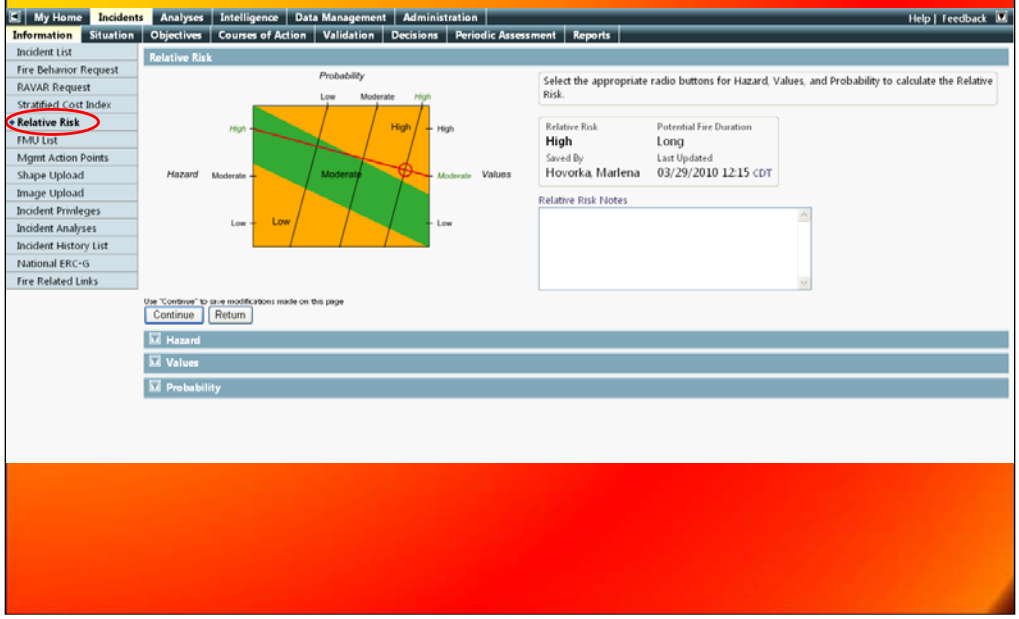

Wildland Fire Decision Support System
RELATIVE RISK ANALYSIS
Wildland Fire Management RD&A
National Interagency Fire Center
Boise, Idaho
APRIL 5, 2010

WFDSS RELATIVE RISK ANALYSIS



The Relative Risk assessment is available on the left menu.

The Relative Risk assessment is required before publishing a decision for an incident. Its purpose is to assist you in planning for, assessing, and managing your incidents. Incident owners, editors, reviewers, and approvers can perform the assessment.

The Wildland Fire Relative Risk Assessment provides the Agency Administrator with a quick, but comprehensive, assessment of the relative risk of the fire. This is a qualitative process that can be completed in less time than a quantitative long-term risk assessment.

Before calculating relative risk, you need the following information:
•Values at risk in the area affected by the fire
•Weather, size and other data about the fire
•Seasonal conditions and an understanding of historic fire activity in the area

