



**Wildfire Management**

Online Event // June 3-4, 2020

# POST-EVENT RECAP

**17 wildfire experts share the latest innovative strategies and cutting-edge technologies poised to transform wildfire detection, prevention & suppression.**



# RE-IMAGINING WILDFIRE MANAGEMENT THROUGH COLLABORATION & INNOVATION

The threat of wildfires is growing. Exacerbated by climate change and the growing urban-wildland interface, wildfires are not only becoming increasingly common, they're also burning hotter, faster and more unpredictably than ever before. The increase of fire activity not only jeopardizes human life and property, it also poses numerous national security, critical infrastructure and economic risks.

This past week, June 3-4, 2020, we invited some of the wildfire management industry's leading minds to discuss the latest, innovative strategies and emerging technologies poised to transform wildfire prediction, prevention, detection and suppression. From the use of small tactical drones to next generation predictive modelling & simulation technology, our presenters shared the next generation of tools they're developing & leveraging to maximize the effectiveness & efficiency of wildfire management efforts. In addition, they also discussed how the industry is coming together to share data, knowledge, training and resources on local, national and global levels.

We at IDGA are honored to be a part of the conversation and we urge you to read on to find out what you missed at the June 2020 Wildfire Management online event.



# DAY ONE RECAP



12:00 PM

## INTEGRATING TOOLS FOR LOGISTICS AND EFFECTIVE DEPLOYMENT

**Bill Hirsch**, Principal Solutions Architect, RedHat Inc

**Roland Sprewell**, Battalion Chief, LA County Fire Department

Following the 2018 Woolsey Fires, the largest natural disaster to hit the state in generations, LA County realized they need to develop a more robust approach to public information management. In this presentation, Chief Duvally and Bill Hirsch, discuss how automation and containerization software can play a pivotal role in not only ensuring citizens can access vital information without in the event of a catastrophe, but also can be used to identify hotspots and reallocate resources accordingly. For example, AI-powered tools can swiftly analyze social media data to uncover where people are posting about encroaching fires or integrate geospatial data to predict where/how the fire will likely spread. They also discuss how tools such as OpenShift ensure that government websites can withstand the dramatic increase of traffic they experience in times of emergency as well as increase the timeliness of public alerts and enable improved inter-agency coordination. They also share their take on the cultural and training changes that need to occur behind the scenes to ensure that these solutions are fully leveraged.



12:45 PM

## PERSPECTIVES ON WILDFIRE PREVENTION AND EMERGENCY RESPONSE IN CALIFORNIA

**Nic Elmquist**, Wildland Fire Specialist, Montecito Fire Department

Mr. Elmquist discusses the Montecito Fire Department's strategy during the 2017, 2018 and 2019 wildfire seasons. As populations move out of city centers, they've seen a substantial growth of wildland-urban interface (WUI) fires. MFD has created numerous community outreach and education programs to not only help the public to plan evacuation routes, fortify their homes/neighborhoods and plan their own disaster responses, it also help hold them accountable. Mr. Elmquist also shares how MFD successfully suppressed the 2017 fires despite the extreme weather conditions. The key factors? The use of stringent building codes, hazardous fuel treatment networks, robust information management planning, the community education plan, and strong cross-agency relationships.



1:15 PM

## CHALLENGES FOR INTERAGENCY COORDINATION ON WILDLAND FIRE

**Kim Christensen**, Deputy Assistant Director of Fire and Aviation Operations, US Forest Service

The National Interagency Fire Center (NIFC) is a globally recognized model for inter-agency collaboration and coordination. NIFC brings together 9 different agencies to share firefighting supplies, equipment, and personnel as well as work together to establish policy, exchange information, train personnel and coordinate wildfire response across agencies and governments. They've also developed a five-tiered preparedness level criteria to help assure that firefighting resources are ready to respond to new incidents. One of their key partners is the DoD, who provides them with additional technological support in the form of MAFFS, IAA, DRTI and UAS imaging. Plus, when need, ground forces.



