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

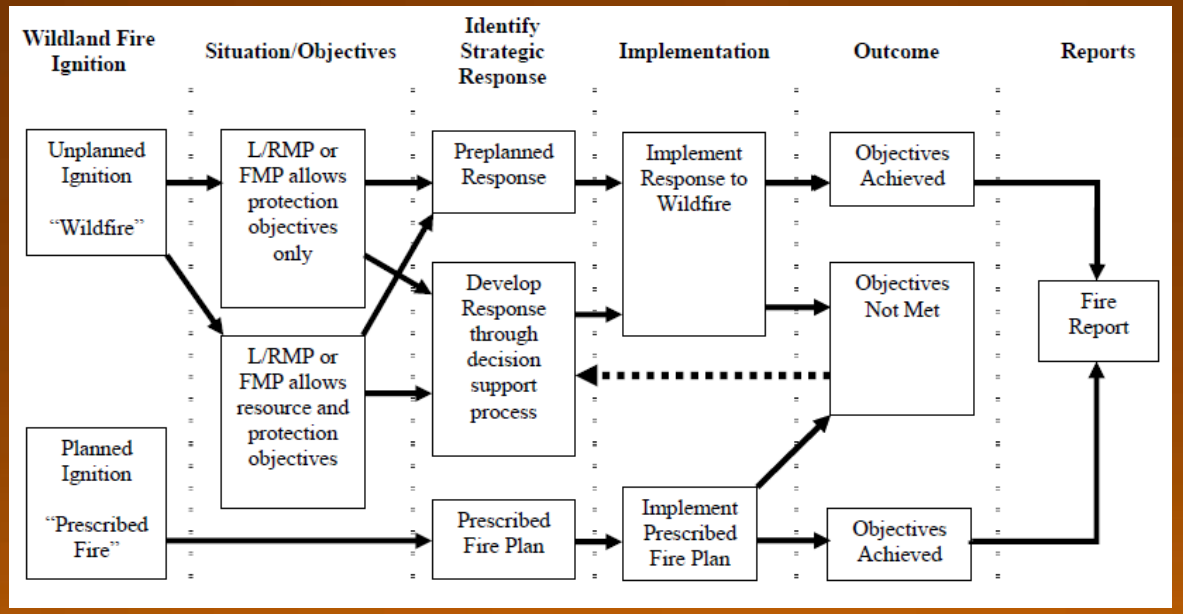
Fire Use Guidance (2009)

#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.

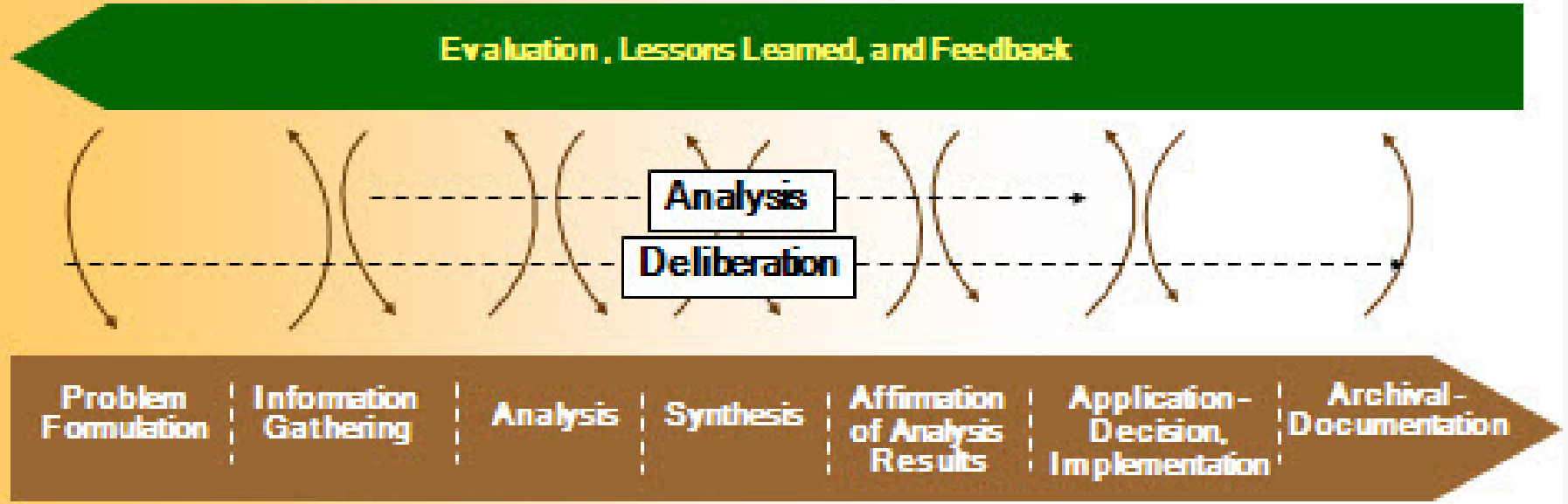


The old 'EFSA/WFSA' compared Alternatives (until 2008)

