



Australian Government  
Department of Agriculture,  
Water and the Environment

# **State Party Report on the state of conservation of the Greater Blue Mountains Area World Heritage property (Australia)**

Property ID 917

In response to the World Heritage  
Committee decision 43 COM 7B.2

For submission by 1 December 2020

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Department of Agriculture, Water and the Environment

GPO Box 858 Canberra ACT 2601

Telephone 1800 900 090

Web [awe.gov.au](http://awe.gov.au)

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# Executive summary

This report responds to a request from the World Heritage Committee in 2019 (Decision 43 COM 7B.2 at Appendix 1) for a State Party Report on the State of Conservation of the Greater Blue Mountains Area to be submitted for consideration in 2021.

The Greater Blue Mountains Area (GBMA), located in the state of New South Wales (NSW) (Map 1), was listed in 2000 on the basis of World Heritage criteria (ix) and (x) for its diversity of species and habitats and as a centre of diversification for the Australian scleromorphic flora, particularly the genus *Eucalyptus*. The World Heritage property, comprised of eight protected areas, consists of 1.04 million hectares of sandstone plateaux, escarpments and gorges dominated by temperate eucalypt forest.

The Australian and NSW governments are deeply committed to protecting the Outstanding Universal Value of the property. There is a strong legislative system in place for the protection and management of the place. As a World Heritage property, the GBMA is protected as a 'matter of national environmental significance' under Australia's national environmental law, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The EPBC Act protects World Heritage properties from the impacts of development activity, even if they originate outside the property.

A single State government agency, the NSW Department of Planning, Industry and Environment, manages the area, primarily through the NSW National Parks and Wildlife Service. All the reserves that comprise the GBMA are also protected under, and subject to, the *National Parks and Wildlife Act 1974* and the *Wilderness Act 1987* and other relevant state legislation. The *Greater Blue Mountains World Heritage Area Strategic Plan 2009* provides an over-arching framework for the property's management, protection, interpretation and monitoring. A new Strategic Plan is in preparation.

The Australian and NSW Governments are continuing to implement programs and policies for the protection of the Outstanding Universal Value of the property, including to address the challenges from a changing climate and the unprecedented bushfire season in 2019-20. In April 2020, the Australian Government provided an update to the World Heritage Centre on the conservation efforts being undertaken following the 2019-20 bushfires that affected 71 per cent of the GBMA. The Australian and NSW governments have implemented comprehensive responses to the bushfires, comprising immediate response and medium to longer-term recovery action. This is backed by substantial investment in impact assessment, on-ground recovery action and management planning.

Consistent with Decision 43 COM 7B.2, the Australian Government has commissioned Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia's national science agency, to conduct an assessment of the potential cumulative impacts of existing and planned mining projects in the vicinity of the GBMA. This assessment is well advanced. No mining activity, including exploration, occurs or is permitted within the property.

A detailed Environmental Impact Statement (EIS) is being prepared for the proposal to raise the Warragamba Dam wall. This assessment is fully assessing all potential impacts on the Outstanding Universal Value of the property, and its other values including Aboriginal cultural

heritage. This EIS will address statutory requirements under national and State legislation. The EIS will be submitted to the World Heritage Centre for review by IUCN at the time it is released for public comment. The EIS process is consistent with IUCN's World Heritage Advice Note on Environmental Assessment.

The Warragamba Dam is downstream and outside of the World Heritage property. The proposal is for flood mitigation downstream of the dam. The Australian Government notified the World Heritage Centre about this proposal in September 2017 in accordance with Paragraph 172 of the World Heritage *Operational Guidelines*.

In response to the challenges posed by global climate change, the Australian Government has commissioned the CSIRO to undertake an assessment of the vulnerability of Australia's World Heritage properties to climate change. This assessment, due to be completed in the first half of 2021, will inform adaption planning for the GBMA.

This report also highlights a number of significant conservation achievements in the GBMA since it was inscribed on the World Heritage List in 2000.

# Résumé

Ce rapport répond à une requête du Comité du Patrimoine mondial en 2019 (décision 43 COM 7B.2 à l'annexe 1) pour un rapport de l'État sur l'état de conservation de la région des Grandes Montagnes Bleues (Greater Blue Mountains) qui sera soumis pour considération en 2021.

La région des Greater Blue Mountains (GBMA), située dans l'État de Nouvelle-Galles du Sud (NSW) (voir carte 1), a été inscrite en 2000 sur la base des critères du Patrimoine mondial (ix) et (x) pour sa diversité d'espèces et d'habitats et en tant que centre de diversification de la flore scléromorphe australienne, en particulier le genre *Eucalyptus*. Elle fournit une représentation significative de l'adaptation évolutive et diversification des écosystèmes d'eucalyptus et des communautés de plantes et d'animaux dans l'isolement post-Gondwana sur le continent australien. La région du Patrimoine mondial est composée de huit zones protégées qui comprennent 1,04 million d'hectares de plateaux de grès, d'escarpements et de gorges dominés par la forêt tempérée composée d'eucalyptus.

Les gouvernements australien et de la Nouvelle-Galles du Sud sont profondément engagés dans la protection de la valeur universelle exceptionnelle de la GBMA. Il y a un système législatif solide en place en vertu de la législation des deux gouvernements, pour sa protection et sa gestion. En tant que faisant partie du Patrimoine mondial, elle est protégée en tant que « question d'importance environnementale nationale » en vertu de la loi nationale australienne sur l'environnement, *la loi de 1999 sur la protection de l'environnement et la conservation de la biodiversité (Environment Protection and Biodiversity Conservation Act 1999 - EPBC Act)*. La loi EPBC protège les biens du patrimoine mondial des impacts de l'activité de développement, même s'ils proviennent de l'extérieur de la région.

Une agence unique du gouvernement de l'État, le Ministère de la planification, de l'industrie et de l'environnement (NSW Department of Planning, Industry and Environment) de la Nouvelle-Galles du Sud, gère la zone, principalement par l'intermédiaire du service des parcs nationaux et de la faune de la Nouvelle-Galles du Sud (NSW National Parks and Wildlife Service). Toutes les réserves qui composent la GBMA sont également protégées et soumises à la loi de 1974 sur les parcs nationaux et la vie sauvage (*National Parks and Wildlife Act 1974*) et à la loi de 1987 sur la vie sauvage (*Wilderness Act 1987*) et à d'autres législations de l'État pertinentes. Le plan stratégique 2009 du site du patrimoine mondial des Grandes Montagnes Bleues (*Greater Blue Mountains World Heritage Area Strategic Plan 2009*) fournit un cadre global pour la gestion, la protection, l'interprétation et le suivi du bien. Un nouveau projet de plan stratégique est en cours de préparation.

Les gouvernements australien et de la Nouvelle-Galles du Sud continuent de mettre en œuvre des programmes et des politiques pour la protection de la valeur universelle exceptionnelle de la région bien face à ces défis, notamment en raison du changement climatique et d'une saison d'incendies de la brousse sans précédent en 2019-20. En avril 2020, le gouvernement australien a fourni au Centre du Patrimoine mondial une mise à jour sur les efforts de conservation entrepris à la suite des feux de brousse de 2019-20 qui ont touché 71 % de la GBMA. Les gouvernements australien et de la Nouvelle-Galles du Sud ont mis en œuvre des réponses globales aux feux de brousse, comprenant une réponse immédiate et une action de

rétablissement à moyen et long terme. Ceci est soutenu par un investissement substantiel dans l'analyse d'impact, les actions de redressement sur le terrain et la gestion/planification.

Conformément à la décision 43 COM 7B.2, le gouvernement australien a chargé le CSIRO (Commonwealth Scientific and Industrial Research Organization), l'agence scientifique nationale australienne, de procéder à une évaluation des impacts cumulatifs potentiels des projets miniers existants et prévus à proximité de la GBMA. Cette évaluation est bien avancée. Aucune activité minière, y compris l'exploration, n'a lieu ou n'est autorisée à l'intérieur de la propriété.

Une étude d'impact environnemental (EIE) détaillée est en cours de préparation pour la proposition de la surélévation de la paroi du barrage de Warragamba. Cette étude évalue pleinement tous les impacts potentiels sur la valeur universelle exceptionnelle du bien et ses autres valeurs, y compris le patrimoine culturel autochtone. Cette EIE répondra aux exigences statutaires de la législation nationale et internationale. Elle sera soumise au Centre du patrimoine mondial pour examen par l'UICN au moment de sa publication pour commentaires du public. Le processus d'EIE est conforme à la Note de l'UICN sur l'évaluation environnementale sur le patrimoine mondial.

Le barrage de Warragamba se trouve en aval et à l'extérieur de la zone du Patrimoine mondial. La proposition vise à atténuer les inondations qui se produisent en aval du barrage. Le gouvernement australien avait notifié cette proposition au Centre du Patrimoine mondial en septembre 2017, et ce conformément au paragraphe 172 des *Directives Opérationnelles* du Patrimoine mondial.

En réponse aux défis posés par le changement climatique mondial, le gouvernement australien a chargé le CSIRO, d'entreprendre une évaluation de la vulnérabilité des biens du patrimoine mondial australien au changement climatique. Cette évaluation qui sera achevée au cours du premier semestre 2021, éclairera la planification de l'adaptation pour la GBMA.

Ce rapport met en valeur également un certain nombre de réalisations importantes en matière de conservation dans la GBMA depuis son inscription sur la liste du Patrimoine mondial en l'an 2000.



**Map 1 Greater Blue Mountains Area (GBMA) World Heritage property and adjacent reserves**



Names of constituent reserves are shown in bold text.

Source: Greater Blue Mountains World Heritage Area Strategic Plan 2009



# 1 Introduction

## 1.1 Decisions of the World Heritage Committee

This State Party Report, prepared in cooperation with the Government of New South Wales (NSW), responds to the 2019 decision of the World Heritage Committee (see Decision [43 COM 7B.2](#), at Appendix 1).

