

Community Response to Wildfire Risk in AZ, CO & NM

Toddi A. Steelman
Department of Forest and
Environmental Resources

NC STATE UNIVERSITY

Funded by USFS Southern Research Station

Overview

- # Policy Sciences
 - # Concept of the Common Interest
 - # Decision Process
 - # Wildfire Problem
 - # Community Responses to Wildfire Risk
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Professional Challenges

- # The work of professionals is to apply their special knowledge and skills responsibly in resolving societal problems in the common interest
 - # The more professionals become involved in real world problems, the more socially and politically enlightened they become.
 - # The social and political aspects can be the most challenging to solving problems
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Challenges...

- # “The significant problems we face cannot be solved at the same level of thinking we were at when we created them” Albert Einstein
 - # “The way we see the problem is the problem” Stephen R. Covey
 - # “We think in generalities, we live in detail” Alfred North Whitehead
 - # “The quickest way of opening the eyes of the people is to find the means of making them descend to particulars, seeing that to look at things only in a general way deceives them” Machiavelli
-

Theories of policy for professionals

- # **Institutional Rational Choice** (Ostrom)
 - How institutional rules alter behavior of intendedly rational individuals motivated by material self interest
- # **Multiple Streams** (Kingdon)
 - “garbage can model” of organizational behavior– three streams of actors and processes (problem, policy, politics) intersect in a window of opportunity
- # **Punctuated Equilibrium** (Baumgartner and Jones)
 - Policy making typified by long periods of incremental change punctuated by brief periods of major policy change
- # **Advocacy Coalition Framework** (Sabatier and Jenkins-Smith)
 - Interaction of advocacy coalitions within a policy subsystem. Policy change is a function of competition within the subsystem and events outside the subsystem.

Policy Sciences

- # Oldest distinctive tradition within policy movement
 - Harold D. Lasswell (1950s)
 - # Contextual, multiple methods and problem oriented with emphasis on human dignity for all
 - # Frameworks— theory of process
 - Problem orientation
 - **Decision process***
 - Social process
-

Decision Process

- # **Intelligence**—process of obtaining and processing information and giving it to decision makers and others
 - # **Promotion**—recommending and mobilizing support for policy alternatives
 - # **Prescription**—the activity that establishes the rules by which people live. To prescribe is to clarify and articulate the basic goals and norms, or values, of the community
 - # **Invocation**—first action taken to invoke, or appeal to, a prescription
 - # **Application**—final characterization of people's behavior in terms of a prescription in specific situations
 - # **Appraisal**—assessment of a decision process as a whole and of the success of particular prescription in achieving their goals
 - # **Termination**—the repeal or large-scale adjustment of a prescription. It involves canceling or succeeding the original prescription.
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Common Interest

- # The work of professionals is to apply their special knowledge and skills responsibly in resolving societal problems in the common interest
 - # What is the common interest?
 - Interests widely shared by members of a community
 - A special interest is incompatible with the common interest
 - A tentative commitment to the common interest (or some alternative goal) is necessary to provide direction for natural resource policies and governance
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Problems with governance?

- # What is or are the problem(s) with governance?
 - # What are the current trends with respect to governance?
 - # What should our goal be with respect to governance?
-

Problem with governance...

- # Failure to clarify and secure the common interest through specific policies
 - # Complex division of authority and control among numerous parts of the federal government with distinctive mandates and jurisdictions, their counterparts in state and local governments and NGOs that lobby and litigate for particular economic, environmental and other interests
-

Trends

- # Gridlock, loss of faith in government, demosclerosis, loss of government's ability to adapt, separation of powers, proliferation of interest groups focus on narrow demands, complex structure of governance, proliferation of substantive and procedural rules and regulations
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Goal:

- # Clarifying and securing the common interest, which is consistent with the overall broader goal of human dignity for all.
 - # The ideal of human dignity takes into account the entire body politic. It is not a matter of giving a privileged few their freedom, but of striking balance among the claims of all.
-

Wildfire as a problem

2000 and 2002 Wildfire Seasons

- # Most costly in the last 50 years
 - # 2000 8.4 million acres and \$1.3 billion
 - # 2002 6.9 million acres and \$1.6 billion
 - # 2003 4.9 million acres and \$1.3 billion (CA fires)
 - # 2004 8.1 million acres (6.6m in Alaska) and \$ 890 million
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Why?

