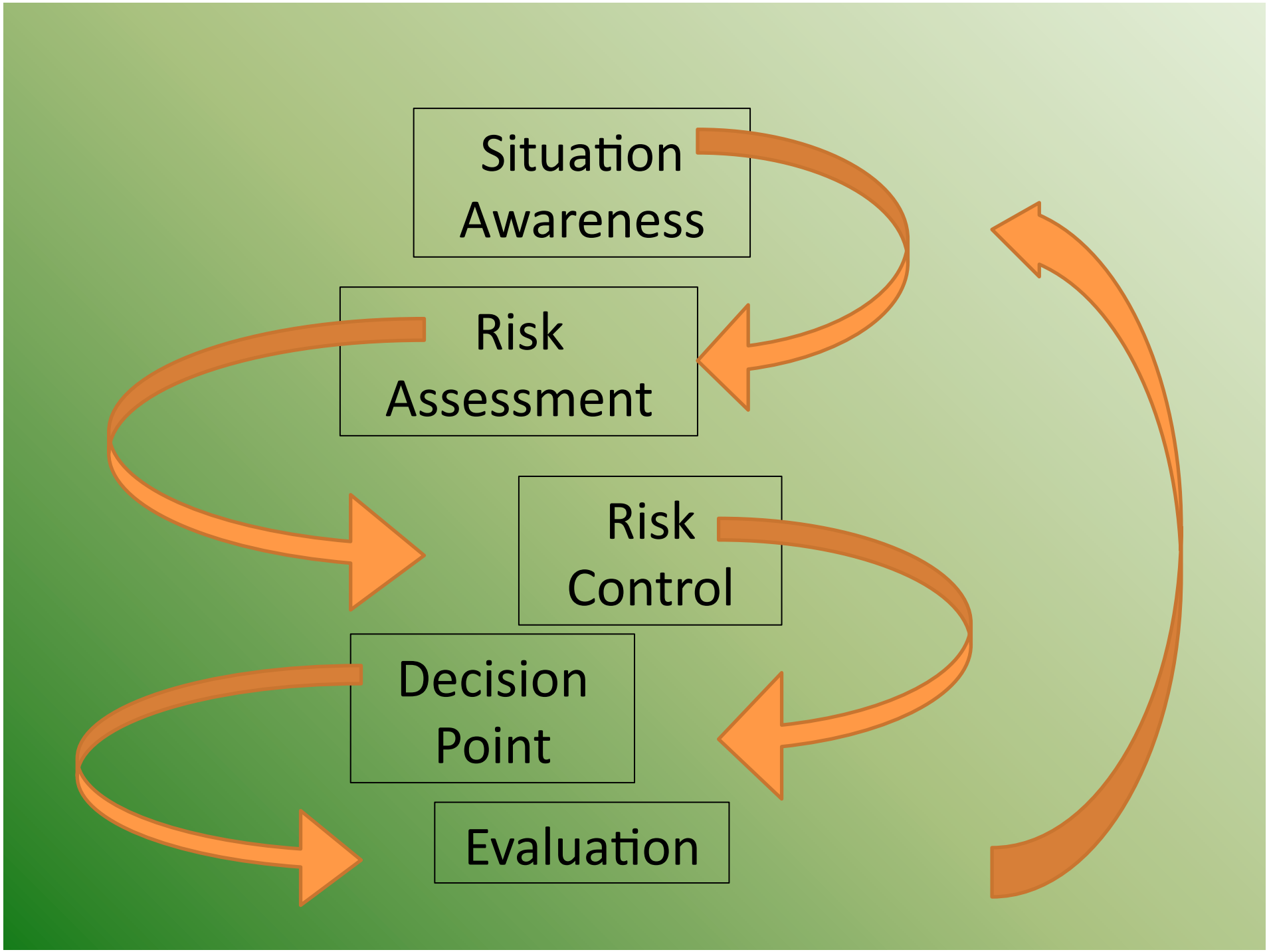
Fire Management Decision Making in Alaska

National Multi-Agency Coordinating Group (NMAC)

Key Issues 2013

It is likely that fire managers' requests for resources will not be filled to the same extent as before, as NMAC and the Geographic Areas make allocations based on a broader landscape perspective.