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

Risk Informed Decision Process and WFDSS

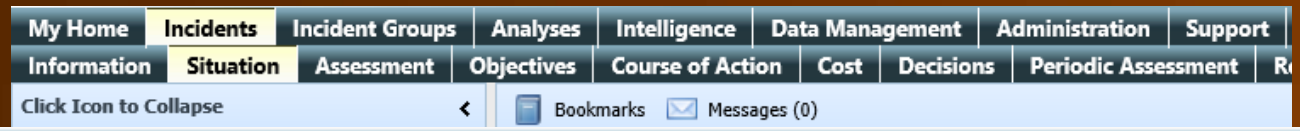
Deliberative Risk Analysis



WFDSS Alignment with Deliberative Risk Analysis

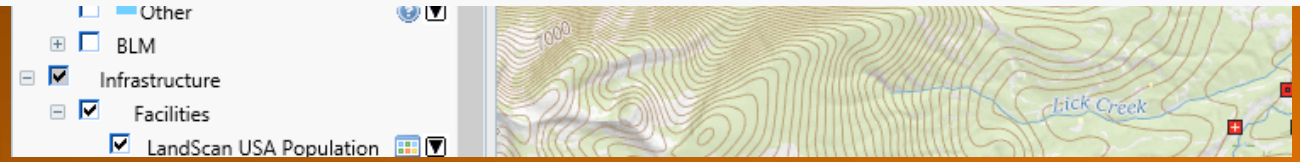
WFDSS-Based Tools

Planning Area & Values

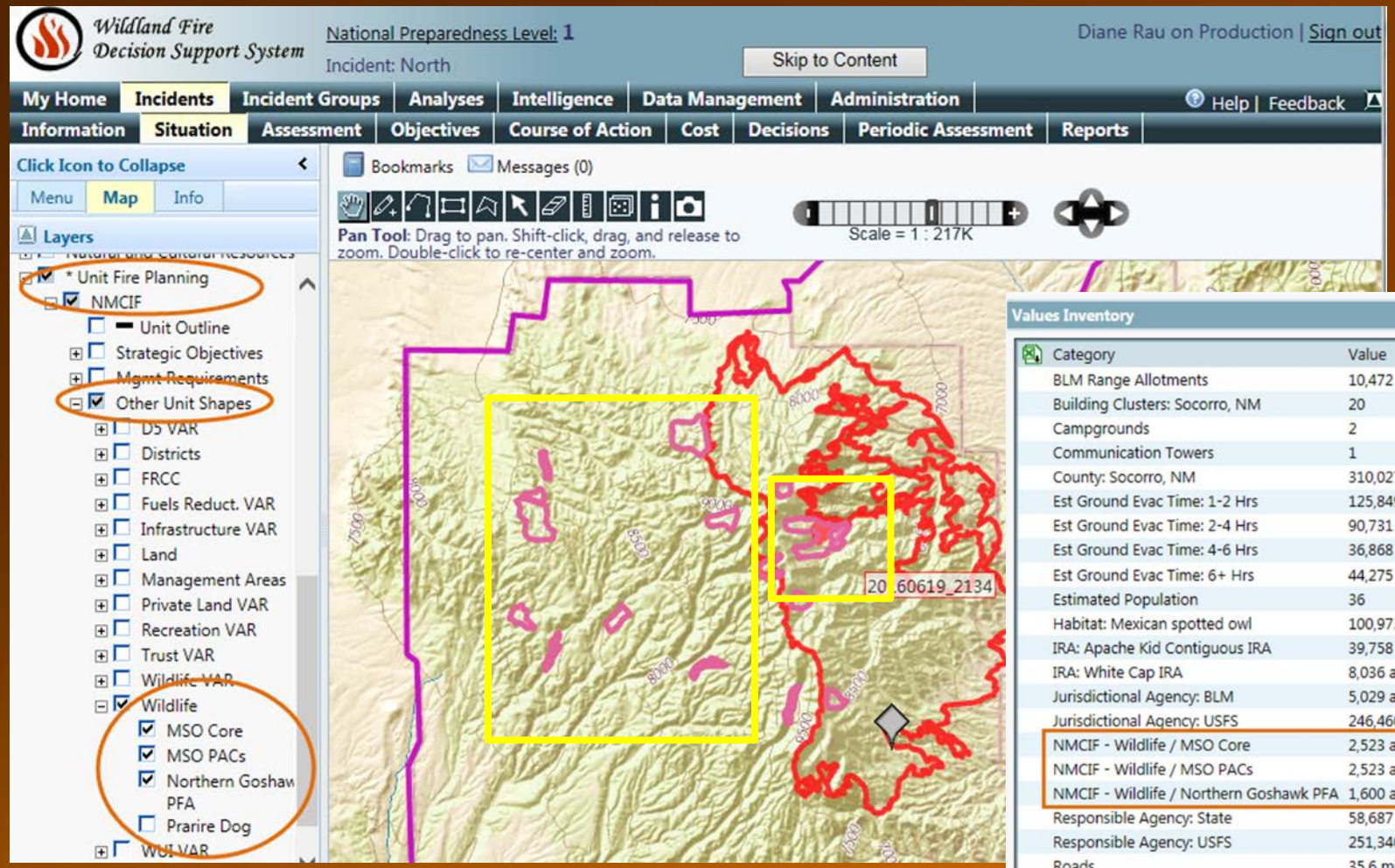


Values Inventory

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



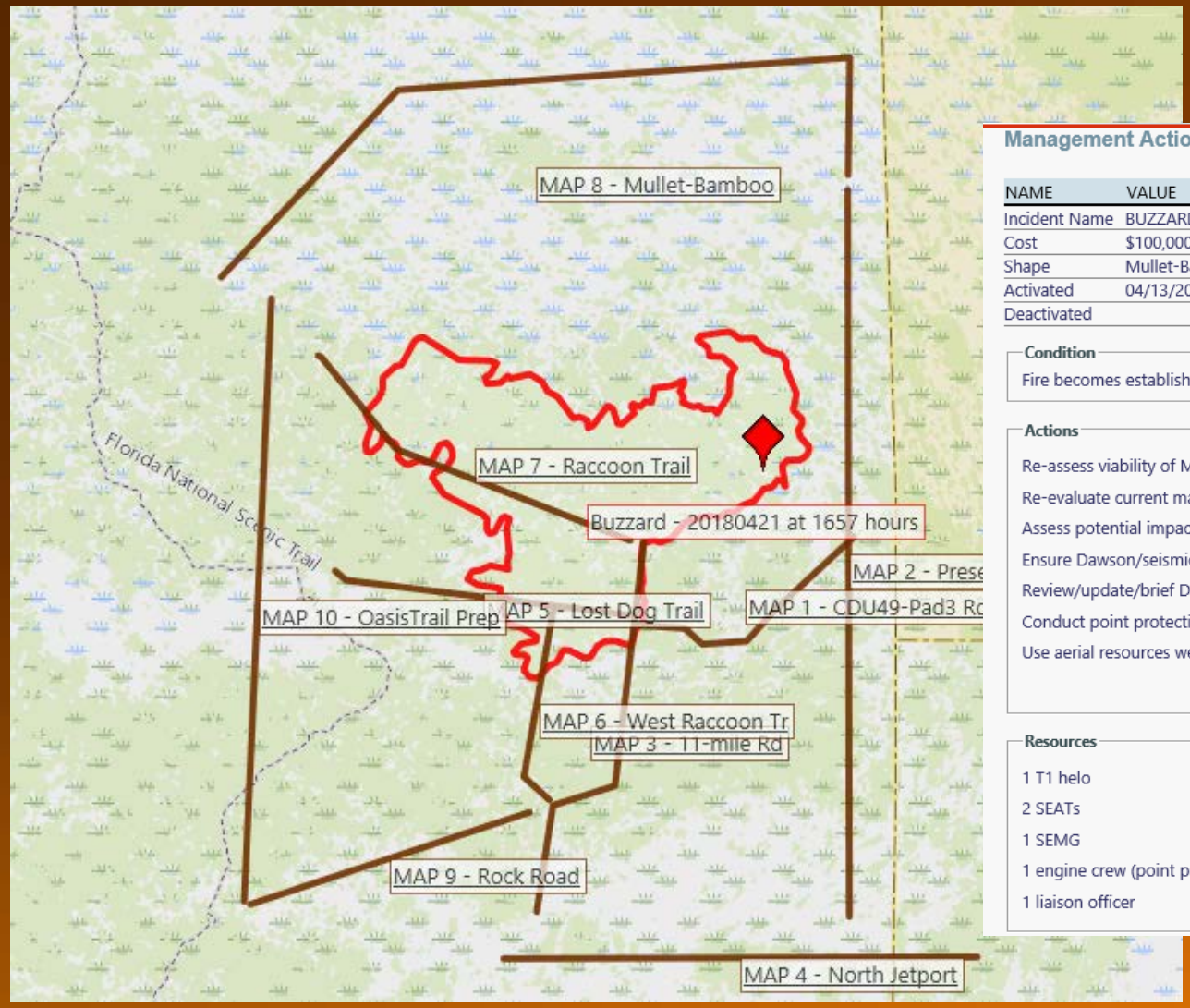
WFDSS: Request a WFDSS walk-thru…



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 sould threaten seismic exploration

