



GEONEON WILDFIRE SEVERITY INDEX

Understanding and Predicting Wildfire Severity with AI and High-Resolution Satellite Imagery

Wildfire Severity Predictions

High-Resolution Wildfire Severity Index for Long-Term Preparedness

Wildfires are a growing threat to communities, ecosystems, and infrastructures worldwide. Understanding the potential severity of a wildfire before it occurs is crucial for effective risk management and disaster preparedness.

Geoneon's Wildfire Severity Index leverages advanced AI algorithms and high-resolution satellite imagery to predict fire severity across landscapes. This product provides detailed layers that show the expected severity if a wildfire were to occur, empowering stakeholders to make informed decisions for resource

allocation, mitigation planning, and environmental protection.

Our model considers key parameters including:

- Vegetation type and density to assess fuel availability.
- Topography to understand how the landscape influences fire severity.
- Climate data to factor in long-term precipitation patterns.



HIGH ACCURACY

Our AI-driven models, trained with extensive wildfire data, deliver accurate predictions of fire severity at a granular level, helping you identify high-risk areas with confidence.



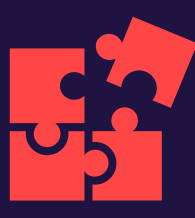
SCALABLE AND GLOBAL

A scalable dataset with transparent pricing, eliminating geographical limitations and minimising the dependency on traditional field measurements or airborne surveys.



QUICK TURN-AROUND

AI-powered processing not only accelerates the initial mapping process but also allows for fast and consistent updates.



SEAMLESS INTEGRATION

Designed for easy integration into any GIS workflow without the need for complex system changes or specialised training.

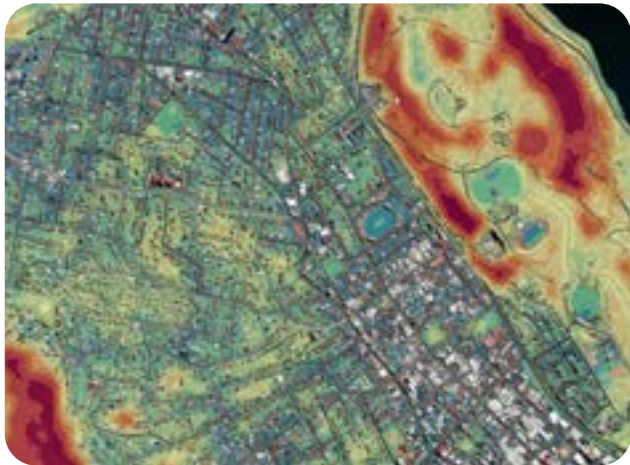
Predictive Insights

Empowering Decision-Makers to Act with Confidence

The ability to predict fire severity before it happens is invaluable for governments, emergency planners, and environmental managers. Geoneon’s Wildfire Severity Index offers a powerful solution for visualising potential wildfire severity across any landscape. This data helps you prioritise resources and develop targeted mitigation strategies.

This global and high-resolution data,

alleviates the necessity for physical site visits and manual or airborne surveys, enhancing the understanding and management of vegetation without geographical constraints. Whether you are managing a small community or a large national park, our high-resolution severity maps provide the insights needed to protect lives, property, and natural resources.



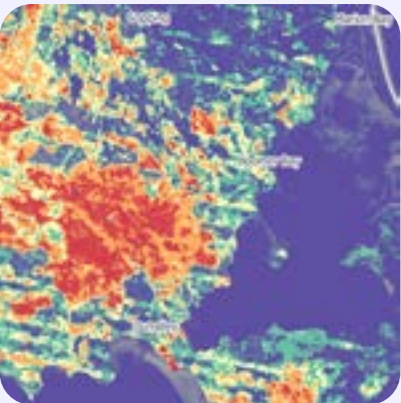
Methodology and Technology

Calibrated with Real-World Fire Data

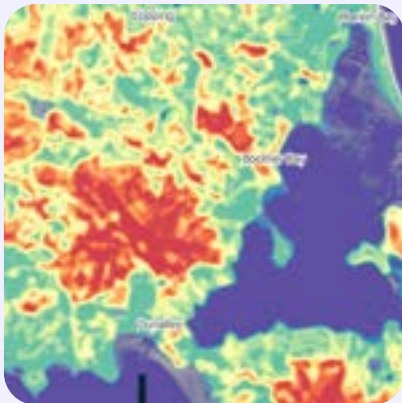
Our Wildfire Severity predictions are powered by sophisticated AI models that have been calibrated using historical wildfire data, remote sensing inputs, vegetation, topography, and climate data. By integrating these diverse data sources, our models can predict the severity of potential wildfires across various land-

scapes.

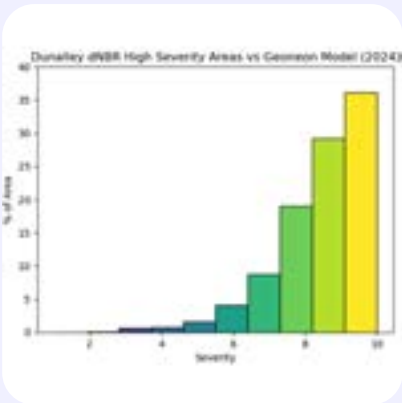
This robust methodology ensures that you receive precise and actionable data, enabling the efficient scanning of large areas to identify and prioritise locations for further assessments and mitigations without the need for extensive initial on-the-ground assessments.



