



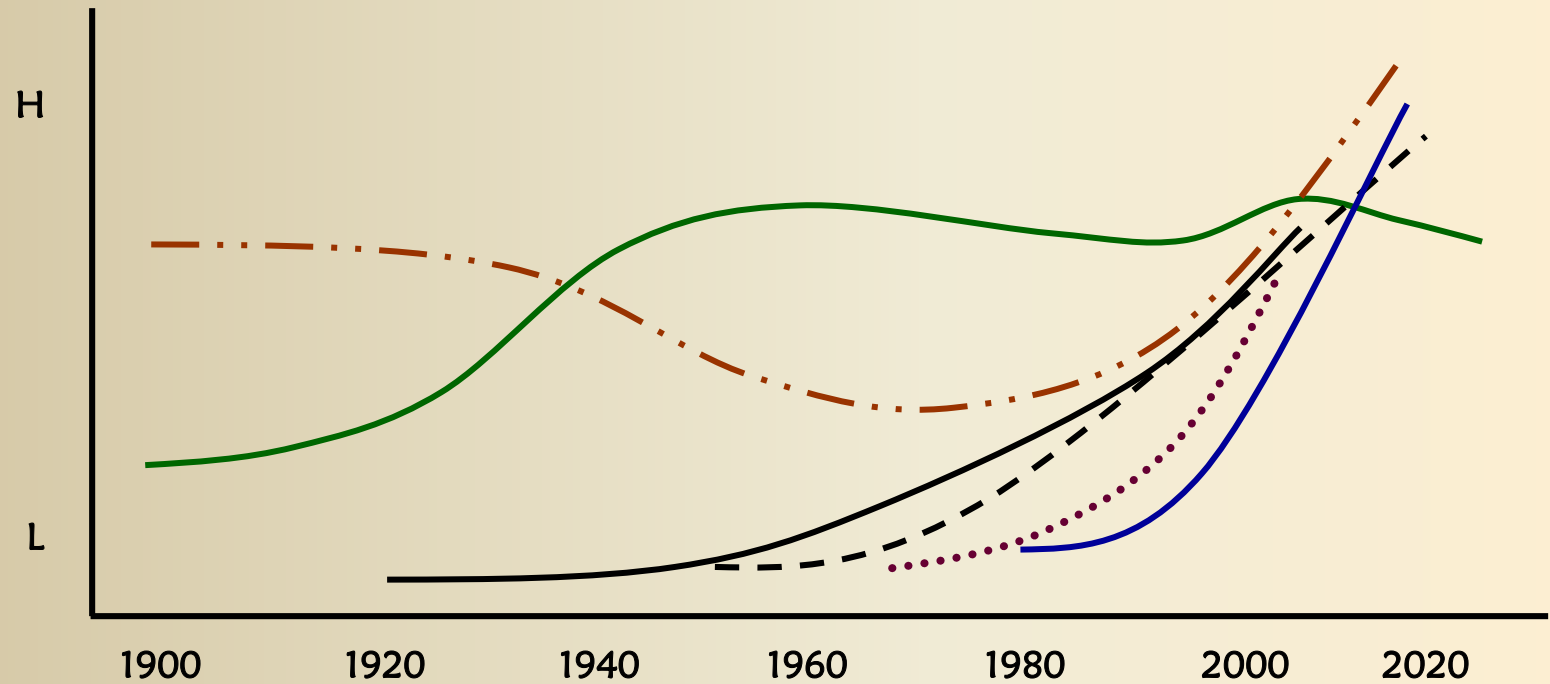
# Wildland Fire Decision Support System

## System Content and Element Descriptions

Wildland Fire Management RD&A  
National Interagency Fire Center  
Boise, Idaho

# Wildland Fire Management –

## Complexity and Capability



— · — Fire Complexity

— Operational Capability

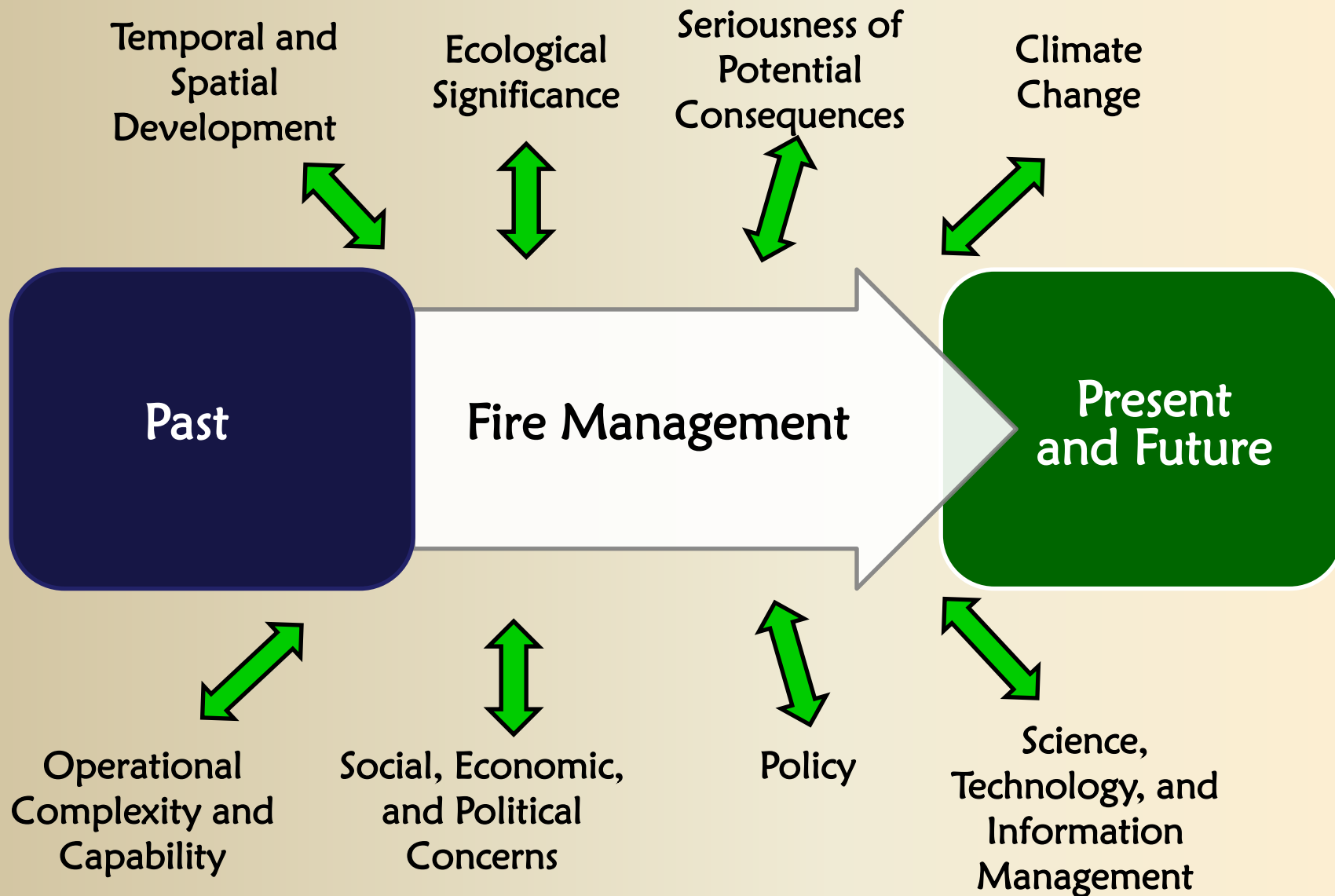
— Prescribed Fire

- - - Science and Technology

— Decision Support

..... Wildland Fire Use

# Factors Driving Change





# Wildland Fire Decision Making

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- Effective management is predicated upon decision making,
- Resource availability can no longer match large fire occurrence,
- Management of large fire costs becoming increasingly important,
- Smallest percentage of total wildland fires – large fires, accounts for largest amount of expenditures,
- Initial strategic response decisions are most important in terms of resource commitments and expenditures.



# Decision Support - Scale

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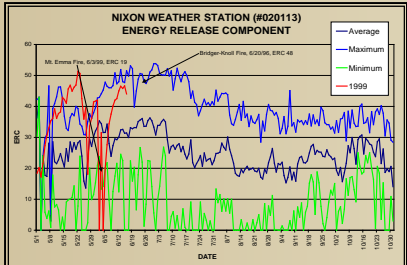


- Incident level (tactical)
  - Short-term temporally and spatially
  - Fine scale
- Incident level (strategic)
  - Broader scale
- Unit or Area level (strategic)
  - Both short- and long-term scales
- National level (strategic)
  - Long-term scale

# 2009 Policy Implementation Guidance



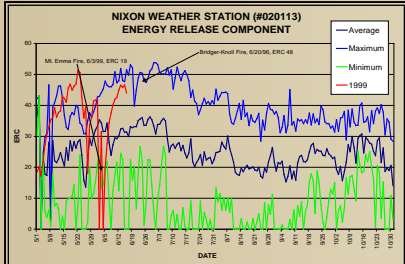
- A wildland fire may be concurrently managed for one or more objectives and objectives can change as the fire spreads across the landscape. Objectives are affected by changes in fuels, weather, topography; varying social understanding and tolerance; and involvement of other governmental jurisdictions having different missions and objectives.



# 2009 Policy Implementation Guidance



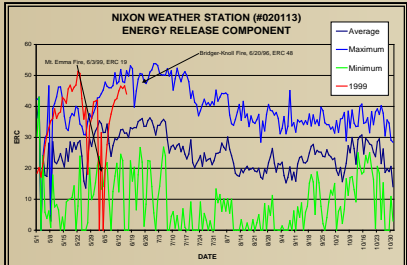
- Managers will use a decision support process to guide and document wildfire decisions. The process will provide situational assessment, analyze hazards and risk, define implementation actions, and document decisions and rationale for those decisions.





