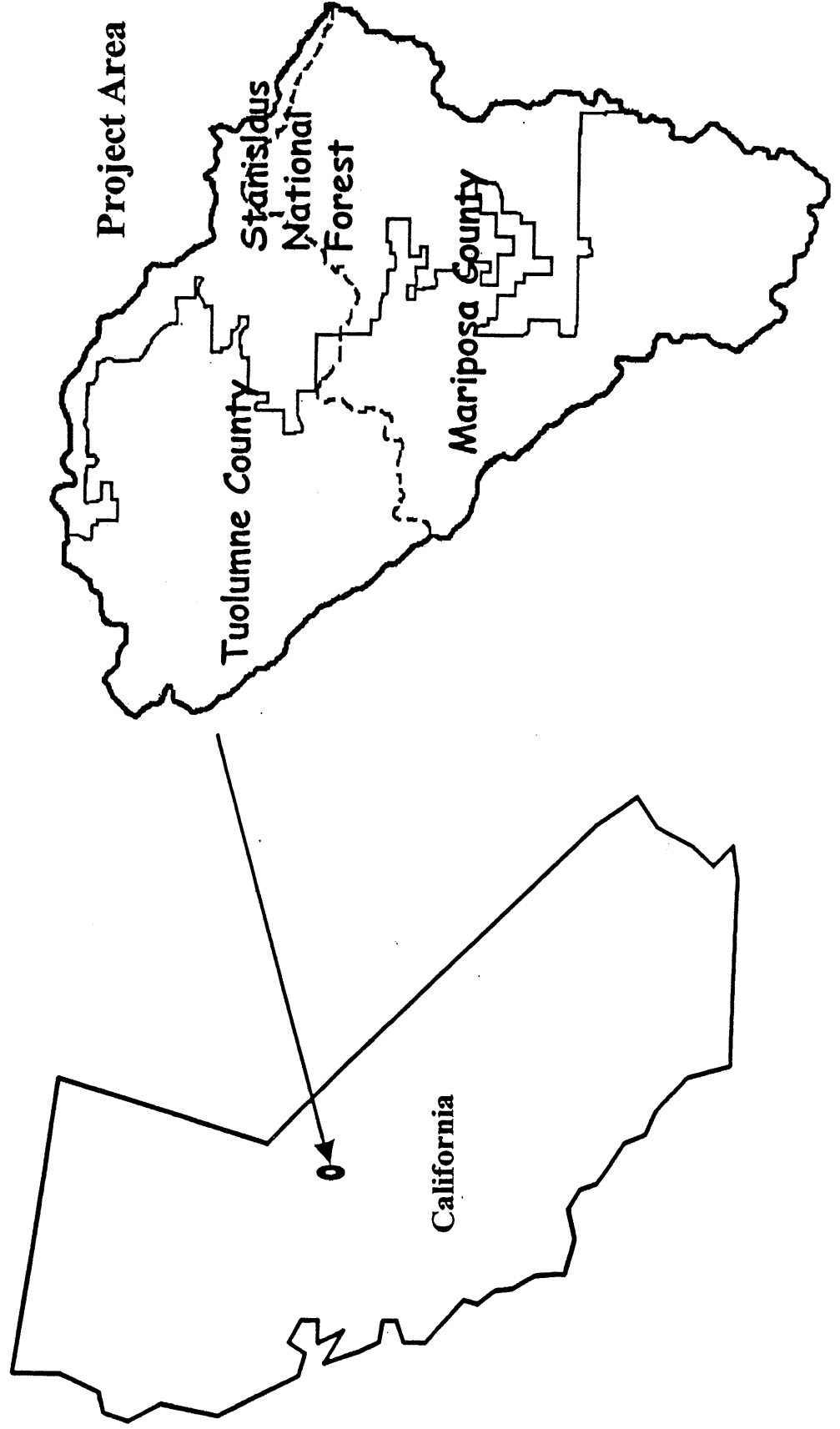
Bureau of Land Management

63 Natomas Street

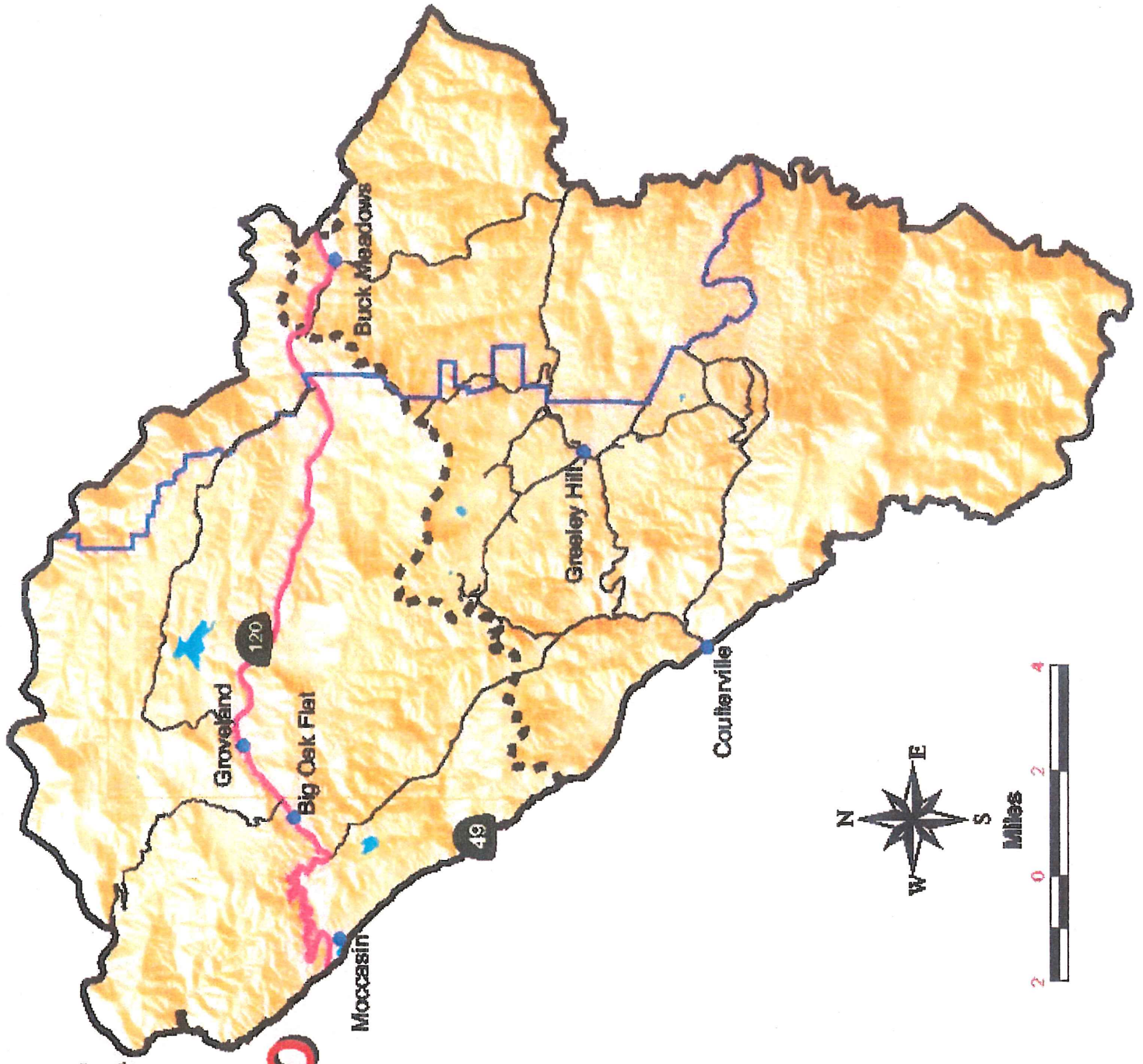
Folsom, CA 95630

THE SOUTHWEST INTERFACE PROJECT

VICINITY MAP

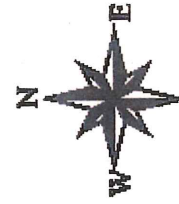


Southwest Interface Project Map



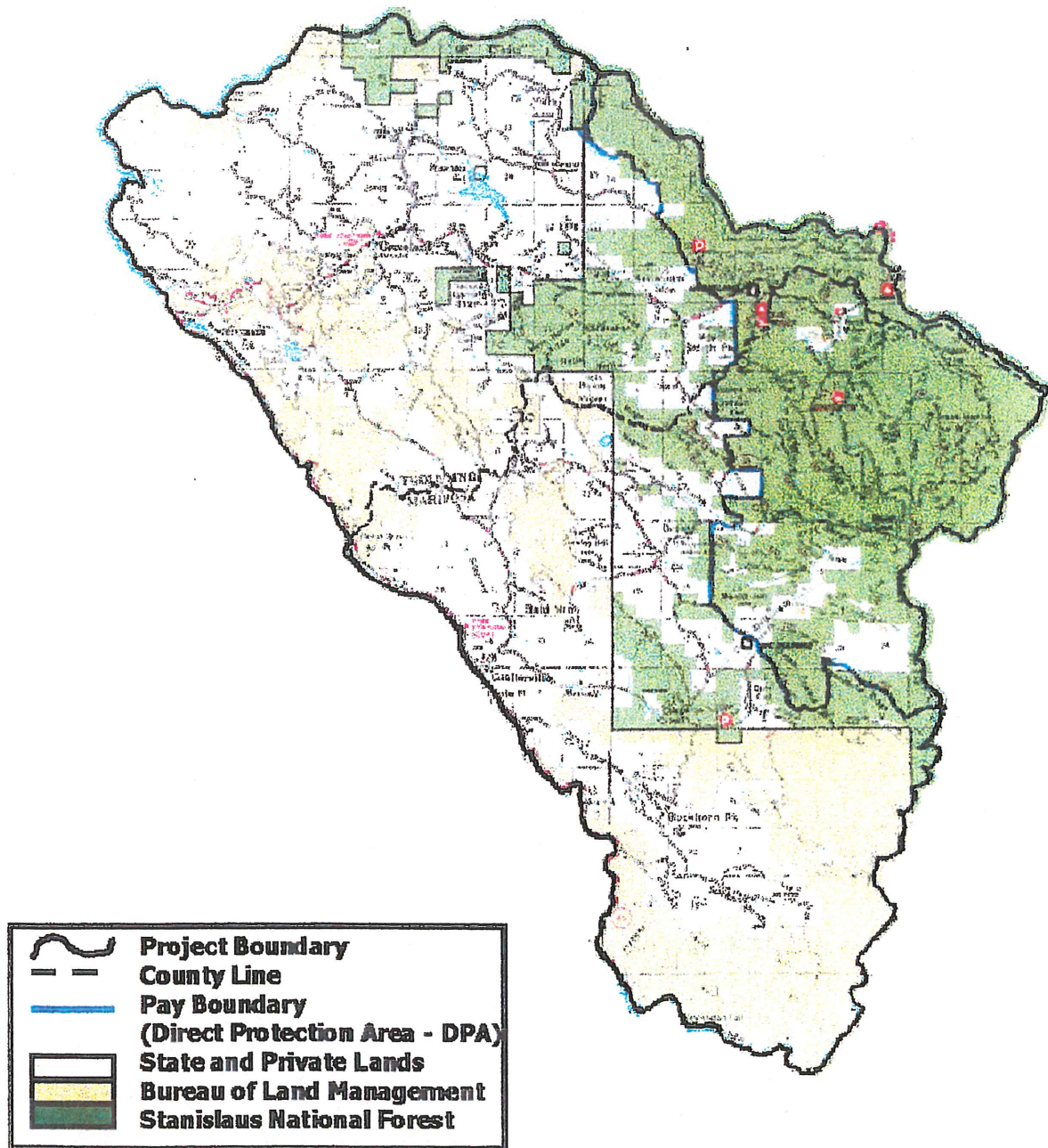
Features

- Main Cities
- County Roads
- Protection Boundary
- State Highways
- - - County Line
- Lakes
- Project Boundary



JURISDICTIONS

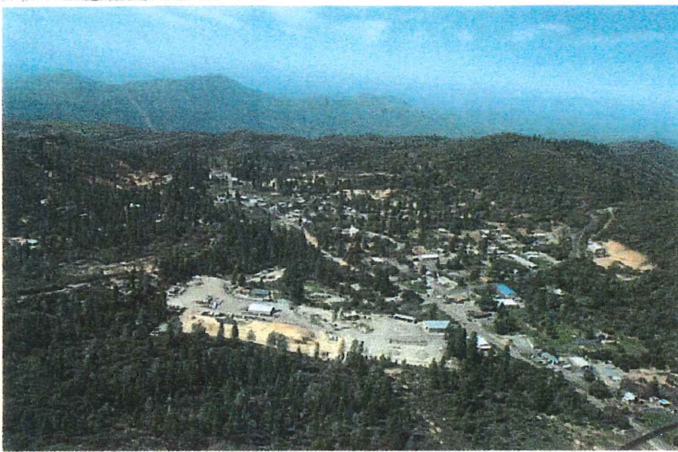
The Southwest Interface Project Area Map



Communities At-Risk

SOUTHWEST INTERFACE PROJECT

There are 12 **Communities** (Residential Concentrations) **At-Risk** within the **Southwest Interface Project** area. The following photos identify 10 of the areas that fall within that classification. Basically all of these residential areas have been threatened by, or have experienced catastrophic fire in recent history. The fire regime indicates repeated fires will continue in the future. Steep canyons, explosive vegetation, extreme fire weather conditions, and numerous fire ignitions all contribute to the potential for loss of life, property, and resources within the project. The map identified as “**Major Fires**” under the section titled **Community Wildfire Protection Plan Support Maps** identifies the last two decades of fire history. This certainly shows a very active fire regime with only a few years between large fire incidents.



Big Oak Flat



Smith Station



Groveland



Greeley Hill



Moccasin



Coulterville



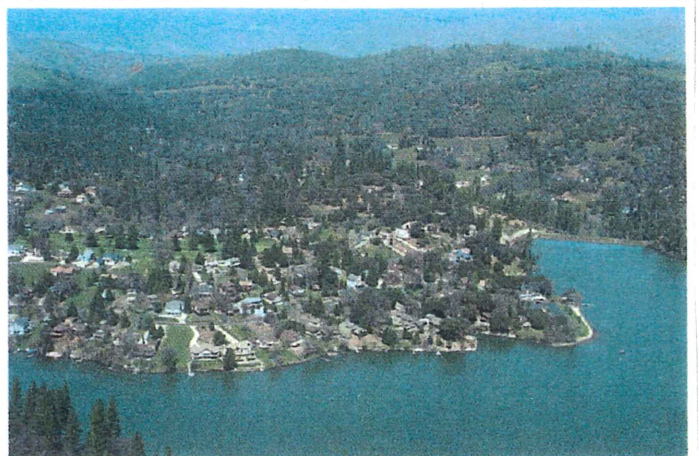
Second Garrotte



Hells Hollow



Buck Meadows



Pine Mountain Lake

Community Profiles

The **Highway 120 Wildfire Community Protection Area** runs somewhat parallel with Highway 120 which bisects the Southwest Interface Project area in an east to west direction. The area can be found to the north and south of the highway at varying distances of ½ to 3 miles. The structures within the area include numerous small businesses to private residents located in isolated, grouped or concentrated settings. The population fluctuates from the winter to the summer season based both on tourist impacts and second home use. It is estimated that the area swells to over 10,000 people during the summer. The Pine Mountain Lake sub-division contains over 2,900 structures in a fairly concentrated area surrounding the lake. The primary businesses are located directly along Highway 120 with the majority located in the town of Groveland. Over 60% percent of the population that resides in the area can be considered as senior citizens. A number retirees from some of the Central Valley and Bay areas have relocated into the Groveland area. Considerable tourist traffic into Yosemite National Park occurs during the spring, summer, and fall. After the first good snowfall Highway 120 into Yosemite Park is closed. Tourist still access the valley floor and other park locations from the Groveland side by connecting to Highway 41. At the bottom of Priest grade at the far west end of the project is the City and County of San Francisco's Hetch Hetchy Water and Power facility and the Moccasin Fish Hatchery. The small town of Buck Meadows is located on the eastern side of the project boundary on Highway 120. Business in the area is keyed to tourism, forestry, ranching, logging, real estate, and numerous other customer and local population service needs. Many facilities in the Groveland area are historic and recorded with the State.