Conduct point protection as needed

Use aerial resources were 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

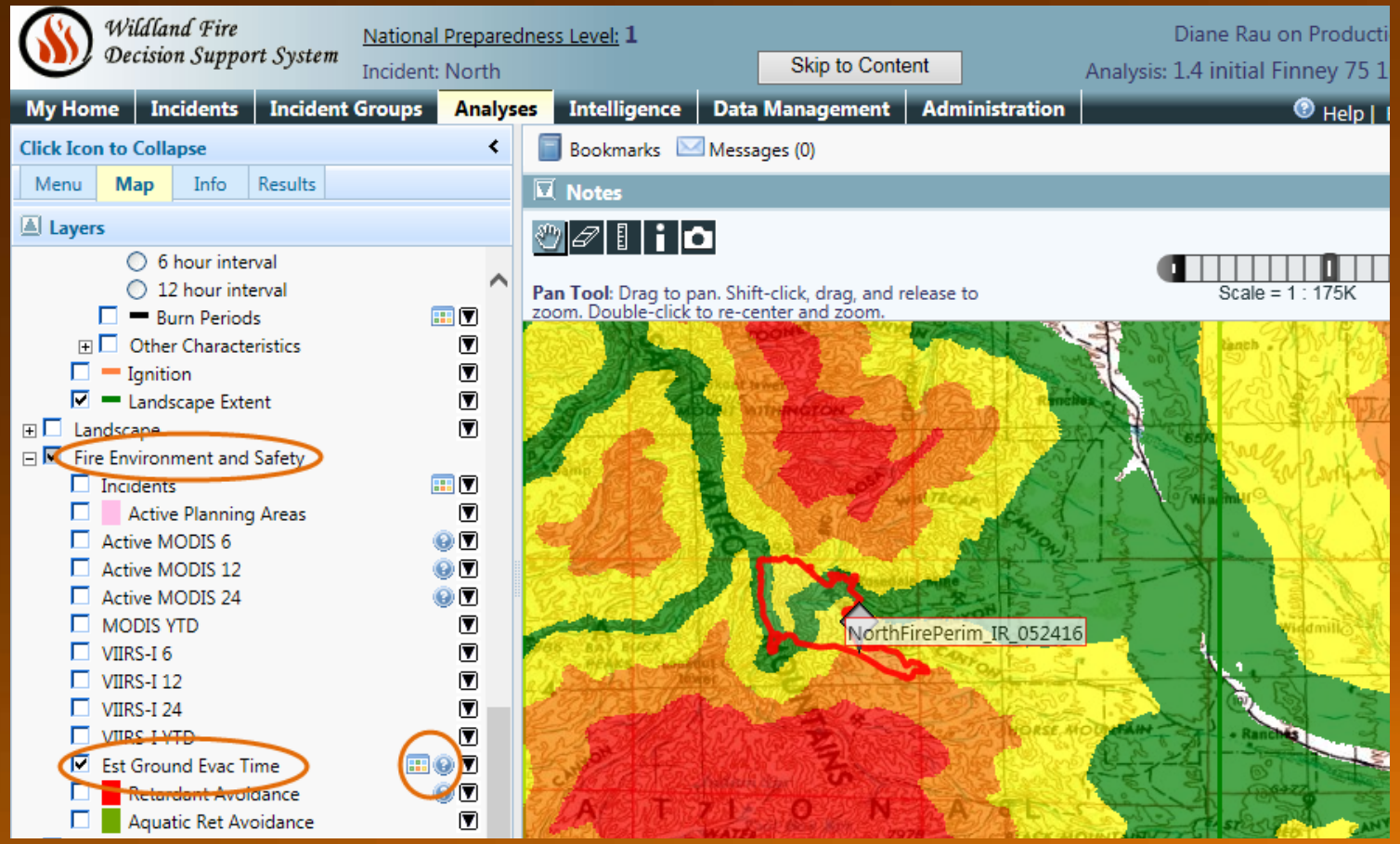
1 SEMG

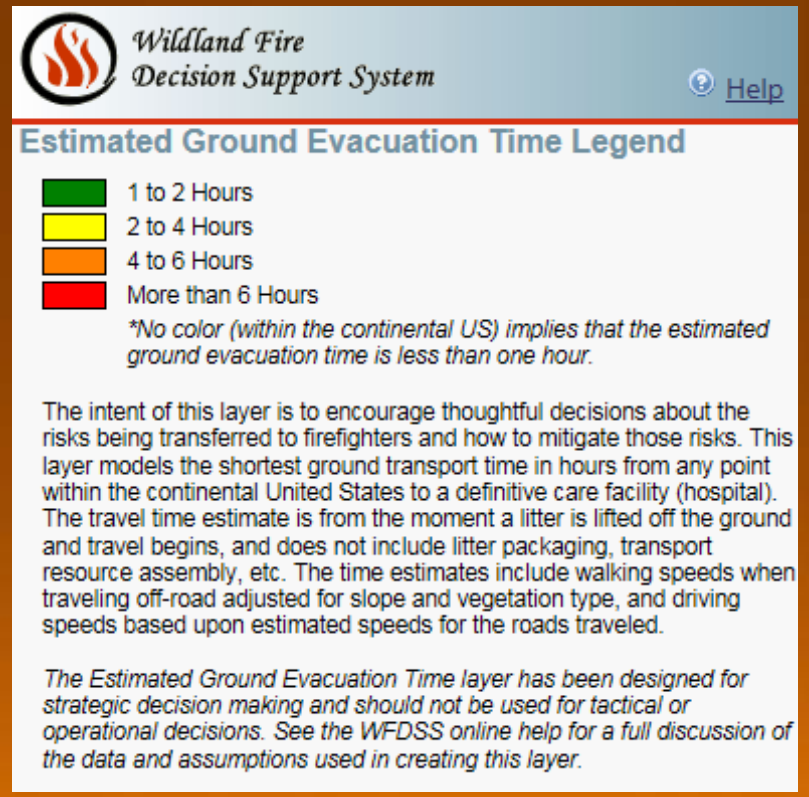
1 engine crew (point protection)

