MIRA SAFETY

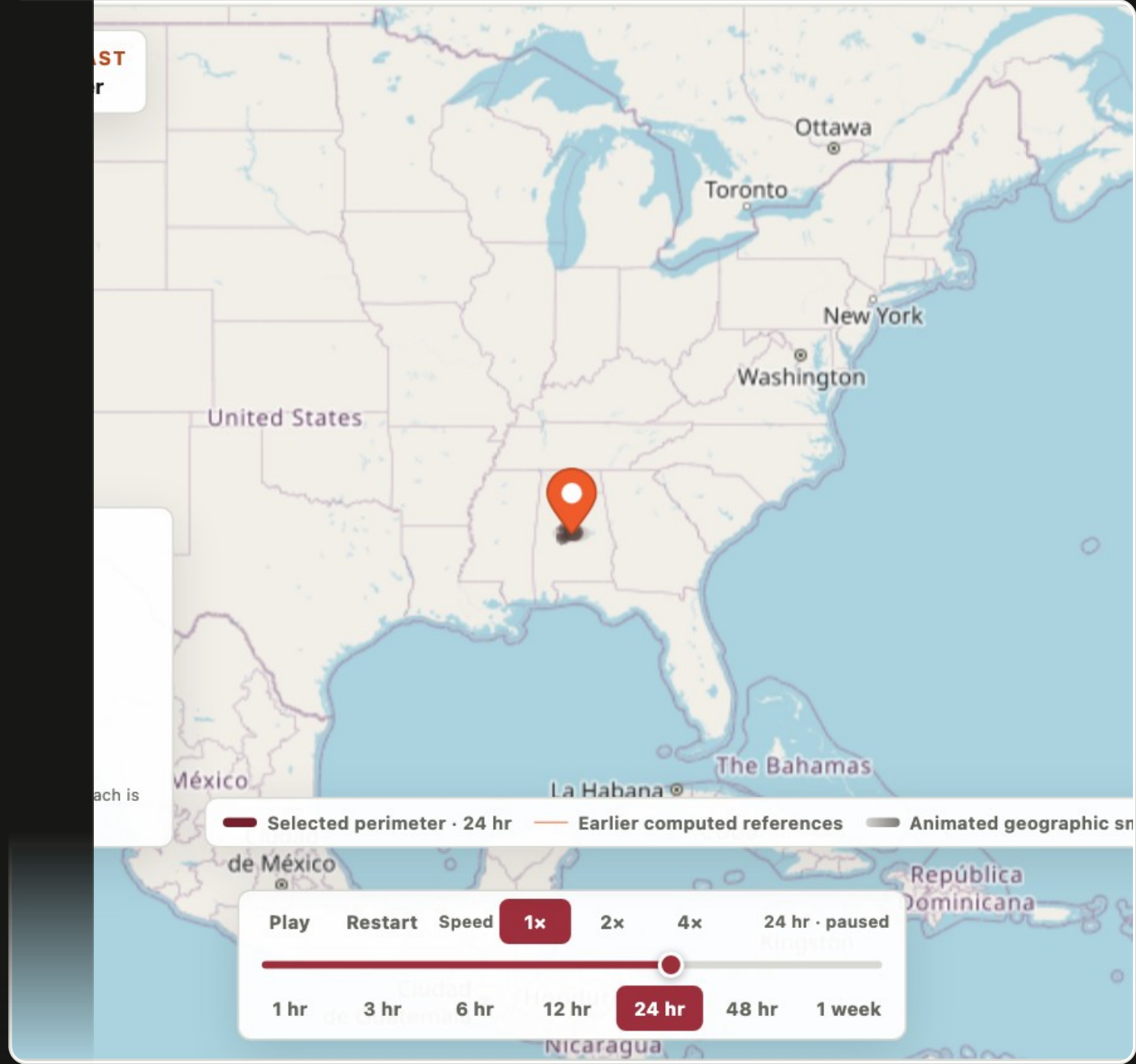
Wildfire Simulator

Customer guide

How to run a scenario, read the map, and explain the output with confidence.