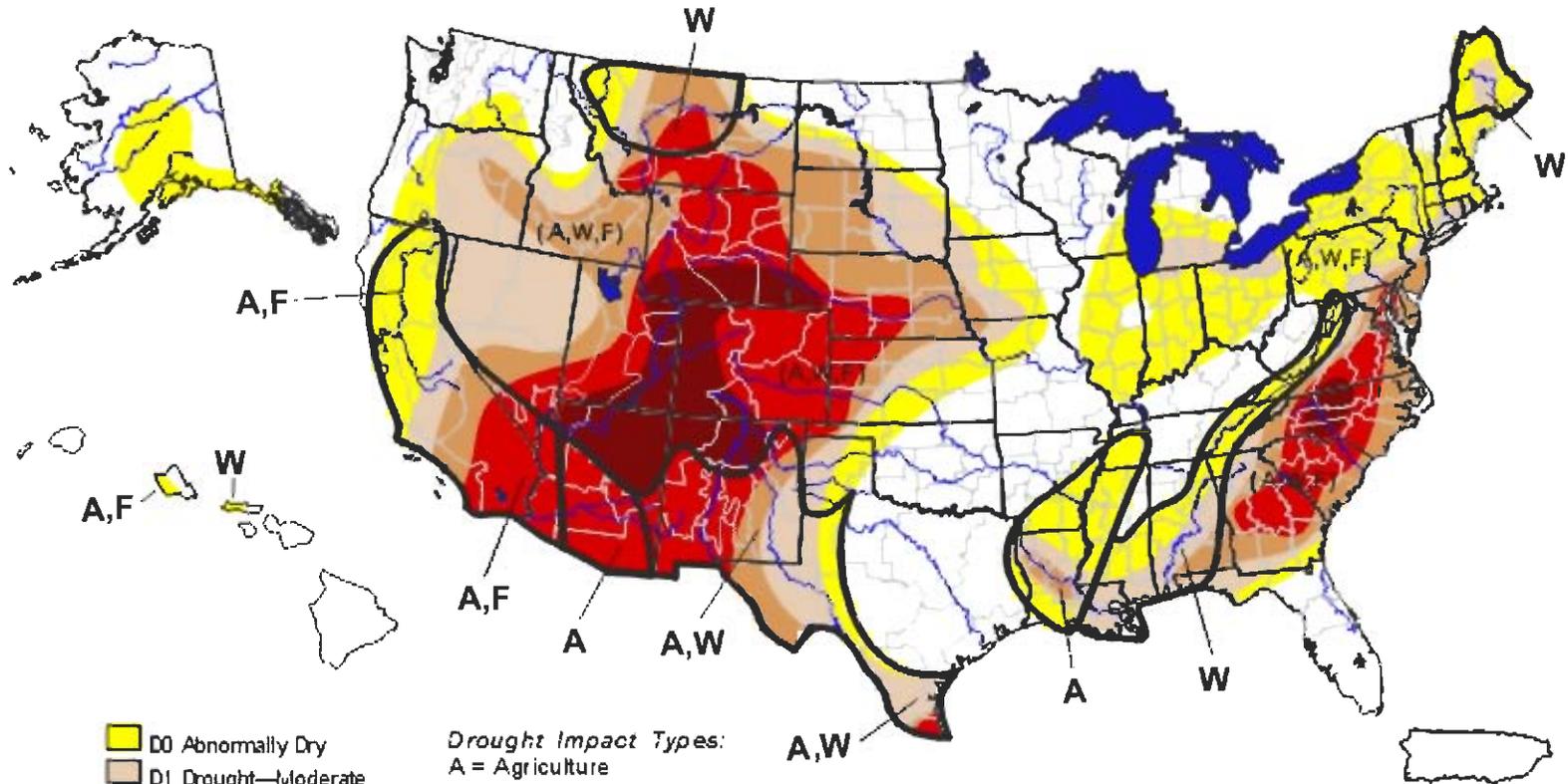
Fire regimes disturbed

- # Frequent, low intensity fires
 - # Maintain plant conditions
 - burn small trees, shrubs
 - leave large trees
 - prevent spread of invasives
 - # Reduce buildup of fuels
 - Precondition for catastrophic fire
-

U.S. Drought Monitor

July 23, 2002

Valid 8 a.m. EDT



- D0 Abnormally Dry
- D1 Drought—Moderate
- D2 Drought—Severe
- D3 Drought—Extreme
- D4 Drought—Exceptional

Drought Impact Types:
 A = Agriculture
 W = Water (Hydrological)
 F = Fire danger (Wildfires)
 — Delineates dominant impacts
 (No type = All 3 impacts)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://drought.unl.edu/dm>



