WFDSS Guide for Alaskans

April 15, 2017

Table of Contents

WFDSS Preparedness Activities

Prior to each fire season, WFDSS users should do the following:

Request Accounts/Roles

The following are likely to require WFDSS accounts in Alaska:

- Jurisdictional FMOs
- Protecting FMOs
- Alaska Fire Program Leads
- Agency Administrators (Refuge Managers, Field Office Managers, Park Superintendents, Regional and Area Foresters, etc.)
- Deputy/Assistant Agency Administrators
- Dispatchers

New WFDSS users will need to request a WFDSS account with one or more of the following roles:

Author

Most Alaska WFDSS users should request the "Author" role. The Author role provides editing privileges and allows for drafting decision content and button-pushing in WFDSS. Authors can accept ownership of incidents and can be granted decision review and approval privileges by incident Owners. Authors can run simple automated fire behavior analyses and can request an analyst's assistance for more advanced fire behavior modeling.

Viewer

Viewers can view incident information for all WFDSS incidents and groups. They can view completed analyses and reports, but do not have access to draft analyses or decisions. Viewers cannot make changes to WFDSS data unless they have additional roles.

Dispatcher

The Dispatcher role is limited to:

- Creating and editing Relative Risk Assessments for fires without an Owner.
- Uploading shape files (except M.A.P.s or Incident Obj. Shapes) for incidents in their geographic area.
- Creating Relative Risk Assessments for incidents in their geographic area and without an Owner.
- Running automated Basic and Short-Term Fire Behavior analyses for incidents in their geographic area.

Data Manager

Data Managers are responsible for:

- Entering and maintaining unit strategic objectives and management requirements.
- Creating, activating, and deactivating unit FMU/SO codes.
- Maintaining fire management unit associations for individual agency units.
- Managing unit shapes.

Each jurisdictional unit in Alaska should have at least one Data Manager assigned to them. A Data Manager may be responsible for multiple units.

Fire Behavior Specialist or Super Analyst

Persons with these roles are trained to run advanced fire behavior analyses for incident decision-makers. Because of the unique fuels in Alaska, it is usually best when analysts have Alaskan experience. There are currently twenty or so Alaskan analysts in the State with varying levels of experience and availability. See Consider Requesting a Fire Behavior Analysis in the Situation Tab section for details on ordering an analysis.

Geographic Area Editor (GAE)

GAEs are WFDSS subject matter experts and work cooperatively for the benefit of all users within their geographic area. They are both able and expected to assist any caller from any agency within their geographic area. The current Alaska GAEs are:

GAE Name	E-mail Address	Phone Number	Agency
Doug Alexander	doug_alexander@fws.gov	907-786-3497	USFWS
Casey Boespflug	cboespflug@blm.gov	907-356-5859	BLM-AFS
Peter Butteri	peter_butteri@fws.gov	907-356-5874	AFS/USFWS
Jake Dollard	jason.dollard@bia.gov	907-586-7404	BIA/Tribal
K.T. Pyne	kathryn.pyne@alaska.gov	907-356-5858	State
Brian Sorbel	brian_sorbel@nps.gov	907-644-3413	NPS
Tom St. Clair	tstclair@blm.gov	907-474-2226	BLM
Dan Warthin	dan_warthin@nps.gov	907-644-3409	NPS
Robert Ziel	zielr@firenet.gov	906-869-3355	State

Table 1: Current Alaska GAEs

Ensure Accounts/Passwords current

Ensure all WFDSS users in your unit have refreshed their passwords prior to fire season.

Validate/Update Unit Strategic Direction

Each unit Data Manager in Alaska is responsible for maintaining unit-specific strategic direction in WFDSS. This direction should tier from unit land/resource management plans and fire management plans.

All Alaska units have been prepared for conversion from the FMU Planning Process to the Spatial Planning Process. **Alaska Data Managers should work with GAEs to update and spatially enable their strategic direction.**

Attend a WFDSS Refresher

National WFDSS Refreshers are scheduled each spring by the Wildland Fire Management Research, Development & Application group. WFDSS Geographic Area Editors may also schedule area or local refreshers.

Alaska Geographic Area Editors will announce refreshers as they are scheduled. Additional WFDSS training can be made available upon request to an Alaska Geographic Area Editor.

WFDSS Decision Development

Situation Tab

Create a Planning Area

Begin by creating a Planning Area on the Situation tab. Planning Areas need to be large enough to include:

- Values you are concerned about.
- The physical reality of where the fire could burn during the life of the current decision (even if you don't want it to burn there.)
- Where you want to contain the fire.
- Where actions are planned (e.g., firelines, evacuation points, protection points.)
- Contingency plans and Management Action Points (M.A.P.s.)
- Fire behavior modeling outputs.