# Principles of Decision Support

- Decision support processes provide information used by managers when they are making decisions,
- Decision support does not replace decision making,
- Decision support information comes from a variety of sources, ranging from experience to quantitative analysis procedures,
- Decision support information has applications across a range of scales and concentrations.





# Wildland Fire Documentation

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Analysis and decision documentation of wildland fires is directed in the following situations:

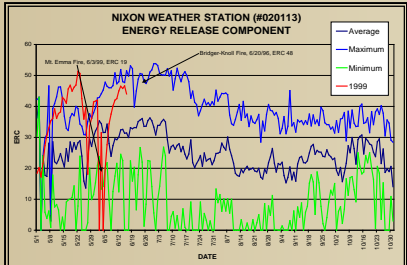
- Wildland fires are no longer following the initial action defined by the Fire Management Plan, or
- Wildland fires are being managed for multiple objectives, or
- Prescribed fires exceed prescriptions and are declared wildfires.

Consider publishing a decision when a fire continues to actively spread beyond a few burning periods, increases in complexity or cost, or has a high relative risk.

# What is WFDSS?



- A web-based system that provides:
  - risk and decision sharing simply and efficiently,
  - strategic decision documentation,
  - decision support analysis utilizing appropriate fire behavior modeling, economic principles, and information technology,
  - information for completion of an operational plan.

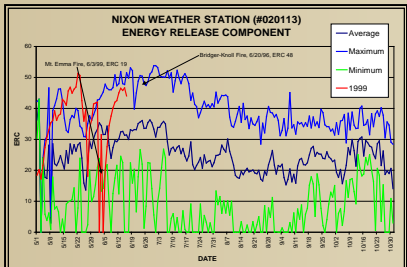




# What is WFDSS? (continued)



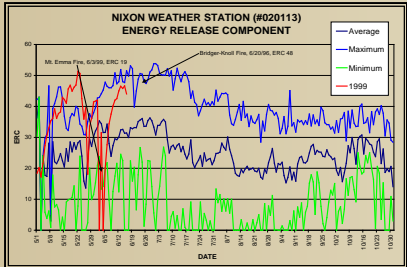
- A system that assembles, consolidates, and presents information to decision makers.
- An analytic – deliberative process that is an iterative, information-goal directed process.
- Is linear, scalable, progressive, and responsive to fire complexity,
- Is spatially oriented, graphically displayed, with no reliance on large text input requirements,



# What is WFDSS? (continued)



- A system that presents a risk characterization to support wildland fire decision making.
- A flexible system that matches different types and levels of analysis and deliberation with varying risk characterization and decisions.
- A system consistent with accepted risk-informed decision models making risk characterization intuitive, logical, relevant, understandable, and accessible.





# Wildland Fire Decision Support System - Attributes

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Primary Role

Documents strategic decisions, facilitates long-term risk assessment - decision support, and allows completion of an operational plan, commensurate with fire complexity

Strategic Objectives

Resource Benefits and Protection

Management Action Focus

Strategic and Tactical

Temporal Scale

Short to long

Spatial Scale

Incident or Complex

Cost

Defined Frequency

Revision/Update

Continually in response to conditions

Tactical Responses

Full range of tactical responses available and built into Course of Action





## Acquisition

- Geospatial data,
- Land and resource management plans,
- Weather, fire danger

**Information Objectives**

## Analysis

- Software analysis tools
- Fire behavior, fire economics, smoke dispersal, fire spread probability

**Situation Assessment**

## Application

- Decision documentation
- Decision rationale
- Periodic Assessment

**Decisions, Courses of Action, Cost Periodic Assessment**

## Archival

- Published decisions
- Electronic system of record
- Fire perimeters
- Reports

**Records, Reports**

# WFDSS - Intelligence

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

**My Home** **Incidents** **Incident Groups** **Analyses** **Intelligence** **Data Management** Help | Feedback

Click Icon to Collapse Bookmarks Messages (0)

Menu Map **Info**

**Information**

Use the Identify Tool ('i' icon) to click on the map

\*Latitude  \*Longitude

Radius (miles)

Feature Information ⊕

- Fire Danger Rating Graph ⊕
- Smoke Dispersion ⊕
- Strategic Objectives ⊕
- Weather Forecast ⊕
- Pred Svcs Sig Fire Potential ⊕
- Hourly Weather Forecast ⊕

Source N/A

Elevation N/A

Aspect N/A Slope N/A

Fuel Model N/A

Canopy Cover N/A Bulk Density N/A

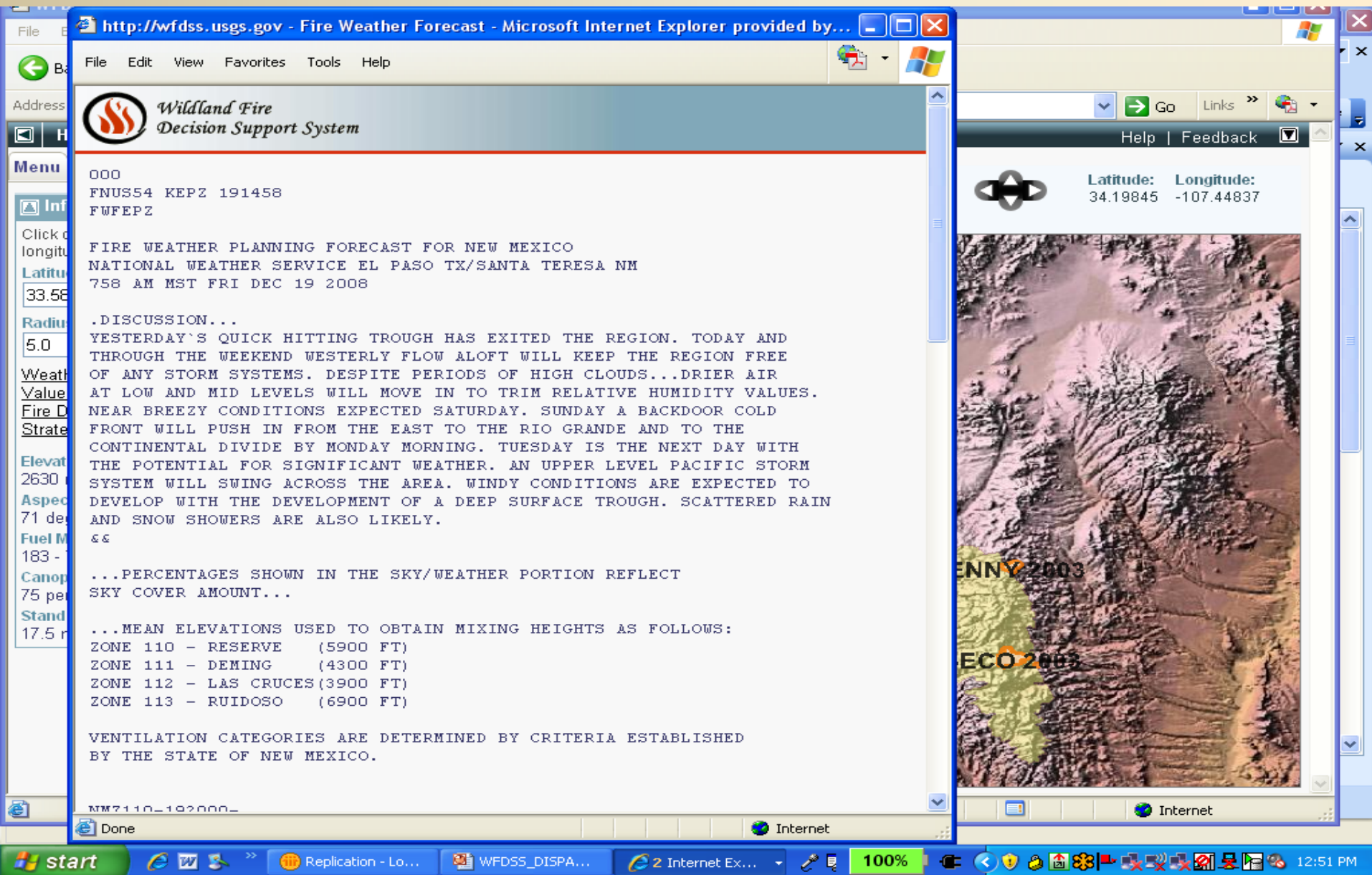
Stand Height N/A Base Height N/A

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

Scale = 1 : 8M



# WFDSS - Intelligence - Fire Weather



http://wfdss.usgs.gov - Fire Weather Forecast - Microsoft Internet Explorer provided by...

File Edit View Favorites Tools Help

Wildland Fire  
Decision Support System

000  
FNUS54 KEPZ 191458  
FWFEPZ

FIRE WEATHER PLANNING FORECAST FOR NEW MEXICO  
NATIONAL WEATHER SERVICE EL PASO TX/SANTA TERESA NM  
758 AM MST FRI DEC 19 2008

.DISCUSSION...  
YESTERDAY'S QUICK HITTING TROUGH HAS EXITED THE REGION. TODAY AND THROUGH THE WEEKEND WESTERLY FLOW ALOFT WILL KEEP THE REGION FREE OF ANY STORM SYSTEMS. DESPITE PERIODS OF HIGH CLOUDS...DRIER AIR AT LOW AND MID LEVELS WILL MOVE IN TO TRIM RELATIVE HUMIDITY VALUES. NEAR BREEZY CONDITIONS EXPECTED SATURDAY. SUNDAY A BACKDOOR COLD FRONT WILL PUSH IN FROM THE EAST TO THE RIO GRANDE AND TO THE CONTINENTAL DIVIDE BY MONDAY MORNING. TUESDAY IS THE NEXT DAY WITH THE POTENTIAL FOR SIGNIFICANT WEATHER. AN UPPER LEVEL PACIFIC STORM SYSTEM WILL SWING ACROSS THE AREA. WINDY CONDITIONS ARE EXPECTED TO DEVELOP WITH THE DEVELOPMENT OF A DEEP SURFACE TROUGH. SCATTERED RAIN AND SNOW SHOWERS ARE ALSO LIKELY.  
&&

...PERCENTAGES SHOWN IN THE SKY/WEATHER PORTION REFLECT SKY COVER AMOUNT...

