Union Civil Protection Mechanism (UCPM)
UCPM-2023-KAPP - Project number: 101140363

Funded by the European Union

EWED

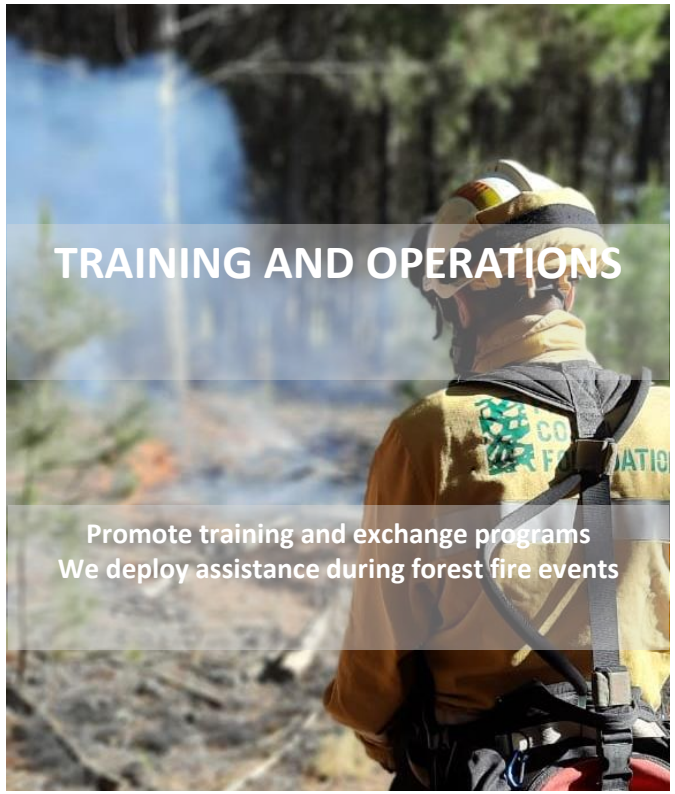
Extreme Wildfire Events Data Hub for Improved Decision Making

NBLF Agder, May 2024

Ove Stokkeland ove.stokkeland@gbr.no
Grenland Fire and Recue

PAU COSTA FOUNDATION

Wildfires Fire ecology Crisis management



TRAINING AND OPERATIONS

Promote training and exchange programs
We deploy assistance during forest fire events

KNOWLEDGE AND APPLIED SCIENCE

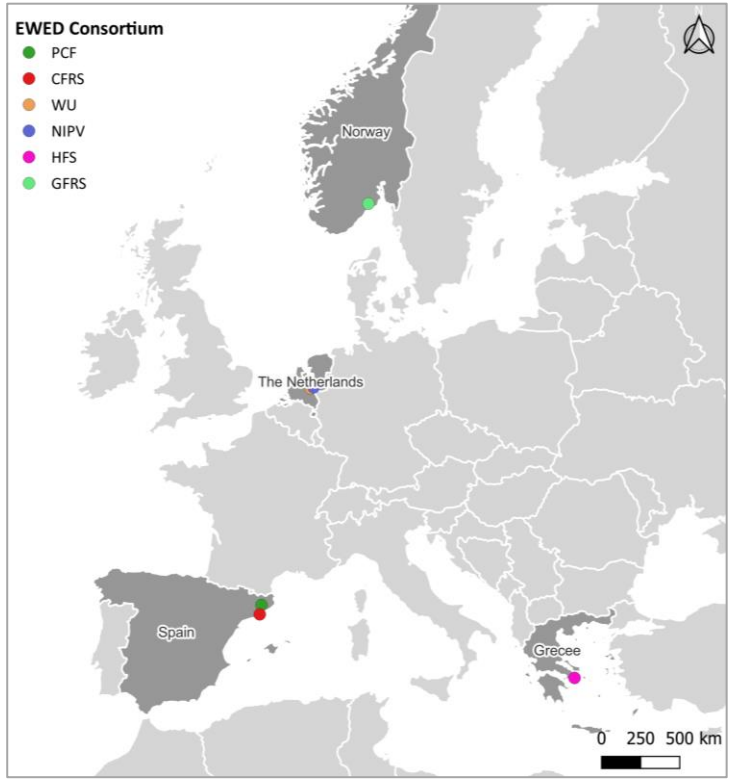
Foster knowledge and experience transfer among academy and first responders

RESILIENCE LANDSCAPES AND SOCIETIES

Support forest management activities for resilient and safer landscapes. Develop risk awareness activities

