

Mapping Fuels for Regional Smoke Management and Emissions Inventories

www.nrfirescience.org/resource/21595

Fuels are highly variable and dynamic in space and time, and fuel loading can vary considerably even within fine spatial scales and within specific fuel types, such as downed wood or organic soils. Given this inherent variability in fuel loadings, it is not good practice to represent all instances of a fuel type by the same set of...

Author(s): Nancy H. F. French, Michael Billmire, Susan J. Prichard, Maureen C. Kennedy, Donald McKenzie, Narasimhan K. Larkin, Roger D. Ottmar

Year Published: 2020

Type: Document

Technical Report or White Paper

Fire and land cover change in the Palouse Prairie–forest ecotone, Washington and Idaho, USA

www.nrfirescience.org/resource/20656

Background: Prairie-forest ecotones are ecologically important for biodiversity and ecological processes. While these ecotones cover small areas, their sharp gradients in land cover promote rich ecological interaction and high conservation value. Our objective was to understand how historical and current fire occurrences and human...

Author(s): Penelope Morgan, Emily K. Heyerdahl, Eva K. Strand, Stephen C. Bunting, James P. Riser, John T. Abatzoglou, Max W. Nielsen-Pincus, Mara Johnson

Year Published: 2020

Type: Document

Book or Chapter or Journal Article

Differing sensitivities to fire disturbance result in large differences among remotely sensed products of vegetation disturbance

www.nrfirescience.org/resource/20609

Recent advances in high-performance computing (HPC) have promoted the creation of standardized remotely sensed products that map annual vegetation disturbance through two primary methods: (1) conventional approaches that integrate remote sensing-derived vegetation indices with field data and other data on disturbance events reported...

Author(s): Jenny Palomino, Maggi Kelly

Year Published: 2019

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Book or Chapter or Journal Article

Correction to: A case study comparison of LANDFIRE fuel loading and emissions generation on a mixed conifer forest in Northern Idaho, USA

www.nrfirescience.org/resource/20041

Following publication of the original article (Hyde et al., 2015), the authors have noticed two errors in the summarizing of our results and wish to point out the following corrections: – The LANDFIRE-FCCS layer showed a 200% higher duff loading relative to measured loadings, not the “300%” stated in the abstract – The 200...

Author(s): Joshua C. Hyde, Eva K. Strand, Andrew T. Hudak, Dale Hamilton

Year Published: 2019

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Book or Chapter or Journal Article

LANDFIRE Remap Prototype Mapping Effort: Developing a New Framework for Mapping Vegetation Classification, Change, and Structure

www.nrfirescience.org/resource/19747

LANDFIRE (LF) National (2001) was the original product suite of the LANDFIRE program, which included Existing Vegetation Cover (EVC), Height (EVH), and Type (EVT). Subsequent refinements after feedback from data users resulted in updated products, referred to as LF 2001, that now served as LANDFIRE's baseline datasets and are the...

Author(s): Joshua J. Picotte, Daryn Dockter, Jordan Long, Brian Tolk, Anne Davidson, Birgit Peterson

Year Published: 2019

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Book or Chapter or Journal Article

Integrating anthropogenic factors into regional-scale species distribution models - a novel application in the imperiled sagebrush biome

www.nrfirescience.org/resource/20486

Species distribution models (SDMs) that rely on regional-scale environmental variables will play a key role in forecasting species occurrence in the face of climate change. However, in the Anthropocene, a number of local-scale anthropogenic variables, including wildfire history, land-use change, invasive species, and...

Author(s): Juan M. Requena-Mullor, Kaitlin C. Maguire, Douglas J. Shinneman, T. Trevor Caughlin

Year Published: 2019

Type: Document

Book or Chapter or Journal Article

Escape Route Index: A Spatially-Explicit Measure of Wildland Firefighter Egress Capacity

www.nrfirescience.org/resource/19854

For wildland firefighters, the ability to efficiently evacuate the fireline is limited by terrain, vegetation, and fire conditions. The impacts of terrain and vegetation on evacuation time to a safety zone may not be apparent when considering potential control locations either at the time of a wildfire or during pre-suppression...

Author(s): Michael J. Campbell, Wesley G. Page, Philip E. Dennison, Bret W. Butler

Year Published: 2019

Type: Document

Book or Chapter or Journal Article

Deriving Fire Behavior Metrics from UAS Imagery

www.nrfirescience.org/resource/19743

The emergence of affordable unmanned aerial systems (UAS) creates new opportunities to study fire behavior and ecosystem pattern-process relationships. A rotor-wing UAS hovering above a fire provides a static, scalable sensing platform that can characterize terrain, vegetation, and fire coincidentally. Here, we present methods for...

Author(s): Christopher J. Moran, Carl A. Seielstad, Matthew R. Cunningham, Valentijn Hoff, Russell A. Parsons, Lloyd P. Queen, Katie Sauerbrey, Tim Wallace

Year Published: 2019

Type: Document

Book or Chapter or Journal Article

A World in Pixels: How New Research Is Helping to Predict Probability of High-Severity Fire

www.nrfirescience.org/resource/18051

With drought across much of the southern and western States, it's shaping up to be another record year for wildfires. According to the National Oceanic and Atmospheric Administration, May 2018 was the fourthworst May since 2000 in terms of U.S. acres burned by wildfires. The year 2000 is a significant measuring point, since the...

Author(s): Sean A. Parks

Year Published: 2018
Type: Document
Research Brief or Fact Sheet

Modifying LANDFIRE geospatial data for local applications

www.nrfirescience.org/resource/15167

LANDFIRE's suite of spatial data layers are a valuable resource for land managers because they stretch "wall-to-wall" across the US, are created with a consistent methodology and are updated over time. These data are designed to support broad-scale land management activities, and users are encouraged to critique and modify...

Author(s): Don Helmbrecht, Kori Blankenship

Year Published: 2016

Type: Document

Technical Report or White Paper

Automated integration of lidar into the LANDFIRE product suite

www.nrfirescience.org/resource/13609

Accurate information about three-dimensional canopy structure and wildland fuel across the landscape is necessary for fire behaviour modelling system predictions. Remotely sensed data are invaluable for assessing these canopy characteristics over large areas; lidar data, in particular, are uniquely suited for quantifying three-...

Author(s): Birgit Peterson, Kurtis J. Nelson, Carl A. Seielstad, Jason Stoker, William Matt Jolly, Russell A. Parsons

Year Published: 2015

Type: Document

Book or Chapter or Journal Article

Demonstration and integration of systems for fire remote sensing, ground-based fire measurement, and fire modeling - Final Report to the Joint Fire Science Program

www.nrfirescience.org/resource/11158

Proof-of-concept research is being conducted to: compare airborne and in situ, ground-based fire measurement systems; begin evaluation of two fire-behavior simulation models with these data; test approaches to incorporating improved wind-field and weather data in these models; test the utility of the airborne remote sensing for...

Author(s): Colin C. Hardy, Philip J. Riggan

Year Published: 2005

Type: Document

Technical Report or White Paper