



Fire Decision-Making Tools

"Wilderness Fire Management: Easier Now or Later?" July 9 Workshop, Choteau, MT
Tonja Opperman, Fire Analyst, Wildland Fire Management RD&A

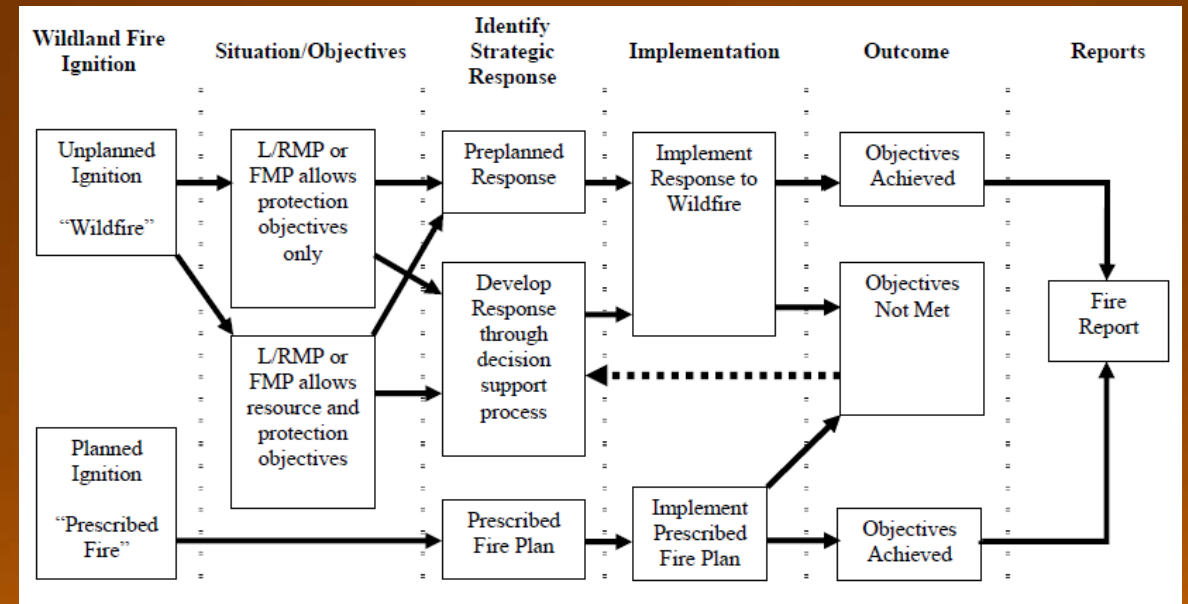
Fire Use Guidance (2009)

#5. Wildland fire describes any non-structure fire that occurs in the wildland:

Wildfires – Unplanned ignitions
Prescribed Fires - Planned ignitions.

#6. Fires can managed for one or more objectives that can change as the fire spreads across the landscape.

#7. Management response is based on objectives in the Land/ Resource Management Plan and/or the Fire Management Plan.



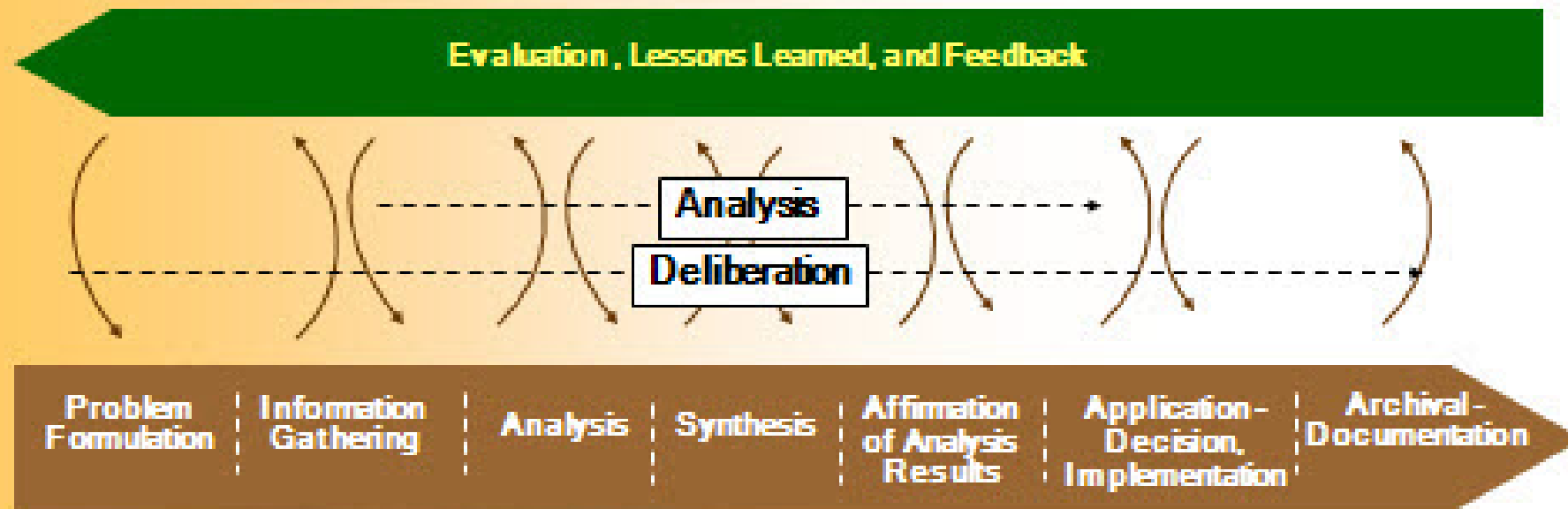
The old 'EFSA/WFSA' compared Alternatives (until 2008)



IV. Evaluation of Alternatives (to be completed by Agency Administrator(s) and FMO/IC)			
A. Evaluation Process	A	B	C
Safety firefighter aviation public			
<i>Sum of Safety Values</i>			
Economic forage improvements recreation timber water wilderness wildlife other (specify)			
<i>Sum of Economic Values</i>			
Environmental air visuals hazardous fuels TE&S species other (specify)			
<i>Sum of Environmental Values</i>			
Social employment public concern cultural other (specify)			
<i>Sum of Social Values</i>			
Other (specify)			
<i>Sum of Other Values</i>			
Comparison of all Evaluated Categories			

Risk Informed Decision Process and WFDSS

Deliberative Risk Analysis



WFDSS Alignment with Deliberative Risk Analysis



Wildland Fire
Decision Support System

National Preparedness Level: 1



Incident: Boiling Springs Road Fire

My Home	Incidents	Incident Groups	Analyses	Intelligence	Data Management	Administration	
Information	Situation	Assessment	Objectives	Course of Action	Cost	Decisions	Periodic Assessment
							Report


WFDSS-Based Tools



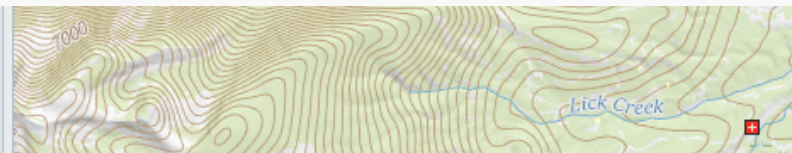
Planning Area & Values

My Home	Incidents	Incident Groups	Analyses	Intelligence	Data Management	Administration	Support	
Information	Situation	Assessment	Objectives	Course of Action	Cost	Decisions	Periodic Assessment	R
Click Icon to Collapse			<	 Bookmarks	 Messages (0)			

Values Inventory

 Category	Value	Data Source	Currency	Coverage
Building Clusters: Ravalli, MT	4	US Counties / FGDC Cadastral Subcomm.		Available counties
County: Ravalli, MT	11,566 acres	HSIP 2011, US Census Bureau TIGER data	07/01/2010	National
Est Ground Evac Time: 1-2 Hrs	3,032 acres	National Park Service NIFC	11/01/2012	CONUS
Est Ground Evac Time: 2-4 Hrs	5,813 acres	National Park Service NIFC	11/01/2012	CONUS
Estimated Population	28	LandScan USA / Oak Ridge Laboratory	04/08/2015	National
Habitat: Bull Trout	3.4 miles	US Fish and Wildlife Service	12/01/2016	National
IRA: Selway-Bitterroot (01067) IRA	7,549 acres	Various	05/01/2016	National
Jurisdictional Agency: USFS	11,531 acres	Various	05/29/2015	National
MTBRF - Analysis Area / LakeComoFHP	128 acres	MTBRF		Unit
Other Areas: Lower Lost Horse Canyon ERNA	5 acres	Various	varies by data source	National
Responsible Agency: CL	9 acres	Various	07/2015	AK, CA, ID, MT, NM, MN
Responsible Agency: USFS	11,557 acres	Various	07/2015	AK, CA, ID, MT, NM, MN

- ☐ Other
- ☐ BLM
- ☒ Infrastructure
- ☒ Facilities
- ☒ LandScan USA Population



WFDSS: Request a WFDSS walk-thru...

