Evaluating the Effectiveness of Mitigation Activities in the Wildland Urban Interface

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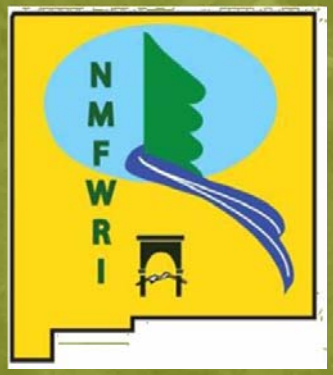
Preliminary Insights

Evaluating the effectiveness of mitigation activities in the wildland urban interface



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Evaluating the effectiveness of mitigation activities in the WUI

- What mitigation activities do we investigate?
- How do measure effectiveness?

Evaluating the effectiveness of mitigation activities in the WUI

- What mitigation activities do we investigate?

Community Wildfire Protect Plans (CWPPs)

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CWPPs – from the Healthy Forests Restoration Act in 2003

1. Collaboration
2. Prioritized Fuel Reduction
3. Treatment of Structural Ignitability

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CWPPs – from the Healthy Forests Restoration Act in 2003

1. **Collaboration:** A CWPP must be collaboratively developed by local and state government representatives, in consultation with federal agencies and others.
2. **Prioritized Fuel Reduction:** A CWPP must identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatment.
3. **Treatment of Structural Ignitability:** A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures.

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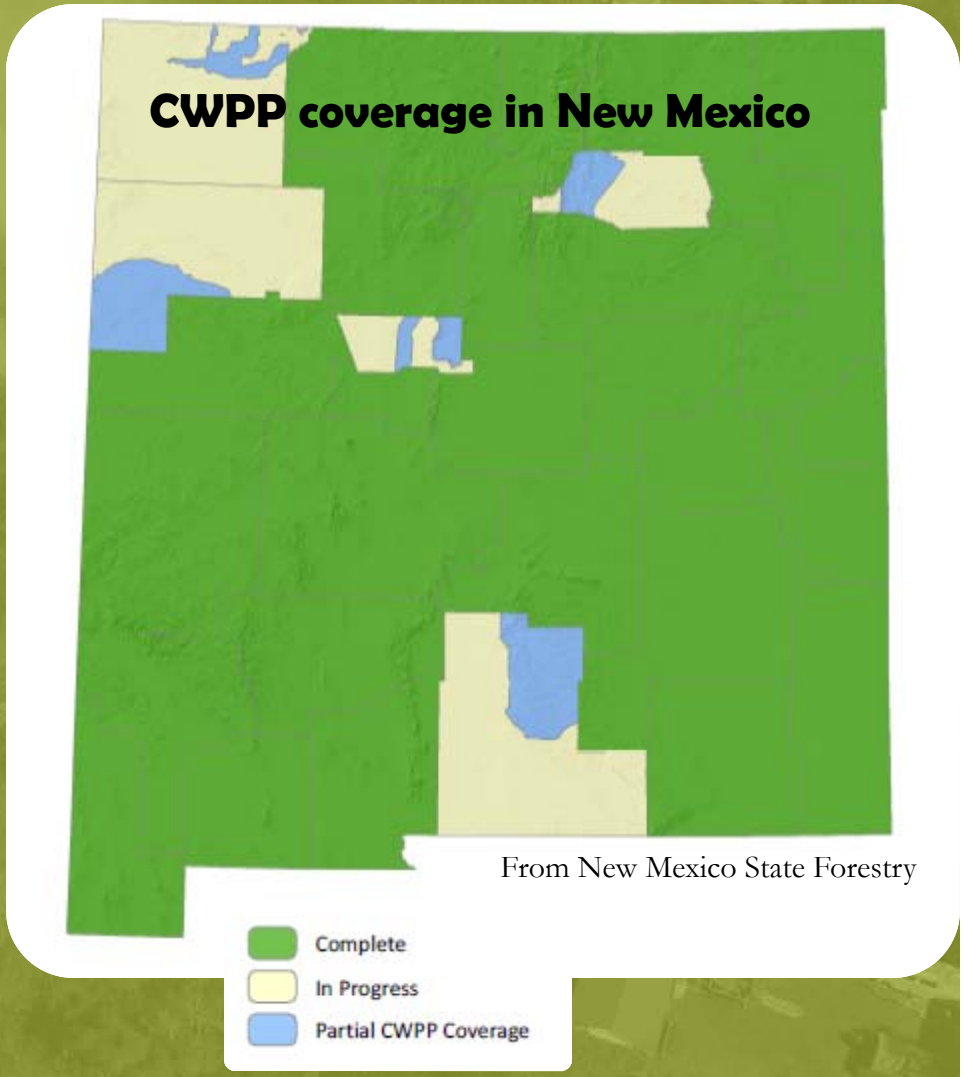
Evaluating CWPPs