LIVE PRODUCTION GUIDE

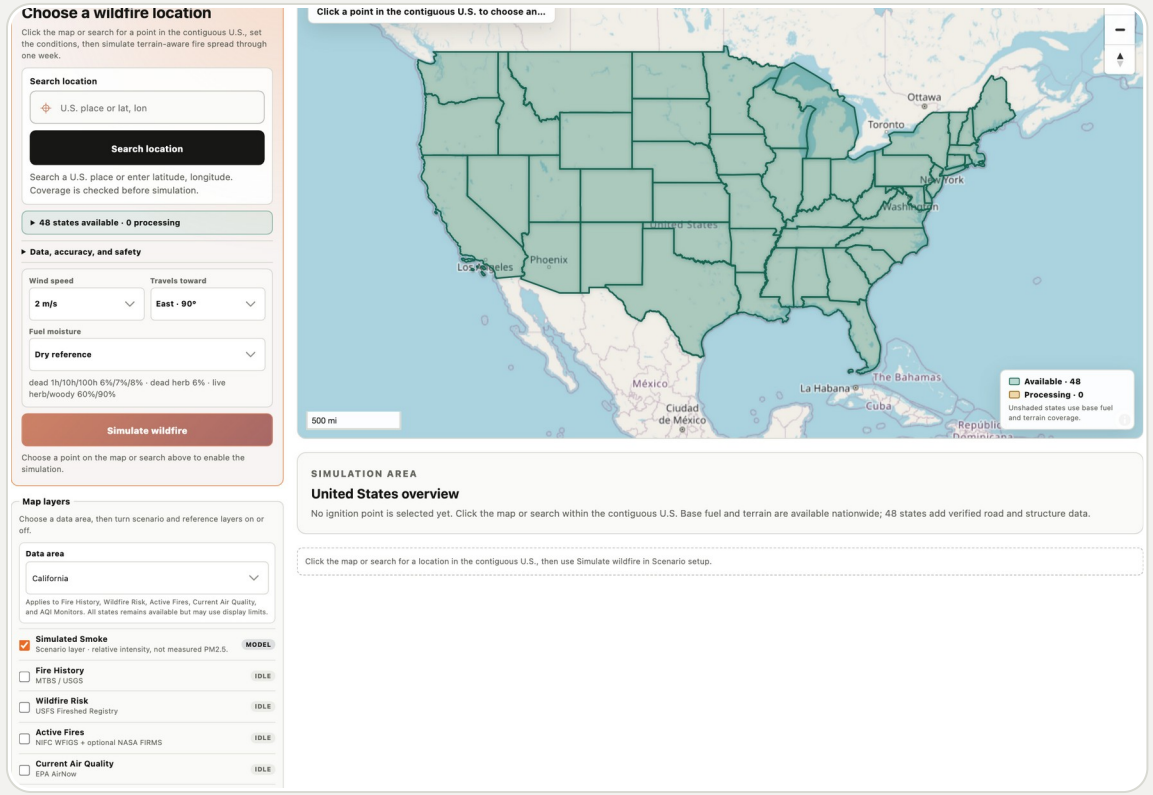
Prepared for customer use · September 2026



ORIENTATION

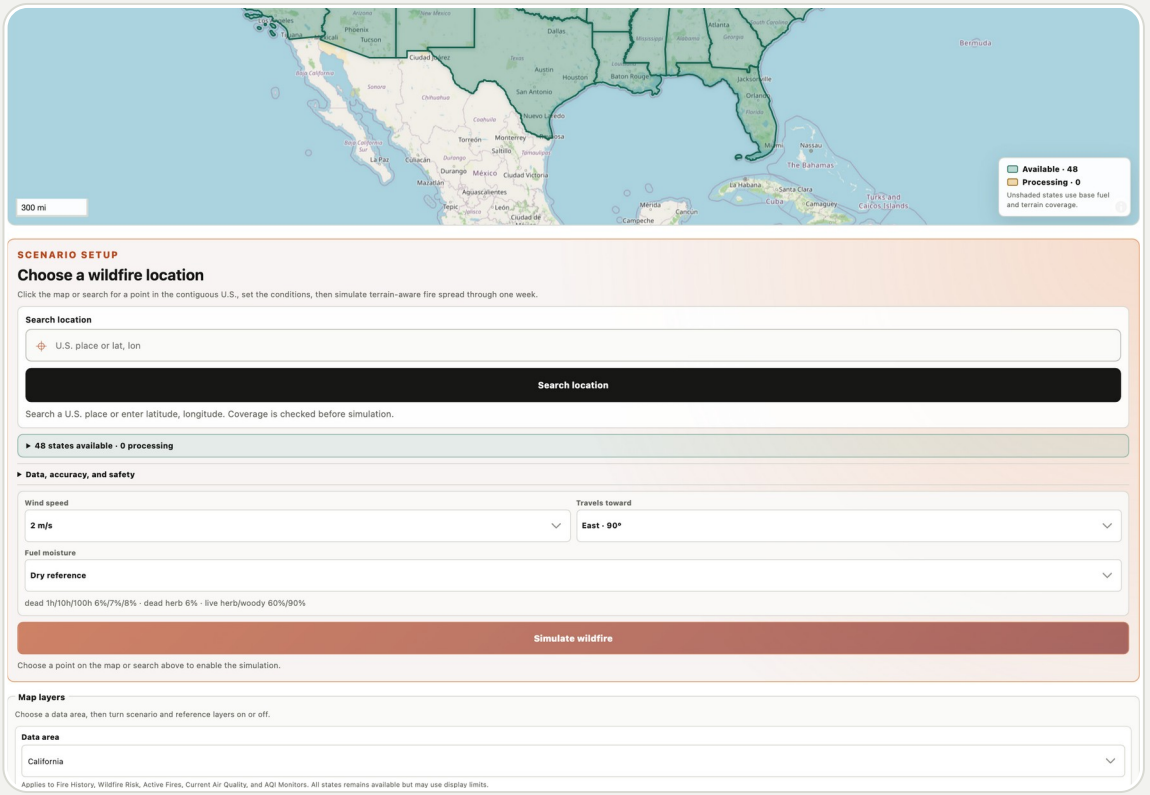
Two ways to use the same simulator

STANDALONE WEBSITE



Full workspace Best for analysis, exports, and detailed layer review.