## 1.2 The Greater Blue Mountains Area (GBMA) World Heritage property

The Greater Blue Mountains Area World Heritage property (GBMA) is located in the state of New South Wales and was inscribed on the World Heritage List in 2000 on the basis of criteria (ix) and (x). The statement of Outstanding Universal Value is at Appendix 2. The area consists of 1.04 million hectares of sandstone plateaux, escarpments and gorges dominated by temperate eucalypt forest (see Map 1) and is comprised of eight protected areas (reserves). Key attributes include:

- outstanding and representative examples in a relatively small area of the evolution and adaptation of the genus *Eucalyptus* and eucalypt-dominated vegetation on the Australian continent. The Wollemi pine (*Wollemia nobilis*) and Blue Mountains pine (*Pherosphaera fitzgeraldii*) are outstanding examples of ancient, relict species with Gondwanan affinities (criterion ix).
- outstanding diversity of habitats and plant communities that support its globally significant species and ecosystem diversity. A significant proportion of the Australian continent's biodiversity occur in the area (criterion x) including mammals, reptiles, frogs and birds.

The GBMA is noted for its representation of the evolutionary adaptation and diversification of eucalypt ecosystems and communities of plants and animals in post-Gondwana isolation on the Australian continent. It provides significant representation of biodiversity with ten percent of Australia's vascular flora, including ninety-seven eucalypt taxa, as well as significant numbers of rare or threatened species, including endemic and evolutionary relict species such as the Wollemi pine, which have persisted in highly-restricted microsites. It is also outstanding for its exceptional expression of the structural and ecological diversity of the eucalypts associated with its wide range of habitats.

## 1.3 Legislative protection of the GBMA

Australia's national environmental law, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides an overarching high level of protection for the Outstanding Universal Value of the GBMA. It does this by regulating actions occurring within or outside a property that have, will have or are likely to have a significant impact on the Outstanding Universal Value of a World Heritage property. Under the EPBC Act, World Heritage values (Outstanding Universal Value) are one of the protected 'matters of national environmental significance' and as such they trigger application of the Act.

There are two key stages in the environment assessment process required by the EPBC Act.

**Stage 1: Referral** – this stage determines whether or not a proposed action requires approval under the EPBC Act. Where a development proposal (proposed action) has, will have or is likely to have a significant impact on Outstanding Universal Value, it is determined to be a ‘controlled action’ and must undergo assessment and a decision whether or not to approve the action.

**Stage 2: Assessment/decision whether to approve** – Proposed actions can be assessed using a hierarchy of assessment methods. Assessments can also be undertaken by State governments for the purposes of both decisions under the EPBC Act, as well as decisions that may be required under NSW regulatory requirements. All assessment processes include transparent measures for public consultation. A list of referrals made under the EPBC Act, including those for projects outside, but in the vicinity of the GBMA, can be accessed on the Department of Agriculture, Water and the Environment's [EPBC Act – Public Notices](#) web page.

Under Australia’s federal system of government, management of the GBMA is the responsibility of the NSW State Government. This management is guided by the *Greater Blue Mountains World Heritage Area Strategic Plan 2009* (NSW NPWS 2009). Its purpose is to bring strategic coherence to the overall management of the property, which, as noted above, comprises eight separate protected areas. Under the EPBC Act (s321-322), the Australian Government must use best endeavours to work with the state government to prepare a management plan that is not inconsistent with Australia's obligations under the World Heritage Convention and the Australian World Heritage Management Principles (Schedule 5, Environment Protection and Biodiversity Conservation Regulations 2000). The Australian Government must then take all reasonable steps to act in a way that is not inconsistent with that plan. The current management plan is the *Greater Blue Mountains World Heritage Area Strategic Plan 2009* (NSW NPWS 2009). A new draft plan is in preparation.

There is a range of NSW state legislation that governs the management of the GBMA. This includes the *National Parks and Wildlife Act 1974*, the *Wilderness Act 1987*, the *Water NSW Act 2014*, the *Biodiversity Conservation Act 2016*, and the *Environmental Planning and Assessment Act 1979*.

The GBMA reserves are subject to the *NSW National Parks and Wildlife Act 1974* and the *NSW Wilderness Act 1987*. These Acts cover the protection and management of areas such as national parks, nature reserves and wilderness (some 66% of the GBMA in parts of the Blue Mountains, Kanangra-Boyd, Nattai, Wollemi and Yengo National Parks is declared wilderness). *The National Parks and Wildlife Act 1974* requires that a plan of management is prepared for each the reserves of the GBMA. The *National Parks and Wildlife Act 1974* is also the main piece of legislation for managing and protecting Aboriginal cultural heritage in NSW. This Act provides for the management of Aboriginal land, Aboriginal Places and Aboriginal objects. Emu Cave, Eureka Clearing “Nye Gnoring”, Kings Tableland, Red Hands Cave and Mount Yengo Aboriginal Places and Finchley Aboriginal Area are gazetted under the *National Parks and Wildlife Act 1974* within the boundary of the property.

The *NSW Biodiversity Conservation Act 2016* provides for managing and protecting biodiversity and threatened species in NSW. It provides for statutory listing and protection for every threatened animal, plant, invertebrate and ecological community.

The *NSW Environmental Planning and Assessment Act 1979* (NSW EP&A Act) and Environmental Planning Instruments specify what kinds of development are allowed in an area and whether development consent is required. For example, the Warragamba Dam Raising proposal is defined as State Significant Infrastructure under the NSW EP&A Act and is subject to concurrent assessment and approval under that Act and the EPBC Act.

Natural, cultural and built heritage is also protected in NSW under the *Heritage Act 1977*. A complex of 37 Blue Mountains Walking tracks in the GBMA are included on the NSW State Heritage Register. In addition to state level heritage, 33 heritage matters across the GBMA are included in relevant Local Environment Plans under the *NSW Environmental Planning and Assessment Act 1979*.

The GBMA protects a large number of pristine and relatively undisturbed water catchment areas, some of which make a substantial contribution to maintaining high water quality in a series of water storage reservoirs supplying Sydney and adjacent rural areas. The population of Greater Sydney was approximately 5.3 million in June 2019 (ABS 2020). The function of the *NSW Water Act 2014* is to manage and protect these declared catchment areas.

## 1.4 Funding

The NSW Government is responsible for the on-ground management of the GBMA. It provides an estimated budget of over AUD\$10 million per year for infrastructure maintenance, visitor management, pest and weed control, access management and maintenance, survey and monitoring, fire management and biodiversity and threatened species management. Additional NSW Government funding is allocated for one off capital projects for infrastructure improvements, additional grant funding for pest and weed control, threatened species management, and fire suppression.

Additional NSW funding includes the 'Improving access to National Parks' program, to enhance safe access to National Parks for both visitors and staff, of which over AUD\$34 million has been allocated to the World Heritage property and adjacent region.

Under the Australian Government's Regional Land Partnerships Program, regional and local organisations in the Blue Mountains region have received funding for projects that support the conservation of the GBMA by managing pressures in areas surrounding the property.

- Greater Sydney Local Land Services is delivering a five year project (2018-2023) 'Protecting the values of the Greater Blue Mountains World Heritage Area through management of pest species', valued at about AUD\$1.9 million.
- NSW Local Lands Services (Central Tablelands) is managing a similar and complementary five-year project (2018-2023), 'Living on the edge – managing invasive species threats to the Greater Blue Mountains World Heritage Area', one of five projects for this organisation together awarded approximately AUD\$8.2 million.
- Local Land Services – South East recently completed a 2-year project (2018-2020) 'Protecting the Greater Blue Mountains World Heritage Area', one of ten projects for this organisation together awarded approximately AUD\$7.5 million.

The Australian Government provides AUD\$185,000 each year to jointly fund with the NSW Government an Executive Officer and a Joint Management Coordinator for the property, and to

support the operation of the Greater Blue Mountains advisory committee. The Executive Officer is the secretariat to the Greater Blue Mountains advisory committee and organises their meetings. The Executive Officer also coordinates reporting and information flow between the NSW and Australian Governments on matters relating to the World Heritage property. The Joint Management Coordinator provides secretariat support to a number of Traditional Owner committees and their associated projects in and around the World Heritage property, as well as other engagement activities with Traditional Owners. The Joint Management Coordinator is an Indigenous person. The Greater Blue Mountains Advisory Committee is comprised of people representing the various Indigenous Traditional Owner groups, a range of scientific and heritage specialists, and tourism and local (municipal) government representatives.

The Australian Government also provides one-off grants for specific purposes. Recently, such projects have included:

- A monitoring system for conservation of swamps in the Blue Mountains (AUD\$142,000 to the Blue Mountains World Heritage Institute Limited – DAWE 2020a)
- Improving interpretation materials across the Blue Mountains – aimed at improving educational and interpretive signage for visitors and education groups (AUD\$600,000 from the Australian Government, AUD\$300,000 from the NSW Government (DAWE 2020b)).

## **1.5 Quarterly reporting to the World Heritage Centre**

The Australian Government routinely informs the World Heritage Centre of potential development activities that may affect the Outstanding Universal Value of Australia's World Heritage properties.

Notification reports and a full list of proposed, approved and withdrawn actions relating to the GBMA (and other areas) that require consideration under the EPBC Act are available at the Department's [World Heritage Committee notification of development proposals](#) website.

The most recent proposed development included in the notification reports for the GBMA was the Warragamba Dam raising project, reported in September 2017.

## 2 Response from the State Party to the decisions of the World Heritage Committee

### 2.1 Implementation of Decision 43 COM 7B.2

The full text of the 2019 World Heritage Committee decision is provided at Appendix 1. Relevant paragraphs from the decision are quoted below, and a State Party response is provided for each.