EWED Project factsheet

Partnership	6 partners 4 countries 3 Fire & Rescue Services 2 Research centres 1 network expander
Partners	Pau Costa Foundation Catalan Fire and Rescue Service Wageningen University The Netherlands Institute of Public Safety Greenland Fire and Rescue Service Hellenic Fire Service
Project eligibility cost	€980.256,96
EU financial contribution	€833.218,40
Starting date	01 Jan 2024
End date	31 Dec 2025
Total duration	24 months
Network partnership call	UCPM-2023-KAPP-PREP - Preparedness projects



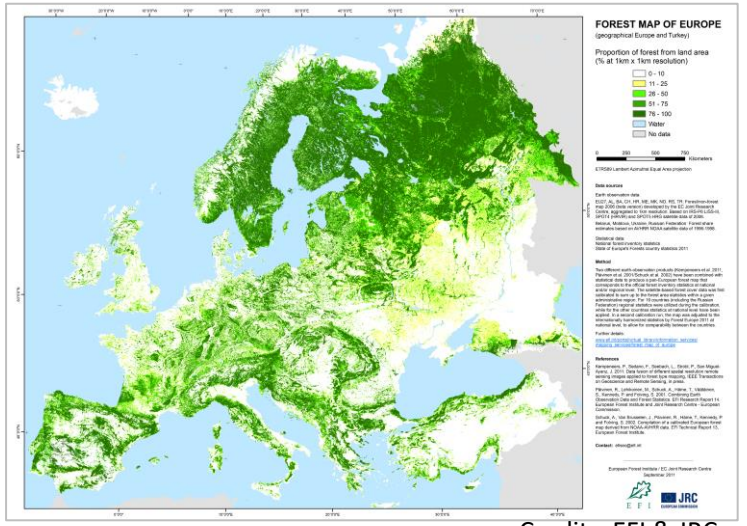
Background

- Challenges at a European scale
  - Global crisis in forest sustainability, new fire scenarios
  - Fuel + Climate change = ↑ intensity, ↑ severity, ↑ complexity
  - EWEs as a new normal

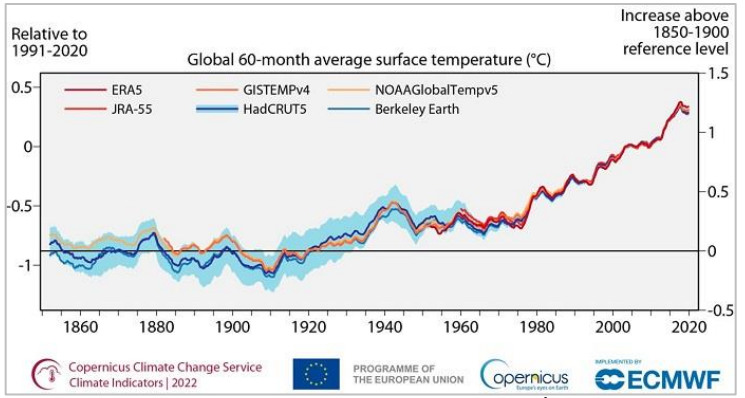
- EWEs: complex events associated with high levels of **uncertainty and erratic and unpredictable fire behaviour and spread** (*Tedim et al.*)

- Overwhelm the response system → Collapse of the response system → safety risk, fatal accidents

- This represents a potential hazard to crews, population, property and natural values