EMBEDDED EXPERIENCE



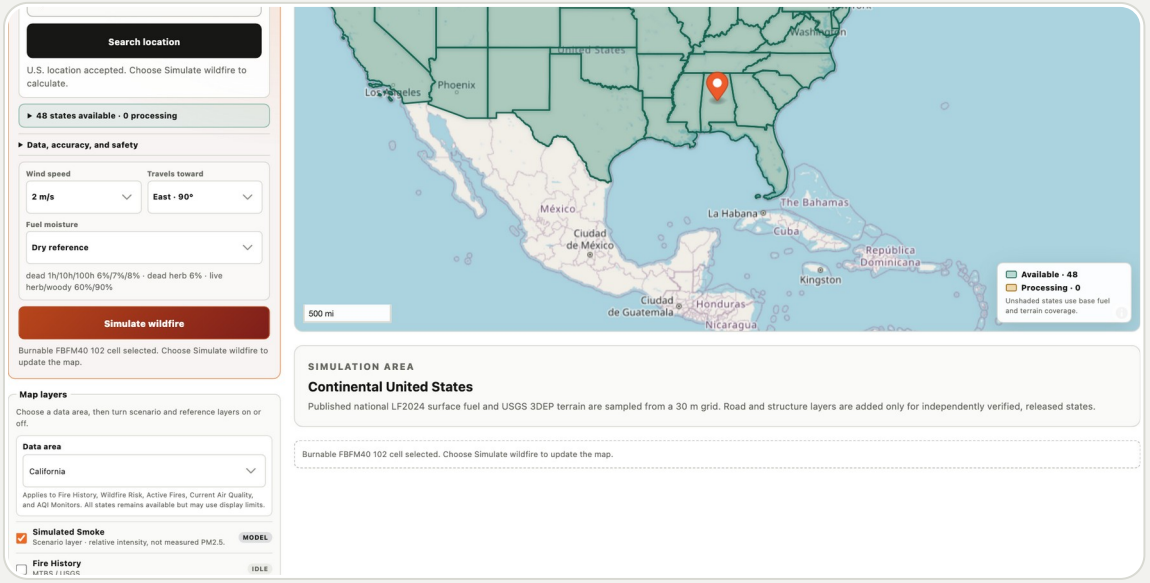
Article embed Same engine and controls, optimized for an embedded page.

Both views use the same production data and browser-based calculation engine.

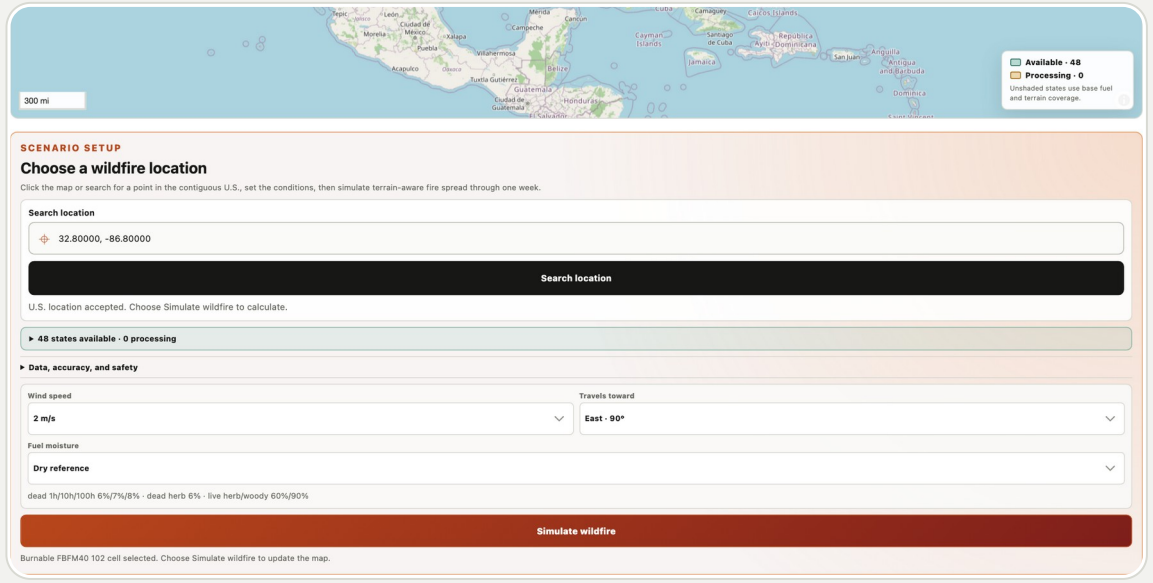
RUN A SCENARIO

1. Choose the ignition point

STANDALONE WEBSITE



EMBEDDED EXPERIENCE



Click directly on the map

Click any supported point. The orange pin marks the ignition cell that the model will use.

Search for a location

Enter a U.S. place or street address, then select Search location to move the map and pin.