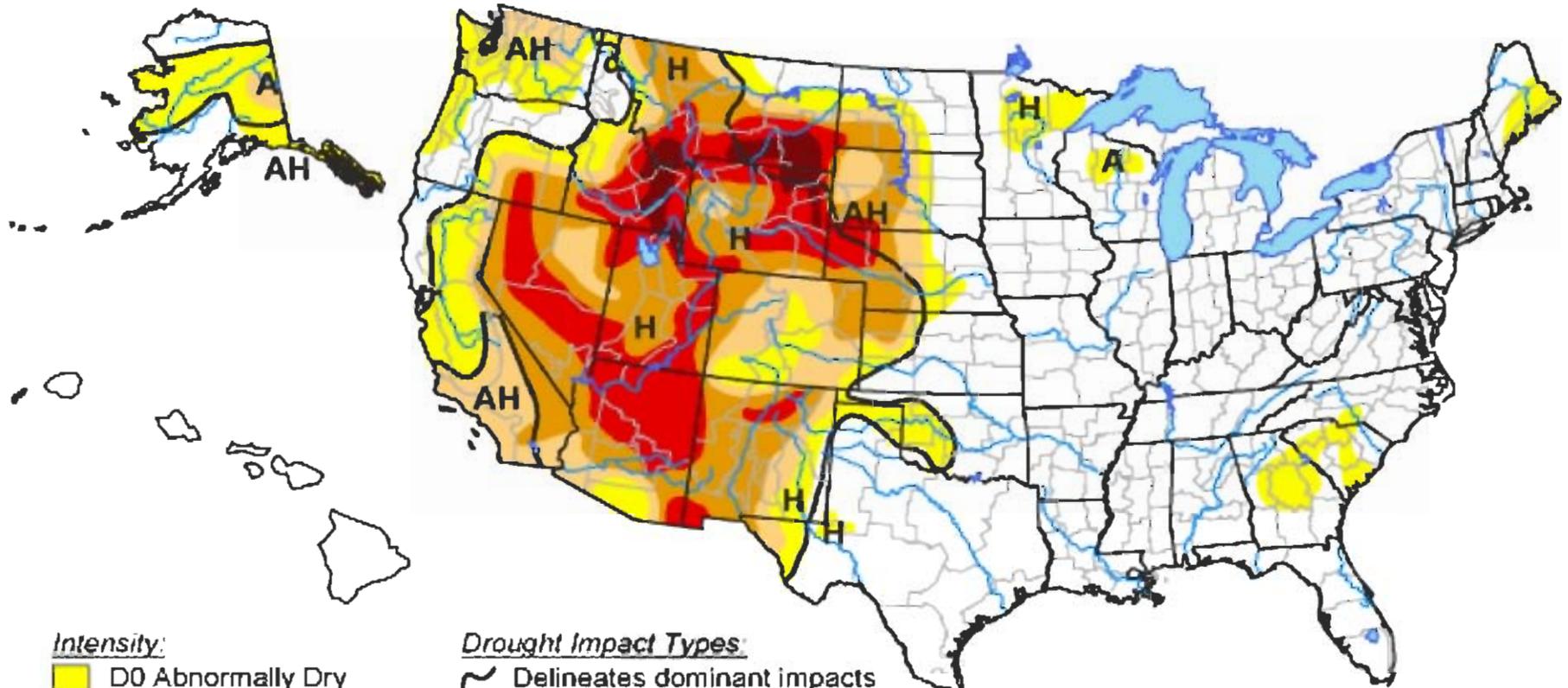
Released Thursday, July 25, 2002

Author: Brad Rippey, USDA

U.S. Drought Monitor

July 27, 2004

Valid 8 a.m. EDT



Intensity:

-  D0 Abnormally Dry
-  D1 Drought - Moderate
-  D2 Drought - Severe
-  D3 Drought - Extreme
-  D4 Drought - Exceptional

Drought Impact Types:

-  Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)
- (No type = Both impacts)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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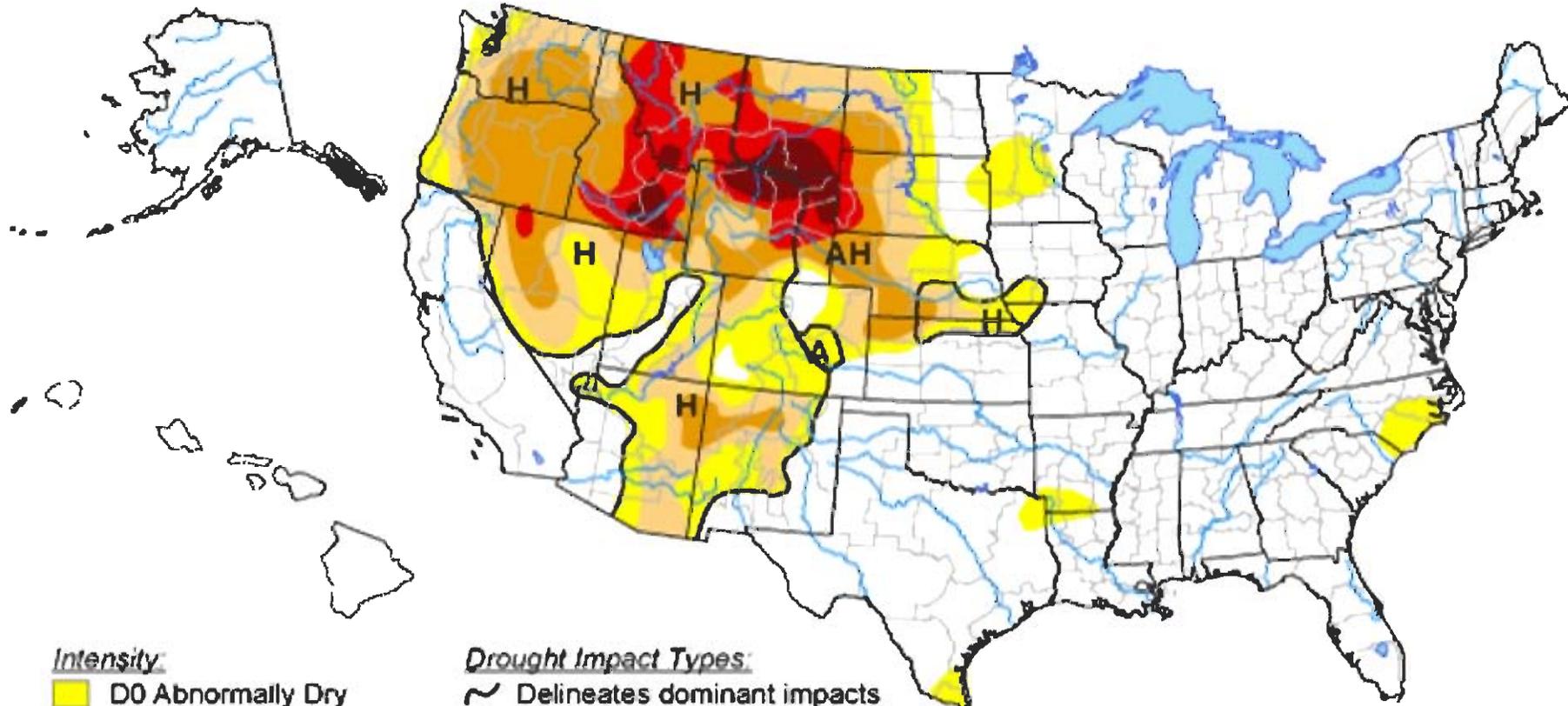
Released Thursday, July 29, 2004

Authors: Richard Heim/Candace Tankersley, NOAA/NCDC

U.S. Drought Monitor

March 29, 2005

Valid 7 a.m. EST



Intensity:

-  D0 Abnormally Dry
-  D1 Drought - Moderate
-  D2 Drought - Severe
-  D3 Drought - Extreme
-  D4 Drought - Exceptional

Drought Impact Types:

-  Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
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The Drought Monitor focuses on broad-scale conditions
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<http://drought.unl.edu/dm>



Released Thursday, March 31, 2005

Author: Douglas Le Comte, CPC/NOAA

Problem

- # History of wildfire suppression
 - # Increases in population growth in West
 - # Increased preferences for living in the wildland urban interface
 - # **Consequence: 60-100 million acres and hundreds communities at risk from wildfire threat**
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Debates: Fuel Reduction Practices