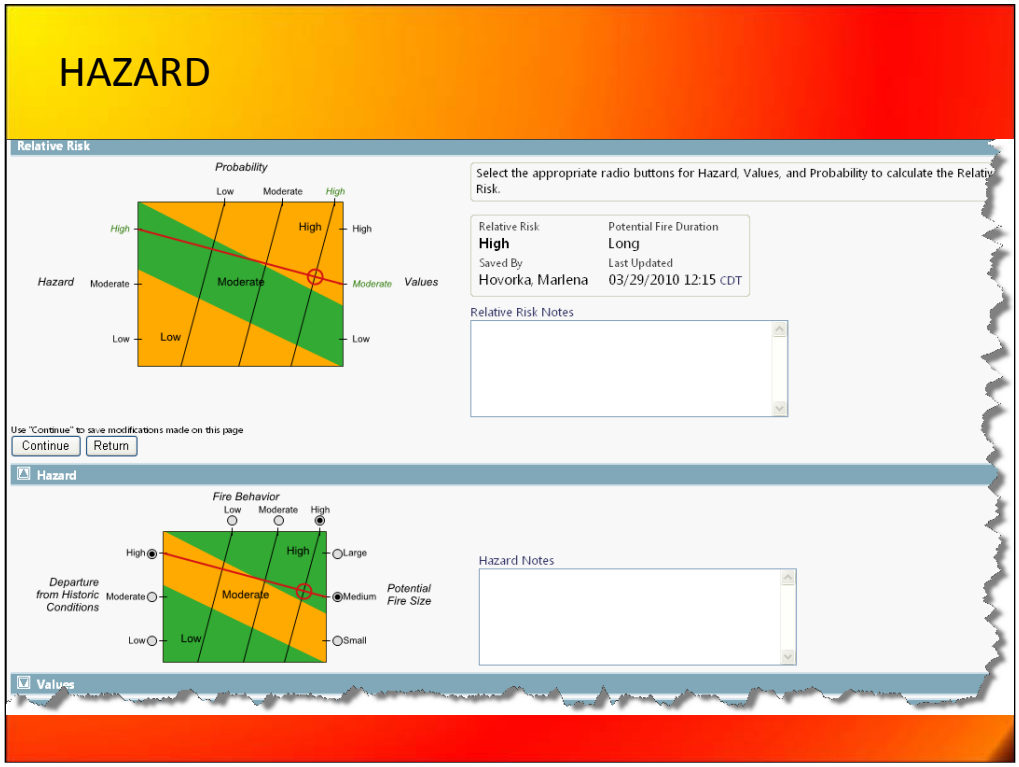
Three Risk Components
The relative risk assessment chart uses three risk components:
•values
•hazard
•probability
Each of these components is assessed independently. Then, the three outputs are evaluated in a final step that provides the relative risk for the fire. Each risk component is defined by three variables. One variable is located on the right and one on the left side of the box and the third variable is defined by three interior lines extending from top to bottom.

Assumptions/concerns can be documented in the text box provided for notes.

To calculate relative risk:

1. From the Incident List, select the incident you want to calculate relative risk for.
2. Choose View Information > Relative Risk. The Relative Risk page appears.
3. Click the blue arrow next to Hazards. The section expands to display the Hazard chart.
4. On the left, top, and right sides of the chart, select the radio button that best represents the current incident.
For example, if you have a fire that is moderately active, could become large, but is similar to historic conditions, you would select Low for Departure from Historic Conditions, Moderate for Fire Behavior, and Large for Potential Fire Size.
5. Enter notes for each chart that explain your reasoning for your selections. Doing so will assist the team later when you re-evaluate the relative risk during the periodic assessment.
6. Repeat steps 3 -5 for Values and Probability. As you complete each section, the chart at the top of the page changes to display the overall relative risk.
7. Enter any notes about the overall relative risk chart.
8. Click Continue. The Relative Risk Duration page appears.
9. Choose the Potential Fire Duration that best fits current conditions.
10. Click Continue. The Relative Risk Results page appears.
11. Review the results and advice, then click Save.
12. The Relative Risk assessment is included in the incident information under Validation and can be added to the decision documentation.

These are the steps you would use to proceed through the application to complete the relative risk



