

Alaska Fire Science Consortium

A JFSP KNOWLEDGE EXCHANGE CONSORTIUM



2010 Consortium Workshop Summary—Condensed

Tanacross Shaded Fuel Break—Treatment in Action

In 2001, the Village of Tanacross partnered with the Tanana Chiefs Conference, BLM – Alaska Fire Service, Alaska Division of Forestry, and US Fish and Wildlife Service to create a 52 acre shaded fuel break around the community, designed to reduce the risk from wildland fires. In late May 2010, this hazardous fuels treatment was put to the test by the Eagle Trail Fire. Although the fuel break was not directly impacted by the head fire, it played a key role in operational decisions and resource allocations. By opening the canopy, fire fighters were able to function efficiently and conduct a burnout from the edge of the fuel treatment.

Speakers:

Tami DeFries (BLM)
Hans Smith (DOF)
Eric Miller (BLM)

Key Discussion Points & Questions:

- There is no “one size fits all” prescription for fuel treatments. There are many factors that need to be considered to minimize adverse impacts and maximize treatment effectiveness.
- There are still many unknowns in discussing shaded fuel break treatments including, the minimum and maximum effective spacing, maintenance, duration of effectiveness, methods of treatment, regeneration, and stand type conversion goals.

Nenana Ridge Project Update—What have we learned so far?



Photo (Above): Edge of thinned fuel treatment. The crown fire dropped from the canopy to the ground, only burning several feet into the treatment at this location. Photo from Robert Schmolli.

The Nenana Ridge Experimental Fuels Treatment Project is designed to quantify the effects of fuels reduction treatments (thinning and shearblading) on fire behavior and post-fire vegetation dynamics in Alaska black spruce. On June 17th, 2009, one unit within the Nenana Ridge Project was successfully ignited. Key results showed that the crown fire was indeed brought down to a surface fire upon impact of the thinned treatment. Project investigators and collaborators are continuing to seek funding to burn the remaining research unit in 2012.

Speakers

Scott Rupp (UAF)
Robert Schmolli (DOF)

Key Discussion Points & Questions:

- What happened in the shearbladed units? Remnants of organic materials scraped up during the shearblading process smoldered and were completely consumed.
- The shearbladed treatments were not intended to stop a fire but promote long term effects like stand type conversions from black spruce to hard woods.
- Which factor is most important in determining treatment effectiveness, tree spacing or elimination ladder fuels

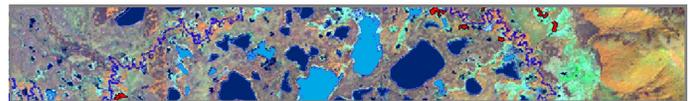
Fuels Forum—What projects are going on in your neck of the woods?

Group Discussion

- Fairbanks Area Forestry is currently implementing a combination of shaded fuel breaks and shearbladed treatments around designated areas.
- The Bureau of Indian Affairs (BIA) has been working with the community of Gulkana to install fuel breaks and utilize the biomass for energy production.
- The Kenai Wildlife Refuge is involved in project to convert spruce to hardwood stands to improve moose browse and wild-life viewing. Approximately 120 acres have already been cleared with some piles remaining to be burned.
- Superior Pellet Fuels in North Pole is looking for opportunities to utilize unwanted biomass from local treatment projects.
- The Kenai Borough, US Fish & Wildlife Service, and Division of Forestry have recently funded a project to evaluate the effects of various treatments (mowing, weed wacking, herbicide use, and mulching) on bluejoint grass (*Calamagrostis canadensis*) establishment and growth.
- The Military Zone continues to build its prescribed fire program, utilizing burn modules on a rotating schedule. If anyone is interested in participating in the spring prescribed fires, contact Tom St. Clair (Military Zone Fuels Specialist).
- The US Army has been looking at several different types of fuels treatments including chipping, mastication, and vegetation clumping
- The BIA and Tanana Chiefs Conference (TCC) have completed shaded fuel break treatments in Healy Lake, Dot Lake, Alatna, Hughes, Minto, Allakaket, Nikolai, and other villages across the state. Contracts have been developed with the Village Councils to provide employment opportunities for fuel break construction and TCC has provided on the job training.
- Suggestions were brought up to investigate previous efforts to improve the National Fire Plan layer on the ArcIMS mapping site (AICC webpage). This site could provide one consolidated place to find state wide fuels treatment projects. A mechanism to update and improve this fuel treatment layer needs to be developed.
- Chugachmiut has been working on the Kenai Peninsula to promote and utilize Firewise practices to improve defensibility.