...MEAN ELEVATIONS USED TO OBTAIN MIXING HEIGHTS AS FOLLOWS:  
ZONE 110 - RESERVE (5900 FT)  
ZONE 111 - DEMING (4300 FT)  
ZONE 112 - LAS CRUCES (3900 FT)  
ZONE 113 - RUIDOSO (6900 FT)

VENTILATION CATEGORIES ARE DETERMINED BY CRITERIA ESTABLISHED BY THE STATE OF NEW MEXICO.

NM7110-192000-

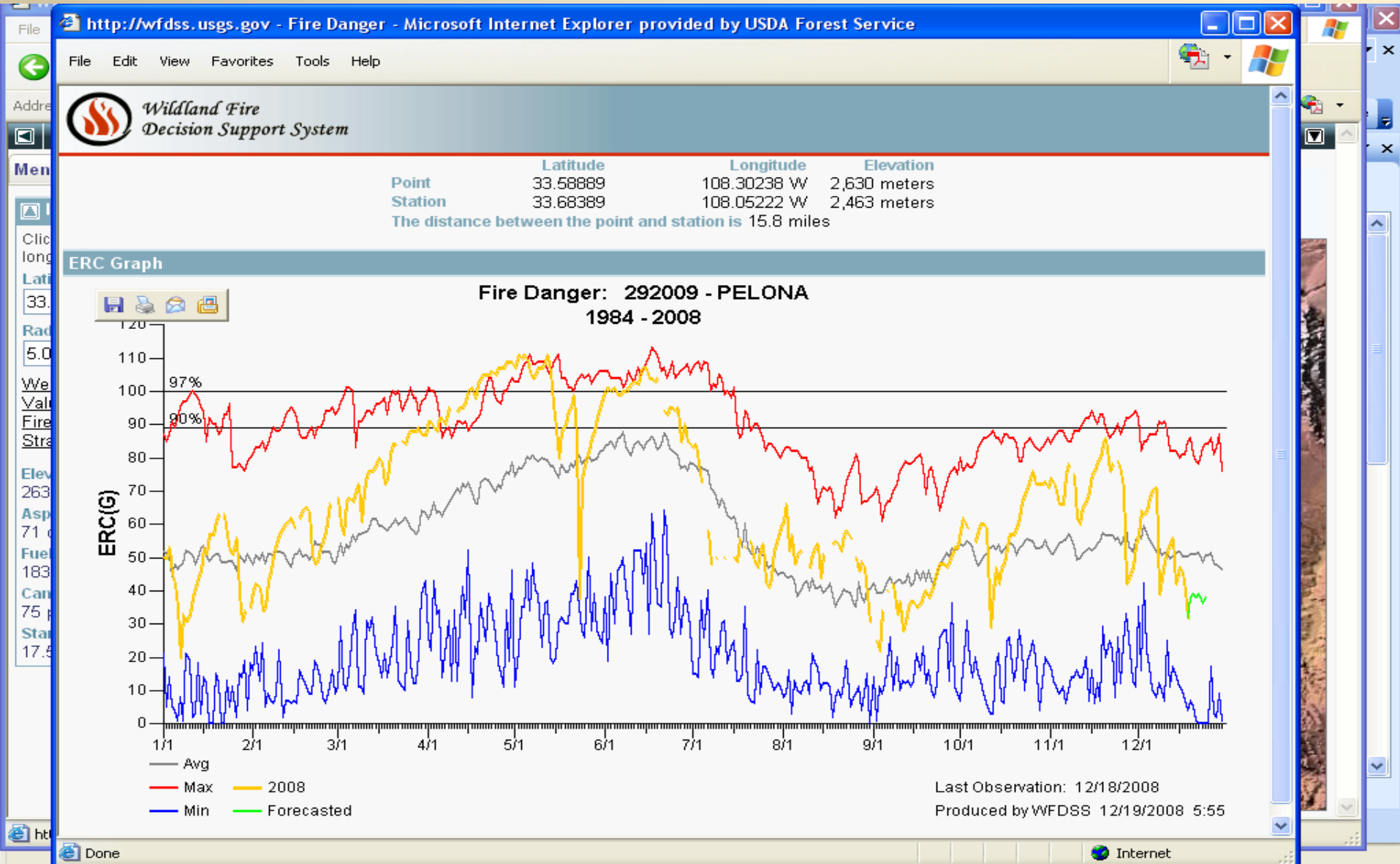
Latitude: 34.19845 Longitude: -107.44837

ENNY 2003  
ECO 2865

start | 100% | 12:51 PM



# WFDSS - Intelligence - Fire Danger



- Home
- About WFDSS
- What's New In WFDSS
- WFDSS Training
- NWCG Training WFDSS Courses
- Data
- Related References
- WFDSS Help
- Sign In to Production
- Sign In to Training
- Request Account

## Welcome!

### Wildland Fire Decision Support System

Welcome to the Wildland Fire Decision Support System ([WFDSS](#))!

This system assists fire managers and analysts in making strategic and tactical decisions for fire incidents. It has replaced the WFSA (Wildland Fire Situation Analysis), Wildland Fire Implementation Plan (WFIP), and Long-Term Implementation Plan (LTIP) processes with a single process that is easier to use, more intuitive, linear, scalable, and progressively responsive to changing fire complexity.

WFDSS integrates the various applications used to manage incidents into a single system, which streamlines the analysis and reporting processes.

WFDSS provides the following advantages over previous systems:

- Combines desktop applications for fire modeling into a web-based system for easier data acquisition.
- Provides an easy way for fire managers and analysts to accurately document their decision-making process by allowing results of analyses to be attached to the decision point and included in the final incident report.
- Provides one decision process and documentation system for all types of wildland fires.
- Is a web-based application for easier sharing of analyses and reports across all levels of the federal wildland fire organization.
- Introduces economic principles into the fire decision process.

Before you log into WFDSS, make sure you read and understand the system [Rules of Behavior](#).

WFDSS follows an analytic deliberative process for decision making. The following graphic displays this process. Click [here](#)

Google Search

only search WFDSS Website

### Hot Picks

- [5.4 Release Video](#)
- [5.4 Release Introduces the Accessibility Mode](#)
- [WFDSS & the iRWIN Data Exchange Service: Working in a Connected World](#)
- [5.3 Release Video](#)
- [5.3 Release Introduces the Assessment Tab](#)
- [5.2 Release Video](#)
- [What You Need to Know About WFDSS - 2015](#)
- [What Fire Behavior Specialists Need to Know About WFDSS - 2015](#)
- [WFDSS - What's New in 2015](#)
- [LANDFIRE 2012 Data is Now Available to WFDSS Users](#)



# WFDSS - Intelligence



Wildland Fire  
Decision Support System

National Preparedness Level: 1

Sign out

My Home Incidents Analyses **Intelligence** Data Management

Help Feedback

Menu Map Info

Messages (0)

Information

Use the Identify Tool (i icon) to click on the map

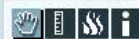
Latitude: 48.1221 Longitude: 110.4126

Radius (miles): 5.0

- Feature Information**
- Fire Danger
- Smoke Dispersion
- Strategic Objectives
- Weather Forecast

Source: Alaska LANDFIRE 1.0.0

- Elevation: No Data
- Aspect: No Data
- Slope: No Data
- Fuel Model: No Data
- Canopy Cover: No Data
- Stand Height: No Data
- Bulk Density: No Data
- Base Height: No Data

