Yukon Fire Zone Policy and the Minto Mine Fire of 2010:
A Case Study

David Milne
Yukon Wildland Fire Management
1958: “Forest Fire Threatens Whitehorse!”
1991 Haeckel Hill Fire
Fire is a natural and beneficial process
Variety of landscape patterns or habitats
... protecting communities while providing for ecological benefit

... providing for the balance of the positive and negative effects of fire
Fire Cause

Lightning Fires:
- more remote
- larger
- lower priority

Human-caused Fires:
- near communities
- or transportation corridors
- highest priority
Ignition Source

Yukon Long Term Average

62% Lightning
38% Human-caused
Fire Season Summary

25 Year Average
- 150 files
- 190,000 hectares
YUKON Annual Area Burned 1950 to 2009

2004 area burned = 1,720,300 ha

10 year moving average (area burned)
Fire Occurrence

Ecoregion Fire History
- Boreal Mountains and Plateaus
- British-Richardson Mountains
- Eagle Plains
- Fort MacPherson Plain
- Hyland Highland
- Klondike Plateau
- Liard Basin
- Mackenzie Mountains
- Muskwa Plateau
- North Ogilvie Mountains
- Northern Alberta Uplands
- Old Crow Basin
- Old Crow Flats
- Peel River Plateau
- Pelly Mountains
- Ruby Ranges
- Saint Elias Mountains
- Selwyn Mountains
- Yukon Plateau-Central
- Yukon Plateau-North
- Yukon Southern Lakes
- Yukon-Stikine Highlands
Fire Operations

- 6 Response Centres
- 22 X 3 person IA crews
- 9 Detection Lookouts
- 35 Weather Stations
- 2 Air tanker Groups
- 18 ICS Supervisor Types (Type 2)
Yukon Wildland Fire Management Program Policy

- Prevent personal injury and loss of life from wildfire.
- Minimize negative impacts of wildfire on communities, property and identified resource values.
- Manage wildland fire in the Yukon in an economically responsible manner.
- Ensure natural benefits of wildland fire are recognized and incorporated into application.
- Adaptable fire management planning and decision-making based upon best available knowledge and science.
Factors Affecting Fire Management in the Yukon:

- Somewhat limited fire fighting capacity
- Lightly populated landscape
- Small population = small tax base
- Little industry demand on forests
- Lots of visible fire activity over past 50 years
Yukon Wildland Fire Zone Policy 1975 to 2003

1975 to 1986

1986 to 1999

1999 to 2003

2003 to Present

32%

30%

37%

20%

Yukon Wildland Fire Zone Policy 1975 to 2003
Yukon Fire Management Zones

**Critical Zone:**
- Homes, highest community infrastructure value.

**Full Fire Mgmt Zone:**
- Homes, industrial, some infrastructure, transportation, recreation.

**Strategic Zone:**
- Some industrial, transportation, recreation, resource values.

**Transitional Zone:**
- Outlying values at risk, bridge between developed and undeveloped.

**Wilderness Zone:**
- Highest ecological value, lowest infrastructure value.
## Fire Zone Details

<table>
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<tr>
<th>Zone</th>
<th>Response Protocols</th>
<th>Area (millions of ha)</th>
<th>Percent of Total</th>
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<td>SUPPRESSION</td>
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<td>5. Wilderness</td>
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## Fire Zone Details

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<th>Zone</th>
<th>Human (Soc-Economic) Value</th>
<th>Ecological Value</th>
<th>Percent of Total</th>
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<td>2. Full Fire Mgmt</td>
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Yukon Fire Management Zonation 2003
Yukon Fire Management Zones

- All Zones elicit a response.
- Based upon Priorities (Communities).
- Change in Zone Status can occur dependant upon time of year and seasonal weather trends. (Strategic and Transitional to Wilderness after July 15th).
- Extended action to occur only with a Wildland Fire Analysis.
Western Yukon and Eastern Alaska Large Fires: 2004
Fire Management Zones with 2004 Fires
2004 Fire Season: North Central Yukon
Minto Mine Fire (CA-03-10)
BUI June 5, 2010

- Green: 0 to 30
- Light Blue: 31 to 45
- Blue: 46 to 60
- Light Yellow: 61 to 80
- Orange: 81 to 120
- Red: 120 +
## Pelly Farm Weather Station
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Fuels
Values at Risk

- Capstone Resources
- Fort Selkirk Historic Site
- Powerline
- First Nation cultural camp
- RV Park
- Assorted cabins
- Highway corridor
Minto Mine Fire (CA-03-2010)


May 31: Active fire behaviour - winds and high BUI’s. Complete control objective not feasible. Protection of powerline, bridges, ferry landing and facilities on east side of Yukon R. Type 2 team (Alberta) resources established. Fire size 3500 ha.

Jun 4: Attention on mine site with 4 km run and evacuation of most mine staff. Cat guards and burnout at mine.


Jun 11: With moderate precip. on fire and downturn in activity, resources are scaled back. Hot spotting on south end. No sig. fire growth.

Jul 1: 30 mm of rain over three days. Operations shut down. Monitor only. No further significant fire activity.
Minto Mine Fire (CA-03-10)

- Minimize impacts of fire to Minto Mine operations
- Prevent fire from crossing to east side of Yukon River
- Protect values at risk in the area
- Implement site protection plan for Fort Selkirk
CA-03-10 Challenges

• How best to ascertain risk?
• Large fires are difficult to model.
• Politics.
• Differences in management objectives.
CA-03-10 Successes

- Policy sorted out priorities.
- Costs were kept manageable.
- Protection plans.
- Scaled up and down appropriately.
Summary

- Flexibility is important - adaptive.
- Complexity creates more risk.
- Hard lines on a map still need a human touch.
- Resource availability may determine how fires are managed.
- Opportunities for education. (public, staff, senior mgmt)