- # Mechanical thinning
 - Inconclusive in terms of changing wildfire behavior
- # Prescribed fire
 - Benefits clearly demonstrated
- # Thinning & prescribed fire
 - Equivocal results
- # Many factors influence wildfire behavior
 - Tree density
 - Distance from base to crown of tree
 - Amount/arrangement of slash and ground vegetation

Debates: Insect Mortality

- # Forests' resilience weakened by management practices
 - # Don't understand relationships between beetle kill and fire behavior
 - # Depends on forest type
 - Pinon pine and Englemann spruce drop needles
 - Ponderosa pine pitch becomes more flammable
 - # Thinning can lead to spread of beetles
 - Slash treatment
 - # Salvage harvest
 - Seed trees and shade
-

Debates: Project Selection

- # USFS National scale fire regime condition class data
 - Total acres at risk
 - Total acres missed two fire cycles
 - Ground-truthed?

 - # National Association State Foresters
 - Criteria to ID high risk communities and high priority projects
 - Facilitate the creation of collaborative plans
-

Debates: Project Delays

- # NEPA Review
- # NEPA Analysis
- # NEPA causing significant delays?

Controversy over NEPA

- # USFS 2001 Report
 - # GAO 2001 Report
 - # GAO 2003 Report
 - # NAU 2003 Report
-

Alternatives to Address Problems

- # National Fire Plan (2000/2001) and Western Governor's Implementation Plan (2002)
 - # Healthy Forests Initiative (August 2002)
 - # Healthy Forests Restoration Act signed by President Bush (December 2003)
-

Alternatives: What Is Being Done?

National Fire Plan

- 2000 report to President, accompanying budget requests and appropriations, & implementation actions

Western Governor's Association 10-Year Strategy

- Action strategy
-

WGA 10-Year Plan

Goals

- Improve fire prevention and suppression
 - Reduce hazardous fuels
 - Restore fire-adapted ecosystems
 - Promote community assistance
-

What are communities doing? How are they doing it?

Project Goals:

- Identify Models of Successful Community Responses
 - Diffuse Models for Adaptation Elsewhere
 - What Constitutes Effective Response?
-

Effective Response = Sound Decision Process

Decision Process

- Intelligence
 - Promotion
 - Prescription
 - Invocation
 - Application
 - Termination
 - Appraisal
-

How Do Communities Respond?

Community Responses to Wildland Fire Threats in New Mexico

Research by Dr. Toddi Steelman and Ginger Kunkel, Department of Forestry

NC STATE UNIVERSITY

Case Studies
in New Mexico



Silver City

Ruidoso

Santa Fe Watershed

Red River

[Click here for an
Overall Summary](#)

- # State Level Analysis
 - AZ, CO & NM
- # Community Case Studies
 - 3 “more successful”
 - 1 “less successful”
 - Interviews--snowball sample, ID key informants, 10-15 semi-structured interviews, recorded, transcribed
 - Site visits, participant observation, photographic analysis
 - Archival documents

State Level Analysis

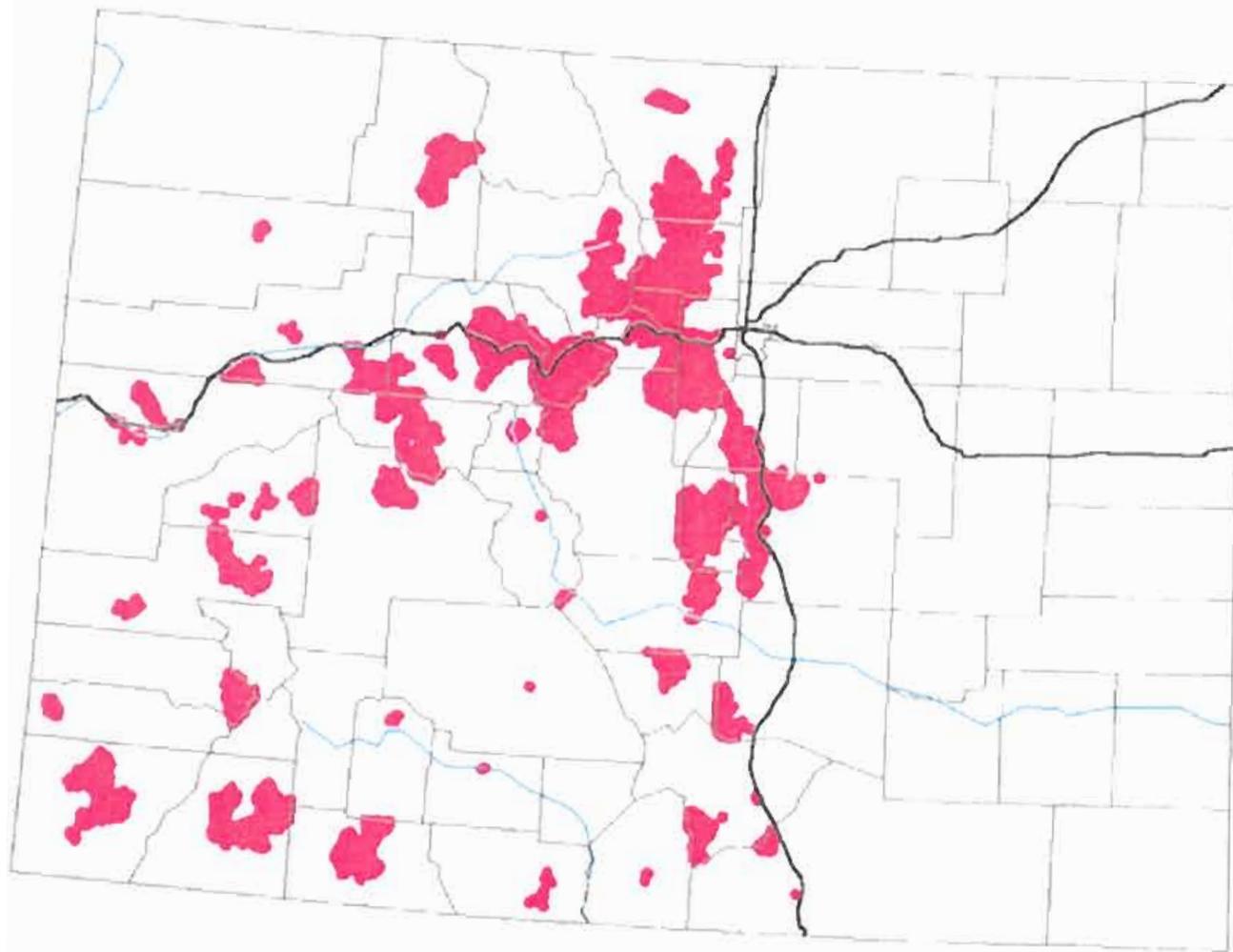
- Population = Communities at risk from wildfire threats
- Sample frame = Communities that 1) border USFS land, 2) at greatest risk for wildfire, 3) that receive NFP \$\$



