

“ FIRE SEVERITY ACROSS SOUTHERN AUSTRALIA HAS BEEN CONSISTENTLY WORSE THAN THE LONG-TERM AVERAGES WOULD SUGGEST. ”

IAN BAIL, WANNON WATER

# A SUNBURNT COUNTRY

Above: Aerial view of bushfire in valley, Echo Point, Blue Mountains, Australia. Right: Water Tanker helicopter protecting houses during a bushfire.



THE DEVASTATING BUSHFIRES THAT RAGED ALONG THE EAST COAST OF AUSTRALIA IN 2019 AND 2020 HAVE BROUGHT THE ISSUE OF FIRE AND LAND MANAGEMENT INTO SHARP FOCUS. THE CATASTROPHIC EFFECTS OF THIS NATURAL DISASTER UNDERSCORED THE NEED FOR THE WATER SECTOR TO ACTIVELY ADDRESS THE STEPS IT CAN TAKE TO BECOME MORE RESILIENT IN DEALING WITH DROUGHT AND EXTREME WEATHER CONDITIONS.

By Martin Kovacs

Water provision professionals are well aware of the effects fire damage can have on catchments and water quality. As landowners and business managers, utilities need to ensure they are adequately prepared for fire and other environmental hazards, and typically work in conjunction with a range of organisations to assess risks, conduct maintenance and determine strategic goals.

The Australian Water Association, in partnership with the UNSW Global Water Institute, the NSW Water Directorate and the Water Services Association of Australia, conducted a survey of water utilities and regional councils affected by the 2019-2020 'Black Summer' fires.

AWA CEO Jonathan McKeown said the broader water sector needs to ensure regional water providers have the resources to maintain resilience in times of extreme weather conditions and natural disaster.

"What we hope to achieve with these results is a way forward that empowers water utilities and regional councils to become resilient in the face of extreme weather events and adverse conditions," he said.

## PLANNING AHEAD

The survey results reveal a clear difference between smaller regional councils and larger water utilities in their capacity to deal with bushfires and maintain water supply.

"The drought and the recent fires have set up the perfect storm. It's been a real wake-up call to a number of local utilities," AWA President Carmel Krogh said.

"[It] highlights the need for more guidance and training to develop resilience as we move forward to the next 10 years. The question and the challenge I have for us all is: how do we change this?"

"The models that we have need changing. We have to recognise that areas of low population density may need a hand up, not a hand out."

Fire poses a range of threats to operations, including direct impacts on water and sewerage assets and services, short and long-term reductions in the yield and quality of water supplies, and indirect impacts on catchments.

Wannon Water General Manager – Service Delivery Ian Bail highlighted the importance of detailed planning, with Australia predicted to experience an increasing number of bad fire weather days and longer lasting fire seasons.

"Fire severity across southern Australia has been consistently worse than the long-term averages would suggest," Bail said.

"Wannon understands that our region will also be strongly impacted by reduced run-off as a result of climate change, and it is critical our long-term planning makes use of these predictions."

Bail said Wannon's Bushfire Plan, broadly encompassing prevention (including preparedness), response and recovery, forms a critical element of its approach, with the utility also involved in a number of local, regional and state planning committees.

Bail advised that Wannon provides feedback on the Fire Operations Plan released each year by the Department of Environment, Land, Water and Planning and Parks Victoria, and said the utility also has a number of assets listed in the Victorian Fire Risk Register (VFRR).

"The Emergency Management Manual Victoria outlines the roles that different organisations play in emergency management, including water corporations," he commented.

"Municipal committees develop integrated fire management plans for the local regions, using the VFRR as the state register of fire risks.

"The VFRR identifies assets at risk from wildfire, assesses the level of risk, and provides a range of treatments to mitigate the risk."

Preventative maintenance also involves collaborating with local Country Fire Authority (CFA) brigades, Forest Fire Management Victoria and Parks Victoria to undertake fuel-reduction burning.

"Fuel reduction and site maintenance are important activities to mitigate the risk of bushfire to individual assets," Bail said.

"Wannon directly manages around 2000 hectares of land, and formal assessments have been undertaken to determine sites at higher risk from bushfires." ►



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“OUR CUSTOMERS HAVE AN EXPECTATION THAT WE WILL, WHERE REASONABLY PRACTICABLE, MAINTAIN CONTINUITY OF SUPPLY DURING BUSHFIRE EVENTS.”

EVAN HAMBLETON, WATER CORPORATION

An early season habitat burn-off, a controlled hazard reduction fire.

## CASE STUDY

Kimberley Land Council (KLC) acting CEO Tyrone Garstone advised that the KLC's Indigenous Fire Management Program facilitates work with traditional owners and Indigenous ranger groups across native title areas.

With traditional owners having used fire to manage land for thousands of years, Garstone said the program preserves cultural burning practices and maintains adequate fire breaks to protect assets.

Garstone said the techniques employed utilise both old and new technologies, with the majority of burning taking place during the early dry season, while fire can also be used throughout the year for different purposes.

While traditional owners perform fire walks using firesticks, allowing for careful burning where required, Garstone said new techniques also “incorporate satellite imagery and remotely sensed data on vegetation to improve environmental outcomes”.