Risk management will become a greater factor in decisions. Fire managers will need to continually weigh the values at risk against the safety of fire personnel and the public, the cost, and the diminished number of available resources.


Situation Awareness
Risk Assessment
Risk Control
Decision Point
Evaluation

Situation Awareness

Collecting existing information to build an understanding of the situation and the decision space.

Situation Awareness

Pre-Ignition

- Land Management Objectives
- Land Management Constraints
- Statewide resource allocations
- Historic weather conditions
- Historic fuels condition
- General wind patterns
- Historic fire size
- Potential fire behavior

Ignition

- Fire Location
- Incident Objectives
- Incident Constraints
- Short-term weather forecast
- Recent precipitation
- Current and forecast indices
- Resource commitments/availability

WFDSS Incident Information - Windows Internet Explorer

http://wfdss.usgs.gov/wfdss_proto/faces/jsp/assessment/IncidentList.jsp

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WFDSS Incident Information

Page | Safety | Tools

- Incident List
- Fire Behavior Request
- Stratified Cost Index
- Relative Risk
- Organizational Needs
- FMU List
- Mgmt Action Points
- Shape Upload
- Image Upload
- Pt of Origin Values
- Incident KMZ
- Download Perimeters
- Contact Information
- Incident Privileges
- Incident History List
- Incident Analyses
- Fire Related Links

Edit Incident Information

*Incident Name: 277 Bear Creek #4

Geographic Area: Alaska

Owner Name: Pyne, kathryn

Transfer Ownership...

*Point of Origin Latitude: 64.1094 or Deg: 64 Min: 6 Sec: 33.8

Example: 39.527

*Point of Origin Longitude: 149.3873 or Deg: 149 Min: 23 Sec: 14.3

Example: 105.3108

Unique Fire Identifier: 2012 - AKFAS - 211277

Calendar Year | Unit ID | Local Number

FireCode: GY4Y

Responsible Unit Name: Fairbanks Area Forestry

Incident Size (acres): 8,520

*Discovery Date: 06/23/2012 *Discovery Time: 18:43

Containment Date: Containment Time:

Controlled Date: Controlled Time:

Out Date: 08/09/2012 Out Time: 12:00

Incident Cause

- ○ Unknown
- ◉ Natural
- ○ Human

Is this a fire of National Significance?

- ○ Yes
- ◉ No

Jurisdictional Agency Unit at Point of Origin

AKAKS - State of Alaska

Landscape Data Source

- ○ Alaska LANDFIRE 1.0.0
- ◉ Alaska Refresh 2008 1.1.0
- ○ CA Landscape 2010
- ○ Hawaii Refresh 2008 1.1.0a
- ○ LANDFIRE National 1.0.0
- ○ LANDFIRE Refresh 2008 1.1.0b

***Jurisdictional Agency(s)**

- ☐ Bureau of Indian Affairs/Tribal
- ☐ Bureau of Land Management
- ☐ Fish and Wildlife Service
- ☐ National Park Service
- ☐ USDA Forest Service
- ☑ State
- ☐ County & Local
- ☐ ANCSA Corporations
- ☐ Other