Wildland Fire Decision Support System National Preparedness Level: 1 Incident: North Diane Rau on Production | [Sign out](#)

[Skip to Content](#)

My Home **Incidents** **Incident Groups** **Analyses** **Intelligence** **Data Management** **Administration** [Help](#) [Feedback](#)

Information **Situation** **Assessment** **Objectives** **Course of Action** **Cost** **Decisions** **Periodic Assessment** **Reports**

Click Icon to Collapse

Menu Map Info

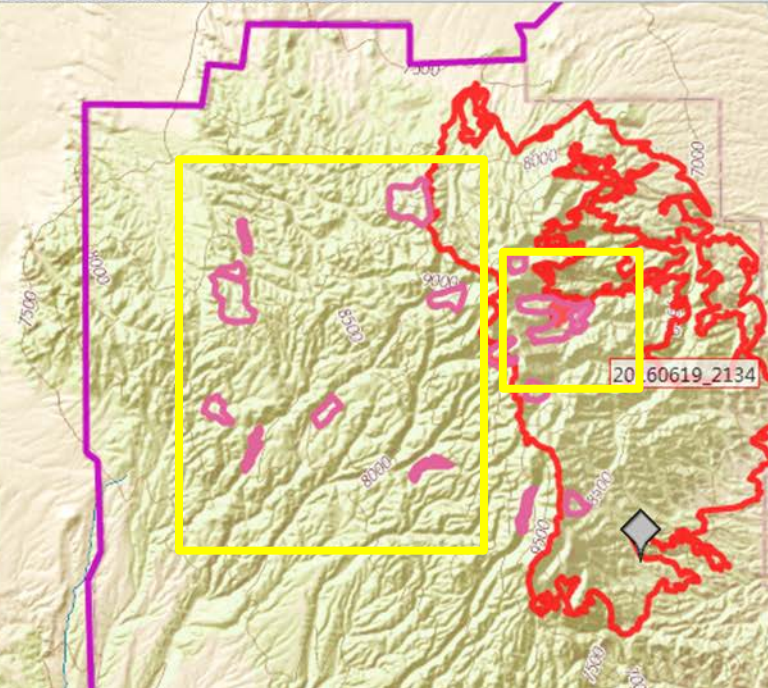
Layers

- ☒ * Unit Fire Planning
- ☒ NMCIF
- ☐ Unit Outline
- ☐ Strategic Objectives
- ☐ Mgmt Requirements
- ☒ Other Unit Shapes
- ☐ DS VAR
- ☐ Districts
- ☐ FRCC
- ☐ Fuels Reduct. VAR
- ☐ Infrastructure VAR
- ☐ Land
- ☐ Management Areas
- ☐ Private Land VAR
- ☐ Recreation VAR
- ☐ Trust VAR
- ☐ Wildlife VAR
- ☒ Wildlife
 - ☒ MSO Core
 - ☒ MSO PACs
 - ☒ Northern Goshawk PFA
 - ☐ Prairie Dog
 - ☐ WUI VAR

Bookmarks Messages (0)

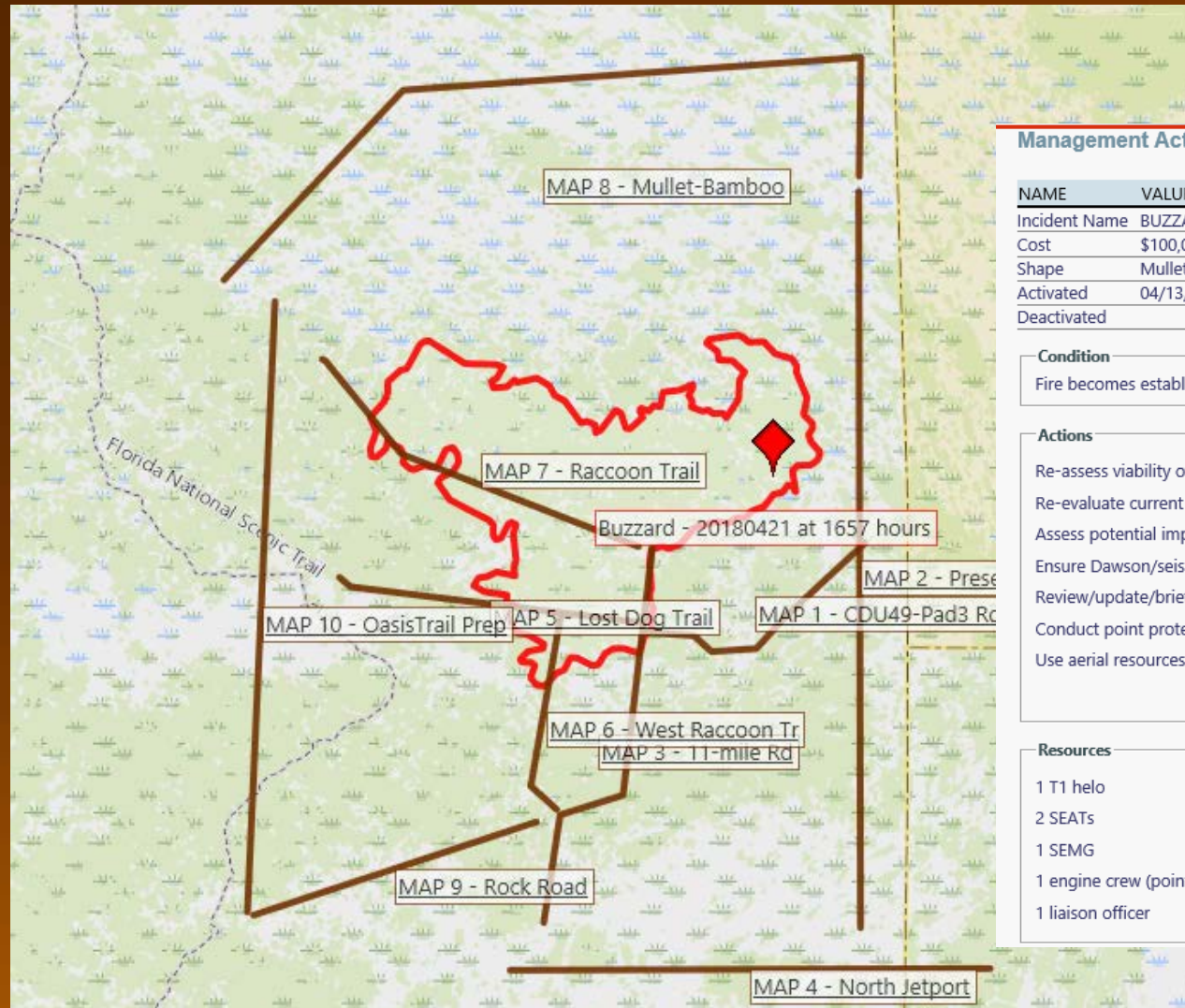
Pan Tool: Drag to pan. Shift-click, drag, and release to zoom. Double-click to re-center and zoom.

