Manuscript: *Forecasting the Flame: Simulating Future Wildfire Regimes in the Northeast Mediterranean* (egusphere-2026-1498)

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Note to the Handling Editor:

Dear Prof. Filippi, thank you for leading the review process of this manuscript. You can find my detailed response to Referee #2 below. I would also like to thank Referee #1 for their second round of review and finding my previous responses satisfactory. I hope with the below clarifications and suggested edits, the text can be considered for publication. I also revised the workflow diagram **(Figure 2)** which Referee #1 from the first round of revisions had kindly suggested, to reflect the latest edits and to further improve readability.

Also, on this occasion I would like to share with you that my new companion study has been submitted to Geoscientific Model Development which streamlines the validation of simulation results against remote sensing outputs (reference below). The two manuscripts are now connected on EGUsphere. Accordingly, I updated the **Code Availability** section to:

"The R codes for validation of model outputs against remote sensing data can be found at the companion publication doi: 10.5194/egusphere-2026-4188. The Phyton codes generated and used are also readily available from the corresponding author upon request. LPJ-GUESS dynamic vegetation model's home page is: https://web.nateko.lu.se/lpj-guess/"

Ekberzade, B.: A seamless workflow for wildfire modelers to validate dynamic global vegetation model outputs against remote sensing data, EGUsphere [preprint], https://doi.org/10.5194/egusphere-2026-4188, 2026.

Response to Referee #2 Comments:

The author appreciates the constructive evaluation and specific technical observations provided by the referee. Below is a detailed, point-by-point response describing how each comment has been addressed in the revised manuscript. Line numbers point to relevant text in the original document (pre-revision clean copy); all works cited are referenced in the main manuscript.

Reviewer Comment (RC) 1: In lines 121–123, the author states: "anthropogenic ignitions and fire suppression were excluded, assuming fires arise exclusively from natural ignitions." In the Mediterranean basin, natural ignitions (lightning) account for very few fires. SIMFIRE explicitly contains empirical formulations relating fire occurrence to human population density and cropland fraction.

Author Comment (AC) 1: The referee is correct that anthropogenic ignitions dominate fire occurrence in much of the Mediterranean (also acknowledged in **Lines 44-47**) and that SIMFIRE includes empirical formulations involving human population density and cropland fraction (Knorr et al., 2014). In this study, however, the experimental design was intended to isolate the response of vegetation–fire dynamics to climatic forcing, rather than reproduce the contemporary, human-modulated fire regimes **(Lines 53-64; 69-73)**. Therefore, disabling these anthropogenic inputs was a deliberate experimental constraint designed to isolate the influence of climate and dynamic vegetation succession on biophysical fire potential.

Simulations were conducted in Potential Natural Vegetation (PNV) mode (*run_landcover 0*), excluding land-use forcing associated with the model's cropland component, and separately, human population density was reduced to negligible levels in the model configuration. Extending empirical relationships for human population and land use through 2100 would introduce additional assumptions about demographic change, land-use trajectories, and future fire management that fall outside the scope of this experiment.

I agree that the distinction between simulated biophysical fire potential and observed fire activity needs to be stated more precisely, since their divergence is not only a direct measure of anthropogenic influence, as it may also reflect model structural limitations, observational uncertainty, and differences in spatial representation. **Sections 2.2** and **2.3.1** have been revised to clarify the experimental configuration and the scope of the historical evaluation.

Original text (Lines 121–123): "To isolate the role of climate and vegetation in shaping potential fire regimes, anthropogenic ignitions and fire suppression were excluded, assuming fires arise exclusively from natural ignitions."

Revised version*:* "To isolate the biophysical controls of climate and dynamic vegetation succession on potential fire activity, all simulations were conducted in Potential Natural Vegetation (PNV) mode, excluding land-use forcing associated with the model's cropland component (run_landcover 0). Human population density was also reduced to negligible levels in the model configuration. Anthropogenic ignition and fire suppression were therefore not explicitly represented. This configuration provides a biophysical reference for examining how fire potential may respond to climatic forcing and vegetation dynamics, rather than simulating fire activity under human influence."

Original text (Lines 143–156): "These simulations were designed to assess the model's ability to reproduce observed spatial patterns and temporal variability of BA across the study region. Simulated BA, both from reanalysis and bias-corrected GCM datasets, was compared against satellite-derived burned area products using geospatial and statistical analyses.