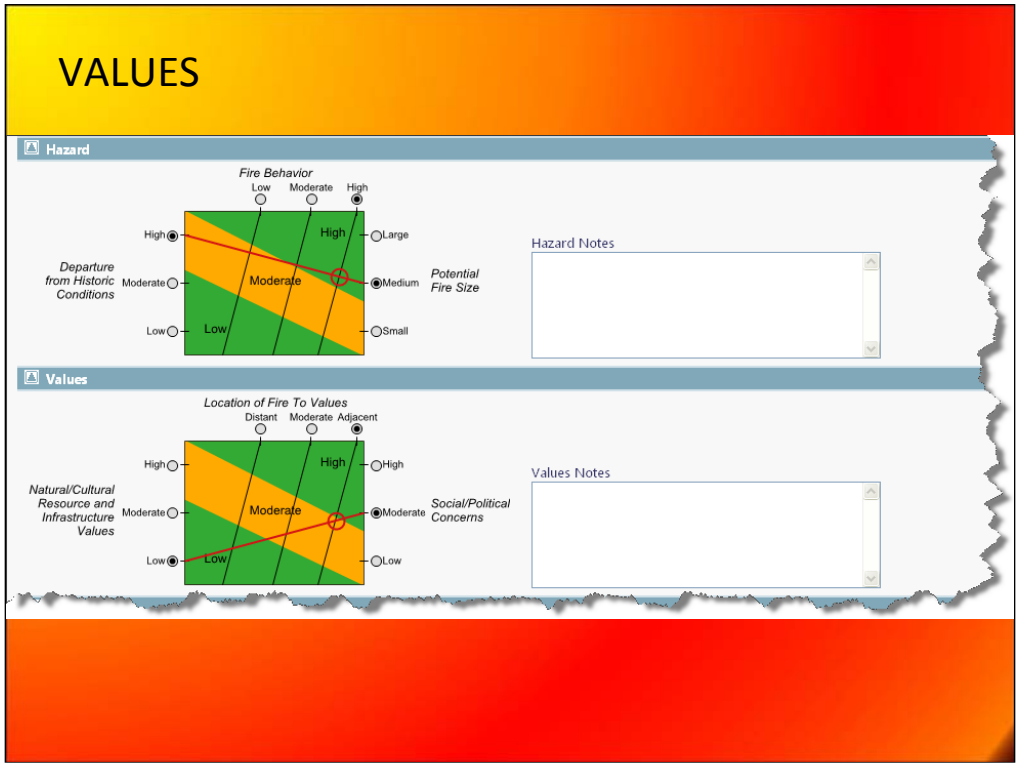
Hazards

The hazard in wildland fire is 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
- spatial extent of the fire

Make sure to document you assumptions in the notes box provided.

Additional information to assist in the completion of the Hazard Assessment



Values

Values are those ecologic, social, and economic resources that could be lost or damaged because of a fire. Ecologic values 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
- natural resources
- artifacts
- sacred sites

Economic values can include the following:

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

VALUE ASSESSMENT: Values are those ecologic, social, and economic effects that could be lost or damaged because of a fire. Ecologic values consist of vegetation, wildlife species and their habitat, air and water quality, soil productivity, and other ecologic functions. Social effects can include life, cultural and historical resources, natural resources, artifacts, and sacred sites. Economic values make up things like property and infrastructure, economically valuable natural and cultural resources, recreation, and tourism opportunities. This assessment area allows opportunity for the local Agency Administrator to identify particular local concerns. These concerns may be identified in the fire management plan or other planning documents.

Natural/Cultural Resource Concerns - key resources potentially affected by the fire. Examples include, but are not limited to habitat or populations of threatened, endangered, or sensitive species, water quality, erosion concerns, and invasive species.

Low	Moderate	High
Local support for wildland fire use is high. The fire should have little or no impact on subsistence or Tribal activities involving treaty rights. The fire is expected to remain within a single jurisdiction or agreements are in place to allow the fire to move across several jurisdictions. Media coverage is favorable. Few structures or business ventures are potentially affected by the fire. There are few impacts to recreation and tourism.	Local support of wildland fire use is clearly divided between supporters and opponents. The fire will have some impacts on subsistence or Tribal activities involving treaty rights. The fire is expected to involve more than one jurisdiction, cooperator, or special interest group and agreements need to be developed. Media coverage tends to be a mix of favorable and unfavorable views. Some structures may be threatened by the fire or some business ventures may be affected by the fire.	Local support for wildland fire use is low. The fire will have significant impacts on subsistence activities or Tribal activities involving treaty rights. Smoke impacts may become a concern for higher level air quality regulatory agencies. The fire is expected to involve several jurisdictions, cooperators, and special interest groups and agreements requiring significant negotiation need to be developed. Media coverage tends to be unfavorable. Many structures or private properties could be threatened.

