



**PRELIMINARY ASSESSMENT OF THE
APPLICATION OF THE CANADIAN
FOREST FIRE DANGER RATING
SYSTEM (CFFDRS) TO ALASKAN
ECOSYSTEMS**

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The CFFDRS in Alaska

- The *Alaska Interagency Fire Community* adopted the CFFDRS in July 1992, as it was believed that the CFFDRS was more applicable to Alaskan ecosystems
- Since its adoption, there has been little ground-truthing of the CFFDRS
- Inconsistent use of the system within and among fire management agencies

Literature Review Request

The *Alaska Interagency Fire Community* developed a list of topics regarding the use of the CFFDRS in Alaska for which they wished to evaluate the *'state of knowledge'*:

- 1) Overwintering stations: pros and cons
- 2) Fuel moisture measurements and comparisons
- 3) Adjustment of mid-season indices based on fuel measurements
- 4) Whether data trends or raw values are more important for fire behavior prediction
- 5) Impacts of using solar noon vs. non-solar noon observations
- 6) Effects of errors in precipitation reporting
- 7) Analysis of any Alaskan data
- 8) Justification for thresholds in fire danger rating charts

The Assessment

- Although >60 documents were reviewed, the summary only provides a **preliminary assessment** of the most relevant resources available that address the list of topics
- The evaluation of the '*state of knowledge*' is intended to assist the ***Alaska Interagency Fire Community*** with:
 - Identifying *knowledge gaps*
 - Developing strategies to assist wildfire managers with the use and adaptation of the CFFDRS in Alaska

Knowledge Gaps

- 1) Overwintering procedures do not contain all of the processes that impact initial spring moisture contents in boreal forest feathermoss sites in permafrost
 - The use of overwintering procedures should be evaluated each year, as the default DC value of 15 does not necessarily work well in Alaska

- 2) The scale of the DMC and DC fuel moisture codes needs to be defined for Alaska fuels
 - An Alaska specific calibration equation needs to be developed that includes data from several locations across multiple fire seasons

- 3) The fire climatology in relation to the FWI System fuel moisture codes and fire behavior indexes has not been clearly defined for Alaska
 - This information is needed to develop fire danger rating thresholds

Strategies to Address *Knowledge Gaps*

- 1) Increasing **communication** between wildfire management agencies, especially in regards to procedures regarding the spring start up values of the DC
- 2) Compiling datasets collected over several years from across Alaska to develop an **Alaska specific calibration equation** relating sampled fuel moisture contents to the FFMC, DMC and DC
- 3) Developing innovative, cost-effective **methods to estimate fuel moisture on a larger scale** (e.g., relating SAR data to the FWI System fuel moisture codes)
- 4) **Initiating research partnerships** both within and between the *Alaska Interagency Fire Community* and potential collaborators at research institutes (e.g., University of Alaska)
- 5) Developing a **research plan** that prioritizes the information needs of the *Alaska Interagency Fire Community* in regards to its application of the CFFDRS to Alaska
- 6) **Comparing the fit of the CFFDRS and the NFDRS** to Alaskan forests. The *Alaska Interagency Fire Community* currently implements aspects of both the CFFDRS and the NFDRS

Where to Find the CFFDRS Assessment?

- <http://www.frames.gov/partner-sites/afsc/partner-groups/fire-behavior-modeling-group/modeling-products-guides/>

Acknowledgements

- Special thanks to the following for assistance:
 - Tom St. Clair
 - Robert Ziel
 - Sharon Alden
 - Brenda Wilmore
 - Jennifer Northway
 - Randi Jandt
 - Jennifer Barnes
 - Eric Miller
 - Frank Cole
 - Devon Barnes (University of Alberta)
 - Marty Alexander (retired Canadian Forestry Service)
 - Cordy Tymstra (Alberta Environment & Sustainable Resource Development)