Integrated Wildfire Risk Management

EU-wide Implementation Support Event on **Integrated Wildfire Risk Management in Natura 2000 and other protected areas**

Background Document

Forest Science and Technology Centre of Catalonia (CTFC)
Solsona (Spain) 24–26 February 2026

European Commission

CTFC

With the collaboration of:

GOBIERNO DE ESPAÑA
VICEPRESIDENCIA TERCERA DEL GOBIERNO
MINISTERIO PARA LA TRANSICIÓN ECOLÓGICA Y EL RETO DEMOGRÁFICO

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This event forms part a series of events organised by DG Environment with the aim of assisting national and regional authorities to fully implement legal obligations in relation to EU nature legislation (under the Birds and Habitats Directives and the Nature Restoration Law) and related voluntary commitments under the EU Biodiversity Strategy for 2030, in particular those linked to the targets for protected areas and status improvement of species and habitats in the Strategy. DG Environment is assisted by ELMEN EEIG in the preparation and implementation of these events under contract: 090201/2024/928438/SER/ENV D3

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1. Introduction

1.1 Context and Rationale

Europe is facing a new era of wildfire risk. In recent years, the frequency, intensity and duration of wildfires have increased dramatically, driven by climate change, land abandonment and shifts in rural economies. These growing fire risk threaten not only human lives and property but also the ecological integrity of Natura 2000 sites and other protected areas; landscapes that are central to the EU's biodiversity and climate ambitions.

The **Nature Restoration Regulation (NRR)** and the EU Biodiversity Strategy for 2030 are the backbones of a new framework for nature conservation in Europe, that goes beyond the baseline established by the Birds and Habitats directives and focus on restoration of ecosystems. This marks a paradigm shift for fire management in protected areas: moving from reactive fire suppression to proactive, integrated wildfire risk management (IWRM) that aligns with conservation and restoration objectives. Protected areas are now expected to deliver on multiple fronts - biodiversity, climate adaptation, disaster risk reduction and rural development - while navigating complex regulatory, social and operational challenges.

Recent analyses by the Joint Research Centre (JRC) of the European Commission underscore the urgency of this transition. JRC's annual reports and technical studies have documented a clear trend: wildfire seasons are expanding, with above-average burnt areas in recent years and increasing fire intensity well above the extinction capacity. The JRC highlights the need for integrated, ecosystem-based approaches and improved coordination across Member States (MS) to address these evolving risks.

This event is held at a pivotal moment. Critically, MS are preparing their first **National Restoration Plans (NRPs)** under the NRR, which require taking into account the risk of forest fires and, therefore, provide an opportunity for the integration and implementation of effective, scalable measures for wildfire prevention and post-fire restoration into conservation policies and planning. Also, the Commission will shortly release a Communication on Integrated Wildfire Risk management to try to tackle the problem from a variety of policy angles.

At the same time, there is growing recognition that ecosystem-based approaches - such as targeted grazing, prescribed burning, landscape mosaics and green firebreaks - can reduce wildfire risk while enhancing habitat quality and resilience. However, the practical integration of these measures is often hindered by fragmented governance, permitting bottlenecks, liability concerns and limited financing. To help MS on the uptake of such approaches in their protected areas, the Commission is also finalising a guidance document on "Natura 2000 and Climate Change" that promotes further integration of ecosystem-based fuel reduction techniques and resilient landscape planning.

The event brings together European Commission representatives, national and regional authorities, technical experts and key stakeholders to address these challenges collectively. Through a combination of field-based learning, expert plenaries and interactive working groups, participants will share experiences, identify practical

solutions, and build the partnerships needed to mainstream integrated wildfire risk management across Europe's protected areas.

By fostering dialogue and co-creation, the event aims to accelerate the transition from policy to practice - ensuring that wildfire risk management not only protects people and properties but also supports the long-term conservation and restoration of Europe's most valuable natural landscapes.

1.2 Objectives of the Event

Provide a platform for open, technical discussion to: (i) identify requirements and workable approaches under the current EU policy context; (ii) exchange practical experience with an emphasis on prevention and recovery; (iii) discuss possible governance and permitting solutions; and (iv) map financing options and partnerships to sustain preventive actions.

1.3 Event Format and delegate Involvement

The event is designed as a three-day programme combining plenary inputs, facilitated working groups and peer-to-peer exchanges. A field visit will illustrate measures in practice. Participants are expected to review this document in advance together with the agenda of the event to make the meeting as effective as possible. This document should help to prepare questions for panel sessions and contribute examples during working groups. Interactive tools during the event (e.g., live polling) may also help prioritise topics.