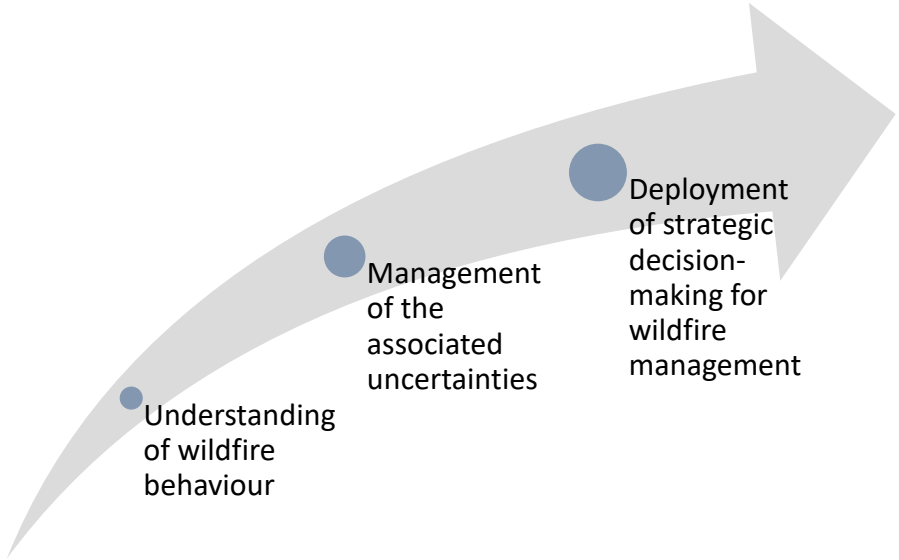
Credits: EFI & JRC

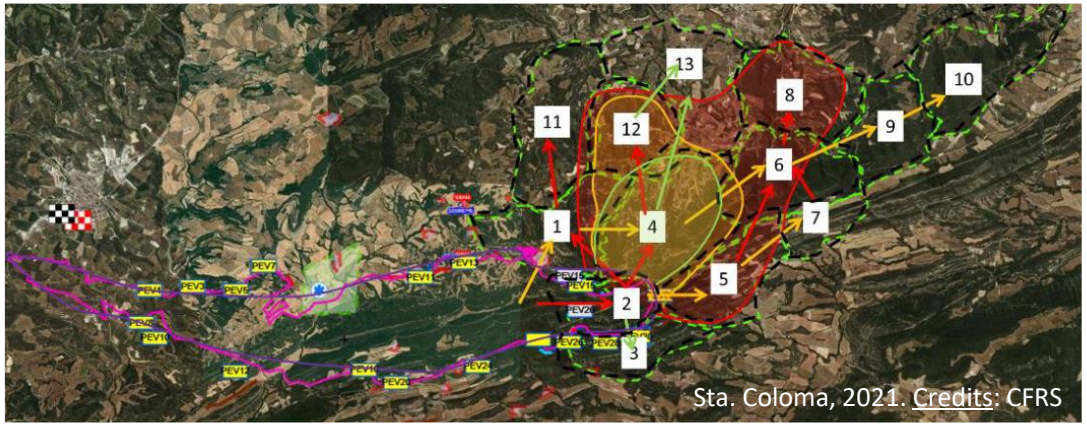


Credits: Copernicus

From tactics to strategy

- A model based in fire suppression is reaching its limits



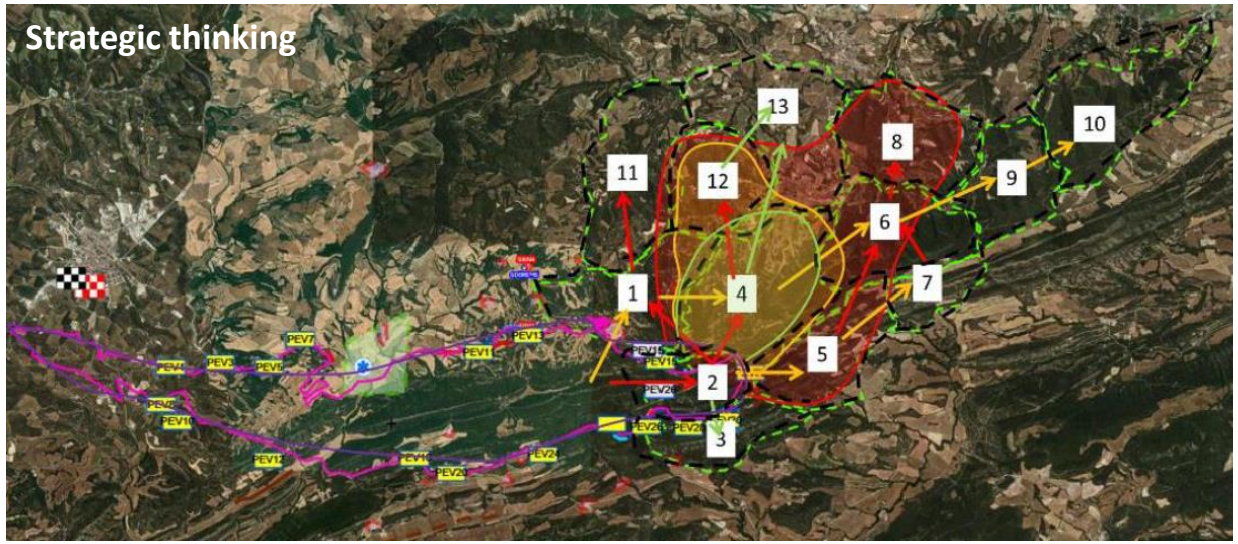


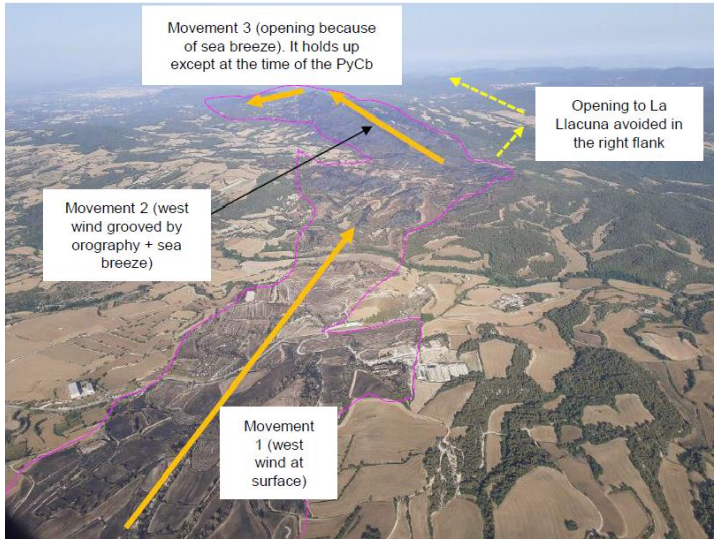
Sta. Coloma, 2021. Credits: CFRS

- Gaps of knowledge = limited capacity to respond to those wildfires
  - Lack of data, science and experience available
  - Pedrógão Grande (Portugal) June 2017

Fire analysis

- **Provide certainty** in decision-making by isolating the sources of uncertainty