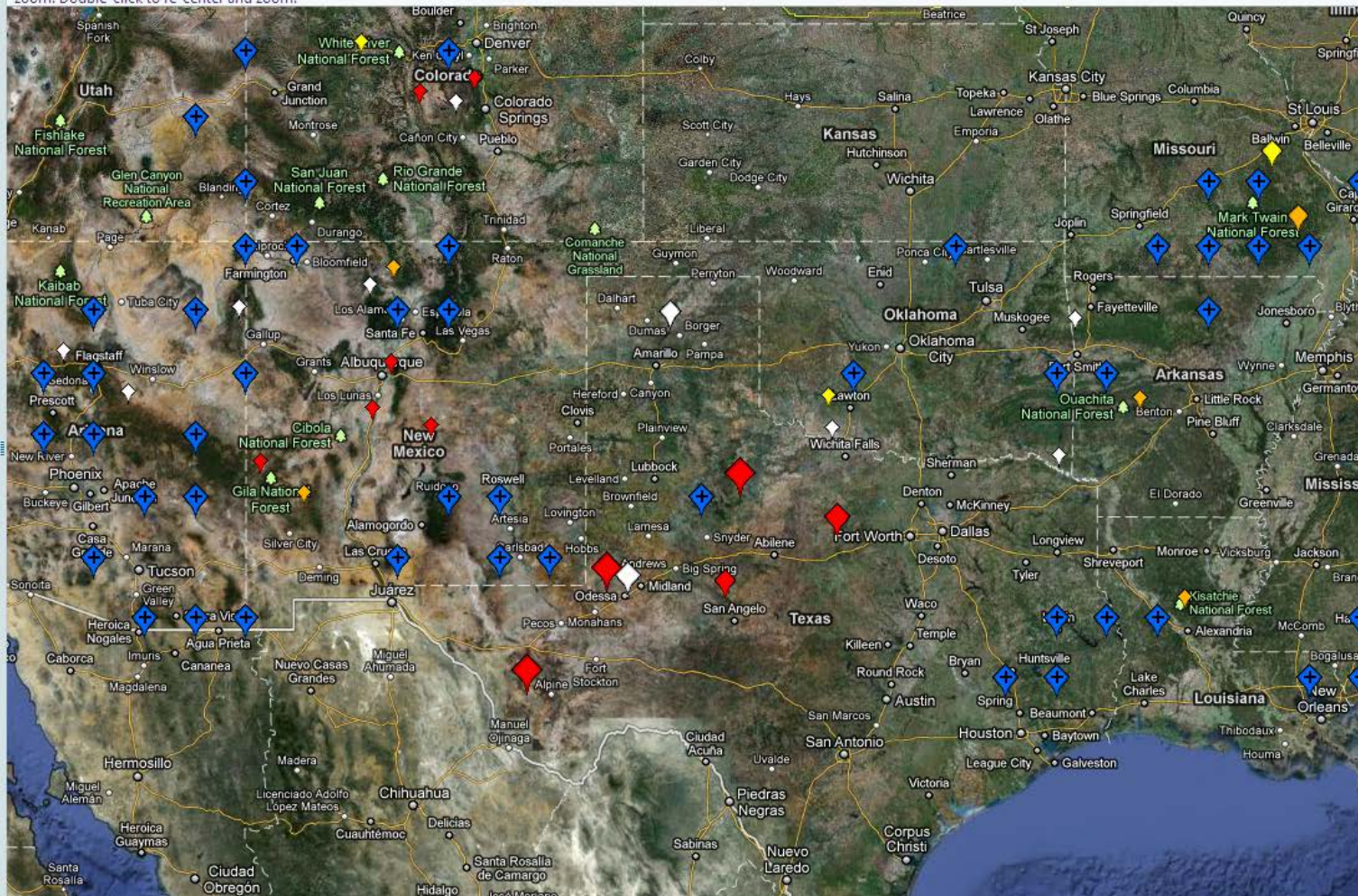


Pan Tool: Drag to pan. Shift-click, drag, and release to zoom. Double-click to re-center and zoom.



Scale = 1 : 7M

Latitude: 39.72409 Longitude: -103.90866





# WFDSS Flow



Wildland Fire Decision Support System

National Preparedness Level: 1

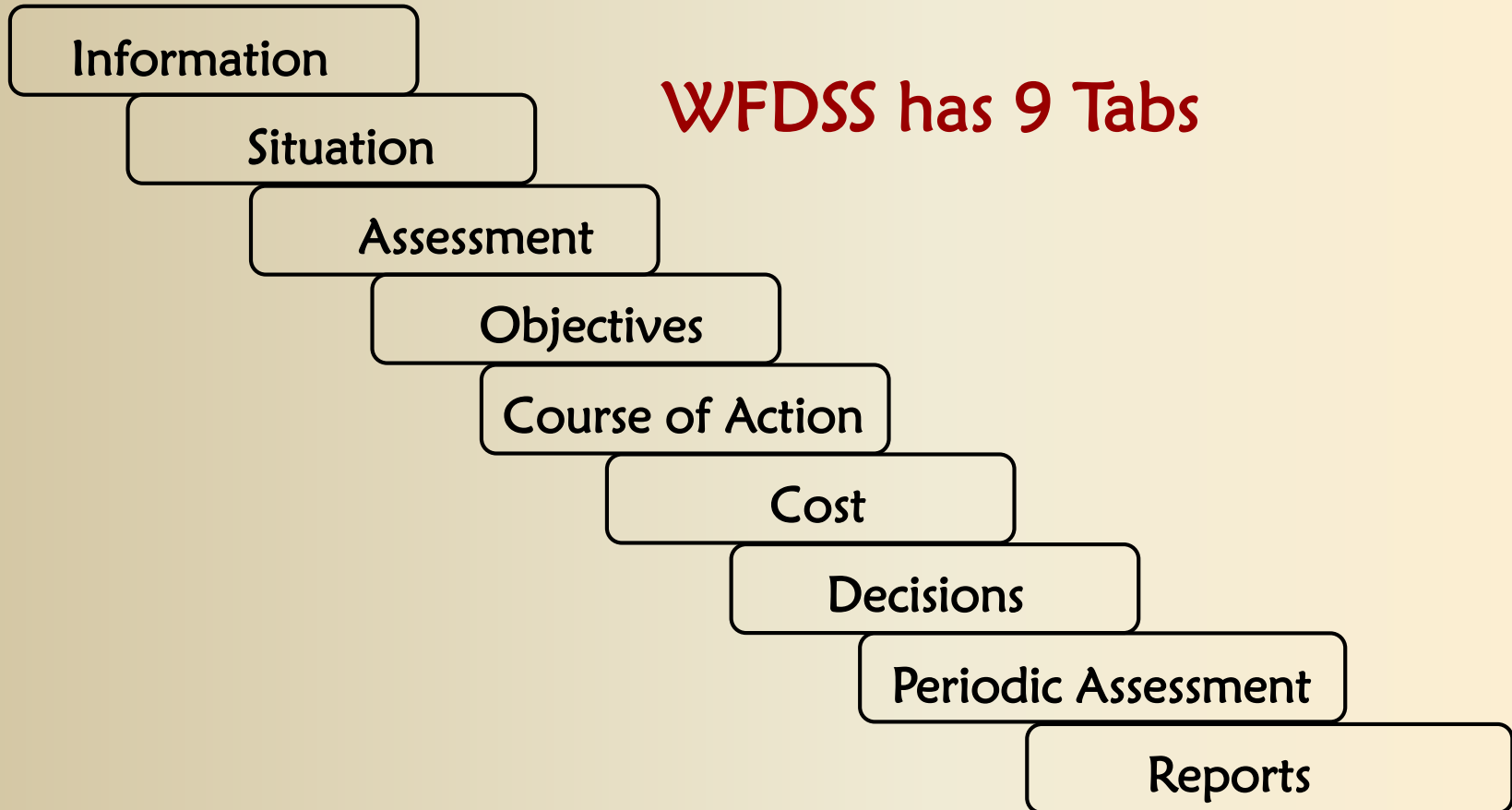
Incident: \_\_\_\_\_

Production | [Sign out](#)

My Home | **Incidents** | Incident Groups | Analyses | Intelligence | Data Management | Help | Feedback

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

WFDSS has 9 Tabs



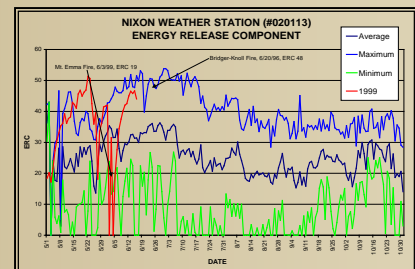
# WFDSS Framework



# Decision Making: An Analytic - Deliberative Process



- **Risk-informed decision making** - requires two distinct but linked processes:
  - analysis
  - deliberation.
- **Analysis:**
  - rigorous, replicable methods to provide information about factual questions.
  - brings new information into the process - **informs deliberation.**
- **Deliberation:**
  - discussion, reflection, and persuasion to communicate, raise, and collectively consider issues, increase understanding, and facilitate substantive decisions.
  - brings new insights, questions, and problem formulations - **frames analysis.**





# Subsection Areas and Information Flow Master Chart

Information

Situation

Assessment

Objectives

Course of Action

Cost

Decisions

Periodic Assessment

Reports

*Purpose:* Documents the initial and continuing fire situation, and provides required information to complete administrative fire reporting.

The screenshot shows the Wildland Fire Decision Support System interface. The top navigation bar includes 'My Home', 'Incidents', 'Incident Groups', 'Analyses', 'Intelligence', 'Data Management', 'Administration', and 'Sign out'. The 'Incidents' tab is active, showing a list of incidents with 'Billy Fire' selected. The main content area displays the incident details for 'Billy Fire'. The 'Incident Information' section includes fields for 'Incident Name' (Billy Fire), 'FireCode', 'P-Code', and 'Point of Origin' (Latitude: 33.8407, Longitude: 107.49692). The 'Incident Cause' section has radio buttons for 'Undetermined', 'Natural', and 'Human'. The 'Incident Dates' section includes fields for 'Discovery Date' (05/29/2013), 'Discovery Time' (12:00), 'Containment Date', 'Containment Time', 'Controlled Date', 'Controlled Time', 'Out Date', and 'Out Time'. The 'Incident Notes' section is currently empty.

# Subsection Areas and Information Flow Master Chart

Information

Situation

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Periodic Assessment

Reports

*Purpose:* Provides spatial data to support strategic and/or inform decisions and development of course of action.

The screenshot displays the Wildland Fire Decision Support System interface. The top navigation bar includes the system logo, the text "Wildland Fire Decision Support System", and the "National Preparedness Level: 1" indicator. The current incident is identified as "Incident: Billy Fire". A "Skip to Content" link is visible on the right. The interface is divided into several sections: a "Map" and "Info" tab at the top left; a "Layers" panel on the left side listing various data layers such as "USGS Topos", "USGS Imagery", "Google Maps", "Google Physical", "WFDSS Topos", "U.S. States", "Incident" (with sub-layers like "Planning Areas", "Fire Perimeters", "Mgmt Action Po", "Objective Shapes", "Points of Interest", "Point of Origin"), "Analysis", "Fire Environment and Safety", "Disturbance History", "Fire Weather and Danger", "Boundaries", "Designated Areas", "Infrastructure", "Natural and Cultural Resources", and "Unit Fire Planning"; a "Bookmarks" and "Messages (0)" section at the top right; a "Pan Tool" instruction: "Drag to pan. Shift-click, drag, and release to zoom. Double-click to re-center and zoom."; a scale bar showing "Scale = 1 : 14K"; and a central map area displaying a satellite-style image with a red diamond marker. A popup window titled "Incident Information" is overlaid on the map, displaying the following data:

NAME	VALUE
Incident Name	Billy Fire
Unique Fire Identifier	2013-NMCIF-000999
Incident Size	100 acres
Incident Cause	Undetermined
Incident Type	Wildfire
Incident Discovery	05/29/2013 12:00
Incident Status	Not Contained
Jurisdictional Agency(s)	BLM, USFS
Point of Origin	33.8407 N / 107.49692 W
Owner Name(s)	<a href="#">Multiple</a>