2. Policy Context - EU integrated wildfire risk management, protected areas and nature-based solutions

Across much of Europe, wildfire risk is increasingly shaped by the interaction of climate change (heat, drought, extreme fire weather), land-use change (rural abandonment, fuel accumulation, landscape homogenisation), expanding wildland–urban interfaces and biodiversity pressures. These drivers have contributed to longer fire seasons, larger burnt areas, increased fire intensity and higher suppression complexity, including in and around protected areas where ecological values and legal protection requirements require more differentiated prevention, response and recovery decisions. This is reflected in the event framing, which treats wildfires not only as an emergency-response topic but as a cross-sectoral policy challenge linking civil protection, biodiversity and ecosystem resilience, climate adaptation and land management.

2.1 Core EU legal and strategic frameworks relevant to protected areas and post-fire decisions

For Natura 2000 protected areas, the policy baseline remains the Birds and Habitats Directives and their implementation through Natura 2000, including Article 6 obligations on conservation measures, avoidance of deterioration, and permitting/appropriate assessment for plans and projects. The Commission supports consistent application through guidance on managing and protecting Natura 2000 and methodological guidance on Article 6(3)–(4), which are highly relevant where fire-prevention infrastructure, fuel treatments, access tracks, salvage logging, or post-fire "reconstruction" proposals may trigger permitting decisions[1].

In parallel, EU policy has shifted from "protecting what remains" to "recovering ecosystem functionality at scale". The NRR (in force since August 2024) positions restoration as a core EU instrument for biodiversity recovery and explicitly links restoration to climate resilience and disaster-risk reduction. MS must prepare their NRP by 1 September 2026, using the Commission's uniform format adopted in May 2025 (developed with the European Environment Agency), thereby creating a governance channel through which wildfire-relevant restoration measures (e.g., restoring mosaic landscapes, re-establishment of silvo-pastoral practices, rebuilding buffers, restoring degraded habitats in and around protected areas) can be planned, financed and monitored in a more structured way[2].

2.2 Climate targets, climate-risk framing and "adaptation mainstreaming"

The EU Climate Law makes climate neutrality by 2050 legally binding and sets an intermediate target of at least –55% net GHG reductions by 2030 (vs. 1990). These targets matter for wildfire policy because large fires affect carbon stocks and sinks (notably forests and peatlands) and increasingly undermine land-sector climate objectives, while the adaptation dimension requires stronger prevention and resilience measures in climate-exposed landscapes[3].

[1] https://environment.ec.europa.eu/topics/nature-and-biodiversity/natura-2000/managing-and-protecting-natura-2000-sites_en
[2] https://environment.ec.europa.eu/news/nature-restoration-law-enters-force-2024-08-15_en
[3] https://climate.ec.europa.eu/eu-action/european-climate-law_en

The EU Adaptation Strategy (2021) frames climate impacts as systemic risks and calls for mainstreaming resilience into policy, planning and investment, with a strong emphasis on ecosystem-based approaches and nature-based solutions (NbS). For wildfire risk, this strengthens the policy case for shifting from predominantly response-centred approaches towards integrated risk governance: prevention (fuel/landscape management and risk-informed spatial planning), preparedness (early warning, capacity, training), response (including EU-level solidarity mechanisms), and recovery that avoids maladaptation (e.g., erosion, invasive spread, inappropriate species choices, carbon losses)[4].

2.3 EU civil protection, solidarity mechanisms and operational support to MS

DG ECHO operationalises EU solidarity through the Union Civil Protection Mechanism (UCPM), which coordinates assistance when national capacities are overwhelmed. Wildfires are now a major activation driver, and the Commission has expanded both pre-positioning and shared response capacities, including EU-co-financed aerial firefighting assets under rescEU and ground firefighting teams deployed to high-risk locations during peak season. The Commission's wildfire information explains the annual pooling of aircraft and helicopters for deployment upon request, and the rescEU framework sets out the rationale for continuously reinforcing EU-level standby capacity in response to repeated "record-breaking" seasons[5]. However, despite these coordinated efforts, response teams are unable to manage multiple simultaneous events and extreme behaviours.

In addition, Copernicus Emergency Management Service (EMS) on-demand mapping provides rapid satellite-based products for response and early recovery (burnt area, damage assessment) and is routinely activated in major fire events. This operational layer is increasingly integrated with prevention and preparedness discussions, because consistent risk mapping, exposure assessment and post-fire monitoring are prerequisites for performance-oriented investment and for learning across MS[6].

