

# CMINE Wilfire Task Group activities and fire risk modelling tools applicable for fire suppression measures

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FireLinks General Assembly Meeting  
8-9 October 2019

Nina Dobrinkova, CMINE Wildfire Task Group Chair

# WHAT DRIVER+ DELIVERS?


## Driving Innovation in Crisis Management for European Resilience

- Large EU-funded project, GA 607798, May 2014 – April 2020
- **Trial Guidance Methodology Handbook**
- a **Pan-European Test-bed** for Crisis Management Capability Building
- **Portfolio of Solutions**, many evaluated in DRIVER+ Trials
- Four trials (**wildfires** & cross-border cooperation' multi-hazard; **flood** & large scale logistics management; **earthquake & volunteer management**)
- Shared understanding on crisis management, bridging CM communities (PRRD), facilitating innovation (I4CMs)



# WHAT IS CMINE ?

## TARGET GROUPS OF CMINE

- Born in **DRIVER+** project
  - **Community of Practice**
  - Facilitate **exchanges at all levels of the crisis management cycle**
  - **Fostering innovation** and **enhancing a shared understanding** in the fields of Crisis Management and Disaster Risk Reduction in Europe
    - Through an ***umbrella network of stakeholders***
    - Through an ***enabling environment*** to reduce fragmentation, generate ideas and help identify innovative solutions
- 

# CMINE THEMES & TASK GROUPS

REFLECTING DRIVER+ THEMES



Volunteer Management



Wildfires



Floods

# CMINE THEMES & TASK GROUPS

## **Volunteer Management**

- Focus: psychosocial support for spontaneous volunteers
- Members from: Estonia, Denmark, Germany, Italy, Israel, Portugal, Switzerland

## **Wildfires**

- Focus: making open source data available to practitioners and ensure compatibility across states
- Members from: Cyprus, Germany, Greece, Ireland, the Netherlands, Spain, Portugal, United Kingdom,

## **Floods**

- Focus: assessment of effectiveness of emergency measures in flood risk management
- Members from: Bulgaria, Denmark, France, Germany, Hungary, the Netherlands, Spain

# GLIMPSE INTO CMINE PLATFORM

## Events

The screenshot shows the CMINE platform's 'Events' section. At the top, there's a navigation bar with links like 'Live feed', 'Directory', 'Events', 'Media center', 'Forums', 'Groups', 'News', 'Projects', 'Portfolio', and a search bar. Below the navigation bar, a large banner image features two people, with the text 'DRIVER+ TRIAL - AUSTRIA' overlaid. To the right of the banner is a yellow button that says 'Register for this event'. Below the banner, there's a section for the event details. It includes a calendar icon, the event title 'Trial - Austria', the dates '9th - 15th September 2019', and the location 'Eisenerz (Styria)'. There's a description of the event, mentioning it's organized by the Austrian Red Cross (ARC) and the Austrian Institute of Technology (AIT). It also mentions that it will be conducted as a multi-day field exercise under the framework of a large-scale European Civil Protection exercise in Eisenerz, Austria. A section titled 'The Scenario: A heavy earthquake in the local region of Eisenerz' describes the event's context. At the bottom, there's a 'Share' button with social media icons and a 'DRIVER+' button.

DRIVER+ TRIAL - AUSTRIA

Register for this event

**Trial - Austria**  
9th - 15th September 2019,  
Eisenerz (Styria)

DRIVER+ TRIAL Austria is being organised by the Austrian Red Cross (ARC) together with the Austrian Institute of Technology (AIT). It will be conducted as a multi-day field exercise under the framework of a large-scale European Civil Protection exercise in Eisenerz, Austria.

**The Scenario: A heavy earthquake in the local region of Eisenerz**

The central area of Austria has been struck by a heavy earthquake and subsequent heavy rains. The local region of Eisenerz (in Styria, Austria) is one of the most affected with missing persons, casualties, collapsed buildings, blocked roads, and endangered industries working with hazardous substances.

## Directory

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Results: 86

Refresh results as I move the map

First name Last name

Search by keywords

Location (e.g. city and/or country)

More filters

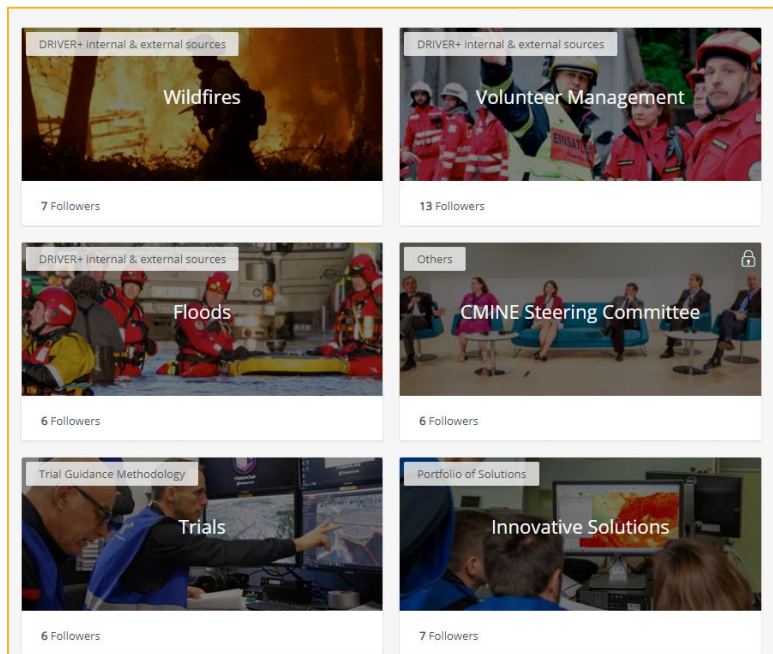
Profile Picture	Name	Location
	Louise Juul Hansen	Denmark
	Peter Kutschera	Austria
	Drazen Ignjatovic	Austria
	Esther Kaehler	Berlin Germany
	Andreas Loepsinger	Iraq
	Todor Tagarev	Sofia Bulgaria
	Gabrielle op 't Hoog	Rotterdam Netherlands
	Nina Baron	Denmark
	Andreas Seipelt	Hamburg Germany
	Massimo Lanfranco	Italy
	David Lund	United Kingdom
	Erik Vullings	Netherlands
	Myriam Ben Ammar	Berlin Germany