The **J132 Highway Community Wildfire Protection Area** includes the communities of Greeley Hill and Coulterville in Mariposa County. Both communities can be found directly adjacent to the highway with numerous road arteries that generally run both easterly and westerly from the centers of each town. Coulterville relies on tourism as one of it's major economic businesses as it lies on both J132 and Highway 49 that intersect the center of town. Greeley Hill has some tourist business along J132, but not to the extent of Coulterville. The Greeley Hill area has many structures that can be considered as grouped or isolated. In many cases they can be found a considerable distance from what would be considered the center of town. J132 runs in somewhat of a north to south direction from Highway 120 to the Greeley Hill Road then turns southwesterly into Coulterville. Populations for the two communities are estimated to be approximately 2,500 people total with up to 55% percent seniors residing within the communities. Tourism, ranching, and meeting both local and travelling public demands for services seems to be the primary business operations for the two communities. The Greeley Hill protection area stretches from the upper Wagner Valley to the southeast to below Date Flat. In places it is over 2 miles in width. The Coulterville area on the other hand is almost circular and reaches out from the center of town for over a mile. Structure concentrations as indicated in a town setting are not really apparent except for one area in Greeley Hill, but are definitely noticeable in Coulterville.

Introduction

Collaboration, prioritized fuel reduction, and both Fire Safe Council and local fire agency involvement in reducing structure loss potentials is a primary objective of *SWIFT*. Working for over 5-1/2 years to provide a higher level of fire protection to the people, their property, and the many natural resources in the project area has always been a critical factor of team activity.

The **Southwest Interface Project** name was derived from the steep southwest facing slopes of the central Sierra Nevada Mountains where continuous and very volatile fuel beds of brush and timber interfaced with the communities lying along the mid elevations of the mountain range. All populated areas as previously identified can be considered **at-risk communities**. Within the last two decades seven major wildfire incidents have impacted the project area.

SWIFT identified where strategic implementation of a fire defense system would have the highest pay-off, and began putting past, present and future pieces together in a manner that displays the total fire environment for the project area. The priority hazard reduction measure as implemented by the **Team** has been **shaded fuel break** and **road corridor** fuel treatments. These are the two critical **strategic fire defense system** activities that can provide the highest level of fire protection for the threatened communities and watersheds. The development of **Pre-Fire Plans** was also a primary concern by the **Team**. Significant work has been on-going to collect and display information required by all emergency service personnel to facilitate a timely, accurate, factual and appropriate decision making process. Both the strategic fire defense system and pre-fire planning activities require long-term maintenance. The project program of work insures that maintenance is a key consideration for any activity planned.

The Community Wildfire Protection Plan

Step One: Convene Decision-makers

The **SouthWest InterFace Team (SWIFT)** was formed in March of 1999. The collaborative partnership was established to mitigate the very serious wildland fire problems within a 132,000 acre area in southern Tuolumne and northern Mariposa County. The objective was to have city, county, state, federal, and local public participation through Fire Safe Councils to work cooperatively to help protect life, property, and natural resources from wildfires.

The **Team** consists of the following agencies/councils:

- *California Department of Forestry & Fire Protection – Tuolumne/Calaveras Ranger Unit*
- *California Department of Forestry & Fire Protection – Madera/Mariposa/Merced Ranger Unit*
- *United States Department of Agriculture – Forest Service – Stanislaus National Forest – Groveland Ranger District*
- *United States Department of Interior – Bureau of Land Management – Folsom Resource Area*
- *City and County of San Francisco – Hetch Hetchy Water & Power*
- *Mariposa County Fire Department*
- *Tuolumne County Fire Department*
- *United States Department of Agriculture – Central Sierra Resource Conservation & Development*
- *United States Department of Agriculture – Natural Resource Conservation Service*
- *Mariposa County Fire Safe Council and Greeley Hill Fire Safe Committee*
- *Yosemite Foothills Fire Safe Council*

This is the group that collectively developed the **Strategic Fire Plan** for the project area. The plan was designed to apply fire protection activities based on pre-determined priorities to protect the citizens, their property, and natural resources from catastrophic wildfire.

These agencies/councils are local to the area and have either direct protection , land management, project support authority or public links and connections to the private stakeholders in the area.

Step Two: Involve Federal Agencies

As you can see by the team listing both the Forest Service and Bureau of Land Management have been involved in this fire protection project for over five years.

Step Three: Engage Interested Parties

SWIFT has had, and continues to have contacts with clubs, councils, residents, boards of supervisors, review teams, committees, conferences, workshops, agency leadership, and others to inform and update, and solicit support, comments, and recommendations about the projects activities. Contacts have been at the local, county, state, and federal levels.

The Fire Safe Councils continue to provide direct contacts with elected officials, local businesses, service organizations, property owners, residents, and other agencies in the area.

Step Four: Establish a Community Base Map

In 1999 the team identified and mapped a 132,000 acre area common to all agencies. Within the boundaries were communities and residential concentrations, and key watersheds for which all the agencies shared common protection problems and responsibilities.

Residential concentrations with regard to the community protection areas have been identified. The pre-fire planning identifies all existing and planned fire defense systems, and any infrastructure or other pertinent information which includes water sources, helispots, staging areas, safety zones, area hazards, jurisdictions, fuel types, special management zones, incident support facilities, and fire history. Infrastructure for public safety is identified as evacuation routes, evacuation sites, fire stations, medical facilities, and any law enforcement facility. (See **Community Base Map**)

Step Five: Develop a Community Risk Assessment

The “**Catastrophic Fire Vulnerability Rating System**” and the “**Home Fire Risk Rating System**”. The components of each of these systems are identified below:

The Catastrophic Fire Vulnerability Rating System

This rating system was designed to identify priorities with regard to communities and watersheds at-risk and to indicate wildfire protection strategies based on the vulnerability rating. This rating system complements what is used by the California Department of Forestry and Fire Protection in their Ranger Unit Fire Plans. There are four rating categories:

Value – Any singular or mix of natural resources or property on a given land area that has either an actual dollar value or can be subjectively valued. (Assets at Risk – AAR)

Risk – Any fire ignition source, natural or person caused, coupled with large fire history data that indicates future catastrophic fire potentials. (Historic Fire Weather)

Hazard – All topographic and fuel indicators that influence fire behavior and produce catastrophic fire potentials. (Hazardous Fuels)

Suppression Capability – Actual response times for initial attack of a fire start, and how complex the actual suppression action may be based on fuel profiles such as structure and vegetation mixes. (Level of Service – LOS)

The rating system incorporates all factors identified in **Step Five** of the March 2004 “Preparing a Community Wildfire Protection Plan” Handbook. There are four levels of rating in the system – **Very High, High, Moderate, & Low**. A summary of the rating calculations follows:

***Watershed and Communities at Risk
By Priority***

Watershed Name	Populations at-risk	Vulnerability Rating	Protection Strategy	Priority
Big Creek	Groveland, Second Garrotte, Hells Hollow, Smith Station, Big Creek Shaft, Yosemite Vista, Pine Mountain Lake	Very High	Fuel Breaks, Road Corridors, FSC, Pre-Fire Planning, Prescribed Burns *Infra	#1
Bean Creek	Greeley Hill	Very High	Fuel Breaks, Road Corridors, Pre-Fire Planning, Prescribed Burns, *Infra	#2
Moccasin	Moccasin, Big Oak Flat	Very High	Fuel Breaks, Road Corridors, *Infra	#3
Maxwell	Coulterville	High	Prescribed Burns	#4
Moore Creek	Buck Meadows	High	Fuel Breaks, Road Corridors, *Infra	#5
Tuolumne River	Isolated	Moderate	Fuel Breaks, *Infra	#6
Merced River (Lower)	Scattered	Moderate	Fuel Breaks, *Infra	#7
Smith Creek	Scattered	Moderate	Fuel Breaks	#8
Jordan Creek	Minimal	Low	Road Corridors	#9
Tuolumne River South	Minimal	Low	Fuel Breaks	#10
Deer Lick Creek	Minimal	Low	Road Corridors	#11
Merced River North	Minimal	Low	Fuel Breaks	#12

*Infra – Infrastructure support facilities for the fuel breaks and some road corridors to include: Helispots, water sources, staging area, etc.

Home Fire Risk Rating System

This rating system is just one of many the team has used to identify various levels of structure risk from wildfire. This particular system uses the rating components identified below:

Fuel Hazard Rating – This rating is based of fuel types and size classes and uses three different categories.

Slope Hazard Rating – The rating uses four types of slopes from 0% percent to 41% percent and greater.

Structure Hazard Rating – Structure roofs and siding are used to identify the ignitability rating.

Additional Rating Factors – Various plus and minus ratings are given to other categories that can help identify if a structure is more or less at-risk.

The rating system uses these four risk categories to determine if a structure is in an **Extreme, High, Moderate, or Low Rating**. A summary of the rating calculations follows:

Fuel Hazard Rating

Fuel Type	Rating
Small, light fuels (grass, weeds, shrubs, brush)	1
Medium size fuels (brush, large shrubs, small trees)	2
Heavy, large fuels (woodland, timber, heavy brush, dead & down fuel loading)	3

Slope Hazard Rating

Slope	
Flat to mild slopes (0-5%)	1
Moderate slopes (6-20%)	2
Steep slopes (21-40%)	3
Extreme slopes (41% and greater)	4

Structure Hazard Rating

Design Characteristics

Classified roof and noncombustible siding materials	1
Classified roof and combustible siding materials	3
Unclassified roof and noncombustible siding materials	7
Unclassified roof and combustible siding materials	10

Additional Rating Factors

Additional Factor

Rough topography that contains several steep canyons	+2
Areas having history of higher than average large fire occurrence	+3

Areas exposed to severe fire weather and strong winds	+4
Areas with existing fuel modification or usable fuel breaks	-3
Areas with local facilities (water systems, fire districts, etc.)	-3

Calculate the Risk

Fuel Hazard _____	X	Slope Hazard _____	=	_____
		+ Structure Hazard _____		_____
		+ or - Additional Factors _____		_____
Total Hazard Points _____				_____

Total Hazard Points _____	
Hazard Rating Calculations	Extreme Wildfire Risk = 26+ points
	High Wildfire Risk = 16 to 25 points
	Moderate Wildfire Risk = 6 to 15 points
	Low Wildfire Risk = 6 or less points

Assessment Considerations

A. Fuel Hazards

Significant work was done to identify the wildfire threat based on fuel types and topographic features that influence fire behavior. The project area has three basic fuel types that include oak-woodland, heavy mixed and continuous brush fields, and pine and mixed conifer timber types. All types are found on different topographic conditions that include steep v-shaped canyons to mild rolling topography. Of major significance with regard to the fuel hazard in the project area is that almost all of the communities at-risk lie above steep brush and timbered covered canyons. Over many decades the fuel and topographic conditions have proven to exhibit extreme catastrophic wildfire occurrence and potentials. (See Fuel Hazard Rating Map)

B. Risk of Wildfire Occurrence

The project area just in the last two decades has experienced seven major fire incidents. Over one-half of the project area has burned in this time period. Large fires have ravaged the area on almost a continual basis since records have been kept. This month (September 2004) a fire occurred within a mile of the project and claimed the life of another firefighter. Records are available to show numbers and types of ignitions. Human caused ignitions are common with arson, debris escapes, and smoking as leading contributors. About one-third of the fires are lightning caused. Fires that escape initial attack in the later part of the fire season are more than likely going to result in a major wildfire incident. (See Risk Occurrence Map)

C. Homes, Businesses, and Essential Infrastructure at Risk

All areas containing structures within the project itself are vulnerable to ignition from direct or indirect exposure to wildfires. Very few locations in any of the residential concentration areas are not subject to ignition by numerous means if a large incident occurs in their proximity. Extensive water and hydro-electric infrastructure is located throughout the area which supplies both San Francisco and California's Central Valley. Over 2.5 million people are served in the San Francisco area alone. (See Risk Map)

D. Other Community Values at Risk

Numerous historical buildings, a Wild and Scenic River, critical fish and wildlife habitats, extremely valuable watersheds, and other values of both historical and cultural significance are at risk. (See Risk Map)

E. Local Preparedness and Firefighting Capability

The primary evacuation routes for the Groveland Protection Area is Highway 120 which basically runs east and west through the project area. For the Greeley Hill/Coulterville Protection Area Highway J132 and 49 are the primary evacuation routes. Fire protection is provided by the following agencies either through direct protection or by mutual aid:

- California Department of Forestry & Fire Protection – Fire Station in Groveland
- California Department of Forestry & Fire Protection – Fire Station in Coulterville
- Tuolumne County Fire Department – Stations at Moccasin and Smith Station
- Mariposa County Fire Department – Station at Greeley Hill and Coulterville
- U.S. Forest Service – Stations at Groveland Ranger Station and McDiarmid
- Groveland Community Service District – Stations at Groveland, Big Oak Flat, and Pine Mountain Lake

Numerous cooperators are signed-up with CDF and the Forest Service to provide all types of fire support assets on a local basis. (See Fire Capability Map)

Step Six: Establish Community Hazard Reduction Priorities and Recommendations to Reduce Structural Ignitability

For over five years the group identified as *SWIFT* which includes both agency and Fire Safe Councils personnel have been establishing hazard reduction priorities and recommendations to reduce structural ignitability. The Fire Safe Councils have had active involvement with the public to seek community input. In some areas of the project there is a level of apathy with regard for public participation in wildfire protection activities.

All projects that are identified in the community protection plan as recommendations for hazardous fuel treatments serve to protect the community and essential infrastructure or are geared toward reducing risks to other community values.

The following information relates to the **Southwest Interface Project** which is committed to protecting the communities and high value watersheds in the area. The recommendations are based on the key objective of protecting communities at high risk from catastrophic wildfire.