- Analyse **possible scenarios** of resolution and the **cost of opportunities**
- Select the **final strategic outcome** using a common good approach and including ecology and future landscape resilience in decision making





Source: SCQ wildfire report - CFRS, 2021

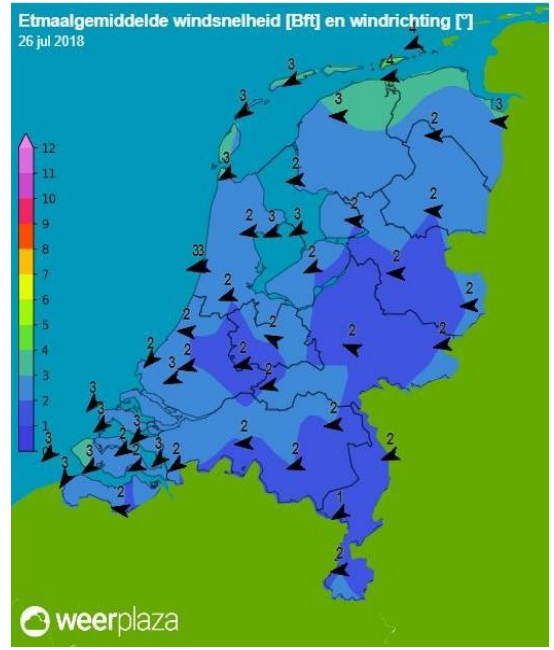
Different fire regimes, new fire scenarios

Recent northern wildfires

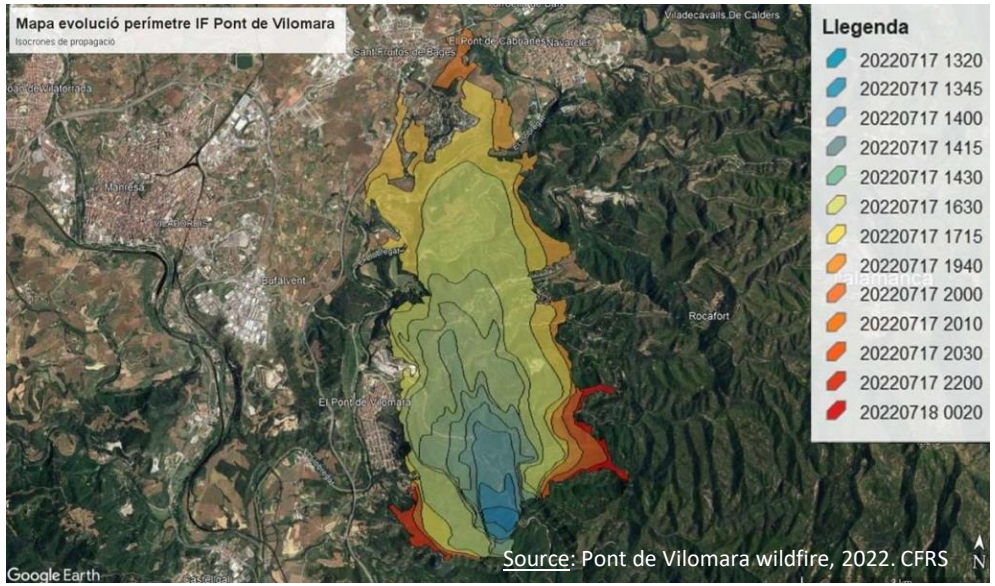
- 2018 Oldebroek wildfire (The Netherlands)
  - Synoptically only 2bft (8,50 km/h) winds…
  - Fire intensity ↔ atmospheric (in)stability


