



## **International Association of Wildland Fire**

3<sup>rd</sup> Fire Behavior and Fuels Conference

### **Beyond Fire Behavior and Fuels: Learning from the Past to Help Guide Us in the Future**

Red Lion Hotel at the Park – Spokane, Washington

October 25-29, 2010

## **POSTER PRESENTATIONS**

### **SESSION #1**

**Tuesday, October 26, 2010**

**1:00-2:00 PM**

#### **The 1910 Fire Season in the US and Canada**

(296) Climate Change and Fire Danger Rating in the Northern Rockies

*F. Heinsch*

(449) 1910 Fire Events in the Forest Reserves, Rocky Mountain and Foothill Regions of Alberta

*A. Annand*

#### **Fire History and Fire Regimes**

(465) Compounding disturbances and their impact on subalpine forest and landscape structure

*B. Buma*

(254) Recreation of Historical Fire Return Intervals and Age Mosaics to Capture Historical Fire Regime Conditions

*MP Rogeau*

(294) The Influence of Geospatial Factors on Wildfire Occurrence in the Black Hills of South Dakota

*J. Strain*

(372) Geo-referencing Historical Photos to Quantify Century-scale Changes in Forest Structure

*C. Stockdale*

(376) Retrospective Fire Modeling to Quantify the Hidden Consequences of Fire Suppression

*C. Miller*

(384) Assessing Fire Severity Among Interacting Fires in Three Western U.S. Wilderness Areas

*S. Parks*

(393) Climatic and Topographic Influences on Fire Regime Attributes in the Northern Cascade Range, Washington, USA

*C. Cansler*

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Poster Presentations

(447) Fire Regimes of Mexico  
*D. Perez-Salicrup*

**Fire and the Wildland-Urban Interface & Dealing With the Public**

(319) LEST WE FORGET: Canada's Major Wildland Fire Disasters of the Past, 1825-1938  
*M. Alexander*

(278) Modeling Wildfire Property Risk in Near Real Time  
*S. Stransky*

(344) Wildland-Urban Interface in Ontario, Canada  
*L. Bowan*

(366) Spatially Defining Wildland Fire Risk: A Novel Approach to WUI Mapping  
*J. Haas*

(373) From the Flames to the Frame: Communicating Messages of "Conflagration" and "Climate Change"  
*R. Steffens*

(442) Fire Risk and Rural Activity in the Djebel Mansour Forest  
*K. Abdelmoula*

(451) Identifying Fire Research Priorities in Mexico  
*D. Perez-Salicrup*

**Wildland Fire Case Studies**

(240) The Role of a Long Term Assessment in Management of the North Fork Complex  
*W. Aney*

(252) The Howling Prescribed Natural Fire – Long Term Effects on the Modernization of Planning and Implementation of Wildland Fire Management  
*T. Zimmerman*

(378) Reconstructing the Spread and Behaviour of the February 2009 Victorian Fires  
*N. Gellie*

**Fuels**

(277) Climate Change and Weather-damaged Fuels – Challenges to Ontario Fire Management Staff  
*A. O'Connor*

(299) Snag Fall, Coarse Wood Decomposition, and Fine Fuel Succession Following High-Severity Fire in Dry-mixed Conifer Forests of Oregon's Cascades  
*C. Dunn*

(308) Quantifying Fire Hazard After Blowdown in Southwest Oregon  
*M. Johnson*

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(331) The Comparison of the Fuel Moisture Change on Pine Forests in Korea East Sea Region in Spring and Fall  
*SY Lee*

(361) Variation in Flammability of North American Pine Species  
*E. Banwell*

(363) Assessing Fuel Loading in Longleaf Pine Forests for the BlueSky Framework  
*R. Mickler*

(382) The Validation and the Prediction of Canadian Fine Fuel Moisture Code (FFMC) Under Future Climate Change in Kangwon Province, Korea  
*HS Park*

(383) Deriving Conifer Needle and Branch Mass for Crown Fuel Modeling Using Terrestrial Laser Scanning  
*C. Seielstad*

(394) Post-fire Logging Effects on Fuel Succession and Potential Fire Behavior in Dry Coniferous Forests  
*D. Peterson*