Drawing a large planning area may incorporate more FMUs or Strategic Objectives, which in turn may require you to include additional jurisdictions, and address more Strategic Objectives, Management Requirements, and values at risk; but if your Planning Area is too small, you will have to create a new decision each time management actions occur outside of it.

Consider Requesting a Fire Behavior Analysis

WFDSS houses four fire behavior tools that can help fire managers assess fire behavior and growth potential for an incident. Each of these tools are used to answer specific fire management questions. In other words, the question being asked dictates which model will provide the best answer. Modeled results inform and support Relative Risk and Organization Assessments, as well as Incident Objectives, Incident Requirements and the Course of Action.

If your unit does not have an available fire behavior specialist there are several methods for requesting one for an incident in Alaska:

- The preferred method is for you to contact an Alaska GAE for assistance. The GAE will work to assign the analysis to an analyst with an Alaska background. In 2017 the primary GAE point of contact for Alaska analysis requests is Doug Alexander (see page 2 for contact information).
- You may be able to work directly with an LTAN and/or SOPL assigned to the incident. The incident FBAN may have the analyst skillset, but will likely not have time to focus on WFDSS analyses.
- As a last resort, you can request an analysis from within WFDSS. This request will bypass the Alaska GAEs and go directly to the National RD&A group.

Using the model descriptions and examples below for guidance, determine which tools will best meet the incident's needs based on the types of questions being asked, and then work towards locating an analyst to generate some modeled outputs.

- ***Basic Fire Behavior****:* provides a very simple way to get 'snapshot in time' fire behavior outputs for every cell of an analysis area. This model is used when there are specific questions about fire behavior potential for an area such as "given today's forecasted winds, how long will flame lengths be and is passive or active crown fire expected?" or "what are fine dead fuel moistures across the analysis area and what effects do these values have on fire behavior?"
- ***STFB or Short Term Fire Behavior****:* using one set of wind and fuel moisture conditions, it provides potential fire spread (arrival times and major paths) for a user defined length of time, such as a burn

period. This model is used to answer questions such as "How far will a fire spread in a 6 hour burn period with steady 15 mph winds?"

- ***NTFB or Near Term Fire Behavior:*** using weather and wind inputs that change over the duration of a simulation, NTFB models fire growth for up to seven days although it's generally most appropriate for the 'near term' of one to three days. This model can answer questions such as "how far is the fire expected to burn to the east over a three day period given the current weather forecast?"
- ***FSPro or Fire Spread Probability****:* it is a long term tool that relies on climatological records to produce an ensemble of fire simulations. This ensemble allows you to see the variability as a probabilistic outcome. Use of this program can answer questions such as "What are the chances that the fire will reach Bear Cabin in the next 14 days?" Output can be used as a general guide when trying to determine an appropriate Planning Area size and can help inform your risk analysis.

Identify Decision Participants & Grant Incident Privileges

All Agencies and Units that fall within the Planning Area should be offered the opportunity to participate in the WFDSS planning process. In order to

Identify Values within the Planning Area

In Alaska, the auto-generated WFDSS Values Inventory will not accurately represent values of concern in most cases. Sources of values data for Alaska include (but are not limited to):

- The AICC Digital Atlas Known Sites Database
- Borough parcel/building footprint data
- Agency/Unit values data
- Native Allotment data
- AIWFMP Fire Management Options

It is a good idea to insert a "Values of Concern" section in the Risk portion of the decision that lists values identified by each unit participating in the decision.

Shapefile(s) containing values data may be uploaded to WFDSS as Objective Shape(s) in order to display them in the Situation tab. Be sure to clip shapes to a reasonable size (Planning Area) before uploading.

Incident Information

WFDSS will auto-generate an Incident Information table for inclusion in the decision. Review the table to ensure information is complete and accurate. Note that:

- The Responsible Unit Name will be the Protecting Zone/Area/Forest at the Point of Origin.
- The Jurisdictional Unit will be the Jurisdictional Unit Identifier and Unit Name at the Point of Origin.
- Most of the information in the Incident Information table is passed by IRWIN from the Computer-aided Dispatch System (CAD). **Corrections usually need to be made in the originating CAD (either FireBeans or IFM in Alaska).**
- The Jurisdictional Agency(s) list is an exception and is not passed by IRWIN. This list is auto-generated in WFDSS based on units falling within the Planning Area. It can be overridden manually to include or exclude agencies, but each time the Planning Area is modified these values will be overridden by auto-generated data that may need to be manually updated again.
- In Alaska, ensure the boxes under the Other Information heading are checked for Jurisdictions that will be participating in the decision process. It is acceptable to uncheck an Agency that has jurisdiction within the Planning Area, but has opted out of the planning process.