Map of Europe showing locations of members. Markers are placed on the map, with numbers indicating the count of members in each location: 2 in France, 9 in Germany, 47 in Italy, and 8 in Spain.

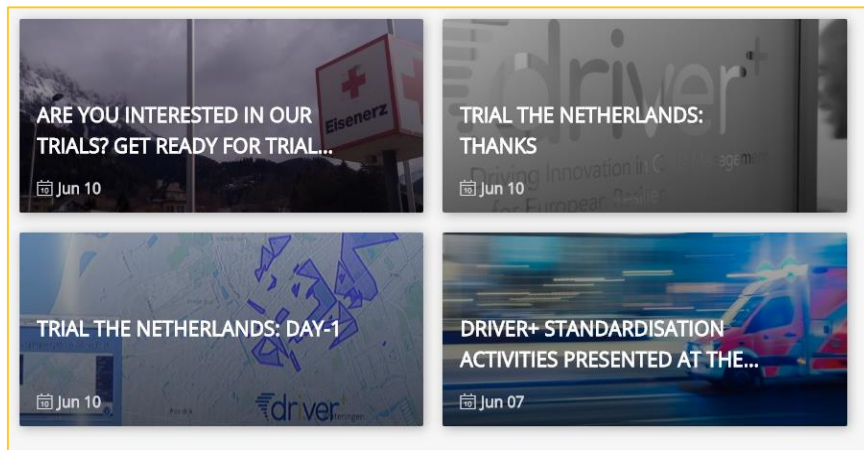
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# GLIMPSE INTO CMINE

## Groups



## News



Registration is easy process and can be done at the link: <https://www.cmine.eu/>

# WILDFIRE TASK GROUP MEMBERS

**The Wildfire Task Group of CMINE consists of:**

10 members

and

4 reviewers

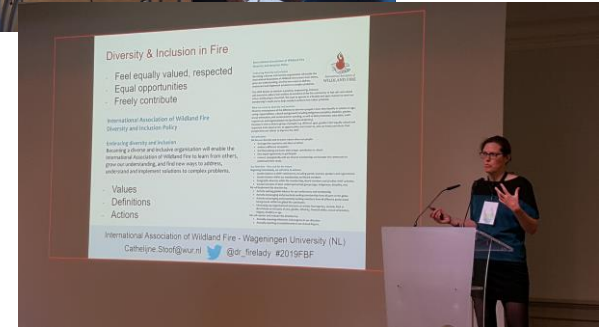
1. Alexander Held (Germany)
2. Charles Bushey (USA)
3. Marc Castellnou (Spain)
4. Cathelijne Stoof (Netherlands)
5. George Boustras (Cyprus)
6. Georgios Eftychidis (Greece)
7. Ciaran Nugent (Ireland)
8. Craig Hope (UK)
9. Carlos Trindade (Portugal)
10. Adrián Cardil Forradellas (Spain)

1. Peter Moore (FAO - Italy)
2. Alice Clemenceau (VALABRE -France)
3. Rob Testelmans (Geel City - Belgium)
4. Dejan Radović (Serbia)



# MEETINGS OF THE WILDFIRE TG

- Kick off for the TG work in March 2019 as a back to back with the 13<sup>th</sup> Meeting of CoU in Brussels.
- Second meeting of the TG has been done in end of April 2019 as back to back with the 6<sup>th</sup> Fire Behaviour and Fuels Conference in Marseille.
- 3<sup>rd</sup> and final meeting will be done in the period 18-19 November 2019 as back to back with the EWWF Wildfire Conference 2019 in Cardiff.



# WORK DONE SO FAR

- **Road Map** of the Wildfire Task Group has been elaborated and finalized in June 2019
- **SWOT Analyses** done within the group members in order to spot gaps in the wildfire sector in all of its phases (prevention, preparedness, response and recovery).
- Elaboration of final report under the scope of :

## **“A Framework for Wildfires Risk Reduction”**

based on the task group members best practices and recommendations for improvements in the field.



