

Black Mountain Symposium Background Paper No. 18

Friends of Black Mountain: golden threads in community awareness

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Abstract. Black Mountain has been a defining element of Canberra since featuring in Walter and Marion Griffin's prize-winning design for the new national capital. Over the decades since, a large number of people and organisations — all 'friends' of Black Mountain — have actively advocated for its reservation, striven to minimise threats, worked to ensure its protection, helped document its biodiversity, become involved in its conservation and promoted its natural and cultural values through publications, displays, walks and talks. This paper describes the efforts of Black Mountain's friends from the 1910s to the present — who they were, what they did, when, and why — and raises a range of issues relevant to future management of the reserve. Their knowledge and keen interest in the natural and cultural values of Black Mountain, coupled with increasing community awareness of the iconic nature reserve, will continue to help protect this 'jewel in the crown' now and into the future.

1. Introduction

Black Mountain is described as a 'jewel in the crown' for Canberra because of its geology and rich biodiversity. It is a key element in the landscape and design of the national capital and one of the largest and most prominent reserves in Canberra Nature Park. All these make it a special place. It is an icon for Canberra and used by various local community groups as well as local, interstate and international visitors.

Who are its friends? I define them as the people and organisations that, over the years, have been supporting the conservation and community awareness of Black Mountain and its natural biodiversity. Black Mountain was declared a nature reserve in 1970, but for this to be achieved there was considerable effort from many friends of the mountain well before then.

Prior to Canberra becoming a national capital, Black Mountain was home to the local Ngunnawal people. Colonial settlement started in the 1820s with exploration into the region, and the mountain was partially cleared for grazing and also used for other activities such as felling trees for timber and quarrying (see Butz 2018). The selection of Canberra as the national capital has been a real benefit for Black Mountain and the community of Canberra and the nearby region.

This paper examines the golden threads of community awareness in the decades of the 20th century, and looks at the first couple of decades in the 21st century in more detail.

2. The 20th century

2.1 The 1910s: national capital

After the selection of Canberra as the site of the national capital, the government distributed maps and illustrations of the area as part of the competition to design the city; the maps and drawings sent to the competitors included Black Mountain, Mount Ainslie, Mount Majura and Red Hill. Naturally, Black Mountain was a key element in the prize-winning design by Walter Burley Griffin and his wife Marion Mahony Griffin (Fig. 1). Golden highlights on their plans and drawings added to the attractive presentation of their entry to the competition.

Walter and Marion Griffin were advocates for Australian native bushland. The *Report Explanatory of the Preliminary General Plan* for the Federal Capital talks about "a feature of the botanical gardens and forest reserve continuous with Black Mountain, incidentally perpetuating there the only remnant of primeval luxuriance on the city site" (Griffin 1913, p.7). I am inclined to think of the Griffins as early friends of Black Mountain. Inspired by the beautiful natural landscape, their plans

for the capital protected the local hilltops and ridges from urban infrastructure and is the basis of the distinctive appearance of Canberra today, which is greatly appreciated and supported by local residents as well as interstate and international visitors.