Climate Change in Alaska

Speaker
Scott Rupp (UAF)



Climate change has been an on-going process here in Alaska, showing some significant changes in the last half century. In general, all climate prediction models are projecting continued increases in seasonal temperatures. Precipitation is also predicted to increase along with growing season length. From looking at predicted evaporative demand, it is most likely that increases in temperature will outweigh any increase precipitation. Alaska will most likely experience a drier environment, particularly in the summer time, potentially changing how we think about and manage fires.

Key Discussion Points & Questions:

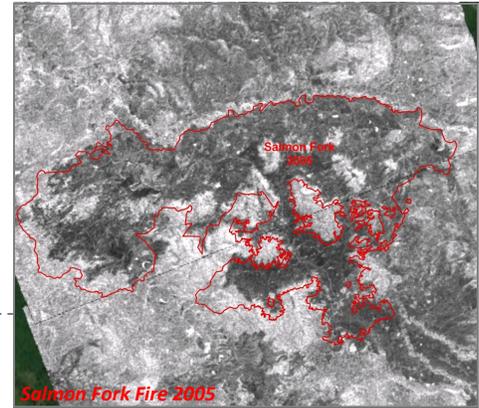
- Our top ten fire years, in terms of area burned, are closely linked to PDO phase shifts.
- Suggestions were made to hold a webinar on the PDO and how it relates to potential seasonal fire activity. The Consortium will also work with ACCAP (Alaska Center for Climate Assessment and Policy) to disseminate applicable climate change information to the fire community.
- We need to consider changes in inter-annual variability, the distribution of extreme events, and the PDO when thinking about impacts to seasonal events like fire.
- We also need to think about how changes in vegetation structure will likely effects the fuels on the landscape.
- There is a newly funded project with DOD and UAF that will begin to look at linkages between permafrost, climate, and fire. One of the biggest linkages will be the impacts of fire speeding up the process of permafrost thaw and thermokarsting and what will come into the disturbed sites. This project will also look at how fuel treatments change soil dynamics in permafrost areas.

Fire Mapping Methods Using SAR

Speaker

Hilary Rigby (BLM)

BLM – Alaska Service plans to use SAR imagery to update, and in some cases add, perimeters 100 acres and larger beginning with the 2009 and 2010 fires and then continuing with future seasons. The initial assessment of using SAR images for end of season fire scar mapping indicated that both a combination of SAR and Landsat 5/7 images should be used to finalize digitized perimeters when needed. The quick processing time and small file size of SAR images will allow for all fire scars to be mapped whereas using only Landsat data is not feasible.



Key Discussion Points & Questions:

- Rain during image acquisition can make data interpretation difficult.
- SAR is also linked to fire severity. The more severe the burn, the longer the fire scar will be visible on SAR images.
- No efforts are currently being made to correct fire scars prior to 2009.
- SAR perimeter mapping will not be used to digitize current fires during the season due to time constraints. Fire management areas and zones should continue to utilize aerial reconnaissance mapping and other mapping methods.

Alaska Research Needs List—What do you need to know?

