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OzFuel

A spaceborne sensor to lead
Australia's bushfire preparedness
with a global first dataset



OzFuel



Bushfire
Research
Centre of Excellence

Catastrophic bushfires are increasing all over the world. It's undeniable that Australia faces a future living with bushfires. Whilst billions have been invested in responding to active bushfires, a critical gap remains: the ability to map and understand the Australian landscape flammability before a fire starts.

OzFuel is designed to provide a missing layer of bushfire intelligence: information about vegetation flammability before ignition, so agencies can prepare earlier, target surveillance better, and strengthen operational decision-making.

OzFuel is a spaceborne sensor, designed to be sensitive to leaf-level flammability traits in Eucalypt trees as well as being capable of detecting changes in the flammability traits of other bushfire fuels. This complements systems focusing on active fire monitoring and early fire detection to provide a much more complete picture of bushfire risk.

OzFuel will allow industries and agencies to see the risk before the fire.

Developed at The Australian National University (ANU), OzFuel is a proposed sovereign satellite capability specifically designed to measure the properties of vegetation that determines how readily it can ignite and how intensely it may burn.

The dataset collected by the OzFuel sensor would mitigate fire risks as it would give end-users better intelligence about where fuels are becoming dangerous, how rapidly conditions are changing, and where resources may be needed before ignition occurs.

Marta Yebra, Director,
ANU Bushfire Research
Centre of Excellence

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There are a lot of studies that state, in natural disasters, \$1 invested in prevention results in \$10 of benefits into the damage that is avoided. ”



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How does OzFuel work?

Australia does not have a sovereign, purpose-built capability to routinely measure how dry and flammable Australia's vegetation is at the scale needed for operational bushfire preparedness. Australia relies heavily on observations from international satellites that are not attuned to the specific landscape and flora of Australia and do not provide all the information needed for flammability readings.

OzFuel would use specialised satellite measurements to monitor fuel moisture and other vegetation characteristics associated with flammability. It would help fire and land management agencies answer practical questions such as: Where is vegetation becoming critically dry? Where is fire risk increasing unusually quickly? Where could a new ignition become difficult to control? How are fuel conditions changing across the landscape?

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OzFuel will deliver decision-ready intelligence that reduces financial exposure, strengthens resilience and enables smarter investment in bushfire preparedness.”

Benefits for High-Value Sectors

OzFuel can turn vegetation flammability data into predictive risk intelligence for critical infrastructure, supply chains and high-value assets. In turn this enables organisations to act before bushfire risk becomes disruption.

By identifying where fuel conditions are changing and risk is escalating, OzFuel will enable organisations to shift from reactive response to proactive risk management targeting resources, maintenance and mitigation where they are needed most.

For infrastructure and supply-chain operators, earlier intelligence will help protect assets, prioritise vegetation management, safeguard critical routes and reduce costly service disruptions.

For insurers and risk managers, dynamic fuel-condition data will strengthen risk modelling, exposure monitoring and portfolio-level decision-making.

The opportunity goes beyond satellite imagery. OzFuel will deliver decision-ready intelligence that reduces financial exposure, strengthens resilience and enables smarter investment in bushfire preparedness. See the risk before the fire.

The next step is to deploy a pathfinder mission, targeting key areas across the Australian continent. This will prove OzFuel's potential and the impact of the data. In conjunction with our industry and end user partners, we are seeking \$15 million for the pathfinder mission.

If you are interested in partnering with us on OzFuel, please contact:



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