**WHY WE ARE DOING ALL OF THIS EFFORTS?**



# WHY THIS DISCUSSIONS AND NETWORKS ARE NEEDED?

PORTUGAL FIRE (2017)



# WHY THIS DISCUSSIONS AND NETWORKS ARE NEEDED?

GREECE FIRE (2018)





# WHY THIS DISCUSSIONS AND NETWORKS ARE NEEDED?

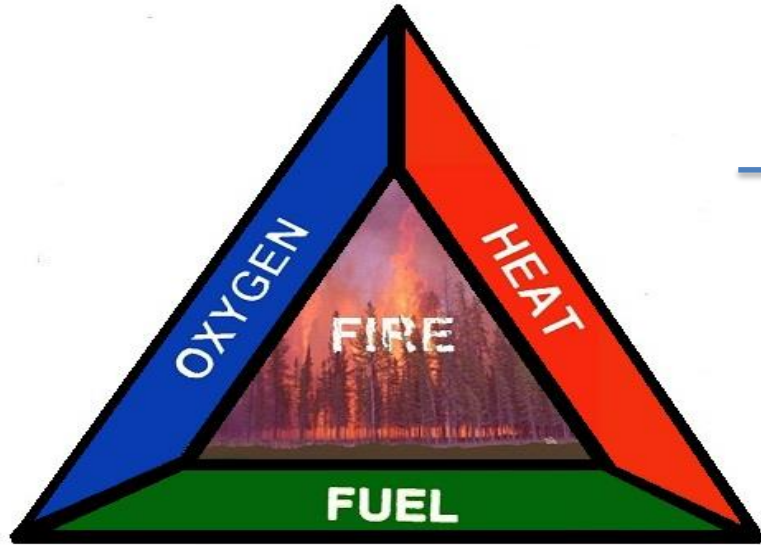
BULGARIAN FIRE (2017)



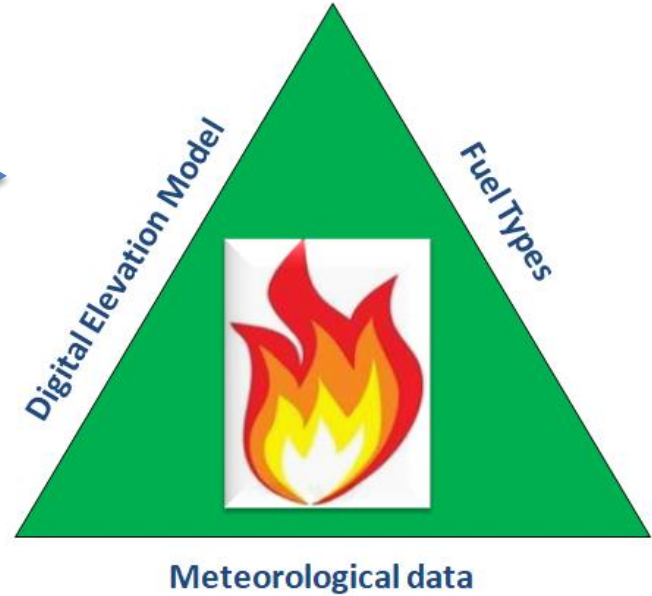
# WE NEED TO LEARN FROM OUR PAST AND AVOID REPEATING IT IN FUTURE



# Wild Land Fires Nature



# Simulation preparedness actions





# Wildfire ANALYST

REAL-TIME ANALYSIS OF WILDFIRE BEHAVIOR

## WILDFIRE ANALYSIS

Wildfire Analyst is software that provides real-time analysis of wildfire behavior and simulates the spread of wildfires. Simulations are completed quickly, in seconds, to support real time decision making. Wildfire Analyst provides a range of analytical outputs, available as GIS maps and

charts, that empower more accurate and timely decision making. For wildland fire, time is of the essence, whether through the desktop platform, or web and mobile enabled applications, capabilities and results are deployed to those who need it, when they need it, without delay.



**SIMULATION  
MODES**



**FIRE BEHAVIOR  
OUTPUTS**



**REAL-TIME  
PERFORMANCE**



**SEAMLESS  
INTEGRATION**

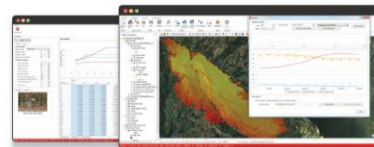


**CUSTOM  
APPLICATIONS**

## INCREDIBLE PERFORMANCE

Wildfire Analyst was designed to be used at the ICP, operations center, or directly on scene. The software can use predefined weather scenarios, or current and forecasted weather, to model fire behavior and provide **outputs within seconds**.

This fast performance facilitates use of the **outputs in real-time**, and allows for constant adjustment based on field observations and deployment decisions by the incident team.



## COMPREHENSIVE OUTPUTS

Wildfire Analyst provides a **comprehensive set of outputs and tools** for each simulation that is tied directly to the time stamp of the weather conditions and data inputs for an incident.

The real time performance allows you to create **multiple simulations for an incident, easily and quickly**, reflecting changing conditions and response tactics during the incident lifecycle.

### Outputs & Tools Include:

- Time of arrival & fire perimeters
- Fire behavior calculator
- Conventional fire behavior
- Fuels mapping adjustments
- HD wind field generation
- Critical fire paths
- Campbell Prediction System
- Suppression capacity



## SIMULATION MODES

Wildfire Analyst offers a variety of simulation modes capable of meeting user's simulation needs and requirements. These simulation modes include:

conventional fire spread, reverse time, evacuation time, probabilistic analysis and adjustment mode.