### 2.2 Proposal to raise the Warragamba Dam wall

#### **Decision 43 COM 7B.2 Paragraph 3:**

*Notes with concern that the State Party recognises that the proposed raising of the Warragamba Dam wall is expected to increase the frequency and extent of temporary inundation of the property upstream of the dam*

#### **Decision 43 COM 7B.2 Paragraph 4:**

*Considers that the inundation of areas within the property resulting from the raising of the dam wall are likely to have an impact on the Outstanding Universal Value (OUV) of the property... recalls Decision 40 COM 7, in which it considered that the construction of dams with large reservoirs within the boundaries of World Heritage properties is incompatible with their World Heritage status... requests the State Party to ensure... that the current process to prepare an Environmental Impact Statement (EIS) for the proposal fully assesses all potential impacts on the OUV of the property and its other values including Aboriginal cultural heritage and to submit a copy of the EIS to the World Heritage Centre for review by IUCN, prior to taking any final decisions regarding the project.*

#### **State Party's response**

##### **2.2.1 Overview of the proposal**

Warragamba Dam is located west of Sydney in NSW (see **Map 1**). Its reservoir, Lake Burragorang, is formed by the damming of the Warragamba River with its major tributaries being the Coxs, Wollondilly, Kowmung and Nattai rivers. Lake Burragorang supplies water to more than five million people living in Sydney and the lower Blue Mountains. It is one of the largest domestic water supply dams in the world and stores around 80 per cent of Sydney's water supply. Warragamba Dam and Lake Burragorang are located outside of the GBMA. Warragamba Dam is owned and operated by WaterNSW (a NSW Government owned corporation) under the provisions of the *Water NSW Act 2014*.

The proposal to raise Warragamba Dam for flood mitigation is one of nine key outcomes of the NSW Government's flood risk management strategy for the Hawkesbury-Nepean Valley (Infrastructure NSW 2017). The purpose of the proposed dam raising is to reduce and/or delay flooding downstream, significantly reducing risk to lives and property, and allowing additional time for evacuation during major floods. It would only operate during flood conditions.

### **2.2.2 Statutory assessment processes**

The Warragamba Dam wall raising proposal is being assessed under the *NSW Environmental Planning and Assessments Act 1979* and the EPBC Act. The proposal is being assessed for its potential impacts on World Heritage and National Heritage listed values and nationally listed threatened species. For the purposes of the EPBC Act, the proposal is being assessed by the NSW Government on behalf of the Australian Government under an assessment bilateral agreement (see section 1.3). The final decision on whether the proposal should be approved under the EPBC Act will be made by the Australian Minister for the Environment. A separate decision on whether the proposal should be approved is also required under NSW environmental protection legislation.

The Australian Government notified the World Heritage Centre about this proposal in September 2017 in accordance with Paragraph 172 of the World Heritage *Operational Guidelines*.

A detailed Environmental Impact Statement (EIS) is being prepared by WaterNSW, the NSW Government-owned statutory corporation that owns and operates the dam. Once finalised the EIS will be scheduled for exhibition and public comment for a minimum period of 30 days. In accordance with Decision 43 COM 7B.2, a copy of the EIS will be provided to the World Heritage Centre for review by the International Union for the Conservation of Nature (IUCN) in conjunction with its public exhibition. No construction activity on the dam wall can occur unless and until all relevant Australian and NSW government approvals are in place. Subject to environmental and planning approvals being granted, the NSW Government will consider the business case for the dam wall raising.

The NSW Government's responses to frequently asked questions about raising the dam wall are on Infrastructure NSW's [Proposal to raise Warragamba Dam Wall FAQs](#) website.

On 28 June 2020, the NSW Government proposal to raise the dam wall was varied to raise the Warragamba Dam wall by 17 metres, an additional 3 metres from the original proposal of 14 metres, for flood mitigation purposes downstream of the dam. The proposed increase to the height of the spillway will remain at 12 metres, as per the original proposal. The purpose of this variation is to enable the spillway crest height to be raised in the future (subject to further environmental impact assessment and approval) in response to changes in rainfall patterns caused by climate change in accordance with NSW Government statutory requirement that climate change impacts are taken into account in infrastructure planning. As the height of the spillway crest (12 metres) and therefore the full supply level of the dam remains unchanged from the original proposal, the varied action will not result in any further impacts on World and National Heritage values of the GBMA or listed threatened species and communities beyond those related to the original proposal.

### **2.2.3 Potential impacts of the proposal**

Areas of the GBMA upstream of Warragamba Dam are already prone to inundation during floods, especially if the dam is full or near to full. Raising the dam wall would increase the frequency, duration, depth and/or extent of temporary inundation of areas located upstream of the dam wall, including declared wilderness area, under some flood conditions.



Raising the dam wall will not change the permanent water storage level in the dam, but temporary inundation associated with the proposed dam raising may have impacts on biodiversity (including a number of threatened species), aesthetic, wilderness and Indigenous cultural values.

The Australian Government requires that potential impacts of the dam raising project relevant to the property are fully addressed in the Environmental Impact Statement (EIS).

Aboriginal cultural heritage values have been identified within the World Heritage Area. A full Aboriginal Cultural Heritage Assessment report regarding the impact of the proposal on Aboriginal culture heritage values found in the property will be appended to the publicly-released EIS. In August 2018, an Aboriginal Place nomination was made by Traditional Owners for an extensive area in the Burratorang Valley in the GBMA. When a significant place is declared an Aboriginal Place, it is protected under the *NSW National Parks and Wildlife Act 1974*. Aboriginal Places can be on public or private land, and do not change the land tenure. To be declared an Aboriginal Place, the NSW Minister is required to legally recognise the place is, or was of special significance to Aboriginal culture.

On 20 June 2019 a NSW Parliamentary Inquiry was established to inquire into the proposal to raise the Warragamba Dam wall (Parliament of NSW 2019). Topics for the Inquiry include: engagement between relevant organisations, flood risk assessment and management and the cost of the project. The Inquiry is ongoing, with the most recent hearing occurring on 6 November 2020. No final reporting date has been advised at this stage. Further detail is available on the Parliament of NSW's [Select Committee on the Proposal to Raise the Warragamba Dam Wall](#) website.

#### **2.2.4 Preparation of the Environmental Impact Statement (EIS)**

WaterNSW is preparing the EIS for the proposal following a detailed set of requirements established by the NSW and Australian governments (DPIE 2015). The terms of reference for the EIS require 'an analysis of any feasible alternatives to the project'.

Since mid-2017, WaterNSW has undertaken research and investigations to inform the EIS. The EIS will include an assessment of impacts of the temporary increase in inundation on the upstream and downstream environment – and options to manage, mitigate or offset those impacts. The Australian Government has requested that WaterNSW undertake an analysis of the impacts of the 2019-20 bushfires given that approximately 70 per cent of the predicted temporary inundation area resulting from the proposal was burnt in the bushfires.

Following the formal public comment period, the EIS will be assessed by the NSW Government. After this assessment is completed, the Australian Government will consider all relevant information including impacts of the bushfires on the World Heritage values of the GBMA and listed threatened species and ecological communities. The Australian Government Minister for the Environment will then make a decision on whether to approve the proposed action.

A draft EIS has recently been provided to the NSW Government planning department and Australian Government for review against the requirements of both NSW and Australian Government legislation. Work is underway by WaterNSW to respond to matters raised by government agencies as part of that review and ahead of finalising the EIS for public exhibition.



These matters largely relate to the biodiversity assessment, the Aboriginal Cultural Heritage assessment, and the impacts of the 2019-20 bushfires.

## 2.3 Cumulative assessment of the impacts of mining adjacent to the GBMA

### **Decision 43 COM 7B.2 Paragraph 5:**

*... requests the State Party to undertake an assessment of potential cumulative impacts of all existing and planned mining projects in the vicinity of the property through a Strategic Environmental Assessment (SEA) or a similar mechanism.*

### **State Party's response**

In response to the decision of the World Heritage Committee, the Australian government commissioned CSIRO, Australia's national science agency, to undertake a cumulative impact assessment of risks from existing and planned mining in the vicinity of the GBMA to its Outstanding Universal Value. CSIRO is due to report to the Australian Government by the end of 2020. It is important to note that mining activity does not occur, and is prohibited, within the boundary of the GBMA.

To assess potential cumulative impacts of all existing and planned mining projects in the vicinity of the GBMA, the assessment will identify: the components of the GBMA that contribute to its Outstanding Universal Value, existing and planned mining operations in the vicinity of the GBMA that could affect its Outstanding Universal Value, specific threats from mining to the property's Outstanding Universal Value, and the mechanisms in place to protect the Outstanding Universal Value of the GBMA.

The scope of the assessment includes fifteen existing and planned open-cut and underground coal mines and three sand mines within 20 km of the GBMA. CSIRO has developed a causal pathway network model that captures all the ways that potentially hazardous actions, or stressors from mine sites (e.g groundwater pumping associated with underground mining) could affect the Outstanding Universal Value of the GBMA. Each stressor pathway linking mining projects and Outstanding Universal Value will be rated in terms of the magnitude and likelihood of adverse effects from mining.

The assessment will identify and analyse stressors that present a risk to Outstanding Universal Value and also identify the geographic areas within the GBMA where effects from mining could be significant, if those effects were to arise. Habitats, ecological communities and species in these areas will not necessarily be impacted by mining, rather the assessment will identify a regional risk where consideration of more detailed local-scale information is needed to determine whether there is a risk to individual components of the Outstanding Universal Value.

## 2.4 Mining proposals in the vicinity of the GBMA

### **Decision 43 COM 7B.2 Paragraph 6:**

*Reiterates its position that mineral exploration or exploitation is incompatible with World Heritage status, which is supported by the International Council of Mining and Metals (ICMM) Position Statement to not undertake such activities within World Heritage properties.*

### **State Party's response**

#### **2.4.1 Summary**

The GBMA is protected and managed under both national and state legislation. Mining is prohibited in the GBMA under this legislation.