1 liaison officer

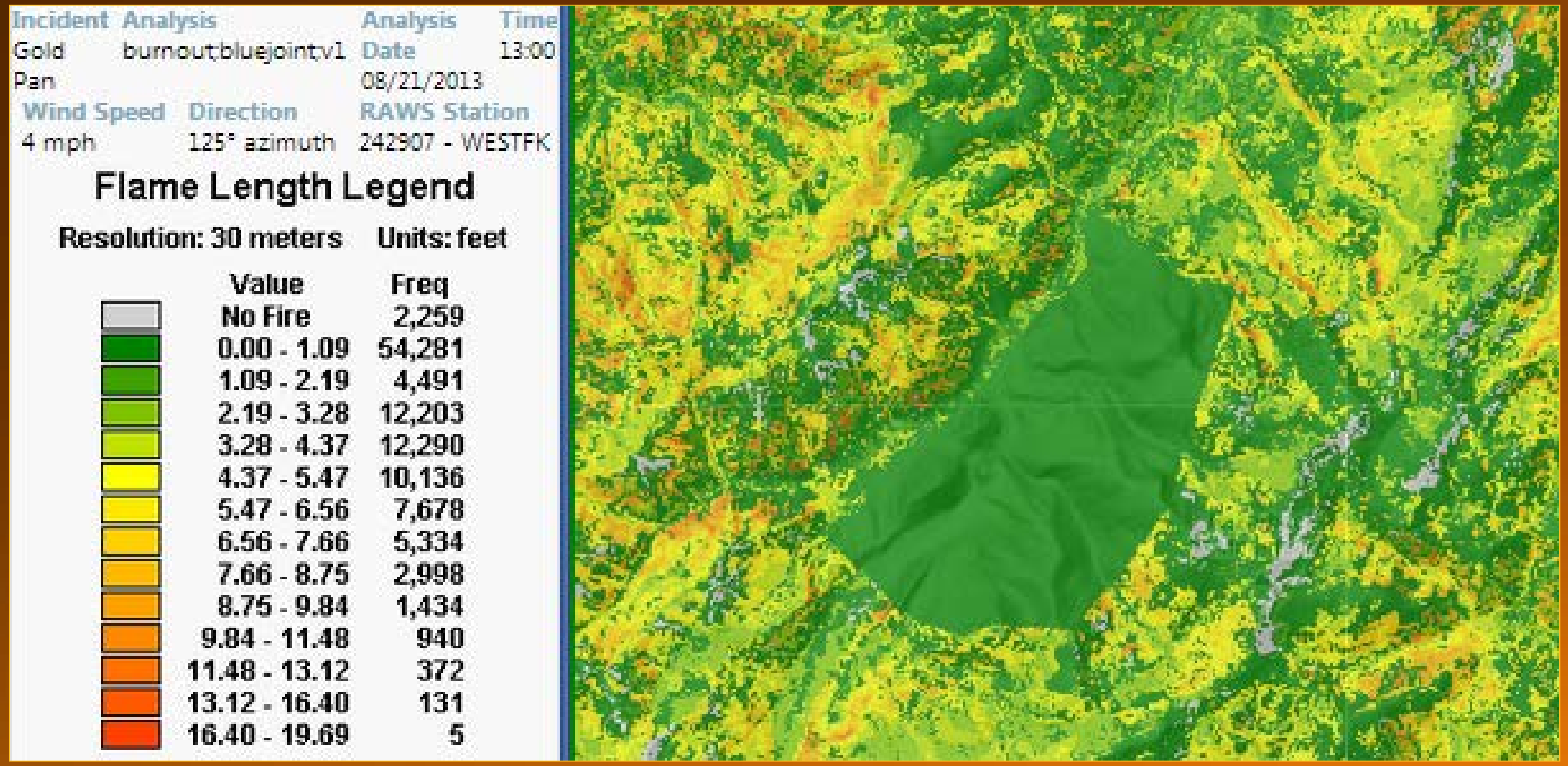
Estimated Firefighter Evacuation Layer

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

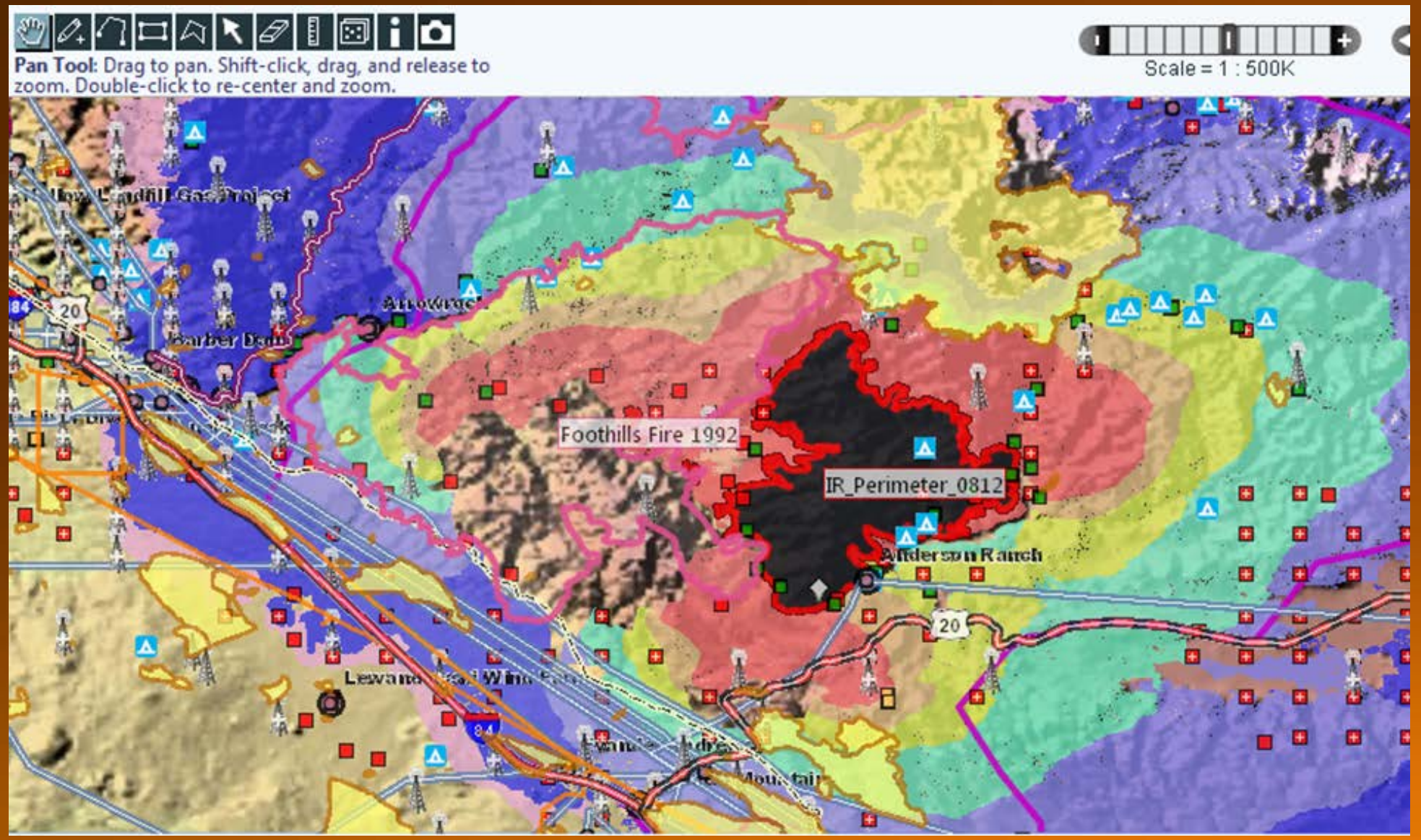




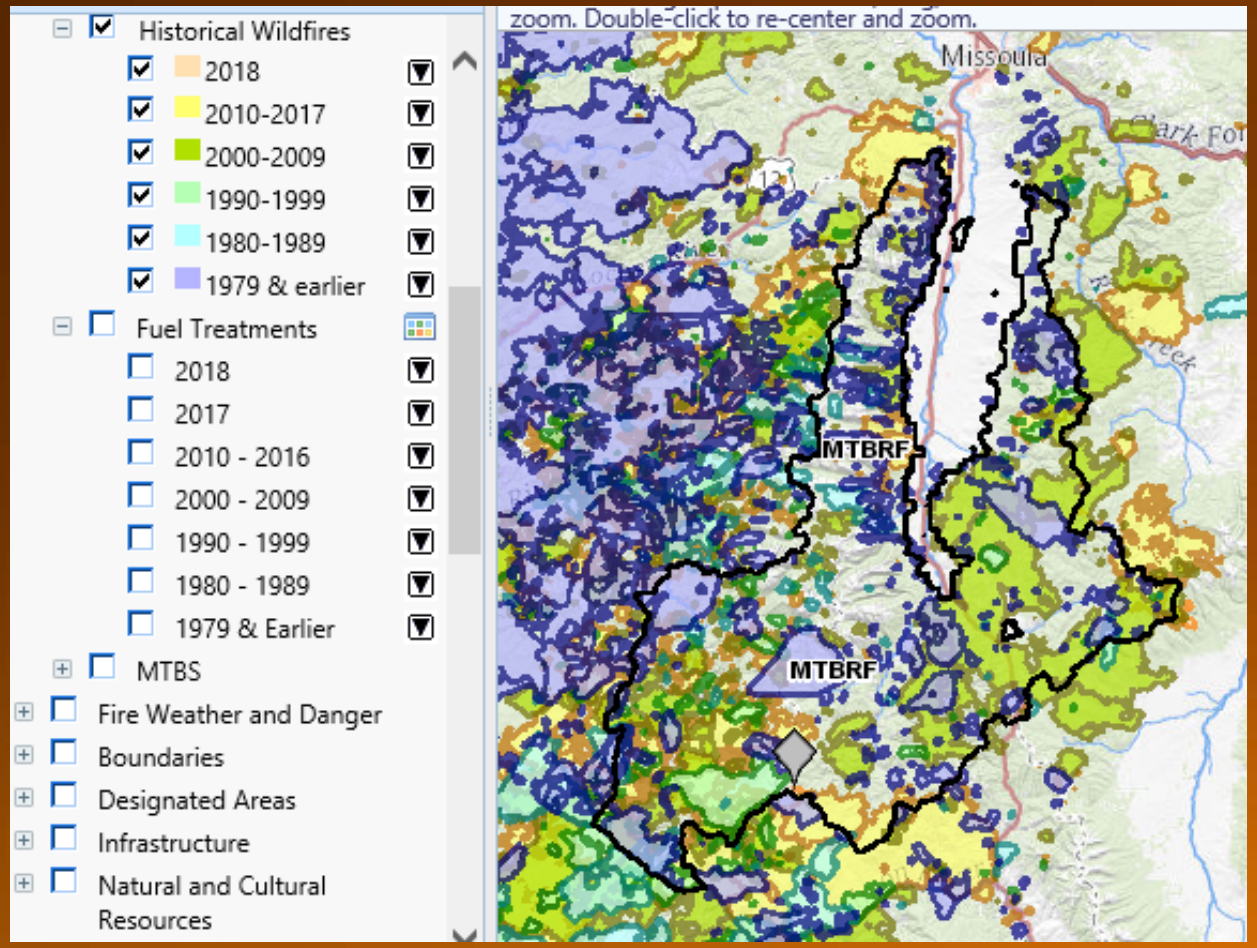
Basic Spatial Fire Behavior

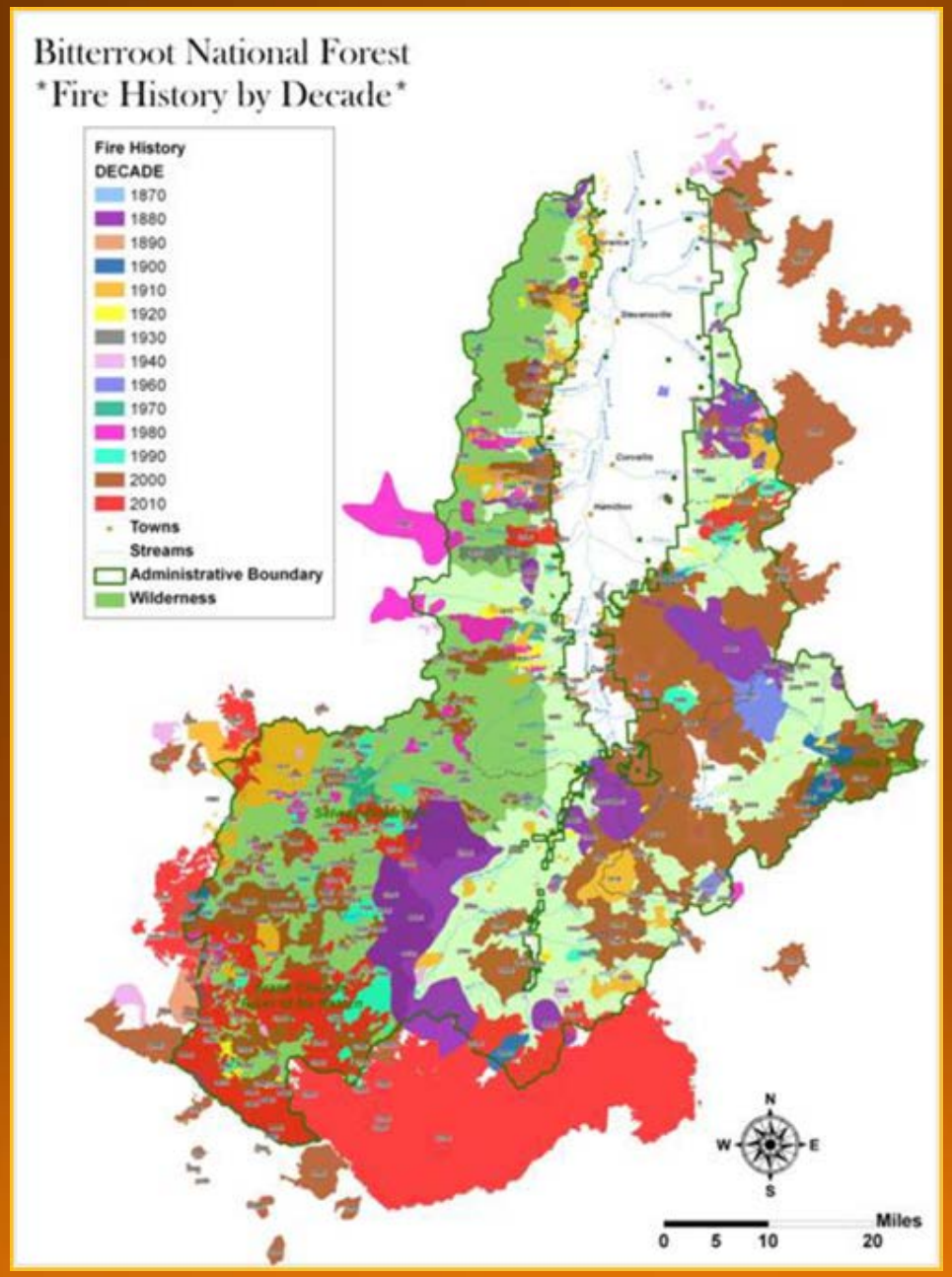


Probabilistic Fire Spread

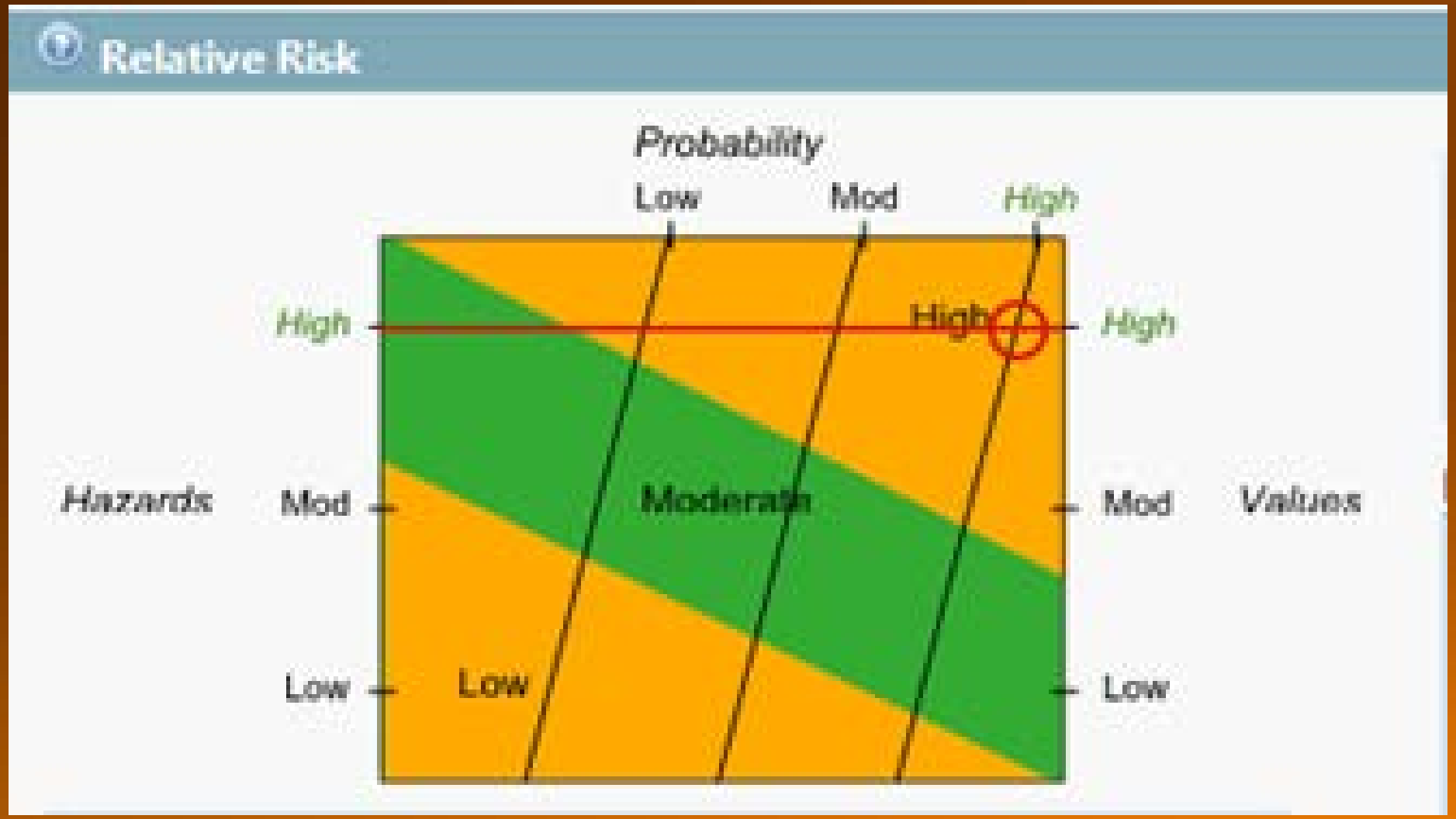


Fire History Maps