2.4 Evidence base and EU expert services supporting common situational awareness

At EU level, the Joint Research Centre (JRC) supports common situational awareness through the European Forest Fire Information System (EFFIS), including seasonal reporting and consolidated assessment of burnt area and trends. JRC's "current wildfire situation" reporting illustrates the scale of annual burnt area and provides a consistent evidence base for cross-border comparison and lessons learned, which is essential for an EU-wide discussion on integrated wildfire risk management[7].

The European Environment Agency (EEA) has recently strengthened the policy-relevant Nature based Solutions (NbS) evidence base specifically for wildfire resilience. Its 2025 briefing on nature-based solutions for wildfire-resilient European forests explicitly advocates moving from a predominant focus on emergency suppression towards prevention and restoration, and highlights measures such as promoting fire-resilient vegetation,

[4] https://climate.ec.europa.eu/eu-action/adaptation-and-resilience-climate-change/eu-adaptation-strategy_en
[5] https://civil-protection-humanitarian-aid.ec.europa.eu/what/civil-protection/wildfires_en
[6] https://www.eea.europa.eu/en/analysis/publications/nature-based-solutions-for-fire-resilient-european-forests
[7] https://joint-research-centre.ec.europa.eu/projects-and-activities/natural-and-man-made-hazards/fires/current-wildfire-situation-europe_en

green firebreaks/buffer zones and rewilding-type approaches where appropriate. This positions NbS not as an "add-on" but as a central risk-management tool aligned with both the EU Adaptation Strategy and the EU Forest Strategy for 2030[8].

2.5 Agriculture and rural development instruments relevant to fire prevention and landscape mosaics

While forest policy competence largely remains with MS, DG AGRI has major leverage through the Common Agricultural Policy (CAP) 2023–2027. The CAP Strategic Plans framework (Regulation (EU) 2021/2115) and its "green architecture" (conditionality, eco-schemes, rural development interventions) can support land-management practices that reduce wildfire risk while delivering biodiversity and soil benefits - particularly where maintaining open habitats, extensive grazing, agroforestry, or targeted biomass/fuel management contributes to a more heterogeneous and less fire-prone landscape structure. DG AGRI guidance on biodiversity under the CAP highlights eco-schemes and rural-development commitments as core pathways for rewarding farmers who deliver environmental public goods, which can be operationalised in high-fire-risk rural areas if designed with clear risk-reduction logic and monitoring indicators[9].

2.6 Forest and biodiversity policy interfaces

The New EU Forest Strategy for 2030 aims to strengthen protection, restoration and resilience of forests under climate change, including against disturbances such as wildfires, and is explicitly linked to biodiversity and climate objectives. In practice, this implies an increasing policy emphasis on diversifying forest structure and composition, avoiding risk-amplifying monocultures in high-hazard contexts, and embedding forest measures in broader landscape approaches (mosaics, buffers, interface management) rather than treating forests as isolated stands[10].

On the biodiversity side, the EU Biodiversity Strategy for 2030 and the NRR reinforce expansion and effective management of protected areas and ecological connectivity. In fire-prone landscapes, this elevates the importance of aligning fire-prevention and post-fire restoration choices with conservation objectives (e.g., avoiding systematic conversion to non-native plantations; preventing erosion and sediment impacts on aquatic habitats; enabling natural regeneration where ecologically appropriate; integrating fuel management through prescribed burning and extensive grazing where it contributes to both risk reduction and biodiversity objectives; and reducing fragmentation through strategically designed mosaic landscape)[11].

[8] https://www.eea.europa.eu/en/analysis/publications/nature-based-solutions-for-fire-resilient-european-forests
[9] https://eur-lex.europa.eu/eli/reg/2021/2115/oj/eng
[10] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX%3A52021DC0572
[11] https://environment.ec.europa.eu/strategy/biodiversity-strategy-2030_en

3. Consideration and integration of Integrated Wildfire Risk Management in the preparation of National Restoration Plans

Regulation (EU) 2024/1991 ("Nature Restoration Regulation") requires each Member State (MS) to prepare a national restoration plan and to carry out the preparatory monitoring and research needed to identify the restoration measures necessary to meet restoration targets and fulfil obligations under Articles 4–13, and to contribute to the overarching objectives and targets in Article 1, taking into account the latest scientific evidence.

The plan must cover the period up to 2050, with intermediate deadlines aligned to the targets and obligations in Articles 4–13, while the plan submitted for the first cycle may (for the period from 1 July 2032) be limited to a strategic overview until it is reviewed under Article 19. Each MS must submit a draft national restoration plan to the Commission by 1 September 2026.