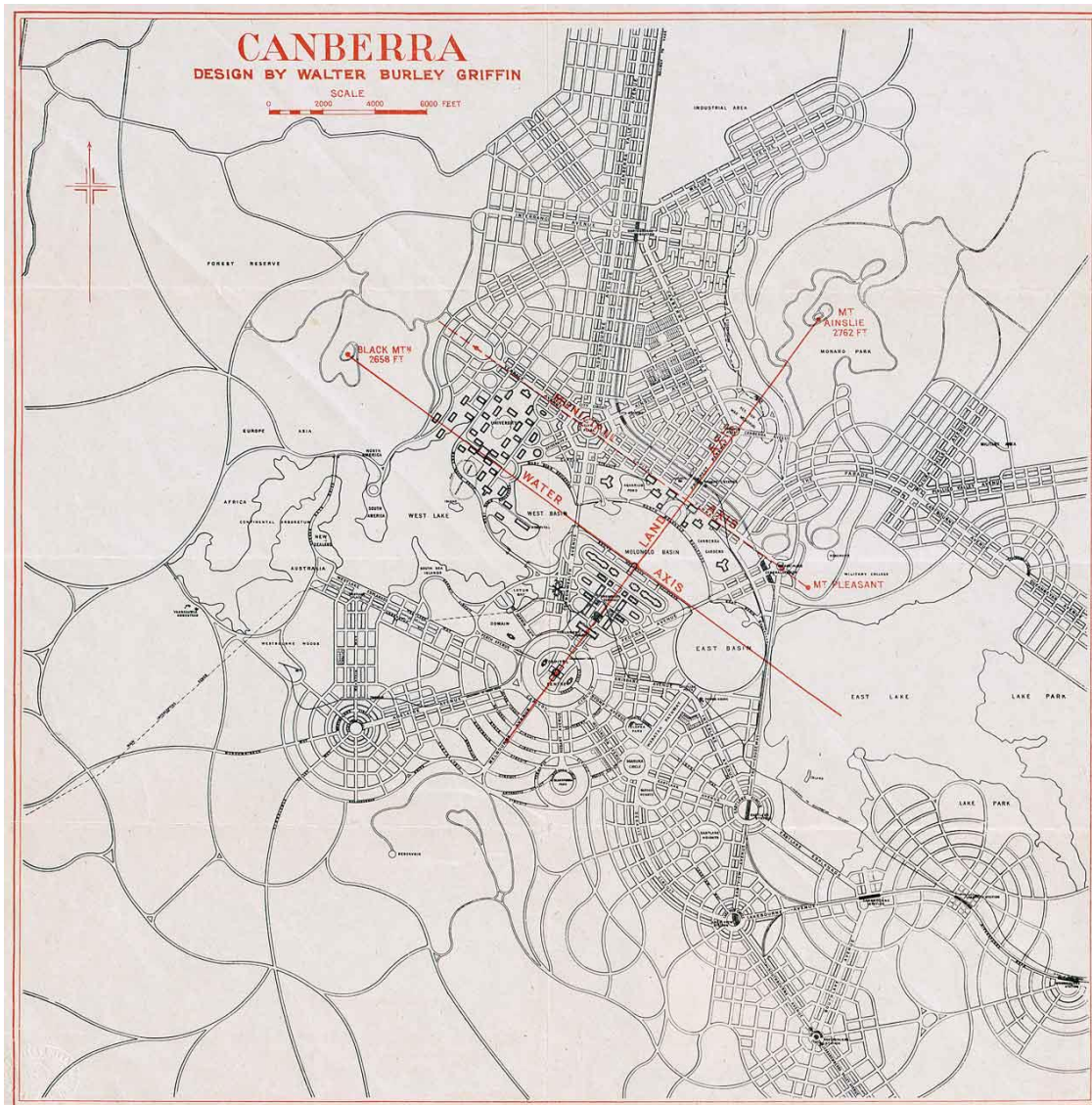


Fig. 1. Cartographic material by WB Griffin revisions 1916–1925, Government Printer, Melbourne. This map, based on revisions 1916–1924, shows that Black Mountain, at one end of the water axis, was to be the backdrop for the city. Source: National Library of Australia, MAP.G8984.C3S1 Gri 1916-1924.

As part of the design for the city, Griffin proposed “the coloured hills scheme” in which inner hills would be planted with a colour scheme based on flowers and foliage. Initially the lower slopes of Black Mountain were to be white and pink, but this was amended in about 1918–1919 to become the “Golden Hill” with an emphasis on ground covers with golden hues (Gray 1999; Taylor 2006); such planting does not seem to have eventuated.

There is continuing strong support for adherence to the Griffin vision for the city landscape. For example the *National Capital Plan* in section 8.5.3 (Policies for Hills, Ridges and Buffer Spaces) confirms “The inner hills will be protected as key symbolic and landscape elements in the National Capital Plan expressing the defined land, water and municipal axes and providing the dominant backdrop feature to the city” (Ryan 2011, p.10). In 2014 Black Mountain and the other inner hills

area featured prominently in the nomination for heritage listing of the Canberra Central National Area including and surrounding Lake Burley Griffin, the Inner Hills and 1920s garden city suburbs. Continuing support was evident in 2016 when a petition for World Heritage Listing of Canberra's central national area was signed by most of the several hundred people at a meeting at Hughes. In 2018, the National Capital Authority reaffirmed the importance of these hills, stating on its website:

The Inner Hills provide the scenic backdrop and natural setting for Canberra's urban areas, and within Canberra Central they are integral to the Griffins' composition. Accordingly their planning, design and development as open space areas are central to the maintenance and enhancement of the character of the National Capital. Including these areas within Designated Areas is the most appropriate way of securing this. (National Capital Authority 2018)