The
Southwest Interface Project
Coordinated

Program of Work

PROJECT SUMMARY

Strategic Fire Defense Systems

Fuel Breaks:

- *Ponderosa Fuel Break*
- *Rim Truck Trail Fuel Break*
- *Wagner Fuel Break*
- *Long Term Maintenance Plan*
- *Infrastructure Support*

Road Systems:

- *Highway 120*
- *Highway 49*
- *Priest-Coulterville Road*
- *J-132 Smith Station Road*
- *Ferretti Road*
- *Greeley Hill Road*
- *Moore Creek Road*

Hazard Reduction Treatment Areas:

- *Coulterville VMP*
- *Greeley Hill VMP*
- *Priest Reservoir*
- *Creek Fire Restoration*
- *Hetchy-Anker VMP*
- *Pine Mountain Lake Project*
- *Hetch-Hetchy Water & Power Transmission Lines*

Defensible Space & Fire Safe Councils:

- *Mariposa County (Greeley Hill FSC Committee) Activities*
- *Tuolumne County (Yosemite Foothills FSC) Activities*
- *Public Meetings and Contacts*
- *Hells Hollow Wildfire Protection Plan*

Pre-Fire Planning Activities

Initial & Extended Attack – 1st Layer:

- *Road Systems*
- *Structure Locations*
- *Evacuation Routes*
- *Safety Zones (Certified)*
- *Area Hazards*

Major Incident & Infrastructure – 2nd Layer:

- *Staging Areas*
- *Helispots/Heliports*
- *Water Sources*
- *Jurisdictions/Ownerships*
- *Incident Support Facilities*
- *Fire Stations/Fire Defense Systems*
- *Fuel Types*
- *Special Management Zones*
- *Fire history*

Public Safety – 3rd Layer:

- *Emergency Support Facilities*
- *Evacuation Sites (Red Cross)*
- *Medical Facilities*

Grant Requests – Actions

Grant Requests:

- *Aerial Photos for Project*
- *Road Maintenance for Fire Defense Systems*
- *Yosemite Foothills FSC – Hells Hollow Request*

Grant Actions:

- *Mariposa County/CDF Ponderosa Fuel Break Grants*

Research Projects

Potential Research Projects:

- ***Creek Fire of 2001 Hazard Reduction Project***
- ***Mechanical Mastication (Issues & Concerns) Recommendations***

Southwest Interface Project and *Strategic Fire Protection*

There are two key elements utilized by *SWIFT* that allow wildfire protection planning and implementation activities in the project area to be identified as “**strategic**”. Strategic Fire Defense Systems and Pre-Fire Planning actions are based on team identification of the best way to protect communities and watersheds under today’s environmental, economic, political, and social constraints and regulations. Dollars and actions are directed strategically at the highest priority areas.

STRATEGIC FIRE DEFENSE SYSTEMS

- Fuel Breaks (Can be considered a direct or indirect treatment and generally identified as “shaded”) Requires appropriate support infrastructure such as helispots, water sources, staging areas, etc. and requires long term maintenance.

Ponderosa Fuel Break



Wagner Fuel Break



- **Road Corridor Hazard Reduction (Can also be a direct or indirect treatment)**
Used to provide safe access for both the public and fire suppression resources, and a means of providing a safe and effective fire control opportunity.

Highway 120



- **Area Hazard Reduction Treatments (Can be direct or indirect treatment)**
Prescribed burning, mechanical shredding, animal grazing, and a number of other treatment measures that may or may not be directly associated with the two previous treatments are also utilized.

Priest Reservoir Hazard Reduction



**Coulterville VMP
Prescribed Burn**



- Private Land Defensible Space (Generally direct treatment) Initiated by the land owner or through various support grant opportunities. State law requires certain compliance. Fire Safe Councils are key to success in some areas.

Creek Fire of 2001 on Wagner Ridge



PRE-FIRE PLANNING

- Planning Overview

SWIFT is gathering data consistent with the teams identification of pertinent information required to develop and maintain a long term pre-fire plan. Data collection both from the field and under an office setting continues with added emphasis utilizing various types of new innovative mapping software from a number of companies. Use of GIS software, palm pilots, GPS, and high tech aerial photography are key to development of the product the team seeks. The following listing indicates information the team has identified as critical to have in the plan:

Initial Attack Component

Water Sources
Helispots
Staging Areas
Safety Zones
Road Systems

Extended Attack Component

Structures
Fuel Types
Area Hazards
Jurisdictions

Major Incident Component

Special Management Zones
Incident Support Facilities
Fire History

Infrastructure Component

Emergency Support Facilities
Fire Stations/Fire Defense Systems

Public Safety Component

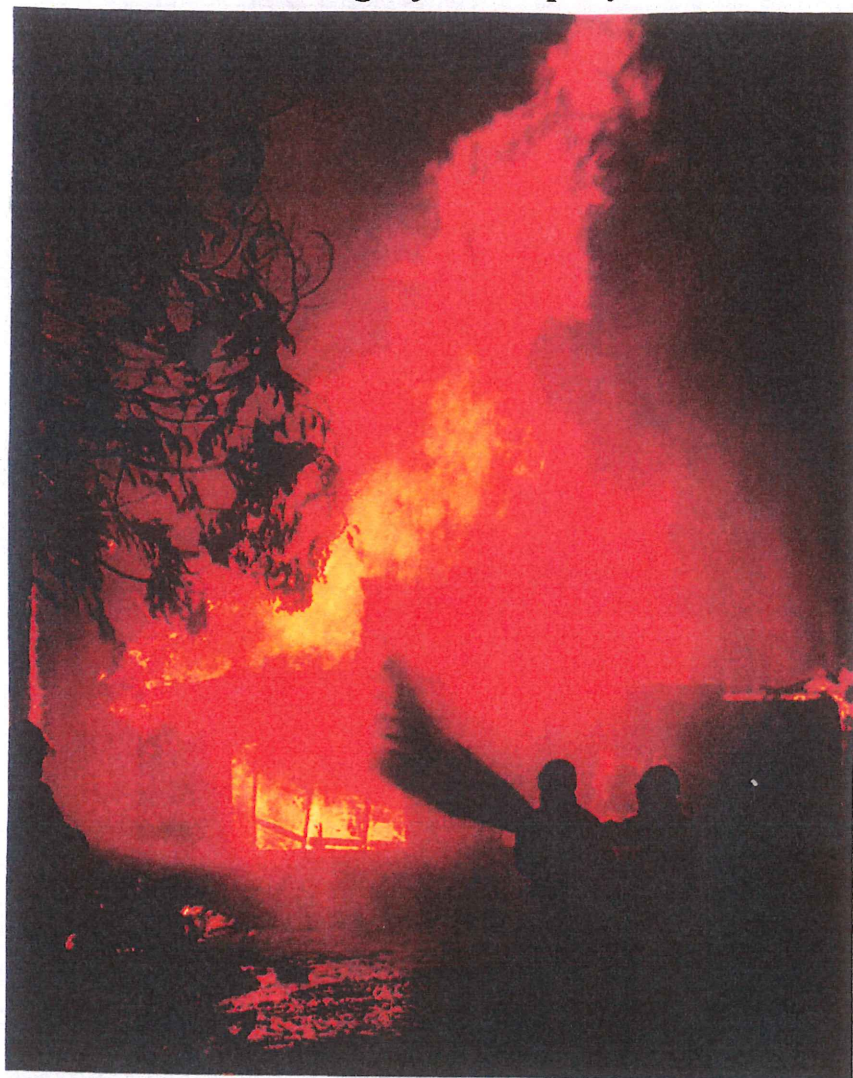
Evacuation Routes
Evacuation Sites

Strategic Fire Protection

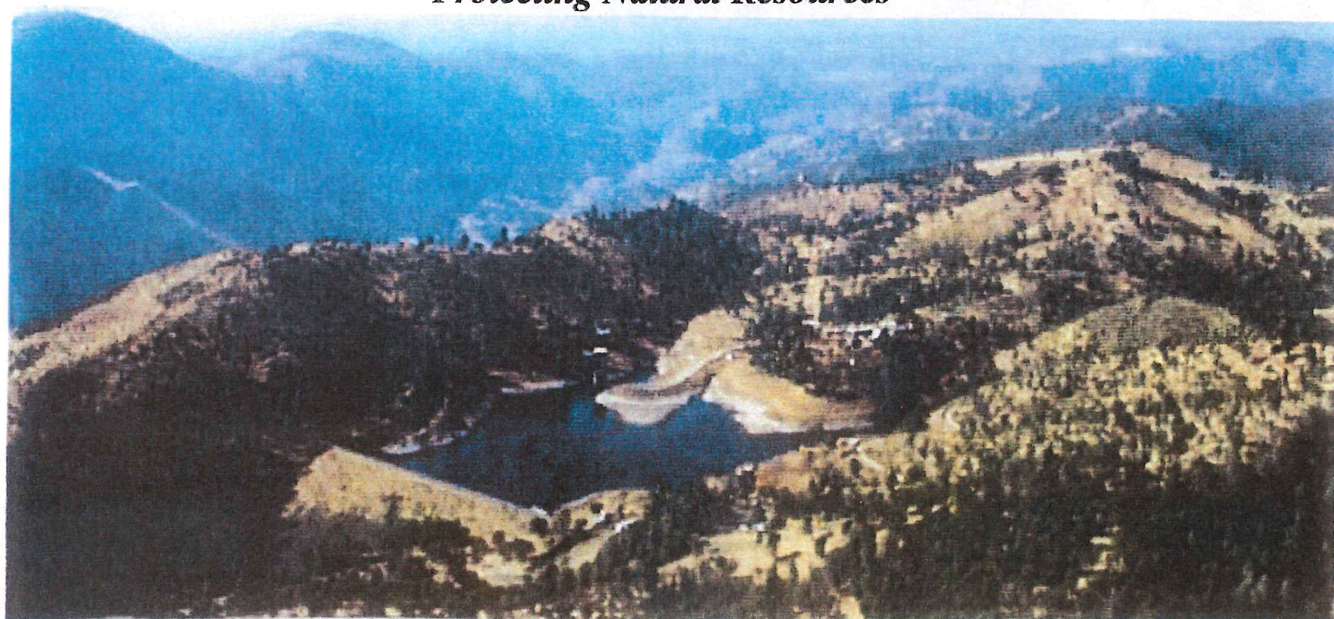
Protecting Life & Property

Community and Watershed PROTECTION

Cooperatively planning and implementing a strategic fire defense system designed to reduce the threat of loss to life, property, and resources in southern Tuolumne and northern Mariposa County.



Protecting Natural Resources



Strategic Fire Defense Systems

Fuel Breaks

There are three primary shaded fuel breaks within the project that serve as key *“strategic fire defense systems”*. The Southwest Interface Team has prioritized the three fuel breaks with regard to needed construction, maintenance, and infrastructure support. They are listed as follows:

- 1st Priority – The PONDEROSA FUEL BREAK
- 2nd Priority – The WAGNER FUEL BREAK
- 3rd Priority – The RIM TRUCK FUEL BREAK

Ponderosa Fuel Break

The Ponderosa Fuel Break System extends approximately 26 miles through the project area, running northwesterly from the North Fork of the Merced River to the main Tuolumne River near Wards Ferry. This fuel break serves as the first line of defense from fires originating on the southwest facing brush covered slopes that lie below many of the communities in the project.

The fuel break is divided into 4 sections: (1) Tip Top Section from the Tuolumne River to Highway 120. (2) Jackass Section from Highway 120 to the County line between Tuolumne and Mariposa County. (3) Cueno section from the County line to Highway J132. (4) Greeley Section from J132 to the North Fork of the Merced River.

Approximately 16 miles of the fuel break has been completed. Specific areas in both Tuolumne and Mariposa County covering approximately 10 miles requires some additional work or new construction. It is expected that all 4 sections will require maintenance at a minimum of 5 years after initial treatment. Planning will reflect the need to complete this fuel break by the end of 2006.

Wagner Fuel Break

The 15 mile long Wagner Fuel Break System runs from the tie with the Ponderosa System south of Big Oak Flat to the southeast to one mile below the town of Buck Meadows onto Moore Creek Road, then south on the Moore Creek Road to Bower Cave. It is basically the second line of defense from fires sweeping up the slopes

from the southwest that may either breach the Ponderosa System or originate north of the existing fuel break.

The fuel break is divided into 2 sections: (1) The Garrotte Section from Big Oak Flat to Highway J 132. (2) The Moore Creek Section from J132 across Hobron Hill to China Flat and to Moore Creek Road then south to Bower Cave area.

Approximately 8 miles of this system has been treated while an estimated 7 miles requires treatment. The primary agency involvement in the work planned is CDF, FS, and BLM. An estimated 350 acres needs to be constructed and or maintained by the end of 2006.

Rim Truck Fuel Break

The Rim Truck Fuel Break runs from a tie with the Ponderosa Tip Top System northwest of Tip Top Peak northeasterly toward the main Tuolumne River, then along the canyon rim to the South Fork of the Tuolumne River. It's approximately 15 miles long and for many years parts of the fuel break were maintained by CDC Crews. This system is designed to protect the communities of Big Oak Flat, Groveland, Hells Hollow, Pine Mountain Lake, and other small population areas from fires originating in the main Tuolumne River Canyon.

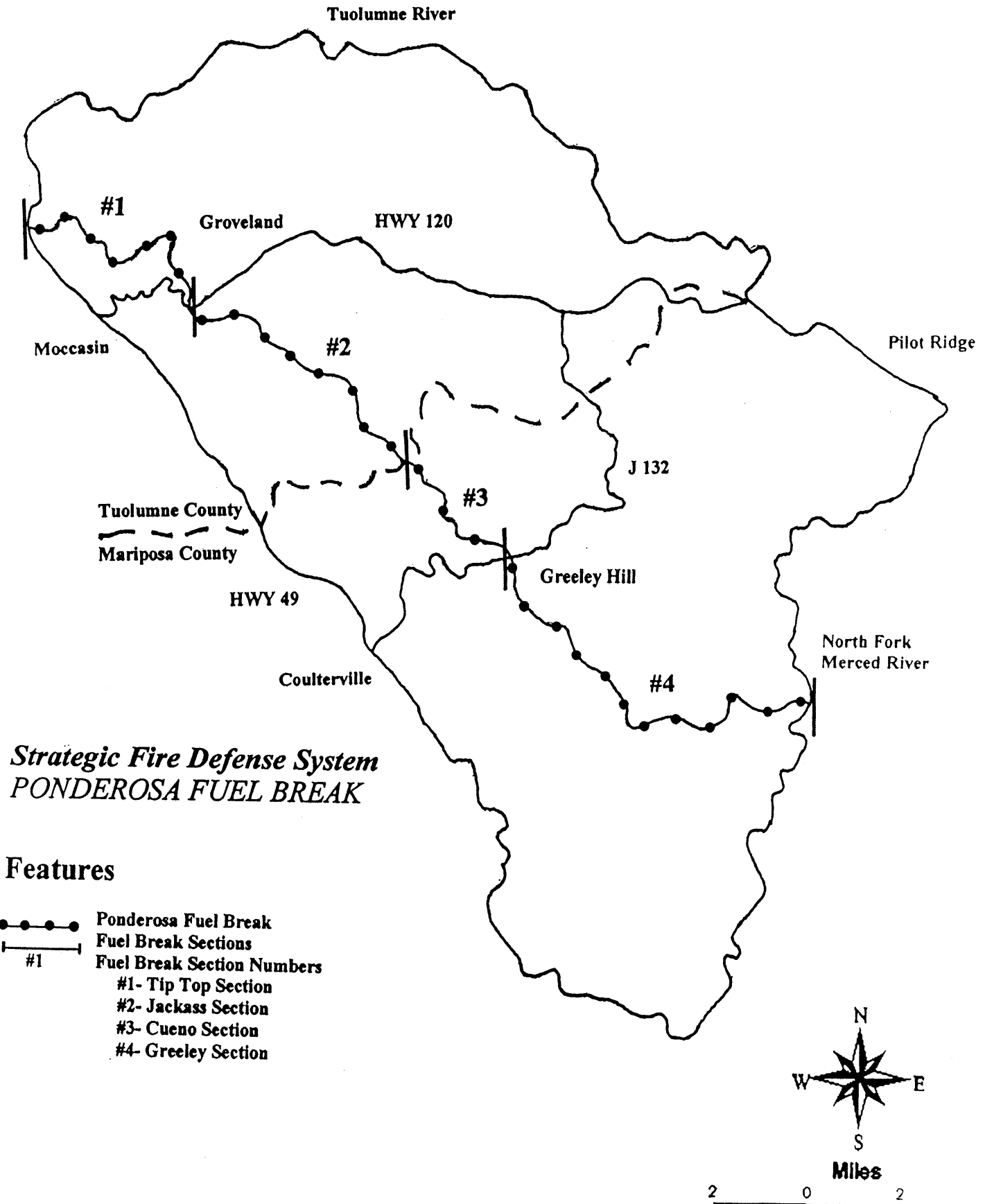
The fuel break is divided into two sections: (1) The Pine Mountain Section that runs from just north of Big Oak Flat to Indian Creek drainage off Ferretti Road. (2) The Ferretti Section runs from Indian Creek southeast and then easterly to the South Fork of the main Tuolumne River.