The legal architecture also explicitly anticipates that restoration planning is undertaken in a way that addresses key pressures and risks, including climate and disaster-related risks: MS must identify synergies with climate change mitigation/adaptation, land degradation neutrality and disaster prevention, and prioritise restoration measures accordingly (as part of the preparation framework in Article 14 NRR).

The Commission's uniform format for NRPs is established via implementing act and is explicitly designed to cover the elements listed in Article 15(3)–(6) of the Regulation, and to allow structured presentation of data and information across targets, including cross-cutting considerations and measure descriptions.

Within this format, several mandatory and optional fields create "NRP-legible" entry points where IWRM can be described as part of (i) how restoration measures are planned, prioritised and designed under climate stress, and (ii) how restoration contributes to disaster risk reduction and resilience - without requiring a standalone "wildfire chapter".

3.1 Cross-cutting fields that directly accommodate wildfire-risk considerations

A. Disaster-risk reduction and adaptation as a required planning dimension (mandatory).

Article 15(3)(t) requires a dedicated section explaining how the NRP considers:

- the potential of restoration measures to prevent or mitigate the effects of natural disasters and to support adaptation (Art. 15(3)(t)(ii)), and
- synergies with national adaptation strategies/plans and national disaster risk assessment reports (Art. 15(3)(t)(iii)).

In the uniform format, these requirements are operationalised through Part A, Section 4.2.4 and Section 4.2.5, which request cross-cutting narrative (and optionally article-specific narrative) on disaster risk reduction/adaptation contributions and on alignment with national adaptation and disaster-risk frameworks.

B. Explicit allowance to reflect "large-scale force majeure", including wildfire (optional, but relevant)

The explanatory notes explicitly state that information related to large-scale force majeure can include natural disasters and that "unplanned and uncontrolled fire" may be considered in the context of planning information. The uniform format includes a dedicated optional field (Part A, Section 4.2.3) for "large-scale force majeure, including natural disasters" (linked to the Regulation's provisions on force majeure across ecosystem targets), which provides a formal place to document how extreme-event risk information is handled within restoration planning logic.

C. Co-benefits framing that can include fire-resilience outcomes (mandatory elements).

Part A includes mandatory text fields on general co-benefits and impacts, including climate change mitigation and wider socio-economic impacts, while the Regulation's recitals emphasise that restoration should be planned to address climate mitigation/adaptation and the prevention and control of the impact of natural disasters. This allows wildfire-risk management to be referenced (where relevant) as part of the restoration co-benefit logic (e.g., resilience of landscapes, reduced exposure and vulnerability), while remaining within the NRP's required reporting structure.

D. Governance, participation and process fields where multi-actor IWRM arrangements can be evidenced.

The explanatory notes clarify that the NRP must include a summary of the preparation and participation process (Art. 15(3)(w)) and encourage engagement of relevant stakeholder communities; this can accommodate the inclusion of wildfire-relevant actors (e.g., land managers and local/regional authorities) as part of a transparent and inclusive planning process.

3.2 Article- and ecosystem-level entry points with integral wildfire relevance

A. Forest ecosystems: explicit linkage to wildfire risk.

Article 12(1) requires MS to put in place restoration measures to enhance biodiversity of forest ecosystems while taking into account the risks of wildfires. In addition, Article 12(4) explicitly recognises that non-fulfilment of certain forest-indicator obligations may be justified if caused by large-scale force majeure, including natural disasters - in particular unplanned and uncontrolled fire - or unavoidable climate-driven habitat transformations.

These provisions make forest-related parts of the NRP a clear locus for describing how restoration approaches are designed under wildfire risk, and how risk contexts are considered when assessing progress.

B. Planning under climate change, unavoidable transformations and extreme events.

The explanatory notes provide dedicated fields for considering climate-driven habitat transformations (Part A, 4.2.2) and for large-scale force majeure (Part A, 4.2.3) and indicate these considerations can inform the design and implementation of restoration measures.

This is directly relevant where wildfire regimes interact with ecosystem trajectories (e.g., post-fire recovery pathways, shifts in species composition, altered disturbance regimes) and where restoration planning needs to reflect risk-informed feasibility and durability assumptions.

C. Connectivity, landscape diversity and prioritisation logic in preparatory work.

The preparatory provisions in Article 14 include requirements to quantify areas needing restoration and to consider factors such as connectivity needs (including, for relevant species and habitats, re-establishment suitability under changing environmental conditions).

Separately, Article 14 includes an explicit instruction to identify synergies with disaster prevention and to prioritise restoration measures accordingly - supporting risk-informed prioritisation as a legitimate planning dimension.

3.3 Measure-level entry points in Part C of the Uniform Format

The uniform format is structured so that MS can describe concrete restoration measures in a consistent, reportable way (Part C), including timing, spatial information, and links to targets/obligations.

