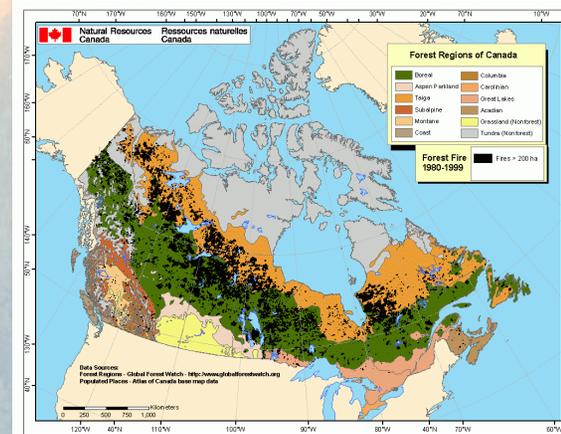
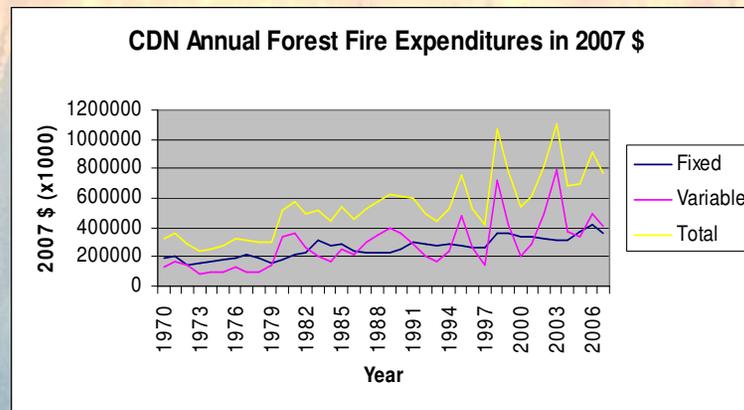


# Forest Fire Management Resource-Sharing in Canada: The Need for an Expanded & More Effective Capability

**B.J. Stocks Wildfire Investigations Ltd.  
Sault Ste. Marie, Ontario, Canada**



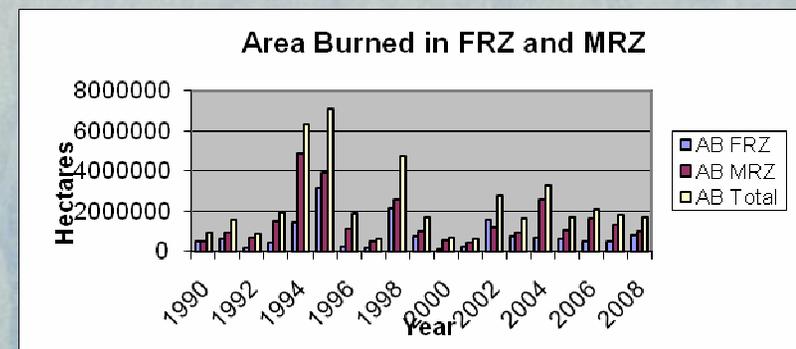
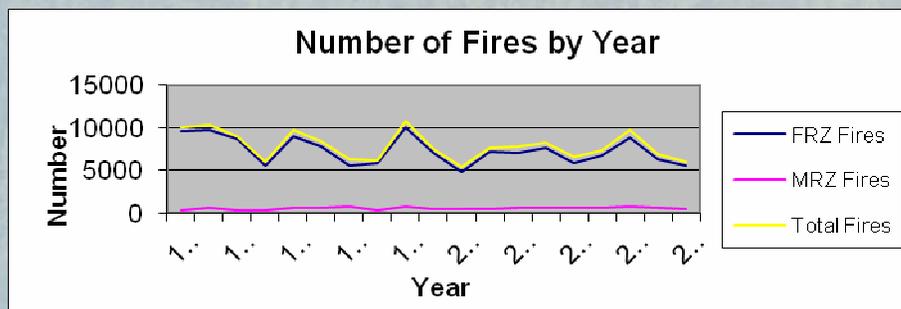
*Wildland Fire Canada 2010  
Kitchener-Waterloo, Ontario*

# Context

- Request from CCFM WFMWG to investigate development of a “National Response/Preparedness Plan”
- Approach:
  - Investigate current status of resource-sharing
  - Attempt to evaluate effectiveness
  - Conduct agency interviews for thoughts on current status/future requirements
  - Prepare report summarizing ideas and presenting some recommendations going forward