(399) The Effect of Decomposition of Coarse Woody Debris Consumption  
*J. Hyde*

(407) Another Compelling Reason for Establishing National Sampling and Data Standards for the National Fuel Moisture Database  
*E. Delgado*

(452) Leaf Litter and Coarse Woody Debris Dynamics in *Pinus douglasiana* stands of different age after high and low severity fires  
*D. Perez-Salicrup*

### **Fuel Dynamics and Fuels Management/Treatments**

(232) Quantifying the Effects of Wildland and Prescribed Fire on three-dimensional forest structure and fuel loading using a 50 year fire history and landscape-scale scanning LiDAR in the Pine Barrens of New Jersey  
*N. Skowronski*

(289) A Comprehensive Guide to Fuels Management Practices for Ponderosa Pine/Mixed Conifer Forests  
*M. Battaglia*

(339) Post-burn Fire Hazard in Mixed Severity Fire Regimes in the Cascade Range  
*J. Hudec*

(351) Assessing Efficacy of Landscape Restoration in Juniper Savannas in Southern Arizona  
*E. Apland*

(375) Evaluating Hazardous Fuel Treatment Alternatives in the Southeastern United States  
*R. Ottmar*

(381) Ponderosa Pine Canopy Changes Following 30 Years of Different Prescribed Fire Burning Rotations  
*S. Haase*

(401) Effectiveness of Fuel Treatments by Wildfire in the Wildland Urban Interface of Central Idaho  
*A. Hudak*

(406) A Comparison of Landscape Fuel Treatment Strategies to Mitigate Wildland Fire Risk in the Urban Interface and Preserve old Forest Structure  
*A. Ager*

## **POSTER PRESENTATIONS**

### **SESSION #2**

**Wednesday, October 27, 2010**

**1:00-2:00 PM**

#### **Fuel Dynamics and Fuels Management/Treatments**

(418) Monitoring Mechanical Fuels Reduction Effectiveness and Effects in Shrublands (Coastal Sage and Chaparral)

*A. Fege*

(420) Evaluating Shrubland Fuels Reduction Projects with BEHAVE models

*A. Fege*

(435) Numerical Simulations of Fuel Treatment Effectiveness in Preventing Structure Ignitions

*M. Ginder*

(437) Forest Restoration and Fire Hazard in a High Severity Fire Regime

*M. Johnson*

(450) Accomplishing Stand and Landscape-scale Fuel Management through a Balanced Fire Management Program

*T. Sexton*

#### **Fire Weather**

(250) Initialization of High Resolution Surface Wind Simulations Using NWS Gridded Data

*B. Butler*

(312) The Australian Dry Slot Theory and Its Occurrence and Implications in North America

*F. Schoeffler*

(313) Weather Modification and Geoengineering Implications on Wildland Fire Weather

*F. Schoeffler*

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(321) Evolution of 20<sup>th</sup>-Century Climate-Fire Relationships in the US Northern Rockies  
*P. Higuera*

(341) Thermal Troughs in the Pacific Northwest  
*J. Ruthford*

(342) The Tale of Tumblebug and the Thermal Trough: A Case Study of Critical Fire Weather Patterns in the Pacific Northwest  
*J. Ruthford*

(370) A Mountain Wind Model for Assisting Fire Management  
*G. Achtemeier*

(388) Untangling the Roles of Dry Air Aloft and Downward Instability in Fire Growth  
*B. Potter*

(441) Progress Towards a Lightning Ignition Model for the Northern Rockies  
*P. Sopko*

(443) Season Ending Events, A Matter of Perspective  
*L. Kurth*

#### **Fuel Modeling, Mapping & Simulations**

(466) Introducing the Canopy Fuel Stratum Characteristics Calculator  
*M. Cruz and M. Alexander*

(241) Producing a Canadian Forest Fire Danger Rating System (CFFDRS) Fuel Map Using the Vegetation Resource Inventory (VRI) for Kootenay and Yoho National Parks  
*J. Park*

(260) Integrating the Fuel Characteristics System and the Forest Vegetation Simulator  
*M. Johnson*

(286) Simulating Fire Hazard Across Landscapes Over Time through integration of the Vegetation Dynamics Development Tool (VDDT) and the Fuel Characteristic Classification System (FCCS)  
*J. Halofsky*

(337) Keeping Up with Changing Landscapes in Wildland Fuels  
*C. Martin*

(354) Fire Effects Tradeoff Model (FETM): A Landscape-scale Ecosystem Model for Land Managers  
*M. Schreuder*

(386) Fuel Heterogeneity at Stand Boundaries in the Elk Creek Watershed of Southern Oregon  
*E. Comfort*

(389) Fuel Dynamics on Sites with Strong Potential to Paludification and Fire Behavior modeled from empirical data in the spruce-fernmoss domain of Northwestern Quebec.