2:00 PM

## WILDFIRES AND DRONES: HOW EMERGING TECHNOLOGIES ARE IMPACTING DISASTER OPERATIONS

**John Scardena**, Former Federal Emergency Response Official, Doberman Emergency Management

An overview of how the use of small, tactical drones can enable emergency responders to more effectively identify and mitigate active fires as well as post-fire destruction. The 2017 Southern California wildfires marked the inaugural use of sUASs for disaster response. Using tactical level drones, they were able to identify an additional 31 destroyed homes and collect detailed data regarding wildfire behavior. He also walks us through the pro's and cons of other wildfire monitoring solutions such as high altitude drones, satellite imaging and mobile applications. In addition, he discusses the use of LiDAR for volume calculations, data validation and search & rescue.

2:30 PM

## THE FUTURE OF DRONES AND WILDLAND FIRE

**Mark Aitken**, Director of U.S. Legislative Affairs, DJI

**Wayne Baker**, Director of Public Safety Integration, DJI

To start, Mr. Baker explains how, as the Fire Chief of the City of Joshua, his department used drones help front line fighters, search & rescue and post-fire analysis activities. Following this, Mr. Aitken digs into the future of drone operations and some of the key wildfire related challenges going forward. One key challenge is the DOI's Country of Use Policy as well as 2 pending pieces of regulation, the American Security Drone Act- S. 2502 and the Drone Origin Security Enhancement Act-H.R. 4753, which, amongst other things, bans government agencies from procuring drones that are manufactured in China OR include even include components made in China. Sufficed to say, this protectionist approach is considered flawed by government stakeholders as it does not nothing to address other, more relevant vulnerabilities nor do they push for the development of robust security standards.



3:00 PM

## ENHANCED WILDFIRE SITUATIONAL AWARENESS: USE OF FIELD DATA TO MAKE CRITICAL DECISIONS AT CRITICAL TIMES

**Shawn Bethel**, Director of Business Development, FTS

Drawn from his own 30+ years of experience in wildfire operations, Mr. Bethel discusses how FTS camera-powered solutions can be used to develop a holistic, unified view of wildfire activity. As he puts it, "When everyone can see the chess board, it's easier to see where you need to move the chess pieces." Using strategically placed sensors, cameras and an integrated dashboard, FTS delivers actionable, real-time data that can be used to optimize resource allocation and enable predictive modelling capabilities. In addition to helping minimize the economic and environmental impact of wildfires on communities, these systems also increases the cost-effectiveness of fire fighting efforts. For more about FTS and the future of situational awareness check out our in-depth interview with [FTS' Alan DeCiantis](#).





# DAY TWO RECAP



12:00 PM

## COLLABORATION ON THE GLOBAL WILDFIRE INFORMATION SYSTEM (GWIS)

**Dr Vincent Ambrosia, Assoc. Program Manager - Wildfires, NASA HQ**

The Global Wildfire Information System (GWIS) Initiative was created to harmonize existing information sources at regional and national level in order to provide a comprehensive view and evaluation of fire regimes and fire effects at global level and to provide tools to support operational wildfire management from national to global scales. The goal is to become a one-stop-shop for global fire information/research by 2022. In this presentation, Dr. Ambrosia walks us through GWIS' various resources such as its global fire danger forecast map, lightning forecast maps, real-time fire detection maps, burned area maps, fire emissions map and fuel maps. In addition, he also shares how they leverage satellites, remote sensing, data integration, data visualization technology and other cutting-edge technology to collect and share global wildfire data.

12:30 PM

## MODELLING, PREDICTION AND RESPONSE WITH WIFIRE

**Timothy Werle, Captian, LAFD**

**Jessica Block, Spatial Data Scientist, UC San Diego**

Developed by UC San Diego in partnership with LA County, WIFIRE's mission is to conduct research and development towards systems, services and tools for artificial intelligence integrated fire science, response and planning. During this presentation, Captain Werle shares how his department leveraged WIFIRE to model future fire behavior and use this information to make smarter fire fighting decisions. Citing examples from the multiple fires his team faced during the 2019 fire season, he explains, how using this tool, they were able to accurately predict the location and size of fires as well as which fires would burn out on their own and which needed to be addressed immediately. They also discuss, in-depth, their approach to fire modelling and how the integrated multiple ariel sensors to paint one, holistic view of fire activity in real-time.