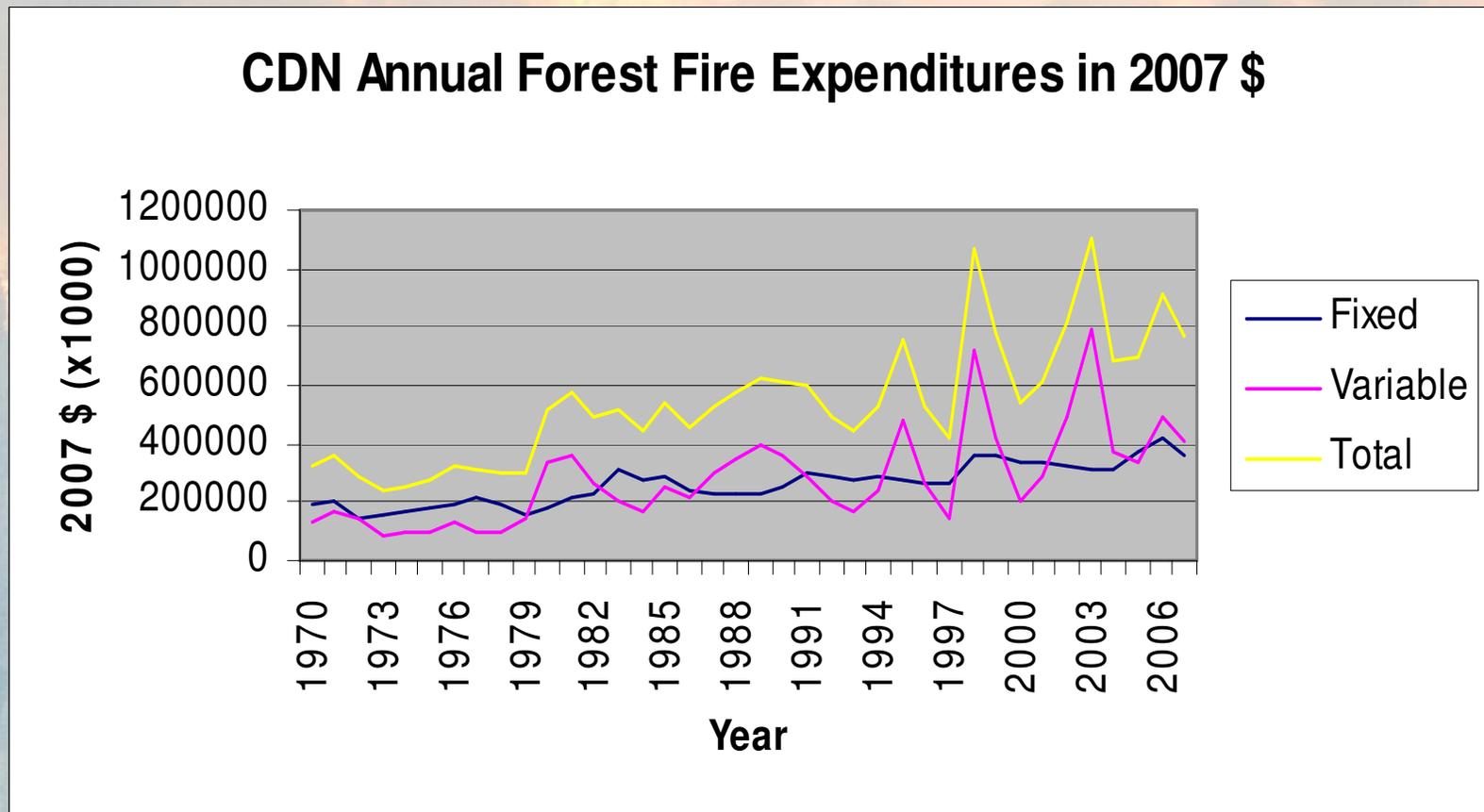
# Why a Canadian Response or Preparedness Plan Now?