What has happened since the release of CWPPs in New Mexican communities?



From New Mexico State Forestry

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Evaluating CWPPs

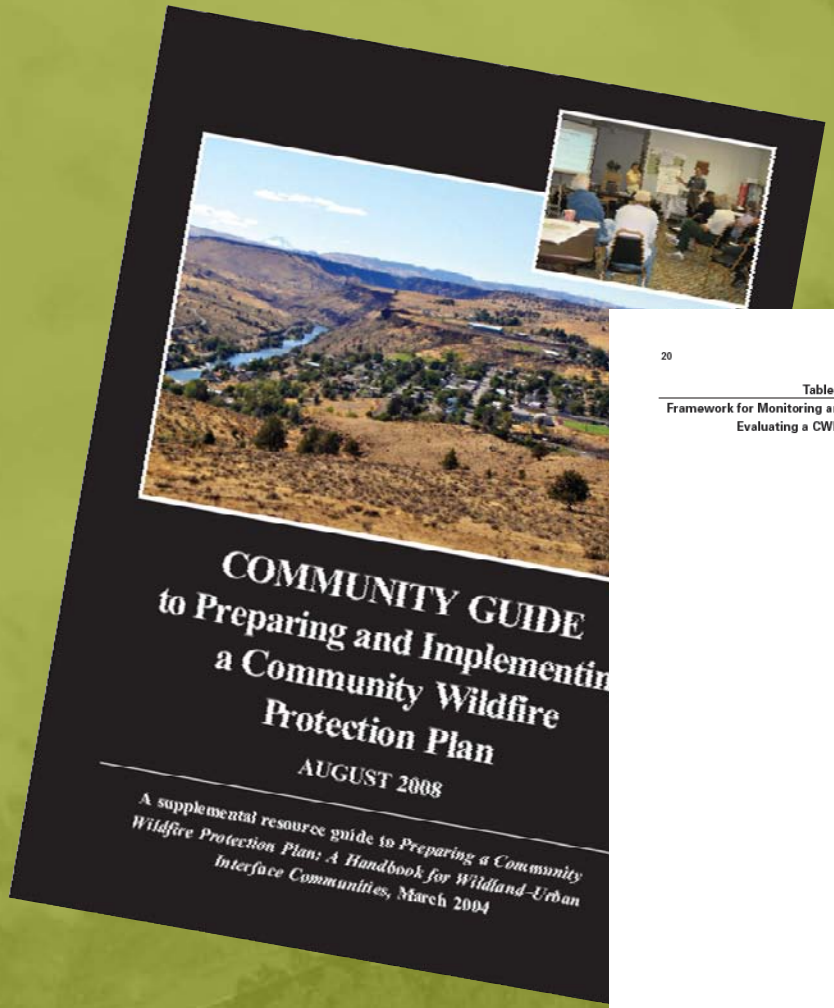

Table 1. Framework for Monitoring and Evaluating a CWPP

Goal	Monitoring and Evaluation Questions	National Measures*
1. Partnerships and Collaboration	1.1 Who has been involved with CWPP development and implementation? How have relationships grown or changed through implementation? What resources did they bring to the table?	
	1.2 How did the fire planning process influence CWPP implementation?	
	1.3 How has the collaborative process assisted in implementing the CWPP and building capacity for the community to reduce wildfire risk?	HFRA
	1.4 Have social service agencies (or groups that might assist low-income and vulnerable populations) partnered on CWPP efforts? If so, how?	
	1.5 Have partners involved in the planning process remained engaged in implementation? Have new partners become involved? How have the relationships established through the CWPP enhanced opportunities to address CWPP goals?	
	1.6 Has CWPP collaboration made a difference or had a positive impact on local organizations, neighborhoods and/or actions?	
2. Risk Assessment	2.1 How has population growth/change and development in your community affected wildfire risk?	
	2.2 If this is a multi-jurisdictional plan, what is the number and percent of communities at risk with a CWPP in the area? Are all communities at risk identified in the CWPP, and are there priority fuels projects identified in the area?	10-YIP
	2.3 Are there new or updated data sources that may change the risk assessment and influence fuels priorities?	
	2.4 How is the risk assessment being used to make decisions about fuels priorities or the designation of the WUI boundary?	10-YIP
	2.5 Has the community enacted a wildfire-related ordinance? If so, county, state, or local?	10-YIP
	2.6 What percent of communities at risk are also low-income or have special needs? Have these communities been engaged in reducing wildfire risk?	
3. Reducing Hazardous Fuels	3.1 How many acres have been treated for hazardous fuels reduction on public and private land that were identified as high-priority projects in the CWPP? What percentage of total acres treated does this constitute?	10-YIP and HFRA
	3.2 How many fuels reduction projects have spanned ownership boundaries to include public and private land?	