NAME	VALUE
Incident Name	Template Fire
Unique Fire Identifier	2017-AKUYD-00TEST
Responsible Unit Name	Alaska Fire Service - Upper Yukon Zone
FireCode	
P-Code	
Point of Origin	68.16667 N / 142.71611 W
Incident Size	0.1 acres
Latest Perimeter Size	0 acres
Incident Cause	Natural
Incident Type	Wildfire
Incident Discovery	02/12/2017 15:00
Contained	
Controlled	
Out	
Jurisdictional Unit	AKARR - Arctic National Wildlife Refuge
Jurisdictional Agency(s)	USFWS
Geographic Area (prep level)	Alaska (1)
Owner Name(s)	Peter Butteri

Table 2: Sample Incident Information Table from WFDSS

- You may want to insert an "Additional Information" section in the Incident Information portion of the decision that identifies one or more of the following:
  - AIWFMP Management Option at Point of Origin
  - A short narrative describing fire discovery and initial actions that were taken on the fire.
  - Participating Jurisdictional Units, Agency Administrators, and FMOs, and their contact information.
  - Jurisdictional Units and Agency Administrators within the Planning Area that have elected not to participate in the decision process.
  - Contact information for the "Lead" Editor of the decision.

Incident Map

WFDSS will auto-generate an Incident Information table for inclusion in the decision. In Alaska, the quality of the auto-generated Incident Map is usually poor; therefore, it is a good idea to create an incident overview map in ArcGIS or on the AICC ArcIMS website, upload it to WFDSS, and insert it here. Adobe pdf files cannot be uploaded to WFDSS, so maps must be saved as .png or .jpg image files. WFDSS will resize large format maps to fit on a letter-sized page, but it is best to create letter-sized maps for upload. If landscape layout maps are rotated and saved in the portrait orientation they will fill an entire page instead of a half page, and may be more readable.

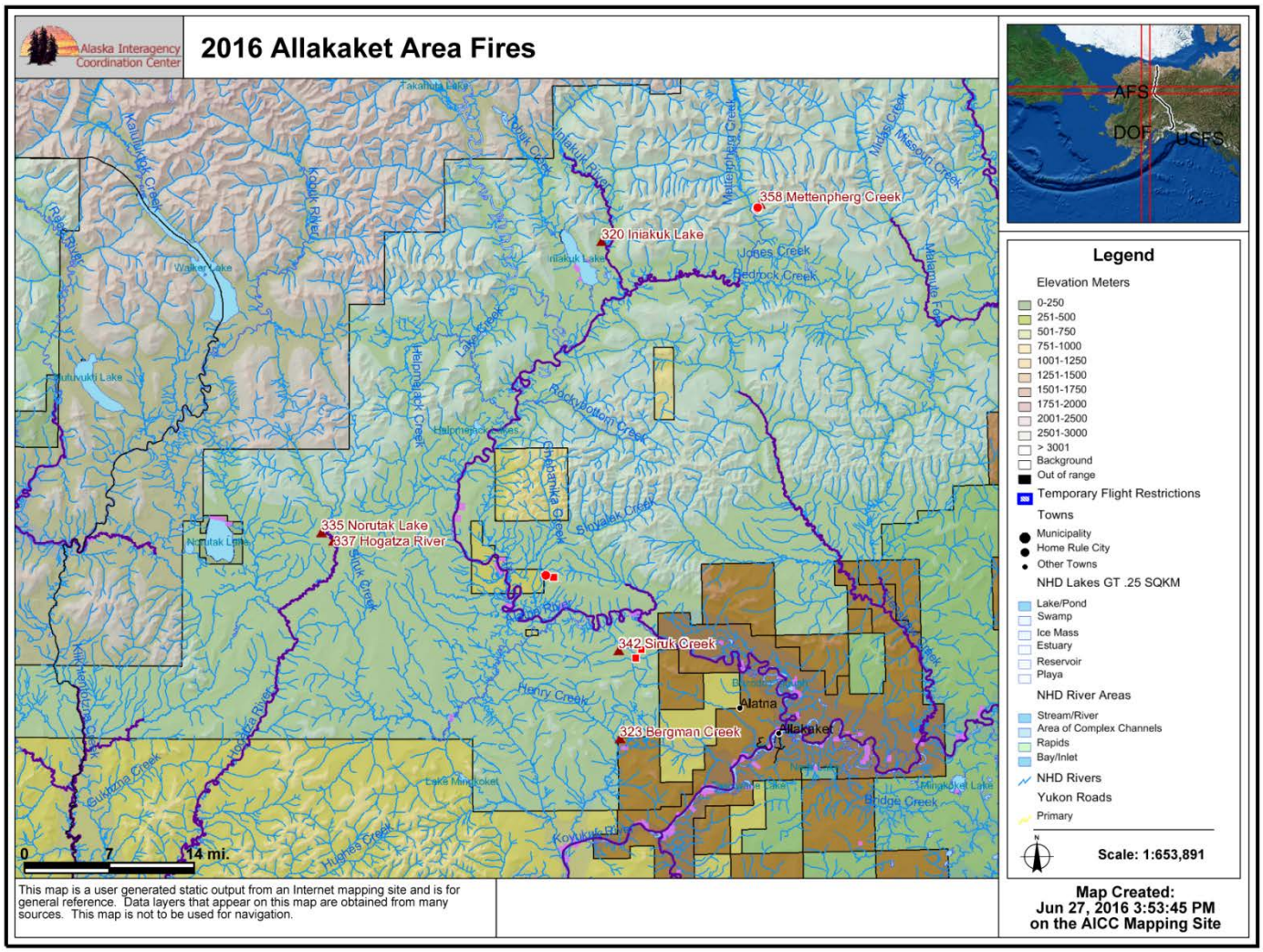
The AICC ArcIMS site provides an interface and tools for rapid map production for users with minimal GIS skills.