Approximately 5 miles of this system has been treated and a large part of the remaining area requires no treatment or has already had treatment. This entire system is in Tuolumne County. The primary effort over the next two years will be to have an extensive field review indicating status and both infrastructure and maintenance needs. Secondary fuel breaks or areas of opportunity for safe fire line construction off the rim into the canyon for fire suppression purposes during any given incident will also be reviewed.



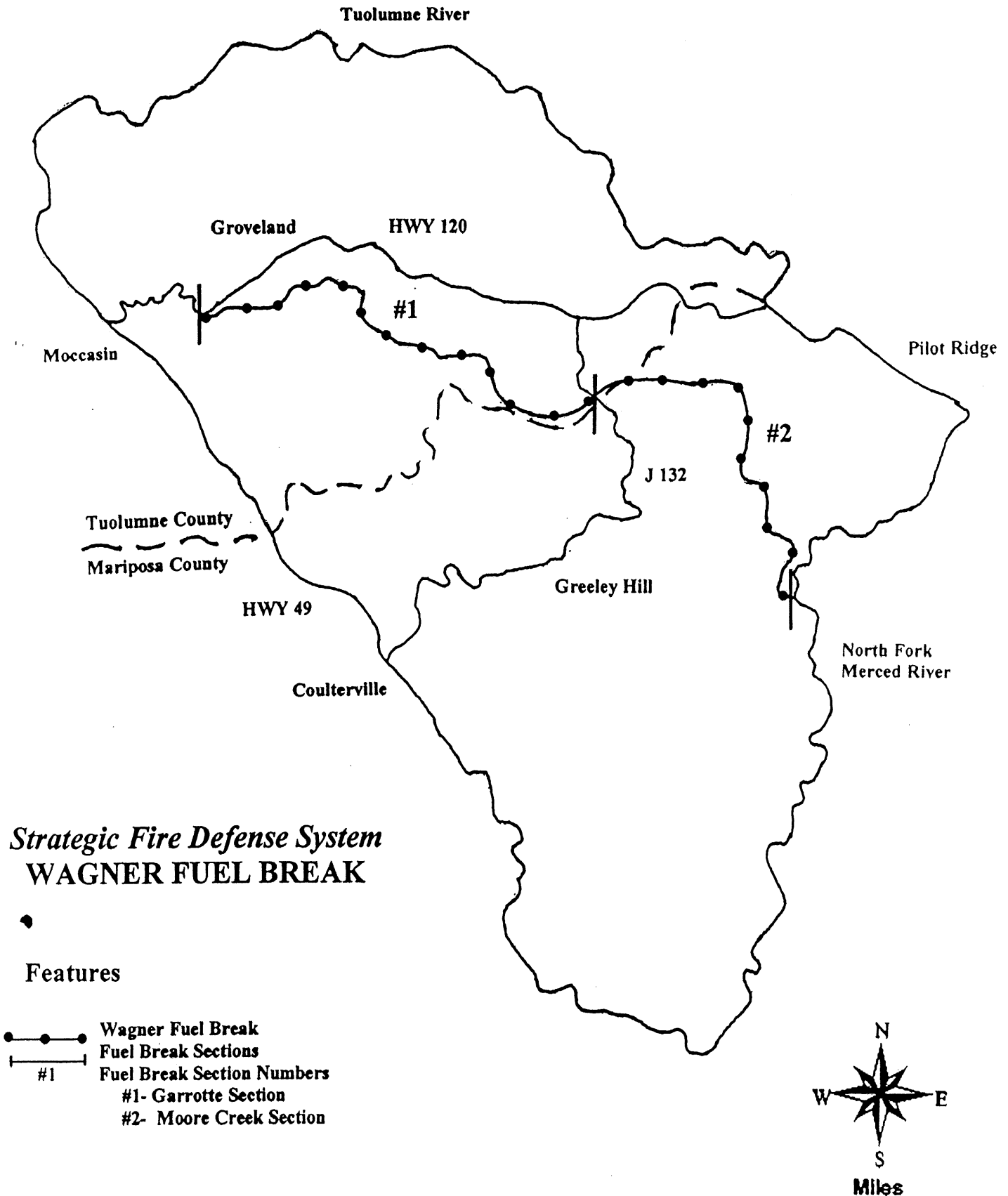
Southwest Interface Project

Program Support Maps



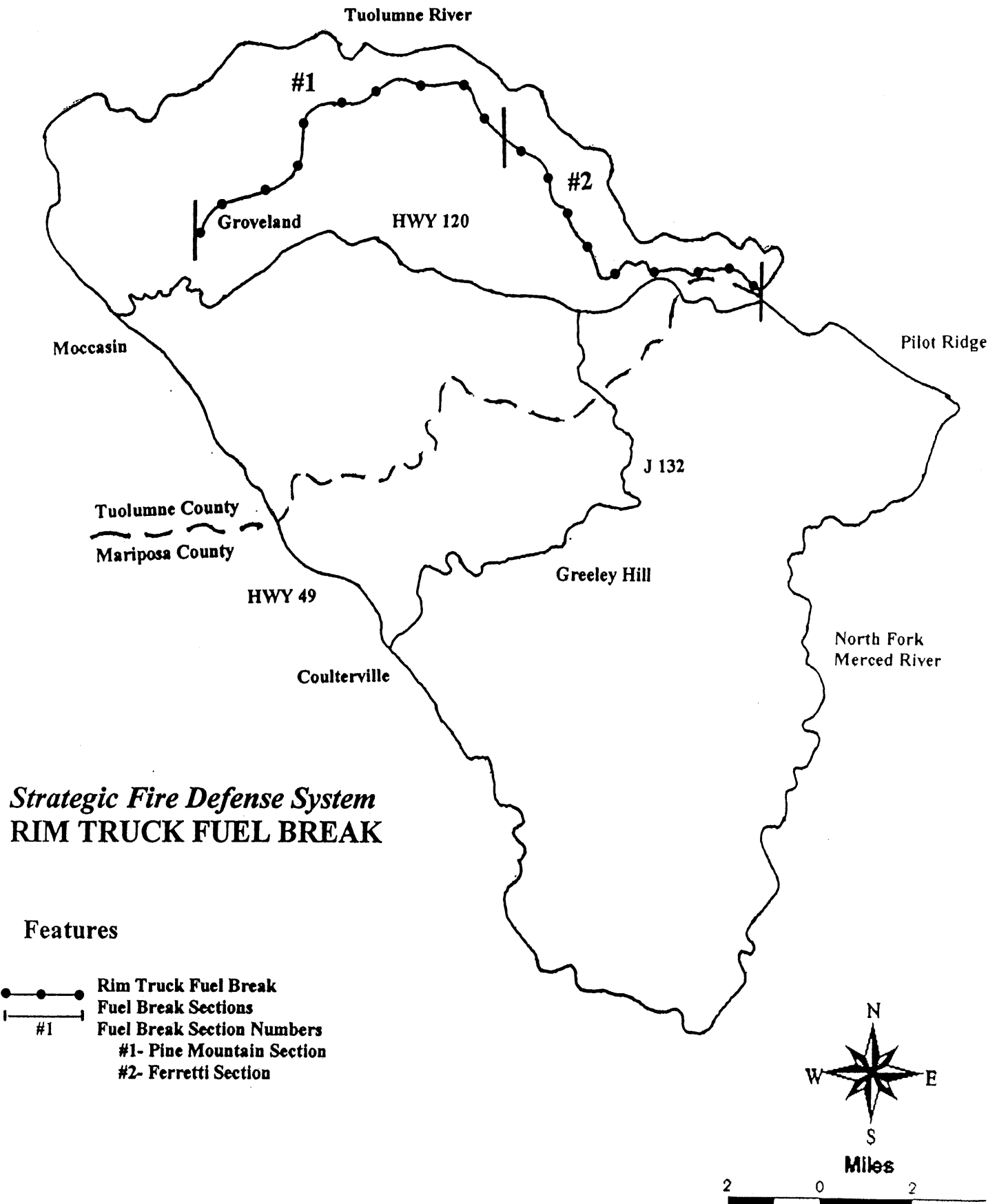
Southwest Interface Project

Program Support Maps



Southwest Interface Project

Program Support Maps



Strategic Fire Defense Systems

Road Systems

A total of seven roads systems within the project area have been identified as key *“strategic fire defense systems”*. The Southwest Interface Team has prioritized these systems for hazardous fuel reduction efforts based on their location and ability to aid in safe and effective fire suppression operations.

They are listed as follows:

- 1st Priority – Highway 120
- 2nd Priority – Highway 49
- 3rd Priority – Priest-Coulterville Road
- 4th Priority – J 132 Smith Station Road
- 5th Priority – Ferretti Road
- 6th Priority – Greeley Hill Road
- 7th Priority – Moore Creek Road

Highway 120

Highway 120 runs through the project area from the bottom of Priest Grade east to the South Fork of the Tuolumne River. This is a major State Highway that provides a major access route to Yosemite National Park. The highway bisects the project area in a west to east direction. It provides a key opportunity for fire suppression actions from fires burning from both the north or south. It also is the primary evacuation route for all populated areas along the mid slopes of the Sierra Nevada Mountain Range from Big Oak Flat into Yosemite National Park.

Hazardous fuel reduction efforts continue along specific portions of the highway and more are planned. Treatment of an area 150 plus feet from each side of the roadbed edge is preferred. Use of mechanical mastication, pile and burn, pruning and thinning, and other types of treatment are all encouraged. Grants to do work on private properties along the road corridors are also within the program of work.

Highway 49

This highway is located along the southern boundary of the project area and runs from the Moccasin area southeast to the North Fork of the Merced River at Bagby.

Many large fires originate from this road corridor and burn both northwesterly, northerly, and northeasterly. They pose a major threat to the communities and watersheds that lie up-hill from the road system. Heavy brush has been the predominant vegetation along the roadway, but is being replaced with grass as large fires and prescribed burning continue to encourage a type conversion process. At present nothing is planned in the program of work to treat fuels on this road corridor.

Priest-Coulterville Road

The Priest-Coulterville Road runs from it's junction with Highway 120 to the southeast and crosses over from Tuolumne to Mariposa County then ties with J132 north of Coulterville. A large portion of the road was burned over during the 2001 Creek Fire. The road is a critical protection corridor from fires that escape control along Highway 49 and is often used as a control line for large prescribed burns.

Prescribed burning that occurs with the hazardous fuel reduction research project on the Creek Fire area will possibly re-enforce the reduction of fuel loading along the road corridor. The Coulterville VMP of 1999 did a great deal in reducing heavy fuels along this road and supported fire control efforts on the eastern flank of the Creek Fire.

J 132 Smith Station Road

This road runs through the project area from it's junction with Highway 120 south to the town of Coulterville. It provides a potential line of defense to support safe and effective fire suppression operations based on various wildfire conditions. It has been used in many past fires as a control line in a very effective manner. Mariposa County has done some outstanding work from the county line at Hobron Hill south to the Greeley Hill Road junction with regard to hazardous fuel reduction.

SWIFT would like to encourage what Mariposa County has done, and support efforts to treat more road right of way areas on this system. The road will be used as a fire line for the planned 2005 Greeley Hill VMP.

Ferretti Road

From Highway 120 in Groveland this road runs through and around Pine Mountain Lake sub-division until it ties again with Highway 120 near the Groveland Ranger Station. Portions of the road on National Forest Lands north of La Casa Loma Store have been treated as far as reducing heavy vegetation. Mechanical mastication and hand crew work has occurred. A number of areas along this road are just grass and do not require fuels treatment.

Based on the amounts of private property along this road corridor it is not likely lots of treatment options may be available. This road is critical to fire resources during any close incident because of the many residents on both sides of the roadway in specific areas.

Greeley Hill Road

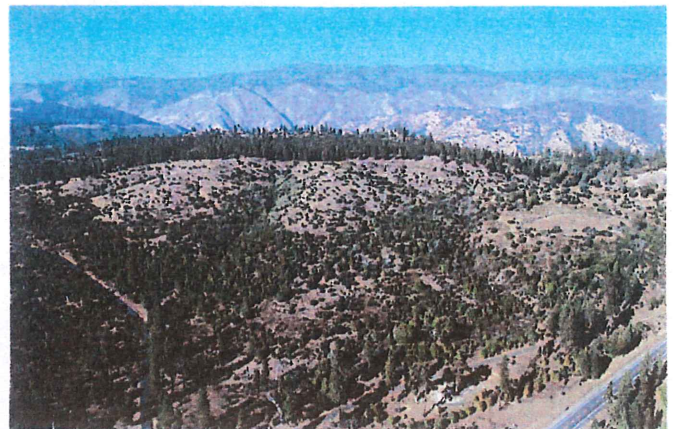
From the junction of J132 east to the Bower Cave/Briceburg Road junction is the Greeley Hill Road. If fuels treatment was conducted along this road it would provide a fire control opportunity for fires that occur south of the system. It is used primarily by people that frequent the Diana pool area by Bower Cave.

The system is paved and provides a tie with the Moore Creek Road which intersects with it to the west of Bower Cave.