Source: X –Piet van Dijk


Source: X – Bianca Habing

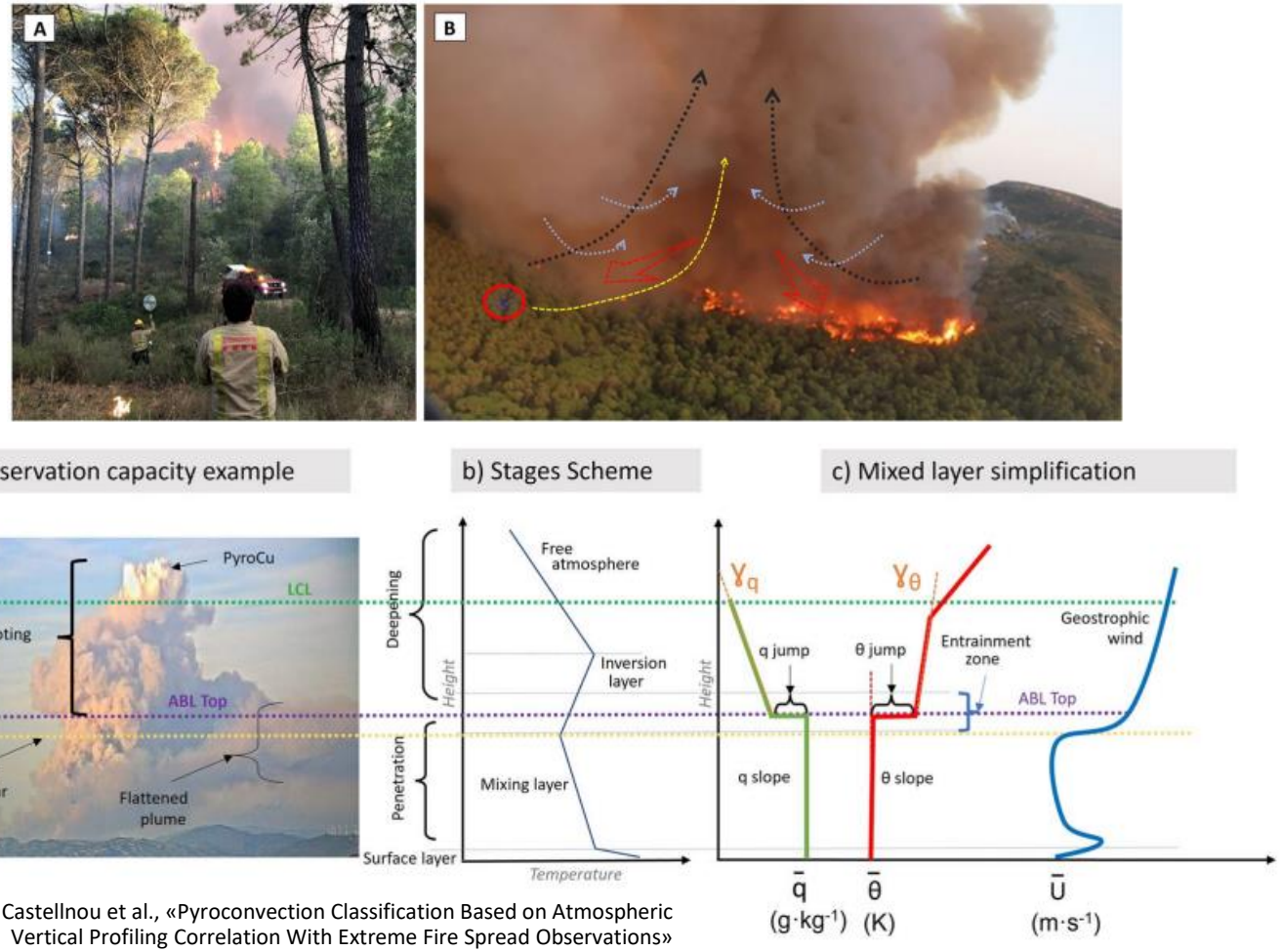


Wildfire evolution



Source: Pont de Vilomara wildfire, 2022. CFRS

Atmospheric vertical profile



Credits: Castellnou et al., «Pyroconvection Classification Based on Atmospheric Vertical Profiling Correlation With Extreme Fire Spread Observations»

Credits: AFAN project

Why this kind of data?