The following link will open a template overview map on the ArcIMS site:
https://afsmaps.blm.gov/imf_fire/imf.jsp?session=6604127686369573862.

You will need to pan and zoom to your area of interest, turn layers/labels on/off as desired, export a map using the Create PDF Map function, and export the the map from Adobe as a .png file.

Help for using AICC ArcIMS tools and buttons is available at: https://afsmaps.blm.gov/imf_fire/imfHelp.jsp

A tutorial for using the AICC ArcIMS site is available at:
https://afsmaps.blm.gov/imf_fire/sites/help/compass_51/gctx_tut_intro.html.



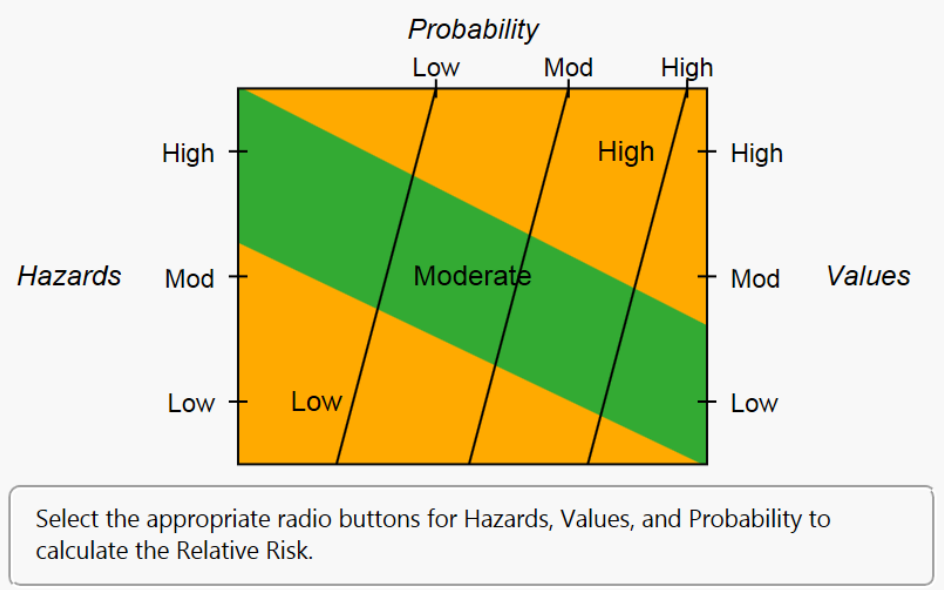
Risk

When evaluating Risk, consider that:

- The breakdown of each aspect is not all inclusive and considerations can vary by place and time.
- Users are expected to exercise their judgment in determining the ratings; information is intended to provide both guidance in completion and flexibility in determining exactly what the descriptions mean.
- Local information can and should be appended to the lists to better reflect site-specific situations.
- Local, site-specific information concerning air quality and smoke management must be appended into the Wildland Fire Relative Risk Assessment to reflect variances in situations and local values and regulatory concerns.
- Air-quality criteria should be reflected in the values assessment portion, smoke production can be incorporated into the hazard descriptive list, and descriptive information related to the probability of adverse smoke events, if available, can be addressed as part of the probability assessment.