# Subsection Areas and Information Flow Master Chart

Information

Situation

Assessment

Objectives

Course of Action

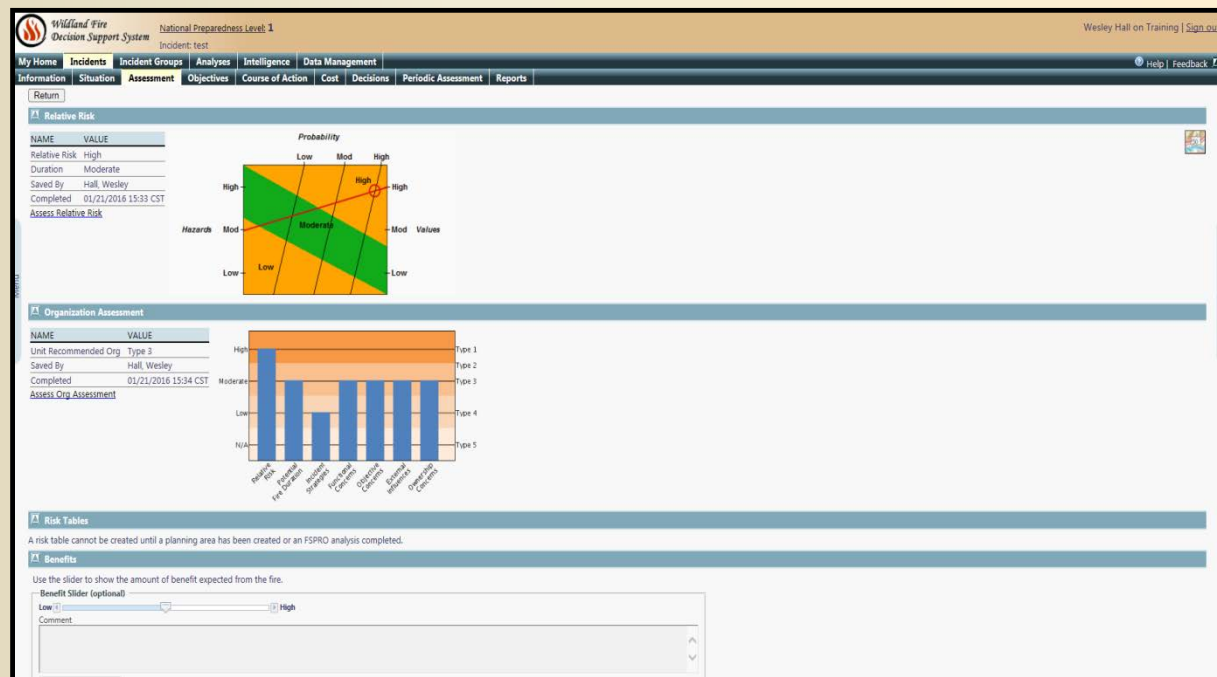
Cost

Decisions

Periodic Assessment

Reports

*Purpose:* Provides risk and organization assessment, as well as, potential benefits to support strategic decisions and development of course of action.





# Subsection Areas and Information Flow Master Chart

Information

Situation

Assessment

**Objectives**

Course of Action

Cost

Decisions

Periodic Assessment

Reports

*Purpose:* Defines objectives as stated in Land, Resource, and Fire Management Plans and lists specific management and incident requirements that will frame and influence strategic decisions and tactical implementation.

The screenshot displays the Wildland Fire Decision Support System interface. The top navigation bar includes 'My Home', 'Incidents', 'Incident Groups', 'Analyses', 'Intelligence', 'Data Management', and 'Administration'. The 'Incidents' tab is active, and the 'Objectives' sub-tab is selected. The main content area shows a table of 'Incident Objectives/Requirements for Main' with columns for Unit, Shape/FMU, Type, Activated, Deactivated, Included, and Objective/Requirement. The 'Objectives' sub-tab is active, and the 'Assess Relative Risk' button is visible. The 'Filter' section includes 'Active Status' (All, Currently Active, Never Active, Active on), 'Objective Type' (Incident Objective, Incident Requirement, Strategic Objective, Management Requirement), and 'Next Decision' (No Filter, Included, Excluded, Included or Excluded). The table below shows several objectives, including those for NMCIF and Kirtland Air Force Base.

Unit	Shape/FMU	Type	Activated	Deactivated	Included	Objective/Requirement
		Inc Obj	09/29/2009	08/17/2010		Minimize impacts to sensitive cultural resources.
		Inc Obj	09/29/2009	05/25/2011		Keep public informed about fire status through joint press releases from Sandia RD and Kirtland Air Force Base.
		Inc Obj	09/29/2009	05/25/2011		Provide for firefighter and public safety.
		Inc Obj	11/23/2009		Yes	minimize impact to cultural resources.
		Inc Req	09/29/2009		Yes	Coordinate fire management efforts with Kirtland Air Force Base.
		Inc Req	09/29/2009		Yes	Unexploded ordinances must be cleared by Kirtland AFB before tactical engagement off the road systems by ground forces can occur.
NMCIF		Strat Obj	10/27/2014			Implemented an appropriate management strategy for all fires occurring on the Forest (LRMP; pg 67-1).
NMCIF		Strat Obj	10/27/2014			Unplanned ignitions may be classified as prescribed fires when they meet prescribed fire prescriptions and predetermined resource objectives. Use prescribed fire or planned ignitions to support resource management objectives. Conduct all burning projects when weather conditions minimize smoke impacts on air quality. (LRMP; pg 67-1).

# Subsection Areas and Information Flow Master Chart

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Reports

## Purpose:

- Defines a strategy/course of action for a specific situation. The Strategy slider bar is an optional tool to help explain the overall strategy for an incident.
- Specificity varies with fire complexity and can include a defined planning area, management actions, and resource commitments for the fire duration.
- When the current decision is no longer meeting objectives, it can include a set of actions to be used until a new decision is completed.

The screenshot displays the Wildland Fire Decision Support System interface. The top navigation bar includes 'My Home', 'Incidents', 'Incident Groups', 'Analyses', 'Intelligence', 'Data Management', 'Administration', and 'Sign out'. The main menu on the left lists various options such as 'Incident List', 'Fire Behavior Request', 'Relative Risk', 'Org Assessment', 'FMU/SO List', 'Mgmt Action Points', 'Shape Upload', 'Image Upload', 'Pt of Origin Inventory', 'Incident KMZ', 'Download Perimeters', 'Incident Notes', 'Contact Information', 'Incident Privileges', 'Incident History List', 'Incident Analyses', and 'Fire Related Links'. The main content area is titled 'Action Items for Deep River' and features a 'Filter' section with 'Active Status' (All, Currently Active, Never Active, Active on) and 'Next Decision' (No Filter, Included, Excluded, Included or Excluded) options. Below the filter is a 'Strategy' section with a slider bar ranging from 'Monitor' to 'Full Suppression'. A 'Comment' text area and a 'Save Strategy' button are also present. At the bottom, there is a 'Create Action Item' table with columns for 'Activated', 'Deactivated', 'Included', and 'Item Description'. The table contains two rows of data, and the footer shows 'Page 1 of 1 Rows per Page: 20' with buttons for 'Edit', 'Include', 'Exclude', and 'Delete'.

Activated	Deactivated	Included	Item Description
<input type="radio"/>	<input type="radio"/>	Yes	Ensure that the management team is following ddate smoke guidelines and producing road closures, or assigning traffic control when needed.
<input type="radio"/>	<input type="radio"/>	No	Follow the planned initial response, the monitoring of the head of the fire and the flanks became compromised due to increased fire activity. Due to this and new course of action is needed to development

# Subsection Areas and Information Flow Master Chart

Information

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Course of Action

**Cost**

Decisions

Periodic Assessment

Reports

*Purpose:* Documents the Estimated Final Cost for an incident as well as providing Cost Estimation Methods and access to the Stratified Cost Index tool.

The screenshot displays the Wildland Fire Decision Support System interface. The top navigation bar includes 'My Home', 'Incidents', 'Incident Groups', 'Analyses', 'Intelligence', 'Data Management', 'Administration', 'Help', and 'Feedback'. The 'Incidents' tab is active, and the 'Cost' sub-tab is selected. The main content area shows the 'Incident Cost' section with an 'Estimated Final Cost' of 150,000 and a 'Cost Estimation Method' dropdown menu. Below this is the 'Stratified Cost Index' section, which includes a table titled 'Stratified Cost Index by Percentage' and a descriptive paragraph.

Acres Burned	25%	50%	75%	90%
12283	\$1	\$2	\$6	\$17
16000	\$0	\$2	\$5	\$16
25000	\$0	\$1	\$5	\$14
40000	\$0	\$1	\$4	\$12

Date Calculated: 02/02/2015  
View SCI List

25 percent of historical fires with similar characteristics had a cost per acre less than the value displayed in the 25% column of the table. Likewise, 50, 75, and 90 percent of fires with similar characteristics had a cost per acre less than the values displayed in their respective columns.



# Subsection Areas and Information Flow Master Chart

Information

Situation

Assessment

Objectives

Course of Action

Cost

**Decisions**

Periodic Assessment

Reports

*Purpose:* Documents the response decision, the rationale for that decision, and stipulates the timeframe for revisiting and reassessing the decision.