As noted in section 1.3, all World Heritage properties in Australia are 'matters of national environmental significance' protected and managed under the EPBC Act. This Act is the statutory instrument for implementing Australia's obligations under a number of multilateral environmental agreements including the World Heritage Convention. By law, any action that has, will have or is likely to have a significant impact on the World Heritage values of a World Heritage property must be referred to the responsible Minister for consideration. Substantial penalties apply for taking such an action without approval. Once a heritage place is listed, the Act provides for the preparation of management plans which set out the significant heritage aspects of the place and how the values of the site will be managed.

Importantly, this Act also protects matters of national environmental significance, including World Heritage properties, from impacts even if they originate outside the property or if the values of the property are mobile (as in fauna). It thus forms an additional buffer of protection for the values of World Heritage properties from external impacts.

Additionally, the EPBC Act provides that the Minister must not approve actions or classes of actions that are inconsistent with Australia's obligations under the World Heritage Convention (sections 34B, 37D, 51, 137, and 146G). This effectively prohibits mining in World Heritage properties in Australia.

Eight mining proposals lie outside the GBMA boundary, but in the vicinity of the property, ranging from directly adjacent to the property to over eight kilometres away from the boundary. These eight projects have been, or are currently being assessed, under the EPBC Act, with specific focus on impacts to heritage values.

#### **2.4.2 Background and summary of mining proposals**

Coal mining has played a major role in the economy of the region since the 1870s. The major coal resources in NSW are located in the 500 kilometre long, 150 kilometre wide Sydney-Gunnedah Basin. An important factor in the economic development of NSW has been the ease of access to coal as an energy resource for the State's main industrial centres. NSW is one of the world's major exporters of coal.

The continued development of coal resources takes into account competing land uses and a range of environmental issues. Mining is prohibited in national parks under NSW legislation and there is no mining within the GBMA. A number of mines near the GBMA were in existence at the

time it was nominated for inclusion in the World Heritage List and are still in operation. The following is a summary of mining developments or mining proposals, that have been, or are being, assessed under the EPBC Act and which are in the area adjacent to the GBMA.

#### **2.4.3 Airly Mine Extension Project (EPBC referral 2013/7076)**

The Airly Mine Extension Project is adjacent to the northern sector of the Gardens of Stone National Park and is outside of the World Heritage Area (see **Map 2**). The project involves mining to extend the life of the existing Airly Mine, with additional surface facilities and infrastructure to support the extension. The project was referred under the EPBC Act in December 2013. The environmental assessment identified water discharge to the GBMA as the primary risk posed by the proposed development. The project was approved in May 2017, with strict conditions requiring implementation of a site water management system to manage the risk to Outstanding Universal Value. A statement of reasons for this decision was made available to the public on 20 March 2019.

#### **2.4.4 Angus Place Mine Extension Project (EPBC referral 2013/6889)**

The Angus Place Extension Project involves underground mining at the existing Angus Place Mine in the Western Coalfields of NSW, outside of the World Heritage Area (see **Map 2**). The Gardens of Stone National Park is located adjacent to the north eastern edge of the mine. In November 2019, the Australian Government varied the project at the request of the proponent. The variation reduced the area of land to be impacted by 17 per cent. The varied project is undergoing assessment under the EPBC Act.

#### **2.4.5 Bylong Coal Project – reconsideration of previous decision (EPBC referral 2014/7133)**

The open cut and underground mining components of the Bylong Coal Project are about two and four kilometres respectively distant from the World Heritage property. The project was assessed under the EPBC Act for potential impacts on the Outstanding Universal Value of the property in 2014. It was determined that the proposal was unlikely to have a significant impact on Outstanding Universal Value and therefore further environmental impact assessment in relation to Outstanding Universal Value was not required by the Australian Government.

In response to a recent request by the Lock the Gate Alliance (a non-governmental organisation), and on the basis of new information that could be relevant to that decision, the Australian Government Minister for the Environment reconsidered this decision on 21 March 2019, as provided under the EPBC Act. Following detailed consideration of new information, the previous decision of 12 March 2014 was confirmed. The review decision reaffirmed that there would be no significant impact on Outstanding Universal Value of the GBMA. On 18 September 2019, the NSW Independent Planning Commission refused development consent for the project. The project is now the subject of an appeal by the proponent to the NSW Land and Environment Court.

#### **2.4.6 Clarence Colliery (EPBC referral 2012/6446)**

The Clarence Colliery is an underground coal mine located in Newnes State Forest. The mine site is adjacent to the World Heritage property (see **Map 2**).

Clarence Colliery has been in operation since before the commencement of the EPBC Act. In July 2015, a substantial coal fines stockpile collapsed into the Wollangambe River, resulting in

pollution of the river within the GBMA. The mining company was prosecuted under New South Wales law and directed to pay over a million dollars for environmental management, planning and fauna conservation projects in the region. This was in addition to more than 12 months' work by the company at a cost to it of AUD\$2 million to clean up the impacts of the incident (NSW EPA 2017).

The Australian Government also investigated the incident and undertook field inspections with two independent scientific consultancy reports produced. Based on this investigation the Australian Government is satisfied with the remediation works and has concluded that there have been no long-term impacts on the Outstanding Universal Value of the GBMA.

#### **2.4.7 Coalpac Pty Invincible Colliery Modification (EPBC referral 2014/7147)**

The Invincible Colliery is an open cut and longwall coal mine located mostly within Ben Bullen State Forest. The Invincible Colliery Southern Extension is also within Ben Bullen State Forest (see **Map 2**). The proposed mining operation is more than eight kilometres from the GBMA at the closest point. It is separated from the GBMA to the east by eucalypt forest, cleared farmland, Coxs River and several other streams. It has been assessed under the EPBC Act as unlikely to have a significant impact on the Outstanding Universal Value of the GBMA.

#### **2.4.8 South Bates Extension (EPBC referral 2016/7816)**

The Wambo Mine South Bates Extension project boundary adjoins the Wollemi National Park (see **Map 2**). Potential subsidence impacts (including the angle of draw) from some of the underground longwall panels may occur up to the boundary of Wollemi National Park.

The project's surface disturbance comprises two new ventilation shafts that are approximately 1.6 kilometres to 2 kilometres away from Wollemi National Park. Given the depth of the underground extraction area in relation to the GBMA, it was determined that mining activity would not adversely impact the Wollemi escarpment or rock features within the neighbouring Wollemi National Park. Additionally, as the project is not located in the GBMA it was determined that it would not significantly impact the area's biodiversity values which form part of the Outstanding Universal Value of the property. This project has been assessed and approved with conditions under the EPBC Act for its potential impact on threatened species and communities, and water resources. It was determined that it was unlikely that there would be a significant impact on the Outstanding Universal Value of the GBMA.

#### **2.4.9 Springvale Mine Extension (EPBC referral 2013/6881)**

Springvale Coal Mine is an underground longwall mine. It is located 6.5 kilometres west of Blue Mountains National Park (see **Map 2**). Subsidence associated with the longwall mining has impacted on groundwater and surface water, reducing flows into some streams that run into the GBMA.

Under the EPBC Act the decision concluded that the proposed action is unlikely to have a significant impact on the GBMA, and therefore the impacts of the proposed action would not be unacceptable. The proposal was approved with conditions which are set out in a statement of reasons published on 1 March 2016.

The NSW Government oversees control of water quality in Coxs River, which flows into Lake Burragorang, the main water supply dam for the city of Sydney. While levels of salt, heavy metals

and other contaminants are above natural background levels, these are not considered to impact on the Outstanding Universal Value of the property. The NSW Government put in place conditions related to water management operations.

#### **2.4.10 Tahmoor South Project (EPBC referrals 2014/7162 and 2017/8084)**

The Tahmoor Colliery is more than 2.5 kilometres from the World Heritage property (see **Map 2**). Long-wall underground coal mining in the part of the Tahmoor Colliery closest to Thirlmere Lakes, ceased eight years ago. The relationship between the coal mining operation and the water levels in Thirlmere Lakes has been the subject of close scrutiny and investigation over recent years, including through a NSW Government sponsored independent public inquiry and ongoing research. The NSW Government is currently studying water loss from the lakes, including whether any long-term damage has occurred from mining. The Australian Government has provided funds for water level monitoring data analysis (NSW OEH 2019).

Modelling work conducted as part of a recent EIS on a proposed southward extension to the Tahmoor Colliery, away from the World Heritage property, indicates that if the proposal proceeds, the water levels of Thirlmere Lakes could be expected to decrease by about one to six centimetres, with an increase in the predicted average number of weeks per decade that the lakes would be without discernible ponded water increasing by between 3 weeks and 5.2 weeks. This proposal is still being assessed under the EPBC Act for its potential impact on threatened species and ecological communities, and water resources (it was considered that it was unlikely that there would be a significant impact on the Outstanding Universal Value of the property).

## **2.5 Western Sydney Airport (EPBC referral 2014/7391)**

### **Decision 43 COM 7B.2 Paragraph 7:**

*Notes the information provided by the State Party regarding the Western Sydney Airport proposal and further requests the State Party to submit to the World Heritage Centre a copy of the EIS for the anticipated airspace and flight path operations, once available, for review by IUCN.*

### **State Party's response**

In December 2016 the Australian Government approved the construction of the Western Sydney Airport subsequent to the publication and finalisation of an Environmental Impact Statement and the production of an Airport Plan. The Western Sydney Airport will be located eight kilometres east of the GBMA.

The Airport Plan approval conditions specify that the airport and flight path design must minimise, to the extent practicable, the impact of aircraft over-flight noise on the GBMA, particularly areas of scenic or tourism value, and wilderness areas (DITRDC 2016). The assessment documentation explains how the conditions of the Airport Plan have been addressed.