*M. Paquette*

(408) Climate-driven Changes in Fire Regime Affect Carbon Dynamics in a Heterogeneous Forested Landscape of Washington, USA

*C. Raymond*

(417) Landscape-level Evaluation of Fuel Treatment Impacts on Fire Behavior and Carbon Dynamics in the Klamath Mountains

*C. Discus*

(457) High Resolution Fuel Mapping: Wildland and Urban Interface Areas Application in the Iberian Peninsula

*J. Ramirez*

### **Operational Perspectives and Applications of Fire Behavior Knowledge**

(229) Do you BEHAVE? – Application of the BehavePlus fire modeling system

*P. Andrews*

(230) Fire Characteristics Charts for U.S. Fire Danger Rating and Fire Behavior

*F. Heinsch*

(424) Fireline Assessment Method (FLAME)

*R. Ziel*

(454) TOWARDS A CROWN FIRE SYNTHESIS: What would you like to know and what might you able to contribute?

*M. Alexander*

(456) Wildfire Analyst: Taking Fire Behaviour Analysis to the Field

*J. Ramirez*

### **Fire Ecology and Post-Fire Effects**

(231) Experimental Fire in Two Different Grassland Ecosystems in the Southwestern United States

*P. Ford*

(279) A Synthesis of Insect Outbreaks and Subsequent Wildfire

*J. Hicke*

(352) Restoring Habitat Diversity in the Centennial Sandhills Ecosystem; a Collaboration Employing a Unique Application of Prescribed Fire.

*B. Bauer*

(365) Predicting Dust Emissions in Post-fire Areas with Complex Terrain

*N. Wagenbrenner*

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(403) Effectiveness of Post-fire Mulches in the Santa Barbara Front County  
*J. Beyers*

(427) Do Non-native Species Invade Chaparral from Fuelbreaks After Fire?  
*J. Beyers*

### **Decision Support Systems**

(283) Predictive Services: Current and Future Directions in Decision Support  
*R. Heffernan*

(315) Tiger: A New 2D Fire Propagation Simulator  
*S. Mazzoleni*

(316) Coupling Fire Behavior Models with Other Decision Support Tools  
*R. Seli*

(396) The Wildland Fire Decision Support System – Decision Support for Fire Management  
*M. Pence*

## **POSTER PRESENTATIONS**

### **SESSION #3**

**Thursday, October 28, 2010**

**1:00-2:00 PM**

### **Scientific Investigations and Approaches to Understanding Fire Behavior**

(249) In-situ Characterization of Wildland Fire Behavior  
*B. Butler*

(262) Numerical Simulation of Crown Fire Hazard following Bark Beetle-caused Mortality in Lodgepole Pine Forests  
*C. Hoffman*

(268) Impact of the Live Fuel Structure on Fire Behavior in Limestone Provence (SE France)  
*A. Ganteaume*

(270) Modern Developments for Ground-based Monitoring of Fire Behavior and Effects  
*R. Kremens*

(272) Modeling a Burning Shrub With and Without Wind Using a Semi-empirical Model  
*T. Fletcher*

(273) Effects of Wind on Flame Characteristics of Leaves and Needles  
*T. Fletcher*

(285) Ignition Thresholds for Grassland Fuels and Management Implications  
*H. Wakelin*

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(298) Mountain Pine Beetle (*Dendroctonus ponderosae*) and Lodgepole pine (*Pinus contorta*) in south-central Oregon: Fuel dynamics and consequences for fire behavior through time.