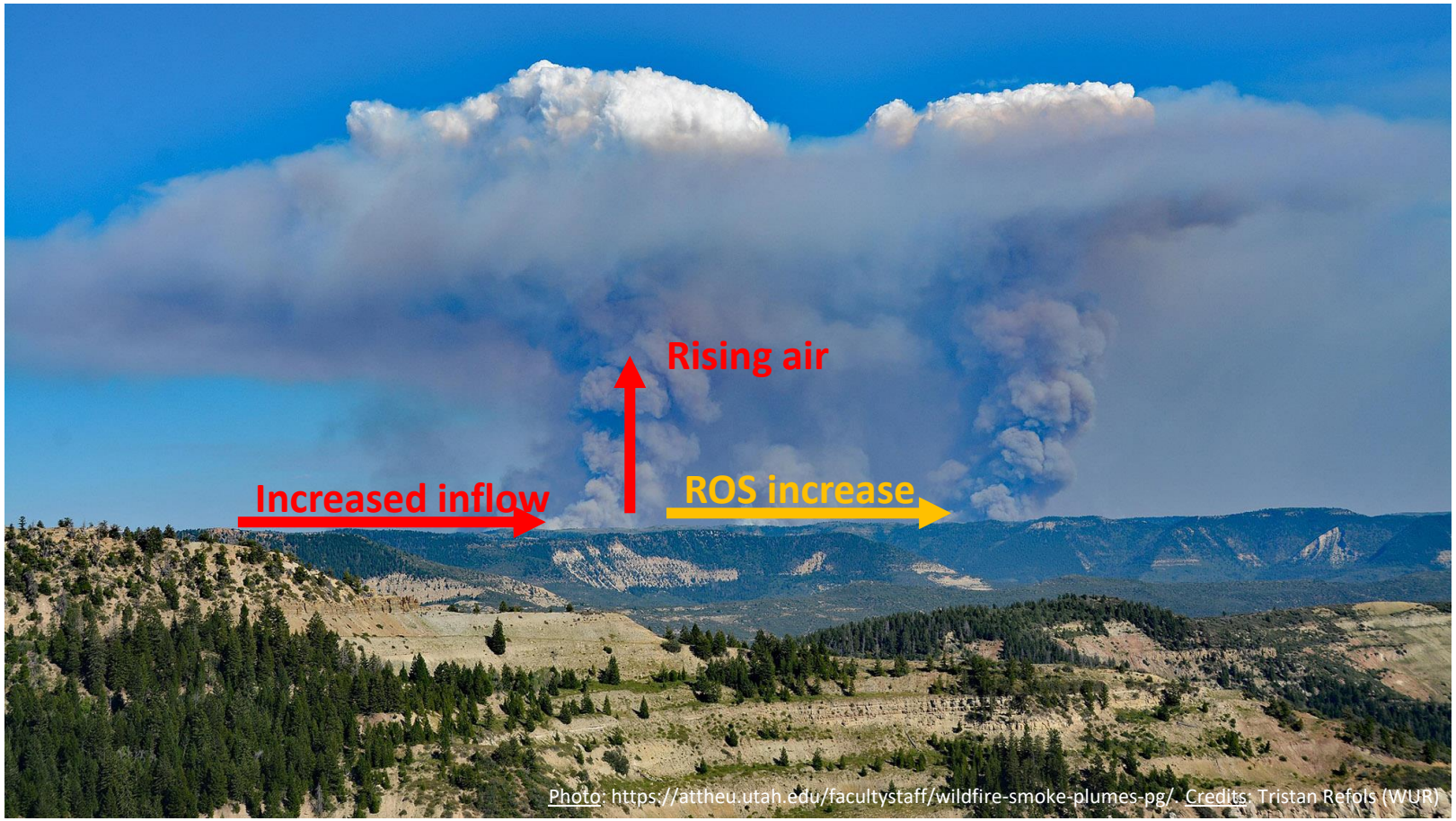


Photo: https://attheu.utah.edu/facultystaff/wildfire-smoke-plumes-pg/. Credits: Tristan Refols (WUR)

- Is there convective potential?
- When will it happen? And where?
- How will this change the fire's behaviour?
- What can I do? Where is it most effective for me to do it?