The airspace and flight path design is currently being developed by an expert Steering Group, led by the Australian Government. Once developed, the airspace and flight path design will be subject to assessment and authorisation under relevant Australian Government legislation, including development of environmental assessment documentation and a public comment

period. The assessment process is expected to commence in 2021. The assessment documentation (EIS) will be submitted to the World Heritage Centre, once available.

## 2.6 Strategic Management Framework

### **Decision 43 COM 7B.2 Paragraph 8:**

*Welcomes the development of a Strategic Management Framework for the property as a new integrated management instrument and requests furthermore the State Party to ensure that potential threats to the property from activities outside its boundaries, particularly mining, are fully considered in the development of this management framework and that the EIS required are carried out in conformity with IUCN's World Heritage Advice Note on Environmental Assessment, with a specific section focusing on the potential impact of the project(s) on the property's OUV.*

### **State Party's response**

As noted in section 1.3, management of the GBMA is guided by the Greater Blue Mountains World Heritage Area Strategic Plan 2009 . Its purpose is to bring strategic coherence to the overall management of the property, which, comprises eight separate conservation reserves/national parks. The Strategic Plan (NSW NPWS 2009) was reviewed in 2016 and an addendum (NSW OEH 2016) was published in 2016 containing the results of the review, mainly to reflect updates to relevant government policy and legislation. A new draft Strategic Plan is in preparation.

Each of the eight conservation reserves that make up the GBMA has a statutory plan of management in place (Environment NSW 2019a). Plans of management are prepared in accordance with the *NSW National Parks and Wildlife Act 1974* to set out the specific management objectives, directions and actions for each park and reserve. Once adopted, all operations must be undertaken in accordance with the plan of management. Information on adopted plans of management is available from the NSW Government web-site . Plans of management help guide the conservation of biodiversity, rehabilitation of landscapes and the protection of natural and cultural heritage, including management and protection of Outstanding Universal Value. They also include management principles for use of a park by Aboriginal people for cultural purposes, sustainable visitor or tourist use, natural resource management and land management practices. Other important and related plans informing management include Fire Management Strategies, Regional Pest Management Strategies and additional tailored plans for managing specific issues and precincts.

The draft Strategic Plan, when agreed by the Australian and NSW governments, will replace the 2009 Strategic Plan. The revised plan will consider all potential threats to the property, including from activities outside its boundaries, consistent with *Decision 43 COM 7B.2 Paragraph 8*.

The draft Strategic Plan is in preparation and will be subject to consultation with Aboriginal communities before exhibition of the draft for public comment. It is anticipated the NSW and Australian Ministers responsible for World Heritage management will endorse the Plan and publish in late 2021.

The Environmental Assessment process required under the EPBC Act (Commonwealth of Australia 2014) is consistent with the IUCN's World Heritage Advice Note on Environmental Assessment. Australia's national environmental legislation, the EPBC Act, establishes a rigorous and transparent legislative and regulatory framework for protecting the Outstanding Universal Value (OUV) of World Heritage Areas. Legally through the EPBC Act, potential significant impacts to World Heritage properties both within or external to the boundary require assessment and approval by the Australian Government.

The IUCN has noted the EPBC Act is exemplary legislation and a model for World Heritage legal framework.



## 3 Other current conservation issues identified by the State Party which may have an impact on the property's outstanding universal value

### 3.1 Impacts of 2019-20 Bushfires

The 2019-20 bushfires in NSW were unprecedented in their extent and severity, occurring during a period of record-breaking temperatures and extremely low rainfall. The Australian Government Bureau of Meteorology determined 2019 was Australia's warmest and driest year on record.

The GBMA was affected by a series of bushfires from late October 2019 to early February 2020. During this time, approximately 739,906 hectares (or 71 per cent) of this World Heritage property was burnt. There was a mosaic of fire intensity and impact across the property. This reduced estimate of fire extent is an update of the estimate of 853,977 hectares (or 82 per cent) of the World Heritage property that was reported in the April 2020 State of Conservation update for the GBMA. This updated estimate is based on ongoing improvements in mapping and analysis of the fire area. A complete picture of the impacts of the fires on Outstanding Universal Value is not yet available, but more detailed assessments in relation to a range of aspects of Outstanding Universal Value are ongoing, as described in this section.

During the 2019-20 fire season there were 41 ignitions, primarily as a result of lightning strikes, across the GBMA. Twenty of those remote ignitions were successfully contained by the NSW National Parks and Wildlife Service Remote Aerial Response Teams to an average fire size of less than 1.2 ha. This action contributed significantly to reducing the impact of the larger fires and helped to ensure 29 per cent of the GBMA remained unburnt.

Of the 587 fires that have occurred within the GBMA over the past 15 years, 67 per cent (393) were contained to less than 10 ha and only 25 fires (<5 per cent) were larger than 1,000 ha. In the 2019-20 bushfires, the Gospers Mountain fire burned over half a million hectares in the heart of the northern part of the GBMA and was one of the biggest forest fires in Australian history.

#### 3.1.1 Summary of direct impacts

Since the April 2020 State of Conservation update, the NSW Government has undertaken a more detailed analysis of the extent and severity of the bushfires using the Fire Extent and Severity Mapping (FESM) method which is being used as an input to assess the degree of impact on native plants, animals and ecosystems across the property. Updated FESM mapping indicates 739,906 hectares were affected by the bushfires. This represents 71 per cent of the property.

The revised extent and severity of impacts across the property using FESM data is detailed in Table 1.

**Table 1 Greater Blue Mountains Area (GBMA) Fire Extent and Severity Mapping (FESM) burnt area classes**

FESM Class Label	FESM Class Description	Burnt area (hectares)	Proportion of area of property (per cent)
<b>Unburnt</b>	Canopy and understorey both unburnt	303919.57	29
<b>Low</b>	Burnt understorey with unburnt canopy	362488.83	35
<b>Moderate</b>	Partial canopy scorch	216709.04	21
<b>High</b>	Full canopy scorch/partial consumption	121849.24	12
<b>Extreme</b>	Complete canopy consumption	38859.31	4
<b>Total area of GBMA</b>		<b>1,043,826</b>	<b>100</b>
<b>Total burnt area</b>		<b>739,906.43</b>	<b>71</b>

Note: The FESM product gives a more detailed understanding of how a fire has changed the landscape than the interim GEEBAM (Google Earth Engine Burnt Area Map) product used in the April 2020 State of Conservation update. It uses a combination of field data and satellite imagery to provide more accurate estimates of fire extent and severity. The FESM method has been peer-reviewed and published and is an ongoing corporate program supported by the NSW Government. The FESM mapping data is accessible through the Sharing and Enabling Environmental Data (SEED) Portal by searching for "FESM" (NSW Government 2020).

### Conservation assessments

Since January 2020, both the Australian and NSW Governments have been undertaking conservation assessments across the area affected by the 2019-20 bushfires to create priority lists of animals, invertebrates, plants and ecological communities that may require management intervention to enable recovery from fire impacts. This area includes the GBMA. Details of these assessments are as follows.

#### Assessment of flora at risk after the fires

The World Heritage property is renowned for its outstanding biological diversity, both in terms of the number of species and the variety of ecological communities that occur there. A joint Australian and NSW Government assessment (Gallagher 2020) and a NSW assessment (Auld et al. 2020) considered plant species at risk following the 2019-20 fires. This assessment also considered other fire regime variables such as fire frequency, sensitivity, and other threats such as drought, pests, weeds and disease.

Approximately 400 NSW plants were identified in that assessment as priority species at greatest risk of decline or extinction. One third of these priority species occur within the GBMA. On-ground assessments to verify the predicted impacts of the fires and threats to natural post-fire recovery have commenced and will provide an essential evidence base to determine the most effective management actions to maximise post-fire recovery and prevent any potential species extinctions.

### **Assessment of ecosystems at risk after the fires and subsequent flooding**

The impacts of the fires on ecological communities were varied. While fire is a naturally recurring disturbance in the majority of communities, it is estimated that some 76 of the 187 communities known to occur in the property are at high risk of decline due to the combined effects of high fire frequency and drought.

The impacts of fire and drought were compounded in some instances by severe erosion caused by torrential rain in mid-February 2020 (Keith, Auld et al. 2020). While this rain was instrumental in extinguishing the fires, it also resulted in flash flooding across the GBMA. These heavy rainfall and storm events, coming so soon after the fire, stripped topsoil and seedbanks, resulting in increased sediment, debris and ash runoff, including influx to the Warragamba Dam water supply, and erosion of some watercourses and unsealed access routes across the property. These factors have resulted in a reduced capacity for regeneration in these ecosystems, which is further exacerbated by browsing by exotic herbivores and competition from exotic plant species, particularly in Critically Endangered Ecological communities which occur in close proximity to urban centres. Managing the threat posed by future fires in both fire-prone and fire-sensitive ecological communities such as rainforests poses a significant challenge in the context of a changing climate, which is predicted to lead to a higher frequency of severe fire weather and ignition events. Critically, endangered peat swamps have in some cases collapsed due the combined effects of intense fire, drought and hydrological change caused by longwall mining and consequent fracturing of bedrock (Keith, Benson et al. 2020).

### **Impacts on fauna**

NSW species identified by the joint government assessment as being especially impacted included iconic species such as the koala, the brush-tailed rock-wallaby and the platypus, all of which are found in the GBMA.

Areas of the property that burnt at a lower intensity are expected to have provided critical refugia for some species. The degree to which this is the case will be the subject of ongoing assessment.

### **3.1.2 Update on the immediate response**

The NSW Government released the *Wildlife and Conservation Bushfire Recovery: Immediate Response* in January 2020 (DPIE 2020). This provided a preliminary assessment of the impact of the 2019-2020 bushfires and set out the immediate and short-term interventions being planned and undertaken by the NSW Government and its partners.

### **Supplementary food, water and shelter**

The 2019-20 bushfires caused widespread loss of food resources for many species, placing them at significant and imminent risk of starvation or dehydration. The NSW Government acted quickly to provide supplementary food and water to important populations of key threatened fauna, including weekly food drops for the endangered brush-tailed rock-wallaby at seven key sites across the GBMA property between 10 January and 21 February 2020. Koala drinking stations were also installed.

