



THE
FIRE CONTINUUM
MAY 21-24, 2018 • MISSOULA, MT
PREPARING FOR THE FUTURE OF WILDLAND FIRE CONFERENCE

WORKSHOPS

Monday, May 21, 2018 – 8:00 am – 12:00 pm

Workshop 1: Learning the Photoload Sampling Technique: Visually estimating surface fuel loadings from photographs for research and management applications

Workshop Leader: Bob Keane

Wildland fire researchers and fire managers need better estimates of surface fuel loadings so they can more accurately predict fire behavior and effects to design more effective fuel and ecosystem restoration treatments. A new fuel sampling system, called the photoload sampling technique, has been developed to quickly and accurately estimate loadings for six surface fuel components using downward-looking photographs that depict graduated fuel loadings. The user simply matches the fuel loading conditions observed on the ground with conditions portrayed in a set of graduated photographs. The original photoload materials were built to estimate fuel loadings for forests in the northern Rocky Mountains of Montana, USA. But, there are now methods to expand the photoload technique to other ecosystems of the world. In this workshop you will learn how to use the photoload technique in the field with great accuracy. Then you will be given all the materials to teach photoload to others and to calibrate photoload visual estimates to improve accuracy. Last, you will be shown how to make your own photoload pictures to estimate loadings of shrub and herb species in your area. An evaluation of the photoload technique is also presented along with a CD of all photoload photographs.

Monday, May 21, 2018 – 8:00 am – 12:00 pm

Workshop 2: Clear talk about wild fire: Meeting the communications challenges of the wide wildfire audience

Workshop Leader: Andrew Larson and Nadia White

The ability to communicate essential information about wildfire during or related to significant fire events is a skill that should be honed when you are not on the hotseat. This workshop offers fire managers, fire research scientists and graduate students in related fields a chance to consider the different audiences they need to be able to reach. It will consider different communication scenarios, tools, and techniques that can help experts make their point, clearly, accurately and in a timely manner.

We will look at the different approaches a communicator might consider as they present information to audiences as varied as journalists, impacted local residents and businesses, local business leaders and policy makers. We'll provide insight into the needs and frustrations of each stakeholder.

Participants will hear tips from the pros and practice developing a message, being interviewed, staying on message in interviews and using humor, when appropriate, to defuse difficult situations. Core practical activities include crafting a wildfire information message and delivering this message in an interview, including peer and expert review.

Expert speakers will include experienced journalists, community PIOs, frequently quoted fire scientists and others whose experiences will inform the practicum.

Monday, May 21, 2018 – 8:00 am – 12:00 pm

Workshop 3: Reaching Deep into Our Collective Fire-Toolboxes to Get More of the Right Fire on the Landscape

Workshop Leader: Johnny Stowe, South Carolina DNR; Steven R. Miller, Chief, Bureau of Land Resources, St Johns River Water Management District; Alen Slijepcevic, Country Fire Authority, Australia; Domingo M. Molina, University of Lleida, Spain; Jane Park, Parks Canada Agency; Joel Carlson, Northeast Forest & Fire Management, LLC; Joseph O'Brien, US Forest Service, Caribbean; Murray Carter, Office of Bushfire Risk Management (OBRM), Western Australia; Robert Wilken, Center for Natural Lands Management and Longleaf Alliance; Ethan Robers and Kelley Harkins, UWSP Fire Crew; Zachary Prusak, The Nature Conservancy

Wildland fire policy and management are mired in an increasingly complex wild, rural and urban landscape. Fires are getting larger; suppression costs are increasing; and harm to the public, to firefighters, and to property and natural resources is monumental. Wildfire prevention and suppression will always be vital tools, but we face a critical need to get more of the right kind of fire on the landscape. While the use of prescription fire has increased across North America, especially in the Southeast, we are falling far short of our goals. Our workshop will highlight successful on-the-ground approaches in the arena of “conventional” prescribed fire, as well as prescribed “natural” fire (managed wildfires). What works in one place can often – with modification – work in other areas, and moreover, exchanging accounts of successes and failures can lead to new ideas and approaches.