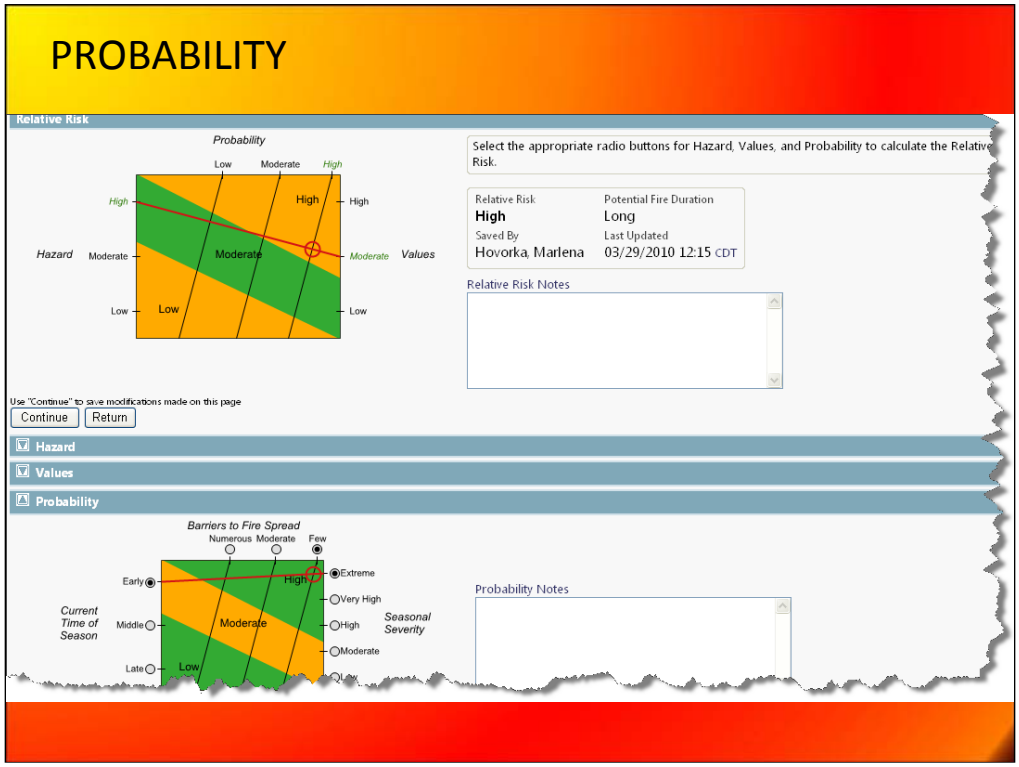
Social/Economic Concerns - the risk of the fire, or effects of the fire, impacting the social or economic concerns of an individual, business, community or other stakeholder involved with or affected by the fire. Social concerns may include degree of support for the wildland fire use program or resulting fire effects, potential consequences to other fire management jurisdictions, impacts to tribal subsistence or gathering of natural resources, air quality regulatory requirements and public tolerance of smoke. Economic concerns may include potential financial impacts to property, business, or infrastructure. Infrastructure impacts may be costs to repair or replace sediment catchments, wildlife guzzlers, corrals, roads, culverts, power lines, domestic water supply intakes, and similar items.

Low	Moderate	High
Resource concerns are few and generally do not conflict with management of the fire. Mitigation measures are effective.	Significant resource concerns exist, but there is little conflict with management of the fire. Mitigation measures are generally effective.	Multiple resource concerns exist, some of which may conflict with management of the fire. The effectiveness of needed mitigation measures is not well established.

Location of Fire to Values

Distant	Moderate	Adjacent
Fire location is not proximate to values to be protected or fire is located where it is highly unlikely that it would reach the values.	Fire location is moderately proximate to values. Location is such that, based on historical data, fire could potentially reach the values but will take multiple burning periods and sustained fire activity to reach the values.	Fire location is in close proximity to values. Without mitigation actions, fire will be expected to reach the values.

Additional information to help complete the Values Assessment portion.



Probability

Probability refers to the likelihood of a fire becoming an active event with potential to adversely affect values.

Considerations

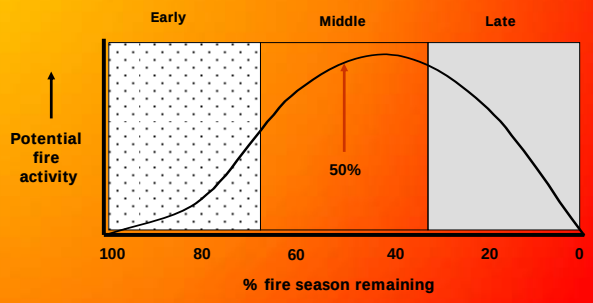
This descriptive list is not all inclusive and items on the list can vary by place and time. Users are expected to exercise their judgment in determining the ratings; information is intended to provide both guidance in completion and flexibility in determining exactly what the descriptions mean.