Relative Risk

Despite appearing as the first risk chart in the decision, Relative Risk represents the summary of the other three risk charts and needs to be considered last.



The chart itself is not editable; but the Notes text box should contain a summary of the values of concern, the hazards associated with the fire, and the probability that values will be affected by the fire. For more detail see http://wfdss.usgs.gov/wfdss_help/index.htm?page=4036.htm.

Potential Fire Duration

Evaluate the estimated length of time that the fire may continue to burn. Rank the element as low (short), moderate, or high (long).

Values

WFDSS defines values as those ecologic, social, and economic resources that could be lost or damaged because of a fire. Ecologic values may consist of the following:

- vegetation
- wildlife species and their habitat
- air and water quality
- soil productivity
- other ecologic functions

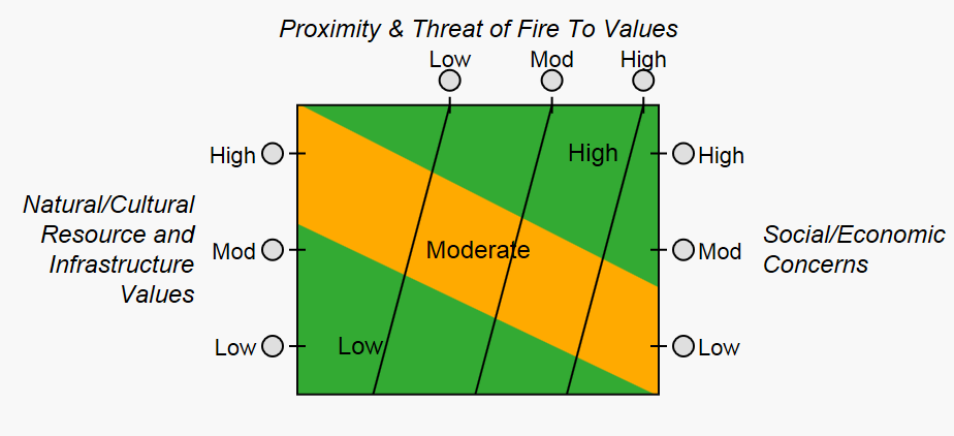
Social effects can include the following:

- life, cultural and historical resources, including artifacts and sacred sites
- natural resources

Economic values can include the following:

- property and infrastructure
- economically valuable natural and cultural resources
- recreation and tourism opportunities

For more detail see http://wfdss.usgs.gov/wfdss_help/index.htm?page=4041.htm.



Natural/Cultural Resource Concerns

Based on the number and kinds of values to be protected, and the difficulty to protect them, rank this element Low, Moderate, or High. Considerations include, but are not limited to; key resources potentially affected by the fire such as urban interface, structures, critical municipal watershed, commercial timber, developments, recreational facilities, power/pipelines, communication sites, highways, unique natural resources, special designated areas (i.e. wilderness), T&E species habitat, and cultural sites.

Social/Economic Concerns

Evaluate the potential impacts (risk or effects) of the fire to social and/or economic concerns, and rank this element Low, Moderate, or High. Considerations include, but are not limited to: impacts to social or economic concerns of an individual, business, community or other stakeholder; other fire management jurisdictions; tribal subsistence or gathering of natural resources; air quality regulatory requirements; public tolerance of smoke, including health impacts; potential for evacuation and ingress/egress routes; and restrictions and/or closures in effect or being considered.

Proximity and Threat of Fire to Values

Evaluate the potential threat to values based on their proximity to the fire, and rank this element Low, Moderate, or High.

Values Notes

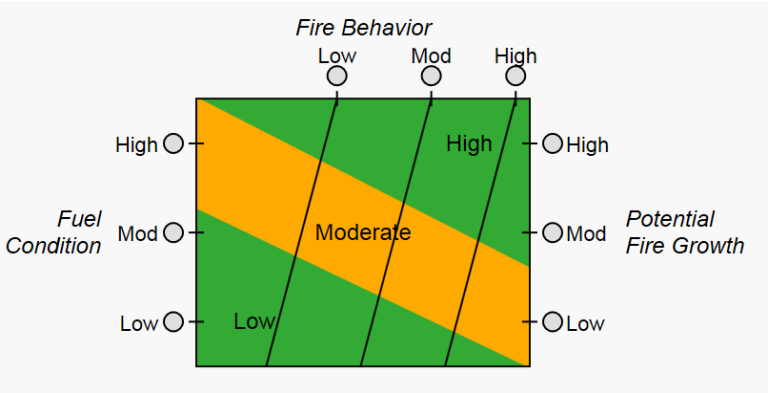
Summarize the values of concern in the Hazards Notes text box. Consider inserting an additional section in the Risk content that identifies values of concern in more detail.