We will invite people from across North America to share their approaches to restoring prescribed fire. Some of these prescribed fire practitioners will be from areas where the entire region general supports prescribed fire, while others will be from places where support for prescribed fire is localized, yet growing.

Monday, May 21, 2018 – 8:00 am – 12:00 pm

Workshop 4: Introduction to the Interagency Fuels Treatment Decision Support System (IFTDSS)

Workshop Leader: Kim Ernstrom and Caroline Noble

The Interagency Fuels Treatment Decision Support System (IFTDSS) is a web-based software and data integration framework that organizes previously existing fire and fuels software applications to make fuels treatment planning more efficient and effective. It is available to all interested users, regardless of agency or organizational affiliation. Participants can expect an overview and demonstration of current functionality to be followed by hands on exercises. Discussion on future development and feedback by participants will be welcome. Participants can learn how to easily model proposed fuels treatment scenarios and compare modeled results to determine which proposed treatment best meets objectives. Key pieces of functionality include: evaluation and editing of Landscape data, basic landscape fire behavior modeling, easy to use mapping interface, landscape and fire behavior reports which can be downloaded or shared. IFTDSS also hosts a complete set of reference data available for the entire US including LANDFIRE 2012 and 2014, SILVIS Wildland Urban Interface, Agency Ownership, as well as disturbance data, and other relevant fire management data layers. The Fuels Treatment Effectiveness Monitoring (FTEM) database is being integrated into the IFTDSS system with a new state of the art spatial interface for viewing wildfire and fuels treatment interactions. Participants will be introduced to this new feature and given the opportunity to view wildfire and fuels data from their local area.

Monday, May 21, 2018 – 8:00 am – 12:00 pm

Workshop 5: Linking wildfire burn mosaic and lynx habitat modeling

Workshop Leader: Paul Hessburg, Bill Gaines and Susan Prichard

The incidence of large and severe fire events is increasing in the western United States with long-term implications for future wildfires, landscape successional mosaics, and wildlife habitat abundance and connectivity. Given that wildfire seasons are increasing in length and severity, managing for existing and future wildlife habitat needs to be closely integrated with wildland fire management and climate change adaptation. In many western landscapes, wildfires are leaving large, high-severity burn patches behind, that can predispose large areas to future large, fire events and continuous shrub field rather than forest

conditions. Recent research demonstrates that recently burned areas often act as barriers to subsequent fire spread and/or mitigate the severity of subsequent fires. Landscape mosaics of heterogeneous burn areas ranging in time since fire can therefore be more resilient to future wildfire events than large homogeneous patches of similar vegetation.

In this workshop, we will introduce a landscape fire simulation tool that couples state and transition models of vegetation and fuels succession with an operational fire spread model and hourly weather streams. We will use a case study from north-central Washington to explore the consequences of different wildland fire management strategies (no suppression, managed wildfires, and modern fire suppression) on habitat abundance and connectivity for the Canada Lynx. A current Lynx habitat resource selection function will be used to translate dead wood and forest successional conditions into Lynx habitat conditions. Recent large fires in north-central Washington State have severely impacted some of the best remaining habitat for Canada Lynx. Understanding how remaining lynx habitat could be managed to create more fire-resilient successional and habitat mosaics will be critical to the recovery and survival of this species.

The workshop will be facilitated by Paul Hessburg, a research landscape ecologist, and Bill Gaines, a wildlife biologist. The first half of the workshop will be to introduce the topic and simulation tool. The second half of the workshop will be devoted to interactive discussions on lynx habitat and population outcomes, opportunities to integrate management objectives for wildland fire and wildlife habitat, and implications for other species of concern.