Save

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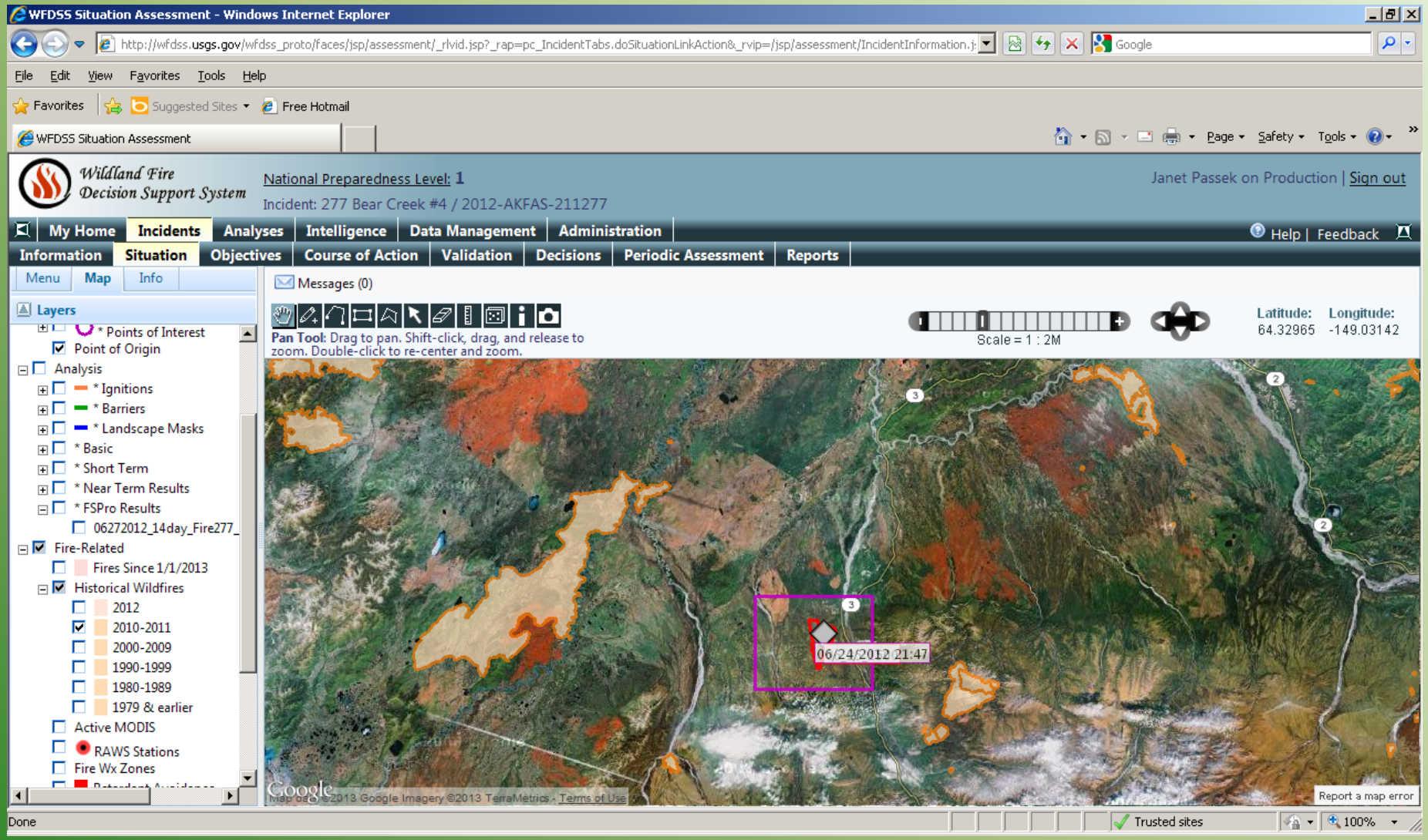
Risk Assessment

Analyzing the collected information to identify potential risks and opportunities. The purpose of this step is to use the information collected and analyses performed to generate necessary predictions for fire growth and risks to values.


WFDSS Situation Assessment - Windows Internet Explorer
http://wfdss.usgs.gov/wfdss_proto/faces/jsp/assessment/_rlvid.jsp?_rap=pc_IncidentTabs.doSituationLinkAction&_rvip=/jsp/assessment/IncidentInformation.j
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WFDSS Situation Assessment
Page Safety Tools
Wildland Fire Decision Support System
National Preparedness Level: 1
Incident: 277 Bear Creek #4 / 2012-AKFAS-211277
Janet Passek on Production | Sign out
My Home Incidents Analyses Intelligence Data Management Administration
Help | Feedback
Information Situation Objectives Course of Action Validation Decisions Periodic Assessment Reports
Menu Map Info
Layers
* Points of Interest
Point of Origin
Analysis
* Ignitions
* Barriers
* Landscape Masks
* Basic
* Short Term
* Near Term Results
* FSPro Results
06272012_14day_Fire277_
Fire-Related
Fires Since 1/1/2013
Historical Wildfires
2012
2010-2011
2000-2009
1990-1999
1980-1989
1979 & earlier
Active MODIS
RAWS Stations
Fire Wx Zones
Messages (0)
Pan Tool: Drag to pan. Shift-click, drag, and release to zoom. Double-click to re-center and zoom.
Scale = 1 : 2M
Latitude: 64.32965
Longitude: -149.03142
06/24/2012 21:47
Google
Map data ©2013 Google Imagery ©2013 TerraMetrics - Terms of Use
Report a map error
Done
Trusted sites
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Risk Assessment
Relative Risk