Scale = 1 : 217K



Values Inventory				
Category	Value	Data Source	Currency	Coverage
BLM Range Allotments	10,472 acres	BLM National Operations Center (NOC)	03/01/2016	National
Building Clusters: Socorro, NM	20	US Counties / FGDC Cadastral Subcomm.		Available counties
Campgrounds	2	BLM (FAMS) and USFS INFRA	02/03/2015	National (BLM and USFS only)
Communication Towers	1	FCC	06/14/2012	National
County: Socorro, NM	310,027 acres	HSIP 2011, US Census Bureau TIGER data	07/01/2010	National
Est Ground Evac Time: 1-2 Hrs	125,849 acres	National Park Service NIFC	11/01/2012	CONUS
Est Ground Evac Time: 2-4 Hrs	90,731 acres	National Park Service NIFC	11/01/2012	CONUS
Est Ground Evac Time: 4-6 Hrs	36,868 acres	National Park Service NIFC	11/01/2012	CONUS
Est Ground Evac Time: 6+ Hrs	44,275 acres	National Park Service NIFC	11/01/2012	CONUS
Estimated Population	36	LandScan USA / Oak Ridge Laboratory	04/08/2015	National
Habitat: Mexican spotted owl	100,973 acres	US Fish and Wildlife Service	01/20/2016	National
IRA: Apache Kid Contiguous IRA	39,758 acres	Various		National
IRA: White Cap IRA	8,036 acres	Various		National
Jurisdictional Agency: BLM	5,029 acres	Various	05/29/2015	National
Jurisdictional Agency: USFS	246,460 acres	Various	05/29/2015	National
NMCIF - Wildlife / MSO Core	2,523 acres	NMCIF		Unit
NMCIF - Wildlife / MSO PACs	2,523 acres	NMCIF		Unit
NMCIF - Wildlife / Northern Goshawk PFA	1,600 acres	NMCIF		Unit
Responsible Agency: State	58,687 acres	Various	July 2015	AK, CA, ID, MT, NM, MN
Responsible Agency: USFS	251,340 acres	Various	July 2015	AK, CA, ID, MT, NM, MN
Roads	35.6 miles	NAVTEQ	11/2012	National
USFS Buildings	13	USFS-INFRA	03/23/2016	National
Wilderness: Apache Kid Wilderness	15,982 acres	Wilderness.net	1/22/2016	National
Wilderness: Withington Wilderness	18,813 acres	Wilderness.net	1/22/2016	National

Long-Term Plan/M.A.P.s



Management Action Point 8

NAME	VALUE
Incident Name	BUZZARD
Cost	\$100,000
Shape	Mullet-Bamboo
Activated	04/13/2018
Deactivated	

Condition

Fire becomes established north/west of line bisecting Mullet Slough/Bamboo Strand

Actions

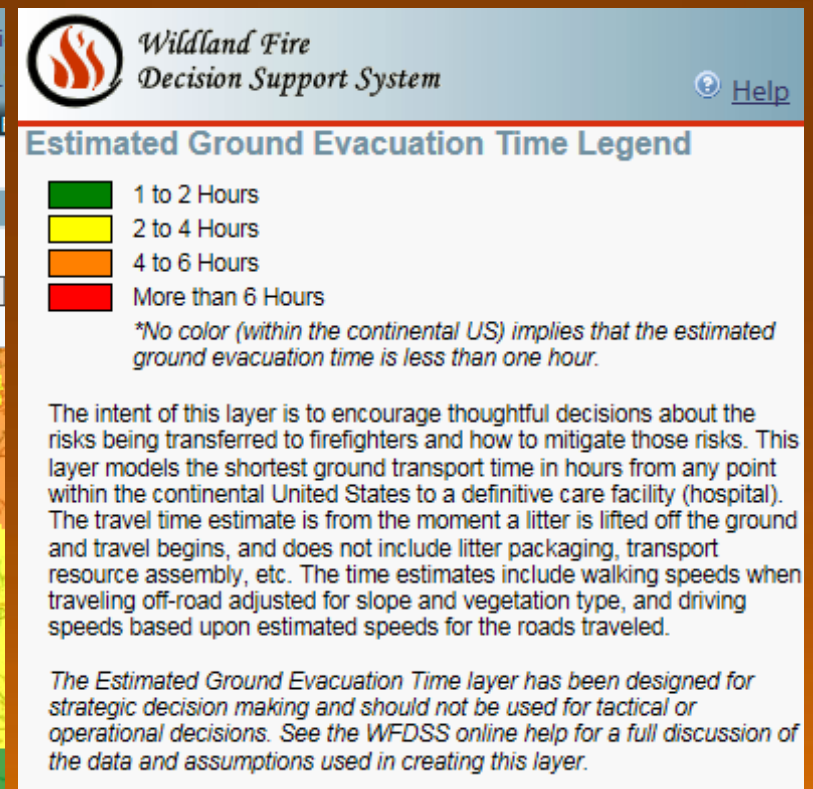
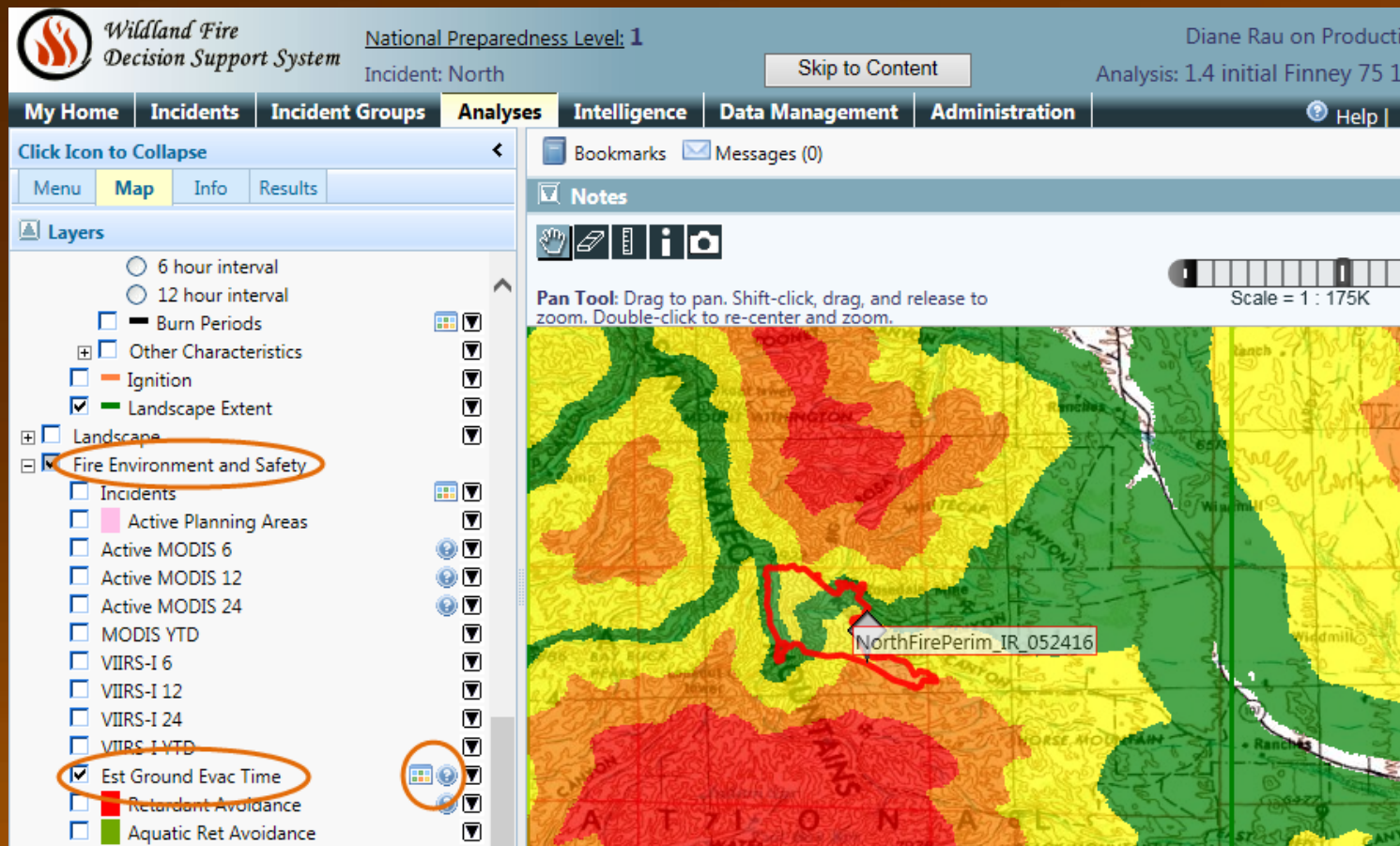
- Re-assess viability of Mullet Slough/Bamboo Strand as a holding feature
- Re-evaluate current management organization and incident complexity
- Assess potential impacts to I-75
- Ensure Dawson/seismic staff are aware of fire status
- Review/update/brief Dawson/preserve management on actions to take if fire could threaten seismic exploration
- Conduct point protection as needed
- Use aerial resources where fuel will allow a high probability of success to slow or check fire growth towards Little Deer/seismic work