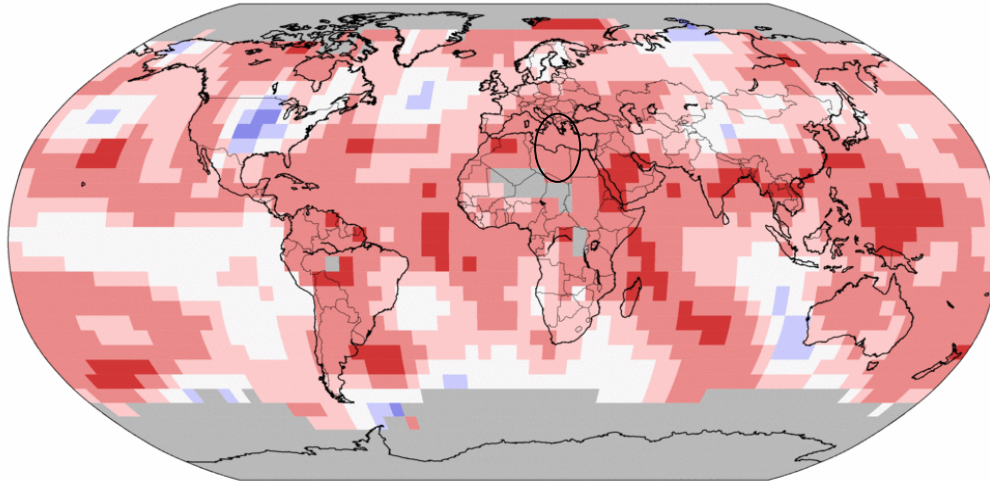
# Weather Conditions Before Kresna Fire

August 2017 is with extreme weather for the Bulgarian territory.

## Land & Ocean Temperature Percentiles Aug 2017

NOAA's National Centers for Environmental Information

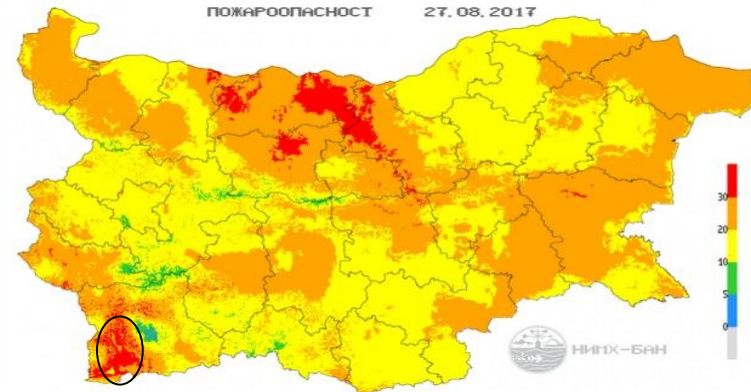
Data Source: GHCN-M version 3.3.0 & ERSST version 4.0.0