	3.3 What is the number and percent of residents that have participated in projects and completed defensible space on their land?	

CWPP Goal	Monitoring and Evaluation Questions	National Measures*
3. Reducing Hazardous Fuels (continued)	3.4 Economic development resulting from fuels reduction	10-YIP
	3.5 How many local jobs have resulted because of fuels reduction or restoration activities?	HFRA
	3.6 How many hazardous fuels reduction projects have been implemented in connection with a forest restoration project?	
4. Reducing Structural Ignitability	4.1 What kind of resource losses (homes, property, infra-structure, etc.) have occurred from wildfires in the year being evaluated?	
	4.2 Are the current codes and regulations for wildfire hazard adequate? If not, are there efforts to change or update them? Are there action items in the CWPP to develop codes and recommendations?	10-YIP
	4.3 Has the public knowledge and understanding about structural ignitability been increased by strategies adopted in the CWPP? Have homeowners been educated on how to reduce home ignitability, and are they replacing flammable building components with non-flammable materials?	
	4.4 How many Firewise Communities have been recognized? How many citizens, neighborhoods, or communities have taken action to increase the resilience of their structure to fire?	10-YIP and HFRA
	4.5 How has the availability and capacity of local fire agencies to respond to wildland and structural fires improved or changed since the CWPP was developed?	10-YIP
5. Education and Outreach	5.1 What kind of public involvement has the CWPP fostered? Examples include public education, household visits, demonstration projects, etc.	
	5.2 Has a change in public awareness about wildfire resulted from the plan?	
	5.3 What kinds of activities have citizens taken to reduce wildfire risk?	
6. Emergency Management	6.1 Is the CWPP integrated within the county or municipal Emergency Operations Plan?	
	6.2 Does the CWPP include an evacuation plan? If yes, has it been tested or implemented since the CWPP adoption?	
	6.3 Is the CWPP aligned with other hazard mitigation plans or efforts?	

** HFRA and the 10-YIP include goals that can be evaluated with measures as part of a local CWPP evaluation process. This table identifies specific measures that relate to outcomes that can be evaluated at a national level and are associated with HFRA or identified within the 10-YIP.*

