

# Publishable interim report

Applies to studies from the research program line

## A) Project Data

General information about the project	
<b>Short title:</b>	Austria Fire Futures
<b>long title:</b>	Integrated Future Wildfire Hot Spot Mapping for Austria
<b>Citation suggestion:</b>	Integrated Future Wildfire Hot Spot Mapping for Austria
<b>Program incl. year:</b>	ACRP 14th Call
<b>Duration:</b>	09/15/2022 – 09/30/2025
<b>Coordinator/ project submitter:</b>	International Institute for Applied Systems Analysis (IIASA)
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<b>Project and cooperation partners (including federal states):</b>	University of Natural Resources and Life Sciences, Vienna Federal Office and Research Center for Forests (BfW)
<b>Total project cost:</b>	€299,866.00
<b>Funding amount:</b>	€299,866.00
<b>Climate fund number:</b>	C265157
<b>Last updated on:</b>	09/11/2024

## B) Project overview

Project details	
<p><b>short version:</b>            Max. 2,000 characters including spaces            Language: German</p>	<p>Waldbrände gefährden das menschliche Leben, die Infrastruktur, die Land- und Forstwirtschaft, die biologische Vielfalt und die Erholungsfunktion der Wälder. Das Verbrennen der schützenden Waldbiomasse erhöht das Risiko von Erdbeben, Steinschlag, Lawinen, und Muren, und führt zu einem Verlust des Potenzials zur Eindämmung des Klimawandels.</p> <p>Das Projekt Austria Fire Futures konzentriert sich auf einheimische, gebirgsdominierte Waldsysteme. Es integriert neue Erkenntnisse über lokale brennbare Biomasse, Morphologie und Erholungsaktivitäten in Waldwachstumsmodelle und Waldbrandrisikomodelle. Es adressiert die dringende Notwendigkeit, dynamische, hochauflösende Brandgefahrenkarten (Hot-Spot-Karten) zu entwickeln und diese für Österreich allgemein zugänglich zu machen. Das Hauptziel dieses Projekts ist daher die Entwicklung einzigartiger und innovativer (virtueller) Karten des Brandrisikos und der Brandherde mit höchster räumlicher Auflösung unter verschiedenen Szenarien des Klimawandels und einer Vielzahl von zusätzlichen Aspekten. Diese neuen Brandrisiko-Hotspot-Karten werden es Experten, Praktikern, und der interessierten Öffentlichkeit ermöglichen, in die Zukunft zu blicken und solide kurz-, mittel-, und langfristige Empfehlungen für eine feuerresistente und nachhaltige Waldbewirtschaftung abzuleiten.</p> <p>Hypothesen/Ansichten:</p> <ol style="list-style-type: none"> <li>1: Das Waldbrandmanagement in Österreich kann durch die Erstellung von neuen Waldbrandgefahrenkarten verbessert werden.</li> <li>2: Ein besseres Verständnis der sozialen Dimension, z.B. des Verhaltens von Wandertouristen, trägt zu einer verbesserten Einschätzung des Waldbrandrisikos bei.</li> <li>3: Die Transparenz der Forschungsergebnisse, die Beteiligung der relevanten Stakeholder und die Verbesserung bestehender Instrumente erhöhen den Wert der im Projekt erstellten Informationen und tragen durch Sensibilisierung der Stakeholder und der Öffentlichkeit zur Verringerung des Waldbrandrisikos und der verbrannten Fläche bei.</li> </ol>

## Project details

### Executive summary:

Max. 2,000 characters including spaces

Language: English

The Austria Fire Futures project will focus on domestic mountain-dominated forest systems and integrate novel insights on local fuel types into forest and forest fire risk models, including new variables such as morphology and recreational activities. The project thus reacts to the urgent need to develop dynamic fire risk maps based on high-resolution hotspots mapping and implement these for Austria in a broadly accessible platform. The project's main objective is therefore to develop a unique and innovative new set of fire risk and fire hazard hotspot maps at the highest spatial resolution under various climate change scenarios. The study will improve our understanding of fire-vulnerable forest areas that may shift over time and space given the underlying climate and fuel assumptions. These new fire hotspot maps will allow experts, practitioners, and the interested public to look into the future to comprehend and derive solid short-, medium-, and long-term recommendations for fire resilient and sustainable forest management and fire emergency planning.

#### Hypothesis:

*H1:* based on a set of new and forward-looking fire hot spot maps, the forest fire management in Austria can be substantially improved through site-specific adaptation to fire risk. This improved capacity will result in reduced burned forest area.

*H2:* better understanding of and familiarity with the social dimension (the human factor), e.g., hiking tourists' preferences and behavior when in the forests, will improve short- to medium-term forest fire risk assessment and hence reduce future occurrences of fires and potential danger and harm to the tourists themselves.

*H3:* transparency with respect to research outcomes, co-design with relevant stakeholders, and improvement of existing tools will add to the value of the information created through Austria Fire Futures and ultimately help reduce fire risk and burned area by creating awareness among stakeholders and the public.

<b>Project details</b>	
<p><b>state :</b>            Min. one bullet point,            max. 5 bullet points            Max. 500 characters            including spaces per            bullet point</p>	<p>The project has made significant progress across multiple work packages:</p> <ol style="list-style-type: none"> <li>1. A repository was set up for data sharing and project updates</li> <li>2. Field assessments were conducted to understand fire risks and fuel loads in Austrian forests. A tiered system for mapping fuel types is also in the works.</li> <li>3. High-resolution forest structure maps were produced for the first time for Austria</li> <li>4. Data on fire-related variables were prepared</li> <li>5. A survey assessing tourists' awareness and behavior towards forest fire risks is underway</li> </ol>
<p><b>Essential (planned) findings from the project:</b>            Min. one bullet point,            max. 5 bullet points            Max. 500 characters            including spaces per            bullet point</p>	<ol style="list-style-type: none"> <li>1. Fine Fuel Moisture Code (FFMC) gives a good approximation of fire risk in Austrian forest.</li> <li>2. 'FirEUrisk' is a 1-km resolution map showing fuel types that can be used for large-scale assessment of fuel types.</li> <li>3. To calibrate probabilities of ignition, fire spread, and suppression efficiency in the FLAM model, detailed information on burned areas and numbers of fire ignitions are prepared.</li> <li>4. The premise of the project was presented at two conferences and generated much interest and discussion.</li> </ol>

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