Local information can and should be amended to the lists to better reflect site-specific situations.

Local, site-specific information concerning air quality and smoke management must be amended 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.

PROBABILITY ASSESSMENT: Probability refers to the likelihood of a fire becoming an active event having potential to adversely affect values.
Time of Season - the current time in relation to the historical fire season. The chart below the guidelines reinforces the importance of time of season. During the early part of the fire season, the peak of burning activity is still to come, thus the fire could present substantial variation in behavior and activity. In the middle of the season, the peak of burning activity may or may not have occurred while in the late part of the season, the peak of fire activity generally has occurred and managers can reasonably expect diminishing fire activity and behavior as time progresses. As the amount of fire season remaining decreases or as the time of season progresses from early to late, management concerns and issues associated with potential fire activity decrease.



Early	Middle	Late
The current date is in the early portion of the historic fire season, at least 2/3 of the established fire season remains and the peak of burning activity is still to come.	The current date is in the middle of the historic fire season, at least 1/3 of that period has passed and no less than 1/3 remains. The peak burning activity period either has occurred, is occurring now, or will occur very soon.	The current date is in the latter part of the historic fire season. At least 2/3 of the historic period has passed, the peak burning activity period has occurred, and the probability of a season-ending or fire-ending event is increasing quickly.

Additional information to complete the Probability assessment

PROBABILITY ASSESSMENT Continued:

Seasonal Severity - a measure of the potential burning conditions as expressed by factors such as energy release component (ERC), drought status, live fuel moistures, dead fuels moistures, soil moisture, stream discharge, and similar types of measures.

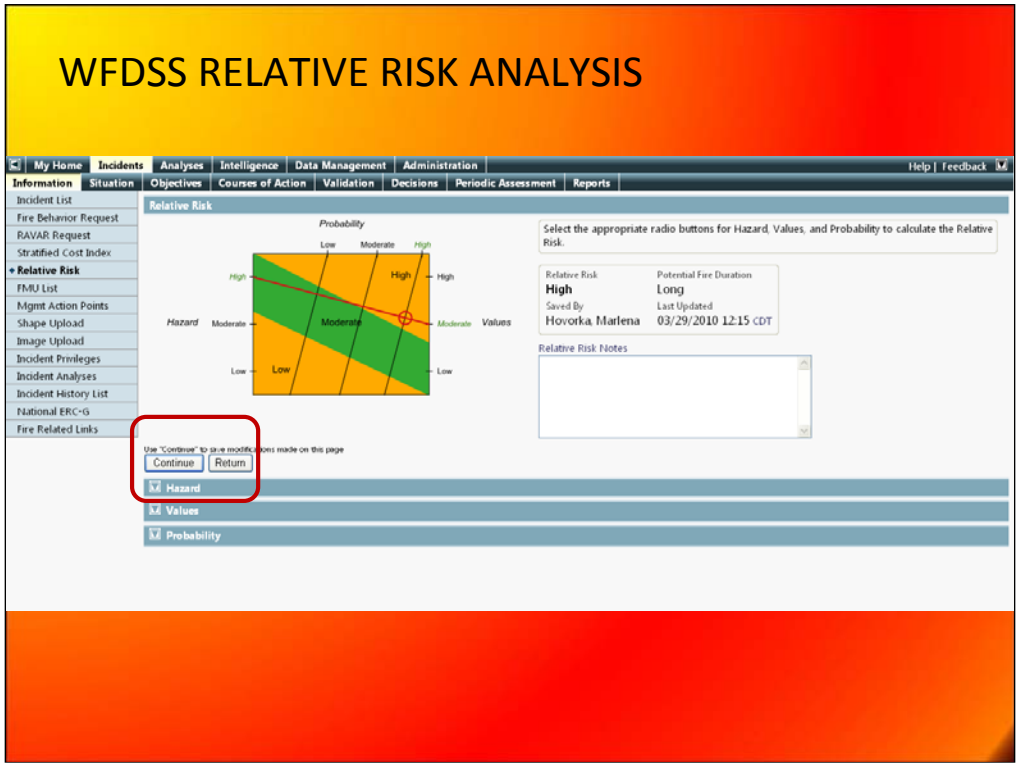
Low	High	Extreme
Measures of fire danger are below to somewhat above seasonal averages. Drought status is within seasonal norms with no long-term drought present	Measures of fire danger are well above seasonal averages but not setting new records. The area is in short-term drought (1-2 years of drought) but not considered to be in long-term drought.	Measures of fire danger are setting new records. The area is considered to be in long-term drought (3 or more years of drought).