Monday, May 21, 2018 – 8:00 am – 10:00 pm

Workshop 6: Teaching the Oregon State University Fire Science Core Curriculum

Workshop Leader: Daniel Leavell and Carrie Berger

Author H.P. Lovecraft once said, “The oldest and strongest emotion of mankind is fear, and the oldest and strongest kind of fear is fear of the unknown.” We tend to fear what we do not understand. Not everyone is afflicted with pyrophobia (an irrational fear of fire), but many fear fire from personal experience or mainly through a lack of understanding. Fire is a chemical reaction that has been on the planet as long as there have been plants and carbon-based lifeforms on the ground and lightning in the sky. Fire is a force of nature we can control under certain conditions but can’t control under other conditions. Fire can take life and save life. Plants and animals have adapted to fire frequency and severity over the eons in different locations, especially in areas of drier climate. We will never eliminate fire from our workplaces, homes, yards, forests, or rangelands. As long as we live in a carbon-based world, we will live with fire. Fire science is complex and can take years of study to fully understand. Professional firefighters and fire scientists learn everything from fire theory, knot tying, and ladder and hose deployment to fluid dynamics and physics. They do this for national, state, and local certifications. This curriculum is not designed to train professional firefighters, although some learners just starting on that path will find it useful. The basic intent of this curriculum is to teach the basics of fire to non-fire-professional community members, including instructors, and landowners, such as ranchers and farmers. The goal is to replace fear and misunderstanding with knowledgeable respect. We want to reduce risk and fire hazard through education and understanding. Each of these five modules — What is Fire?, Fire Ecology, Fire Behavior, Fire Management, and Fire Prevention for Home and Landscape intends to do just that.

We will conduct a workshop that follows the details of the modules sufficient to gain an understanding of the content.

Monday, May 21, 2018 – 10:00 am – 12:00 pm

Workshop 7: Wildfire hazard and risk assessment: concepts, terminology, and applications

Workshop Leader: Joe H. Scott

For over ten years, a quantitative wildfire risk assessment framework has been used to address wildfire management problems at scales ranging from a wildfire incident to agency-wide budget allocation. Wildfire

risk assessments are often initiated or carried out by fire management or fuel specialists, but the assessments have even greater application for natural resource managers from other disciplines, like wildlife or watershed management, especially for land and natural resource management planning and implementation. This workshop is designed so that fire, fuel and natural resource managers from any agency can develop a strong understanding of available wildfire risk assessment processes and how they apply to real-world wildfire problems.

In this workshop we will first introduce participants to spatial wildfire risk assessment concepts, terminology and methodology. Second, we will demonstrate the application of wildfire risk assessments at multiple scales (local to national). These applications include: identification and prioritization of fuel treatment opportunities; ranking community exposure to wildfire; identifying firesheds (and the gradient of influence within them); fine-scale risk to surface municipal drinking water; incident-level risk assessment; and utility-related wildfire risk. We conclude with a round-table discussion of the current state of wildfire risk assessment and possible future developments.

Monday, May 21, 2018 – 8:00 am – 12:00 pm

Workshop 8: Fuel and Fire Tools (FFT)—Application for Wildland Fuel and Fire Management Planning

Workshop Leader: Roger Ottmar, Research Forester, Pacific Wildland Fire Sciences Laboratory, US Forest Service and Susan Prichard, Research Scientist, School of Environmental and Forest Sciences, University of Washington.

The Fire and Environmental Research Applications team (FERA) of the US Forest Service Pacific Wildland Fire Sciences Laboratory has developed the Fuel and Fire Tools (FFT) application. FFT has integrated a suite of five fuel and fire management products that will be demonstrated at this workshop. The suite of tools includes the Fuel Characteristics Classification System (FCCS), Digital Photo Series, Consume, piled fuel biomass and emissions calculator, and the Fire Emissions Production Simulator (FEPS).