2.2 The 1920s to 1940s: the mountain and the gardens

In the 1920s the focus in Canberra was mostly on the infrastructure of the national capital and associated urbanisation. By 1935 the locations of the Canberra University College, the Council for Scientific and Industrial Research and the Forestry School were clear. Dr BT Dickson could be thought of as a friend of Black Mountain when, in his report about the establishment of the Canberra Botanic Gardens, he wrote:

If the site recommended for the botanical gardens is approved the upper slopes of Black Mountain should be constituted a Reserve because there are to be found the most numerous examples of native wild flowers in the city area. It will be a matter for regret in future years if they are not protected now. (Dickson 1935, p.2)

... and a few pages later ...

Rising above it [botanic gardens] are the upper slopes of Black Mountain and these should be constituted a Reserve complementary, as it were, with the gardens. (Dickson 1935, p.5)



Fig. 2. Dr Bertrand Thomas Dickson, CMG, prepared a report on the requirements and suitable location for botanic gardens in Canberra in 1935, in which he mentioned that Black Mountain should be constituted a reserve. Photo: from Australian Plant Collectors and Illustrators (<https://www.anbg.gov.au/biography/dickson-bertram.html>).

The Canberra Botanic Gardens was established on the lower slopes of Black Mountain with more work after the end of World War II. The first ceremonial planting there was on 12 September 1949 by the Prime Minister of Australia, Ben Chifley, and the Director of Kew Gardens who was in Canberra during a visit by international foresters (Anon 2011).

2.3 The 1950s and 1960s: conservation movement

Development of the infrastructure, institutions and urbanisation of Canberra as the national capital continued in the 1950s with the push by the then Prime Minister, Robert Menzies, leading to the establishment of the National Capital Development Commission in 1957. As more people came to live in the town, its intrinsic beauties were increasingly appreciated by the community.

A strong friend of Black Mountain and its biodiversity was the National Parks Association of the ACT (NPA), formed in 1960. The NPA aimed to have a national park in the territory and was also active in the conservation of Canberra's hills and ridges, lobbying the government in the 1960s for the hills to be made nature reserves. Black Mountain was made an area of restricted activity in 1961, and in that year the NPA opposed erection of a TV tower on it (NPA 2000 p.8).

In 1966 Senator Tony Mulvihill championed the establishment of a national park in the Senate. James Anthony (Tony) Mulvihill was a Labor Senator for New South Wales from 1964 to 1983, and a member of the Standing Committee on Social Environment in the period 1971–1975. Senator Mulvihill was also described as a “friend of Black Mountain” in a government folio in 1969 (Shorthouse 2018). Incensed by gazettal of the Telecom Tower, subsequently he was very active in raising the matter with the Labour Party caucus and the Trades and Labour Council. He was described as the first person to make conservation an issue in the Labor Party of New South Wales (Senator Sibraa, cited in Clune 1987).

Members of the NPA were also active in outings to Black Mountain, such as guided rambles led by members including Dr Nancy Burbidge, George Chippendale, and Pat Hammond. Laurie Adams, a botanist, also guided on these walks although he preferred not to lead them. Burbidge (Fig. 3a), who was founding Secretary of NPA in Canberra (NPA undated), became renowned for the Black Mountain spring wildflower rambles which she had begun in the early 1960s (see Purdie 2018a). Appointed as a systematic botanist to CSIRO in 1946, she helped establish the Herbarium Australiense (now the Australian National Herbarium) and had principal responsibility for development of the new *Flora of Australia* project from 1973 (Hewson 2003). She also had a strong interest in educating people generally about Australian native plants.