Emphasis was placed on the spatial distribution and temporal variability of BA, rather than exact magnitudes, as even small anthropogenic interventions – which are absent in the experimental design – can produce disproportionately large observed burned areas (Ekberzade et al., 2025; Li et al., 2024; Hantson et al., 2016). Particular attention was given to natural vegetation zones, where natural ignitions are expected to drive fire activity more than anthropogenic ignitions (although the latter can still occur). Comparisons were performed for long-term means and interannual variability in burned area, allowing the identification of persistent wildfire hotspots and regions where simulated and observed fire patterns converged. Crucially, heavily managed and agricultural ecoregions were retained in this evaluation rather than excluded to allow the measurement of anthropogenic divergence."

Revised version (revisions in green colour): "These historical simulations were used to examine model's response to observed hydroclimatic variability, rather than reproduce the contemporary spatial distribution of human-modulated fire activity. Emphasis was placed on the model's ability to reproduce spatial distribution and temporal variability of BA, rather than exact magnitudes, as even small anthropogenic interventions – which are absent in the experimental design – can produce disproportionately large observed burned areas (Ekberzade et al., 2025; Li et al., 2024; Hantson et al., 2016). Particular attention was given to natural vegetation zones, where natural ignitions are expected to drive fire activity more than anthropogenic ignitions (although the latter can still occur). Using geospatial and statistical analyses, simulated and satellite-derived BA were compared to characterise the spatiotemporal agreement and divergence between observed fire activity and simulated biophysical fire potential. Specifically, comparisons of long-term mean BA, interannual variability, and peak-fire timing were used to characterise these agreement and divergence across ecoregions.

These comparisons provide diagnostics of the model's response to climatic variability and of the differences between simulated potential and observed fire activity. They also allow the identification of persistent wildfire hotspots. Heavily managed and agricultural ecoregions were retained to examine how the divergence varies across contrasting landscape contexts."

RC 2: In Section 4.1, the author claims that this mismatch is an intentional feature providing a "useful diagnostic of the human imprint". If that's the case you cannot benchmark/validate a model against satellite observations (MODIS MCD64A1) that reflect human ignitions and suppression, obtain a statistically insignificant spatial correlation, and then claim the model is "benchmarked" and suitable for projecting future spatial reorganizations.

AC 2: The referee raises a valid concern about interpreting comparisons between a model configuration that excludes anthropogenic ignition and fire suppression and satellite observations that record contemporary burned area. However, the benchmarking strategy was based on comparisons of model performance across ecoregions, rather than on domain-wide validation of the model's ability to reproduce the spatial distribution of observed fire activity. This ecoregion-based analysis allows to characterise regions of closer agreement and systematic divergence between simulated biophysical fire potential and observed burned area.

As reported in **Section 3.1.1 (Lines 301–308)**, "Mediterranean ecoregions exhibit the closest agreement between simulated and observed burned area, with median simulated-to-observed ratios near unity", whereas forest ecoregions show moderate overestimation and steppe and desert ecoregions exhibit substantially greater variability. The same section identifies pronounced discrepancies in Central Anatolian and Pontic steppe landscapes and parts of the Caspian lowland desert, where observed burned-area peaks coincide with agricultural regions in which post-harvest stubble burning is common **(Lines 326–332).** These contrasts are important to the interpretation of the weak domain-wide spatial correlations (ρ = 0.17 for ERA5-Land and ρ = 0.15 for the GCM ensemble median). They indicate that

the mismatch is not spatially uniform and that anthropogenic burning is a plausible contributor to discrepancies in particular agricultural landscapes; they do not, however, establish that anthropogenic influences account for the entire spatial mismatch.

The distinction is therefore between evaluating the model's biophysical response and claiming that it reproduces the contemporary spatial distribution of fire activity. The historical comparison provides an important reference for examining how simulated fire potential corresponds to observed burned area across contrasting ecoregions, including where the two diverge. The separate analysis of interannual variability **(Section 3.1.2)** provides additional, though modest, evidence of correspondence in temporal patterns. Neither result is presented as proof of spatial predictive skill. The model's future projections are intended to explore conditional biophysical responses of vegetation–fire dynamics to climate forcing, rather than to predict the locations of future human-modulated fires.

To further clarify this distinction, I made the below revisions to describe the "Human Gap" as a comparative divergence between simulated biophysical fire potential and observed fire activity, rather than as a direct diagnostic of the human imprint.

Original text (Lines 591–592): "The difference between these two signals therefore provides a useful diagnostic of the human imprint on regional fire dynamics."