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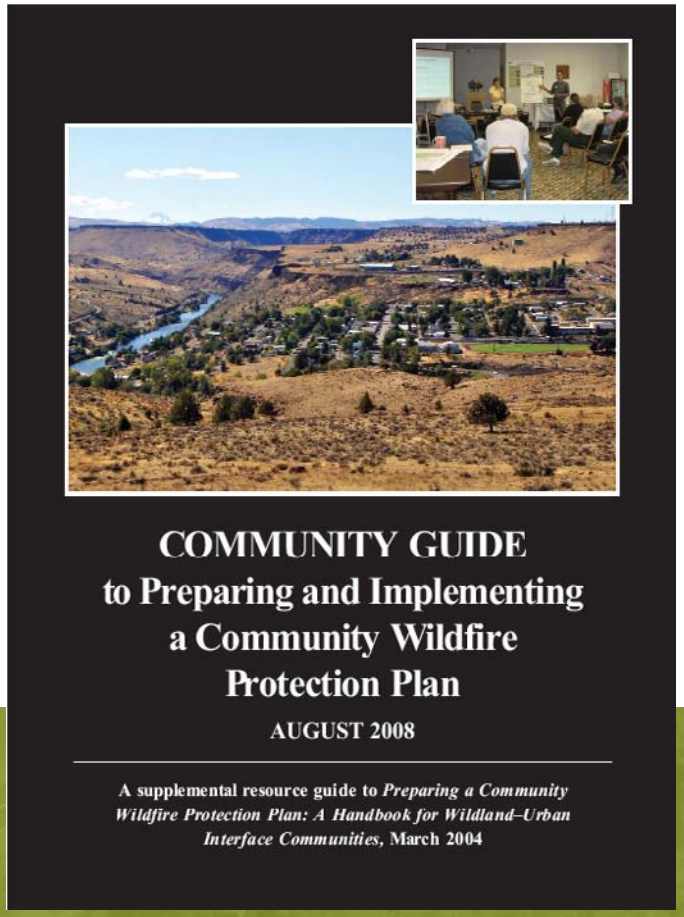

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3. Reducing Hazardous Fuels	3.1 How many acres have been treated for hazardous fuels reduction on public and private land that were identified as high-priority projects in the CWPP? What percentage of total acres treated does this constitute?
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	3.3 What is the number and percent of residents that have participated in projects and completed defensible space on their land?
	3.4 Economic development resulting from fuels reduction
	3.5 How many local jobs have resulted because of fuels reduction or restoration activities?
	3.6 How many hazardous fuels reduction projects have been implemented in connection with a forest restoration project?

Preliminary Insights

1. Collaboration

2. Prioritized Fuel Reduction

3. Treatment of Structural Ignitability

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Collaboration

- Agencies (USFS, BLM, State Forestry, NRCS) are crucial to keeping the collaboration going
- Job turn over and changes threatens collaboration
- Meeting fatigue
- Ecological benefits important to public

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Fuel Reduction Treatments

Fuel treatments can work!

- Are the treatments we're putting in for CWPPs in the best place?
- Are they covering enough area?

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Bureau of Land Management

Fuel Reduction

- Treatments are happening, but very few early CWPPs identified specific treatments.
- Prioritization is difficult because no one left out.
- Areas where jurisdiction overlaps or ownership is intermingled are particularly tough.

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Homeowner Mitigations

- How do CWPPs motivate homeowners?
- How do we track homeowner mitigations?

Homeowner Hazard Assessments

Latest News

- Fire Danger Increases on Lincoln National Forest
- 2013 New Mexico Wildland Urban Interface Summit, "Lessons Learned After the Fire" April 3-4