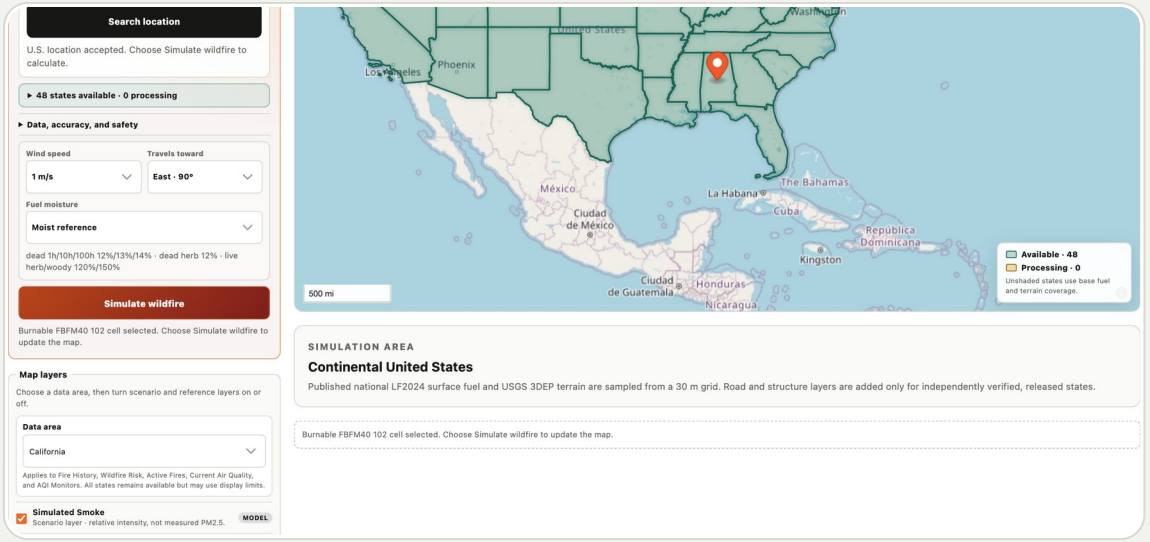
Paste coordinates

Enter latitude and longitude when you already know the exact point you want to test.

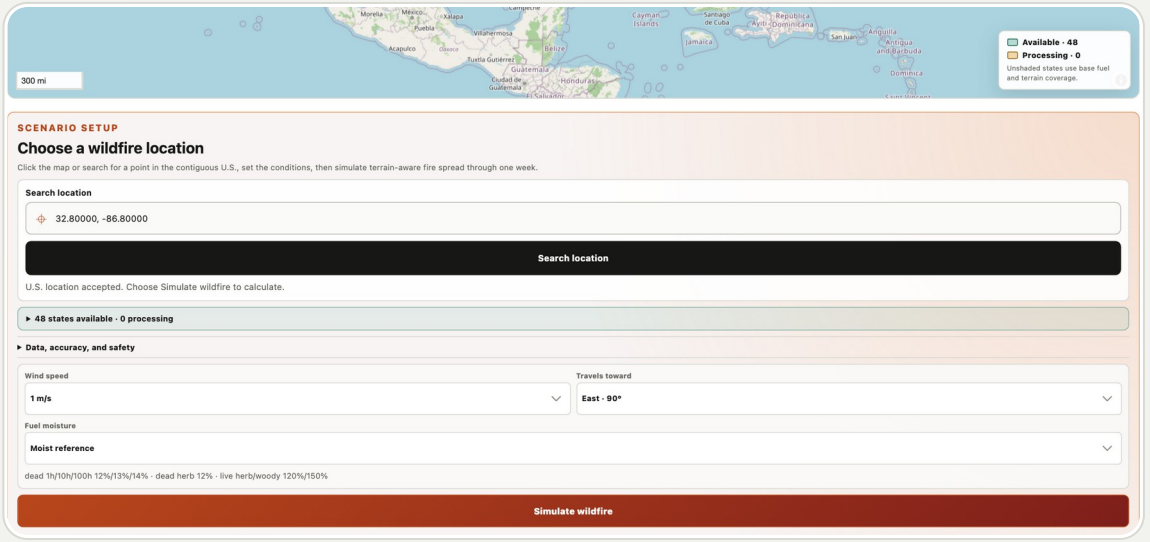
Confirm the orange pin before running the model. If the point is unsupported, choose a nearby eligible burnable cell.

2. Set the scenario conditions

STANDALONE WEBSITE



EMBEDDED EXPERIENCE



Wind speed

Sets how strongly wind drives the modeled fire. Higher values usually increase growth in the travel direction.

Travel direction

Sets the compass direction the wind carries the fire toward. East means the modeled spread is pushed east.