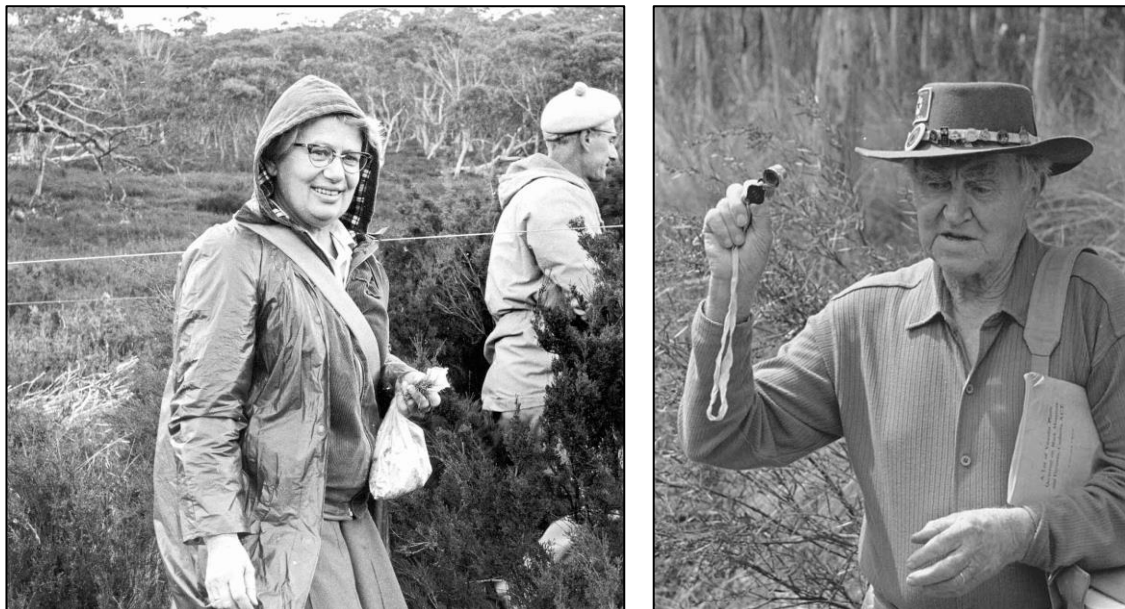


Fig. 3. a) left, Dr Nancy Burbidge, initiator of the Black Mountain spring wildflower rambles in the early 1960s. b) right, George Chippendale, October 2001, who led the rambles for many years from 1968. Photos: left, CSIRO (<https://csiropedia.csiro.au/burbidge-nancy-tyson/>) and right, R Alder.

In the late 1960s Burbidge asked George Chippendale (Fig. 3b) to take on responsibility for these rambles because of her declining health (see Purdie 2018a). He was highly regarded for his knowledge of plants, particularly eucalypts. Both Burbidge and Chippendale provided golden insights to the many participants about the range of plants on Black Mountain and added to their awareness and appreciation of the area.

Following discussion at its meeting in October 1969, the NPA formed a Black Mountain Committee convened by Dr John Hill to focus on Black Mountain becoming a reserve (NPA 1971). NPA members George Chippendale, Mr Green, Julie Henry, Dr John L Kirk and Dr Nancy Burbidge have been recorded in the NPA Bulletin as being involved with Dr Hill. It appears that Kirk became the convenor during 1971.

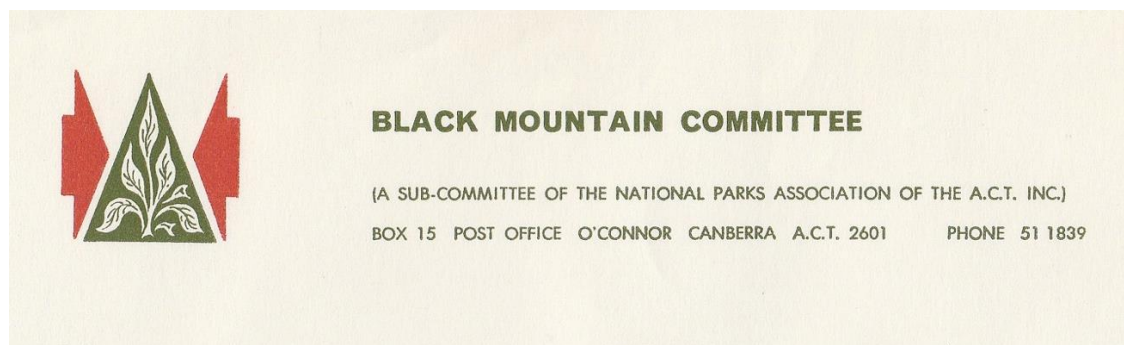


Fig. 4. Letterhead of the Black Mountain Committee, a sub-committee of the National Parks Association of the ACT. Photo: J McMahon.