Resources

- 1 T1 helo
- 2 SEATs
- 1 SEMG
- 1 engine crew (point protection)
- 1 liaison officer

Estimated Firefighter Evacuation Layer

Estimated ground transport time in hours from every point within CONUS to the nearest hospital



Basic Spatial Fire Behavior

Incident Analysis
Gold burnout/bluejoint.v1
Pan
Wind Speed 4 mph
Direction 125° azimuth

Analysis
Date 08/21/2013
RAWS Station 242907 - WESTFK

Time
13:00

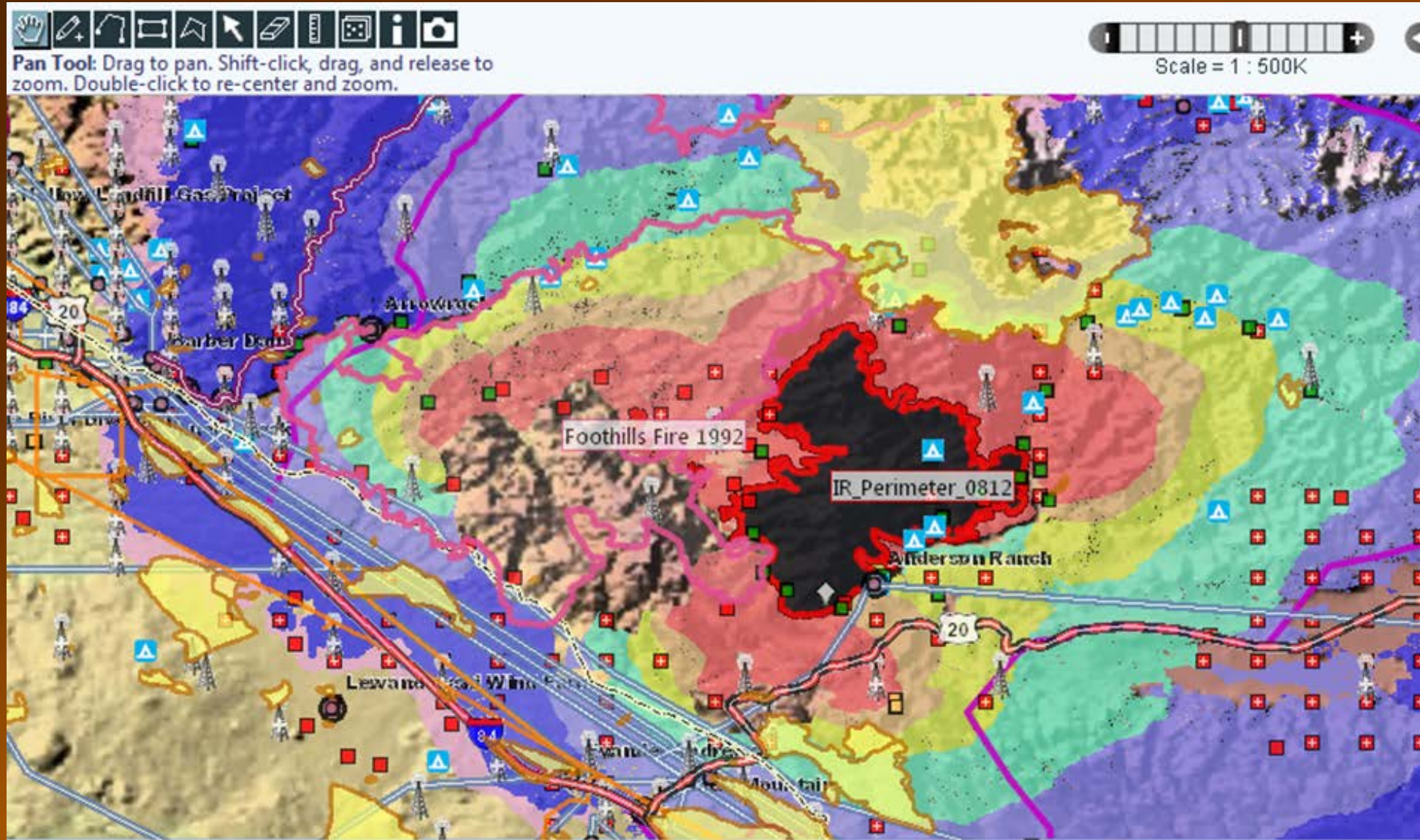
Flame Length Legend

Resolution: 30 meters Units: feet

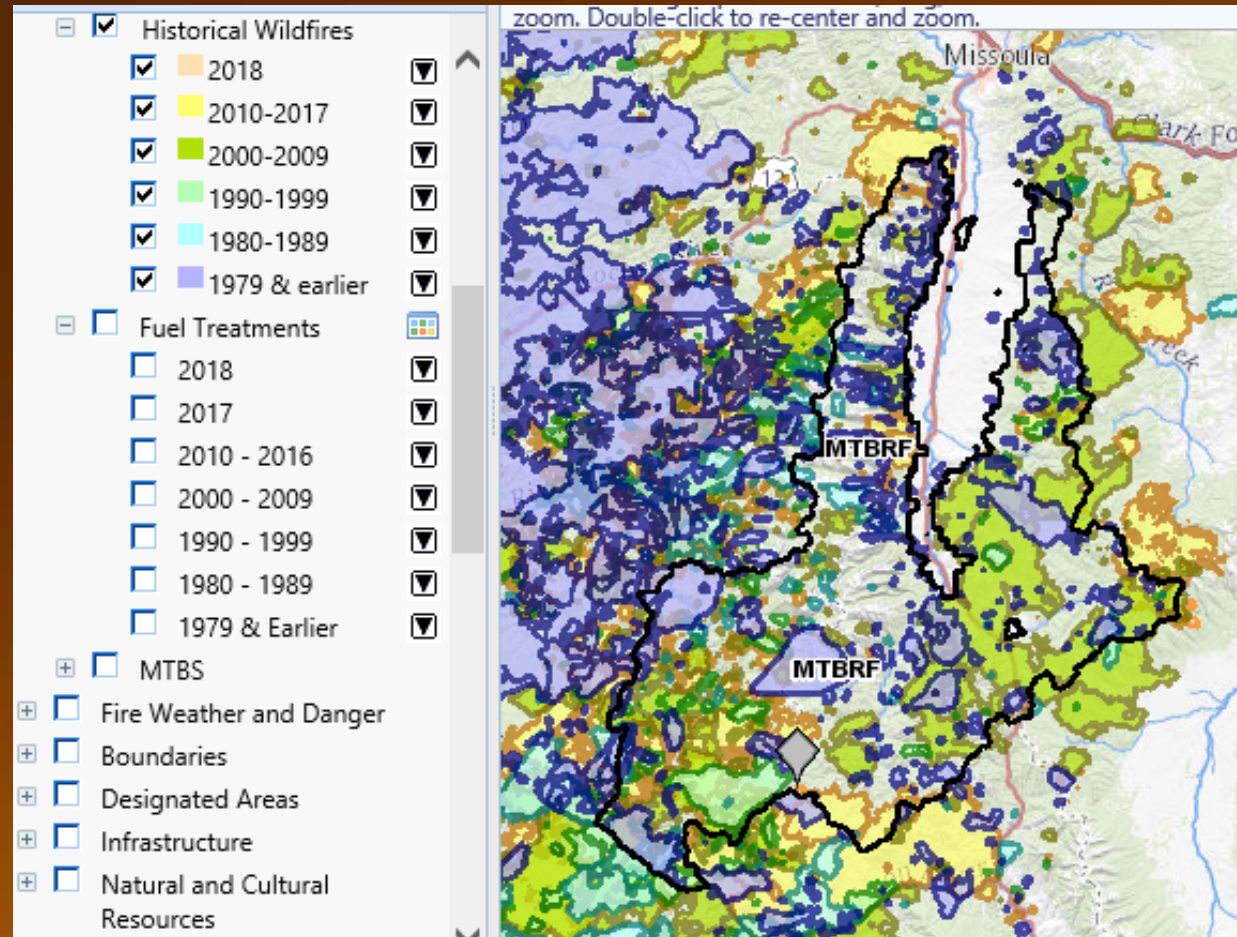
	Value	Freq
	No Fire	2,259
	0.00 - 1.09	54,281
	1.09 - 2.19	4,491
	2.19 - 3.28	12,203
	3.28 - 4.37	12,290
	4.37 - 5.47	10,136
	5.47 - 6.56	7,678
	6.56 - 7.66	5,334
	7.66 - 8.75	2,998
	8.75 - 9.84	1,434
	9.84 - 11.48	940
	11.48 - 13.12	372
	13.12 - 16.40	131
	16.40 - 19.69	5