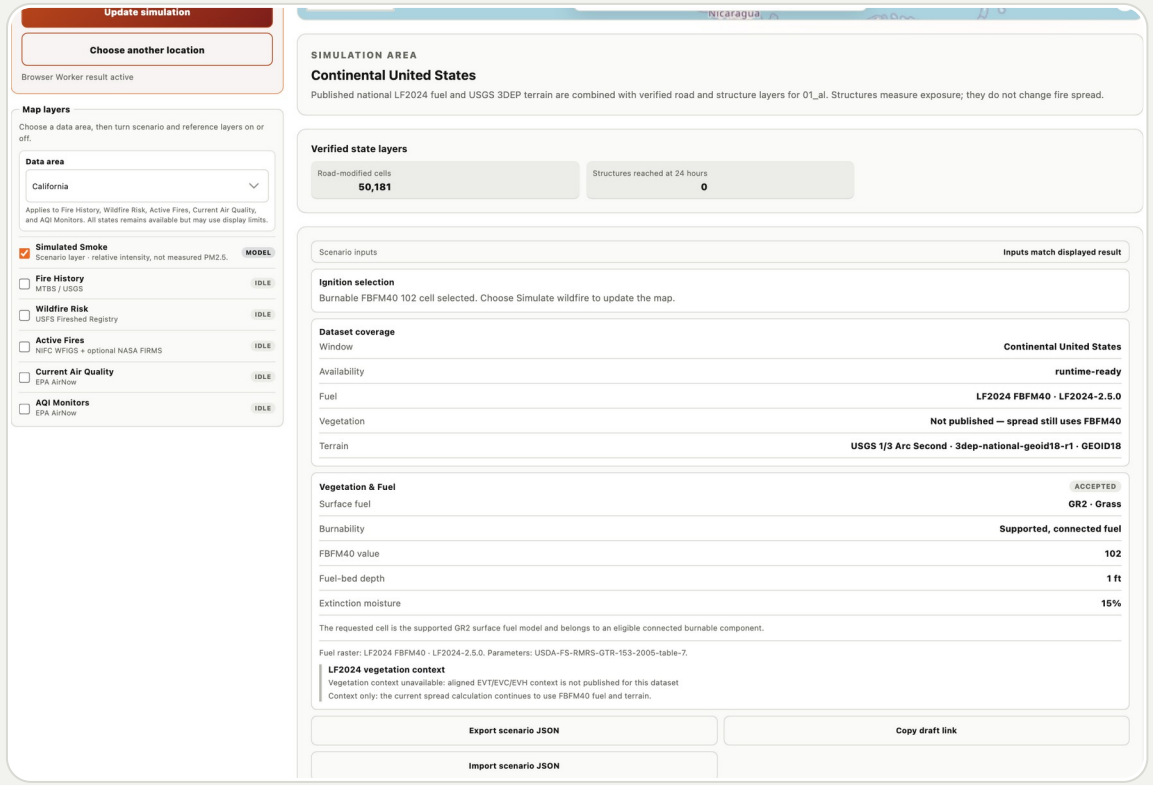
Fuel moisture

Selects how dry the modeled fuels are. Drier presets generally support faster and wider spread.

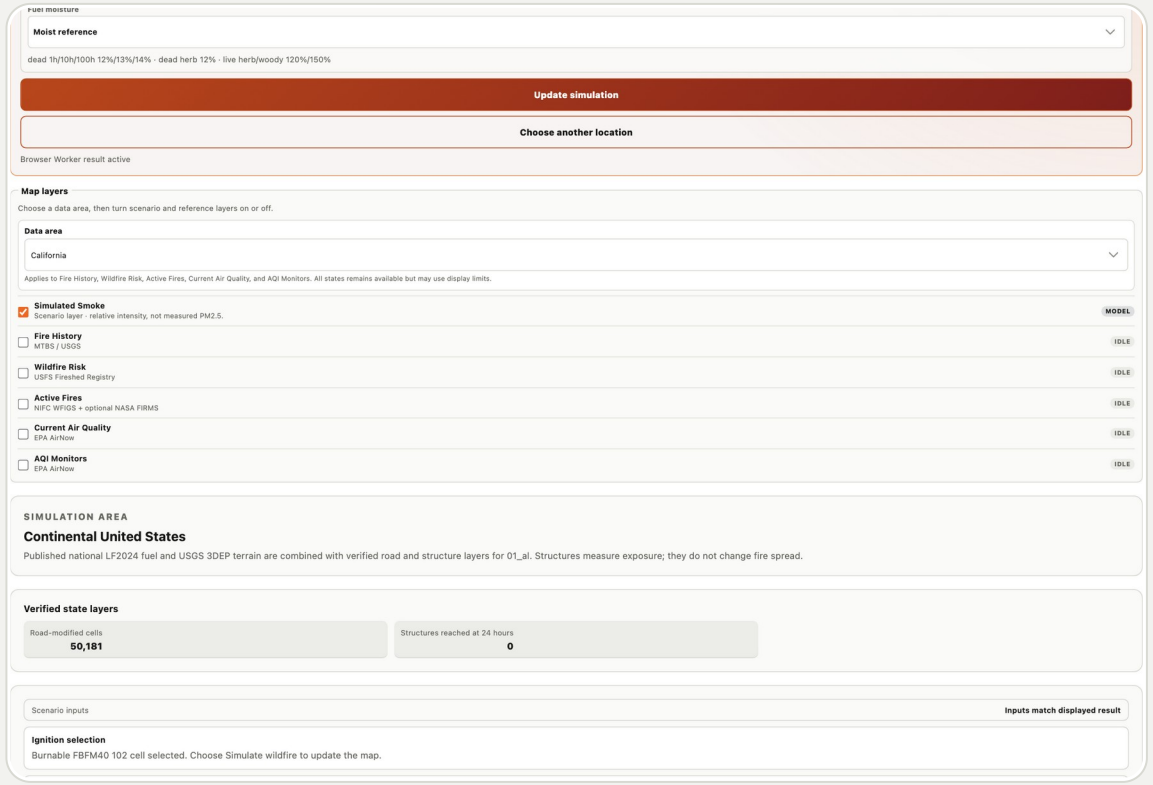
These inputs stay fixed for the scenario. They are not live weather observations. Changing any one of them recalculates the result.