- Natural Barriers
- Fire spread probability predictions
- Values in fire area
- Probability of success
  - Resource availability
  - Fire behavior
  - Weather

WFDSS Relative Risk - Windows Internet Explorer

http://wfdss.usgs.gov/wfdss_proto/faces/jsp/assessment/_rlvid.jsp?_rap=pc_WFDSSOpenIncident.doRelativeRiskLinkAction&_rvip=/jsp/assessment/IncidentIn

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WFDSS Relative Risk

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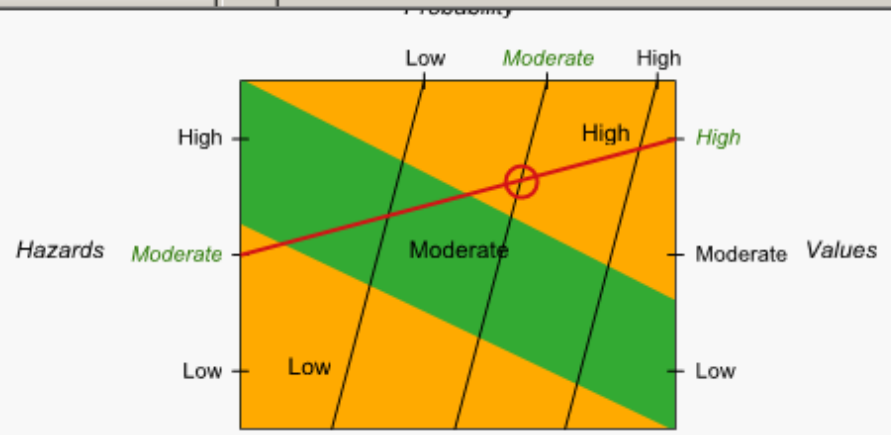


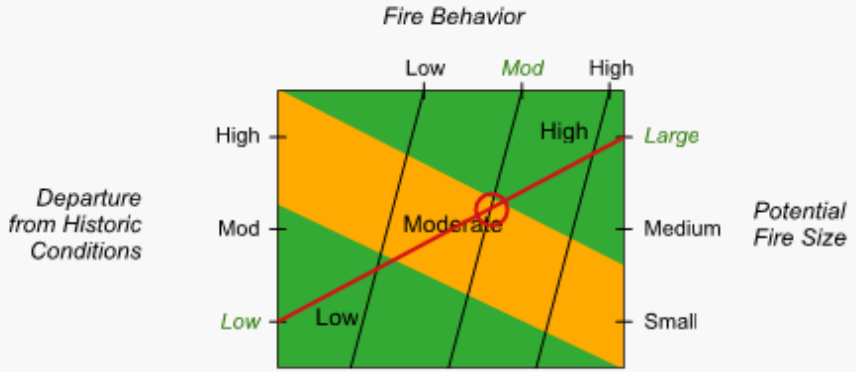
Relative Risk	Potential Fire Duration
High	Medium
Saved By	Assessment Completed
Henderson, Marsha	06/24/2012 20:10 CST

Relative Risk Notes

This fire has immediate risk of affecting multiple homes, commercial businesses, and military installations.

Return

Hazards



Hazards Notes

This area has burned in recent years. The fire behavior has been driven primarily by wind. Without aggressive suppression actions, the fire has the potential to become large on all flanks given the available fuels.