The FFT allow users to build and characterize fuel beds, assess potential fire hazard and surface fire behavior, and estimate the amount of fuel consumed and emissions produced if burned during a wildland fire. The workshop will provide background information on individual tools and demonstrate how to use FFT. All participants are requested to bring a laptop with FFT pre-loaded so they can follow along with hands-on exercises. An e-mail will be sent out to each participant several weeks prior to the workshop that will provide directions for downloading FFT. Information on the tool can be found at:

<https://www.fs.fed.us/pnw/fera/fft/index.shtml>

Monday, May 21, 2018 – 8:00 am – 10:00 pm

Workshop 9: Operations and Application of Unmanned Aircraft Systems for Forest and Burn Area Mapping and Monitoring

Workshop Leader: Shane Romsos

Unmanned Aircraft Systems (UAS) offer a cost-effective and efficient approach to capturing high-resolution imagery and mapping features of interest. For relatively small areas (< 3,000 acres), post-processed imagery from UAS is superior to traditional airborne and satellite platforms because it is high-resolution (< 3.5cm), can be captured during optimal conditions (e.g., to ensure cloud-free imagery, and ideal phenology), and be deployed within hours of need. During this workshop, our team will provide an overview of UAS, including a comparison of platforms, UAS operations, hardware and software requirements, map products, and real-world examples of UAS application at areas across the US. As part of the workshop, our team will also provide a live demonstration of UAS operations.

The workshop will focus on data collected using the Ebee™ line of fixed wing Unmanned Aircraft Systems, the DJI Mavic™ line of quadcopters, and Pix-4-D™ software for image processing and analysis. Participants in the workshop will gain an operational understanding of when, where, and how to utilize UAS for project level assessments. In addition, participants will learn the relative advantages and disadvantages of using Unmanned Aircraft Systems as compared with satellite imagery, LiDAR, and other imagery collected with piloted fixed wing aircraft and helicopters.

The workshop instruction team has several years of experience using UAVs for a range of natural resource related mapping projects across the United States. This includes mapping of forest and rangeland vegetation, stream morphology, landslides, in-stream woody debris, “real time” flood assessments, and impervious surfaces on both public and private lands and in heavily urbanized and wildland settings.

Monday, May 21, 2018 – 10:00-12:00 pm

Workshop 10: Applying Advanced Technology to Enhance the Situation Unit

Workshop Leader: Joaquin Ramirez

With the advent of new and enhanced technology for incident analysis, management and real-time tracking, there is an opportunity to re-think the roles and procedures to improve the efficiency and safety of wildfire management operations.

We now have advanced capabilities to monitor and track suppression units, integrate high-resolution weather and fire behavior modeling outputs, and leverage mobile technology to capture and share information in real-time. These capabilities are readily available, however they have not been integrated into the decision making process and responsibilities of the situation unit to improve its capacity.

This workshop will demonstrate examples of how these tools can be integrated and applied by agencies across the US and rest of the World, building upon success stories using the Technosylva suite of their fiResponse, Wildfire Analyst & Tactical Analyst software solutions for wildland fire.

Monday, May 21, 2018 – 8:00 am – 12:00 pm

Workshop 11: Unmanned aircraft in fire research and management

Workshop Leader: Adam Watts

The advent of low-cost, reliable unmanned aircraft systems (UAS; also known as “drones” or unmanned aerial vehicles, “UAVs”) has encouraged a proliferation of their uses for all manner of scientific applications. With their military pedigree, UAS are as ideally suited for so-called “dull, dirty, and dangerous” missions as they are for providing a novel aerial perspective for much work traditionally conducted from the ground, such as surveys and sampling. These characteristics make UAS ideally suited for many uses in fire science and management, as does the similarity of many aspects of fire management to military operations in complexity of organization, pace of operation, and need for rapid and accurate geospatial information in order to ensure safety of personnel.