Revised version: "The difference between these two signals is retained as a useful, comparative diagnostic of divergence between simulated biophysical fire potential and observed fire activity. However, it should be noted that while this divergence reflects anthropogenic influences, it may also encompass model structural limitations and observational uncertainties."

Original text (Lines 594-597): "In ecoregions such as the Northern Anatolian conifer forests and the Balkan mixed forests, the simulated overestimation of burned area likely reflects a suppression deficit, representing the magnitude of fire activity that current climatic conditions could support in the absence of effective fire suppression."

Revised version (revisions in green colour): "In ecoregions such as the Northern Anatolian conifer forests and the Balkan mixed forests, the simulated overestimation of burned area likely reflects a suppression deficit, serving as an indicator of the magnitude of fire activity that current climatic conditions could support in the absence of effective fire suppression."

Original text (Lines 603-606): "In this sense, the divergence between simulated and observed burned area in historical simulations may be interpreted as a latent "fire debt," representing fire activity that is currently suppressed but could emerge if suppression capacity were overwhelmed during extreme fire seasons (Parisien et al., 2020; Ekberzade et al., 2025)."

Revised version (revisions in green colour): "In this sense, the divergence between simulated and observed burned area in historical simulations may be interpreted as a latent "fire debt": potential fire activity that is not realized under current suppression regimes but could emerge if suppression capacity were overwhelmed during extreme fire seasons (Parisien et al., 2020; Ekberzade et al., 2025)."

RC 3: (Lines 163–165): SSP5-8.5 is increasingly viewed in climate science as an extreme high-end stress test rather than a business-as-usual pathway. Evaluating future fire regimes only under SSP5-8.5 without a plausible mid-range mitigation scenario (such as SSP370) and an optimistic one (SSP126) limits the policy and management utility of this work.

I agree that SSP5-8.5 represents a high-end forcing pathway rather than a business-as-usual trajectory. While I acknowledge that including SSP3-7.0 and SSP1-2.6 would enable comparisons across

mitigation pathways, this is not the objective of the present study. As already stated in the manuscript **(Lines 163–165),** this scenario was deliberately selected to explore the potential upper bound of climate-driven fire activity and to stress-test ecosystem responses under strong warming and drying, rather than to provide a deterministic prediction of future fire regimes. The objective of this study is to identify potential biophysical limits and spatial reorganizations of fire activity under strong climatic forcing.

By mapping the high-end potential, the study provides information relevant to long-term disaster preparedness, identifying areas where substantially different fire regimes might emerge under strong climate forcing, including potential hotspots that may remain overlooked when attention is focused on the intensification of existing fire activity. The choice was therefore intentional and question-driven, rather than an assumption that SSP5-8.5 represents the most likely future. Adding alternative scenarios would shift the analytical focus from examining ecosystem responses under a defined high-end forcing to comparing outcomes across multiple, necessarily conditional climate futures. While valuable in its own right, such a comparison constitutes a different research objective than the one this manuscript pursues.

To further highlight this point, I made the following revisions:

Original text (Lines 73-74): "These simulations investigate whether such climate trajectories will simply intensify existing wildfire activity in the region or drive a fundamental spatial reorganization of fire regimes across its diverse ecosystems."

Revised text (revisions in green colour): "These simulations investigate whether such climate trajectories will simply intensify existing wildfire activity in the region or drive a fundamental spatial reorganization of fire regimes across its diverse ecosystems, potentially revealing emerging fire-prone areas that are not readily anticipated from present-day patterns."

Original text (Lines 579-581): "Overall, the simulation results point toward a reorganization rather than a simple intensification of fire regimes across the Northeast Mediterranean, with important implications for ecosystem resilience, land management, and future wildfire risk."

Revised text (revisions in green colour): "Overall, the simulation results point toward a reorganization rather than a simple intensification of fire regimes across the Northeast Mediterranean, with important implications for ecosystem resilience, land management, and future wildfire risk. Nonetheless, considering the objective of this study was to examine the biophysical consequences of a defined, high-end climate forcing (rather than to rank alternative socioeconomic futures), the projected patterns should be discerned within the boundary conditions of SSP5-8.5, with multi-scenario comparisons representing a complementary direction for future research."

Original text (Lines 665-667): "While extreme future drought remains a looming threat, the overarching structural shift of these systems toward a denser canopy in the simulation results acts as a potential biophysical buffer against future warming."

Revised text (revisions in green colour): "While extreme future drought remains a looming threat, the overarching structural shift of these systems toward a denser canopy in the simulation results acts as a potential biophysical buffer against future warming.