Interface Areas of **High Risk** in Colorado

- # Risk – Lightning Strike
Density and Roads and
Railroads
 - # Threat – Slope, Fuel
Hazard, Aspect,
Disturbance Regime
 - # Value – Housing Density
-

Interface Areas of High Forest Fire Risk In Colorado



 Red Zone

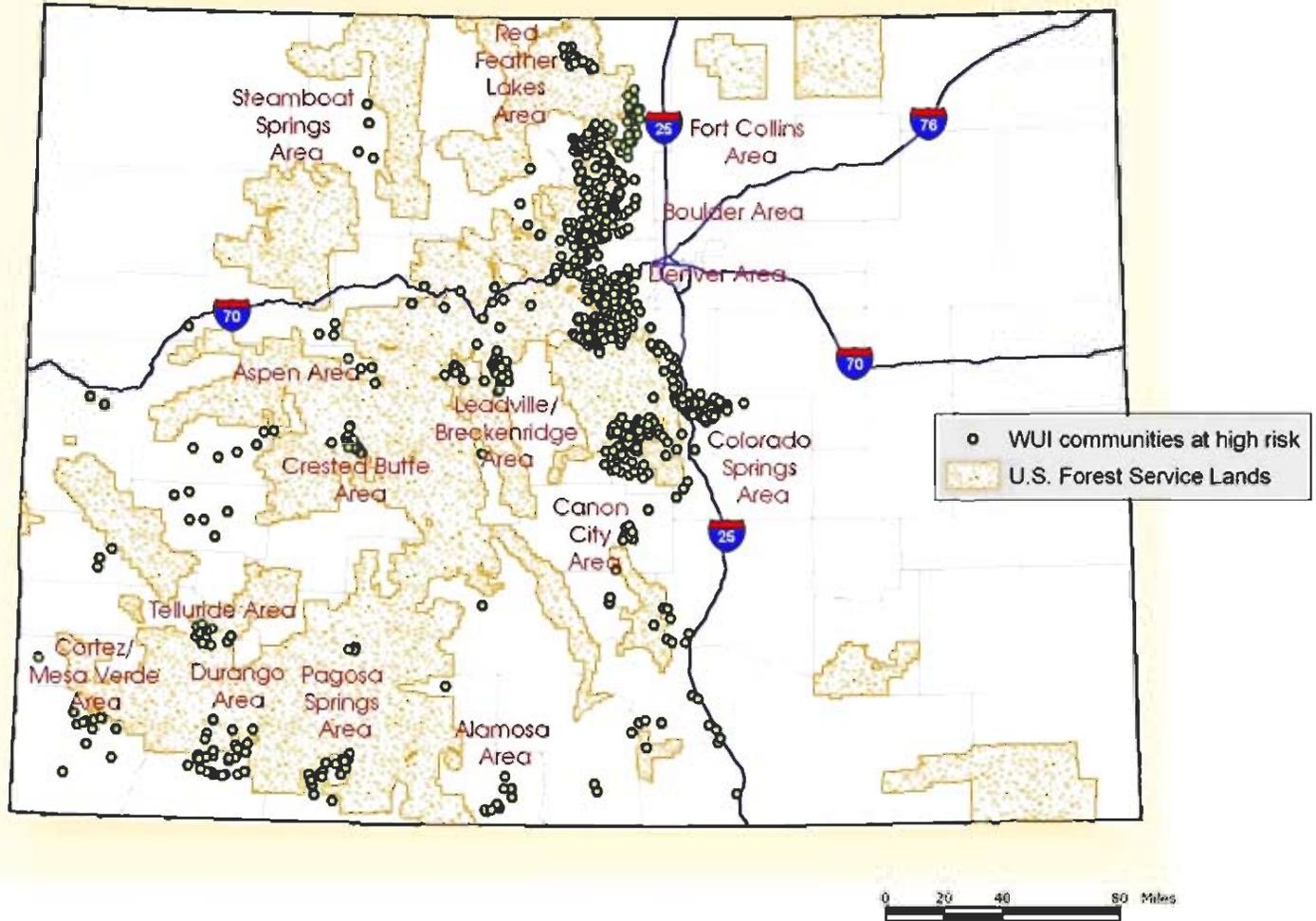
979,851 people (2000 Census)