2.4 The 1970s: declaration and gazettal

Golden threads of conservation and community awareness of Black Mountain's biodiversity continued into the 1970s. The NPA Black Mountain Committee was very active in late 1969 and the 1970s in correspondence to government agencies, the federal Minister for the Interior and meeting with government representatives about Black Mountain becoming a reserve. In April 1970 Hill reported that Apex and Jaycees clubs had offered moral support. He also presented a paper titled "The Black Mountain Reserve" at a conference organised by the NPA and the Centre for Continuing Education at the Australian National University (ANU) on 26–28 June 1970. With the theme "The processes and problems of seeding conservation", the conference posed the following questions:

- Who is responsible for deciding whether conservation proposals should be favoured?
- How is inaccessible, or scientifically or technically difficult information translated and transmitted in such a way that the essential matters emerge?
- What paths are open for the citizen wishing to conserve his natural heritage and how is he most likely to achieve results?
- What is the position of the politician or administrator caught between the conflicting demands of economic interests and conservationists?

A similar NPA committee was focussing on Mt Ainslie being declared a reserve, and at the 1972 NPA Annual General Meeting the two committees merged to form the City District Reserves Subcommittee, comprising Bill Watson (convenor), Dr Nancy Burbidge, Brian Lee, Dr Chris Watson (temporarily) along with Bill Adams, Julie Henry and Roy Tait as non-committee members (NPA 1972). This subcommittee continued with correspondence and meetings with government representatives about protecting the reserve from encroachment by roads. They reported success in reducing the width of the planned roads and associated encroachment on Black Mountain.

Other friends of Black Mountain have been part of universities such as the Canberra University College (now ANU) and the Canberra College of Advanced Education (now the University of Canberra). The NPA and other interested parties joined forces with the Society for Social

Responsibility in Science (SSRS) to oppose construction of a telecommunications tower on Black Mountain (see Hotchin 2018). Dr J Kirk, who was also a member of the SSRS, was coordinator for at least one of the petitions in 1972 (Chippendale 1972). On 11 March 1973 approximately 700 supporters attended a public meeting in Melville Hall on the ANU campus. Before it dispersed, the meeting elected a Citizen's Committee to Save Black Mountain (CCSBM), with Professor Ralph Slatyer as Chairman and Bruce Kent as Secretary. The 1000 people who attended a lunch-time meeting on 29 May 1973 demonstrated the strong community awareness and support for Black Mountain Reserve.

CCSBM was a strong friend of Black Mountain and its biodiversity and took the case to the Supreme Court. The committee received authoritative advice from Dr John Hookey, and Mrs P Coward of Abbott, Tour, Creer and Wilkinson. Coward, who was described as "a young lawyer of outstanding ability" (Hancock 1974, p.19) instructed the Counsel, Mr Richard Barbour who appeared for the plaintiffs along with Mr WH Nicholas (Hancock 1974, p.27). Although the tower was built, the work of the CCSBM committee and its supporters is a golden thread through darkness; over the years it is still referred to as an example of a heightened community awareness of environmental issues and the high value placed on nature reserves by local residents and visitors, which has led to strong community pride and concern for their future.

Also at this time, community awareness and appreciation of Black Mountain's biodiversity continued to grow with outings in the area. These included the NPA rambles guided by George Chippendale, Laurie Adams, Tom Baker, Pat Hammond and others, and those of the Society for Growing Australian Plants (SGAP, now Australian Native Plants Society ACT or ANPS), including a walk led by Jim Webb in the late 1970s. The Canberra Ornithologists Group (COG), established in 1964 (see Purdie 2018b), was another friend of Black Mountain. Members soon started surveying the territory's avifauna including that of Black Mountain, e.g. Marchant (1973), Bell (1980a, b) and Davey (2004). Davey specifically focussed on the potential impact of the Gungahlin Drive Extension on Black Mountain's avifauna and concluded:

All species will be affected by the construction of the GDE, as the proposed route will lead to the destruction of habitat. A reduction in both feeding and breeding areas will lead to displacement and the possible death of some individuals ... Individuals most at risk are those that are sedentary and resident within the area ... As an under-estimation, it can be assumed that at least 53 individuals would be displaced by the GDE construction. (Davey 2004, p.75)

2.5 The 1980s: concerns about encroachment

Concern about encroachment of Black Mountain Reserve continued to be expressed by the NPA and another group of friends — the O'Connor and Black Mountain Foothills Protection Society convened by Donald Fraser. The latter organised petitions and protests in 1986–88 about the Gungahlin Drive Extension¹ being located between Black Mountain and CSIRO, and CSIRO and the Canberra Botanic Gardens. For example, *Canberra Times* journalist Ian Warden (Warden 1987) reported a protest by c.80 people who presented a petition signed by 1700 people opposing it as a proposed route for John Dedman Drive because it would spoil the bush corridor adjoining the gardens and the peaceful enjoyment of nature in the gardens. Some of the protestors held signs alleging "NCDC kills echidnas!".