A rapid pace of technology development, and a regulatory environment that has until recently set challenges for non-hobbyist use, have meant that groups working with UAS may have limited exchange of information and techniques. Additionally, the highly interdisciplinary nature of natural-resource related UAS work has led to an unusually disparate array of publication outlets, reducing the efficiency with which advances are received and applied by the community of workers in the field. This workshop is designed to promote the exchange of information about techniques, technology, information products, and other areas of operations among actual and potential users, in hopes of increasing the efficiency of information exchange and the adoption of safe and effective practices by which UAS can support the needs of the wildland fire community.

Topics, themes, and questions we hope to address in the workshop include (but are not limited to) the following:

- Infrared thermography for monitoring and mapping: lessons learned and protocol development
- Fire effects and fire behavior assessment
- Aircraft platforms: what works well and what doesn't always work?
- Regulations on and off the fireline, policies that help or hinder, and integrating UAS into fire aviation operations
- Lighting and fighting fires with UAS
- Sampling payloads

This workshop is planned in parallel with a special issue of the new journal FIRE whose focus will be the same as that of this workshop (for more information, see the Special Issue URL:

http://www.mdpi.com/journal/fire/special_issues). Participants in this workshop will be especially encouraged to develop their work into manuscripts for consideration for this Special Issue, as a means of further extending their work to the fire community.

Monday, May 21, 2018 – 8:00 am – 12:00 pm

Workshop 12: FireWorks Educational Program: Hand-on Activities to Engage Students and the Public about Wildland Fire Science

Workshop Leader: Ilana Abrahamson

Wildland fire draws the public's attention every summer, but public understanding of fire is limited. The FireWorks Educational Program aims to increase the public's understanding of wildland fire, especially students in Kindergarten through 12 grade (and beyond). The FireWorks curriculum—first published in 2000—is newly revised to include new materials that reflect recent advances in fire research and national educational standards.

This workshop consists of entertaining, hands-on activities for teaching students and the general public about the science of wildland fire. Participants will learn several fun activities, and be able to teach them to students of all ages. Activities will cover fire behavior, ecology, management, and traditional fire use by Native Americans. Some activities focus on ecosystems in the Northern Rocky Mountains and the Sierra Nevada, however we will discuss about how ecosystem-specific activities can be modified for use in other ecosystems.

FireWorks Educational Program website: www.frames.gov/fireworks/fireworks-home/

Monday, May 21, 2018 10:00-12:00 pm

Workshop 13: Publishing in International Journal of Wildland Fire

Workshop Leader: Susan G. Conard, George Mason University, co-Editor-in-Chief; Stefan Doerr, Swansea University, co-Editor-in-Chief; Jenny Foster, CSIRO Publishing, Journals Publisher

This workshop is aimed at assisting authors and potential authors to get their best work published in the International Journal of Wildland Fire. Writing about your research in a way that connects with other people is essential if you want your results, methods and ideas to have meaning and to make a difference. Publishing is an integral part of scientific research, and a strong publication record underpins a successful research career. For people and institutions alike, publications are a most important measure of research output and they are a critical means of achieving impact from the research. This workshop is ideal for all scientists – including students, early-career researchers, or those with more experience – wishing to improve their writing skills and the impact of their publications. During this workshop, Journals Publisher, Jenny Foster will provide some information, including metrics, about why IJWF is a great place to publish your work. IJWF's co-Editors-in-Chief, Sue Conard and Stefan Doerr, will also be presenting some helpful guidelines and tips, for ensuring you have the best possible chance of getting your research published in IJWF. These presentations will be followed by an informal feedback session, where you will have a chance to ask questions and seek advice. International Journal of Wildland Fire publishes new and significant articles that advance basic and applied research concerning wildland fire. Published papers aim to assist in the understanding of the basic principles of fire as a process, its ecological impact at the stand level and the landscape level, modelling fire and its effects, as well as presenting information on how to effectively and efficiently manage fire. The journal has an international perspective, since wildland fire plays a major social, economic and ecological role around the globe.