- Requested by WFMWG and CIFFC CoD
- Is resource sharing reaching a limit?
- 2009 fire season in BC?
- Are fire conditions measurably more extreme?
- Increasing fire occurrence/area burned?
  - Not in FRZ or MRZ
- More values-at-risk? Fewer resources?
- However, national fire expenditures are rising

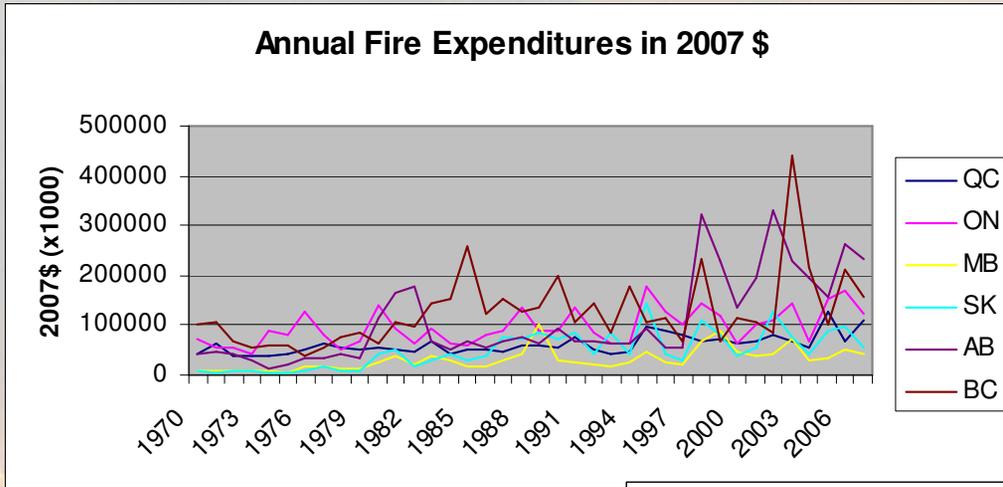


# Fire Costs Increasing Nationally

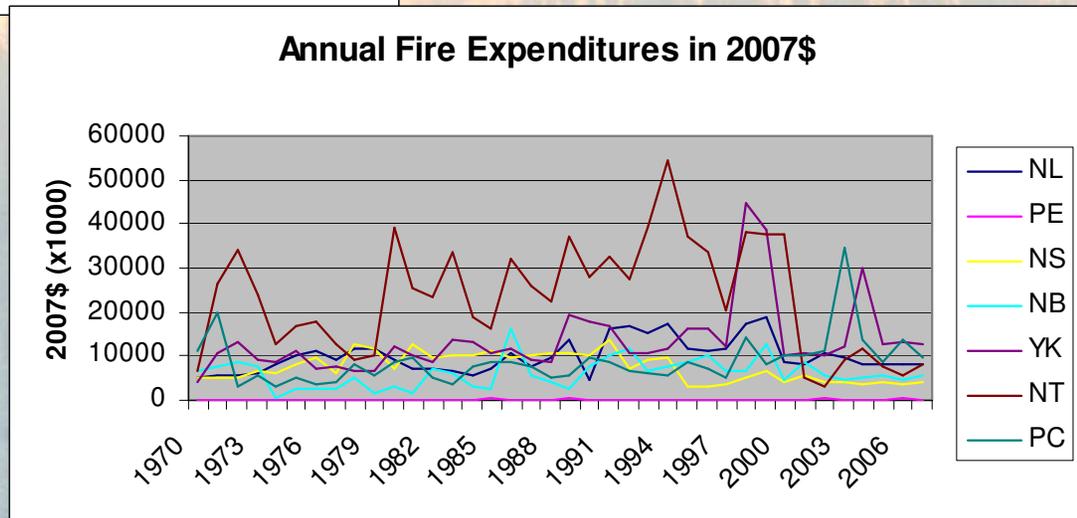
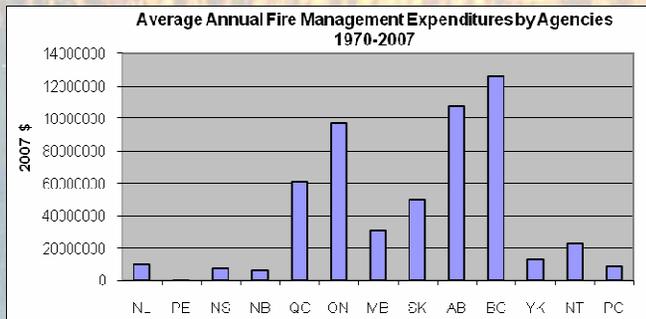
- Fixed and variable costs rising nationally
- Increased variability in recent years