Importantly, the future trajectories presented here should be interpreted as conditional ecosystem responses under a high-end forcing pathway, not as probabilistic forecasts or predictions of the most likely future. SSP5-8.5 was selected deliberately to investigate how sustained strong warming and

drying could reorganize vegetation–fire dynamics across the Northeast Mediterranean, including the emergence of fire-prone conditions in landscapes where these are currently constrained."

RC 4: (Lines 210–218): The manuscript mentions "outputs from five GCMs (CMIP6, SSP5-8.5)" but never names these five models anywhere in the main text. The author should list the models, their institutions, their spatial resolutions, and their specific climate sensitivities.

Thank you for highlighting the omission of the GCM names from the main text. The five models used in this study (EC-Earth3P-HR, CMCC-ESM2, INM-CM5, MPI-ESM1-2-HR, and NorESM2-MM) were originally documented in **Table S1** of the **Supplementary Material**, alongside their literature references, spatial resolutions, variant labels, and bias-correction trend results, and the table was referenced in the main text. I agree however that identifying the models also in the main manuscript improves the transparency of the climate-forcing description, and this has now been addressed.

The scope of this study is to investigate how climate-driven changes in vegetation–fire dynamics may alter the biophysical potential for wildfire across the Northeast Mediterranean, rather than to evaluate or rank individual GCMs. Accordingly, the analysis is centred on the ensemble median and its implications for future fire-regime dynamics, not on differences in the climate sensitivity or relative performance of the underlying climate models. A model-by-model sensitivity analysis would constitute a separate climate-model evaluation (for example, Ekberzade et al.2024) and would not directly address the central research question of this study. The individual GCMs, their relevant characteristics, and the results of the bias-correction trend assessment are documented in **Table S1**, providing transparency regarding the climate forcing and its processing. Since the study focuses on ensemble-level implications for fire-regime dynamics, the bias-correction diagnostics are presented in support of this approach, while a comparative assessment of individual model climate sensitivities falls outside the scope of the present analysis.

The 1995–2014 reference period was deliberately selected as a recent baseline that already reflects anthropogenic climate change. Bias correction against this period, followed by projections under SSP5-8.5, provides the climate-forcing context for examining future vegetation–fire responses. The simulations are not intended to predict the locations of individual future fires or reproduce the full influence of contemporary human activity; rather, they investigate how vegetation–fire dynamics respond to sustained climate forcing when anthropogenic ignition and fire suppression are excluded.

I revised **Section 2.4.1** to identify all five GCMs in the main text. **Table S1** information has also been updated to include the institutions responsible for developing the individual models, while retaining the detailed model documentation, variant labels, references, spatial resolutions, and bias-correction trend results. No separate model-by-model climate-sensitivity analysis has been added, as this would extend beyond the study's focus on ensemble-based fire-regime projections.

Original text (Lines 208-212): "For the simulations including future projections (1961–2100), to ensure the robust representation of climate variability and extreme events – which are critical drivers of wildfire dynamics in the SIMFIRE-BLAZE module – outputs from five GCMs (CMIP6, SSP5-8.5) were interpolated to 0.1° resolution, and bias- corrected against the 1995–2014 ERA5-Land reference period using Quantile Delta Mapping (QDM)."

Revised version (revisions in green colour): "For the simulations including future projections (1961–2100), to ensure the robust representation of climate variability and extreme events – which are critical drivers of wildfire dynamics in the SIMFIRE-BLAZE module – outputs from five GCMs (CMCC-ESM2, EC-Earth 3p-HR, INM-CM5, MPI-ESM1-2-HR, and NorESM2-MM; CMIP6 SSP5-8.5

scenario runs) were interpolated to 0.1° resolution, and bias- corrected against the 1995–2014 ERA5-Land reference period using Quantile Delta Mapping (QDM)."

RC 5: (Lines 110–111, 439–446): The manuscript evaluates fuel availability using FAPAR. FAPAR saturates rapidly and does not differentiate between live overstory foliage, dead fuel accumulation, or understory fine fuels. Why did the author use a satellite-style proxy (FAPAR) rather than analyzing the actual fuel mass modeled by BLAZE?