- Influences all phases of emergency management

Objectives

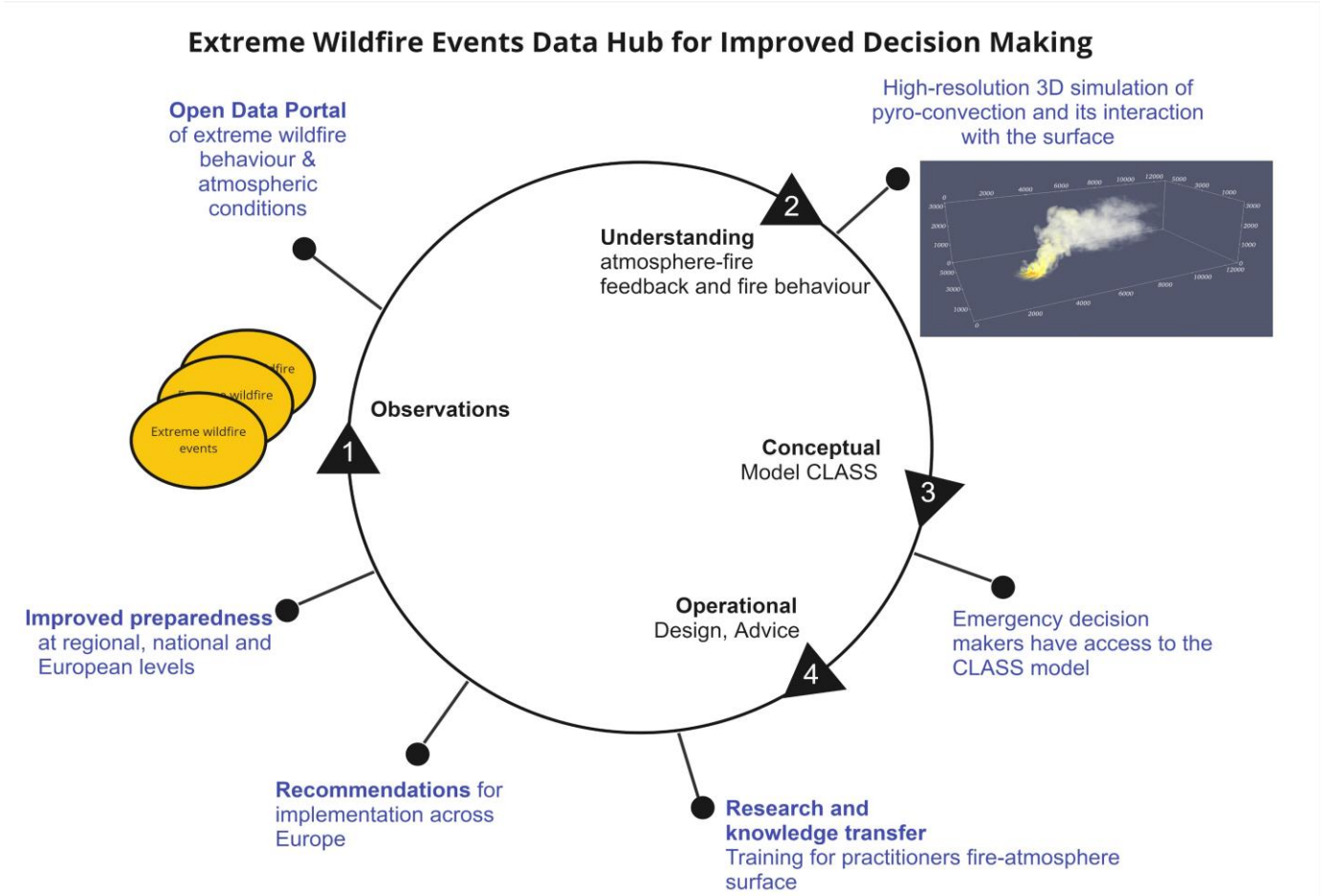
Learn and improve the understanding of extreme fire behaviour