In practical terms, this provides space and opportunity for describing restoration measures that also function as wildfire-risk management interventions where they remain restoration-compatible (e.g., actions that modify fuel continuity while supporting habitat condition, connectivity and ecosystem function), framed as measures addressing relevant pressures and delivering climate/disaster co-benefits.

The earlier synthesis work also notes that - without changing the NRP structure - wildfire risk can be treated as a relevant “pressure” informing the design and packaging of measures, and that the NRP’s mandatory disaster/adaptation sections provide the formal hook for explaining this logic across the plan.

3.4 Financing, accountability and results orientation

Recent scrutiny has increased on whether EU and national spending on wildfire prevention is sufficiently risk-targeted, evidence-based and durable. The European Court of Auditors’ Special Report 16/2025 concludes that more preventive measures are being financed, but that evidence of results and long-term sustainability is often insufficient - highlighting recurring weaknesses such as outdated risk maps, limited monitoring of outputs/outcomes, and sustainability risks when time-limited funding instruments are used for measures requiring long-term maintenance. This strengthens the policy rationale for integrated planning (risk, biodiversity, climate, rural development) and for choosing NbS and “green infrastructure” solutions that can deliver multi-benefit outcomes and avoid high maintenance burdens where feasible[12].

[12] https://www.eca.europa.eu/en/publications?ref=SR-2025-16

3.5 Nature-based Solutions as a convergence space: reducing wildfire risk while improving biodiversity and ecosystem condition

The most policy-relevant development for this event's topic is that NbS are now explicitly positioned by EU expert bodies as part of the mainstream toolkit for wildfire risk governance, not a niche conservation addendum. The EEA's wildfire NbS work (briefing plus supporting technical material on Climate-ADAPT) provides a structured intervention logic across the fire cycle: (i) pre-wildfire risk reduction (e.g., landscape restoration and diversification; green firebreaks; buffer zones around settlements and infrastructure; restoring wetlands/peatlands to reduce extreme dryness where relevant), (ii) response-supporting functions (e.g., safer landscape configuration and access planning consistent with Natura 2000 requirements), and (iii) post-wildfire recovery that rebuilds ecosystem function (e.g., erosion control, assisted natural regeneration, native and climate-suitable species mixes, invasive-species prevention). This evidence base aligns with the event's integrated risk-management framing and provides a concrete bridge between DG ENV biodiversity/protected area objectives and DG ECHO preparedness/response priorities, with strong links to DG CLIMA adaptation mainstreaming.[13]

[13] https://www.eea.europa.eu/en/analysis/publications/nature-based-solutions-for-fire-resilient-european-forests

4. Thematic Working Groups

The Working Groups are designed to explore in greater depth the key topics introduced and framed in the plenary sessions, through sharing participants' national experiences and concrete situations. In each group, participants will compare approaches, share practical challenges and workable solutions and highlight what may need further clarification, support or coordination to strengthen integrated wildfire risk management in protected areas and the wider landscape context.

Each Working Group runs twice (Round I and Round II), following a consistent format: a short framing, brief case-study stimulus inputs, guided discussion in thematic blocks and a synthesis phase. Each group is expected to converge on a small set of concrete take-home messages (recommendations) and a limited number of "open needs" (e.g., guidance gaps, data/standards needs, enabling conditions) to be reported back in the closing plenary. Refer to the Working Group Instructions in the Annex.

WG1 - Ecosystem-based Prevention and Habitat Conservation

This Working Group focuses on biodiversity-positive prevention measures and post-fire restoration choices that reduce wildfire risk while maintaining or improving habitat condition in protected areas, including through landscape heterogeneity, habitat-friendly fuel management, and the use of extensive land-use practices where appropriate.

WG2 - Governance, Permitting and Policy Framework

This Working Group addresses the enabling framework for implementation: roles and coordination across sectors and levels, permitting workflows and legal certainty, and approaches that align prevention and restoration practice with nature-protection requirements while improving predictability for managers and practitioners.

WG3 - Integrated Fire Management and Decision Support

This Working Group explores how analytical tools and decision-support systems can connect prevention, preparedness, response and recovery in protected areas, including common triggers and prioritisation logic (e.g., exposure, vulnerability and conservation sensitivity), and the data standards needed for interoperable, climate-informed planning.

WG4 - Communication, Engagement and Sustainable Financing

This Working Group focuses on implementation conditions that determine uptake and durability: social acceptance and stakeholder engagement, evidence-based communication on active management tools, and financing and capacity-building models that can sustain prevention and maintenance beyond one-off projects.