2 February 2024

Standing Committee on Environment, Climate Change and Biodiversity
ACT Legislative Assembly

e: LAcommitteeECCB@parliament.act.gov.au

Dear Committee Chair and Members

The ACT's bushfire preparedness

Forestry Australia is the professional body representing over 1000 members who are forest scientists, professionals and managers operating in all aspects of forest and natural resource management, across Australia and internationally. We appreciate the opportunity to make a submission on the topic of the ACT's bushfire preparedness.

Forestry Australia has published a Position Paper on Forest Fire Management (2023) and a Policy Statement on The Role of Fire and its Management in Australian Forests and Woodlands (2017). Both are relevant to the Inquiry's Terms of Reference, and are attached.

The key points that Forestry Australia makes in relation to the Terms of Reference are:
- in relation to **ToR A and B**, the factors contributing to bushfires and fire risk, and the impacts of bushfires, in Australia are generally well-known and documented (eg 2004 COAG Bushfire Inquiry, 2020 Royal Commission into national Natural Disaster Arrangements; various ACT agency publications and academic papers), with the caveat that more extreme climate conditions can drive hitherto unprecedented fire behaviour, as evidenced in the 2019-20 Black Summer fires;
- as a consequence, in relation to **ToR C**, bushfire risks and impacts on ACT environments and human communities can be expected to increase, necessitating strengthening the resilience of both environmental and human communities. Forestry Australia members were able to observe some of the environmental impacts on a field trip through Namadgi National Park in September 2020, where two particular issues were notable. The first was the effect of prescribed fire in reducing wildfire impacts on ecological communities in parts of the landscape; the second was the impact of repeated severe fire *on Eucalyptus delegatensis* communities, and the need to develop strategies to address this potential loss of species;
- these risks and impacts in turn necessitate, **in relation to ToR D**, proactive management of ACT landscapes across all tenures, particularly but not only of the lands to the west of Canberra, and of the western urban interface. The history of fire impacts on the city, most recently in January 2003, and on the environment of Namadgi National Park, most recently in early 2020, illustrate both the need for and challenges of such management.

Traditional cultural practices should be more prominent in landscape management, complemented by strategic management of the landscape and of fuel loads. In the ACT, as elsewhere, resources and opportunities typically limit the achievement of these strategic goals. Technological developments, such as those for remote detection being developed by ANU researchers, can assist in risk reduction, but are complements rather than substitutes for landscape planning and management.
In addition, as the 2004 COAG Bushfire Inquiry noted (Fig 13.1), a typical 'bushfire cycle' after each major fire event results in growing complacency institutionally and in communities. Given the demographic changes in Canberra since 2003, and the expansion of the western edge of the city (as a consequence, in part, of the 2003 fires), community preparedness in the Western Edge suburbs is likely to be suboptimal. These risks are exacerbated by planning decisions which do not appear to take sufficient account of bushfire risk or the recommendations of previous inquiries (eg the design of Denman Prospect adjacent to Bluetts Block);

- in relation to **ToR E**, the condition of key elements of ACT landscapes, of emergency and management access routes, and of progress against strategic and operational goals, should be assessed regularly and reported publicly. It is not clear that this remains a priority for the ESA;
- in relation to **ToR F**, the apparent lack of coordination between agencies responsible for bushfire risk management and response and those responsible for planning, notably in relation to the Western Edge;
- in relation to **ToR G**, effective cooperation with NSW and the Commonwealth remain imperative, and should focus more strongly on the whole cycle of bushfire risk management (eg as recommended by the COAG Bushfire Inquiry) rather than primarily on response.

Forestry Australia would be pleased to discuss this submission and related matters with the Committee.