Hazards

WFDSS defines wildland fire hazard as being composed of the following:

- Conditions under which the fire occurs and exists;
- Ability of the fire to spread and circulate;
- Intensity and severity the fire may present; and

For more detail see http://wfdss.usgs.gov/wfdss_help/index.htm?page=4045.htm.



Fire Behavior

Evaluate the current and expected fire behavior and rank the element Low, Moderate or High. Considerations include intensity, rates of spread, crowning; and profuse or long-range spotting.

Fuel Condition

Consider fuel conditions where fire is currently burning and where it will be burning and rank this element Low, Moderate or High. Evaluate fuel conditions that exhibit high ROS and intensity for your area, such as those caused by invasive species or insect/disease outbreaks; and/or continuity of fuels.

Potential Fire Growth

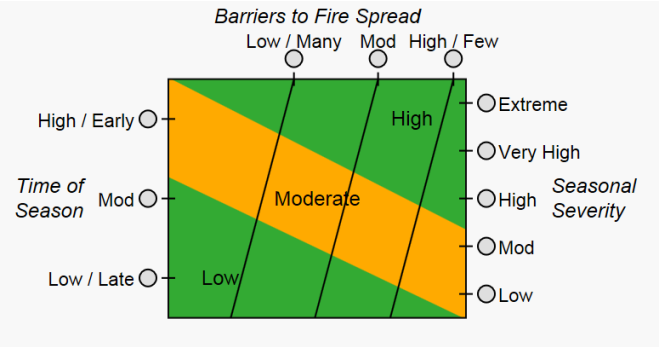
Evaluate the potential fire growth, and rank this element Low, Moderate, or High. Considerations would include current and expected fire growth based on fire behavior analysis and the weather forecast and/or the ability to control the fire.

Hazard Notes

Summarize the hazard in the Hazards Notes text box.

Probability

Probability refers to the likelihood of a fire becoming an active event with potential to adversely affect values. For more detailed information see http://wfdss.usgs.gov/wfdss_help/index.htm?page=4049.htm.



Time of Season

Evaluate the potential for a long-duration fire and rank this element Low, Moderate or High. Time remaining until a season-ending event should be considered.

Seasonal Severity

Evaluate Seasonal Severity based on fire danger indices and rank this element Low/Moderate, High or Very High/Extreme. Considerations include fire danger indices such as CFFDRS Buildup Index (BUI), live fuel moistures, adjective fire danger rating, and geographic area preparedness level.

Barriers to Fire Spread

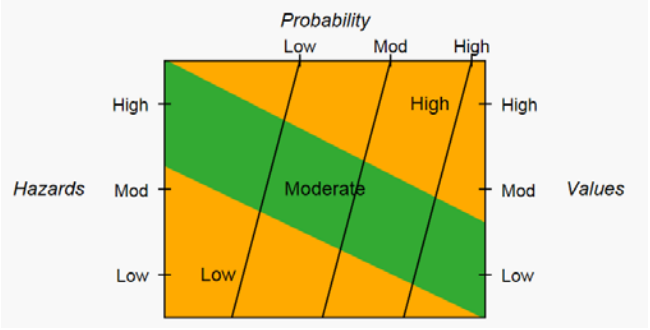
Evaluate the barriers to fire spread as a measure of natural defensibility of the fire's location and an indication of the degree of potential mitigation actions needed and rank this element Low, Moderate or High.

Incident Organization

The Relative Risk Assessment must be completed and published before the Incident Organization Assessment can be created.

Relative Risk

The Relative Risk chart and Notes in the Incident Organization Assessment are locked and will auto-populate from the Relative Risk Assessment.