Improve DRM strategic thinking, planning and operation throughout Europe

Develop the first-ever Knowledge Hub on Extreme Wildfire Events

Expanding Europe's capacity to address new emerging disaster risk

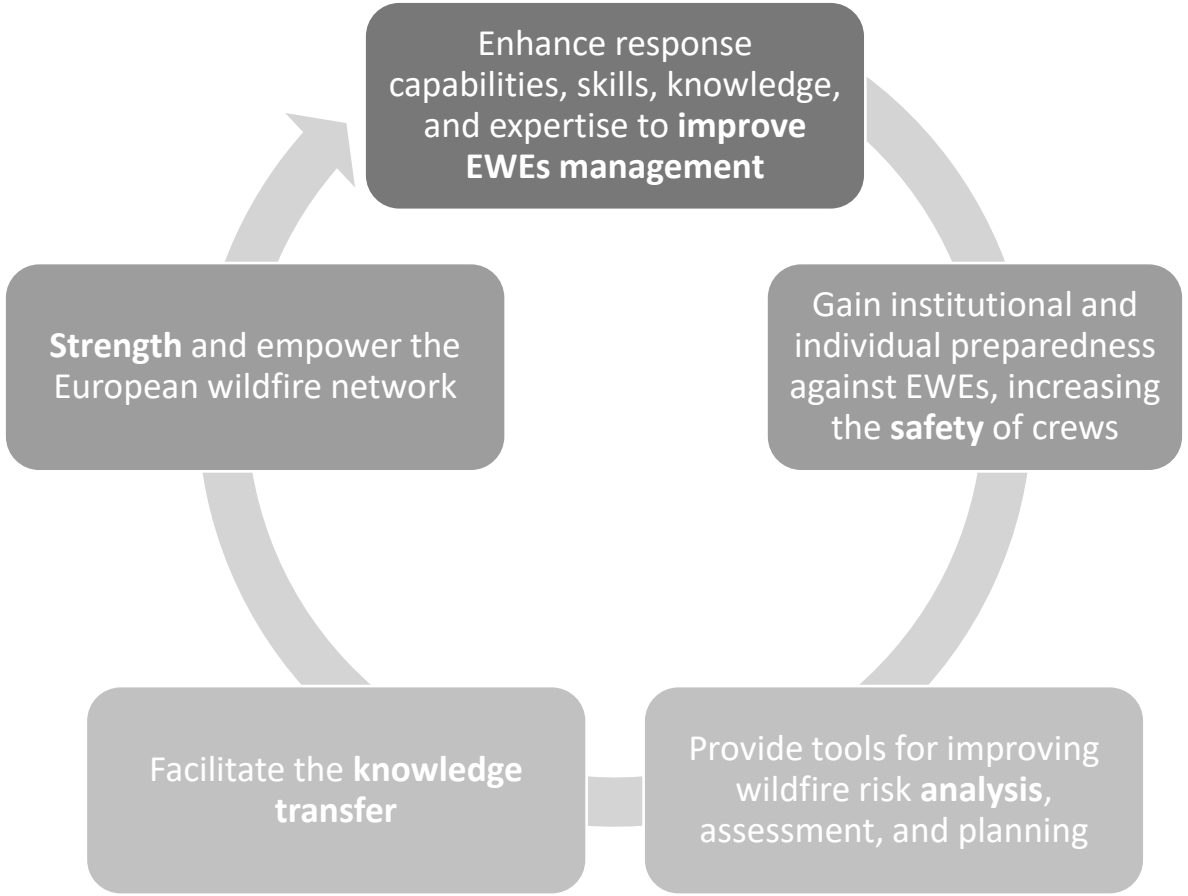
Project concept



Key outcomes

- Protocols for data collection - **coming soon**
- Open Data Portal
- Case studies
- Simulation setup and conceptual model
- Report on simulations of extreme wildfires
- Guidelines and recommendations to strategically plan for extreme wildfire events

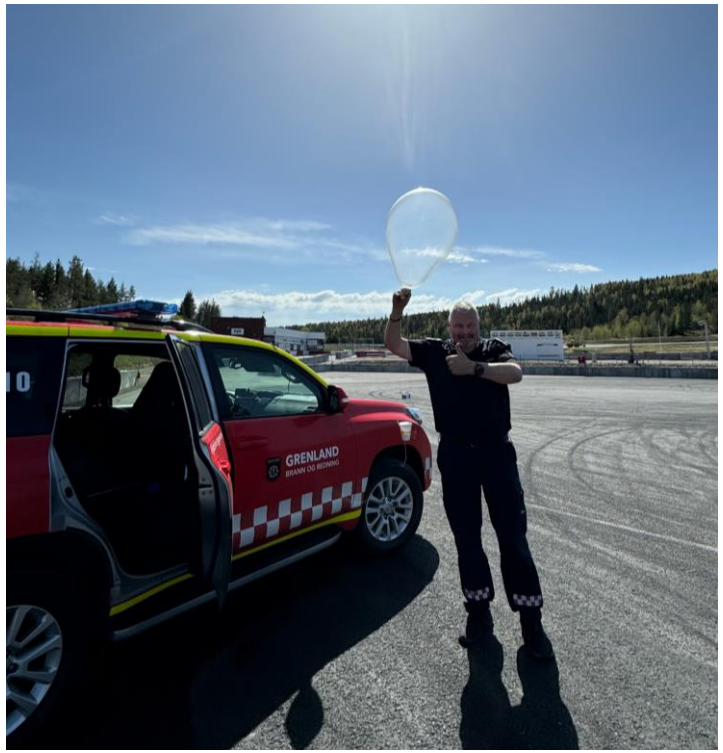
Impact


Enhance response capabilities, skills, knowledge, and expertise to **improve EWEs management**
Gain institutional and individual preparedness against EWEs, increasing the **safety** of crews
Provide tools for improving wildfire risk **analysis**, assessment, and planning
Facilitate the **knowledge transfer**
Strength and empower the European wildfire network

Sustainability

- Ensure that access to EWED's tools and training materials are accessible also once the project ends
- Modelling tools with open-source software and DOIs of the code releases provided via Zenodo
- Become the base for harmonised protocols for collecting data during wildfire events
- The Open Data Portal will be operational towards the end of the project – different opportunities to explore
- Promote interaction with other projects and opportunities aligned with the EWED

Some images



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Thank you!

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Grenland Brann og redning IKS

Stay tuned!

https://civil-protection-knowledge-network.europa.eu/projects/ewed

@EWEDproject