- Published by CSIRO Publishing on behalf of the International Association of Wildland Fire.
- Impact factor: 2.75, rank: 5/64 (Forestry category) in 2016
- Frequency: 12 issues per year
- Web: www.publish.csiro.au/journals/IJWF
- Follow the journal on social media using the hashtag #IntIJWildlandFire

We are looking forward to meeting you!

Monday, May 21, 2018 8:00-12:00 pm

Workshop 14: Geospatial Fire Modeling Using FlamMap6

Workshop Leader: Charles W. McHugh

The FlamMap fire mapping and analysis system is a standalone PC-based program that runs in a Windows Operating System. FlamMap describes potential fire behavior for constant environmental conditions (weather and fuel moisture) and has been in use since 2002. BASIC Fire behavior is calculated for each pixel within the landscape file independently. Additionally, FlamMap can calculate Burn Probabilities and Minimum Travel Time (MTT) Perimeters based on either random ignitions or a user supplied ignition file to determine conditional burn probabilities across a given landscape under a constant set of fuels, wind and weather conditions. A variety of raster and vector based outputs are produced which can be easily incorporated into standard GIS programs. FlamMap also produces outputs in a KMZ format for use in GoogleEarth. With the release of FlamMap6 FARSITE has been included allowing for the spatial and temporal growth of fires across a landscape. Additionally, the program now has a landscape editing function allowing the user to make basic edits to landscape data themes. This workshop is designed to introduce the user community to these new features within FlamMap6. Experienced FlamMap users will be introduced to helpful features and the newest modeling capabilities. While not a requirement, it is assumed that attendees are familiar with and have experience operating FlamMap5 in the past. The workshop will be interactive and hands-on with attendees running the program using sample data available within the program in instructor lead exercises. Exercises will primarily focus on learning to use the new FARSITE and landscape editing function within FlamMap6.

The workshop would be a combination lecture followed up with exercises using FlamMap6 addressing the following topics:

- Introduction, demonstration to FARSITE within FlamMap6. At this time continued development and support of FARSITE will no longer be continued. It will only be available in FlamMap6;
- Introduction and demonstration of the built-in landscape file editor which allows all data themes in a landscape file to be edited within the FlamMap program;
- Introduction and demonstration of gridded wind information from WindNinja within FlamMap6 or ingested from outside FlamMap6 using the WindNinja program [Note: WindNinja will not be taught in this workshop];
- Introduction and demonstration of the Help File and associated tutorials;
- The lecture will cover an introduction to program features including basic background knowledge and theory, and useful tips and tricks.

This is a hands-on workshop requiring a laptop computer capable of running FlamMap6 and WindNinja programs. Participant computers must be running Windows 7 or greater 64-bit Operating Systems with sufficient memory (minimum of 8GB of RAM). While attendees are free to bring their own local data they should contact the workshop organizer prior to attending to ensure it is appropriate for use in the intended instructional environment.

Monday, May 21, 2018 8:00-12:00 pm

Workshop 15: NASA Wildfire Applications Toolbox: Training in Availability, Access, and Use of Earth Observation Data, Models, and Information

Workshop Leader: Vincent G. Ambrosia and Amber Soja, NASA-Applied Science Program

In 2011, NASA solicited applications and applied research proposals to use Earth observation data to improve decision-making activities and actions on topics related to wildland fires. Nine project teams, partnering with wildfire organizations (USFS, BLM, USGS, etc.) were selected to develop tools, web services, data access, and models to improve wildfire analysis and assessments, management strategies and actions, business practices, and policy analysis and decisions associated with wildland fires. Those nine

projects separately focus on all aspects of the fire cycle: from predictive fire behavior, through active fire monitoring to post-fire assessment and rehabilitation. The projects employ a range of operational Earth Observation systems and data, coupled with other geospatial information, and modeling data (such as LANDFIRE) to improve operational decision support systems and processes. Each of the nine investigators will brief the workshop attendees on their efforts and provide hands-on training for accessing and employing their tools. The goal of the workshop is to have a wildfire management and science community that is more knowledgeable about Earth Observation data, where to access it, and how to utilize such in supporting their decision processes, whether it be fire predictive behavior modeling, active fire monitoring, or post-fire analysis and rehabilitation activities.