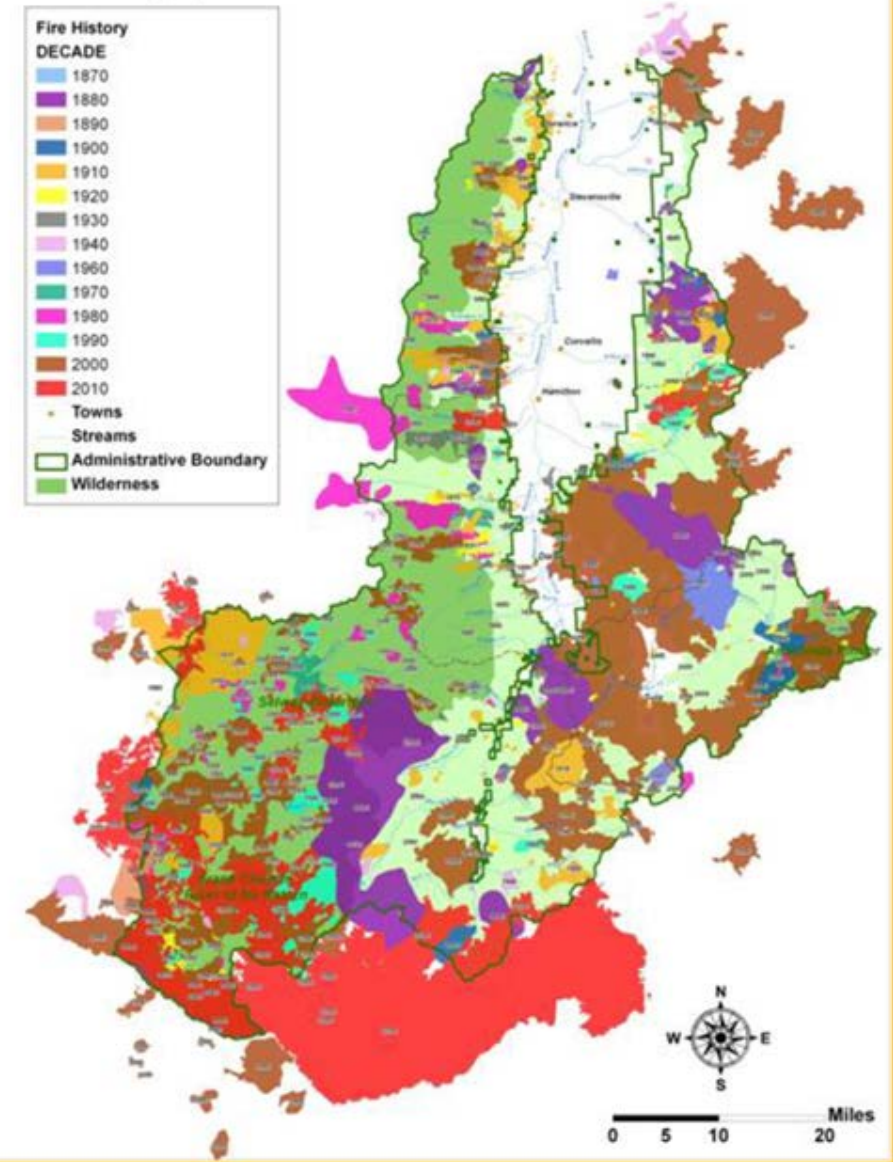
Probabilistic Fire Spread



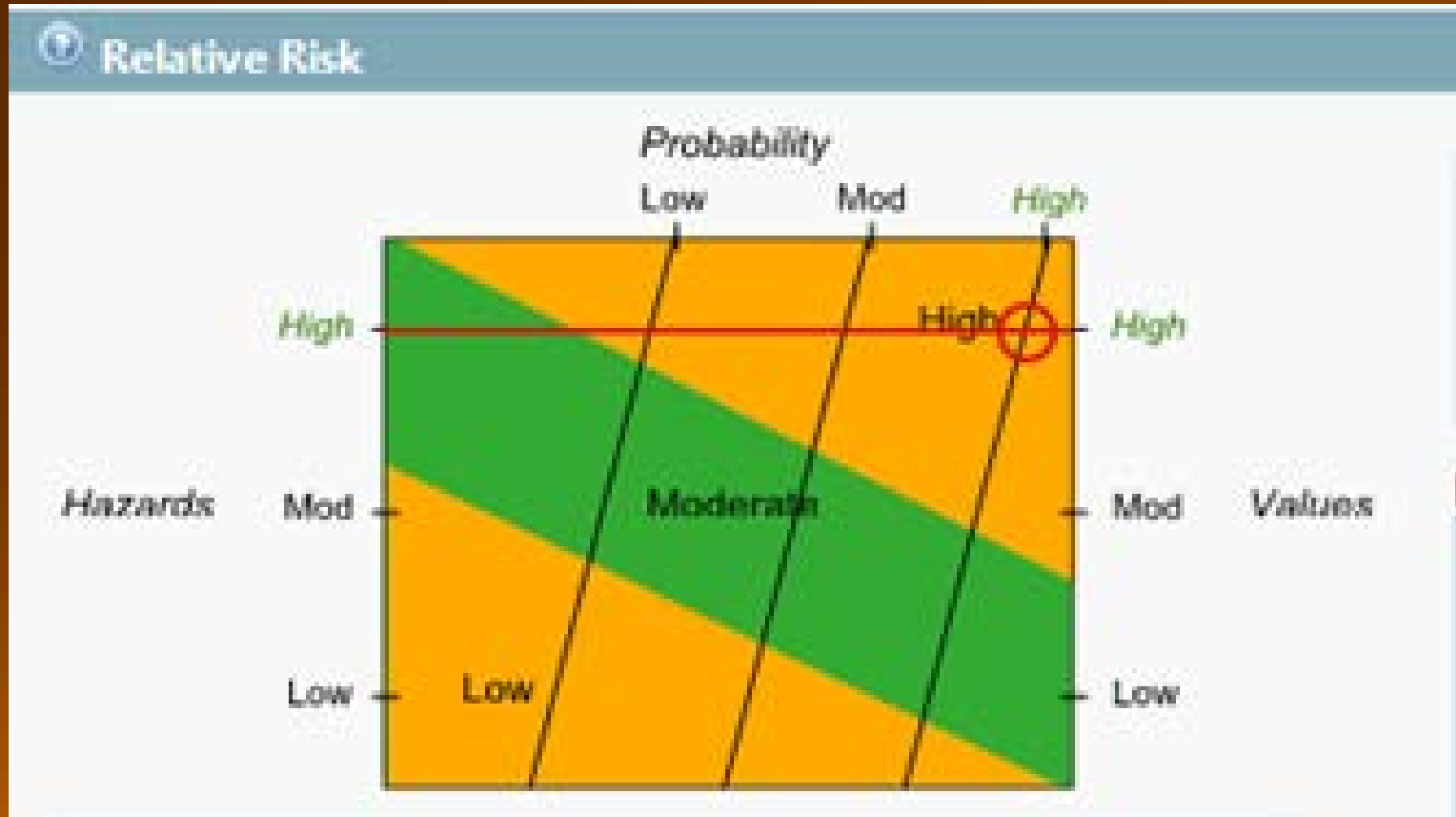
Fire History Maps



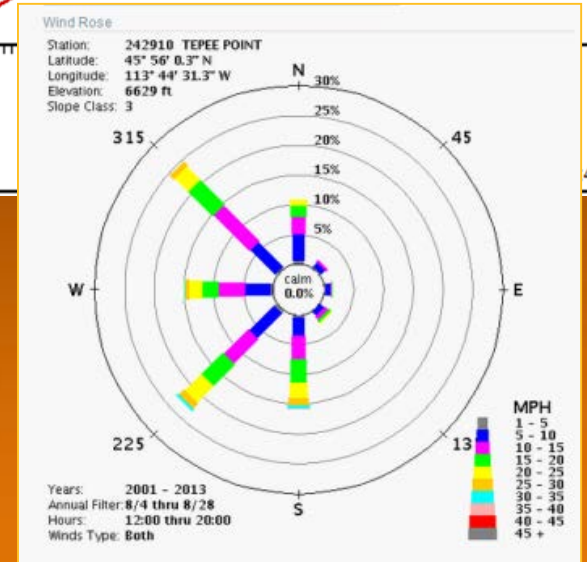