# Fire Cost Trends by Agency

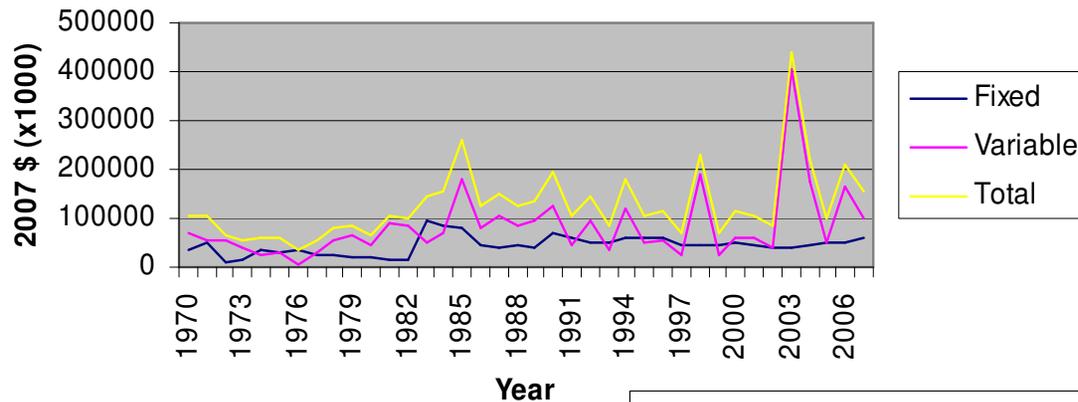


- **Upward trend in recent years driven by larger agencies?**
- **Particularly BC and AB**
- **Note different scales**



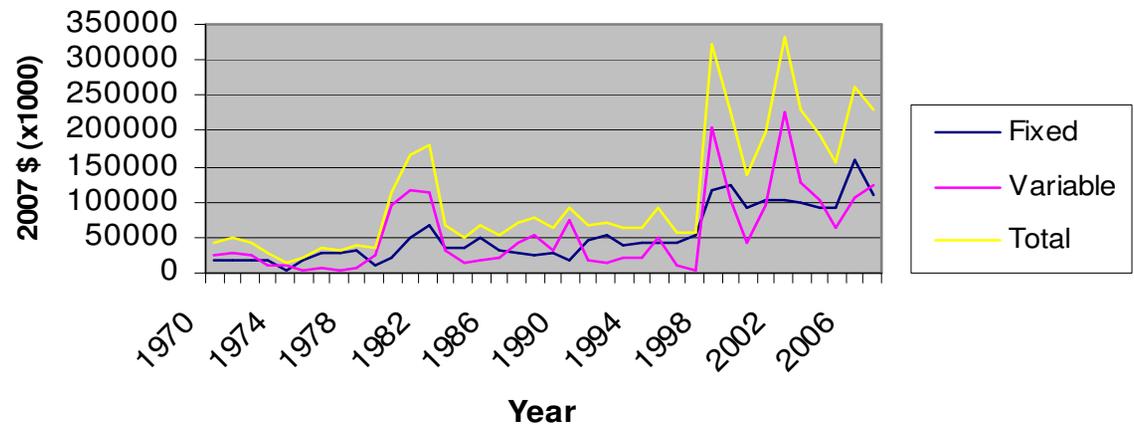
# Variable Costs Rising Most Significantly in BC and AB

BC Annual Forest Fire Expenditures in 2007 \$



FC steady, VC rising

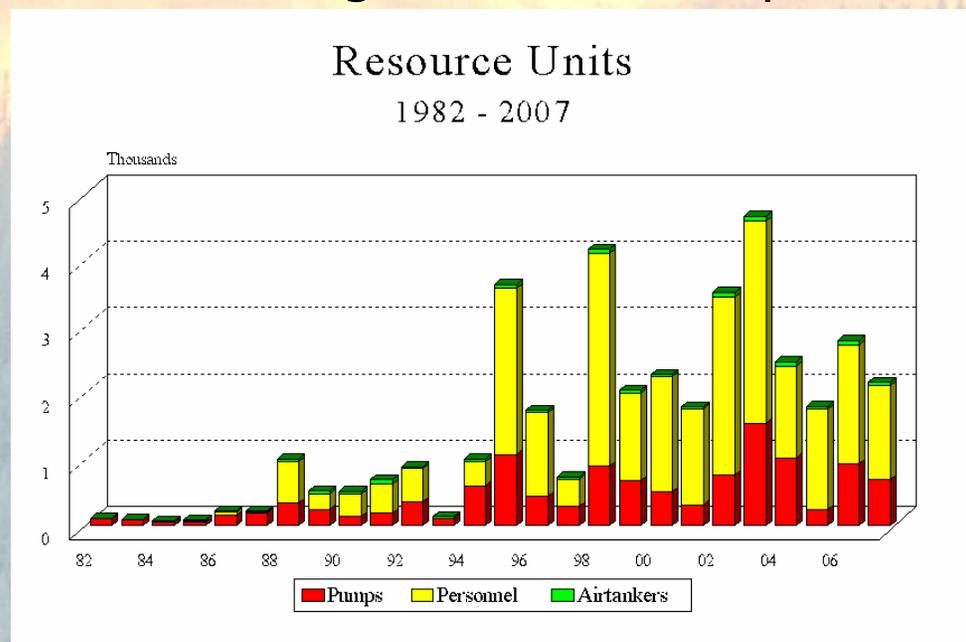
AB Annual Forest Fire Expenditures in 2007 \$