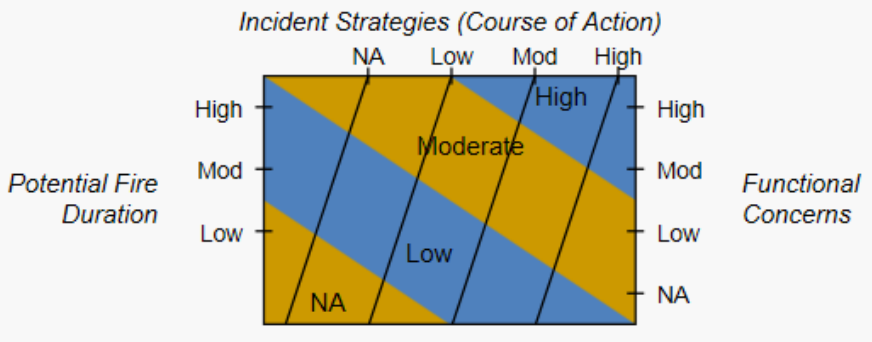


Implementation Difficulty

The Implementation Difficulty is a measure of how the specific circumstances that may be associated with a particular fire combine to represent potential intricate implementation concerns. While many specific situational elements have been addressed by the Relative Risk, special functional concerns and the requirement to implement the course of action selected to meet the incident objectives and requirements are addressed here. This assessment area also allows opportunity for the Agency Administrator to identify local information in regard to historic fire duration, special needs and concerns, and potential tactical responses. Implementation Difficulty addresses:

- potential fire duration,
- incident strategies (Course of Action),
- functional concerns;

For more detailed information see:
http://wfdss.usgs.gov/wfdss_help/index.htm?page=WFDSSHelp_ONA2_Imple_Diff.html.



Potential Fire Duration

Within the WFDSS system, this element is rated during the Relative Risk Assessment process and transferred to the Organizational Needs Assessment.

Incident Strategies (Course of Action)

Evaluate the level of firefighter and aviation exposure required to successfully meet the current strategy and implement the course of action. Rank this element as N/A (Very Low), Low, Moderate, or High. Considers the likelihood that those resources will be effective; exposure of firefighters; reliance on aircraft to accomplish objectives; and whether there are clearly defined trigger points.

Functional Concerns

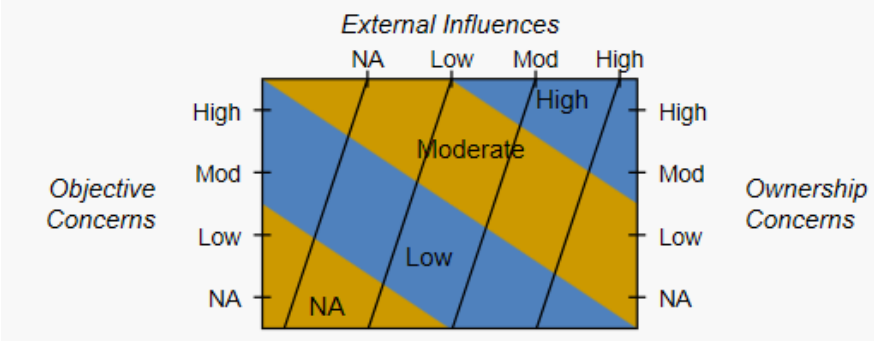
Evaluate the needed organizational structure to adequately and safely manage the incident, and rank this element as N/A (minimal resource committed), low (adequate), moderate (some additional support needed), or high (current capability inadequate).

Considerations include: Incident management functions (logistics, finance, operations, information, planning, safety, and/or specialized personnel/equipment) are inadequate and needed; availability of resources; access to EMS support; heavy commitment of local resources to logistical support; ability of local businesses to sustain logistical support; substantial air operation which is not properly staffed; worked multiple operational periods without achieving initial objectives; incident personnel overextended mentally and/or physically; Incident Action Plans, briefings, etc. missing or incomplete; performance of firefighting resources affected by cumulative fatigue; and ineffective communications.

Socio/Political Concerns

The Socio/Political Concerns are an indicator of how difficult and involved the decision is for the specific situation that may be associated with a particular fire. Key areas that influence and affect an Agency Administrator's decision space and range of options include: the type of objectives to be implemented on the fire; the particular ownership situation; and any external influences that may exert strong influences on the Agency Administrator and his/her decision. This assessment area also allows the Agency Administrator to identify local information with attention to fire activity, local public and political opinions, and local knowledge.

For more detailed information see:
http://wfdss.usgs.gov/wfdss_help/index.htm?page=WFDSSHelp_ONA3_Decision_Concerns.html



Objectives Concerns

Evaluate the complexity of the incident objectives and rank this element as N/A (very low), low, moderate, or high. Considerations include: clarity; ability of current organization to accomplish; disagreement among cooperators; tactical/operational restrictions; complex objectives involving multiple focuses; and objectives influenced by serious accidents or fatalities.