Yours sincerely

Peter Kanowski
Chair, Forestry Australia, ACT & Region

enc

FOREST FIRE MANAGEMENT

CONTEXT

Fire has been part of the Australian environment for millions of years; it is an essential element and can't be removed without ecological consequences. Aboriginal people developed appropriate fire management practices to maintain their culture and Country. Australia has experienced an increased occurrence of severe bushfires, that result in substantial impacts on life, property, forest biodiversity, water quality and quantity, forest products and uses as well as on the health and resilience of forest ecosystems. Australia's knowledge and systems of forest fire management are based on decades of bushfire research and lessons from previous bushfire inquiries. The COAG-endorsed National Bushfire Management Policy Statement for Forests and Rangelands brings this knowledge together to provide appropriate goals and strategies for reducing the occurrence, severity, and impacts of bushfires as well as for enhancing the resilience of forest and rangeland ecosystems.

FORESTRY AUSTRALIA ADVOCATES THE FOLLOWING:

- Regardless of tenure, all land managers should actively manage forests and rangelands to minimise the risk of, and undesirable impacts from, severe bushfires on environmental, social, cultural and economic values.

- Greater awareness within communities is needed that fire has an important and ongoing role in maintaining biodiversity and ecological processes in Australian forests and rangelands.

- Land managers should facilitate increased engagement and empowerment of Traditional Custodians to implement cultural burning practices integrated with science-based approaches to achieve more ecologically sensitive and culturally appropriate approaches to forest fire management.

- Forest fire management strategies and programs should be prepared at the landscape level based on the best available information about fire behaviour and appropriate fire regimes for maintaining forest ecosystem health. They should apply the principles of 'prevent, prepare, manage'; relying on 'response and recovery' only as needed.

- Landowners need a long-term commitment to implement the strategies documented in the National Bushfire Management Policy Statement for forests and rangelands. Their progress towards meeting the national goals should be reviewed annually using a consistent national framework of key performance indicators relevant to Specific, Measurable, Achievable, Relevant and Time-bound objectives.

- Protection of plantations from bushfires must be a high priority in bushfire management strategies and responses.

- Increased investment in prevention and preparedness activities is essential to achieve enhanced management of fire in the landscape and address the increased risk of more frequent and severe bushfires. This should include:

    - Well-planned, risk-based strategic programs of fuel reduction, silvicultural management, fuel breaks and track maintenance, with appropriate public consultation;

    - Prescribed burning by trained and experienced land managers, complemented where possible and appropriate by reintroduced Traditional Custodians' fire management practices; and

    - Surveillance and bushfire response, appropriate to the threat, by well-trained personnel, resourced with equipment suited to rapid and aggressive on-ground response, day and night, with reliable communication systems and efficient and effective aerial support.

SUPPORTING NOTES

In Australian forests and rangelands, fire is integral to maintaining ecological processes such as nutrient cycling, habitat formation and the maintenance of ecosystem health and resilience.

The National Bushfire Management Policy Statement indicates that *"Inappropriate fire regimes (especially ones that predispose the landscape to catastrophic fires) exacerbate the risk of major economic impact on regionally critical industries").* Uncontrolled bushfires can lead to the loss of life, homes, infrastructure and services; loss of amenity, habitat, soil and soil nutrients; loss or degradation of other forest values such as timber; and impact on water flows and water quality. Smoke from bushfires or planned burns can reduce visibility, adversely affect human health, and damage crops, such as wine grapes, across regions.

In many fire-dependent ecosystems, the frequency, intensity and seasonality of fire determines which species persist and which disappear from an ecosystem. Fires at too-short or too-long intervals can lead to a loss of flora and fauna species. Inappropriate fire regimes are the second-most cited reason for threatened species listings in Australia. Forest scientists are increasingly recognising that the increased frequency and severity of large bushfires is having major impacts on the forest biodiversity.

FOREST FIRE MANAGEMENT

In forests the spread and intensity of bushfires varies with vegetation type, weather conditions, topography, fuel load and characteristics. Of these, the only variable within human control is fuel level, which is influenced by the time since it was last burnt. Well-planned prescribed burning is an effective tool for managing forest fuel accumulation, as well as for maintaining ecosystem processes and achieving silvicultural outcomes. Forest fuels can also be reduced through physical removal, mechanical and chemical control treatments and in some situations by grazing.