TODAY'S FIRE DANGER LEVEL

Upcoming Trainings

There are no events at this time

Main Menu

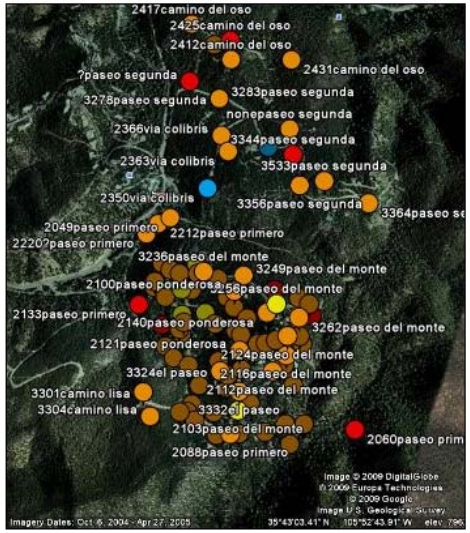
- Home
- Prepare for Wildfire
- Lessons Learned
- Fuels Reduction Projects
- Property Assessments
  - What is an Assessment?
  - All Assessments to Date
  - Hyde Park Estates
  - San Pedro
  - Glorieta Mesa
  - Cedar Grove
  - Valencia
  - Vista Redonda
  - Chupadero
  - Rancho Alegre
  - Thunder Mountain
  - Apache Ridge
  - Ellis Ranch
  - Los Vaqueros
  - La Canada de los Alamos
  - La Tierra Nueva
  - La Barbaria
  - Arroyo Hondo
  - Schedule an Assessment
- County Fires so far
- Talk to us
- Assignments
- Fire Weather

property assessments

What is an Assessment

Home owner assessments consists of two parts: one is to educate the homeowner on ways to reduce risk to their property in the event of a wildfire; the other is to gather important information in specific communities which we utilize to create maps and documents for fire agencies responding to a fire.

When we canvas an area, we do a very brief assessment to get an idea of the overall hazards. We also take GPS coordinates, and gather information such as available water sources, fire apparatus accessibility, and alternate means of egress. If a homeowner is home at the time we arrive and has questions, we'll be happy to talk to them. At any time, a homeowner can give us a call and schedule a more thorough home assessment. More thorough assessments can be helpful should a homeowner want to apply for grants to create defensible space around their home.



We also create maps, and informational documents which are available for not only Santa Fe County Fire, but also any outside agencies responsible for responding to a wildland event in the areas we cover. This information can be extremely helpful in aiding departments unfamiliar with the area.

The brief assessments are also available via Google Earth. The links below will take you to each area that we have completed. If you have not installed the Google Earth Plugin, or your browser does not support it, the assessments are still viewable in Google Maps. There is an option on the page to switch to "Hybrid" view. This will bring up Google Maps

Homeowner Hazard Assessments

Santa Fe County Fire Dept.
Wildland Division

http://www.sfcfire-wildland.com/

Wildfire Hazard Assessment

address

community

SITE HAZARD RATING:			RATING
ACCESS and VISIBILITY: Can emergency personnel find and access?			
Driveway < 150 feet long		0	
Driveway > 150 feet with adequate turnaround		3	
Driveway > 150 feet with inadequate turnaround		5	
Driveway width more than 12 feet		0	
Driveway width less than 12 feet		5	
No overhead branches below 14 feet		0	
Obstructing overhead branches below 14 feet		5	
No bridges or bridges with no restrictions		0	
Inadequate surface / bridges for emergency vehicle		5	
Road grade level or less than 10%		0	
Road grade over 11%		5	
No gate / non=-locking gate		0	
Locked gate restricting access		5	
Address visible from road (on house/end of drive)		0	
Address not visible from road or not found		5	
SURROUNDING TREES: Choose predominate type within 30ft of home			
No trees within 30 feet		0	
Hardwoods (trees with deciduous leaves)		4	
Mixed (hardwoods and conifers/evergreens)		7	
Conifers / Evergreens (non-deciduous)		10	
LADDER FUELS: Can fire spread from surface to aerial fuels?			
Include low limbs, underbrush, vines, etc.	No	0	
	Yes	5	
FUEL CONNECTION: Are ground fuels touching or within 3ft of home?			
Include ornamental shrubs, leaves, grass, weeds, mulch beds, etc.	No	*0*	
	Yes	5	