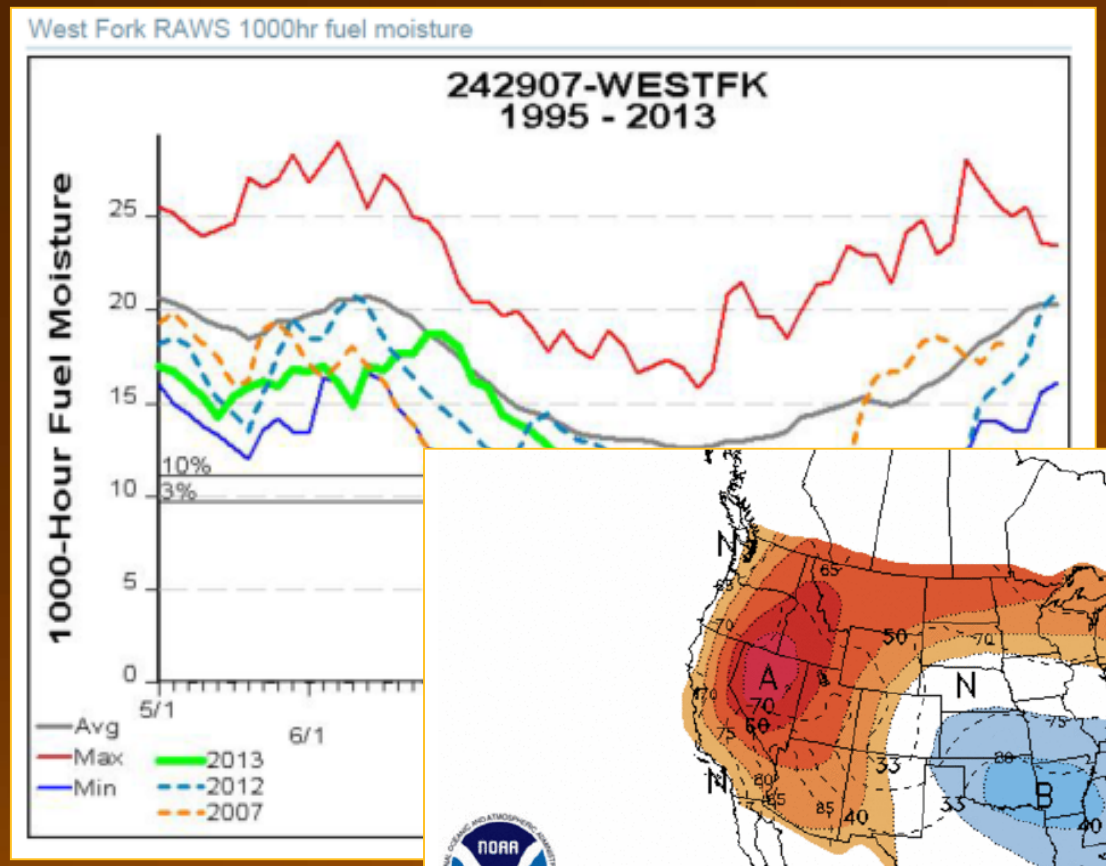


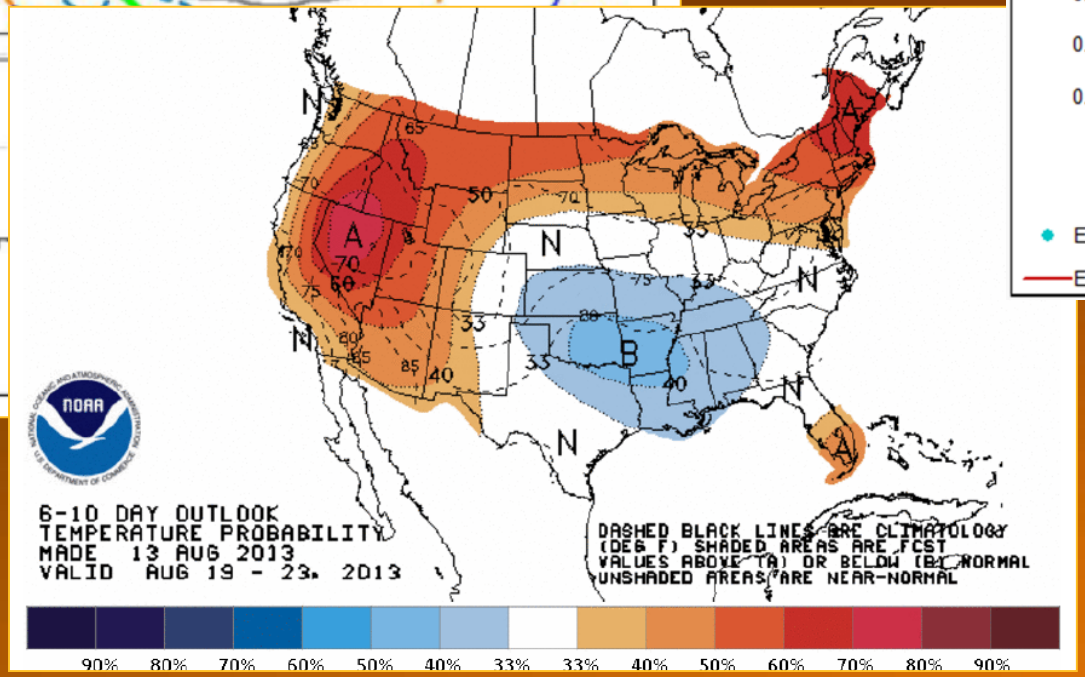


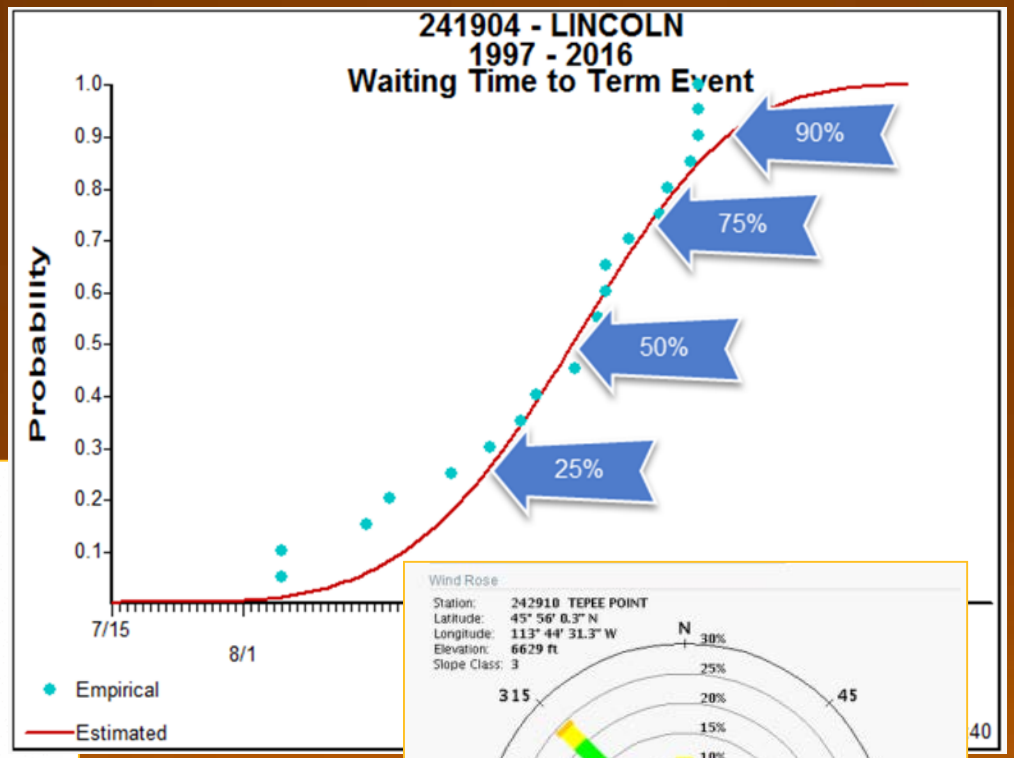
Relative Risk Assessment

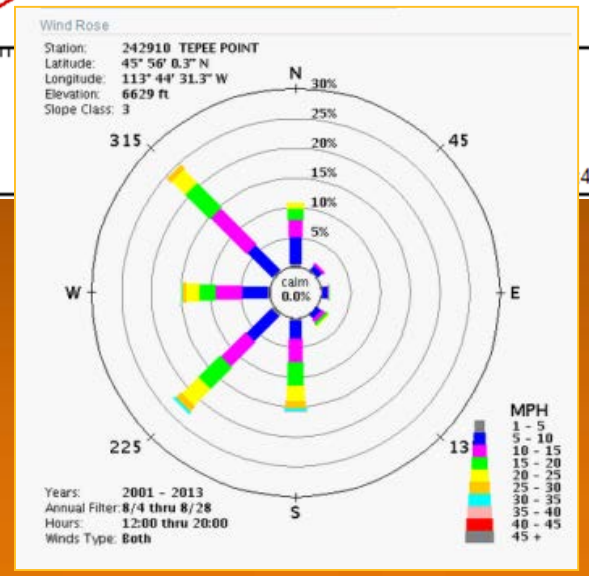


Other (non-WFDSS) Tools

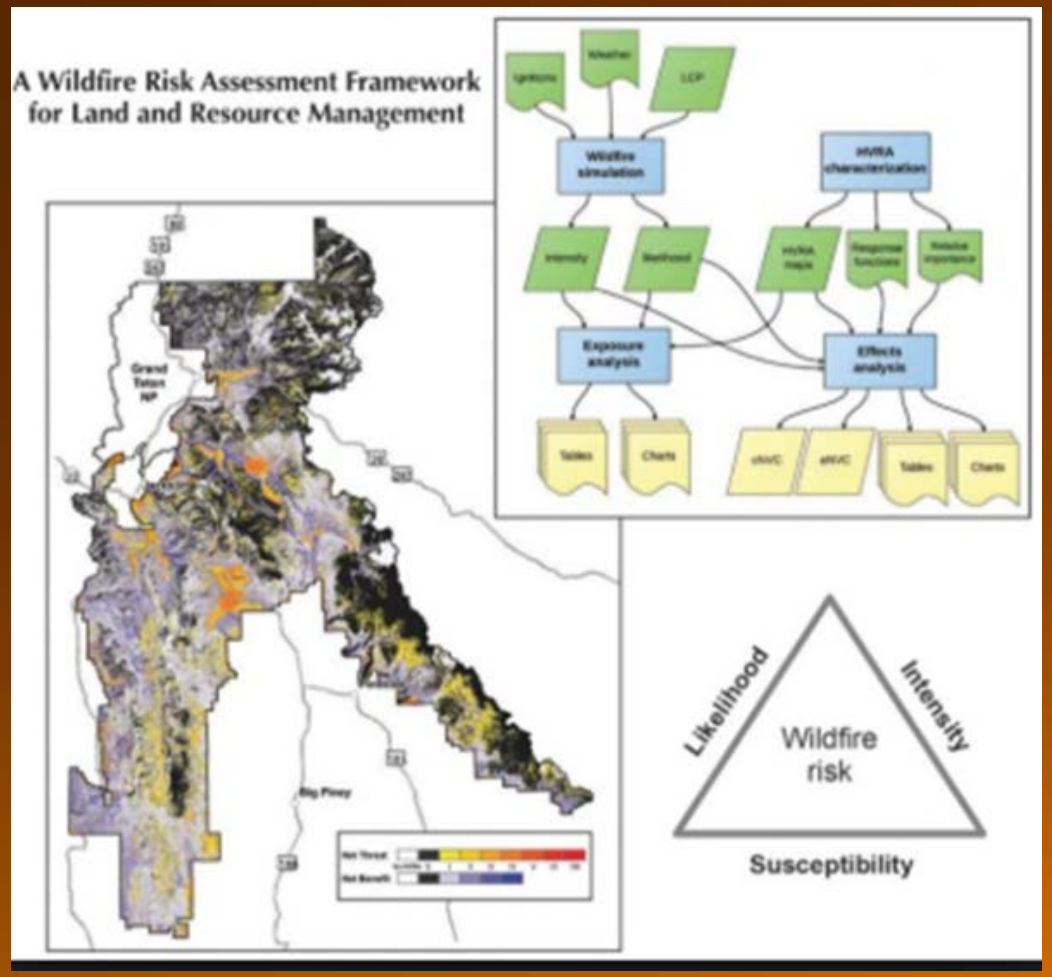


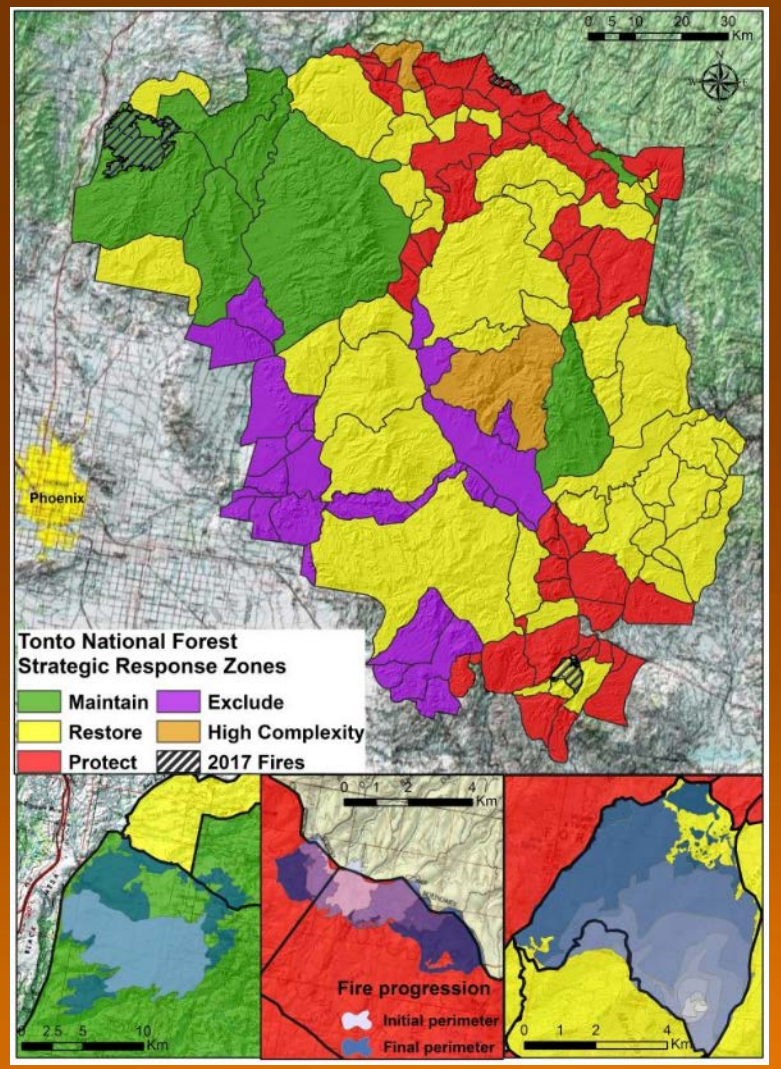






New Landscape Approaches





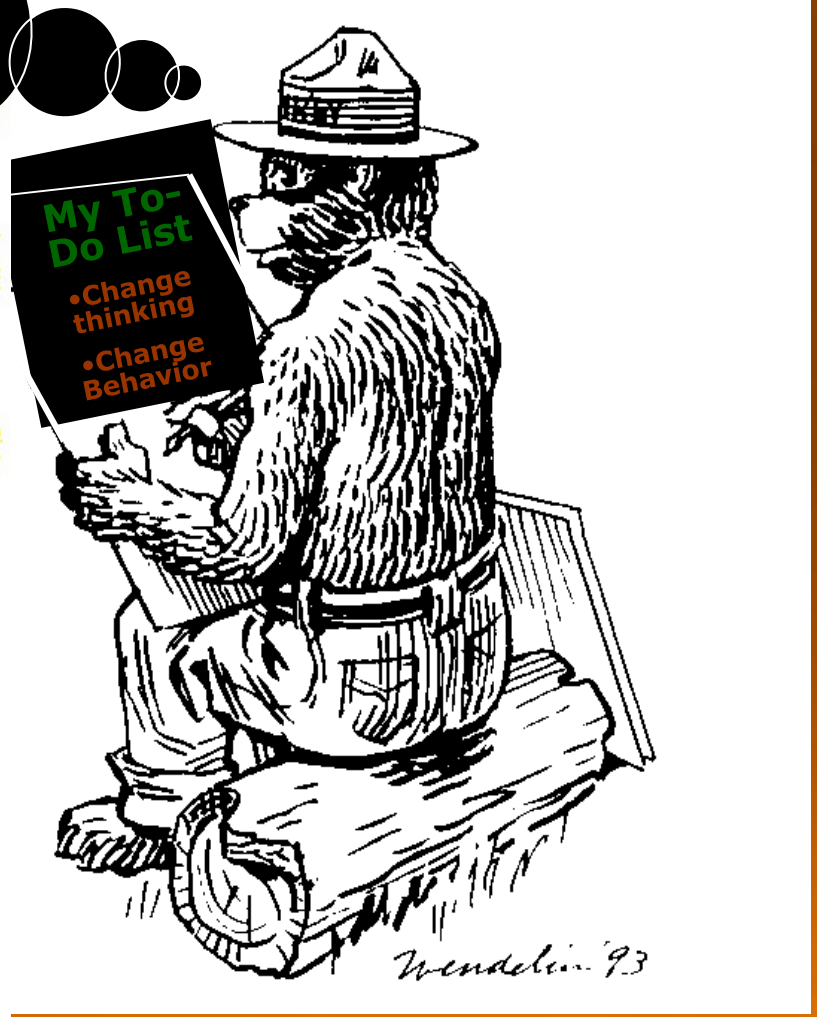