Community members wanting to know more about Black Mountain's richness continued to attend outings and guided rambles there through the 1980s, including the spring wildflower rambles led by George Chippendale with Laurie Adams as one of the guides (see Purdie 2018a).

¹ Also known as the Gungahlin Parkway and the John Dedman Parkway (see Hogg 2018).

2.6 The 1990s: increasing community awareness

The 1990s became another golden era of friends of Black Mountain as community groups started additional walks and rambles and produced new information leaflets to meet the level of interest in the nature reserve.

A few members of SGAP/ANPS started walking on Wednesday afternoons in interesting local bushland areas looking at the plants and recording what they saw. In September 1992 Jo Walker wrote about some of these walks and the interesting species they found. These early walkers were the founding members of the Wednesday Walkers (Clarke 2013, p.12). From about 1996 Ros Cornish produced lists of plants that walk participants recognised during the rambles on Black Mountain and other reserves. These lists were valuable not only in enhancing participants' knowledge of the flora, but continue to be a gold mine of information and reference about species, and even more so when Cornish and Martin Butterfield put the Wednesday Walks records from 2008 onwards onto the ANPS website (http://anps-canberra.asn.au/site_old/index.php/gatherings-category-list/wednesday-walks/plant-lists) and added the data to the Atlas of Living Australia (www.ala.org.au).

Rosemary Blemings and friends who were also members of organisations such as SGAP/ANPS and the Fields Naturalists Association of Canberra developed a series of self-guided *Black Mountain Wildflower Walks* leaflets in the period 1997–2004, publishing them with support from Telstra and the ACT Government (see Purdie 2018a); another golden thread in community awareness. These volunteer authors would walk a route and describe it in a leaflet, along with a map and an illustration of one of the plants on the walk, which was printed and distributed widely in Canberra. The series was launched at Black Mountain by Senator Gary Humphries in October 1997 (Fig. 5).



Fig. 5. The *Black Mountain Wildflower Walks* leaflet series was launched by Senator Gary Humphries (third from left) on 2 October 1997. Also present, from left to right, are Leon Horsnell, a staff member, Rosemary Blemings, Trish Gresham, Audrey Jones and Rosemary Metcalf. Photo: J Geue.

The volunteer authors of the leaflets included Blemings, Audrey Jones, Trish Gresham, Jean Geue, Geoff Clarke, Naomi Bell, Barbara Daly, Rosemary Metcalf and Winifred Mumford. Illustrations were by Janet Twigg-Patterson, cartography by Winifred Mumford and the design for several by Green Words and Images, Canberra. These leaflets also referenced *Our Patch: field guide to the Flora of the Australian Capital region* that had been produced by the Friends of Aranda Bushland and *Grassland Flora: a field guide for the Southern Tablelands (NSW & ACT)* by David Eddy, Dave Mallinson, Rainer Rehwinkel and Sarah Sharp.

George Chippendale continued the golden thread of community awareness and appreciation of Black Mountain by still leading rambles on Black Mountain several times each year in the 1990s. Laurie Adams published *Trees and Shrubs of Black Mountain, Mt Ainslie and Mt Majura: a key based on vegetative characteristics* (Adams 1990) which was used as a reference by some of the walk participants. In 1999 Chippendale extended invitations for involvement in the rambles from

just the NPA to the Friends of the Australian National Botanic Gardens, University of the Third Age (U3A), and the Fields Naturalists Association of Canberra, which resulted in about 60 people coming, the largest group until then (NPA 1999, p.37). These organisations have continued to be involved in various ways in the annual Black Mountain spring wildflower ramble.

3. The 21st century: threats and more golden threads

The themes of conservation and promotion of Black Mountain continued through the next decades, with organisations and individuals continuing to be friends of the area in various ways. Promotion activities included walks in Black Mountain Nature Reserve, while conservation issues included concern about encroachment of roads and other activities into it.