Wed Sep 13 07:29:21 EDT 2017



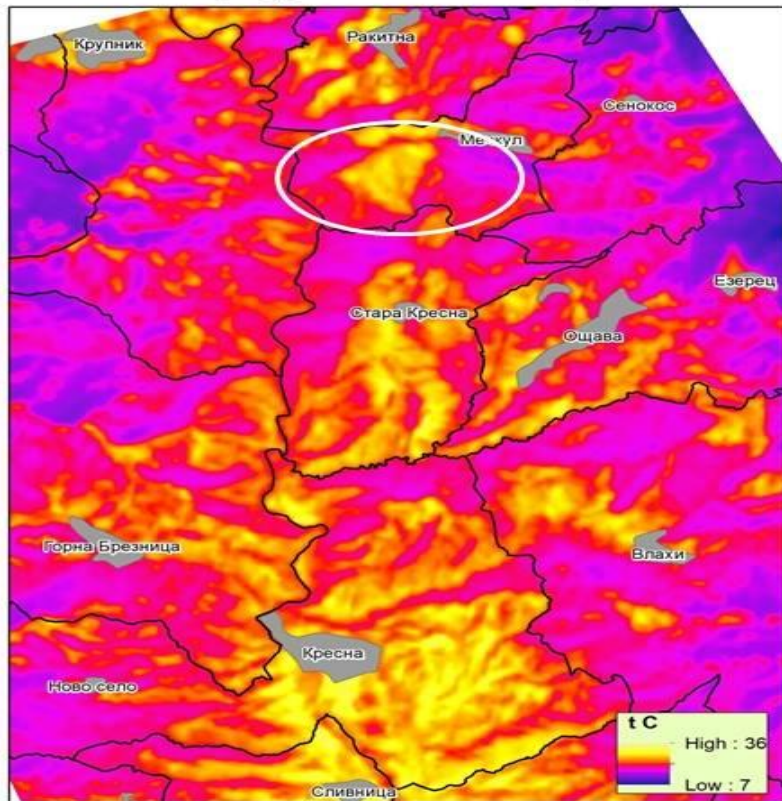
06.08.2017





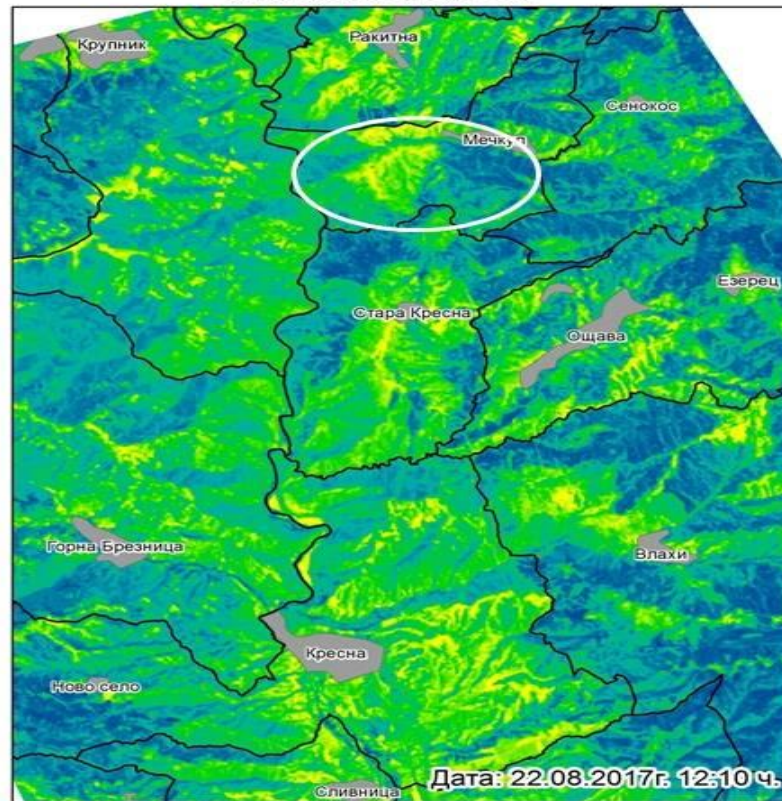
## Temperature of the earth surface

Температура на земната повърхност



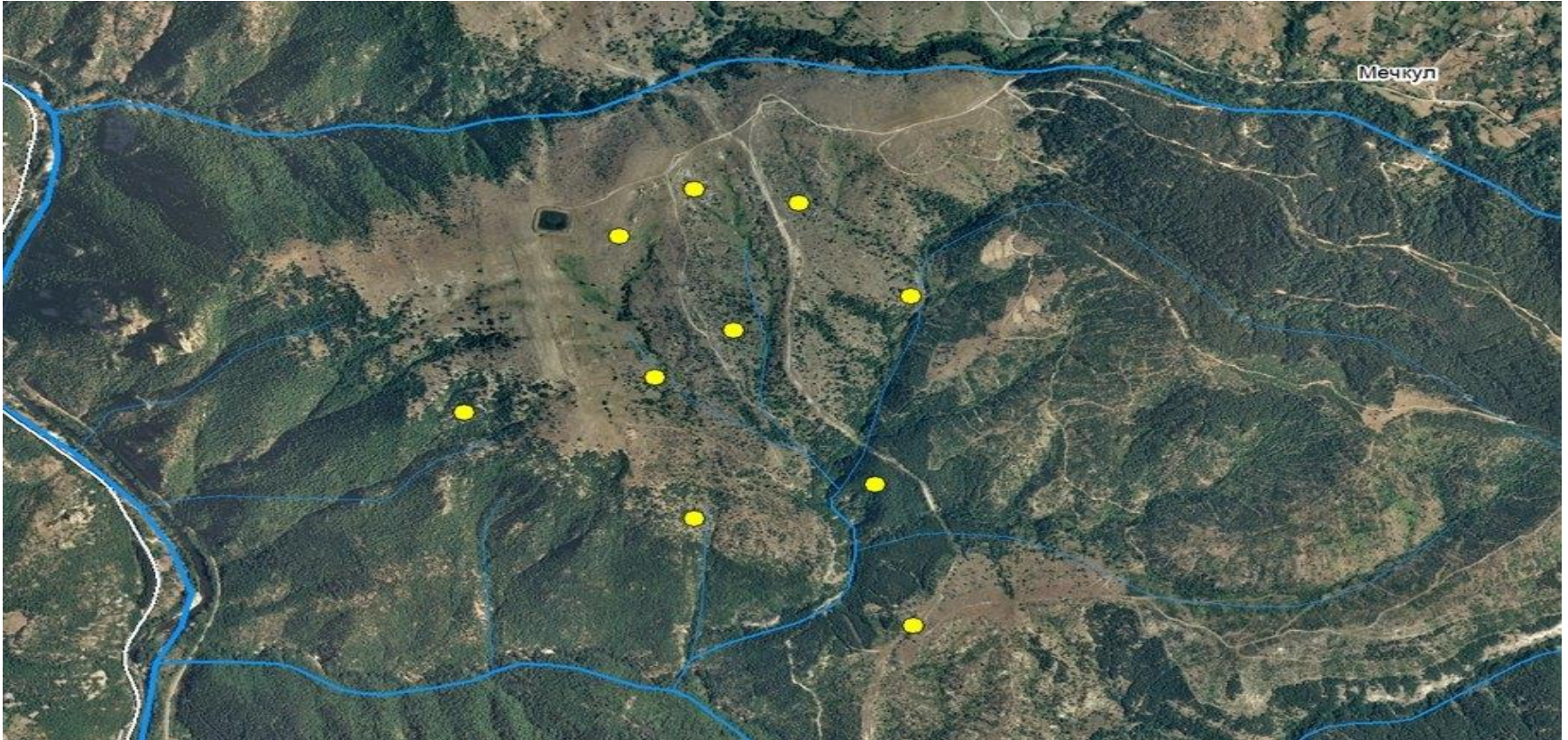
## Humidity index

Индекс за влажност



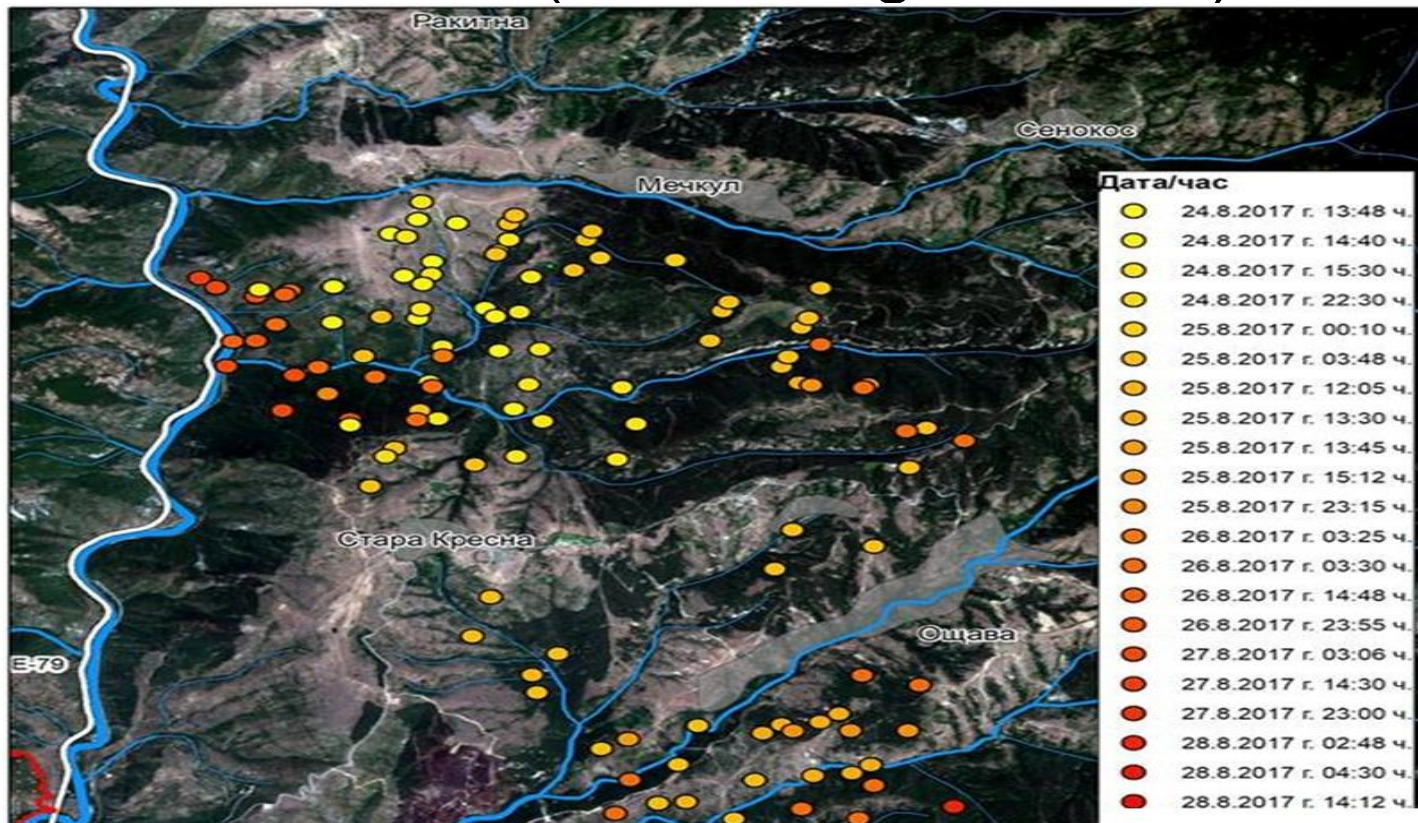


# Satellite VIIRS Active Fire Product from 24.08.2017 – Temperature anomalies





# Satellite VIIRS and Modis – Temperature anomalies (24-29 August 2017)





# MAP OF ALL AFFECTED FORESTRY AREAS IN KRESNA FIRE 24-29.08.2017

Карта на засегнатите горски територии от пожара в Кресненско дефиле: 24-29.08.2017г.