Barriers to Fire Spread - a measure of the natural defensibility of the fire location and an indication of degree of potential mitigation actions needed.

Numerous	Moderate	Few
The location of the fire and presence of natural barriers and fuel breaks limit the horizontal fuel continuity, minimal mitigation actions on-the-ground will be needed.	The location of the fire and presence of some natural barriers and fuel breaks limit the horizontal fuel continuity on some, but not all fire flanks, some mitigation actions on-the-ground will be needed to protect threats to boundaries and sensitive areas.	The location of the fire and presence of only limited natural barriers and fuel breaks will permit fire spread across continuous fuels. Mitigation actions on-the-ground will be needed but are expected to be effective.

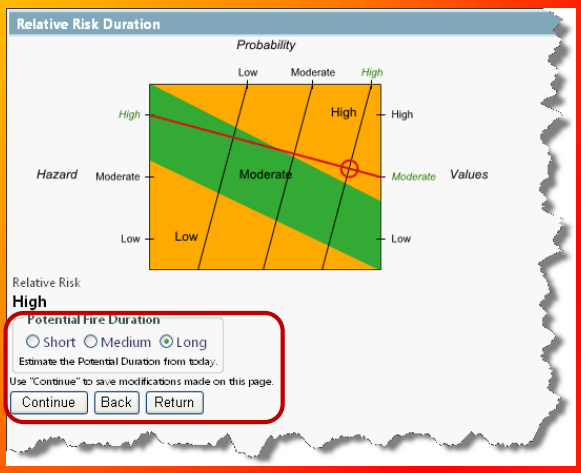
Additional information for the Probability assessment.