Susceptibility and Severity Analysis for Highly Valued Natural and Cultural Resources

Probability
No Fire
80-100%
60-79%
40-59%
20-39%
5-19%
<0.2%

Description of Valued Resource or Asset	Unit's Priority (A=Highe)	Susceptibility Notes	Tolerated and Predicted (Outlined) Fire Types Based on Wx[1]			
			Surface (Low)	Passive (Moderate)	Active (High)	7-day Probability (Analysis Date)[2]
Priority #1 is Firefighter and Public Safety (WUI is addressed with Management Action Points)	A	n/a	n/a	n/a	n/a	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 stil 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?

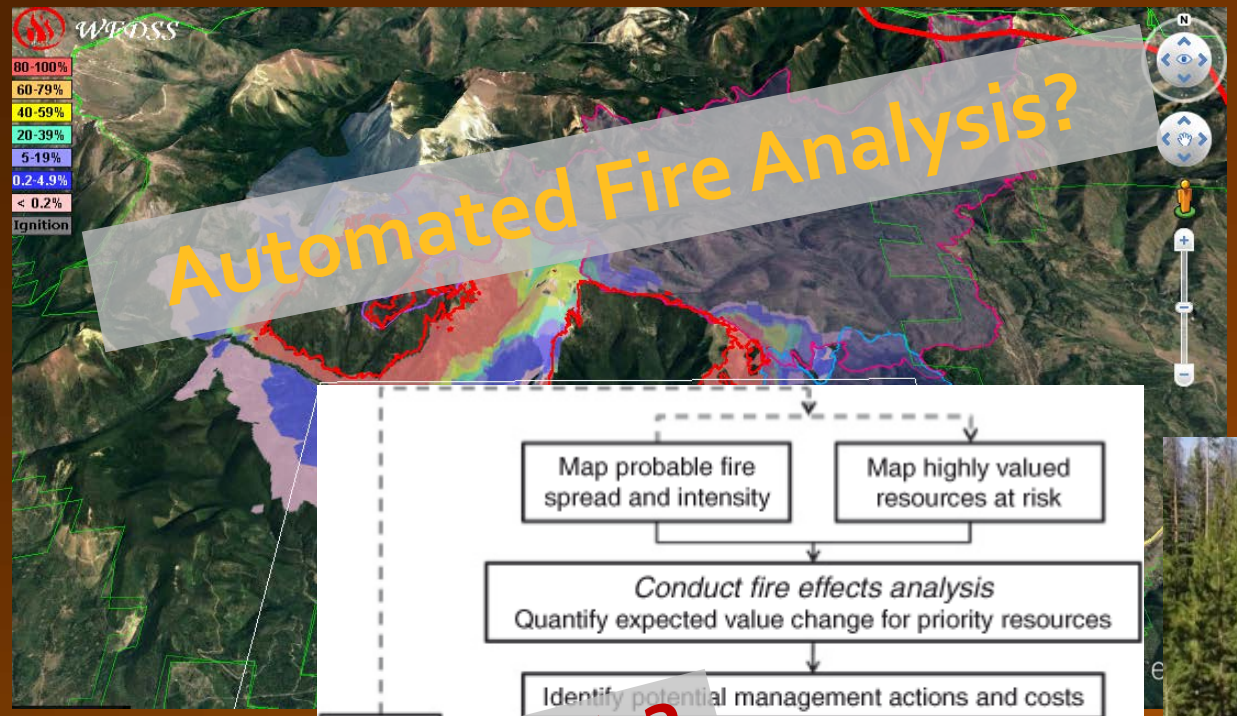
The only thing that is not going to change is the fact that things will always change



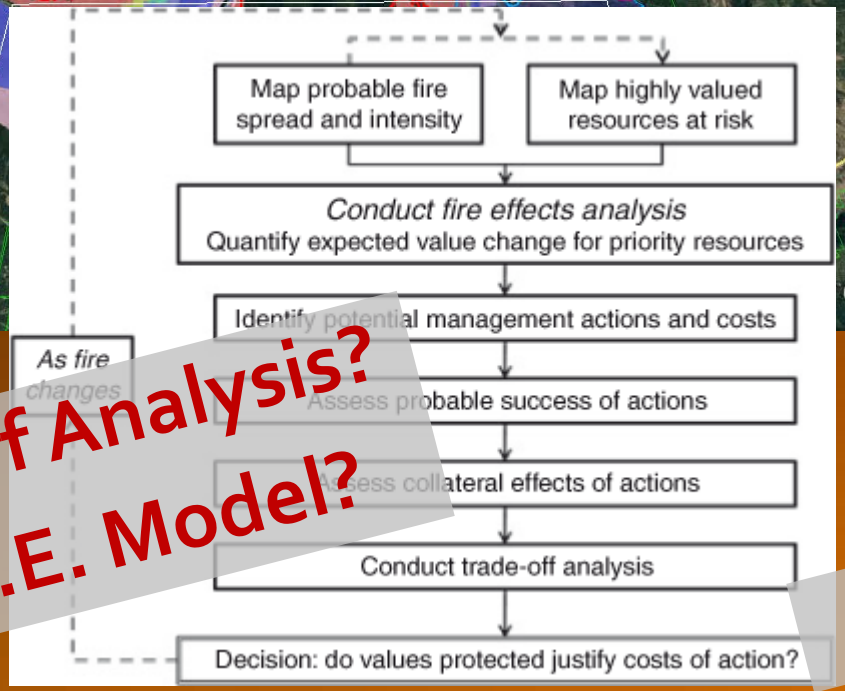
Catalysts for Policy Changes?