The screenshot displays the Wildland Fire Decision Support System interface. The top navigation bar includes the system logo, "National Preparedness Level: 1", and the incident identifier "Incident: Banner / 2010-IDSCF-010293". The main menu is divided into sections: My Home, Incidents, Analyses, Intelligence, and Data Management. The "Incidents" section is active, showing sub-menus for Information, Situation, Objectives, Course of Action, Validation, Decisions, Periodic Assessment, and Reports. The "Decisions" sub-menu is selected, leading to a "Decisions List" page. A note states: "Note: The incident has been declared out. Decisions may no longer be published." Below the note are buttons for "Create", "View Information/History", "View Decision", and "Begin Review/Approval Process". The main content area features a table with the following data:

Decision	Section	Status	Editor	Created (CDT)	Last Modified (CDT)	Relative Risk
<input type="checkbox"/>	Pending Decision	Available	Blount, William	10/28/2010 10:12	10/28/2010 10:12	08/23/2010 High
<input type="checkbox"/>	08/25/2010 14:39	Published	guzman, frank	08/24/2010 17:05	08/25/2010 14:39	08/23/2010 High
<input type="checkbox"/>	08/23/2010 16:05	Published	guzman, frank	08/23/2010 15:55	08/23/2010 16:05	08/23/2010 High
<input type="checkbox"/>	08/21/2010 21:33	Published	Grove, Chris	08/21/2010 21:19	08/21/2010 21:33	08/21/2010 High

At the bottom of the table, there are controls for "Page 1 of 1", "Rows per Page: 20", and buttons for "Edit", "Check In", "Download...", and "Delete...".

# Subsection Areas and Information Flow Master Chart

Information

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Decisions

Periodic Assessment

Reports

*Purpose:* Provides a process to periodically review the current decision, response, and accomplishments to evaluate effectiveness and confirm accuracy or, if needed, indicate progression to a higher response level and associated planning activities.

The screenshot displays the Wildland Fire Decision Support System interface. The top navigation bar includes 'My Home', 'Incidents', 'Analyses', 'Intelligence', and 'Data Management'. The 'Incidents' tab is active, showing a sub-menu with 'Information', 'Situation', 'Objectives', 'Course of Action', 'Validation', 'Decisions', 'Periodic Assessment', and 'Reports'. The 'Periodic Assessment' sub-menu item is selected, leading to a page titled 'Periodic Assessment List'. The page shows a table with columns for 'Date (CDT)', 'Approver', 'Action', 'Comments', and 'Relative Risk'. A single entry is visible: '04/08/2011 21:05', 'Warnack, David', 'Published', and '04/08/2011 High'. Below the table, there is a 'Periodic Assessment' section with a message: 'The next assessment is due on or before 04/12/2011'. It includes a dropdown for 'Number of days between assessments' set to 4, a checkbox for 'Send me an email reminder the morning the next assessment is due' which is checked, and a 'Comment' field. At the bottom, there is a question: 'Are the Incident and Strategic Objectives being satisfied with the current Course of Action?' with 'Yes' and 'No...' buttons. A 'Some Things to Consider' section lists several questions related to fire growth, costs, and resources.

Wildland Fire Decision Support System National Preparedness Level: 1 Incident: White Fire / 2011-NMN55-000187 Laurie Kurth on Production | Sign out

My Home Incidents Analyses Intelligence Data Management Help | Feedback

Information Situation Objectives Course of Action Validation Decisions Periodic Assessment Reports

Incident List The current decision is valid.

Fire Behavior Request

RAVAR Request

Stratified Cost Index

Relative Risk

FMU List

Mgmt Action Points

Shape Upload

Image Upload

Download Perimeters

Contact Information

Incident Privileges

Incident History List

Incident Analyses

National ERC-G

Fire Related Links

Periodic Assessment List

Date (CDT)	Approver	Action	Comments	Relative Risk
04/08/2011 21:05	Warnack, David	Published		04/08/2011 High

Periodic Assessment

The next assessment is due on or before 04/12/2011

4 Number of days between assessments

Send me an email reminder the morning the next assessment is due

Comment (A comment must be entered when a new decision is required)

Are the Incident and Strategic Objectives being satisfied with the current Course of Action? Yes No...

Some Things to Consider

- Is the fire expected to remain within the Planning Area?
- Is the actual cost of the fire in line with the planned costs in the published decision?
- Has there been any unexpected fire growth since the last Periodic Assessment?
- Have additional values been threatened since the decision was published?
- Have significant resources not identified in the Course of Action been requested?

[View or Modify the Current Relative Risk](#)

# Subsection Areas and Information Flow Master Chart

Information

Situation

Assessment

Objectives

Course of Action

Cost

Decisions

Periodic Assessment

Reports

*Purpose:* Query the WFDSS database to pull information from the decision document. Standard and custom reports are available. MAP report is frequently used to provide information to the field.

The screenshot displays the WFDSS web application interface. At the top, the header includes the Wildland Fire Decision Support System logo, the National Preparedness Level (1), and the current incident (TOWER FIRE / 2011-MNCPF-110122). The main navigation menu is divided into several sections: My Home, Incidents, Analyses, Intelligence, Data Management, and Reports. The Reports section is currently active, showing a Report List table. The table has columns for Report Name, Status, Editor, Owner, Type, Created (CDT), and Last Modified (CDT). The table is currently empty, and the page shows 'Page 0 of 0 Rows per Page: 20'. There are buttons for 'Create', 'View Information/History', and 'View Report'.





# Decision Support – Added Value

---

- How fire may burn (intensity, spread rates),
- Fuel conditions, departures from average,
- Fire dynamics,
- Fire danger and weather analysis,
- Fire history reviews, area burned, type of past fires,
- Probability of a fire reaching a planning area boundary
- Probability of season-ending event,




# Decision Support – Added Value

---

- Indications of where the fire may spread, or total area that may be burned,
- How fast the fire will travel,
- How soon the fire may reach critical locations,
- Potential fire effects,
- Fire duration,
- Probability of fire impacting sensitive areas,
- Projections of values to be protected in the fire area and identification of values,
- Probability of where the fire will spread.

# Decision Support – Stratified Cost Index



**Wildland Fire  
Decision Support System**

National Preparedness Level: **1**

Incident: Deep River

[Sign out](#)

[Skip to Content](#)

My Home
Incidents
Incident Groups
Analyses
Intelligence
Data Management
Administration

Help | Feedback

**Information**

**Situation**

- Incident List
- Fire Behavior Request
- Relative Risk
- Org Assessment
- FMU/SO List
- Mgmt Action Points
- Shape Upload
- Image Upload
- Pt of Origin Inventory
- Incident KMZ
- Download Perimeters
- Incident Notes
- Contact Information
- Incident Privileges
- Incident History List
- Incident Analyses
- Fire Related Links

**SCI Results**

**Stratified Cost Index by Percentage**

Acres Burned	25%	50%	75%	90%
4006	\$9	\$33	\$127	\$430
10000	\$7	\$27	\$103	\$347
20000	\$6	\$23	\$87	\$294
30000	\$5	\$20	\$79	\$267

25 percent of historical fires with similar characteristics had a cost per acre less than the value displayed in the 25% column of the table. Likewise, 50, 75, and 90 percent of fires with similar characteristics had a cost per acre less than the values displayed in their respective columns.

**SCI Parameters**

\*SCI Name  Model

**Estimated Final Fire Size (acres)**

*Estimate 1	Estimate 2	Estimate 3	Estimate 4
<input type="text" value="4,006"/>	<input type="text" value="10000"/>	<input type="text" value="20000"/>	<input type="text" value="30000"/>

SCI is NOT valid for fire sizes less than 300 acres.

**Model Input Parameters**

Latitude	Longitude	Ignition Date
<input type="text" value="26.1769"/>	<input type="text" value="81.3139"/>	<input type="text" value="02/21/2014"/>
Aspect	Elevation (meters)	
<input type="text" value="North"/>	<input type="text" value="0"/>	
Fuel Model	Housing Value	
<input type="text" value="H, R, E, P, U, or G (Timber)"/>	<input type="text" value="1,233,286,016"/>	



# Decision Support – Basic Fire Behavior

WFDSS Analysis Detail - Windows Internet Explorer

http://wfdss.usgs.gov/wfdss\_proto/faces/jsp/analysis/\_rivid.jsp?\_rap=pc\_WFDSSOpenAnalysis.doResultsLinkAction&\_rvip=/jsp/analysis/FBParameters.jsp# WFDSS

File Edit View Favorites Tools Help

WFDSS Analysis Detail

**Wildland Fire Decision Support System** National Preparedness Level: 2  
Incident: 137 Turquoise Lake / 2010-AKSW-004137 Brian Sorbel on Production | [Sign out](#)  
Analysis: Cal8; 5/28-5/29; 20hrs; 142=144

My Home Incidents **Analyses** Intelligence Data Management Help | Feedback

Menu Map Info Results Messages (0)