Values

Probability

Return

Done

Start | People+Content IP | WFDSS | Home - Window... | WFDSS Relative Risk ... | E:\Planning\Decision Mak... | wfdss for managers2013...

Risk Control
Course of Action

Developing controls to address identified risks and opportunities. The purpose of this step is to identify potential fire management strategies, tactics, and contingencies to address identified risks and opportunities.

Risk Control
Course of Action

- Direct line construction
- Burn out operations
- Monitoring
- Point protection

WFDSS Course of Action - Windows Internet Explorer

http://wfdss.usgs.gov/wfdss_proto/faces/jsp/assessment/_rlvid.jsp?_rap=pc_IncidentTabs.doCoursesOfActionLinkAction&_rvip=/jsp/assessment/IncidentObje

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WFDSS Course of Action

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Never Active
Active on

Excluded
Included or Excluded

Apply Filter

Action Items for 277 Bear Creek #4

Proposed Course of Action

Estimated Cost: 10,000,000

Cost Estimation Method: ☐ SCI ☐ Historic Costs ☐ ICARS Projection ☐ Spreadsheet ☑ Other

Save Cost | Download Cost Estimator Spreadsheet...

Create Action Item

Activated	Deactivated	Included	Item Description
06/24/2012		Yes	6/24/2012 Inventory additional structures and values identified within the fire area and provide this data to Fairbanks Area Forestry
06/24/2012		Yes	6/24/2012 Minimize fire related traffic delays along Parks Highway, Alaska Railroad and other local connecting roads.
06/24/2012		Yes	6/24/2012 Plan for possible evacuation by coordinating with Denali Borough Emergency Services. Establish evaluation points for each identified subdivisions, sections of the residences along the Parks for Evacuation Advisories and Evacuation Warnings.
06/24/2012		Yes	Follow the planned initial response.
06/24/2012		Yes	6/24/2012 Develop rehab plan in coordination with land management agencies. Complete suppression repair in accordance with the DNR Rehabilitation Guidelines.
06/24/2012		Yes	Minimize fire growth to the smallest possible acreage.
06/24/2012		Yes	Assess needs for potential structure protection within the identified subdivisions and allotments. When there is a need to engage in structure protection, ensure that safe and reasonable tactical actions of which firefighters are trained and equipped are used. Do not use tactics such as gelling, wrapping, or extensive hazardous fuels modifications, and avoid long term staging of personnel or long term parking of structural engines on location.
06/24/2012		Yes	Identify and document the condition of all existing roads and trails within the fire area prior to any heavy equipment use.
		No	Monitor the incident.

Page 1 of 1 Rows per Page: 20 Edit Include Exclude Delete...

Done Trusted sites 100%

Decision Point

Validating the effectiveness of the decision and articulating the rationale supporting the decision. This step includes acknowledging and accepting the residual risk that remains after all reasonable mitigations have been planned or implemented.

Decision Point

Thinking through the rationale for their decision.

Defining what's at risk?
Probability of fire reaching that value.
What's the worst case scenario?
What will trigger a reconsideration of the decision

Evaluation

Periodically reassessing the situation and revising the decision and course of action as needed.

Risk Management	WFDSS Tab
Situation Assessment	Information & Situation
Risk Assessment	Situation & Objectives
Risk Control	Course of Action
Decision Point	Validation & Decision
Evaluation	Periodic Assessment

????????