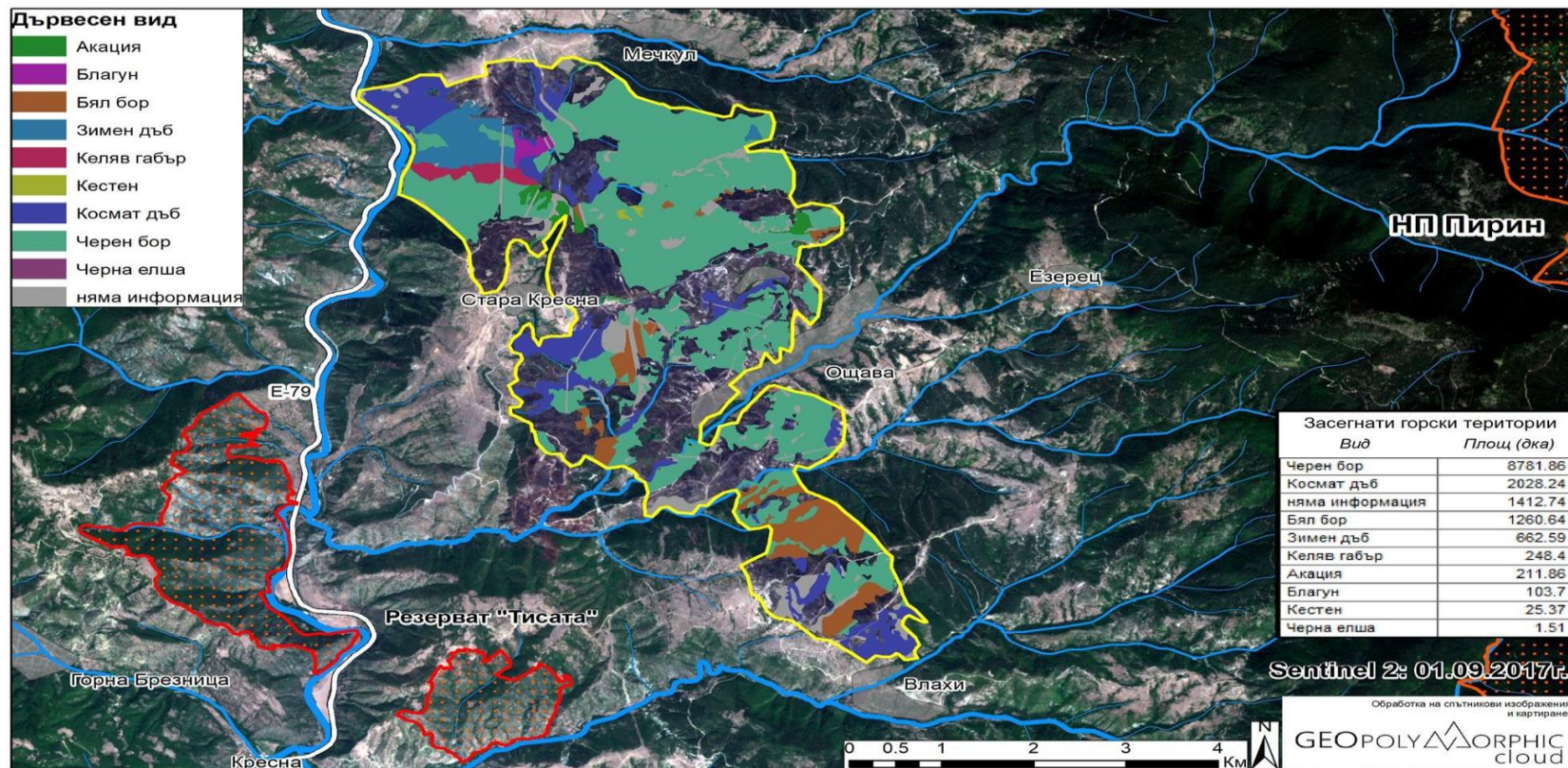
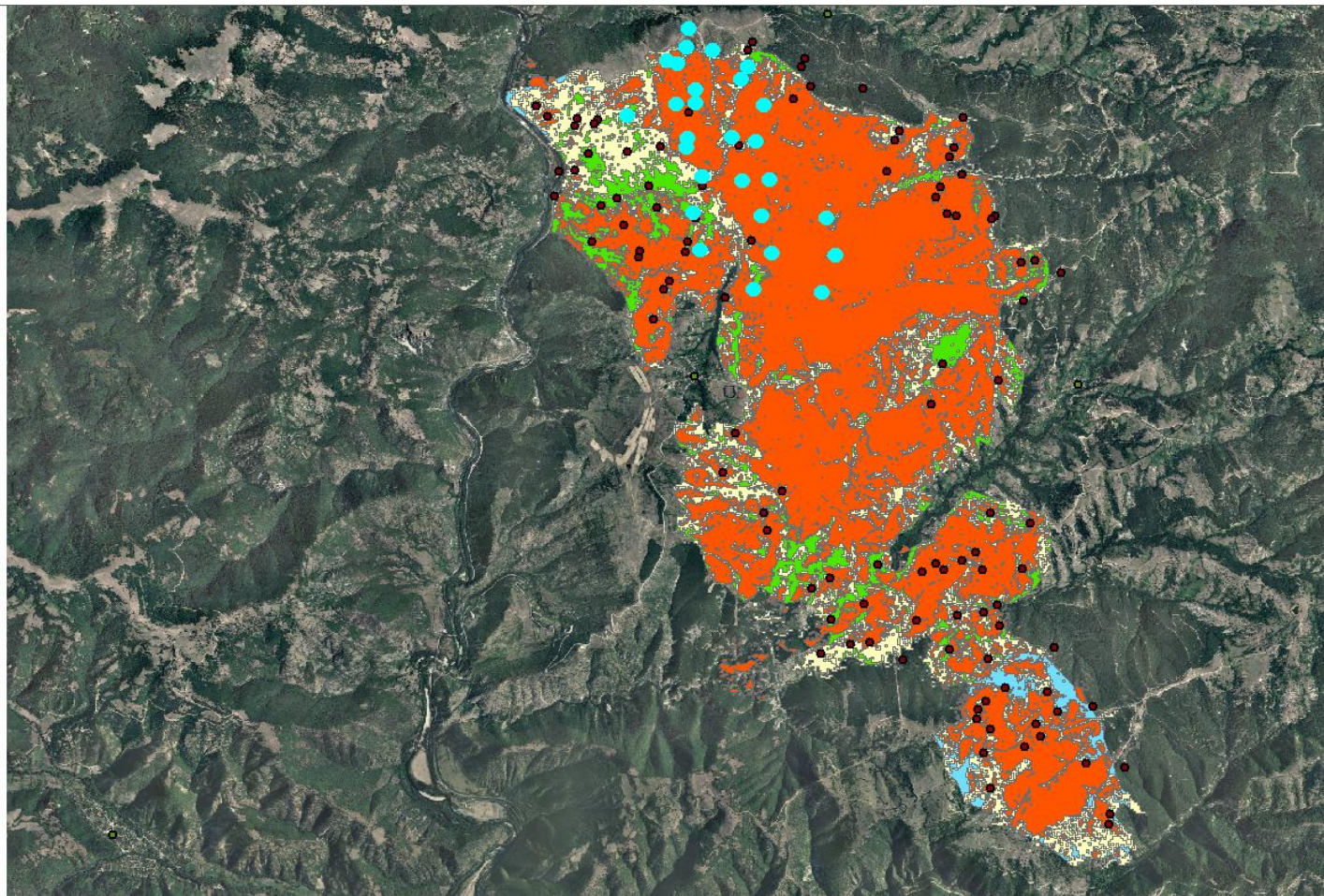