Research has shown that the severity of the 2019-20 bushfires was significantly decreased in about half of the areas in which prescribed burning had been conducted within the past five years. Prescribed burning is implemented to achieve defined objectives and under appropriate weather conditions. Areas in which prescribed burning has been conducted provide multiple benefits when bushfires occur. These include:

- Protection of assets, houses and infrastructure
- Increased safety and success of direct attack suppression
- Increased options for safely implementing large backburns
- Reduced impacts on flora and fauna caused by intense fire
- Reduced soil erosion in water catchments

Conducting prescribed burns can be challenging. Seasonal 'windows' of suitable weather conditions are becoming shorter; the spread of human settlement has introduced concerns about community health, safety and amenity;

and environmental regulation constraints may need to be resolved first. Furthermore, well-resourced, experienced personnel with local knowledge are not always available to conduct prescribed burns that meet burn objectives and enjoy widespread community acceptance.

The integration of Aboriginal cultural burning practices with forest science-based practices and technologies offers the prospect of implementing widespread, more frequent, low-intensity, and patchy managed fires to reduce bushfire risk and create sustainable biodiverse landscapes resilient to climate extremes.

To protect human life and biodiversity, fire must be strategically planned and managed at a landscape scale and over long timeframes, even though its impact, at any one time, may be local and immediate. To this end, fire in forests must be supported by legislation, government policy and ongoing research and be managed by professionally trained, experienced, and accredited forest managers in partnership with Traditional Custodians, not just emergency service agencies.

With the reduction of native forest timber harvesting across Australia, commercial forest plantations have become critical for meeting Australia's future timber requirements and maintaining private sector investment and prosperous regional economies. In the Black Summer bushfires 129,000 hectares of commercial plantations were burnt, including about one-third of the established plantations in three regions of NSW, which will cause significant impacts to long-term timber supplies in those regions.

Further reading

Forest Fire Management Group, 2014, National Bushfire Management Policy for Forest & Rangelands. Accessed June 2023. https://www.forestry.org.au/fire-resources/

Forestry Australia, 2022, 'Turning the Goals of the National Bushfire Management Policy Statement into Objectives and Key Performance Indicators.' Viewed June 2023. https://www.forestry.org.au/nbmp-objectives-kpis/

Forestry Australia, 2022, Forest Fire Management Resources. Accessed June 2023. https://www.forestry.org.au/fire-resources/

Davey, SD & Sarre AD, 2021, 'Fire and Australian Forestry – key papers published since 1975, *Australian Forestry*, 84:3, pp. 105-107, DOI: 10.1080/00049158.2021.1970407.

Morgan, GW, Tolhurst, KG, Poynter, MW, Cooper, N, McGuffog, T, Ryan, R, Wouters, MA, Stephens, N, Black, P, Sheehan, D & Leeson, P, 2020, 'Prescribed burning in south-eastern Australia: history and future directions,' *Australian Forestry,* 83(1), pp.4-28. DOI: 10.1080/00049158.2020.1739883.

ABARES, 2020, 'Insights: Stocktake of Fire in Australia's forests, 2011 to 2016.' Viewed June 2023 https://www.agriculture.gov.au/abares/products/insights/stocktake-of-fire-in-Australias-forests-2011-2016

Bennett, L, Kasel, S, Fairman, T & Jiang, R, 2020, 'Why Australia's severe bushfires may be bad news for tree regeneration,' *Australasian Plant Conservation: Journal of the Australian Network for Plant Conservation, 28*(4), pp.10-12.