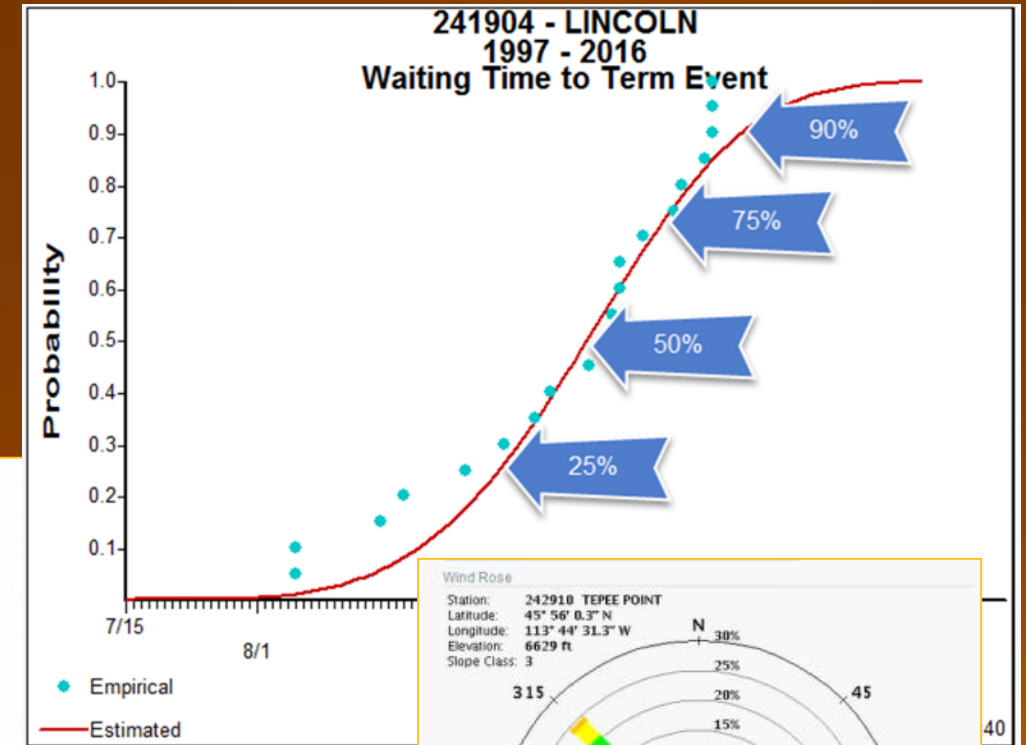
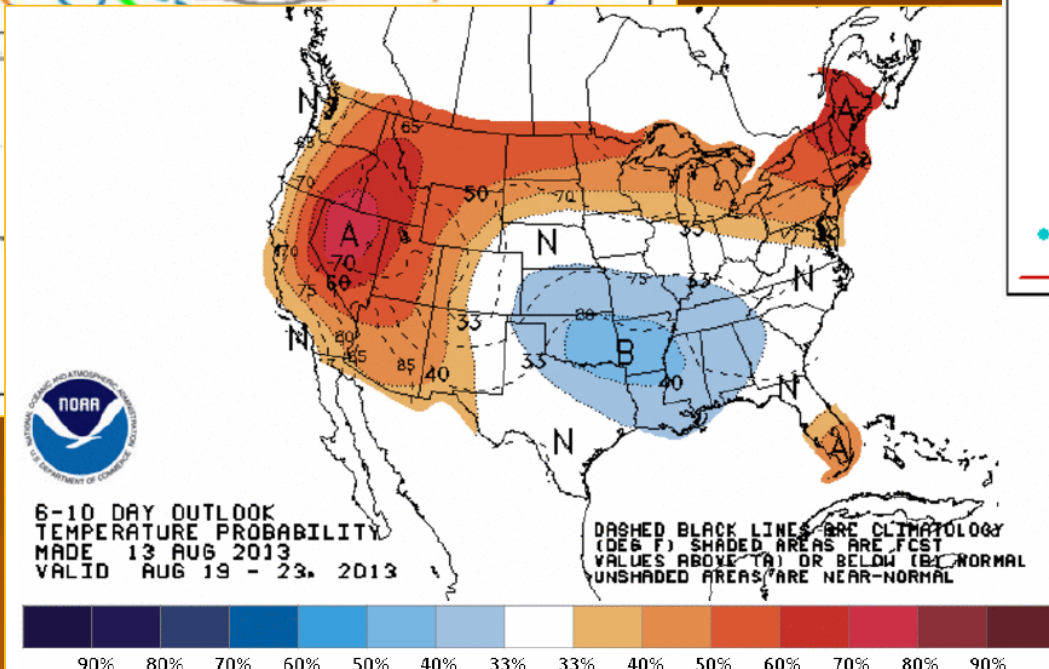
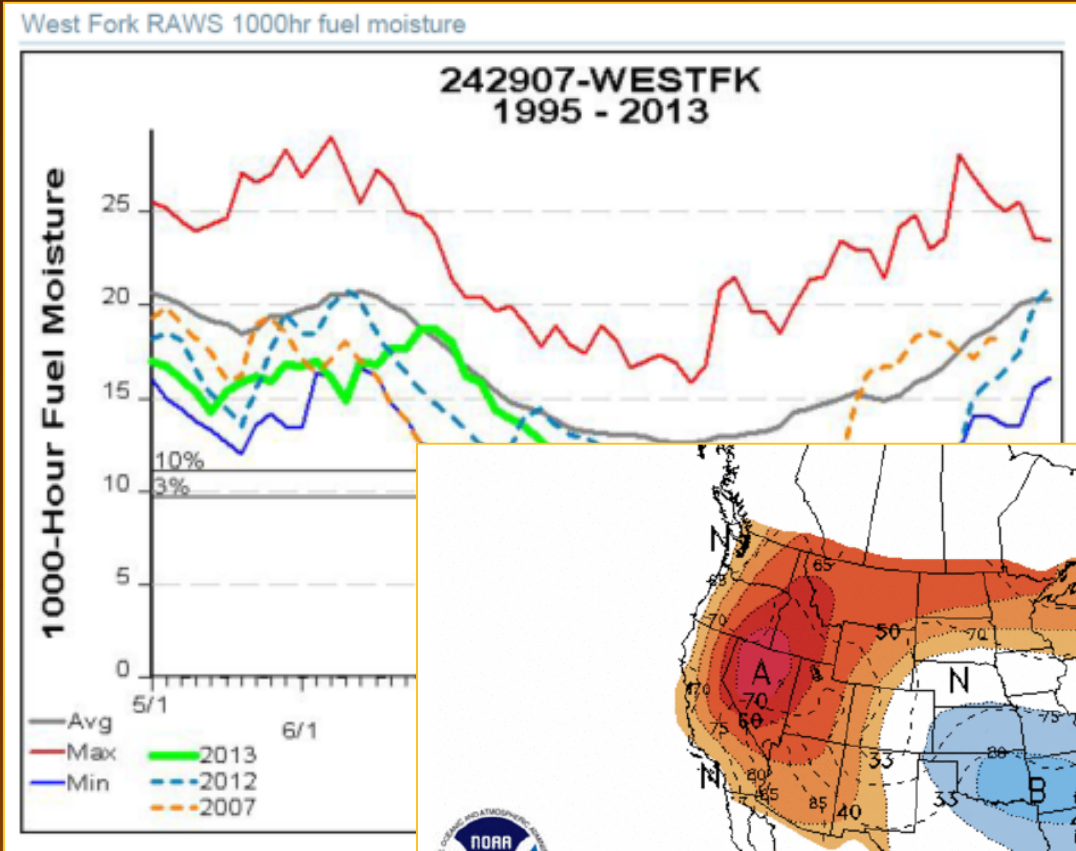
Bitterroot National Forest
Fire History by Decade