Both FC and VC rising

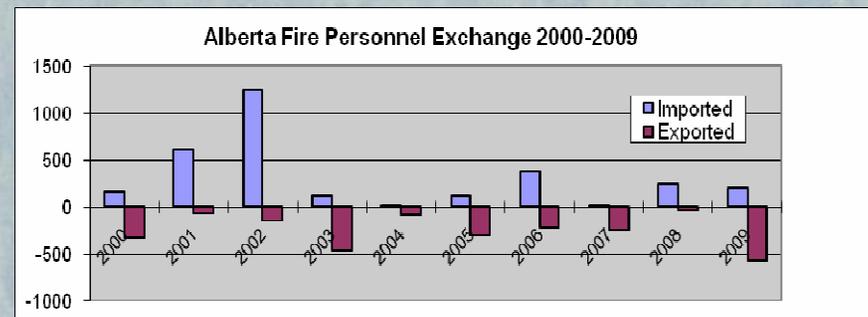
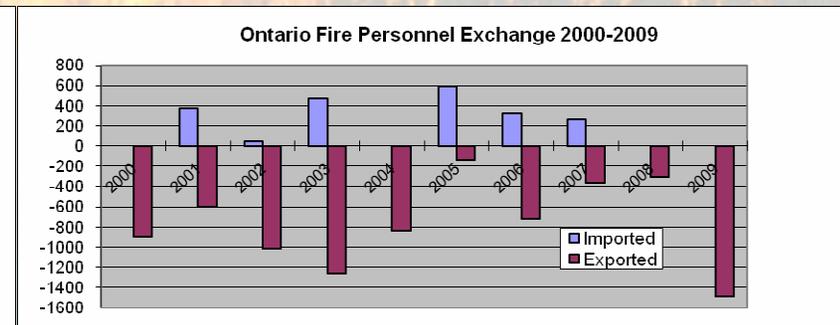
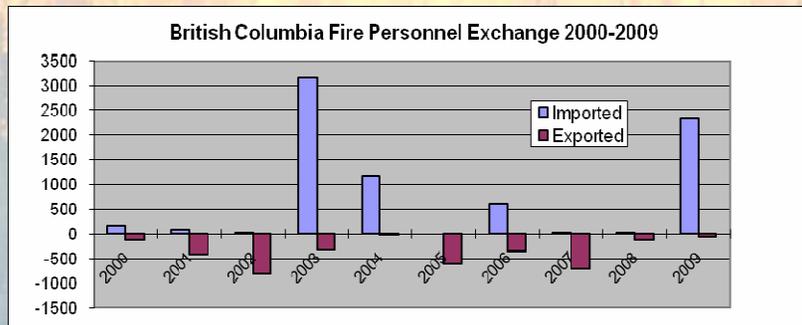
# Resource Sharing Increasing

- Major shift upward in mid-1990s
- Largest increases in personnel (national training standard adopted in early 1990s)
- Resource-sharing shows strong commitment to assisting other agencies, and is viewed favorably by public
- However, analysis shows no statistically valid evidence that level of resource sharing affects fire impacts



# Resource Sharing – BC, AB and ON

- By far the three most active agencies in resource exchange
- In past decade BC has been a strong importer of resources, ON a strong exporter, and AB more balanced
- With these agencies resource exchange has become an integral component of fire management – standard practice



# Survey of Agencies and CIFFC: Key Points (1)

- Interviews with BC, AB, SK, MB, ON, QC fire managers and CIFFC staff
- Voluntary resource-sharing has reached a limit, as evidenced most recently by the 2009 fire season in British Columbia, when many more resource requests would have been made if there was any sense that other agencies would or could commit further;
- A growing sense that, while resource levels are remaining relatively constant, capability to provide mutual aid is starting to decline during more severe fire seasons;
- A strong feeling that the situation could be much worse in future if major fire activity occurred concurrently in two or more regions of the country, as current resource-sharing methods would be totally inadequate;
- Some agencies using MARS as means to reduce, or avoid increasing their in-house complement of resources;
- Collective view that additional resources can be shared, but that this will require assuming and sharing more risk;
- Recognition that this must be done to mitigate future fire problems nationally;