Layers

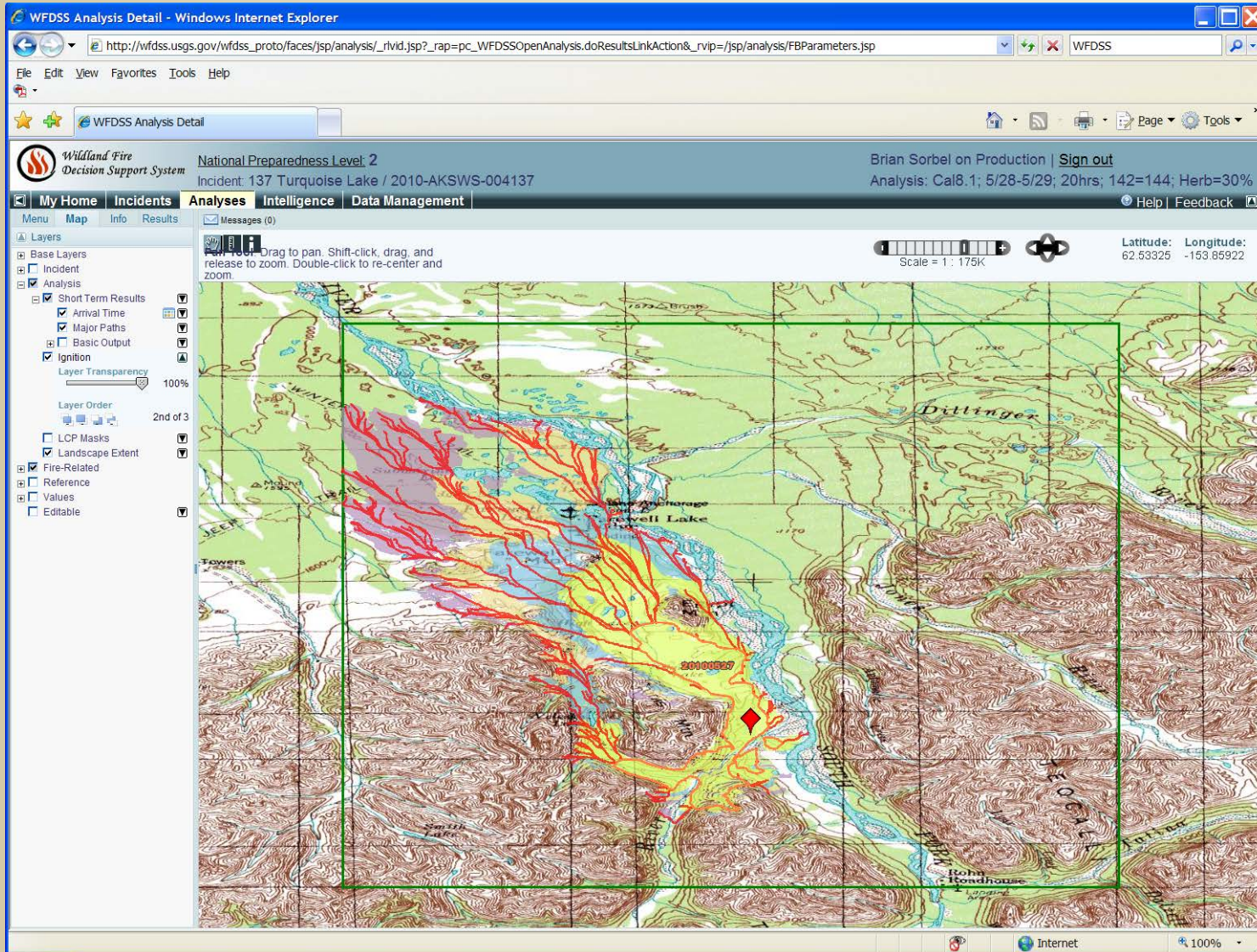
- Base Layers
- Incident
- Analysis
  - Short Term Results
    - Arrival Time
    - Major Paths
  - Basic Output
    - Flame Length
    - Rate of Spread
    - Fireline Intensity
    - Heat per Unit Area
    - Crown Fire Activity**
    - Solar Radiation
    - 1 Hr Fuel Moisture
    - 10 Hr Fuel Moisture
    - Max Spread Direction
    - Wind Direction
    - Wind Speed
  - Ignition
  - LCP Masks
  - Landscape Extent
- Fire-Related
  - Reference
  - Values
  - Editable

Scale = 1 : 175K Latitude: 62.43936 Longitude: -153.84144

http://wfdss.usgs.gov/wfdss\_proto/faces/jsp/analysis/\_rivid.jsp?\_rap=pc\_WFDSSOpenAnalysis.doResultsLinkAction&\_rvip=/jsp/analysis

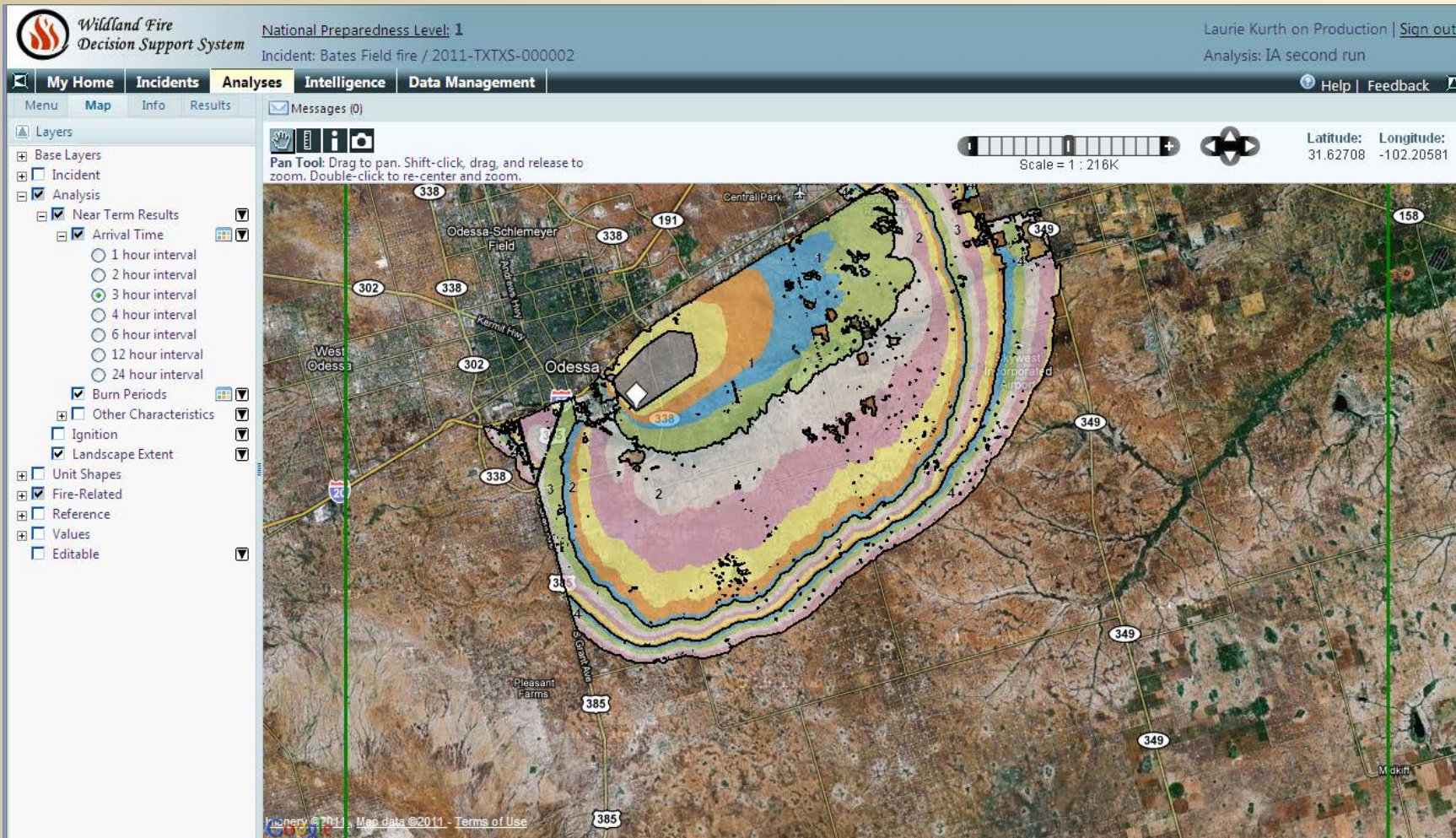


# Decision Support – Short Term Fire Behavior





# Decision Support – Near Term Fire Behavior





# Decision Support – Values Inventory



[Help](#)

## Near Term Analysis Values Inventory

Category	Value	Data Source	Currency	Coverage
Building Clusters: Baxter	no data	US Counties / FGDC Cadastral Subcomm.		Available counties in AZ, CA, CO, ID, MT, NM, NV, OR, UT, WA, WY, No data available for Baxter
County: Baxter	254 acres	Tele Atlas North America, Inc., ESRI	05/11/2010	National
Des Areas: Leatherwood Wilderness	236 acres	FWS, BLM, USFS, Wilderness.net	05/18/2010	National
Roads	0.1 miles	ESRI Data and Maps 2010	2010	National
Surface Mgmt Agency: USFS	254 acres	Various	July 2010	National

## Currency/Coverage of Values Queried that Produced No Results

Category	Data Source	Currency	Coverage
BLM Buildings	GeoCommunicator / Other Sources	07/21/2010	BLM Lands
BLM Horse and Burro	BLM	11/17/2010	OR, ID, MT, WY, CA, NV, UT, AZ, CO, NM
BLM Oil / Gas Leases	BLM/NOC	Unknown	Western United States
BLM Range Allotments	BLM/NOC	2007	Western United States
Class 1 Airsheds	NPS Air Resources Division	Various	National
Communication Towers	FCC	08/08/2010	National
Electric Power Plants	HSIP	02/2010	National
Electric Sub Stations	HSIP	02/2010	National
Electric Transmission Lines	HSIP	02/2010	National
Habitat	FWS Geospatial Services	01/2011	National
Mines	HSIP	02/2010	National
NPS Buildings	NPS (NISC - Resource Information Services Division)	03/04/2011	National (incomplete)
Oil and Gas Pipelines	HSIP	02/2010	National
Ozone Non-Attainment	EPA	2009	National
Particulates Non-Attainment	EPA	2009	National
Responsible Agency	USFS Region 5 GIS Clearinghouse	02/10/2010	California
Sage Grouse Key Habitat	BLM/NIFC	2009	Regional - OR, WA, ID, MT, ND, SD, NV, UT, CO, CA, WY
Sage Grouse Occupied Habitat	BLM/NOC	2008	Regional - OR, WA, ID, MT, ND, SD, NV, UT, CO, CA, WY
Trails	NPS, USFWS, USFS, appalachiantrail.org	03/08/2011	National
USFS Buildings	USFS-INFRA	02/23/2011	National