WFDSS RELATIVE RISK ANALYSIS

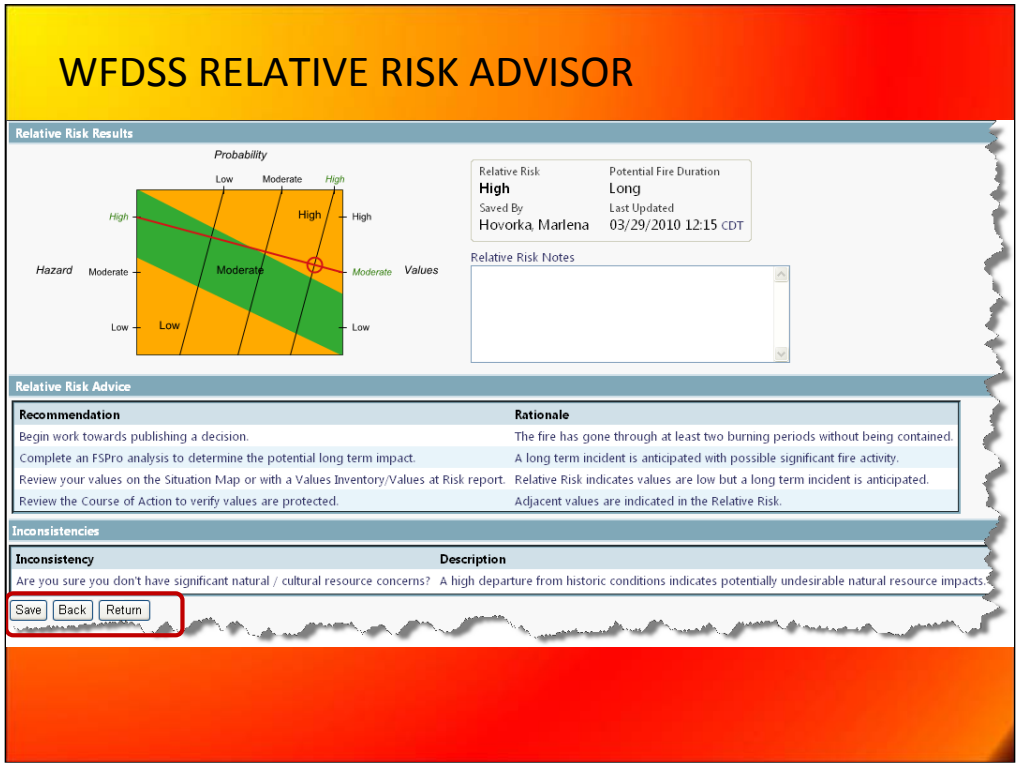


Once the inputs are complete and notes are documented, CLICK “Continue”.

POTENTIAL FIRE DURATION



You are prompted to document the Potential Fire Duration before you can continue. This screen will be incorporated with the previous image in the next release of the WFDSS application. Once the Potential Fire Duration is chosen, CLICK “Continue”.

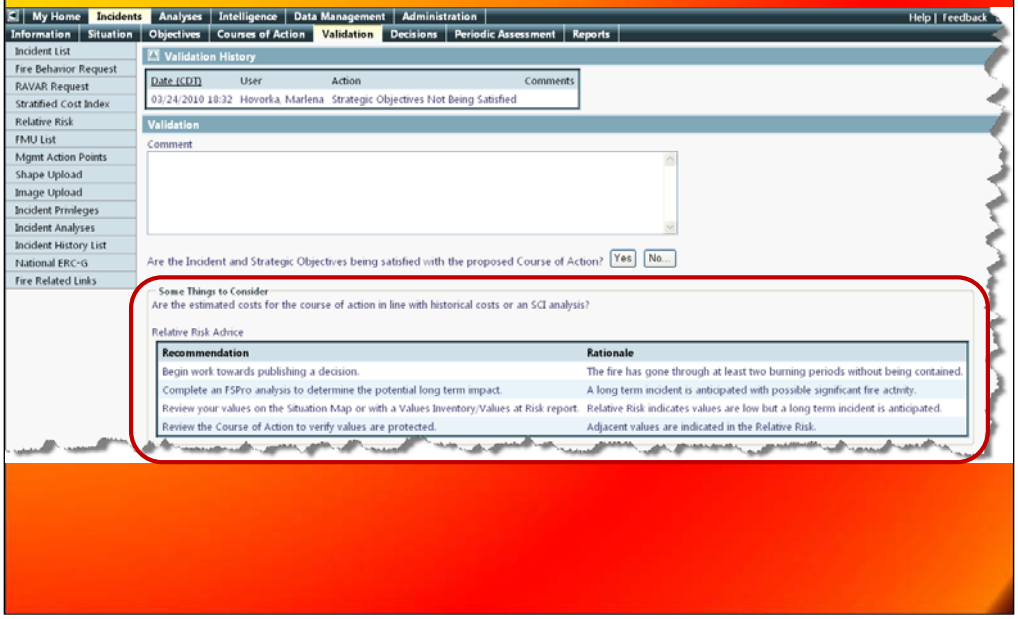


Users are now provided with “RELATIVE RISK ADVICE”

The intent is to provide users some guidance on what to consider for the decision document. If there are inconsistencies in the Relative Risk inputs, they are also highlighted. If the inputs are correct, users should use the text boxes to document their rationale/support for the inputs.