Moore Creek Road

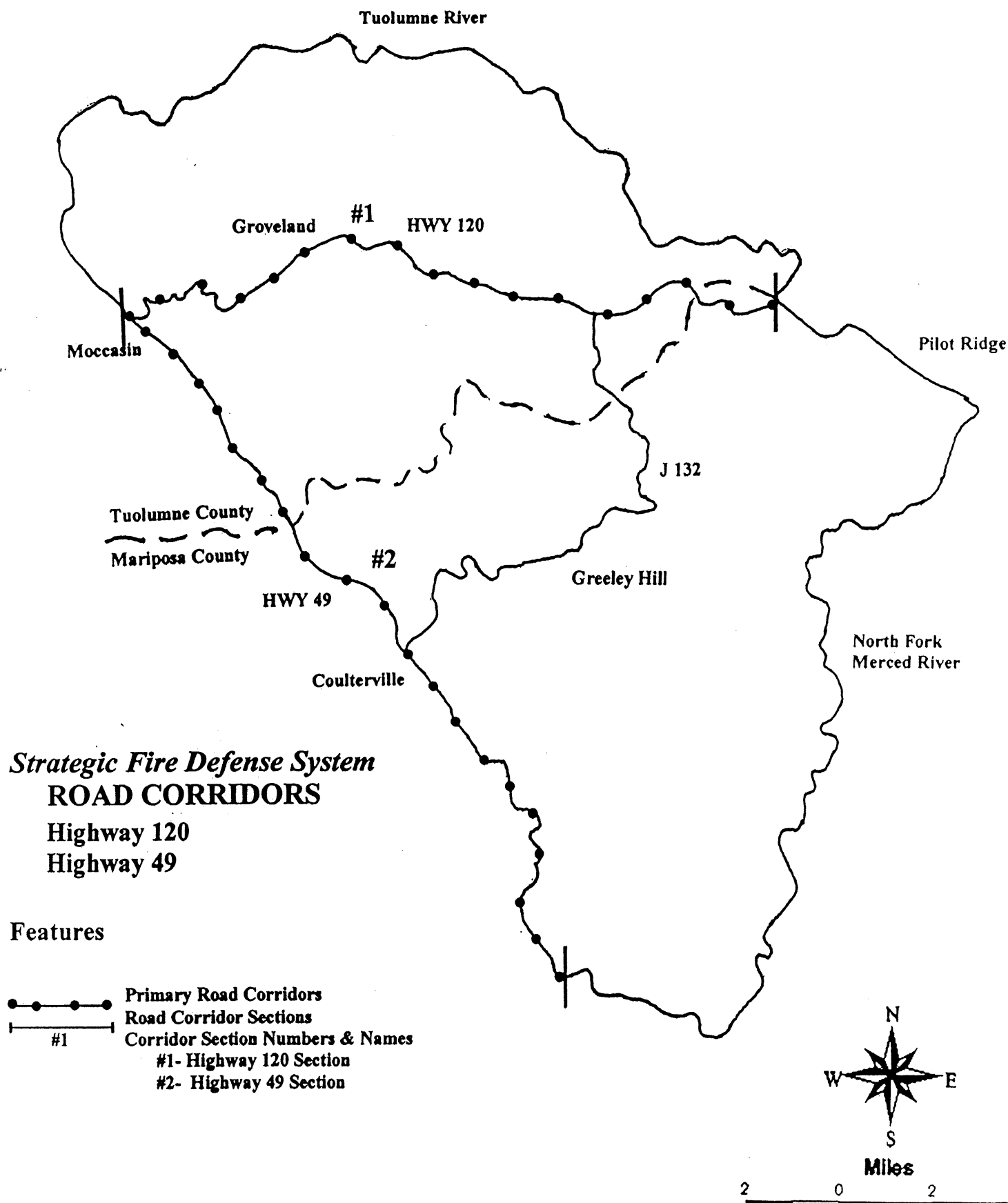
The Moore Creek Road which is maintained by Mariposa County runs from Buck Meadows south to it's junction with the Greeley Hill Road. It has in the past served as a road corridor "shaded" fuel break. Treatment was done on both sides of the road for many years as an effort to aid fire suppression that may be needed from fires originating either east or west of the road system.

The road is now considered a part of the Wagner Fuel Break System, and is a key north to south tie for the protection of both the town of Buck Meadows and many high value tree plantations in the area. For the majority of it's length Moore Creek runs adjacent to the road system and provides added opportunity for safe and effective fire suppression activities in the event of a wildfire threat.



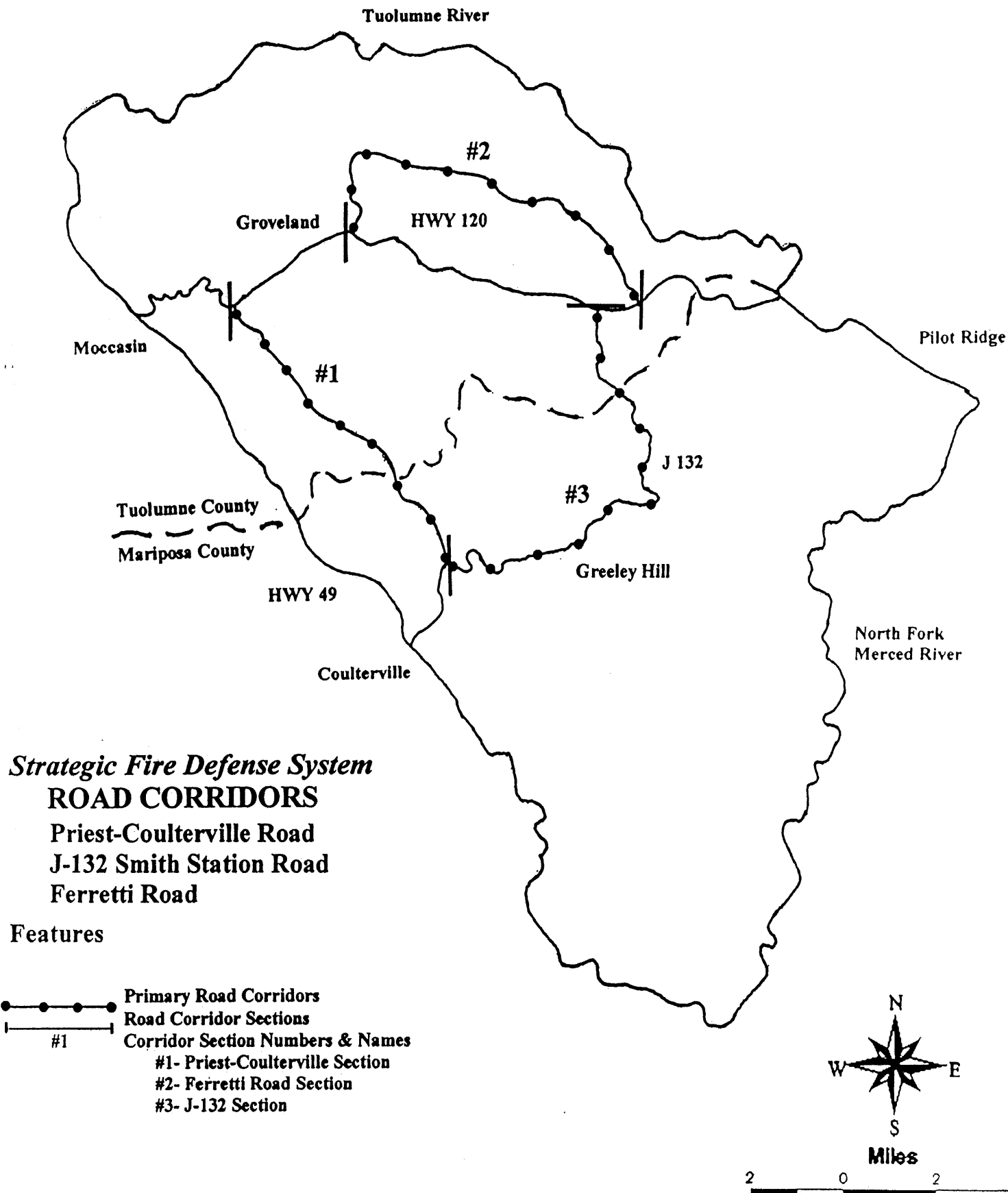
Southwest Interface Project

Program Support Maps



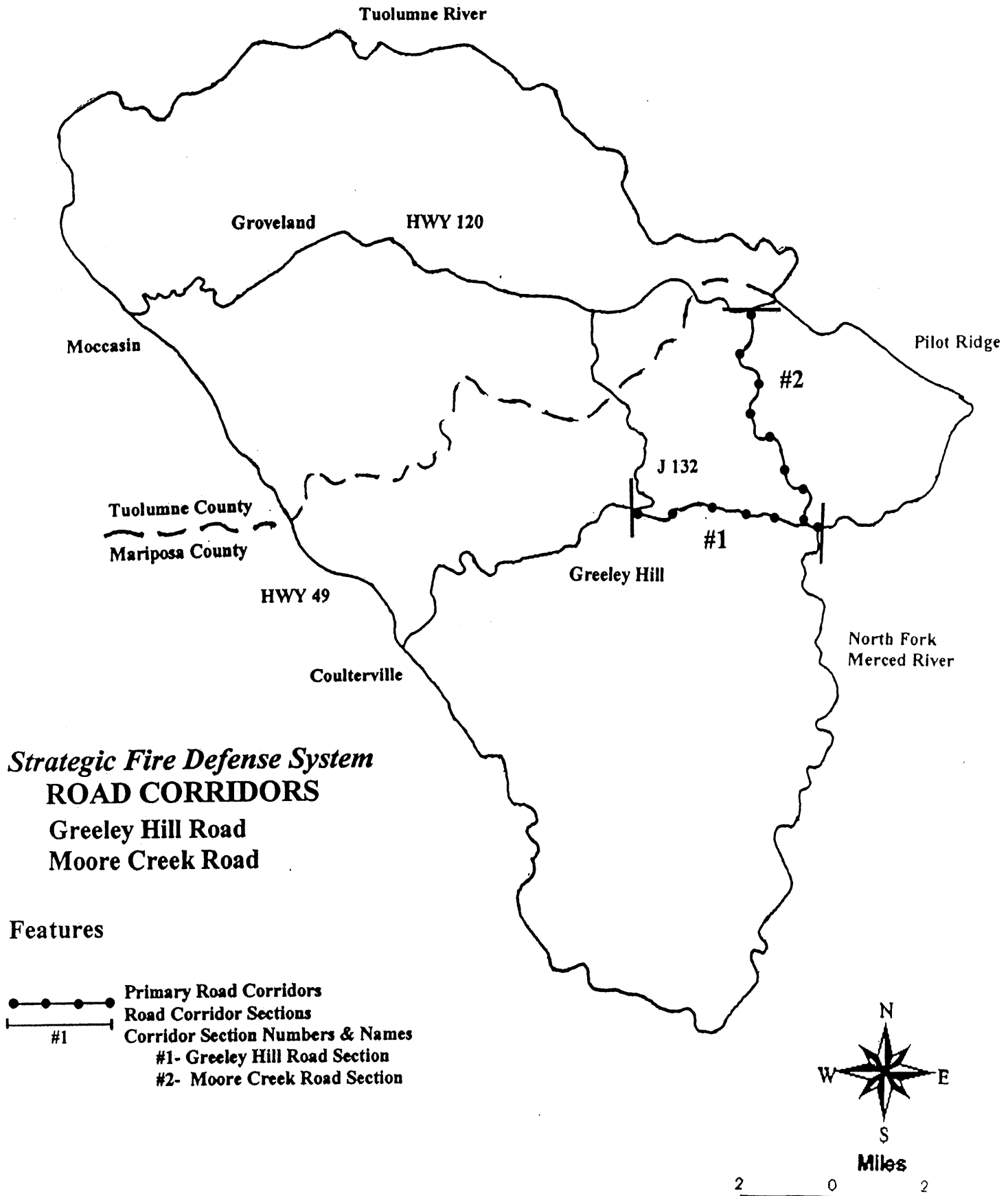
Southwest Interface Project

Program Support Maps



Southwest Interface Project

Program Support Maps



Strategic fire Defense Systems

Hazard Reduction Treatment Areas

Seven specific hazardous fuel treatment areas in the project are either in a state of completion or planned for implementation over the next few years. Depending on their location they all have positive effects on the reduction of wildfire potentials. Some efforts are keyed directly to community protection while others may serve multiple purposes in watershed protection, habitat improvement, and high value property protection. They are listed as follows:

- Coulterville Vegetation Management Project (VMP)
- Greeley Hill Vegetation Management Project (VMP)
- Priest-Reservoir Hazard Reduction Project
- Creek Fire Hazard Reduction Project
- Hetch-Anker Vegetation Management Project (VMP)
- Pine Mountain Lake Project
- Hetch-Hetchy W & P Transmission Line Hazard Reduction/Protection

Coulterville VMP

Located to the north of the town of Coulterville and along Highway 49 this burn was completed in the Fall of 1999. This was a CDF Vegetation Management Project on private property for hazardous fuel reduction and range improvement. The prescribed burn was northwest of J132 and south of the Priest-Coulterville Road. The fuel type was generally brush, and grass-oak woodland.

The area had been burned in prior years for basically the same objective. At present there are no immediate plans for re-entry, however it seems that a 10 year burn cycle would continue the type conversion back to a large percentage of the land returning to a oak-woodland vegetation type. The northwestern flank of this project was very beneficial in the control of the south flank of the 2001 Creek Fire because of less volatile fuel types.

Greeley Hill VMP

The Greeley Hill Vegetation Management Project is a prescribed burn planned for implementation in the next two year program of work. It is located between the

Tuolumne and Mariposa County Line and J132. Secondary road systems and constructed fire line will serve as the control features on both the northeastern and southwestern flanks of the planned burn. It will support the planned Ponderosa Fuel Break and provide valuable catastrophic fire protection to the community of Greeley Hill and surrounding scattered populations.

The fuel type is heavy mixed brush with scattered timber stands. The intent would be to reduce fuel loading and convert to a less explosive fuel condition.

Environmental documentation and field reviews, burn plan preparation, fire line construction, and all the appropriate approvals are still required in the pre-burn phase. Estimated acres involved are approximately 1,250 acres.

Priest-Reservoir Project

In order to protect the extremely valuable Priest-Reservoir from contamination of various vegetation fire particulate matter a number of fuel treatments have been conducted around the reservoir. The reservoir located above Moccasin and just off the Priest-Coulterville Road near it's junction with Highway 120 has been the scene of numerous fuel treatments to include goat grazing, pile and burn, large area prescribed burning, hand cutting and pruning, and mechanical shredding.

The hazardous fuel reduction effort around the reservoir has been substantial and very favorable with regard to fire protection objectives. Work will continue in a maintenance manner to ensure the initial work done remains effective for years to come.

Creek Fire Hazard Reduction Project

After the 2001 Creek Fire members of the Southwest Interface Team recommended we use part of the fire area as a test to see if we could reduce the long term fire hazard with multiple prescribed burns. Ken Hood with BLM and Jay Norton with the University of California (Agriculture & Natural Resources) Tuolumne County Farm Advisor have been working on a plan to implement a research project in the area. Jay has obtained grant dollars to support the effort.

The area of 2,500 acres is planned to have three prescribed burns over the next 3 years. The location of the burning will be in both Tuolumne and Mariposa County and on the north follows the Priest-Coulterville Road. The western boundary is Highway 49 while the southern boundary follows some of the Creek fire line.

Hetchy-Anker VMP

The Hetchy-Anker is an area that partially surrounds Priest Reservoir on the west and south sides. The first phase of the burn was in the Fall of 2002 and covered approximately 500 acres. The second phase is planned for this Fall, but may have to

wait until the Fall of 2005. The southwestern portion of the burn area is along Highway 49. Two sides of the planned burn flank the reservoir on the north and south sides. The second phase of the burn will cover approximately 550 acres.

This project was designed to aid in the protection of Priest Reservoir, private property owned by Wally Anker and also support the protection of communities that lie on the upper slopes above Highway 49.

Pine Mountain Lake Project

A number of small projects within the Pine Mountain Lake sub-division initiated by CDF have been aimed at protection of the many residents that live within the area. Using Baseline hand crews and others CDF has facilitated work with hand pile and burn, and small prescribed burns to reduce hazardous fuel loading in specific locations in the "green zone" within the sub division.

Approximately 2,900 structures are within the sub-division and major efforts through the SWIFT strategic fire protection plan are aimed at protecting people, property, and natural resources in and adjacent to the area.