Strategic Risk Assessment Example

VALUES

Communities

Cabins

Infrastructure

Cultural sites

Recreation

Wildlife Habitat

Viewshed

Air quality

Determine Fire Management Option

Probability Fire will Start

Historic lightning occurrence

Potential for human-caused ignitions

Probability Fire will Spread

Homogeneity of fuels

Precipitation history

Fire behavior potential

Historic Weather

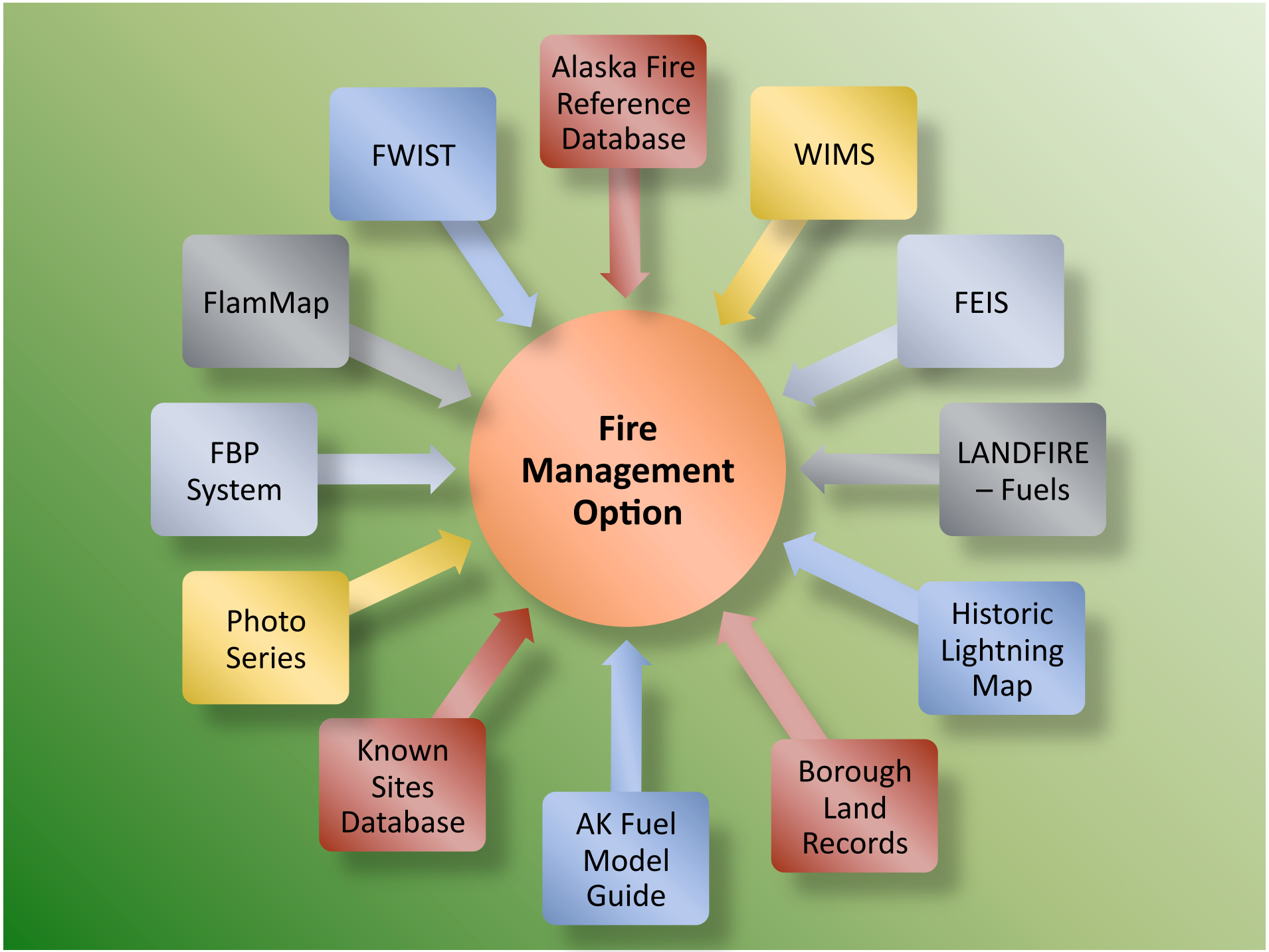
Historic fire size

Barriers to spread

General wind patterns

Summary

- Risk = Values + Probability
- Fire Management Options – annual review
- Inputs into decisions – lots of tools available to help you
- Fire Science Consortium will help you sort all those tools out…..


Alaska Fire Reference Database
FWIST
WIMS
FlamMap
FEIS
FBP System
Fire Management Option
LANDFIRE – Fuels
Photo Series
Historic Lightning Map
Known Sites Database
AK Fuel Model Guide
Borough Land Records