# Survey of Agencies and CIFFC: Key Points (2)

- Agreement - no substantial increase in new resources in the near future (barring the collaborative funding proposed in the CWFS) - more effective sharing seems timely and necessary to maintain capacity at a time when fire load is forecast to increase;
- Sharing resources is seen politically as good PR, can this be used in arguments to expand future sharing;
- Finding ways to share more deeply shows senior bureaucrats that fire managers are attempting to be innovative in the absence of increasing resources;
- Risk aversion varies between & within agencies - key to being less risk averse is more shared knowledge, better resource planning and demand forecasting tools, & an informed senior bureaucracy;
- National guidelines and procedures required that can help individual agencies mitigate added risk they take on by sharing more, including an understanding that they will be helped in turn as necessary;
- Strong support for ongoing CIFFC-funded work on developing a tactical model of daily/weekly fire load, fire management resource requirements, and resource availability- to be utilized by all agencies to make more informed decisions on resource-sharing, both individually and collectively.

# Recommendations/Next Steps

- A strategic vision is required that anticipates the changing wildland fire dynamic in Canada:
  - Position agencies, political establishment and public to anticipate new future accommodation with fire
  - Frame the issues and develop a communication around more fire on the landscape
  - This is the role of senior managers within the WFMWG of CCFM;
- Provincial and territorial fire management agencies need to think at both a jurisdictional and "national" level:
  - In addition to primary roles, view themselves as part of a national "cooperative" of agencies.
  - This mindset required to share more deeply and proactively across the country.
  - Proactive positioning of resources would be more effective, but requires trust, less risk-aversion, and education of senior bureaucrats;
- The well-established Canada/United States Compacts could be used more effectively for resource-sharing;
- In the near future a strategic national resource model that permits a quantitative evaluation of resource-sharing effectiveness under a variety of future fire regimes and resource levels is required.

# Recommendations/Next Steps

- Develop a means to evaluate both the cost-effectiveness and the operational benefits of resource-sharing:
  - Critical to gaining the continued and future support of the governments that fund fire management and support inter-agency cooperation;
  - CDN fire management agencies require the means to evaluate the risk that they will not achieve their government's expectations under both current and more challenging climate change-driven future fire regimes;
  - These critical strategic requirements require the development of a national strategic planning model (i.e., a national version of the Leopards level-of-protection model currently used in Ontario), and the WFMWG should strongly support such an initiative.
- Form a small interagency team of experienced provincial/territorial/CIFFC fire operations managers to investigate current operational, language, or institutional barriers to enhanced resource-sharing (e.g., common helicopter contracting methods that would facilitate movement throughout Canada; aircraft compatibility in different regions) and suggest solutions to CIFFC CoD. This may involve amendments to the current MARS Agreement.

# Recommendations/Next Steps

- Coordinate resource-sharing through CIFFC with resource-sharing through the long-established Canada/United States Forest Fire Protection Compacts.
- Support further development and utilization of the resource demand model currently under development with CIFFC funding support. This model will allow managers to view their jurisdictional situation in a national context. This will permit assessment of the hierarchy of need nationally and encourage the best collective decisions.
- Consider using a "scenario" approach to evaluate possible future national fire scenarios in which major fire activity occurs at the same time in different regions of the country.
  - Have agency duty officers and CIFFC respond in their normal manner
  - Determine when exhaustion of resources would occur, then look at the level of prioritization decisions being forced on duty officers
  - Forecast the impact of escaped or non-actioned fires
  - Rather than just speculating on the impacts of future crises, this type of emergency simulation approach may serve as a way to garner political attention.

An aerial photograph of a vast, dense evergreen forest. The trees are a deep green color. In the background, a bright sunset or sunrise is visible, with the sun low on the horizon, casting a warm, golden glow across the sky and reflecting off the tops of the trees. The sky is filled with soft, wispy clouds, some of which are illuminated by the low sun, creating a mix of orange, yellow, and light blue tones. The overall scene is peaceful and scenic.

**Thank You!**

# Relationship Between Costs & Area Burned in FRZ

- Appears to be a relationship with variable costs (2003 anomalous – BC interface fires)
- Reflects jurisdictional response plus resource sharing
- Not an indication of resource sharing effectiveness