3. Calculate and wait for the active result

STANDALONE WEBSITE



EMBEDDED EXPERIENCE



Select Simulate wildfire

Keep the page open

Look for “result active”

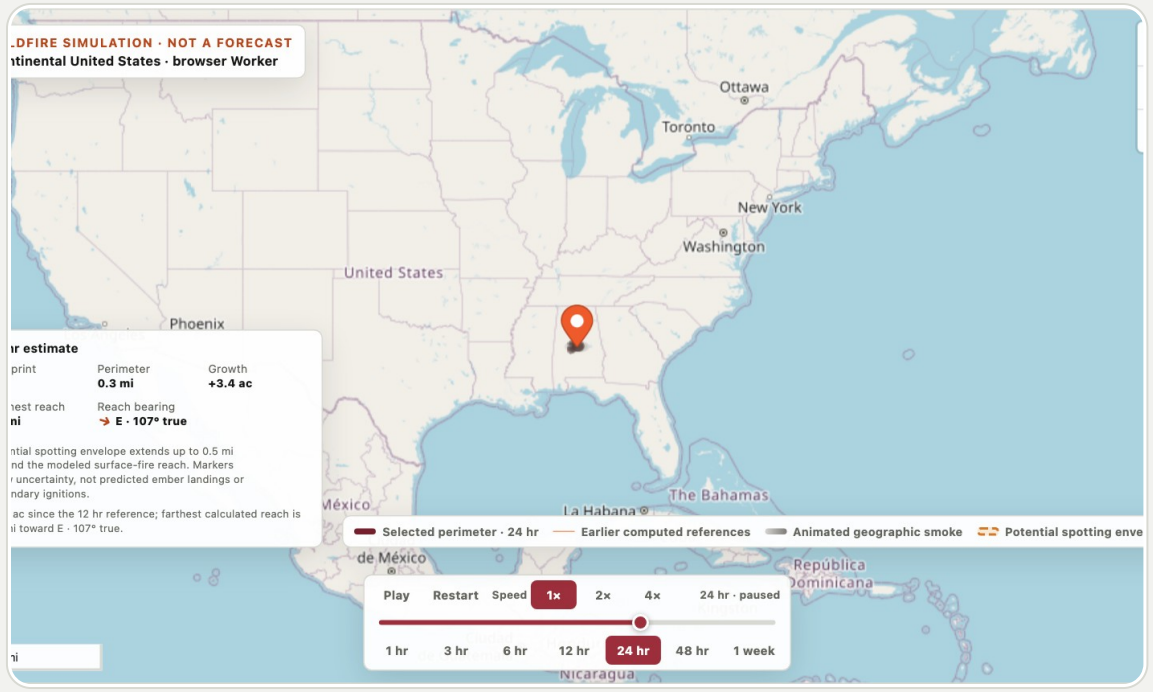
The first run may take longer while terrain and state layers are cached in the browser.

A completed run shows the perimeter, metrics, verified state layers, and runtime checks with NoData status.