With WA water sources often in native title areas, Garstone said Indigenous rangers can assist by performing protective burning around infrastructure, while late-season firefighting is also often conducted with Indigenous ranger and traditional owner assistance.

“Early ‘right-way’ fire management, with an emphasis on leaving shrubs and trees intact, and providing large remnant patches of perennial grasses in fire scars, can assist in controlling sediment run-off into water storages – with the emphasis being on protecting environmental and cultural assets, there are obvious shared benefits,” he said.

“Aboriginal people have always maintained a positive relationship with fire, rather than treating it as something which should be avoided,” Garstone said.

“Aboriginal people have understood fire is an essential part of the Australian landscape, and used it effectively to maintain balanced and fire-resilient ecosystems.”

## LONG-TERM POLICY

Bail said Wannon's Dunkeld Sewage Treatment Plant long-term management plan, developed in collaboration with the Glenelg Hopkins Catchment Management Authority, utilises controlled burning as part of its objective to maintain and improve natural assets.

With the area home to several nationally threatened species, the burning is used to both reduce introduced species and enhance native flora and fauna.

“Wannon is one of the first private land managers to effectively utilise ecological burning as a management tool for this vegetation type, and a number of partnerships have been developed,” Bail said.

The program, established via a partnership with the local CFA, is now being extended to other areas of Victoria, offering other Australian utilities a case study for effective land management.

“It is a practical demonstration of using fire to achieve both ecological and asset protection outcomes on private land,” Bail said.

“This complements the established practices of implementing controlled burning regimes on public land, which have primarily focused on the protection of people and property.” ▶

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INAPPROPRIATE  
FIRE REGIMES  
ARE CAUSING A  
DIRECT IMPACT,  
THEY'RE BURNING  
THE WRONG WAY  
AT THE TIME, AND  
THEN AN INDIRECT  
IMPACT THROUGH  
THE SUPPRESSION  
OF FIRE. ”

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### EXTREME RISKS

Water Corporation Assets Planning and Delivery General Manager Evan Hambleton also stressed the importance of long-term planning in dealing with extreme weather conditions.

As a significant landowner and manager across WA, Hambleton advised that Water Corporation is required to manage its land and assets in compliance with state-based bushfire acts and bushfire prevention regulations.

“Our customers have an expectation that we will, where reasonably practicable, maintain continuity of supply during bushfire events,” Hambleton said.

“Wildfire poses a significant risk to water and wastewater infrastructure, and has also at times caused damage to infrastructure and associated power supply, resulting in a loss of service delivery to the community at critical times.”

Hambleton said Water Corporation's Bushfire Prevention Strategy and Implementation Plan has been developed in conjunction with experts, consultants and land managers.

“There are a number of ways that Water Corporation manages fuel

loads and bushfire risk on land and assets. This includes developing bushfire management plans, vegetation management strategies, clearing or establishing fire breaks and controlled burning,” he said.

“Detailed fuel load assessments are conducted where land meets high-risk criteria, and risk-reduction gap treatments and site maintenance regimes are developed and implemented.”

### CHANGING TACK

Water Corporation is developing a five-year program for 33,000 parcels of land, harnessing the latest available data, science and software to ensure evidence-based decisions are made to reduce bushfire risk.

“The process requires automation, and a Bushfire Risk Assessment Tool has been developed based on an objective risk-assessment methodology to make decisions about bushfire risk reduction on Water Corporation land. The output of this tool, which is a GIS spatial layer containing data on each piece of land as well as a risk rating, can then feed into the investment decision processes to mitigate

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bushfire risk," Hambleton said.

Along with utilising modern technologies, Hambleton said Water Corporation's collaborative approach has also seen it work in conjunction with traditional owners.

"An example is in the Dampier Peninsula, where hazard reduction burns are planned for the Broome borefield, and where we have engaged with the Yawuru traditional landowners to be part of the teams undergoing the work," he said.

"We anticipate that this engagement will expand to other traditional owners, as the traditional land management techniques are relearned in other parts of the state."

## CULTURAL BURNING

Firesticks Alliance Indigenous Corporation CEO Oliver Costello pointed to the potential for the water sector to utilise cultural burning as a land management tool.

Costello described cultural burning as a holistic process, encompassing a range of factors, including water systems, plants, animals and people.

"Cultural fire management is the

cultural fire regime that has been in place in Australia for thousands of years. The way we burn, we protect the canopy, and we protect the right vegetation compositions, which improves moisture retention," Costello said.

Costello highlighted concerns that incorrectly undertaken hazard reduction and prescribed burning can not only lead to erosion and loss of moisture, but also wildfires.

"Inappropriate fire regimes are causing a direct impact, they're burning the

wrong way at the time, and then an indirect impact through the suppression of fire. So, then a wildfire comes that has an immediate impact," he said.

Costello highlighted the importance of supporting a cultural framework that sees traditional owners in control of their own fire programs.

"When you have people in place, they'll teach local landholders and agencies. People want to share. It's about maintaining relationships through the cultural authorities," he said. ♠



The Three Sisters and large smoke cloud at a bushfire in the Blue Mountains National Park, Australia.

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