Group Discussion

Requests for Alaska Fire Science Research Needs were distributed at the 2010 Interagency Fall Fire Review. All of the submitted research questions/topics were consolidated and divided into 12 main categories: climate change, education/information, fire behavior, fire danger, fire effects, fire regime, fuels, fuels treatments, predictive models, smoke, suppression tactics, and weather.

The AWFCG Fire Research Development and Applications Committee will complete the final list along with solicit any additional feedback from their respective agencies. When this is complete, a survey will be distributed allowing the management and research communities to vote on their top research needs category along with rank specific questions of interest. The top Alaska Research Needs will be submitted to the Joint Fire Science Program for potential selection and development into one or more of the 2012 task statements.

Brainstorming—The missing links in science delivery

Group Discussion

Suggestions on how the Consortium could be most effective:

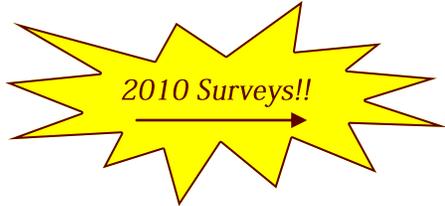
- Possibly connect with the Alaska Fire Plan Working Group or link to the National Fire Plan in Alaska website which contains information on statewide hazardous fuels reduction projects
- Incorporate more research from Canada and Russia.
- Investigate hosting a fire symposium poster session.
- Record webinars and create one page summaries.
- Create a blog for after webinars. Any questions or additional discussion with the presenter can be carried on via blog.
- Complete periodic 6-8 page research reviews written for managers.
- Host field trips to Nenana Ridge or similar projects in the fall.
- Create a list of on-going projects with links to contacts and additional resources/references.
- Advertise current fire tools/products and highlight their purpose and functionality.
- Update or create a product similar to the “Summaries of management and research activities related to Alaska’s boreal forest” produced by the Alaska Northern Forest Cooperative in 2005.

Alaska Fire Science Consortium: Tech Transfer Update & Evaluations

Speaker

Sarah Trainor (UAF)

Currently, the Consortium has a 2010 Technology Transfer survey available and encourages everyone to participate. This survey will be used to evaluate current fire science products/tools and help determine how the Consortium can better serve you. The 2010 Workshop Evaluation is also available to all participants. Let us know what you thought about this year's workshop and /or how it can be improved.



Survey Links:

1. Technology Transfer Survey: <https://www.surveymonkey.com/s/ZNWCBPX>
2. Workshop Evaluation: <https://www.surveymonkey.com/s/Z5L5WFJ>

Consortium Action Items!!

Several points of action were brought up at the 2010 Workshop that the Consortium plans to explore and/or implement:

1. Host a webinar on how the Pacific Decadal Oscillation relates to potential seasonal fire activity/area burned.
2. Investigate the potential of a product (spatial layer or list) which would incorporate all completed fuel treatment projects within Alaska.
3. Create a survey for the fire and research communities to rank their top fire science research needs.
4. Record webinars and create one page summaries
5. Create a list of on-going projects with links to contacts and additional resources and references
6. Advertise available fire tools/products and highlight their purpose and functionality.
7. Explore potential for hosting a fire science symposium or poster session.

Additional Information

More information on this workshop, including presentation slides and recordings can be found at:

<http://frames.nbii.gov/alaska/consortium/workshops/oct2010>

There is also a "Full Text" version of this summary which includes more dialog from each presentation/discussion, additional photos and graphics, and most importantly, links to **additional resources**. These links include published papers, applicable websites, and more. This "Condensed" Workshop Summary and the "Full Text" version can viewed and download from the Consortium website at: <http://frames.nbii.gov/alaska/consortium>

Contact Information

For more information on the content of this summary, the 2010 Workshop, or the Alaska Fire Science Consortium, please contact:

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Alaska Fire Science Consortium

The purpose of the Alaska Fire Science Consortium is to enhance ongoing fire science delivery by developing new mechanisms for outreach across the state of Alaska and to stimulate communication among researchers and managers to bridge the gap in information sharing.