			RATING
GROUND COVER: Choose primary type of ground cover within 30ft of home			
Sand, gravel, etc. (non-combustible)		0	
Grasses, up to 6" tall		3	
Grasses over 6" tall (heavy weeds, etc)		10	
Herbaceous understory or forest leaf litter		15	
Shrubs with leaves		5	
Shrubs with needles (spreading juniper, etc)		7	
SLOPE OF PROPERTY: What is average slope around structure?			
Gradual (0-10%)		0	
Moderate (11-30%)		5	
Steep (over 30%)		10	
FIREWOOD, DEBRIS or COMBUSTIBLES: Where are the jackpots located?			
Include firewood piles, brush piles, stored lumber, outdoor furniture, etc.	None	0	
	More than 30ft from home	1	
	3ft -30ft from home	5	
	0ft - 3ft from home	10	
FLAMMABLE MATERIALS: Where are highly flammable materials stored?			
Include gas cans, gas grills, lawnmowers, pesticides, etc.	None/Unknown	0	
	More than 30ft from home	1	
	3ft -30ft from home	5	
	0ft - 3ft from home	10	
OTHER POTENTIAL HAZARDS: Are there any external hazards present ?			
Include outbuildings, propane tanks, etc. within 30 feet of structure	No	*0*	
	Yes	5	
TOTAL SITE HAZARD RATING:			

Homeowner Hazard Assessments

Wildfire Hazard Assessment

STRUCTURE HAZARD RATING:			RATING
ROOFING MATERIALS: What is the roof covering of the home?			
Metal, Slate, Tile or Class A Shingles		0	
Rolled roofing or non-rated roof material		5	
Wood (cedar shingles or shakes)		15	
FOUNDATION: What type of foundation does the home have?			
Enclosed (fireproof ie: concrete, metal, adobe)		0	
Enclosed with wood or vinyl sheeting		5	
Open air foundation (piers, stilts, etc.)		10	
EXTERIOR WALLS: What is predominate outer wall covering?			
Brick, Stone or Metal		0	
Vinyl or Wood		5	
VENTS and EAVES: Are these protected from flying embers?			
Enclosed with plastic or metal screens		0	
Exposed wood, open soffits or unscreened vents		5	
ATTACHMENTS: Are there any attachments to the structure?			
Includes decks, overhangs, fenced, trellises, etc..	No	0	
	Yes	5	
FUEL TRAPS: Any areas where leaves/debris can accumulate?			
Include window wells, under steps, foundation indents, etc.	No	0	
	Yes	5	
TOTAL STRUCTURE HAZARD RATING:			

HAZARD REDUCTION FACTORS: (Choose any)		RATING
SITE:		
Ladder fuels removed within 30ft of house	-1	
Grass mowed/watered within 30ft of house	-1	
Leaves/needles raked within 30ft of house	-2	
3 feet of gravel or non-flammable material around house	-3	
STRUCTURE		
Regularly cleaned roof and gutters	-1	
Deck skirting non-flammable / screened	-3	
OTHER		
Firefighting equipment available (hose, ladders, etc)	-1	
Useable water supply nearby(pool, pond, hydrant, etc)	-3	
TOTAL HAZARD REDUCTION RATING:		

CWPP HAZARD RATING FOR AREA

Low=0
Moderate=10
High = 20
Very High=30
Extreme= 35

CWPP + SITE + STRUCTURE - REDUCTIONS = grand total

recommendations

Total possible points = 145

fire service support llc

NFPA 1144

Standard for Protection of Life and Property from Wildfire

2002 Edition

NFPA, 1 Batterymarch Park, PO Box 9101, Quincy, MA 02269-9101
An International Codes and Standards Organization