Who Should Attend: Those in the fire science and management structure that are interested in how to use EO data in their research or day-to-day jobs: fire ecologists, fire behavior analysts, incident command team members (Sit Unit Leaders), BAER and rehabilitation team members, smoke management scientists, geospatial analysts and, of course, agency management personnel who want to learn how to partner with NASA to utilize its vast Earth observations knowledge and resources.

Monday, May 21, 2018 8:00-12:00 pm

Workshop 16: Empowering Strategic Decision Making for Wildfire Management: Avoiding the Fear Trap and Creating a Resilient Landscape

Workshop Leader(s): Marc Castellnou, Pau Costa Foundation, Karin Riley, US Forest Service, Rocky Mountain Research Station, Forestry Sciences Lab, Leda Kobziar, University of Idaho, College of Natural Resources, and Nuria Prat, Pau Costa Foundation

Wildfires are overwhelming firefighting organizations worldwide, and as a consequence, fire managers often move into a defensive strategy rather than managing for fire effects on ecosystems. With pressure on firefighting agencies to act as responding emergency organizations, transparency in decisions can degrade, threatening trust and confidence between citizens and firefighting agencies. Technological tools, including a suite of wildfire and smoke dispersion models, help to predict fire behavior and spread during active incidents. Outputs from these models are one input used to decide strategy when fighting or managing a fire. They are often employed in deciding how to minimize the pressure of losing property and lives and to minimize impacts from smoke. We see potential to leverage them in managing risk on future landscapes. However, the decision space during wildfires is often restricted by lack of time, social pressure, and the overwhelming influence of risk aversion (“the fear trap”).

By including ecosystem values and fire behavior effects in the decision-making process, we can enhance decisions made on the fireline. Including this information can empower firefighters, managers, and landowners to be creative in identifying desired impacts of these decisions on future resilience, vulnerability, exposure and risk of a certain ecosystem, landscape, society, and firefighting community. Confidence can build across stakeholder groups if they understand that decision making during wildfires is not only about defense, but can be an opportunity for holistic planning. Fire effects on ecosystems and landscapes can last longer than the lifetime of humans fighting them- the consequences of decisions made during a wildfire will shape the future landscape: its structure, diversity, and the ecosystem services it provides; but also its vulnerability, exposure, and risk. We draw on an array of experiences managing and modeling wildfires and fuels treatments, including prescribed burning, across Europe, South America, and North America to propose that by thinking outside of the box, land and fire managers might apply creative ideas into active fire management strategies, giving priority to decisions that will improve future ecosystem and social resilience and help create less vulnerable landscapes.

This workshop aims to discuss the decision-making process using scenarios from recent large fire events around the globe, such as the Thomas Fire of 2017 in California, USA; the Fort McMurray Fire of 2016 in Canada; the Las Maquinas Fire of 2017 in Chile; the Pedrao Grande Fire of 2017 in Portugal; and the Lolo Peak Fire of 2017 in Montana, USA. We provide simulation scenarios to illustrate different possible decisions and their likely impact on landscape values of today and the future. Drawing from one of our

workshop organizer’s experience managing fires in Spain, we explore real examples of how a community might agree on priorities considering the common good, impact on all values-at-risk, and firefighting capacity. In Marc Castellnou’s experience, “We empower firefighters to be creative in defining the future, avoiding the defense at all costs of a vulnerable situation. If that is done, we provide a bridge of understanding with society for working together on a common goal.” Wildfire scenarios will be presented by key speakers, who will then moderate discussions on how creative decision making could be implemented in these real-world scenarios.

**Co- hosted by
Association for Fire Ecology and
International Association of Wildland Fire**