474,000 homes

6,304,969 acres



Wildland Fire and Communities in Colorado Interface Areas at High Risk



Research project by Dr. Toddi Steelman and Ginger Kunkel, NCSU, Dept of Forestry

Source: Colorado State Forest Service

NFP Funding to AZ, CO & NM FY 2001-2003

AZ- \$252,074,888

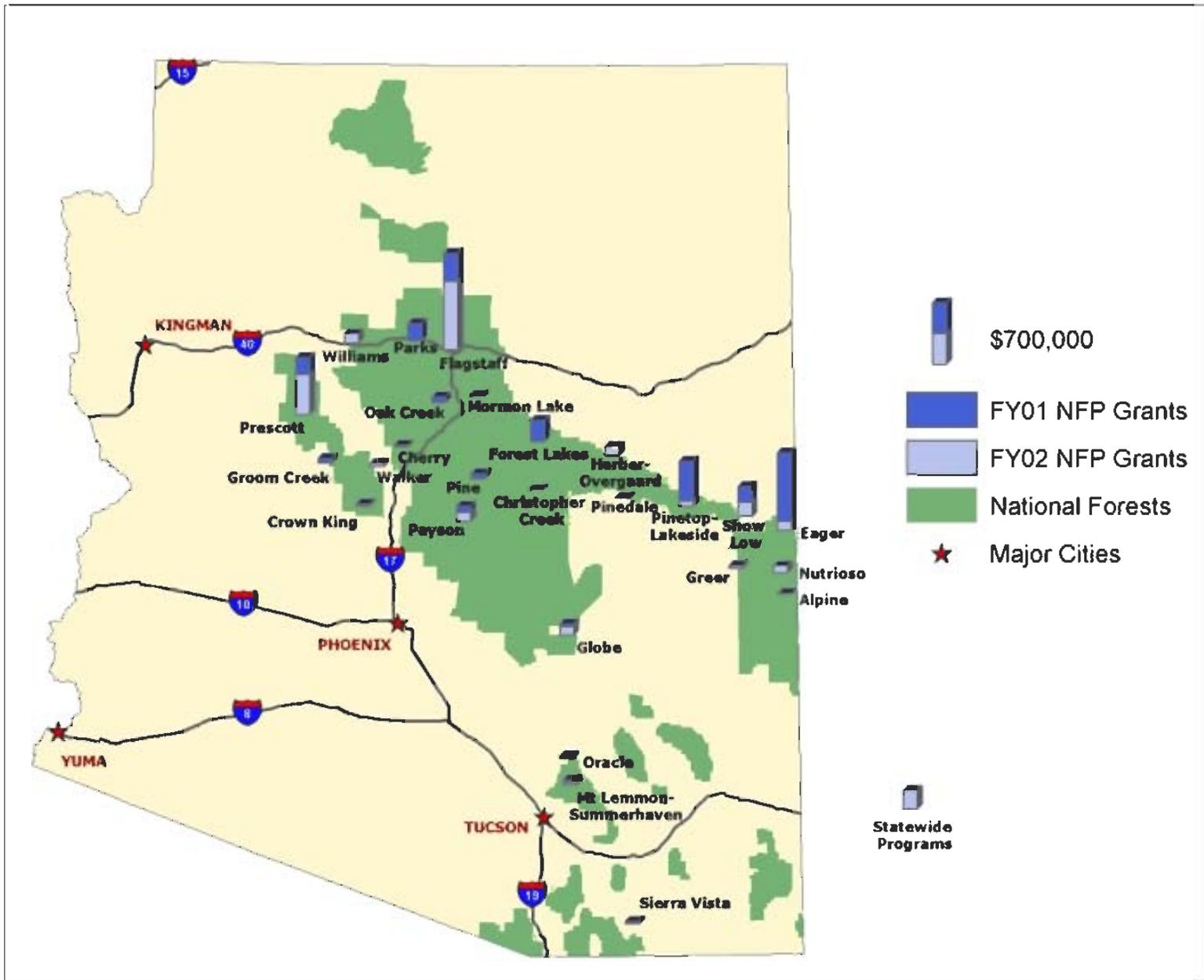
- Community Assistance \$7,654,802 (3%)