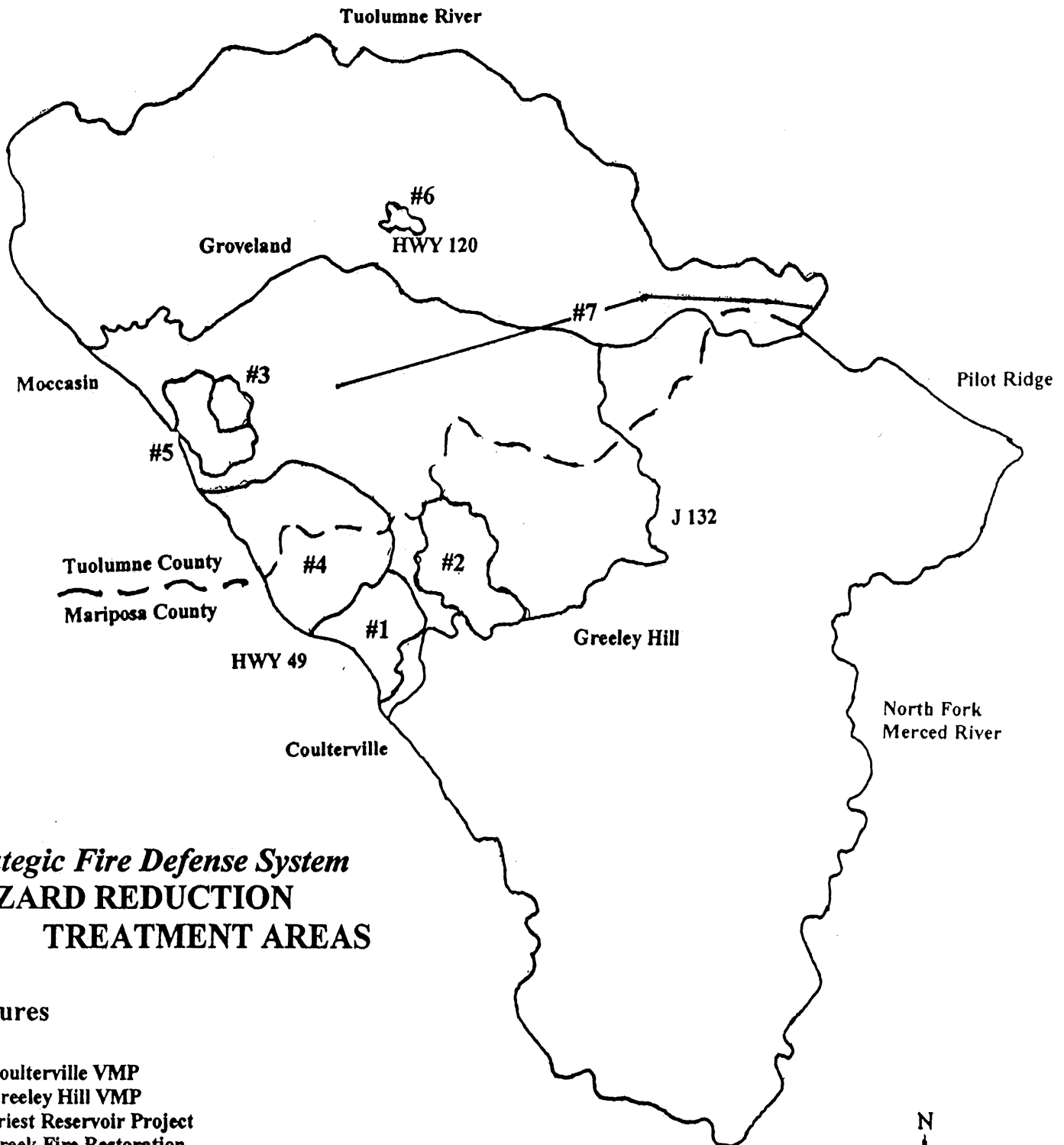
Hetch-Hetchy W & P Transmission Lines

Emphasis a few years ago to put a concentrated effort into hazard reduction work under Hetch-Hetchy Water & Power major power transmission lines has been very effective. Using mechanical shredding equipment in addition to hand crew work and other treatment activities miles of transmission lines have been cleared of significant fuel loads.

This fuel treatment not only aids in the protection from wildfire of the transmission lines, but serves as a break in many continuous brush fuel beds that cover the front country area. Actual fire suppression and prescribed fire actions could at times use these breaks in fuel loading to fight wildfires or as holding lines during prescribed burn operations.

Southwest Interface Project

Program Support Maps



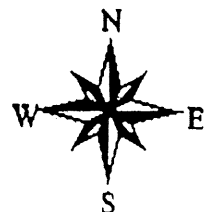
Strategic Fire Defense System

HAZARD REDUCTION

TREATMENT AREAS

Features

- #1 – Coulterville VMP
- #2 – Greeley Hill VMP
- #3 – Priest Reservoir Project
- #4 – Creek Fire Restoration
- #5 – Hetchy-Anker VMP
- #6 – Pine Mountain Lake Project
- #7 – Hetch-Hetchy W & P Transmission Line



Miles

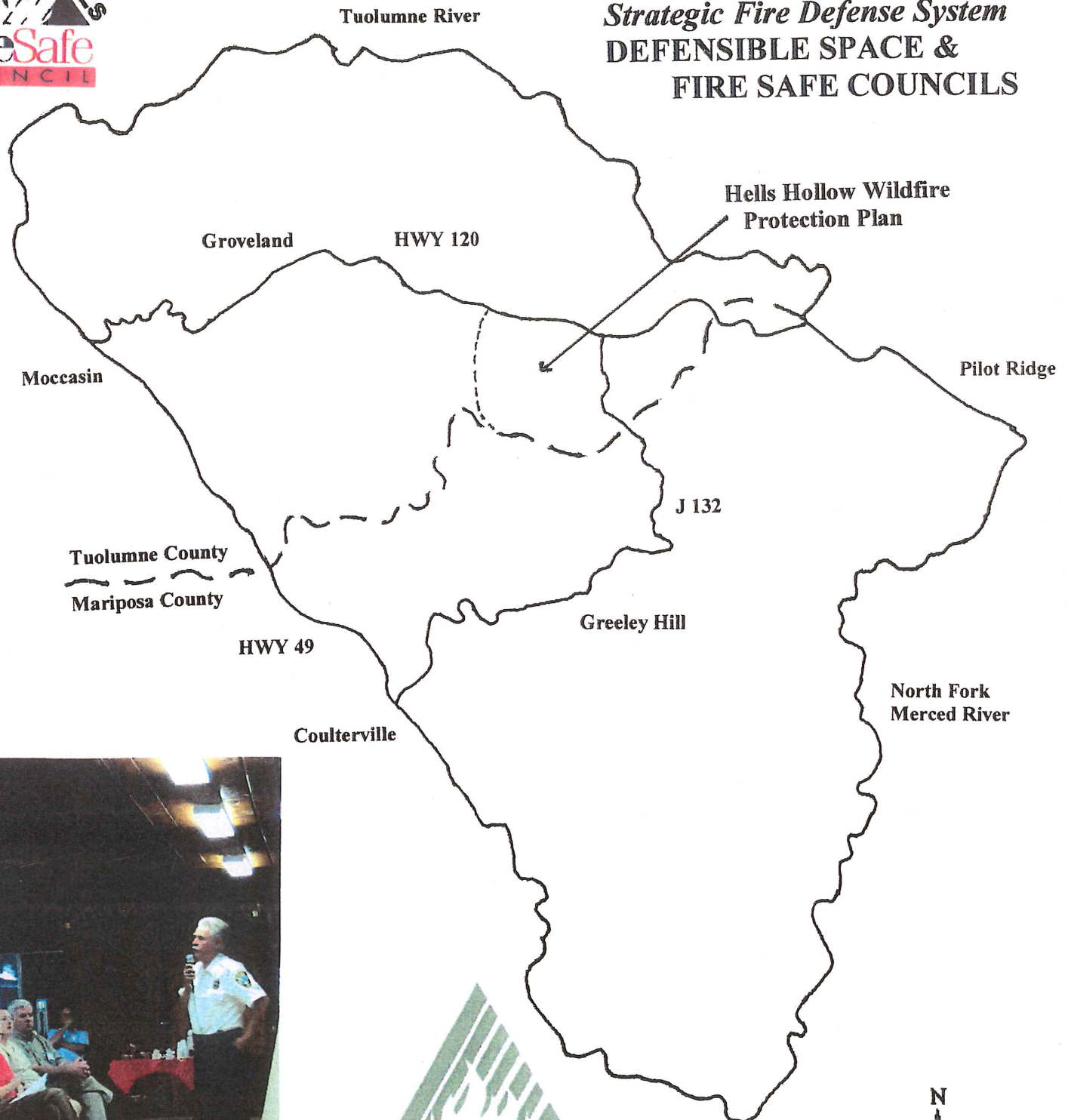
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Southwest Interface Project

Program Support Maps

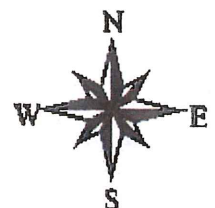
Strategic Fire Defense System
**DEFENSIBLE SPACE &
FIRE SAFE COUNCILS**



Public Meetings



Mariposa Fire Safe Council and
Greeley Hill Fire Safe Committee



Miles



Step Seven: Develop an Action Plan and Assessment Strategy

The **Action Plan** is tied to the C.Y. 2005 and 2006 Coordinated Program of Work for the Southwest Interface Project. The project uses a 2 year program of work in its actual implementation cycle, but considers at least the next 8 years in a long-term maintenance schedule. The "Project Summary" indicates four key areas of work planned in the program of work to review as critical to the community protection effort:

- Strategic Fire Defense Systems
- Pre-Fire Planning Activities
- Grant Requests
- Research Projects

Under these various action plan considerations are listed a number of specific work activities that have been identified as extremely important in meeting the intent of the Community Wildfire Protection Plan. After extensive review by the core team of all the individual projects identified by the team the following list reflects those with the highest priority for implementation:

- **Complete the Ponderosa Fuel Break System with all appropriate support infrastructure, and the development of a long-term maintenance plan.**
- **Complete the approved and recommended hazardous fuel treatment actions along Highway 120.**
- **Finish the Hetchy-Anker Vegetation Management Project (VMP)**
- **Continue Fire Safe Council activities in both counties, and implement the Hells Hollow Protection Plan after residential review.**
- **Complete 80% percent of the Pre-Fire Plan for the Project area.**
- **Continue working with the Fire Safe Councils and through SWIFT means to obtain grants for protection activities.**
- **Provide support to both the research activities on the Creek Fire and on the Mechanical Mastication work.**

The assessment strategy for the CWPP can be found in a review of the documents and agency and Fire Safe Council participation and support over more than five years of SWIFT activities. The collaborative partnership that is ***SWIFT*** maintains a long term strategy of working together with the appropriate documentation to insure all parties that have projects planned, under contract, or being implemented are committed into the future.

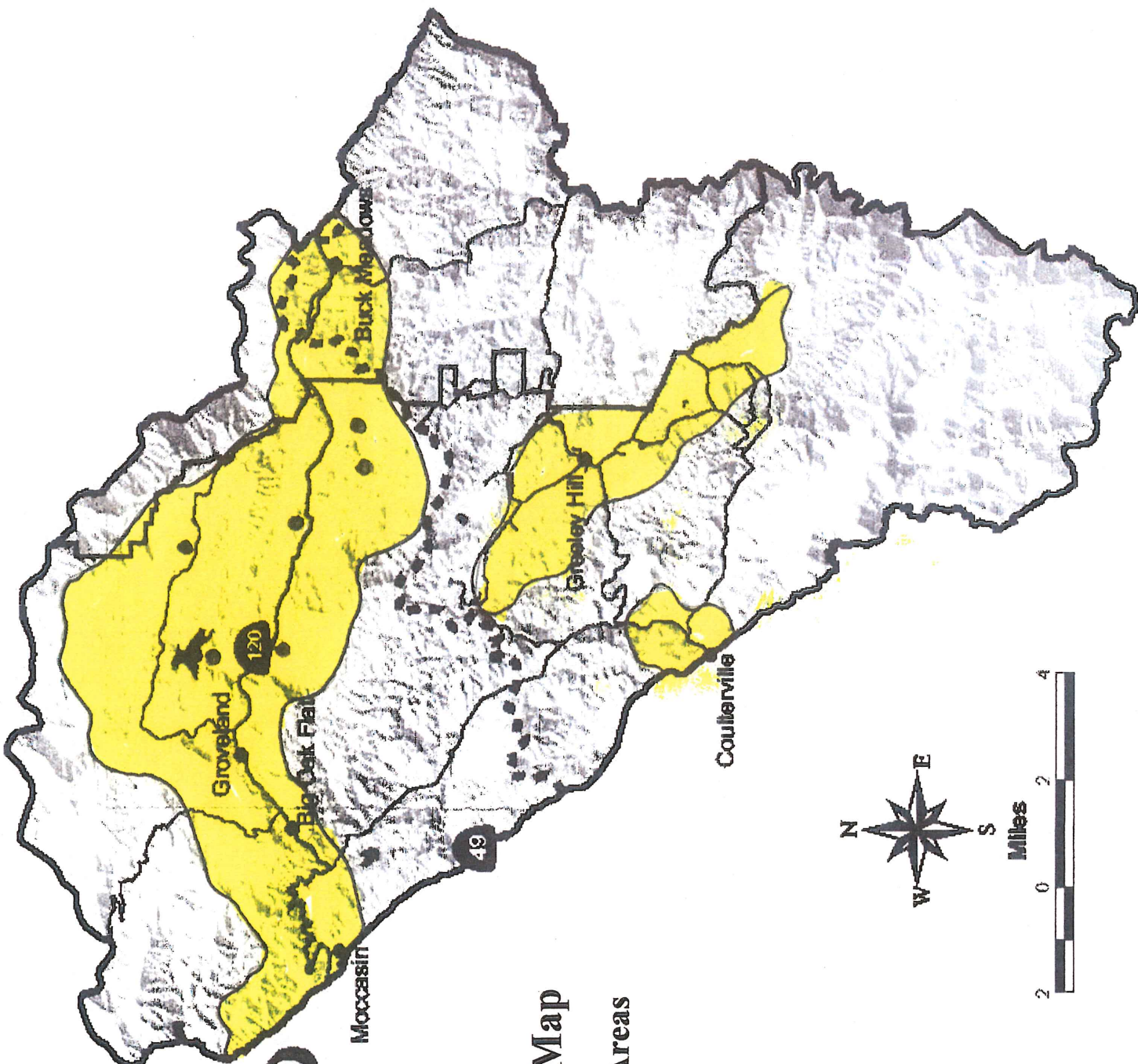
Community Protection Action Plan

Project Name	Action Type	Target	Cost	Timetable	Responsible	Priority
Ponderosa	Fuel Break	4 mile	\$88,000	2 mile 05 2 mile 06	Forest Service	1
Ponderosa	Fuel Break	3 mile	\$66,000	3 mile 06	BLM	1
Highway 120	Road HRT	6 mile	\$126,720	3 mile 05 3 mile 06	Forest Service	2
Hetchy-Anker	VMP			Fall 2005	CDF	
Hells Hollow	CWPP	210 ac	\$115,500	½ 2005 ½ 2006	Forest Service	3
Pre-fire Plan	Plan	Plan		2006	SWIFT	1
Grant Requests	Infra	Grant 1	\$80,000	2006	SWIFT	4
	Roads	Grant 2	\$187,000	2006	Forest Service	4
Creek Fire	Rx Burn	800 ac.	\$67,000	2005	BLM	2
		800 ac.	\$82,000	2006	BLM	4

Step Eight: Finalize the Community Wildfire Protection Plan

After over five years of committed activity to implement a positive and pro-active approach to community and watershed protection from wildfire, **SWIFT** feels it meets the intent of the community based planning direction as per HFRA legislation.