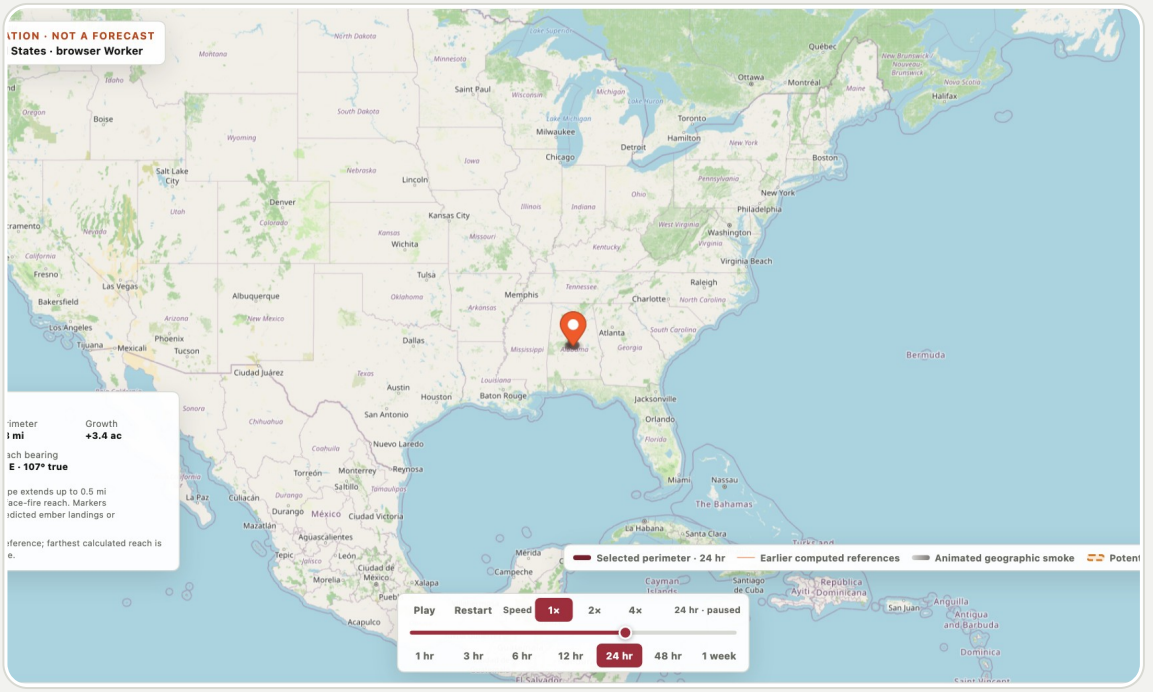
READ THE MAP

4. Explore the time horizon

STANDALONE WEBSITE



EMBEDDED EXPERIENCE



1 hr → 1 week

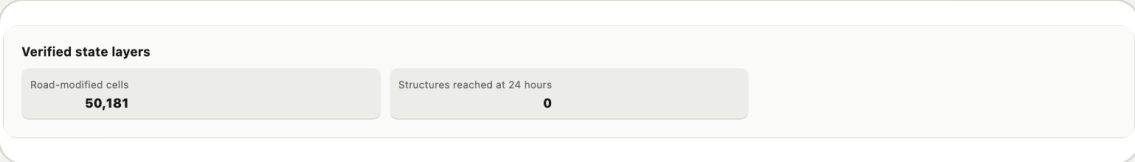
Use the timeline buttons or playback controls to see how the modeled perimeter changes.

Solid perimeter = selected time
Dashed envelope = spotting uncertainty

Perimeters are constant-condition educational estimates—not an operational forecast or evacuation boundary.

5. Read road effects and structure exposure

STANDALONE WEBSITE



EMBEDDED EXPERIENCE



Road-modified cells

Count of raster cells where verified road data modifies the local spread calculation.

Structures reached at 24 hours

Exposure count from verified FEMA structure layers; structures do not change the spread.

Footprint, perimeter, reach

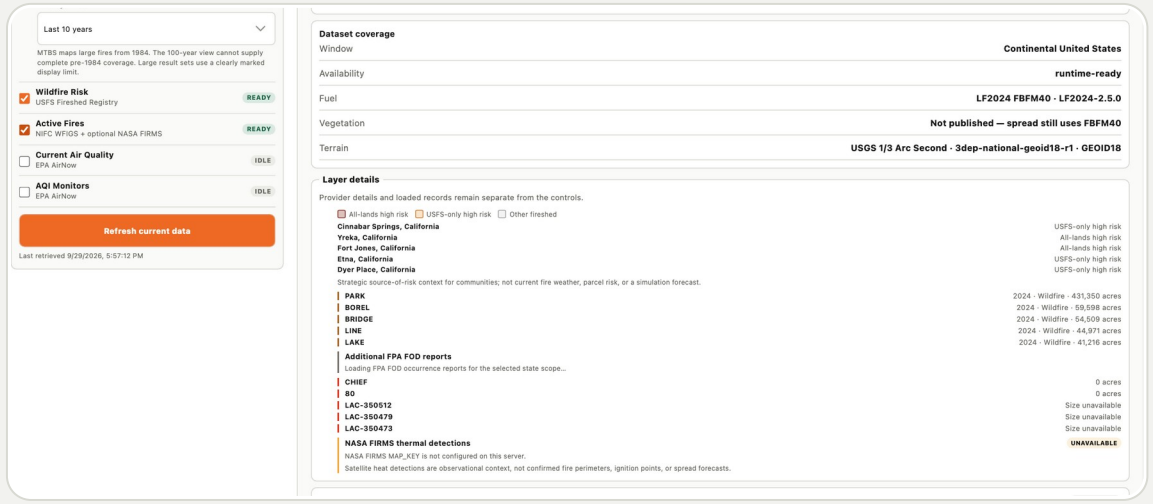
Map metrics describe the selected time step and update as the timeline changes.

Zero is a valid result: it means the modeled perimeter did not reach a verified structure by that time step.

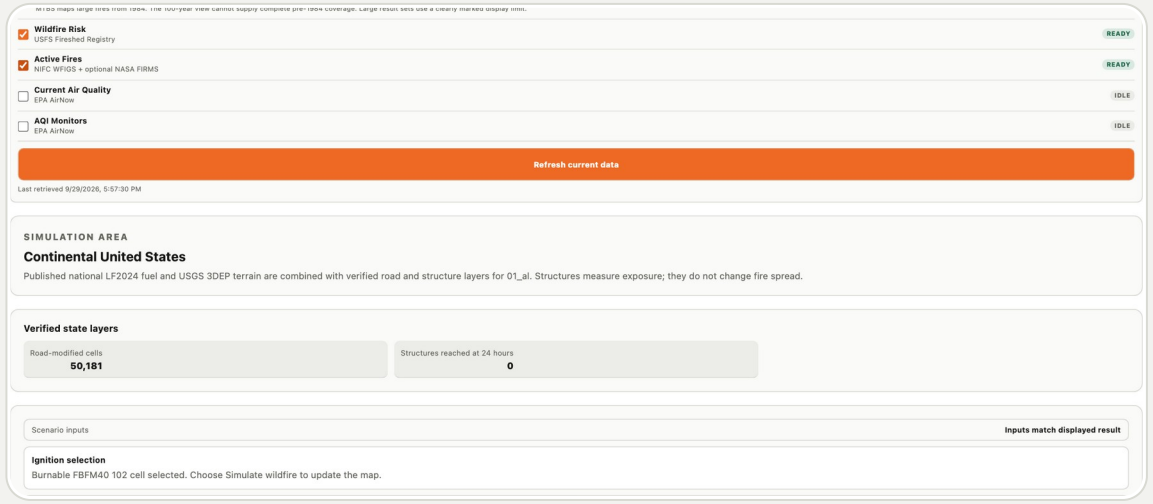
REFERENCE DATA

6. Add reference layers for context

STANDALONE WEBSITE



EMBEDDED EXPERIENCE



Fire History

Shows mapped fire perimeters from prior years. Use it to see where wildfire has occurred and compare the scenario with historical footprints.