Thank you for highlighting the distinction between vegetation-related indicators and explicit fuel loads. In observational remote sensing, FAPAR can saturate in dense canopies and primarily reflects radiation absorption by photosynthetically active vegetation, rather than dead fuel accumulation or understory fine fuels. These limitations, however, should be distinguished from the role of FAPAR as a simulated vegetation variable. I agree that it does not directly quantify total combustible fuel mass or distinguish among live foliage, dead fuels, and understory fuels, and therefore should not be interpreted as a direct measure of fuel availability. However, in the LPJ-GUESS–SIMFIRE–BLAZE configuration used here, FAPAR is not an externally derived satellite proxy for fuel mass. In this study, maximum annual FAPAR is analysed as a simulated indicator of vegetation abundance and productivity within the coupled modelling framework.

Specifically, SIMFIRE estimates the probability of fire occurrence based on biome type, climate conditions, and vegetation abundance, the latter proxied by maximum annual FAPAR. BLAZE subsequently simulates the effects of fire, including biomass consumption and carbon fluxes, using explicit fuel loads and local fire weather conditions. These variables therefore have distinct roles within the coupled framework: FAPAR informs the vegetation-related component of SIMFIRE's fire-probability formulation, whereas BLAZE's fuel representation informs the simulation of fire impacts. The choice to analyse FAPAR reflects the study's focus on how vegetation responses under changing climate relate to evolving fire probability and vegetation–fire dynamics. Changes in vegetation productivity can provide information about the vegetation response to changing growing conditions that is not captured by fuel mass alone. Analysing BLAZE fuel-mass outputs would address a complementary question concerning the amount and composition of combustible material, but would not replace the vegetation variable used in SIMFIRE's fire-probability formulation.

To make this distinction explicit and avoid implying that FAPAR directly measures combustible fuel mass, I have revised the relevant sections to clarify the distinct roles of FAPAR and explicit fuel loads in the coupled modelling framework. I have also refined the interpretation of FAPAR throughout the manuscript.

Original text (Lines 109-113): "In this configuration, SIMFIRE estimates the probability of fire occurrence based on biome type, climate conditions, and vegetation abundance, the latter proxied by the fraction of absorbed photosynthetically active radiation (FAPAR). Within the LPJ-GUESS patch framework, these probabilities are used to generate stochastic ignition events, from which the realized burned area fraction emerges as the proportion of burned patches within each grid cell."

Revised version (revisions in green colour): "In this configuration, SIMFIRE estimates the probability of fire occurrence based on biome type, climate conditions, and vegetation abundance, the latter proxied by the fraction of absorbed photosynthetically active radiation (FAPAR). FAPAR informs the vegetation-related component of SIMFIRE's fire-probability formulation and is not a direct measure of combustible fuel mass or its composition. Within the LPJ-GUESS patch framework, these probabilities are used to generate stochastic ignition events, from which the realized burned area fraction emerges as the proportion of burned patches within each grid cell."

Original text (Lines 165-168): “Simulation results were analysed to examine potential changes in burned area, fuel availability (represented by FAPAR), and fire return intervals, with particular focus on fire-adapted ecoregions and the emergence of new potential wildfire hotspots under strong warming and drying conditions.”

Revised version (revisions in green colour): “Simulation results were analysed to examine potential changes in burned area, vegetation productivity (represented by maximum annual FAPAR), and fire return intervals, with particular focus on fire-adapted ecoregions and the emergence of new potential wildfire hotspots under strong warming and drying conditions.”

Original text (Lines 439-442): “Simulated vegetation productivity, represented by the maximum annual fraction of absorbed photosynthetically active radiation (FAPAR), shows a pronounced increase in the highland regions of the study area by the end of the century (Fig. 11a). A strong increase with full vegetation connectivity can be seen in northern Anatolia, along the Black Sea coast.”

Revised version (revisions in green colour): “Simulated vegetation productivity, represented by the maximum annual fraction of absorbed photosynthetically active radiation (FAPAR), shows a pronounced increase in the highland regions of the study area by the end of the century (Fig. 11a), evident particularly in northern Anatolia, along the Black Sea coast.”

Original text (Lines 444-446): “These areas exhibit high projected fire probability maxima despite relatively modest increases in FAPAR, indicating that climatic drivers of fire weather dominate over fuel availability in these landscapes.”

Revised version (revisions in green colour): “These areas exhibit high projected fire-probability maxima despite relatively modest increases in FAPAR, suggesting that changes in climatic fire conditions contribute more strongly to the projected fire-probability response than changes in vegetation productivity alone.”