Southwest Interface Project Map



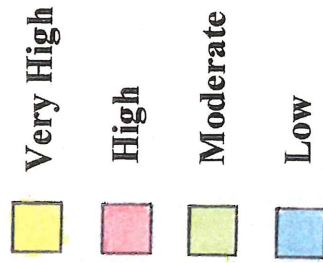
Community Base Map
Community At-Risk Areas

Features

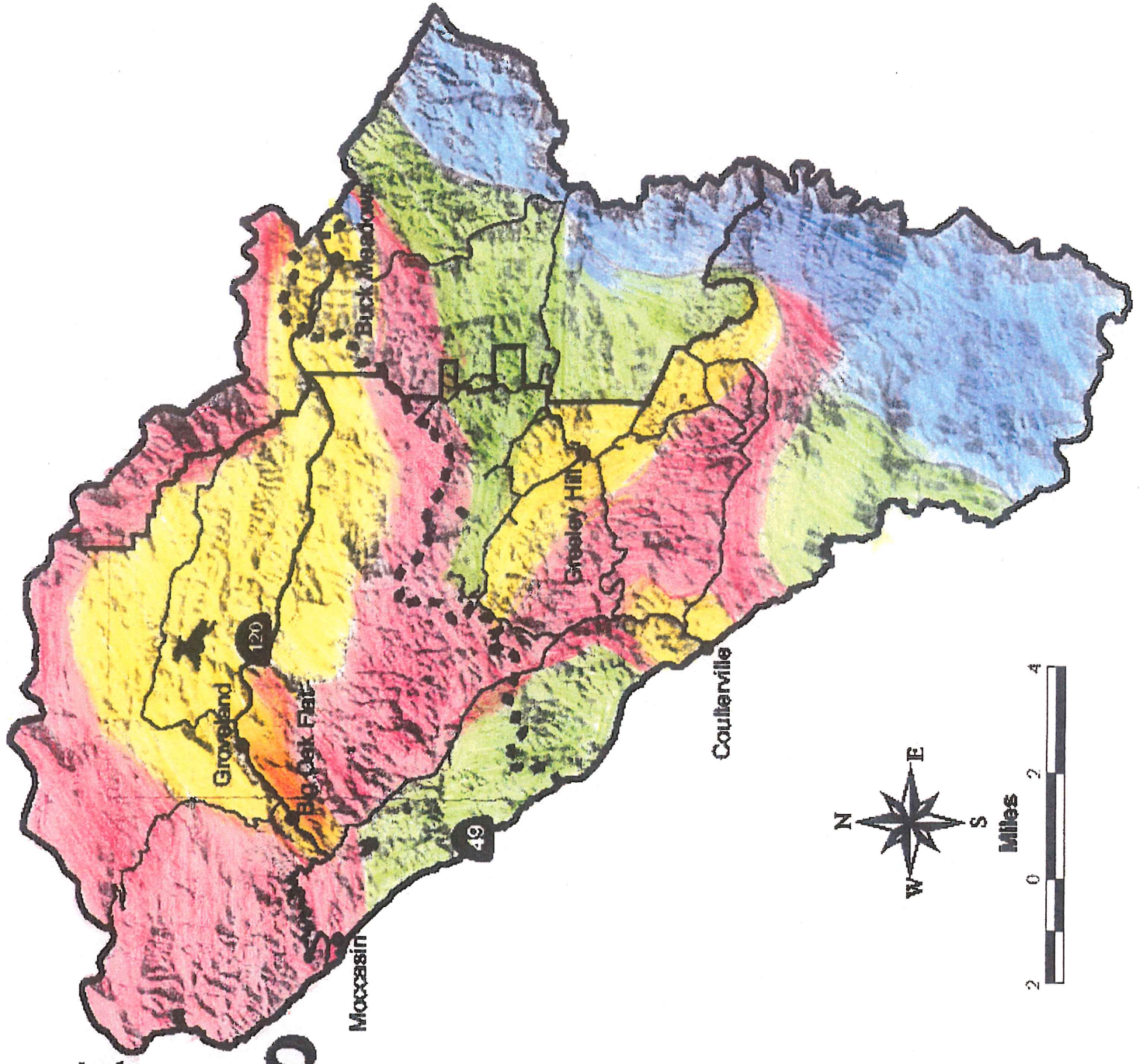
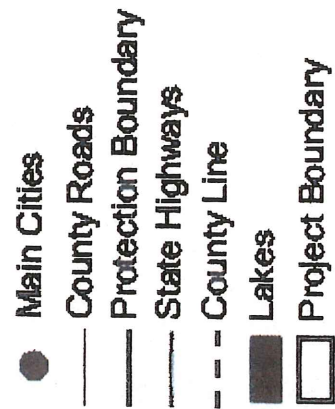
- Main Cities
- County Roads
- Protection Boundary
- State Highways
- - - County Line
- Lakes
- Project Boundary

Southwest Interface Project Map

FUEL HAZARD RATINGS



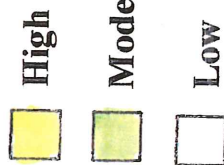
Features



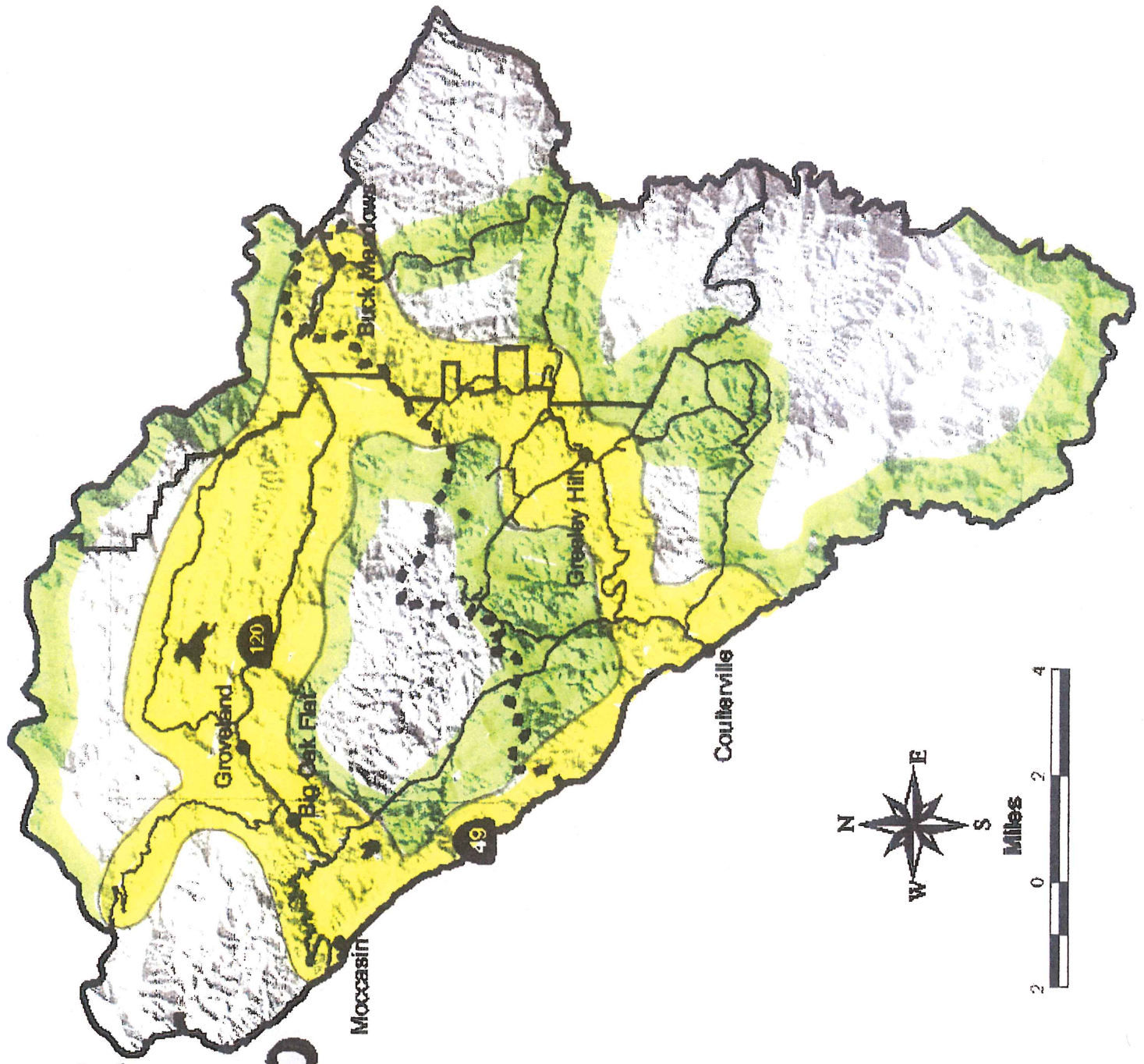
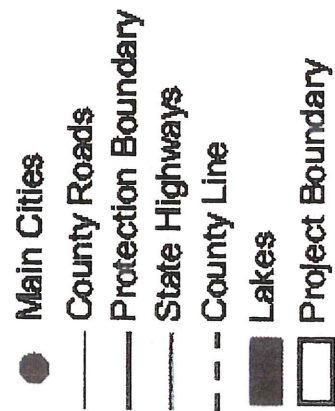
Southwest Interface Project Map

Risk Occurrence Map

Ratings



Features

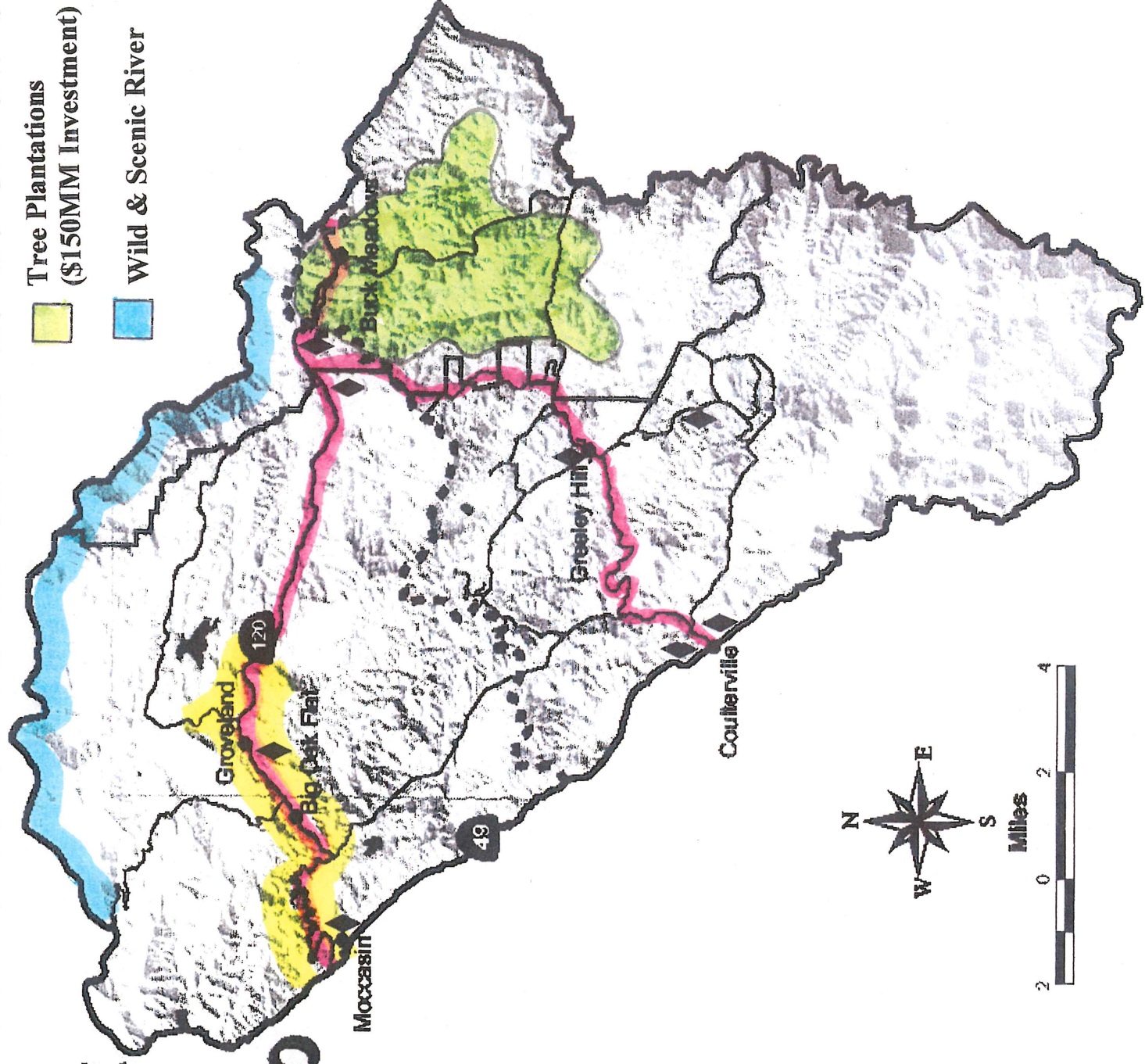


Southwest Interface Project Map

Risk & Capability

-  Primary Escape Routes
-  Key Infrastructure Areas
-  Fire Facilities/Stations

- ### Features
-  Main Cities
 -  County Roads
 -  Protection Boundary
 -  State Highways
 -  County Line
 -  Lakes
 -  Project Boundary



Southwest Interface Project Map

FIRE BEHAVIOR CONSIDERATIONS

➔ Prevailing Wind Direction (Summer)