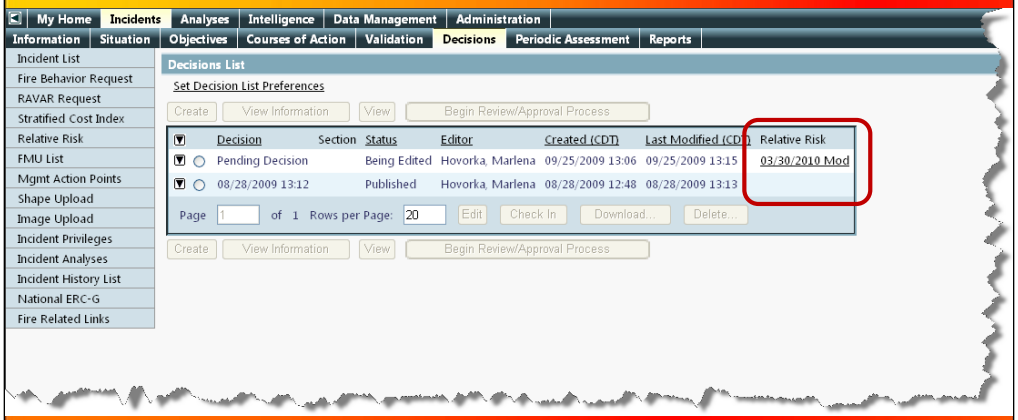
Once the users are comfortable with their inputs, they should CLICK “Save”.

WFDSS RELATIVE RISK ADVISOR & VALIDATION

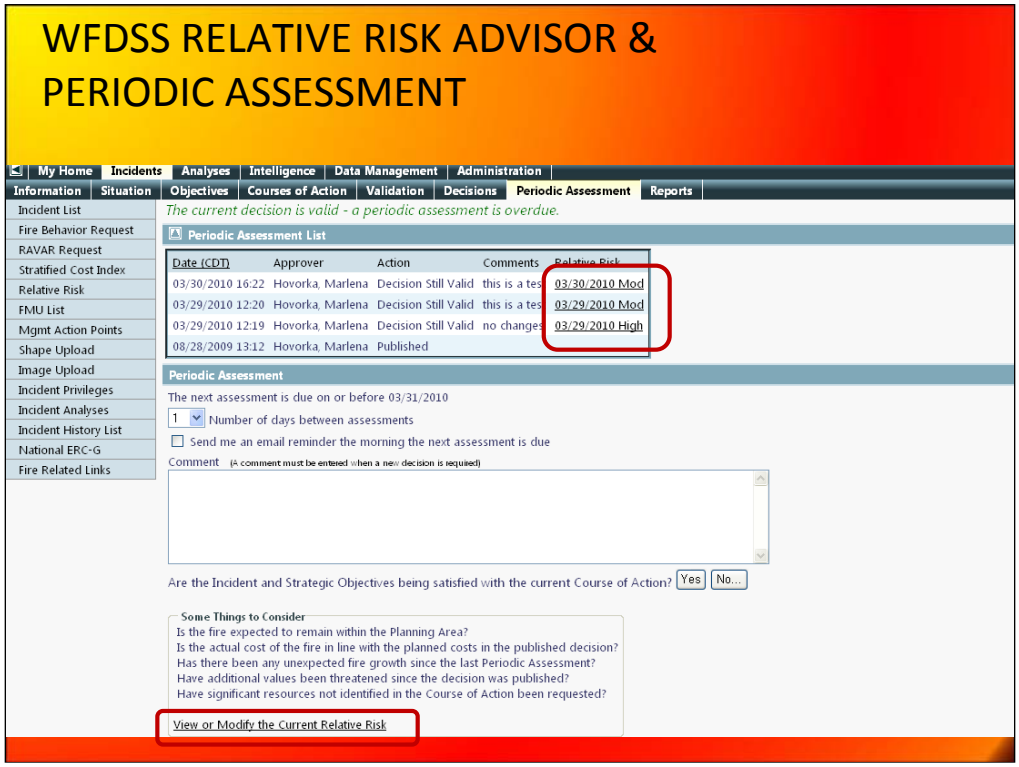


Users can review the RELATIVE RISK ADVICE on the VALIDATION tab.

WFDSS RELATIVE RISK ANALYSIS & DECISION DOCUMENTS



On the DECISION tab, users will see the Relative Risk that was completed for each published decision.



On the Periodic Assessment tab, users can review the Relative Risk that was associated with each completed Periodic Assessment.

Agency Administrators can review and modify the Current Relative Risk. Once they modify and save the Relative Risk, it will be associated with the Periodic Assessment.