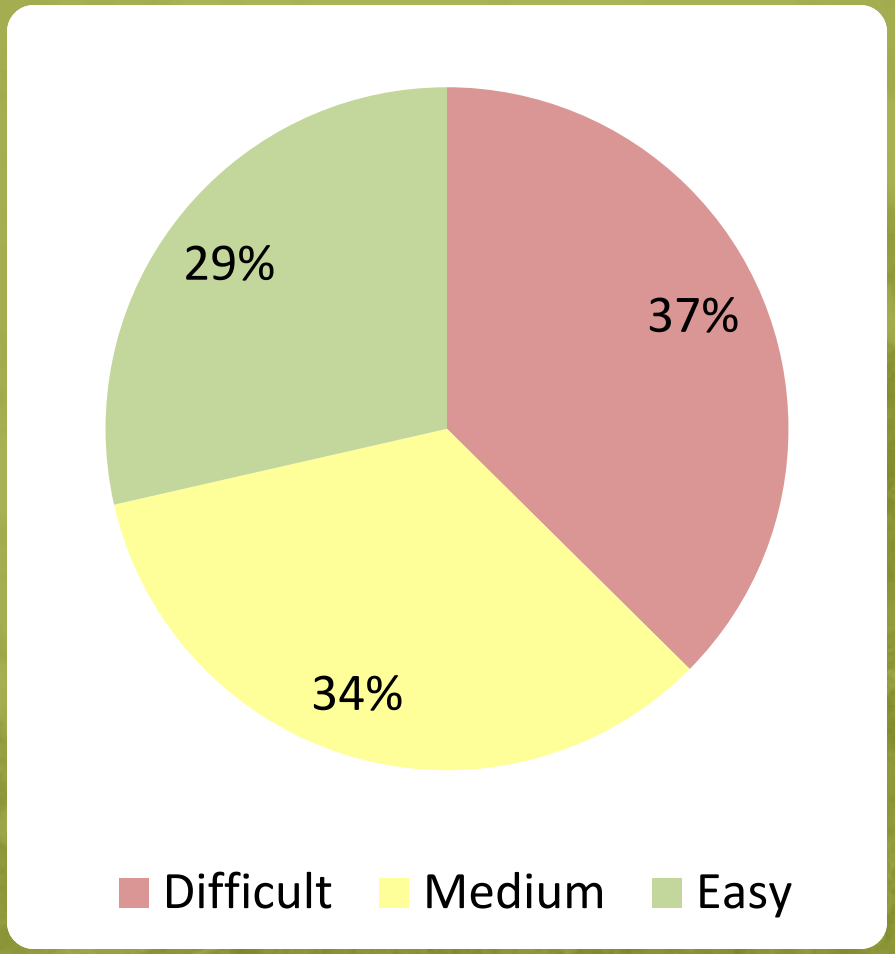
WILDLAND FIRE RISK AND HAZARD SEVERITY ASSESSMENT FORM

Assign a value to the most appropriate element in each category and place the number of points in the column on the right.

Element	Points	
A. Means of Access		
1. Ingress and egress		
a. Two or more roads in/out	0	_____
b. One road in/out	7	_____
2. Road width		
a. ≥7.3 m (24 ft)	0	_____
b. ≥6.1 m (20 ft) and <7.3 m (24 ft)	2	_____
c. <6.1 m (20 ft)	4	_____
3. All-season road condition		
a. Surfaced road, grade <5%	0	_____
b. Surfaced road, grade >5%	2	_____
c. Non-surfaced road, grade <5%	2	_____
d. Non-surfaced road, grade >5%	5	_____
e. Other than all-season	7	_____
4. Fire Service Access		
a. ≤91.4 m (300 ft) with turnaround	0	_____
b. >91.4 m (300 ft) with turnaround	2	_____
c. <91.4 m (300 ft) with no turnaround	4	_____
d. ≥91.4 m (300 ft) with no turnaround	5	_____
5. Street signs		
a. Present [10.2 cm (4 in.) in size and reflectorized]	0	_____
b. Not present	5	_____
B. Vegetation (Fuel Models)		
1. Characteristics of predominate vegetation within 91.4 m (300 ft)		
a. Light (e.g., grasses, forbs, sawgrasses, and tundra) NFDRS Fuel Models A, C, L, N, S, and T	5	_____
b. Medium (e.g., light brush and small trees) NFDRS Fuel Models D, E, F, H, P, Q, and U	10	_____
c. Heavy (e.g., dense brush, timber, and hardwoods) NFDRS Fuel Models B, G, and O	20	_____
d. Slash (e.g., timber harvesting residue) NFDRS Fuel Models J, K, and L	25	_____
2. Defensible space		
a. More than 30.48 m (100 ft) of vegetation treatment from the structure(s)	1	_____
b. 21.6 m to 30.48 m (71 ft to 100 ft) of vegetation treatment from the structure(s)	3	_____
c. 9.14 m to 21.3 m (30 ft to 70 ft) of vegetation treatment from the structure(s)	10	_____
d. <9.14 m (30 ft) of vegetation treatment from the structure(s)	25	_____
C. Topography Within 91.4 m (300 ft) of Structure(s)		
1. Slope <9%	1	_____
2. Slope 10% to 20%	4	_____
3. Slope 21% to 30%	7	_____
4. Slope 31% to 40%	8	_____
5. Slope >41%	10	_____