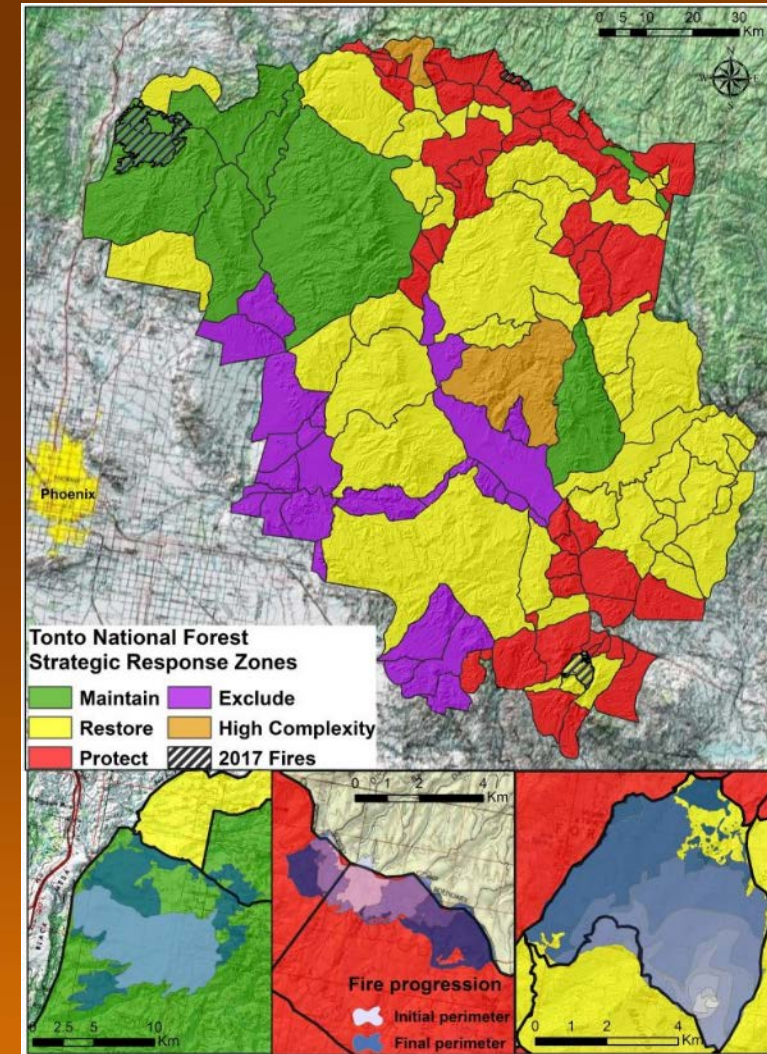
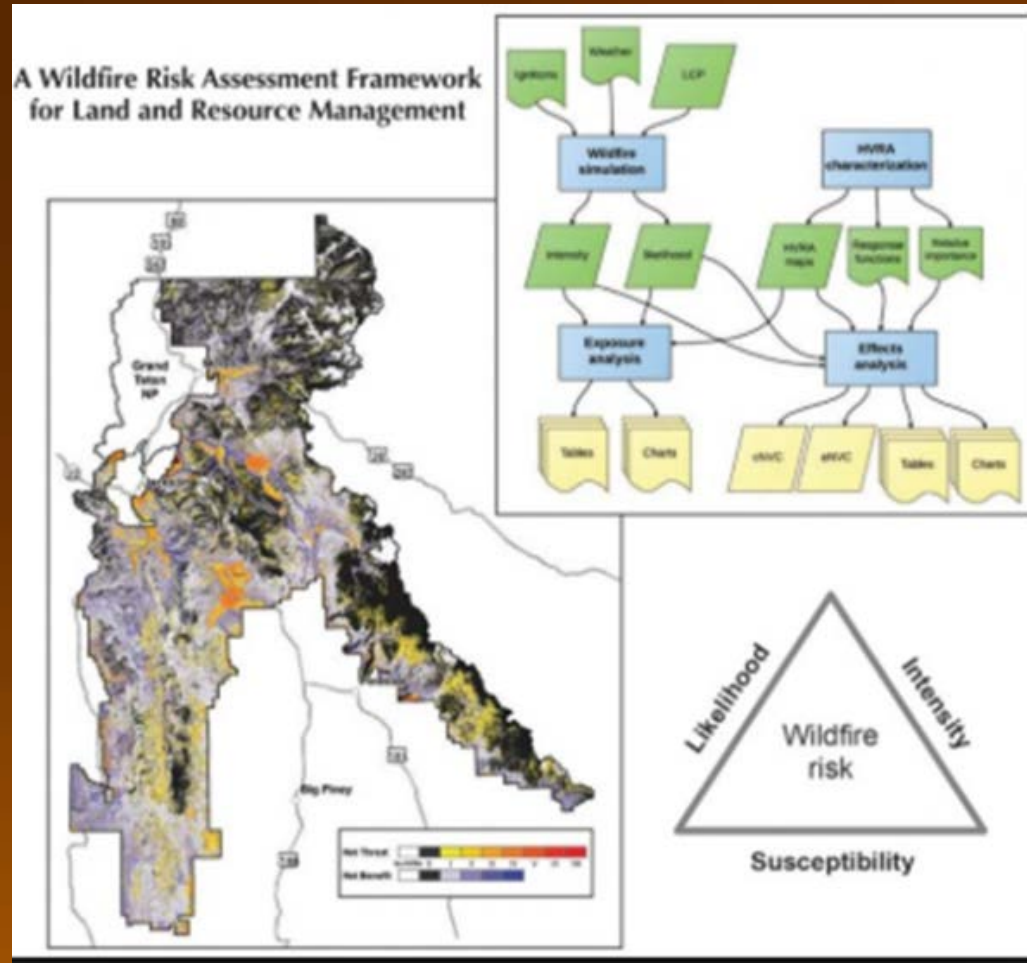
Relative Risk Assessment



Other (non-WFDSS) Tools



New Landscape Approaches



Susceptibility and Severity Analysis for Highly Valued Natural and Cultural Resources

Description of Valued Resource or Asset	Unit's Priority (A=Highest)	Susceptibility Notes	Tolerated and Predicted (Outlined) Fire Types Based on Wx ¹			Probability
			Surface (Low)	Passive (Moderate)	Active (High)	No Fire 80-100% 60-79% 40-59% 20-39% 5-19% <0.2%
Priority #1 is Firefighter and Public Safety (WUI is addressed with Management Action Points)	A	n/a	n/a	n/a	n/a	7-day Probability (Analysis Date) ² Current Operation ³
Occupied & Designated Critical Habitat for Bull Trout (Beaver Creek)	B	Effects depend on burn severity and post fire storm events (Suppression effects not addressed here). Retain vegetation buffer.	Acceptable	Acceptable	Undesirable	Current Ops
Occupied & Designated Critical Habitat for Bull Trout (Copper Creek)	B	Effects depend on burn severity and post fire storm events (Suppression effects not addressed here). Retain vegetation buffer.	Acceptable	Acceptable	Undesirable	Current Ops
Lincoln Gulch Cemetery	A	Susceptible to fire & suppression damage; site still in use.	Undesirable	Undesirable	Undesirable	MAP 19
Timber values near Stonewall Cr	B	Fire that damages value of timber is not Acceptable.	Acceptable	Undesirable	Undesirable	MAP 21

What Does the Future Hold?