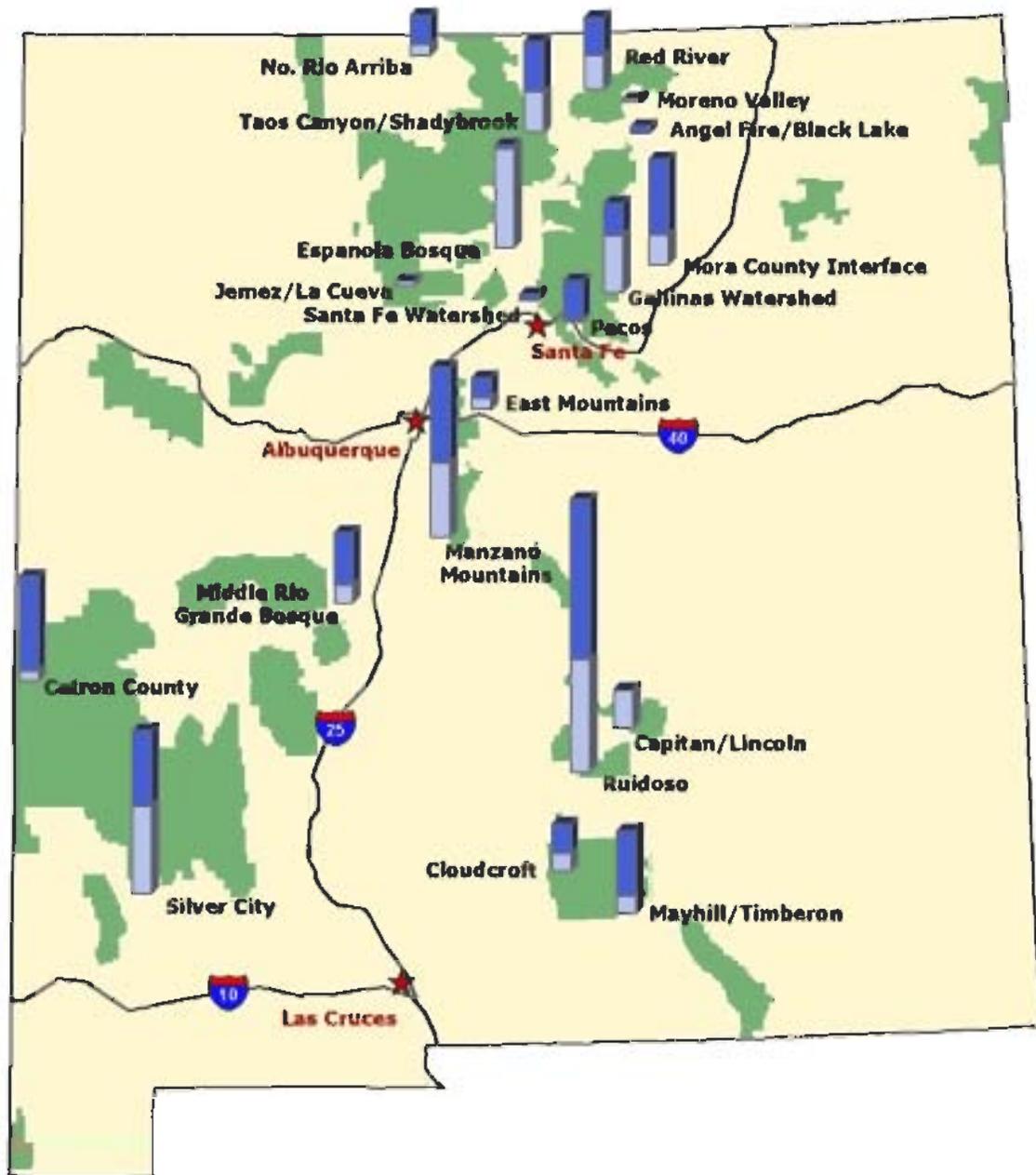
CO- \$196,599,560

- Community Assistance \$11,789,634 (6%)

NM- \$237,800,530

- Community Assistance \$18,550,014 (8%)





No. Rio Arriba

Taos Canyon/Shadybrook

Espanola Bosque

Jemez/La Cueva

Santa Fe Watershed

Red River

Moreno Valley

Angel Fire/Black Lake

Mora County Interface

Galinas Watershed

East Mountains

Manzano Mountains

Capitan/Lincoln

Ruidoso

Cloudcroft

Mayhill/Timberon

Middle Rio Grande Bosque

Silver City

Las Cruces

Albuquerque

Santa Fe

Cañon County

Hazardous Fuel Reduction in NM

Ruidoso, NM

- Pop. 8,500 (25,000 in summer)
- 43% homes owned seasonally
- \$37,107 median household income
- \$113,900 median home value

Santa Fe, NM

- Pop. 70,000
- 5% homes owned seasonally
- \$42,207 median household income
- \$189,400 median home value



US Forest Service Land



US Forest Service Land

Hazardous Fuel Reduction in Ruidoso, NM

- # Status Quo Policy in late 1980s
 - \$5 permit to cut tree larger than 5” diameter
- # New Policy as of 2002
 - Municipal property assessments
 - GOAL: Treat 13,000 acres private land
 - ACCOMPLISHED: 805 acres
 - Municipal management plan
 - GOAL: Treat 638 acres municipal land near USFS interface
 - GOAL: Treat 6,000 acres on USFS land near municipal land
 - ACCOMPLISHED: 6,027 acres treated

Policy Response



- # 1990s growing recognition of wildfire hazard
- # Residents prohibited from cutting trees
- # 1995 Forest Health Coalition forms
- # 1996 tree ordinance changed
- # 2000 fires begin
 - 2000 Cree fire 6,500 acres (3 structures)
 - 2001 Trap and Skeet fire 463 acres
 - 2002 Kokopelli fire 1,000 acres (29 structures)
- # 2000 Urban Forester hired (Rick DeIaco)
- # 2000 Ruidoso Wildland Urban Interface Group (RWUIG) formed



Decision Process in Ruidoso

	Structural	Social
Intelligence	<ul style="list-style-type: none"> •Tree cutting ordinances •Hire urban forester 	<ul style="list-style-type: none"> •Forest Health Coalition
Promotion	<ul style="list-style-type: none"> •Priority treatment areas 	<ul style="list-style-type: none"> •RWUIG •Urban Forester, Rick DeIaco
Prescription	<ul style="list-style-type: none"> •Municipal Property Assessments •Municipal Management Plan 	<ul style="list-style-type: none"> •Urban Forester, Rick DeIaco
Invocation	<ul style="list-style-type: none"> •Fuels Management Ordinances •Slash and Debris Removal System • NM 20 Communities Cost Share Program private land owner treatment 	<ul style="list-style-type: none"> •Forest Task Force, Ruidoso Planning and Zoning Committees, Ruidoso Village Council •Urban Forester, Rick DeIaco •Coordinated through the Ruidoso Solid Waste Department •South Central Mountain Resource Conservation and Development Council •Lincoln County
Application	<ul style="list-style-type: none"> •Enforcement of municipal ordinances •Enforcement of 20-Communities land owner treatment 	<ul style="list-style-type: none"> •Urban Forester, Rick DeIaco •Lincoln County, Grants administrator •NMSF
Appraisal	<ul style="list-style-type: none"> •Monthly updates to track progress • 6,027 acres treated on public lands •805 acres treated on private land 	<ul style="list-style-type: none"> •RWUIG
Termination	<ul style="list-style-type: none"> • Completion of municipal public lands projects • Other prescriptions on-going 	<ul style="list-style-type: none"> •RWUIG