*T. Woolley*

(305) Fire Behavior in Simulated Mountain Pine Beetle Attacked Stands

*D. Schroeder*

(311) A Study on Heat Release Characteristics of Tree Species Distributed at M. Halla

*HP Lee*

(317) Physical-based Modeling of Crown Forest Fire Behavior Using the PHOENICS CFD Software

*V. Perminov*

(327) Airborne Remote Sensing of Southern California Wildland Fires

*P. Riggan*

(355) Evaluation of the FCCS Crown Fire Potential Equations in Conifer Stands in the Western United States

*M. Schreuder*

(362) Large Fire Whirls: Can Their Formation be Predicted?

*J. Forthofer*

(374) Advanced Fire Data Products from the AMS-Wildfire Sensor

*E. Hyer*

(426) Sensitivity Analysis and Application of a Coupled Fire-Atmosphere Model

*K. Yedinak*

(464) A Fire Simulation Using a Chemically Reacting Plume in a Cross Flow

*T. Alvarado*

### **Smoke**

(233) Do Polyethylene Plastic Covers Affect Smoke Emissions from Debris Piles?

*D. Weise*

(263) Development and Validation of Modeling Tools for Predicting Smoke Dispersion During Low-intensity Fires

*W. Heilman*

(287) Large Eddy Simulation of Canopy Structure Effects on Smoke Dispersion from Prescribed Fire

*S. Garrity*

(310) A Study of Smoke Release Characteristics of the Tree Species Distributed at Mt. Halla

*HP Lee*

(334) Simulation and Evaluation of Smoke Plume Rise with Modified Daysmoke

*Y. Liu*

(358) BlueSky Modelling Framework: Status, Products, and Future Developments

*N. Larkin*

(397) Comparison of Measure PM2.5 Data from Two Prescribed Burns in North Carolina

*M. Rorig*

(402) Development of New Fuels and Emissions Data for Maritime Chaparral and Madrean Oak Woodland Fuel Types

*D Weise*

(404) Measurements of Smoke Concentrations and Inversions in the Lake Tahoe Basin

*M. Rorig*

(409) The Smoke and Emissions Model Intercomparison Project (SEMIP) Community Data Warehouse

*N. Larkin*

(410) Identifying the Conditions Necessary for CONUS Fires to Impact the Arctic

*N. Larkin*

(411) Uncertainties in Fuel Loading, Fire Consumption, Plume Rise, and Smoke Concentration Calculations

*N. Larkin*

(412) Integrating Air Quality Tools into the Wildland Fire Decision Support System (WFDSS-AQ)

*N. Larkin*

(413) Smoke Modeling and Validation Field Design: CO, PM2.5, CO2 and Smoke Monitoring

*J. Hom*

(439) Validation of Smoke Plume Rise Models Using Ground Based Lidar

*C. Wold*

(446) Fuels, Fuel Consumption, and Smoke Emissions Simulations Under Wildfire Conditions: Case Studies Using Modeling Frameworks

*S. Drury*

(463) Effectively Engaging and Addressing Natural Resource Smoke Management Issues – A Focus Of The National Wildfire Coordinating Group (NWCG) Smoke Committee (SmoC)

*P. Lahm*

### **Fire Management Applications**

(227) Relay Pumping with Electric Wires in Houses to Power Electric Pumps

*S. Shoap*

(246) GIS Tools, Courses and Learning Pathways Offered by the National Interagency Fuels, Fire and Vegetation Technology Transfer (NIFTT)

*K. Schon*

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(288) Geospatial Fire Analysis, Interpretation, and Application – Developing and Maintaining Fire Analysis Training for Multiple Audiences

*L. Kurth*

(377) The Pacific Northwest Fire Science Consortium: Towards a New Paradigm for Technology Transfer

*T. DeMeo*

(390) The National Fire Decision Support Center: Supporting Decision Making

*M. Pence*

(395) Transforming Fire Fighters into Fire-Guiders: Firefighters United for Safety, Ethics, and Ecology (FUSEE)

*T. Ingalsbee*

(432) Firefighter Math – A Web-based Learning Tool

*D. Jimenez*

(462) Blending Fire Management Tools in Support Of Planned Fire Ignitions On Organic Soils A Case Study at Camp Lejeune / Jacksonville, North Carolina

*G. Curcio*