### **Post-fire recovery work**

Immediate post fire recovery work includes:

- Rapid post-fire assessments of fire impacts including Deane's boronia (*Boronia deanei*); Blue Mountains water skink (*Eulamprus leuraensis*); giant dragonfly (*Petalura gigantea*), Newnes Plateau shrub swamp, and montane peatlands and swamps threatened ecological communities; Littlejohn's tree frog (*Litoria littlejohni*); broad-headed snake (*Hoplocephalus bungaroides*); and the broad-toothed rat (*Mastacomys fuscus*);
- Installation of exclosures and cages to protect seedlings and resprouting adults of threatened plants;
- Replacement of burnt monitoring equipment - cameras, piezometers, acoustic and habitat loggers;
- On-ground and aerial assessments to verify impacts predicted from desktop analyses;
- Stream rehabilitation works to mitigate erosion caused by fire and post-fire flooding;
- Detailed post - fire monitoring for the Wollemi pine, dwarf mountain pine, brush-tailed rock-wallaby and sparse heath.

### **Feral animal and weed control**

Bushfires can compound the impacts of weeds and feral animals on native species and ecosystems. The continuing presence of pests and weeds is likely to hinder the recovery of many species and ecosystems. The NSW Government is responding to this threat by implementing the most extensive pest animal control program ever undertaken on the national park estate in NSW. The program is supported by funding from the Australian Government. As of 30 June 2020, the NSW National Parks and Wildlife Service has conducted over 300 hours of aerial shooting and baiting with over 1,000 feral predator and herbivore animals removed across the GBMA. These include pigs, goats, deer, foxes and wild dogs.

To limit the impact of weeds on post-fire recovery, the NSW National Parks and Wildlife Service has been undertaking strategic weed control in areas where it will benefit threatened species and in areas that have previously been inaccessible due to dense vegetation.

### **Seed banking and insurance populations**

Staff from NSW National Parks and Wildlife Service have been working with Taronga Conservation Society, the Royal Botanic Gardens Sydney and non-government partners to collect seeds and individual animals from species with habitats impacted by fire. Seeds will be banked and individual animals used to propagate insurance populations.

### **Supporting wildlife carers**

The NSW Government committed AUD\$1 million to support the wildlife rescue and rehabilitation sector as part of the immediate bushfire response. This funding supported wildlife rescued both from the property and other areas affected by the 2019-20 fires, and included:

- AUD\$500,000 in emergency funding, for grants to licensed wildlife rehabilitators, to support veterinary care and build capacity in the wildlife rehabilitation sector to respond to bushfire emergencies
- AUD\$500,000 for other support actions:

- the appointment of two Bushfire Recovery Wildlife Coordinators to coordinate search, rescue and recovery for wildlife impacted by bushfires and increase the rehabilitation sector's capacity to respond to emergencies
- mapping of koala habitat
- twenty places in Taronga Conservation Society's professional development training course for vets and vet nurses involved in wildlife care.

### **Saving our Species**

The NSW Government's Saving our Species program aims to secure threatened plants and animals in the wild in NSW. It is a key program to address the impacts of the fires on threatened species and threatened ecological communities. All Saving our Species sites for plant projects that were impacted by the bushfires have been inspected and post-burn monitoring has been established. A few species, including the endangered *Callistemon megalongensis* and *Acacia gordonii* have shown excellent post-fire response with prolific recruitment and re-sprouting. Other species do not appear to have recovered well, but it is still too early to assess population declines.

### **3.1.3 Medium-term response**

The NSW Government is currently finalising a Wildlife and Conservation Bushfire recovery medium-term response plan that will set out a range of activities needed to ensure the recovery of species and ecological communities, and to build their resilience to future bushfires and the increasing impacts of climate change, including within the GBMA.

#### **Recovery investment**

The Greater Blue Mountains is a key investment target for the Australian Government under the Australian Government's AUD\$200 million bushfire recovery program following the 2019-20 bushfires.

Under this program, an initial \$50 million was made available on 13 January 2020 for emergency wildlife and habitat recovery, of which AUD\$5,860,000 million has been directly invested in the GBMA and surrounding region,

A further AUD\$150 million over two years was announced on 12 May 2020 to support the sustained efforts required for the long-term recovery of the most impacted native species and threatened ecological communities. Of this second tranche of funding, \$13 million has been directly allocated to the GBMA and surrounding region. The GBMA will also benefit from other components of this funding, including funds for community grants and scientific research.

#### **Modelling and mapping to protect World Heritage values**

Spatial modelling and assessment is being used by the NSW Government to identify the risks to World Heritage values from the fires and the compounding threats after the fires. The modelling and mapping will help to inform and direct management actions to support the recovery and resilience of the attributes of Outstanding Universal Value damaged by the bushfires. It will also support national park planning processes, for example by identifying where weed and pest control are required, where fire management strategies may need review, and where specific monitoring of World Heritage values is needed. It is projected to be completed in early 2021.

### **Managing fire to protect environmental assets**

The NSW National Parks and Wildlife Service and the NSW Rural Fire Service are developing a more sophisticated, risk-based approach for mapping environmental assets and integrating them into environmental impact assessments, fire management strategies, controlled burning plans and regional bushfire risk management plans. The spatial mapping will include information on the location of and appropriate management strategies for key environmental assets, including refuge areas, habitat of threatened species, and threatened ecological communities. The spatial mapping data will be made available to Incident Management Teams during live fire events so, where possible, environmental assets can be protected from fire in the future. A pilot project is expected to be completed by mid 2021, with a full production version by early 2022.

### **Protecting ecological refuge areas**

The NSW Government is developing comprehensive maps of potential ecological refuge areas that are linked to biological data and fire science. These maps are expected to be available in late 2021. The information used to identify refuge areas will then be used to support strategic and operational planning decisions that protect refuge areas over time. For example, it may be necessary to manage pest and weed incursions into a refuge area, or manage over-population of species taking refuge there. Future fire regimes also need to be considered to ensure vegetation and habitat can persist within tolerable fire intervals and thresholds. Fire management should protect unburnt habitat of priority threatened species, threatened ecological communities and World Heritage Areas in the medium term, as these areas will be repopulating neighbouring burnt areas.

### **Improving post-fire water quality**

As part of its immediate response to the bushfires, the NSW Government produced a powerful state-wide model to predict the risk of hillslope erosion following the fires. In the catchment of Warragamba Dam within the GBMA, WaterNSW and the NSW National Parks and Wildlife Service applied the hillslope erosion model to areas where native vegetation and groundcover had been destroyed by the fires. Water NSW used the map to:

- identify the highest erosion risk sub-catchments and prioritise monitoring points and areas for erosion interventions;
- communicate with stakeholders and regulators about the impacts of the bushfires and the risk to water quality;
- inform modelling of the impact of different rainfall events on catchment water quality.

The NSW Government will continue to provide support and tools to neighbouring land managers to help them predict post-fire erosion risk, assess the impact of different rainfall events on water catchments within and adjacent to the GBMA and make decisions to improve water quality in areas impacted by the fires.

### **Climate change vulnerability assessment and adaptation planning**

In response to the challenges posed by global climate change, including the risks demonstrated by the 2019 20 fires, the Australian Government has commissioned the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia's national science agency, to undertake a climate vulnerability assessment for each of Australia's 20 World Heritage properties. This assessment is due to be completed in the first half of 2021. The CSIRO report

will update the 2009 report: The CSIRO report will update the 2009 report: [Implications of Climate Change for Australia's World Heritage Properties - A Preliminary Assessment](#) (DCC and DEWHA 2009).

In addition to individual property climate vulnerability assessments, the project will deliver adaptation planning tools to support World Heritage property managers better prepare for and manage the impacts of climate change through their management planning, and help property managers to prioritise and target management actions on the ground.

#### **Aboriginal cultural heritage assessments**

Aboriginal people have a strong cultural connection with the lands and waters of the GBMA and are actively engaged in managing and protecting their country. The Australian and NSW Governments are aware that Traditional Owners of the GBMA region want to play a leadership role in land and fire management including through the use of cultural burning practices and culturally important species as priorities for bushfire recovery and want to be engaged in the recovery of these matters.

As part of the Australian Government's bushfire response, Minister Ley announced \$13 million dollars worth of funding for the GBMA on 18 November 2020 (Ley and Payne 2020). A number of project proposals are being developed by the NSW Government for this funding, including one project titled *Traditional Owner led healing of country*. This project will increase the number of GBMA Aboriginal Field Officers to four and improve relationships with the six Aboriginal language groups of the GBMA.

The Australian Government is also currently offering \$2 million for grants to support the delivery of workshops to strengthen traditional knowledge and build wider understanding of Indigenous fire and land management practices. This program is available Australia-wide to Traditional Owners, Indigenous organisations and Indigenous enterprises. Applications for the program close on 10 December 2020.

Aboriginal cultural heritage assessments of fire damage are underway but have been constrained by access limitations due to bushfire damage, flood damage and COVID restrictions. The NSW National Parks and Wildlife Service, in collaboration with Traditional Owners, currently have assessments underway in the Gundungurra ILUA (Indigenous Land Use Agreement) area in Kedumba, Cedar and Erskine catchments of the Blue Mountains National Park.

The NSW National Parks and Wildlife Service have various other cultural heritage assessments underway with the Indigenous community, including at two of the largest and best preserved culturally significant sites in the Wollemi National Park: Eagle's Reach, with drawings and stencils; and Gallery Rock, an engraved platform where the site was remarkably undamaged with the exception of a separate platform which shows lamination and scorch marks.

#### **3.1.4 NSW Bushfire Inquiry**

The NSW Government commissioned an independent expert inquiry into the 2019-20 bushfire season to provide input to NSW ahead of the next bushfire season. The Final Report of the NSW Bushfire Inquiry is available from the [NSW Bushfire Inquiry](#) website.