1:00 PM

## INTERNATIONAL PERSPECTIVES ON WILDFIRE PREVENTION AND RESPONSE

**Daniel Buckley, Wildland Fire Directore, National Park Service**



To start, Mr. Buckley explains how the NICC and NPS assisted Australian fire fighters over the course of the 2019/2020 wildfire season. In addition, the 362 personnel sent over to help on the front lines, came back with numerous lessons learned regarding everything from IT support to PR training to improved on the ground communications. The biggest lesson learned though is the "disasters occur when you don't evacuate soon enough." In other words, we need to evacuate people sooner and not worry so much about inconvenience. In addition, we must be more proactive about fortifying our structures and ecosystems before a fire occurs. He also discusses the impact of COVID-19 on the wildfire community and how they're training fire responders to understand what they need to do to stay safe in this crisis.

2:00 PM

## PRESCRIBED FIRES AND CONTROLLED BURNS

**Kevin Hiers**, Former SERDP Technical Advisory Committee member and former Chief of the Wildland Fire Center, Strategic Environmental Research and Development Program (SERDP)

Whoever dubbed the phrase “you can’t fight fire with fire” clearly had no idea that controlled burns of vegetation and other potential fuel sources are a necessary part of wildfire management. However, effectively applying prescribed fires requires an exceptional level detailed planning, research and modelling. Under the DoD, SERDP has funded \$23 million to fund key prescribed fire science needs from 2015-2019. In partnership with the DoD, Tall Timbers Research Station has developed advanced prescribed fire tools such as QUIC-Fire, a desktop tool that captures critical fire-atmosphere feedbacks, integrates ignitions, and uses advanced modeling to create prescribed wildfire simulations.



2:30 PM

## ADVANCING INTERNATIONAL COOPERATION ON WILDFIRES

**Ian Meier**, Executive Director, British Columbia Wildfire Service

Like so many other countries, Canada is experiencing a growing wildfire crisis. On average, the country spends \$1.1 billion a year on suppression efforts plus an additional \$4-40 billion in indirect costs. In response, BC Wildfire Service has developed a collaborative, “whole society” approach that aims to de-politicize and integrate emergency management services.



To accomplish this, they’re developing partnerships with other local, national and global organizations to facilitate knowledge and resource sharing. The Canadian Interagency Forest Fire Centre (CIFFC) and The Northwest compact are 2 such consortiums. Specific objectives of the efforts include interoperability, data standardization, joint research ventures and cross-agency training. Also discussed, key technologies BCW will be deploying this wildfire season.

3:00 PM

## RETROSPECTIVE ON THE 2019-2020 AUSTRALIAN BUSHFIRES

**Paul Baxter**, Commissioner, Fire and Rescue New South Wales, Australia

The 2019/2020 Australian Wildfire season was a wakeup call for the world: not only are wildfires increasing in frequency, they’re also burning hotter, faster and more unpredictably. The 2019/2020 not only started earlier, but, as the fires spread and became concurrent, Australian wildfire experts saw that the fires were spreading into new, previously unimpacted areas. To ensure they’re better able to anticipate and mitigate wildfire behavior, Fire and Rescue NSW will be investing in developing improved fire modelling and predicting capabilities going forward. He also discussed why he believes the fires were driven vs. fuel driven.



3:30 PM

## INTEGRATING REMOTE SENSING AND GEOSPATIAL FOR MORE EFFECTIVE FUELS MANAGEMENT

**Dr Graham Kent**, Professor, ALERT Wildfire Program, University of Nevada, Reno

**Dr Douglas Toomey**, Professor, ALERT Wildfire Program, University of Oregon

A look into how heat/smoke monitors and thermal cameras, once integrated, can serve as powerful tools for predicting, preventing and detecting wildfire condition. In this presentation, professors from the University of Oregon and the University of Nevada showcase their ALERTWildfire tool. Using real-world examples and footage, they explain how these fire cameras and associated tools to help firefighters and first responders: identify fire ignition, scale fire resources appropriately, monitor fire behavior through containment, help evacuations through enhanced situational awareness, and ensure contained fires are monitored appropriately through their demise.





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