Wildfire Risk

Adds the USFS risk layer. Use it to understand the broader long-term hazard context around the selected point.

Active Fires

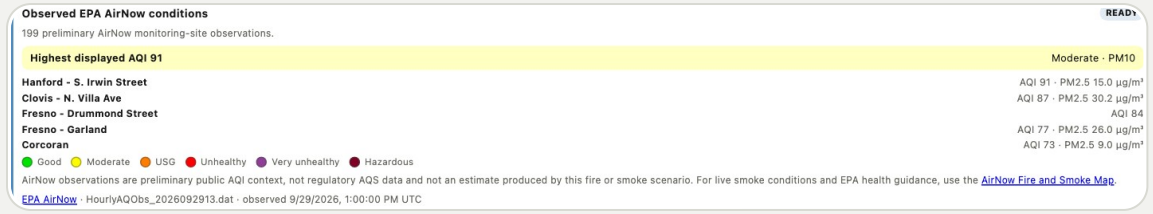
Shows current incident records from NIFC and NASA FIRMS when available. Open the official source for operational details.

Turn layers on independently. They add context around the scenario and do not become ignition points or live spread predictions.

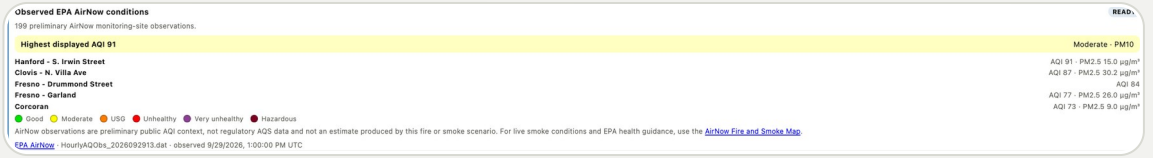
REFERENCE DATA

7. Use Current Air Quality and AQI Monitors

STANDALONE WEBSITE



EMBEDDED EXPERIENCE



Current Air Quality

Loads the observation summary below the map, including the highest displayed AQI, pollutant, station list, timestamp, and category legend.

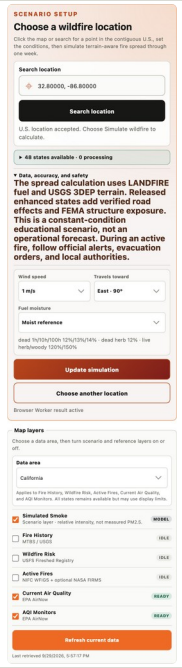
AQI Monitors

Plots monitoring stations as colored dots on the map. Turn this on when the customer expects visible markers rather than only the summary panel.

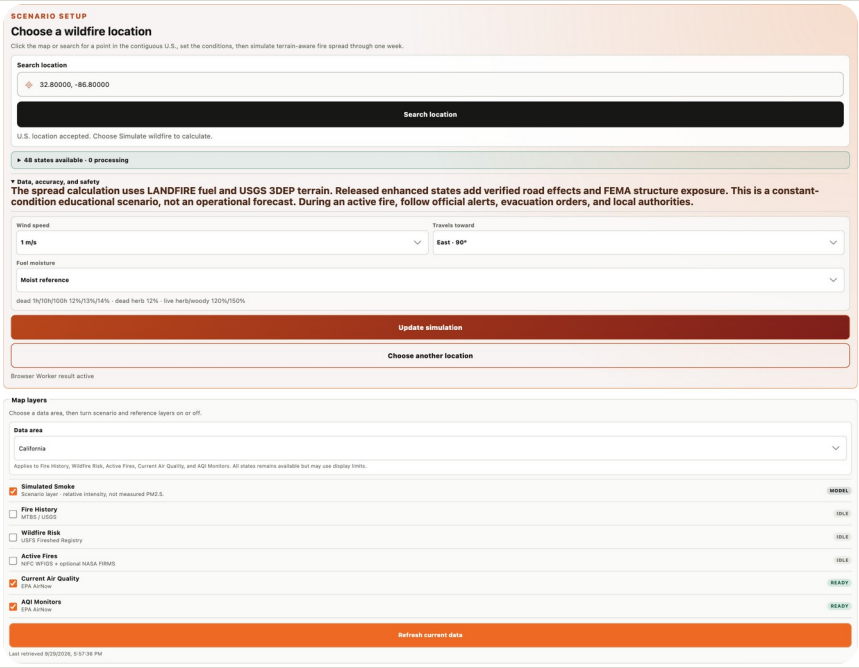
AirNow observations are preliminary public context—not regulatory AQS data and not generated by the fire simulation.

8. Explain the result safely

STANDALONE WEBSITE



EMBEDDED EXPERIENCE



Educational scenario

Not a live fire forecast or evacuation product.

Model assumptions

Constant wind and moisture; road effects are not absolute barriers.

During an incident

Follow official alerts, evacuation orders, and local authorities.

Customer-ready summary: use the simulator to explore a scenario, then use official sources for real-world decisions.