1
delta Normalized Burn Ratio (dNBR)



2
Geoneon Wildfire Severity Index



3
Prediction Evaluation

In January 2013, bushfires devastated Dunalley, Tasmania, destroying 30% of the town. We compared the dNBR with GeoNeon’s Wildfire Severity Index, and our model demonstrated strong predictive accuracy. These case studies highlight our model’s effectiveness in forecasting wildfire severity and its potential to improve long-term preparedness and reduce risks in future events.

Outcomes from Geoneon Wildfire Severity Index

- **Enhanced Preparedness:** Predict wildfire severity to better prepare communities and infrastructure, reducing potential damage and enhancing safety.
- **Targeted Mitigation Efforts:** Focus resources on high-risk areas identified by the index, ensuring that mitigation efforts are both effective and efficient.
- **Optimised Resource Allocation:** Streamline the deployment of mitigation measures, enabling better planning and resource allocation.
- **Cost Efficiency:** Reduce the financial burden of wildfire management by targeting interventions where they are most needed, avoiding unnecessary expenses.
- **Informed Strategic Planning:** Utilise detailed severity predictions to guide long-term planning, policy-making, and land management strategies.

An aerial photograph of Hobart, Tasmania, Australia, overlaid with a wildfire severity index. The map shows a dense urban area with a grid of streets. The severity is indicated by a color gradient: green for low severity, yellow for moderate, and red for high severity. High severity areas are concentrated in the western and southern parts of the city, particularly in the areas of Lenah Valley and West Hobart. The map also shows various landmarks such as St. John's Park Hospital, Aurora Substation, and several schools. The text 'The Future of Wildfire Management' is overlaid on the bottom left of the map.

The Future of Wildfire Management

Imagine a tool that not only sees the landscape as it is but also predicts the severity of a fire before it even starts. Geoneon's Wildfire Severity Index transforms satellite data into actionable insights, empowering you to anticipate and mitigate wildfire risks with unprecedented clarity. Every pixel tells a story—of preparedness, protection, and the power to safeguard what matters most.

Wildfire Severity Monitoring

Current Data for Informed Decisions

In the ever-changing landscape of wild-fire management, relying on outdated models can lead to missed opportunities and increased risks. Geoneon's Wildfire Severity Index ensures that you have access to the most current and accurate data, reflecting the latest conditions on the ground. By incorporating up-to-date vegetation data and other environmental factors, our model provides fast, reliable updates that are crucial for proactive risk management.

Accurate and timely updates empower stakeholders to make informed decisions when they matter most, whether it is planning, implementing, or monitoring mitigation strategies. In a field where conditions can change rapidly, having a model that evolves with those changes is essential for safeguarding lives, property, and natural resources.



The Wildfire Severity Index provides critical insights into the potential exposure of buildings and communities to wildfire hazard. When used in conjunction with other datasets, this information supports more effective risk assessment and targeted protective measures for at-risk areas.

Use Cases

Unlock the Potential of the Wildfire Severity Index

- Community Risk Assessment
- Urban Planning & Development
- Infrastructure Protection
- Environmental & Wildlife Management
- Insurance & Risk Management
- Forestry & Land Management
- Climate Change Adaptation
- Emergency Planning & Response

Pricing Overview

Choose Your Resolution

Choose from a range of pricing options to match your project's scope and requirements. Whether you need high-resolution data for critical areas or broader coverage for regional planning, Geoneon offers flexible pricing plans to suit your needs.

- Standard:** 10m resolution mapping, perfect for baseline severity predictions for large areas.
- High-Res:** 50cm resolution mapping offers detailed severity mapping for critical regions.
- Combined:** A tailored solutions that combine both 10m and 50cm resolutions for comprehensive, multi-scale project insights.

FEATURE	STANDARD	HIGH-RES	COMBINED
Resolution (Pixel Size)	10 metres	0.5 metres	Mix of 10 metres and 0.5 metres
Data Layer Included	Wildfire Severity Index	Wildfire Severity Index	Wildfire Severity Index
Imagery Update Rate	Up to every 10 days	About daily	Every 10 days
Availability of Historical Data	Back to 2015	Back to 2015	Back to 2015
Minimum Order (sq km)	10,000	100	5,000

Ready to transform your approach to wildfire management with unparalleled precision and ease?

Click the link below to talk to our team.

CONTACT SALES TEAM

or email us at sales@geoneon.com



About Geoneon

Geoneon is an innovative technology firm, leveraging Artificial Intelligence (AI) and Earth Observation to transform complex geospatial data into actionable climate risk insights for built and natural asset managers from both and private and public organisations. Our unique solutions bridge the gap between environmental data and reporting, aiding in comprehensive and accurate climate risk disclosure and drive sustainability initiatives. Geoneon works across a diverse range of sectors, including utilities, cities, government agencies, and international organisations, reinforcing our ability to handle challenges of varying scales and complexities with proficiency.

About this document

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