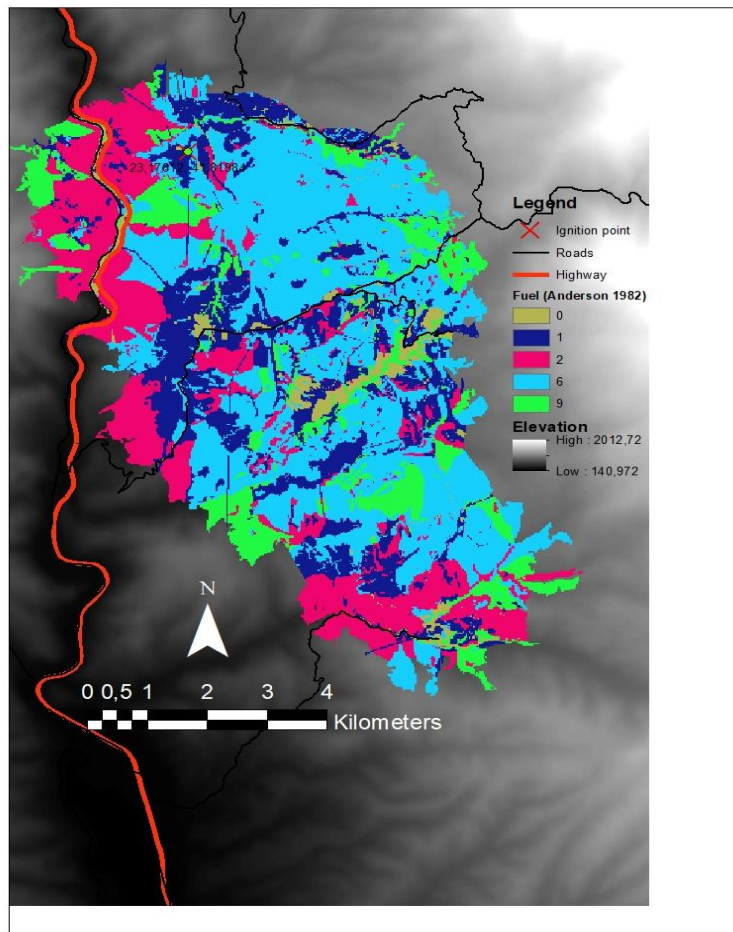
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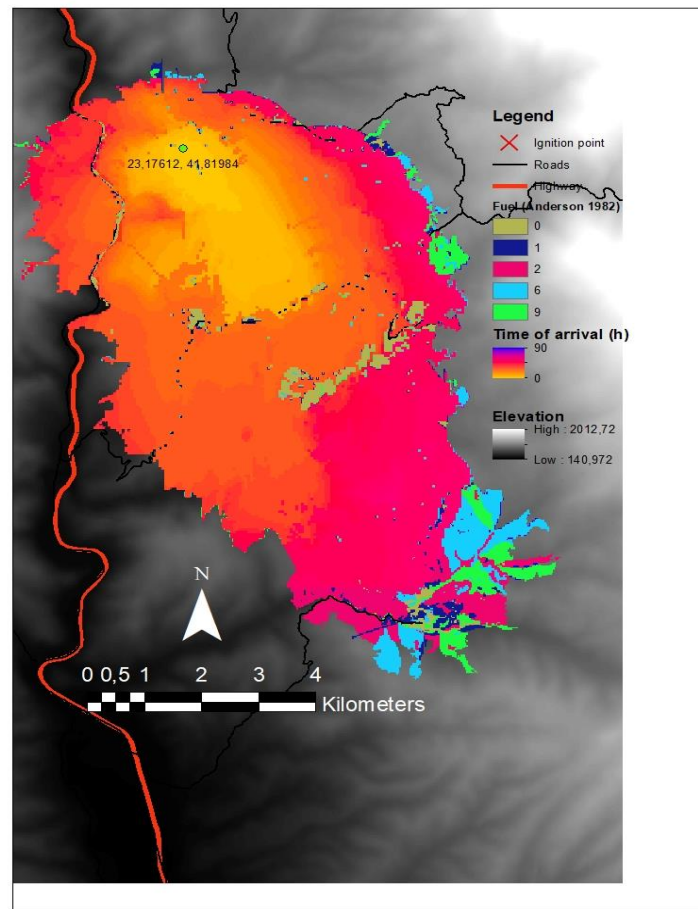
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  - lesso
    - lesso\_Sign
    - lesso\_Label
    - lesso\_Contour
    - lesso\_Parcel
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    - ☒ fire\_index\_bai
    - ☒ fire\_index\_nbr
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    - ☒ fire\_Extent\_20170901
  - admin
    - ☒ admin\_PopPlace
    - admin\_District
    - admin\_Municipality
    - admin\_Zemlishte
    - cad\_Parcel
  - trans
    - trans\_Railway



# FBFMs with WFA



# Simulation results with WFA





# KRESNA FIRE VIDEO





## CONCLUSION

Fire is part of the natural life cycle of the wildlands. We can not stop it, but working together with multidisciplinary approach can deliver as a final result:

**Resilient Landscapes, Adapted Communities,  
Adequate Response!**





**THANK YOU FOR YOUR  
ATTENTION!**

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