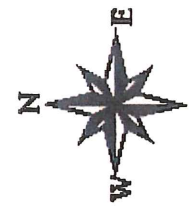
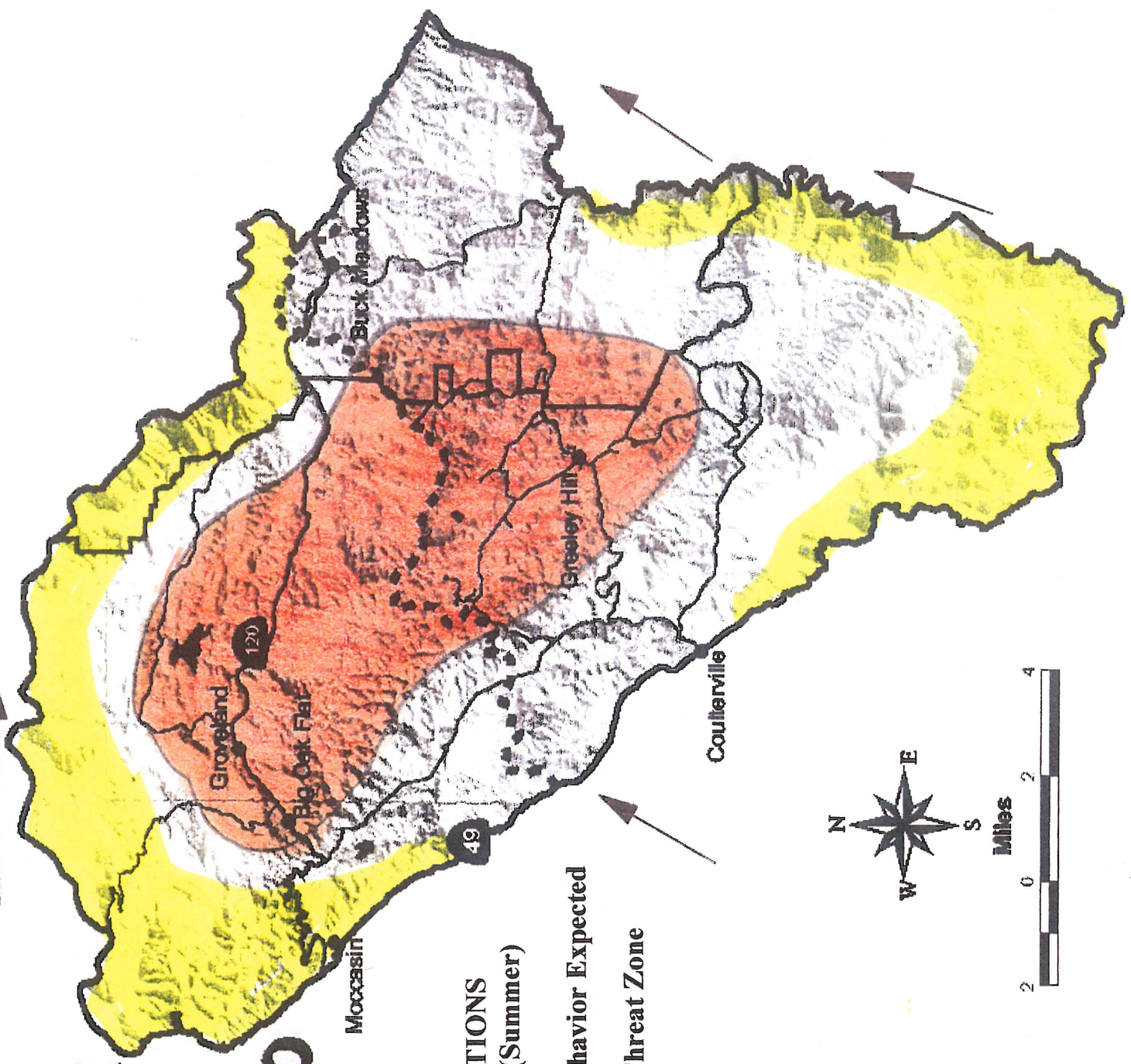
Canyons - Extreme Fire Behavior Expected



Interior Community Fire Threat Zone

Features

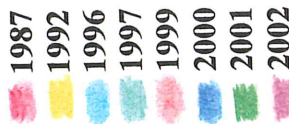
- Main Cities
- County Roads
- Protection Boundary
- State Highways
- - - County Line
- Lakes
- Project Boundary



Southwest Interface Project Map

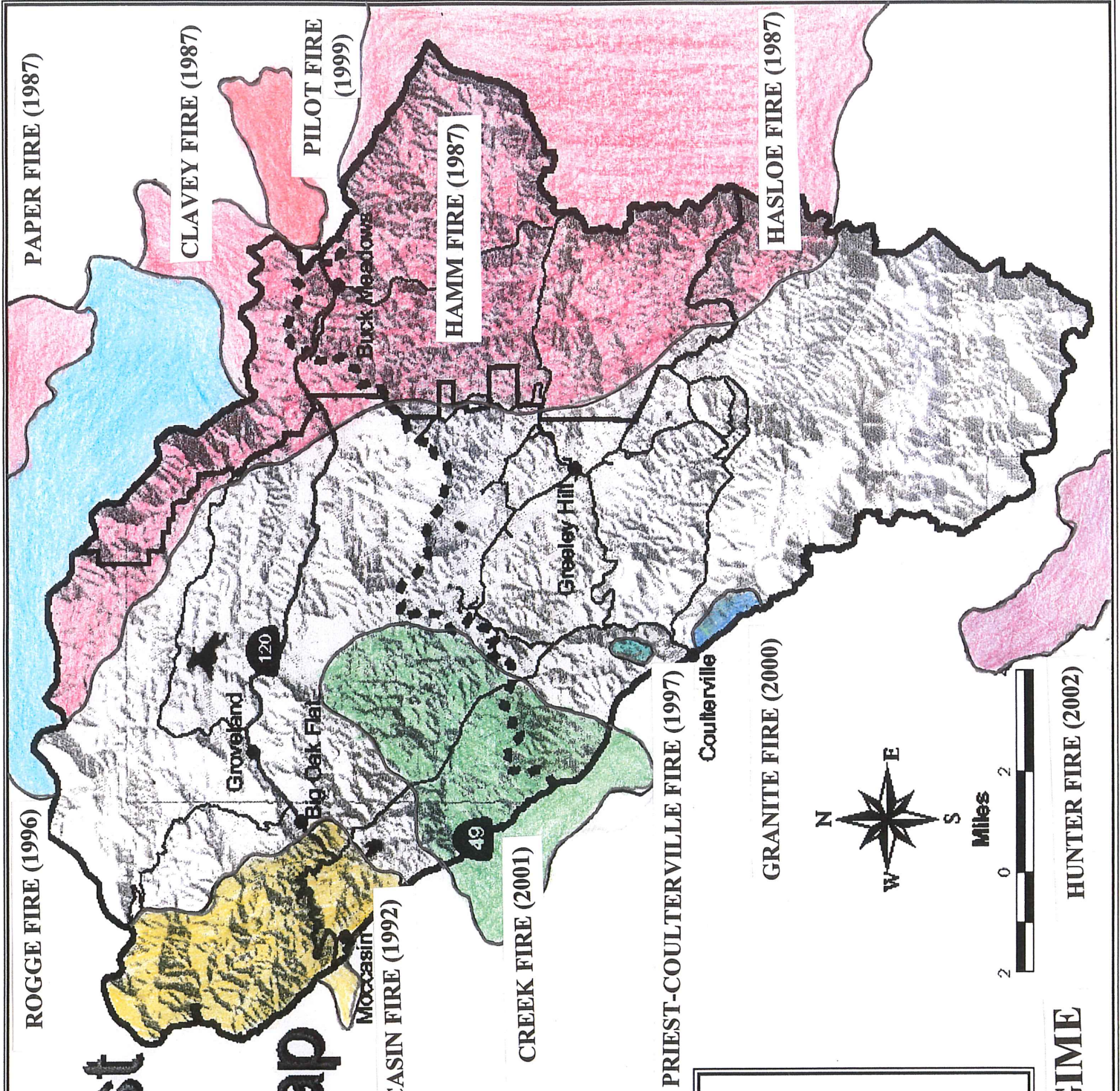
MAJOR FIRES

*Last 2 Decades
1985 to 2004*



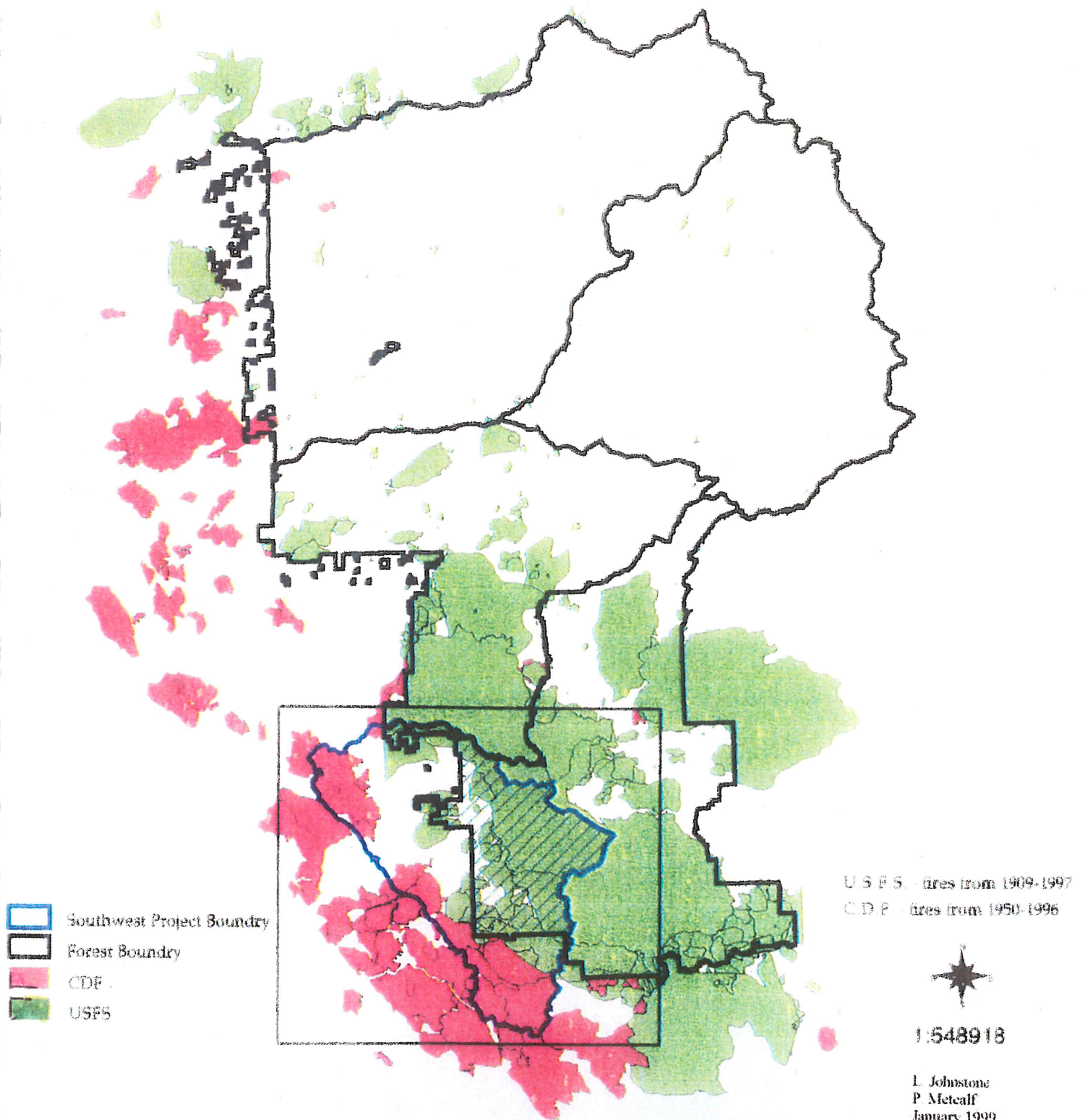
Features

- Main Cities
- County Roads
- Protection Boundary
- State Highways
- - - County Line
- Lakes
- Project Boundary



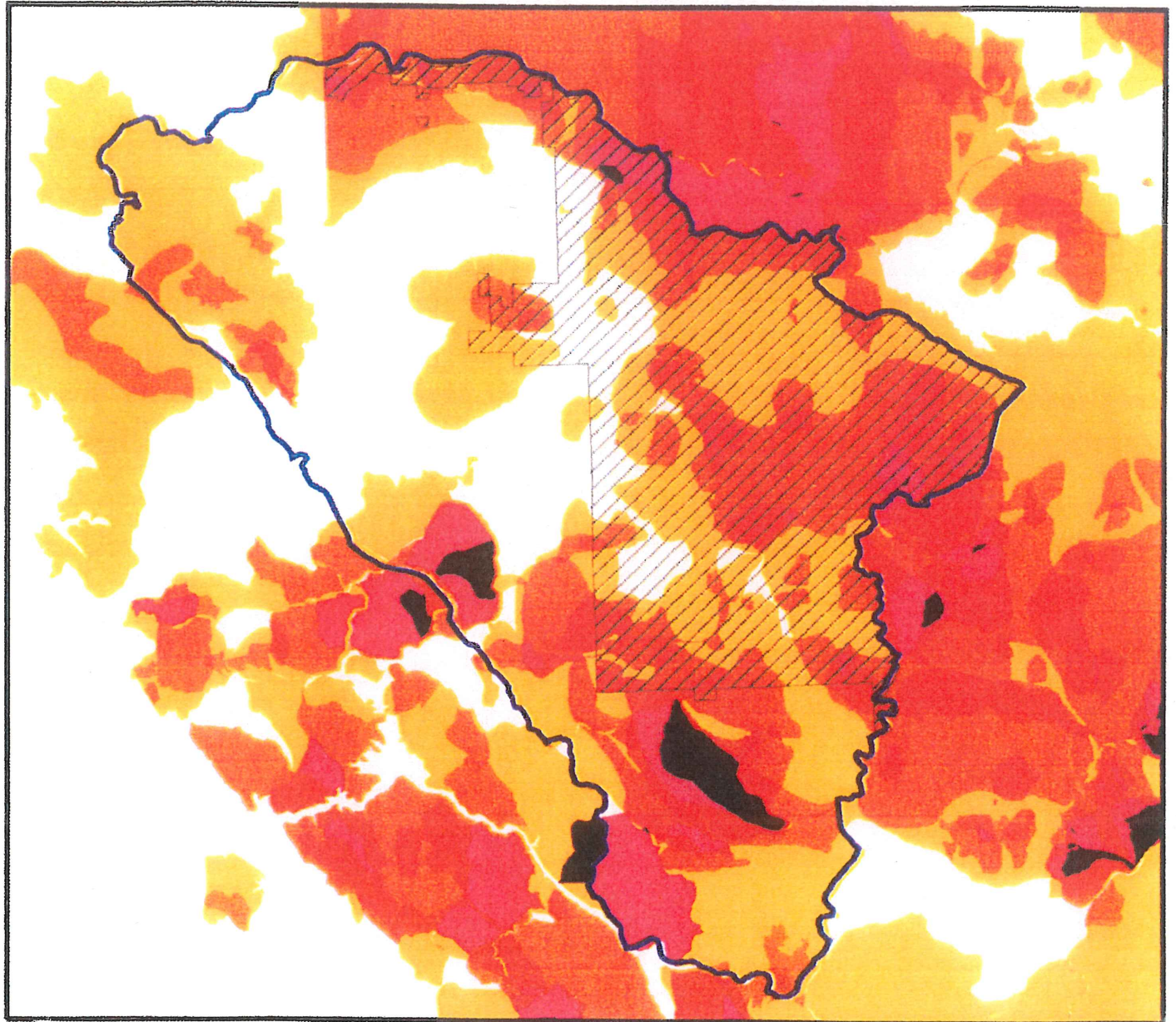
RECENT FIRE REGIME

FIRE HISTORY



SOUTHWEST INTERFACE PROJECT

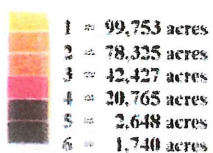
Historic Wildland Fires



 South West InterFace Project Boundary
 Forest Boundary

U.S.F.S. - All fires over 10 acres from 1909-1997
 C.D.F. - All fires over 10 acres from 1950-1996

Fire Occurrences / Area Colors indicate number of times an area has burned, and total acreage burned.



1:222200

L. Johnstone
 P. Metcalf
 January 1999



Southwest Interface Project

Project Reference Documentation

Strategic Fire and Resource Protection Planning "A Process". Robert L. Irwin, William H. Bowman, Thomas E. James. October 1991.

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<http://www.fs.fed.us/r5/stanislaus/groveland/swift/> or southwest interface project. Up-dated April 2004.

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Southwest Interface Project Map. Topography Map at 1:38,000 scale. Rich Strazzo (CDF) 1999-2004.