Ownership Concerns

Evaluate the effect ownership/jurisdiction will have on how the fire is managed and rank this element N/A (Very Low), Low, Moderate, or High. Considerations include disagreements over policy, responsibility, and/or management response; fire burning or threatening more than one jurisdiction; potential for unified command; different or conflicting management objectives; potential for claims (damages); and disputes over suppression responsibility.

External Influences

Evaluate the effect external influence will have on how the fire is managed and rank this element as N/A (very low), low, moderate, or high.

Considerations include increasing media involvement, social/print/television media interest; threat to safety of visitors from fire and related operations; restrictions and/or closures in effect or being considered; preexisting controversies/relationships; smoke management problems; and sensitive political concerns/interests.

Objectives

Strategic Objectives and Management Requirements come from the Fire Management Plans and the Land/Resource plans. They are then tiered down to specific Incident Objectives and Incident Requirements for the Planning Area. For example, a unit's Strategic Objective for a given area provides the desired condition, standard, guideline or objective relating to management of the land; the incident objectives and requirement should directly relate to what that guidance means for the current fire at hand under the current and expected conditions.

Incident Objectives & Requirements

Incident Objectives are site specific guidance and direction necessary for the selection of appropriate strategy(s) and the tactical direction of resources. Incident objectives are based upon agency administrators' direction and constraints. Incident objectives must be measurable, yet flexible enough to allow for strategic and tactical alternatives.

Incident Requirements are incident-specific directives, standards, specifications, or constraints that need to be complied with when implementing management actions on a specific fire incident. Incident requirements derive from the Land Management Requirements, legal authorities, or other local influences (e.g., county commissioners, air quality boards) that pertain to the incident or its associated actions; they often define the limitations or "sideboards" when implementing the course of action.

When developing Incident Objectives and Requirements:

- Identify what types of values and/or resources need to be addressed:
    - Review the Strategic Objectives and Management Requirements.
    - Review other sources of incident direction such as the delegation of authority, the briefing package or other related documents.
    - Review the Values Inventory.
    - Obtain local knowledge about values or events
- Develop Incident Objectives and Requirements that:
    - Tier from the over-arching Strategic Objectives and Management Requirements and address the what, where, when and why.
    - Include content that is specific to the location, conditions, and time of the fire.
    - Address values included in the Values Inventory and known locally
    - Are aligned with other sources of direction to include delegation of authority, the briefing package or ad hoc discussions.
    - Communicate the relative importance of one objective over another.
- **Avoid** developing Incident Objectives that are:
    - Generic in nature or have vague terms that have different meaning to individuals (e.g., keep the fire small)

For more detailed guidance on developing Incident Objectives see:
https://wfmrda.nwcg.gov/docs/_GAE_Docs/Additonal_GA_Resources/CreatingIncidentSpecificWFDSSObjectives_October2015_FINAL.pdf

Course of Action

An overall plan describing the selected strategies and management actions intended to meet incident objectives and requirements based on current and expected conditions.

The Course of Action (COA) is comprised of one or more Action Items that are developed to accomplish Incident Objectives and/or Requirements. Use this section to clearly define the strategy and actions to the IMT. As you are developing Action Items make sure they help to accomplish the Incident Objectives or Requirements. If an Action Item does not contribute to the accomplishment of Objectives or Requirements it may need to be modified, or it may be an indication that there are gaps in your Incident Objectives and Requirements that need to be corrected.

Create Action Items in a way that an individual Action Item can be easily excluded from a pending decision if it's no longer applicable.

For more detailed description of the relationship between a Course of Action and Incident Objectives see: https://wfmrda.nwcg.gov/docs/_GAE_Docs/Additonal_GA_Resources/CreatingIncidentSpecificWFDSSObjectives_October2015_FINAL.pdf

Rationale (Decision Summary)

The Rationale portion of a decision is developed by the decision Approver, or by an Incident Editor that can effectively communicate the Agency Administrator's wishes. The Rationale:

- Documents why a specific course of action was chosen,
- Records the risk decision dialog that has occurred among agency administrators and incident managers, and
- Provides the opportunity to tell the "story" of the incident.

Consider using the following template for writing the Rationale:

Our decision is…Discuss what is allowed in the LRMP, what are the conditions of success, what is the probability of being successful, expected duration of the incident, what was considered but rejected

The cooperators involved in sharing this decision process are…Discuss who and why

The current fire situation is…Describe the area the fire is burning in and the fire environment

The values of concern are…Summarize why they are important and the likelihood of them being impacts, area closures

The Relative Risk Assessment and Organization Assessment indicate...Tie to values, highlight expected firefighter exposure, IMT needs

The following triggers would indicate revisions to or a new decision is needed…Describe low probability/high consequence events