Hazardous Fuel Reduction in Santa Fe, NM

Status Quo Policy

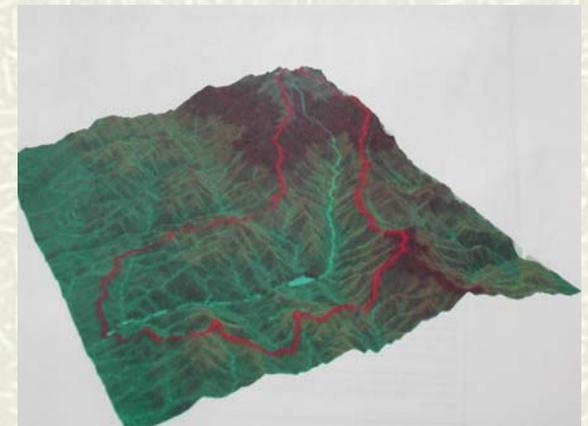
- Santa Fe Municipal Watershed 17,520 acres
- Densely populated with 500-1,000 tree per acre

New Prescription

- Santa Fe Municipal Watershed Project 2001
 - Treat 7,270 acres
 - 700-1000 acres per year
 - Thin trees up to 16” diameter, pile and broadcast burning
 - **ACCOMPLISHED: 11 acres treated**
-

Policy Response

- # 15,000 acres managed by USFS
- # 1,000 acres managed by City of Santa Fe
- # 40% of water supply threatened
- # 1997 baseline assessment of conditions
- # 1998 NEPA work on SFMWP begins
- # 1998 “Partner’s Group” formed
- # 2001 SFMWP released



Decision Process in Santa Fe

	Structural	Social
Intelligence	<ul style="list-style-type: none"> •Existing conditions study 	<ul style="list-style-type: none"> •City of Santa Fe Water Department
Promotion	<ul style="list-style-type: none"> •SFMWP Draft EA 	<ul style="list-style-type: none"> •Partner's Group
Prescription	<ul style="list-style-type: none"> •SFMWP Final EIS 	<ul style="list-style-type: none"> • Partner's Group
Invocation	<ul style="list-style-type: none"> •Contract to Forest Rehab • Demonstration plots • Monitoring plan 	<ul style="list-style-type: none"> • Espanola Ranger District—ineffective program management • Espanola Ranger District—ineffective program management • Santa Fe Watershed Association, Technical Advisory Group, USFS Rocky Mountain Research Station
Application	<ul style="list-style-type: none"> • Enforcement of contracts, demonstration plots • Enforcement of monitoring plan 	<ul style="list-style-type: none"> •Espanola Ranger District—ineffective program management •Santa Fe Watershed Association
Appraisal	<ul style="list-style-type: none"> •Quarterly reports from monitoring plan 	<ul style="list-style-type: none"> • Santa Fe Watershed Association
Termination	<ul style="list-style-type: none"> •Disposal/reduction fuel loads altered to include “chunking” instead of burning only 	<ul style="list-style-type: none"> •SFWA

Effective Decision Processes

Ruidoso

- Structural response accompanied by social response in each phase of decision process

Santa Fe

- Structural response accompanied by social response in intelligence, promotion and prescription, but lacking in invocation and application, appraisal
-

Recommendations

- # National policy emphasizes structural response
- # How do we build capacity to engender complimentary social response?
 - Individuals
 - Groups
 - Institutions



Addendum

Ruidoso

- Created Forestry Department
- Added Forestry Technician

Santa Fe

- January 2003 WUI Specialist hired
 - May 2003 Project Implementation Team established
 - As of June 2003 700 acres completed
-

USFS 2001 Report

- # 326 plans for “high risk” national forests
 - # 155 or 48% of fire-suppression projects appealed
 - # Controversy
 - Didn't consider prescribed burns
 - Included timber sales (projects not designed specifically to reduce fire risk)
 - Didn't include projects “not subject to appeal”
-

GAO 2001 Report

- # 1,671 “hazardous fuel reduction” projects
 - Prescribed burning + mechanical thinning
- # 99% went through without appeal
- # 0% litigated
- # 20 appealed
 - Appellants include environmentalists, industry, recreation groups and individual citizens
- # Controversy:
 - Only looked at FY 2001
 - Appeals may have occurred earlier in the process
 - Included categorical exclusions (not appealable)

GAO 2003 Report

762 hazardous fuel reduction projects

- 180 appealed (24% total or 59% of appealable)
 - 133 unchanged
 - 16 modified
 - 19 reversed
 - 13 withdrawn by USFS
- 97% not challenged by lawsuit (23 projects litigated)

Controversy

- Environmentalists
 - 95% (724) ready for implementation after 90 day review process
- Industry
 - 59% appealed causing delay

NAU- Ecological Research Institute

- # 3,635 appeals
 - # January 1997-September 2002
 - # Appeals used by broad range of interests
 - Grazing permittees, timber companies, environmentalists, individuals
 - # Downward trend since 1998
 - # 1/3 filed by individuals
-

Healthy Forests Restoration Act (2003)

- # Targets 20 million acres at “high risk”
 - # NEPA: limits alternatives that can be studied (3 alts- no action, agency, +1)
 - # Judicial Review: temp. injunction limited to 60 days, courts give weight to inaction
 - # Administrative Appeals: limited to those that file written comments during planning, filed within 15 days
 - # \$760 million authorized annually, 50% to WUI
 - # Old growth forest protection: statutory protection for older, larger trees
-

Implementation?

- # To date, the current prescription is moving closer to serve the common interest than the previous, status quo situation
 - # But there could be greater improvement
 - Collaboration
 - CWPP, multi-party monitoring, local/state/feds, stewardship contracts
 - Emphasis on fuel reduction to exclusion of other goals
 - Emphasis on suppression overshadows haz. fuel reduction
 - Funding
 - Technical resources
 - Measuring/Reporting
-