The
only thing that is
not going to
change is the fact
that things will
always
change

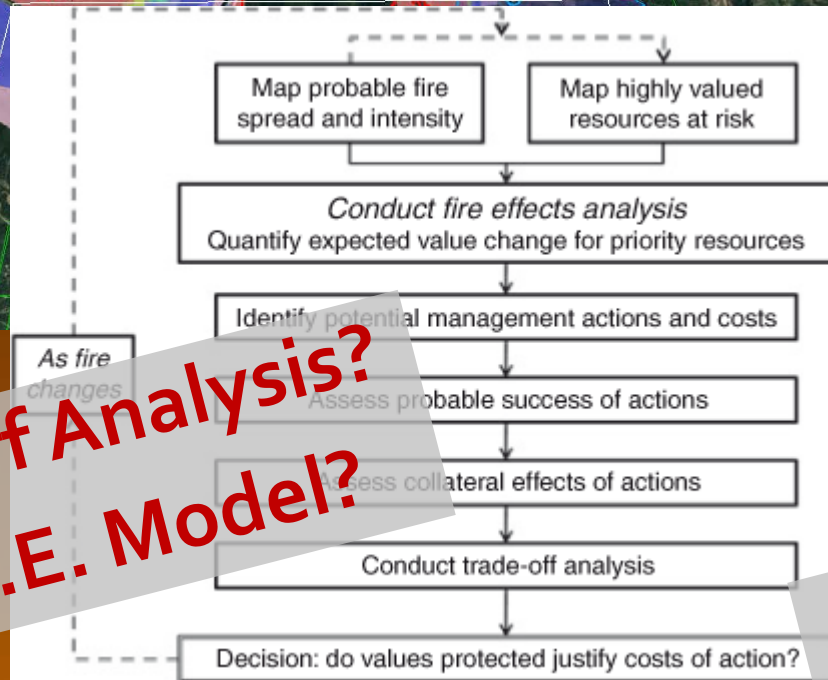
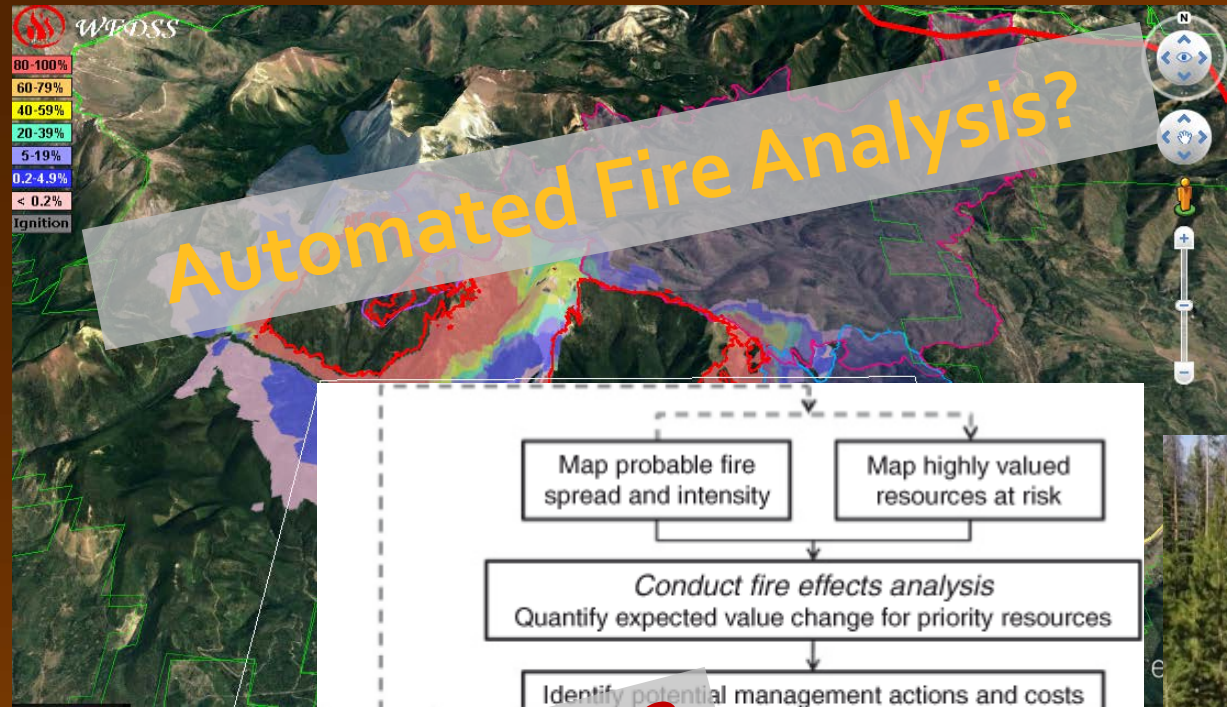


Catalysts for Policy Changes?

- 2018 Camp Fire, California
- 2019 Dingell Act (Wildfire Modernization)



Future Fire Management Tools?



Workforce?

Decision Criteria Checklist

Decision Element

Is there a threat to life, property, or public and firefighter safety that cannot be mitigated?

Are potential effects on cultural and natural resources unacceptable?

Are there other agency administrator issues that preclude successful management of this fire?

Are there other agency administrator issues that preclude wildland fire use?

Are there other agency administrator issues that preclude wildland fire use?

The Decision Criteria Checklist is a implementation. A "Yes" response should be suppression-oriented.

Approved Response Action (check one)

Suppression Response

Wildland Fire Use Response

Justification for Suppression

Yes No

Bring Back Processes?

A Publication of the
USFS National Line Officer Team

Task Book for the Positions of:

AGENCY ADMINISTRATOR
(Working, Journey, Advanced, Low, Moderate, High)

May 2019

AA Taskbooks

Home Unit/Agency:

Home Unit Phone Number:

Task Book Initiated By:

Official's Name:

Home Unit Title:

Home Unit/Agency:

Home Unit Phone Number:

Home Unit Address:

Date Initiated:

Easier Now or Later?

- TECHNOLOGY? Better and improving.
- ANALYTICS? Better and improving.
- POLITICS? We have a lot of work to do in the social sciences and messaging.
- MANAGEMENT? A lack of “fire use” IMTs hinders progress.



STILL HAVE Q's?

Contact us:

WFDSS Feedback Button
208.387.5253 on WFDSS Homepage

WFM RD&A website:
<https://wfmrda.nwcg.gov/>



This block contains three overlapping screenshots of web interfaces. The top screenshot shows the WFDSS homepage with a navigation menu and a "Help | Feedback" button highlighted by a red box. A blue arrow points to this button with the text "Send Feedback from the page you are visiting in WFDSS". The bottom-left screenshot shows the WFDSS "Home" page with a "Welcome!" message and a "WFDSS Help Desk" section. A red arrow points to the "Analysis & Decision Content Support" link in the help desk. The bottom-right screenshot shows the WFM RD&A homepage with a banner for "MOBILE TECHNOLOGY IN WILDLAND FIRE" and several featured sections: "Technology Transfer", "Decision Support", "Fuels & Fire Ecology", and "Weather Climate & Smoke".



Thank You

Tonja Opperman

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406-461-0780

Decision Support Phone

208-387-5253