All recommendations have been accepted in principle by the NSW Government with further work to be done on specific timelines to give at risk communities assurance that changes will be made to keep them safe. They cover a broad range of issues including hazard reduction, asset protection, operational response and capability, equipment and training, bushfire research, use of technology, cultural burning and vegetation management.

### **3.1.5 Royal Commission into National Natural Disaster Arrangements**

The Australian Government established a Royal Commission on 20 February 2020 to examine the response to the 2019-20 bushfires, and what improvements were needed to Australia's disaster response and preparedness capability. The [Royal Commission into National Natural Disaster Arrangements Report](#) (the Commission's final report) was published on 28 October 2020.

Many of the report's recommendations centred around operational fire fighting matters and community preparedness and recovery. The main recommendation in relation to wildlife and heritage was that all levels of government in Australia should ensure greater consistency and collaboration in the collation, storage, access to and provision of data on the distribution and conservation status of Australian flora and fauna. This included ensuring better integration of information about the location and vulnerability of sensitive environmental and Indigenous cultural values, such as attributes of Outstanding Universal Value, into emergency planning and responses.

### **3.1.6 Longer term recovery**

The NSW National Parks and Wildlife Service is collecting information and data to inform longer-term recovery to build on the actions identified in the immediate response plan. Further mapping and analysis to identify biodiversity impacts is planned, as is a range of conservation actions to address impacts.

## **3.2 Significant conservation achievements and other changes since World Heritage listing**

### **3.2.1 Conservation of the Wollemi pine**

The critically endangered Wollemi pine (*Wollemia nobilis*), a Gondwanan relict species – comprises a highly localised population of less than 100 adult trees in Wollemi National Park, which is part of the GBMA. Since discovery in 1994 their population health and demography have been closely monitored. Horticultural understanding of the species has increased to the extent that the species is commercially available around the world. Extensive ground and aerial survey over the years has not located any additional wild populations.

#### **Impacts of the 2019-20 bushfires**

A much-lauded fire-fighting operation to protect the wild stands of Wollemi pine during the 2019-20 fire season successfully prevented significant losses of the larger, mature trees (Hannam 2020). However, the population was impacted by fire to varying degrees, including charring of the lower trunks and scorching of the lower canopies of most adults; loss of several dominant trunks due to prolonged basal charring and impacts with falling rocks and trees; and possible elimination of the juvenile bank. NSW Government scientists are closely monitoring post-fire recovery due to the risk of delayed mortality and declines in tree health.

### **Establishment of new wild populations of Wollemi Pine**

The NSW Government commenced efforts to establish new wild populations of Wollemi Pine by translocation of seedlings to new wild sites in Wollemi National Park in 2019. The establishment of new wild populations is provided for in the recovery plan for the species and affords a degree of insurance against the potential catastrophic loss of the original wild stands due to fire, disease or other factors. The new translocation sites were heavily impacted by the 2019-20 fires and current survival of translocated individuals ranges from 3-30 per cent across the sites. Pre-fire drought has also contributed to plant mortality. A pilot translocation site established in 2012 at Mt Tomah Botanic Garden, outside the GBMA, was also impacted by the fires and current survival of translocated individuals at that site is approximately 30 per cent.

### **3.2.2 Increase in recorded eucalypt diversity since World Heritage nomination**

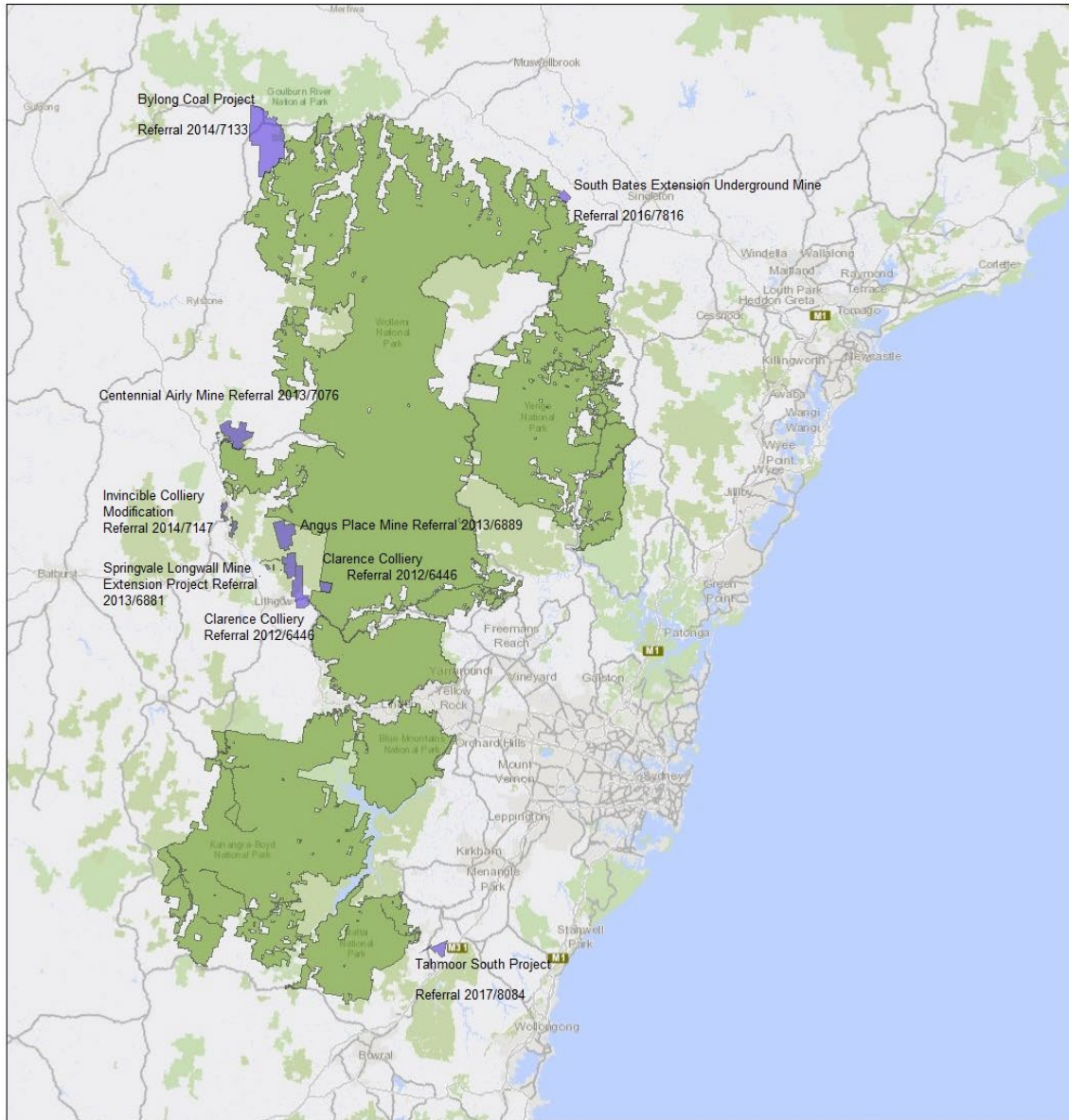
At the time of its nomination for inclusion in the World Heritage List in 1998, the GBMA was known to support 90 species of eucalypt (species of the genera *Eucalyptus*, *Angophora* and *Corymbia* in the family *Myrtaceae*). At the time of listing in 2000, that number had risen to 91. A review published in 2010 indicated the presence of 96 species. Additional species identified since the 2010 review include *Eucalyptus dealbata*, *Angophora subvelutina* and *Eucalyptus expressa*, bringing the current total of eucalypt species to 99.

### **3.2.3 Increase in the integrity of the GBMA through additions to reserves**

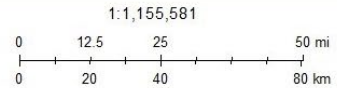
Since the GBMA was included on the World Heritage List, over 38,000 hectares of adjacent lands and inholdings have been added to the eight conservation reserves that comprise the property. This has been achieved through change in land tenure and management responsibility of some public lands and the purchase of strategically located private lands. Almost 260,000 hectares of adjacent reserves, including new flora reserves, has added to the integrity of the property and improved the security and management of these lands, which act as buffers to the GBMA.

In addition, the NSW Government has stated its intent to convert about 13,000 hectares of four state forest areas adjacent to the GBMA to flora reserves to be managed by the National Parks and Wildlife Service.