FAO, 2006, 'Fire Management: Voluntary guidelines. Principles and strategic actions. Fire Management Working Paper 17,' *Food and Agriculture Organization of the United Nations.* Viewed June 2023. https://www.fao.org/3/j9255e/j9255e00.htm

FFMG and AFAC, 2014, 'National Burning Project: Prescribed Burning Guidelines and Frameworks. Viewed 30 June 2023 https://knowledge.aidr.org.au/resources/national-burning-projectprescribed-burning-guidelines-and-frameworks/

Hislop, S, Stone, C, Haywood, A & Skidmore, A, 2020, 'The effectiveness of fuel reduction burning for wildfire mitigation in sclerophyll forests,' *Australian Forestry,* 83 (4) pp. 255-264. DOI: 10.1080/00049158.2020.1835032

Ximenes, F, Stephens, M, Brown, M, Law, B, Mylek, M, Schirmer, J, Sullivan, A & McGuffog, T, 2017, 'Mechanical fuel load reduction in Australia: a potential tool for bushfire mitigation,' *Australian Forestry* 80 (2) pp. 88-98. DOI: 10.1080/00049158.2017.1311200

The Role of Fire and its Management in Australian Forests and Woodlands

IFA Forestry Policy Statement 3.1

The Institute of Foresters of Australia (IFA) advocates a better appreciation of the important and complex role that fire plays in the evolution and maintenance of Australian ecosystems and its potential to significantly impact on social, economic and cultural values. The IFA also advocates for better management of bushfires and prescribed fires, including the need for further scientific research and the systematic monitoring and review of fire management with the results being made available to policy makers, land managers, fire services and the community.

Fire is one of the most important factors in the ecology of Australian forests and woodlands. Hence, the managers of both public and private forests must understand the role of fire both in meeting land management objectives and in minimising the potential for adverse impacts on human life and property.

The Issues

Fire is an essential element of the Australian natural environment that cannot be removed. It is integral to maintaining environmental processes such as nutrient cycling, adaptation and evolution via gene expression and redistribution, faunal and floral composition and structure, hydrological processes and habitat formation and maintenance.

However, uncontrolled fire can also be destructive, potentially leading to human death, loss of houses, infrastructure and services, loss of amenity, impact on water flows and water quality, loss of habitat, loss of soil and soil nutrients and loss or degradation of other forest values such as timber. The impact of fire can also extend beyond the burnt area with smoke from bushfires or planned burns having potential to cause visibility problems, adversely affect human health, and damage crops such as wine grapes.

To manage for the protection of human life and biodiversity, fire must be viewed and managed at a landscape scale and over long timeframes even though its impact, at any one time, may be local and immediate. To this end, fire in the natural environment must be managed by professionally trained, experienced and accredited forest managers, not just emergency service agencies.

There has been an increasing reliance on the use of tools and technology, such as aircraft, firefighting vehicles, fire suppression chemicals, computer models and voluntary evacuation ("leave early") to control fires and reduce the loss of human life. This has been at the expense of rapid and aggressive early fire control using experienced and well trained ground crews in direct attack strategies early in the fire's development which, in most cases, is more likely to be effective than indirect attack strategies.

Position Statement

The IFA recognizes that:

- Fire is an essential ecological factor, which has an important and ongoing role in maintaining biodiversity and ecological processes in Australian forests and woodlands.

- The ecological effects of fire vary according to the season, frequency, intensity, patchiness and scale of burning within a landscape.

- Bushfires can have effects that are significant at local, regional and global spatial scales and operate on timescales from the immediate to impacting over decades or centuries.

- Bushfires can be a very real threat to human life, property, economic and cultural values, social function and environmental values.

The IFA considers that:

- Every fire management program should be objectives-based and outcome-focused. The objectives should be set out in management plans based on legislative requirements, government policy and public consultation. Objectives must cover the protection of human life, property, economic and cultural values, social function and environmental values.

- Short-term fire management objectives should be consistent with long-term, landscape-scale fire and land management objectives.

- A decision to deliberately exclude fire from naturally fire-prone forests and woodlands will have adverse consequences for ecosystem productivity and function in the long-term.