Homeowner Hazard Assessments

Homeowner Hazard Assessments



Easy to change:

- Address Visible
- Ladder Fuel
- Firewood next to house

Difficult to change:

- Slope
- Roofing material
- Water supply

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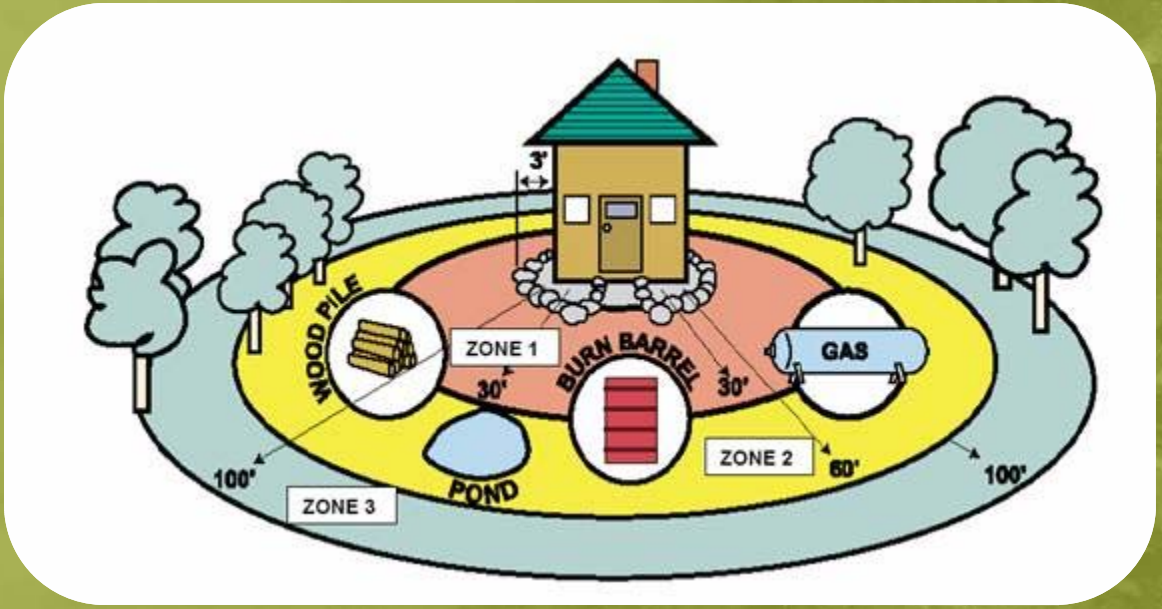
Repeat Assessment: 3 Years Later



- Nearly 90% of homeowners had changed reduced hazard in some way.
- 50% of the improvements came from the easiest to implement actions.

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Repeat Assessment: 3 Years Later

- 30% thinned or removed trees within 30ft of the home
- Nearly 50% of the homeowners moved firewood piles that had been too near the house
- Nearly 30% of homeowners had addressed other hazards near their homes

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Homeowner Hazard Assessments

Homeowner Mitigations

Homeowners are most receptive when smoke is in the air

US Fish and Wildlife Service

Other Issues

- Populations at risk
- Integration with emergency management plans
- Potential role of ordinances
- Part time residents & absentee owners *(time constraints)*

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Looking Ahead

- How can we move beyond CWPPs written solely to check a box & access funding *(and then sit on the shelf)*?
- How do we maintain the engagement in WUI collaborations?
- How do we get more treatments on the ground *(and ensure they are in the right place)*.
- How do we use CWPPs to motivate homeowners?

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Fire Adapted Communities Network

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Slide credit: Pam Leschak

Thank You

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