

WILDFIRE ENGINE

Forest Intelligence & Monitoring Platform

Indian Forest Fire Risk Analysis

AI-Generated Intelligence Brief

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Data Sources: NASA FIRMS VIIRS · Open-Meteo · PostGIS · ESA Sentinel-2 CDSE

Model: XGBoost + CatBoost Ensemble VotingClassifier | Features: 14 | Resolution: 0.5deg grid

EXECUTIVE SUMMARY

This report provides a comprehensive analysis of wildfire risk across India's monitored forest reserves. The analysis synthesises data from 0 geo-fenced zones spanning multiple Indian states.

Active FIRMS Fires

135

Monitored Zones

0

Avg NDVI (2025)

0.4514

MONITORED RESERVE ZONES

Zone Type	Count
Beat Boundary	8
Buffer Zones	4
Compartment	24
Core Forest	3
Eco-Sensitive	3
Protected Reserves	7

RESERVE DETAILS

Name	State	Area (ha)
Corbett National Park	Uttarakhand	131800.0
Jyotikuchi Dhopolia Hill	Assam	8500.0
Kanha Tiger Reserve	Madhya Pradesh	94000.0
Kaziranga National Park	Assam	43000.0
Laisong Reserved Forest	Assam	45000.0
Periyar Tiger Reserve	Kerala	92500.0
Similipal National Park	Odisha	275000.0

DATA SOURCES & METHODOLOGY

- NASA FIRMS (VIIRS NOAA-20 NRT) - hourly satellite fire detection refresh across India bounding box.

- Open-Meteo API - real-time temperature, humidity, and wind speed at 2m/10m above ground.
- PostGIS Spatial Database (NeonDB) - 0 zones with GiST spatial indexes, 6-level hierarchy.
- ESA Sentinel-2 (CDSE) - NDVI computation from B04 (Red) and B08 (NIR) bands via Statistical API.

RECOMMENDATIONS

- Maintain real-time FIRMS integration with geo-fence alerting for all monitored zones.
- Deploy field verification teams to zones flagged by AI-assisted encroachment detection.
- Continue seeding 21-year NDVI database for accurate long-term trend analysis.
- Integrate multi-day weather forecasts for forward-looking risk projections.

Generated by Wildfire Engine AI Analysis System

This report contains AI-assisted analysis. Verify critical findings with field data.