**Map 2 GBMA – location of coal mining proposals outside of the World Heritage property discussed in section 2.4**



April 4, 2019



Map produced by the Department of the Environment and Energy.  
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Map 3 GBMA – bushfire affected areas



**Fire Extent and Severity Mapping FESMv2.1**

0 15 30 60 Kms

Greater Blue Mountains World Heritage Area

unburnt

low - burnt understory/unburnt canopy

moderate - partial canopy scorch

high - full canopy scorch/partial consumption

extreme - full canopy consumption

NSW GOVERNMENT

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# Appendices

## **Appendix 1: Decision 43 COM 7B.2 about the Greater Blue Mountains Area World Heritage Property adopted by the 43rd session of the World Heritage Committee (Baku, 2019)**

**Greater Blue Mountains Area (Australia) (N 917)**

**Decision: 43 COM 7B.2**

The World Heritage Committee,

- 1) Having examined Document WHC/19/43.COM/7B.Add,
- 2) Recalling Decision **28 COM 15B.15**, adopted at its 28th session (Suzhou, 2004),
- 3) Notes with concern that the State Party recognizes that the proposed raising of the Warragamba Dam wall is expected to increase the frequency and extent of temporary inundation of the property upstream of the dam;
- 4) Considers that the inundation of areas within the property resulting from the raising of the dam wall are likely to have an impact on the Outstanding Universal Value (OUV) of the property, recalls Decision **40 COM 7**, in which it considered that the construction of dams with large reservoirs within the boundaries of World Heritage properties is incompatible with their World Heritage status, and urged States Parties to “ensure that the impacts from dams that could affect properties located upstream or downstream within the same river basin are rigorously assessed in order to avoid impacts on the OUV”, and requests the State Party to ensure, in line with its commitment, that the current process to prepare an Environmental Impact Statement (EIS) for the proposal fully assesses all potential impacts on the OUV of the property and its other values, including Aboriginal cultural heritage, and to submit a copy of the EIS to the World Heritage Centre for review by IUCN, prior to taking any final decisions regarding the project;
- 5) Also notes with concern that several mining projects exist in the vicinity of or adjacent to the property, and that some mining activities have resulted in impacts on the property, as evidenced by the incident at the Clarence Colliery, and also requests the State Party to undertake an assessment of potential cumulative impacts of all existing and planned mining projects in the vicinity of the property through a Strategic Environmental Assessment (SEA) or a similar mechanism;
- 6) Reiterates its position that mineral exploration or exploitation is incompatible with World Heritage status, which is supported by the International Council of Mining and Metals (ICMM) Position Statement to not undertake such activities within World Heritage properties;
- 7) Notes the information provided by the State Party regarding the Western Sydney Airport proposal and further requests the State Party to submit to the World Heritage Centre a copy

of the EIS for the anticipated airspace and flight path operations, once available, for review by IUCN;

- 8) Welcomes the development of a Strategic Management Framework for the property as a new integrated management instrument and requests furthermore the State Party to ensure that potential threats to the property from activities outside its boundaries, particularly mining, are fully considered in the development of this management framework and that the EIS required are carried out in conformity with IUCN's World Heritage Advice Note on Environmental Assessment, with a specific section focusing on the potential impact of the project(s) on the property's OUV;
- 9) Finally requests the State Party to submit to the World Heritage Centre, by 1 December 2020, an updated report on the state of conservation of the property and the implementation of the above, for examination by the World Heritage Committee at its 45th session in 2021.

## Appendix 2: Statement of Outstanding Universal Value for the Greater Blue Mountains Area

### Brief synthesis:

The Greater Blue Mountains Area (GBMA) is a deeply incised sandstone tableland that encompasses 1.03 million hectares of eucalypt-dominated landscape just inland from Sydney, Australia's largest city, in south-eastern Australia. Spread across eight adjacent conservation reserves, it constitutes one of the largest and most intact tracts of protected bushland in Australia. It also supports an exceptional representation of the taxonomic, physiognomic and ecological diversity that eucalypts have developed: an outstanding illustration of the evolution of plant life. A number of rare and endemic taxa, including relict flora such as the Wollemi pine, also occur here. Ongoing research continues to reveal the rich scientific value of the area as more species are discovered.

The geology and geomorphology of the property, which includes 300 metre cliffs, slot canyons and waterfalls, provides the physical conditions and visual backdrop to support these outstanding biological values. The property includes large areas of accessible wilderness in close proximity to 4.5 million people. Its exceptional biodiversity values are complemented by numerous others, including indigenous and post-European-settlement cultural values, geodiversity, water production, wilderness, recreation and natural beauty.

**Criterion (ix):** The Greater Blue Mountains include outstanding and representative examples in a relatively small area of the evolution and adaptation of the genus *Eucalyptus* and eucalypt-dominated vegetation on the Australian continent. The site contains a wide and balanced representation of eucalypt habitats including wet and dry sclerophyll forests and mallee heathlands, as well as localised swamps, wetlands and grassland. It is a centre of diversification for the Australian scleromorphic flora, including significant aspects of eucalypt evolution and radiation. Representative examples of the dynamic processes in its eucalypt-dominated ecosystems cover the full range of interactions between eucalypts, understorey, fauna, environment and fire. The site includes primitive species of outstanding significance to the evolution of the earth's plant life, such as the highly restricted Wollemi pine (*Wollemia nobilis*) and the Blue Mountains pine (*Pherosphaera fitzgeraldii*). These are examples of ancient, relict species with Gondwanan affinities that have survived past climatic changes and demonstrate the highly unusual juxtaposition of Gondwanan taxa with the diverse scleromorphic flora.

**Criterion (x):** The site includes an outstanding diversity of habitats and plant communities that support its globally significant species and ecosystem diversity (152 plant families, 484 genera and c. 1,500 species). A significant proportion of the Australian continent's biodiversity, especially its scleromorphic flora, occur in the area. Plant families represented by exceptionally high levels of species diversity here include Myrtaceae (150 species), Fabaceae (149 species), and Proteaceae (77 species). Eucalypts (*Eucalyptus*, *Angophora* and *Corymbia*, all in the family Myrtaceae) which dominate the Australian continent are well represented by more than 90 species (13% of the global total). The genus *Acacia* (in the family Fabaceae) is represented by 64 species. The site includes primitive and relictual species with Gondwanan affinities (*Wollemia*, *Pherosphaera*, *Lomatia*, *Dracophyllum*, *Acrophyllum*, *Podocarpus* and *Atkinsonia*) and supports many plants of conservation significance including 114 endemic species and 177 threatened species.



The diverse plant communities and habitats support more than 400 vertebrate taxa (of which 40 are threatened), comprising some 52 mammal, 63 reptile, over 30 frog and about one third (265 species) of Australia's bird species. Charismatic vertebrates such as the platypus and echidna occur in the area. Although invertebrates are still poorly known, the area supports an estimated 120 butterfly and 4,000 moth species, and a rich cave invertebrate fauna (67 taxa).

### **Integrity**

The seven adjacent national parks and single karst conservation reserve that comprise the GBMA are of sufficient size to protect the biota and ecosystem processes, although the boundary has several anomalies that reduce the effectiveness of its 1 million hectare size. This is explained by historical patterns of clearing and private land ownership that preceded establishment of the parks. However parts of the convoluted boundary reflect topography, such as escarpments that act as barriers to potential adverse impacts from adjoining land. In addition, much of the property is largely protected by adjoining public lands of State Forests and State Conservation Areas. Additional regulatory mechanisms, such as the statutory wilderness designation of 65% of the property, the closed and protected catchment for the Warragamba Dam and additions to the conservation reserves that comprise the area further protect the integrity of the GBMA. Since listing, proposals for a second Sydney airport at Badgerys Creek, adjacent to the GBMA, have been abandoned.

Most of the natural bushland of the GBMA is of high wilderness quality and remains close to pristine. The plant communities and habitats occur almost entirely as an extensive, largely undisturbed matrix almost entirely free of structures, earthworks and other human intervention. Because of its size and connectivity with other protected areas, the area will continue to play a vital role in providing opportunities for adaptation and shifts in range for all native plant and animal species within it, allowing essential ecological processes to continue. The area's integrity depends upon the complexity of its geological structure, geomorphology and water systems, which have created the conditions for the evolution of its outstanding biodiversity and which require the same level of protection.

An understanding of the cultural context of the GBMA is fundamental to the protection of its integrity. Aboriginal people from six language groups, through ongoing practices that reflect both traditional and contemporary presence, continue to have a custodial relationship with the area. Occupation sites and rock art provide physical evidence of the longevity of the strong Aboriginal cultural connections with the land. The conservation of these associations, together with the elements of the property's natural beauty, contributes to its integrity.

### **Protection and management requirements**

The GBMA is protected and managed under legislation of both the Commonwealth of Australia and the State of NSW. All World Heritage properties in Australia are 'matters of national environmental significance' protected and managed under national legislation, the Environment Protection and Biodiversity Conservation Act 1999. This Act is the statutory instrument for implementing Australia's obligations under a number of multilateral environmental agreements including the World Heritage Convention. By law, any action that has, will have or is likely to have a significant impact on the World Heritage values of a World Heritage property must be referred to the responsible Minister for consideration. Substantial penalties apply for taking such an action without approval. Once a heritage place is listed, the Act provides for the

preparation of management plans which set out the significant heritage aspects of the place and how the values of the site will be managed.

Importantly, this Act also aims to protect matters of national environmental significance, such as World Heritage properties, from impacts even if they originate outside the property or if the values of the property are mobile (as in fauna). It thus forms an additional layer of protection designed to protect values of World Heritage properties from external impacts. In 2007, the GBMA was added to the National Heritage List, in recognition of its national heritage significance under the Act.

A single State government agency, the NSW Office of Environment and Heritage, manages the area. All the reserves that comprise the GBMA are subject to the National Parks and Wildlife Act 1974 and the Wilderness Act 1987. Other relevant legislation includes the Threatened Species Conservation Act 1995, the Environmental Planning and Assessment Act 1979, the Sydney Water Catchment Management Act 1998 and the Heritage Act 1977.

At the time of nomination statutory management plans for the constituent reserves of the GBMA were in place or in preparation, and these are reviewed every 7-10 years. Currently all management plans have been gazetted, and those for three component reserves (Wollemi, Blue Mountains, and Kanangra-Boyd National Parks, which constitute 80% of the property) are under revision for greater emphasis on the protection of identified values. An over-arching Strategic Plan for the property provides a framework for its integrated management, protection, interpretation and monitoring.

The major management challenges identified in the Strategic Plan fall into six categories: uncontrolled or inappropriate use of fire; inappropriate recreation and tourism activities, including the development of tourism infrastructure, due to increasing Australian and overseas visitor pressure and commercial ventures; invasion by pest species including weeds and feral animals; loss of biodiversity and geodiversity at all levels; impacts of human-enhanced climate change; and lack of understanding of heritage values.

The set of key management objectives set out in the Strategic Plan provides the philosophical basis for the management of the area and guidance for operational strategies, in accordance with requirements of the World Heritage Convention and its Operational Guidelines. These objectives are also consistent with the Australian World Heritage management principles, contained in regulations under the Environmental Protection and Biodiversity Conservation Act.

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