- Because of the complex interaction of factors affecting fire and land management, there can be some uncertainty about the outcomes of different strategies and operations, therefore a risk-based assessment is a good way to approach fire management. Given the uncertainty in all the contributing factors and their interactions, the application of sound risk management principles gives the best likelihood of achieving specific management objectives. Having an outcomes focus, with well-defined performance measures, will lead to a system whereby the results of fire management strategies can be identified and measured over a long timeframe.

- The Australian, State and Territory governments have a responsibility to provide adequate resources for coordinated research and systematic monitoring of the behaviour, environmental effects and social impacts of bushfires and use of fire for managing forests and woodlands, and to provide inter-generational continuity of skills, capability and resources.

- The focus in all fire management programs should be around Prevention, Preparedness, and Fire Regime management and there needs to be a move away from relying primarily on Response and Recovery.

- The use of fire in the landscape by many Traditional Owners is acknowledged. Traditional knowledge and burning practices have great potential to contribute to positive social and environmental outcomes. Fire management can be used to reintroduce traditional knowledge to communities where it has been lost.

- All fire management operations should put a high priority on fire-fighter safety. However, the level of risks taken should be commensurate with the potential benefits to be gained, cognisant of the fact that fire-fighting is inherently risky and that trying to avoid all risk may inhibit the capacity to control fire in a timely manner and result in greater impacts and losses.

- Fire-fighting aircraft, tools and technology are not a substitute for effective on-ground fire-fighting. The primary focus of fire control should always be around on-ground efforts with aircraft, tools and technology being used to make on-ground efforts safer and more effective.

- Planned burning must be undertaken to enable forests and woodlands to be managed sustainably in the long-term, including the ability to evolve and adapt to climate change, physical disturbances, pests and diseases.

- Communication and consultation between forest managers, emergency response agencies and other stakeholders is vital to establish management objectives, including levels of "acceptable bushfire risk" for successful planning and fire management activities.

- Adaptive fire management ("learning by doing", monitoring and recording with scientific analysis) should always be used.

- Many aspects of forest fire management are common globally. It is important to exchange knowledge and expertise nationally and internationally to extend the range and depth of knowledge and experience in bushfire policy, research and management.

Supporting Documents

AFAC (2012). *Bushfire Glossary*. Prepared by the Rural and Land Management Group for AFAC Agencies. Australasian Fire and Emergency Service Authorities Council. 36pp. http://www.afac.com.au/docs/default-source/doctrine/bushfire-terminology.pdf

AFAC (2016). *National Position on Prescribed Burning. A report sponsored by the National Burning Project*. Australasian Fire and Emergency Service Authorities Council, East Melbourne, Vic. Australia. AFAC Publication No. 2036, 6pp. https://www.afac.com.au/initiative/burning

Department of Environment and Conservation (2008). *Code of Practice for Fire Management. Western Australia*, Dept. Environment and Conservation. 26pp. https://www.dpaw.wa.gov.au/images/documents/fire/fms-code-of-practice.pdf

Department of Sustainability and Environment (2012). *Code of Practice for Bushfire Management on Public Land.* Victoria, Department of Sustainability and Environment. 44pp. https://www.ffm.vic.gov.au/__data/assets/pdf_file/0006/21300/Code-of-Practice-for-Bushfire-Management-on-Public-Land.pdf

Forest Fire Management Group (2014). *National Bushfire Management Policy Statement for Forest and Rangelands*. Prepared by The Forest Fire Management Group for The Council of Australian Governments. 28pp. http://www.afac.com.au/docs/default-source/assets/national-bushfire-management-policy.pdf

Pyne, S.J. (2006). *The Still-Burning Bush*. Scribe, North Carlton, Victoria, Australia. 137pp.

South Australia (2012). *Code of Practice for Fire Management on Public Land in South Australia*. South Australia, Government. 12pp. http://www.environment.sa.gov.au/managing-natural-resources/fire-management/bushfire-risk-and-recovery