Original text (Lines 447-454): “(a) Spatial distribution of cumulative maximum FAPAR (Fraction of Absorbed Photosynthetically Active Radiation) simulated under SSP5-8.5, indicating regions of high fuel continuity. (b) Spatial distribution of cumulative maximum fire probability, highlighting the high-risk zones in western and central Anatolia, Cyprus, and the Middle East. (c) Regional time series of maximum FAPAR (green) and maximum fire probability (red). Note the synchronous rise in both metrics towards 2100, suggesting that future fire regimes could be driven by abundant fuel loads interacting with increased ignition probability, potentially leading to significantly shorter fire return intervals.”

Revised version (revisions in green colour): “Projected shifts in vegetation and fire probability (1961–2100). (a) Spatial distribution of cumulative maximum FAPAR (Fraction of Absorbed Photosynthetically Active Radiation) simulated under SSP5-8.5, illustrating patterns of vegetation productivity. (b) Spatial distribution of cumulative maximum fire probability, highlighting the high-risk zones in western and central Anatolia, Cyprus, and the Middle East. (c) Regional time series of maximum FAPAR (green) and maximum fire probability (red). Note the synchronous rise in both metrics towards 2100, suggesting that future fire regimes could be driven by increased vegetation productivity interacting with increased ignition probability, potentially leading to significantly shorter fire return intervals.”

Original text (Lines 476-477): “In historically fuel-limited, semi-arid regions, the projected accumulation of highly combustible fine fuels results in steep, positive correlations between productivity and fire hazard.”

Revised version (revisions in green colour): "In historically fuel-limited, semi-arid regions, positive correlations between vegetation productivity and fire probability suggest that increasing vegetation growth may contribute to conditions more conducive to fire."

Original text (Lines 555-556): "However, these increases in fuel availability do not translate into proportional increases in fire probability or burned area."

Revised version (revisions in green colour): "However, these increases do not translate into proportional increases in fire probability or burned area."

Specific Discrepancies, Typos, and Inconsistencies

Line 336 vs. Table A1: The caption for Figure 6 lists "Caspian lowland desert [727]". However, Table A1 lists Caspian lowland desert as [815], while [727] is the Eastern Anatolian montane steppe.

Thank you for catching this typo. The caption has now been corrected: "…Caspian lowland desert [815] ecoregions."

The satellite observation record is referred to as 2000-2025 (Line 99), 2001-2024 (Line 286, Line 416), 2001-2025 (Figure 2, Line 294), and 2002-2020 (Line 276). The author must standardize the observational period across the entire manuscript. Figure A1 title states: (2001-2024), but the x-axes run from 2000 to 2025.

Thank you for your suggestion, however the varying observational timeframes mentioned in the text are not typographical errors, they reflect the data availability windows and analytical periods used for different stages of the study. These distinctions are methodologically intentional, and imposing a single date range across all analyses would either exclude valid data from analyses where they are available or misrepresent the temporal coverage of the underlying datasets. I have therefore retained the dataset-specific periods while clarifying their respective purposes.

2001–2024 (Lines 286, 416, and Figure A1 title): This is the period used for the primary evaluation against MODIS MCD64A1 burned-area observations. Since MODIS Terra observations began late in 2000, 2001 is the first full calendar year used for the continuous annual time-series analysis. This period is retained for the primary observational benchmark.

2002–2020 (Line 276): This period refers specifically to the years available for the secondary cross-validation comparison using the FireCCI51 dataset. It is retained because it accurately reflects the temporal coverage of that comparison, which differs from the primary MODIS benchmark.

2000–2025 (Line 99, Figure 1 caption): Figure 1 presents the spatial distribution of wildfire hotspots across the study domain using the broader data coverage available for this mapping exercise, including partial boundary years. This period is retained since the map indeed incorporates data spanning the full 2000-2025 range. The caption, therefore, refers to the temporal coverage of this spatial analysis rather than the primary annual time-series evaluation.

2001–2025 (Figure 2, Section 3.1 header): The 2025 endpoint reflects the broader historical simulation period, which extends through 2025 using ERA5-Land forcing, rather than the endpoint of the primary MODIS observational benchmark, which concludes in 2024.

Figure A1 X-axis: The axis extends from 2000 to 2025 to provide visual spacing around the annual time series; these limits do not indicate that the primary observational benchmark includes additional years beyond 2001–2024. I have clarified this distinction in the figure caption so that the plotted period is unambiguous:

Text addition to Figure A1 end of caption: “The x-axes extend slightly beyond the observational period (2001–2024) to provide visual spacing at the boundaries; these limits do not indicate additional observational years.”