# Decision Support - FSPro

WFDSS Analysis Detail - Windows Internet Explorer

http://wfdss.usgs.gov/wfdss\_proto/faces/jsp/analysis/AnalysisList.jsp#

File Edit View Favorites Tools Help

WFDSS Analysis Detail

Wildland Fire Decision Support System

National Preparedness Level: 2  
Incident: 137 Turquoise Lake / 2010-AKWS-004137

Brian Sorbel on Production | Sign out  
Analysis: 3\_May28\_7day\_161-165=145

My Home Incidents Analyses Intelligence Data Management

Menu Map Info Results

Messages (0)

Legend

Fire Spread Probability

80-100%	Red
60-79%	Orange
40-59%	Yellow
20-39%	Light Green
5-19%	Blue
0.2-4.9%	Pink
< 0.2%	White

Layers

- Base Layers
  - WFDSS Topos
  - Google Maps
  - Google Physical
- Incident
  - Fire Perimeters
    - Turquoise 6\_4\_2010
    - newer20100528
    - new21100522
    - new20100525
    - new20100527
  - Mgmt Action Points
  - Points of Interest
- Analysis
  - FSPro Results
  - Ignition
- Layer Transparency: 100%
- Layer Order: Top
  - LCP Masks
  - Landscape Extent
- Fire-Related
  - Reference
  - Values
  - Editable

Scale = 1 : 433K

Latitude: 62.30624 Longitude: -154.37576

Turquoise 6\_4\_2010

20100527

Done

Internet 100%



# Decision Support – Values at Risk

WFDSS Analysis Detail - Microsoft Internet Explorer provided by USDA Forest Service

File Edit View Favorites Tools Help

Address <http://wfdss.usgs.gov/wf...>

**Wildland Fire Decision Support System**

Home Incidents Analysis

Menu Map Info Results

**Fire Size (acres)**

Average Size	3,093
90th Percentile	6,519
70th Percentile	4,068
50th Percentile	2,411
30th Percentile	1,228
10th Percentile	518
Largest Fire	12,195

Histogram

**Analysis Details**

Incident Latitude	Longitude
33.3801	108.1923
Analysis Start	Burn Duration
5/28/08	14 days
Simulations	
256 fires	
Details	Values at Risk

Downloads

**Values at Risk**

Values List

Incident	Analysis	Author	Analyst
Gila 2.11	14 day - point	Fiedler, Hans	Fiedler, Hans
Latitude	Longitude	Geographical Area	
33.3801	108.1923	Southwest	

	80-100%	60-79%	40-59%	20-39%	5-19%	0.2-4.9%
Census Housing Values	\$0	\$0	\$0	\$0	\$0	\$0
Habitat: Mexican Spotted Owl	812 acres	878 acres	1,189 acres	2,074 acres	2,699 acres	4,737 acres
Jurisdiction: USFS	812 acres	878 acres	1,307 acres	2,270 acres	2,969 acres	6,181 acres

**Currency/Coverage Of Values Reported**

Category	Data Source	Currency	Coverage
Habitat: Mexican Spotted Owl	Gila National Forest	2008-03-01	Habitat restricted to Gila National Forest
Jurisdiction	Various		AZ, CA, CO, ID, MT, NM, NV, OR, UT, WA, WY
Census Housing Values	U.S. Census Bureau	2000-01-01	National coverage

Done Internet

start

Marlena ... Paper\_D... Microsof... 3 Micro... 2 Inter... NVIDIA ... 100% 11:58 AM

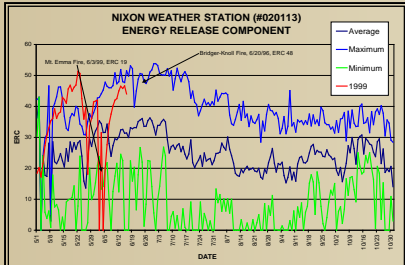


# WFDSS – User Roles



## Specific Roles Identified:

- Viewer
- Dispatcher
- Author
- Data Manager
- Geographic Area Editor
- National Editor
- Fire Behavior Specialist
- Help Desk
- Administrator



# WFDSS – User Roles, continued

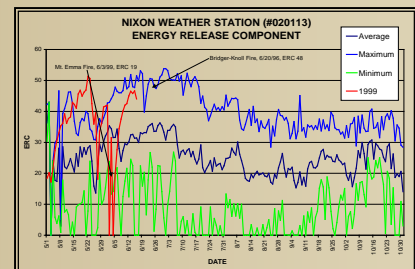


## Viewer:

- Is the minimum level of access for all WFDSS users.
- View incident information for all WFDSS incidents and groups.
- Cannot edit.

## Dispatcher:

- Enter information for a new WFDSS incident.
- Edit incident information for incidents they create.
- Run simple (unsupervised) fire behavior analyses.

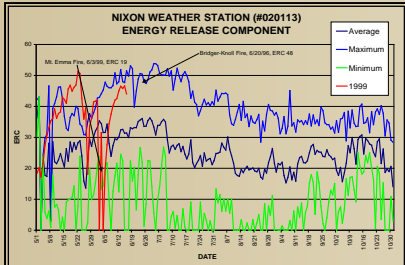


# WFDSS – User Roles, continued



## Author:

- Enter information for a new WFDSS incident.
- Edit incident information for incidents they create.
- Grant privileges to other users for incidents they have authored.
- Run simple (unsupervised) fire behavior analyses.
- Request an analyst be assigned for fire behavior modeling
- Create a group or complex from individual incidents.



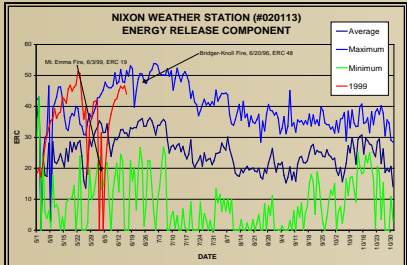


# WFDSS – User Roles, continued



## Data Manager:

- Enters and maintains strategic objectives / management requirements and Fire Management Unit (FMU) or Strategic Objective (SO) associations for individual agency units
- Manages the Planning Process selected for individual agency units
- Enters and maintains Unit Shapes

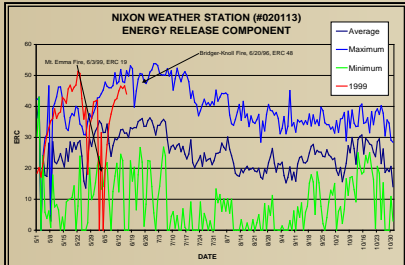


# WFDSS – User Roles, continued



## Geographic Area Editor:

- Edit WFDSS incidents within their geographic area (GACC).
- Request and cancel analyses for WFDSS incidents in their GACC.
- Prioritize analysis requests within their GACC.
- Authorize new Viewer, Author, Dispatcher, and Fire Behavior Specialist roles in their GACC.
- Does not have privileges specific to Fire Behavior Analysts or Administration.

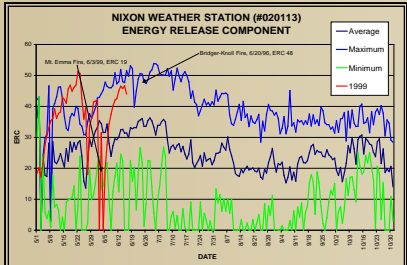


# WFDSS – User Roles, continued



## National Editor:

- Has maximum authority relative to WFDSS incident management.
- Has all the capabilities of a Regional Editor, but at a national level.
- Delete incidents.
- Does not have privileges specific to Fire Model Analysis or Administration.



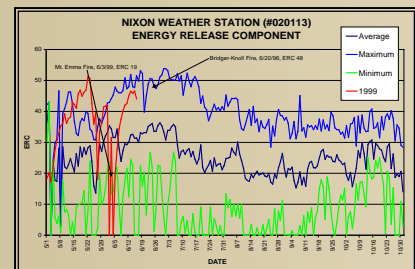


# WFDSS – User Roles, continued



## Fire Behavior Specialist:

- Formerly the FSPro Analyst role, but the name change reflects additional fire behavior tools available in WFDSS. Users requesting this role should have previous fire behavior modeling experience, including evaluating and modifying landscape files, historic climate, and forecasted weather.
- Conduct “supervised” fire behavior analyses and modify inputs as needed.
- Accept (or reject) the results of the fire behavior analyses.
- Grant privileges to other analysts for analyses they have created.
- Interpret fire behavior analyses for other users.



# WFDSS – User Roles



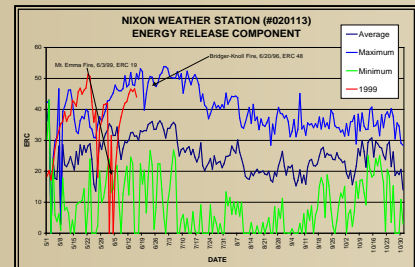
## Super Analyst: Going Away

- Has maximum analysis authority, provides coaching and training to other analysts.
- Run, edit, and accept all types of analyses.
- Delete analyses.

## Help Desk – This role is for the folks at the NIFC HELP DESK

## Administrator –

- This role is for the system developers





# Summary

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- Decision support is markedly important to fire management success and useful at all levels,
- Decision support tools provide a range of information, from subjective to quantitative long-term analyses,
- Decision support tools incorporate science and technology to reduce uncertainty, better understand complexity and risks, help develop management strategies and operational tactics, and define the situation,
- Decision support information does not make decisions, only facilitates them,



# Where to find WFDSS

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- <http://wfdss.usgs.gov>
- **Request your user account now!!**

# Questions

A dramatic landscape photograph featuring a sunset or sunrise. The sun is a bright white circle near the horizon, casting a warm orange and red glow across the sky. Large, dark clouds are scattered throughout, some catching the light from the sun. A massive, jagged lightning bolt strikes the ground from the upper right, its bright yellow and white energy branching out across the sky. The foreground shows dark silhouettes of trees and hills. The word "Questions" is written in a bold, yellow, sans-serif font with a black outline, centered in the upper half of the image. In the bottom right corner, there is a white, curled-up corner graphic, suggesting the image is a page from a book or a document.