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

Future Fire Management Tools?

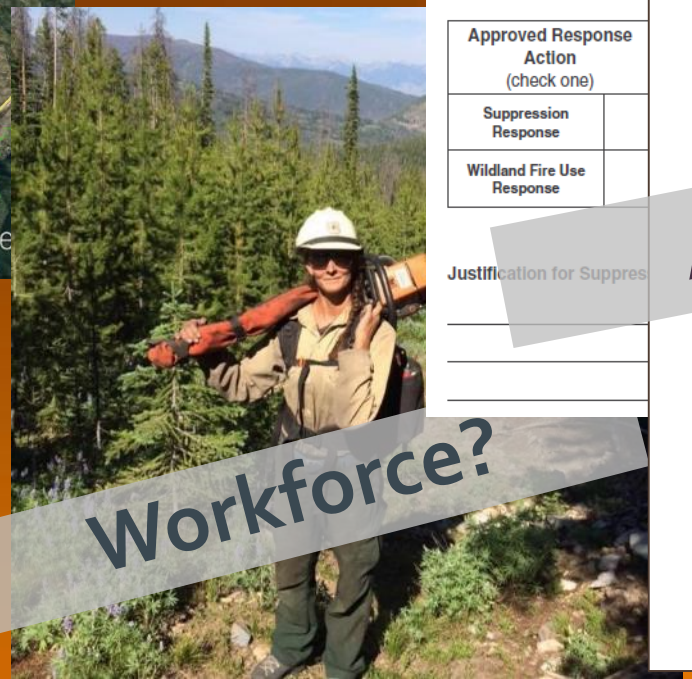


Automated Fire Analysis?

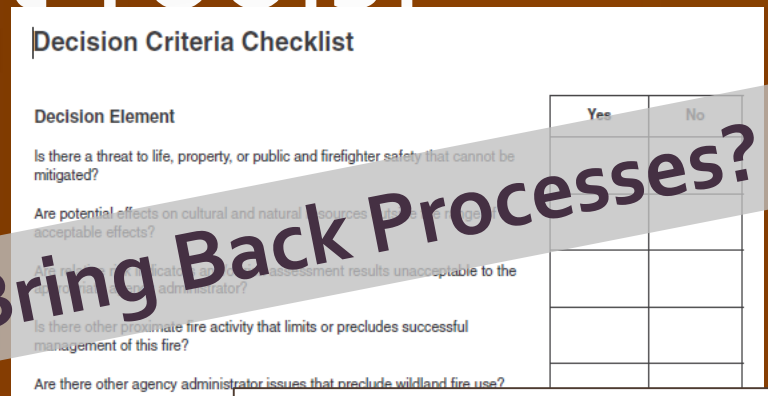


Tradeoff Analysis?

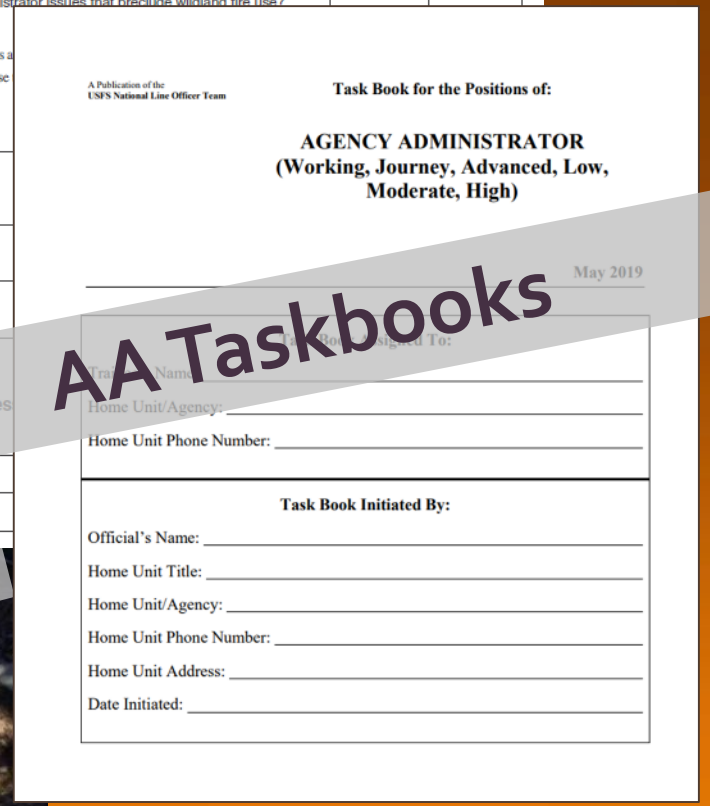
P.A.C.E. Model?



Workforce?



Bring Back Processes?



AA Taskbooks

Easier Now or Later?

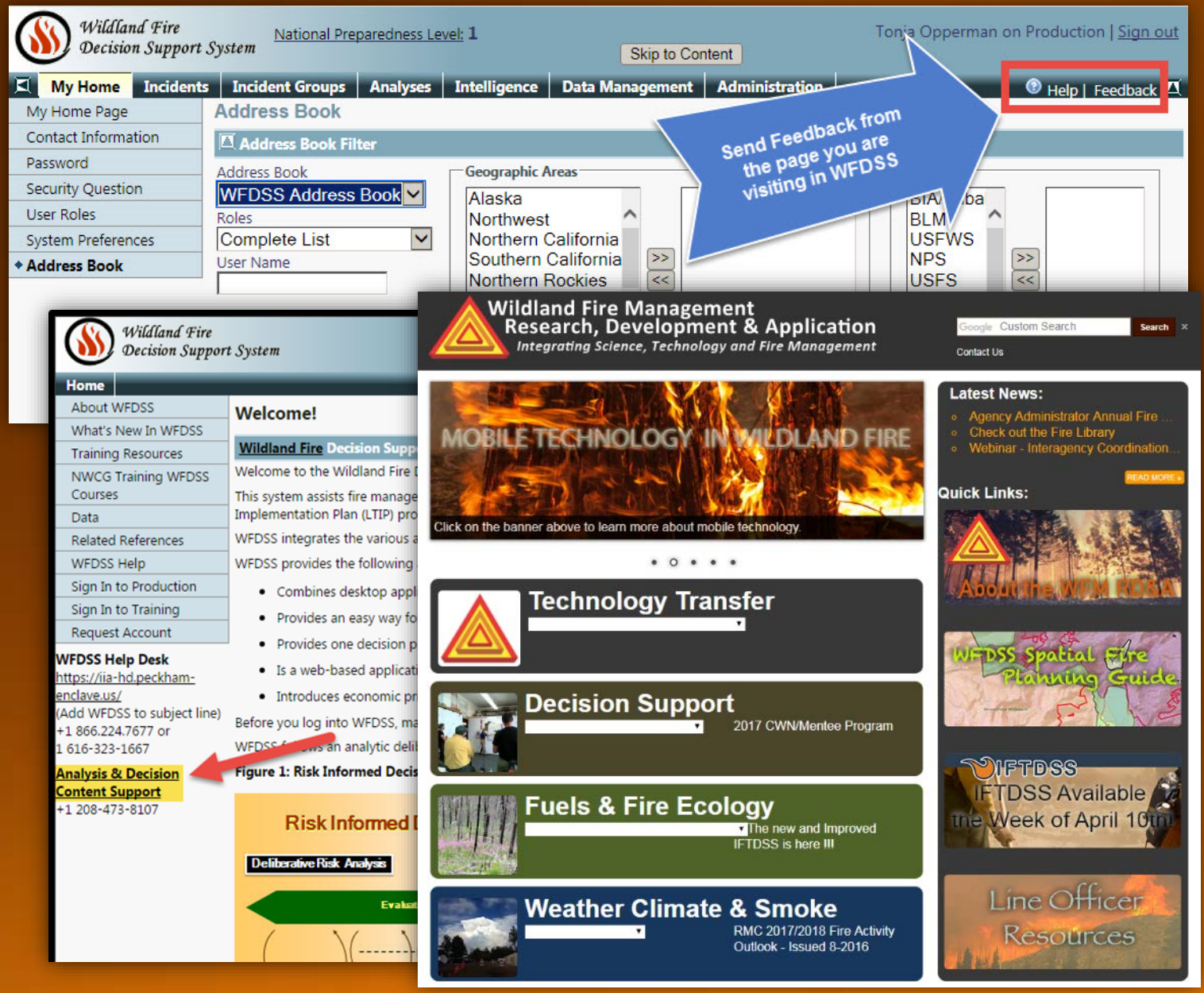
- TECHNOLOGY? Better and improving.
- ANALYTICS? Better and improving.
- POLITICS? We have a lot of work to do in the social sciences and messaging.
- MANAGEMENT? A lack of "fire use" IMTs hinders progress.

STILL HAVE Q'S?

Contact us:
WFDSS Feedback Button
208.387.5253 on WFDSS Homepage

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

Integrating science, technology and fire management.
Wildland Fire Management RD&A



Thank You

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