3.1 The 2000s

The Australian National Botanic Gardens (ANBG) being a friend of Black Mountain was apparent again in 2000, when it developed a walking trail between the gardens and the summit of Black Mountain as a joint initiative with the ACT Government and with Telstra sponsorship. This Summit Walk was officially opened on 26 July 2000 (Fig. 6), the 30th year of both the declaration of the Black Mountain Reserve and of the official opening of ANBG to the general public by Prime Minister John Gorton, in October 1970.



Fig. 6. The official opening of the Summit Walk by Brendan Smyth (left), acting Chief Minister, ACT Government. Also shown are John Hicks (centre), ANBG Director, and a Telecom representative (right). Photo: J Geue.

In August 2001 the Friends of Black Mountain was formed by a group of people concerned about perceived threats to the area. These included:

- the impact of the Gungahlin Drive Extension and Caswell Drive duplication along the western flank of the reserve, particularly at the intersection of Belconnen Way and at Glenloch Interchange;
- the possible widening of Parkes Way, involving potentially significant earthworks at the southern side of Black Mountain;
- the possible re-development of Rani Road as a ramp to Parkes Way; and
- a possible road along the eastern edge of Black Mountain behind CSIRO and adjacent to ANBG.

People at the initial meeting included Dierk von Behrens, Philip Bell, Harry Crawford, Nicky Davies, Julia Richards, a member of the Conservation Council, Graeme Evans, Jean Geue, Paul Hattersley, Ian Hayes, Dave Kelly, Dan McMillan (Australian Democrats) and Shane Rattenbury (ACT Greens). Apologies were received from Phillipa Rowland (convenor of the O'Connor Ridge ParkCare group) and Alan Frost. Hattersley, who had been appointed spokesperson for the group, said in a media release that "some of the proposals being suggested amounted to environmental

vandalism” (*Sustainable Times*², September 2001). An article published in the *Canberra Chronicle* on 9 October 2001 was accompanied with a photo of Geue and von Behrens expressing concerns about the impact of the Gungahlin Drive Extension (GDE) on Black Mountain.

The Save the Ridge group were also friends of Black Mountain in various ways, especially in 2004 about the Environmental Impact Statement in relation to the GDE. The group was advised that two ANU researchers, Brendan Mackey and a colleague, had scientifically dated a sample of tree stems along the path of the GDE between Ginninderra Drive and Belconnen Way. They found:

To our surprise the data clearly shows that this tract of vegetation comprises mature, multi-age woodland with one cohort of around 200 years, and probably another smaller cohort even older. This vegetation clearly predates European settlements of the region. While there is always uncertainty around estimates of tree age, our confidence limits are sufficiently robust to support this interpretation. It is definitely not young (~40 years old) re-growth that has been generally believed and communicated to the public. ... a critical ecological parameter which is highly relevant to, inter alia, the vegetation’s habitat significance. (Mackey 2004)

Mackey also made tree ring counts on Black Mountain and Bruce Ridge eucalypts. This caused Jean Geue, Terry Digwood and other friends who had measured tree diameters of twelve plots along the GDE route to revise their estimate of the Black Mountain woodland age to 11% of the trees being more than 200 years old (Geue 2010a).

The representation and protests of the Friends of Black Mountain, Friends of Aranda Bushland and others resulted in changes to the Glenloch Interchange area to protect an old growth tree called Pryor’s Notable Snow Gum, and its progeny, and slightly reduced the amount of Black Mountain woodland area that would be affected by the road developments.

The annual spring wildflower ramble and other walks continued to be led by George Chippendale for many years until “only some infirmities of age” (Chippendale and Geue 2010) caused him to pass over responsibility to the capable hands of Jean Geue, a member of several plant and conservation organisations in Canberra, on 9 October 2004 (Fig. 7).



Fig. 7. George Chippendale (2nd from right) at his last spring wildflower ramble, 9 October 2004. Photo: J Geue.

² A newsletter of the Canberra Environment Centre and the Conservation Council of the South East Region and Canberra.

Although not a member of the NPA, Geue took over organisation and promotion of the walk in the absence of an NPA volunteer at the time in order to continue the tradition because of her and the community's strong interest in the value of these rambles. She was a member of the ANPS, and coordinated the continuing involvement of ANBG, Friends of ANBG, Field Naturalists Association of Canberra and U3A as well as the NPA (see also Purdie 2018a). Many U3A people enjoyed the rambles as a practical excursion in recognising species that complemented the botany courses Chippendale had conducted at U3A for several years about local native plants. Laurie Adams' revised edition of *Trees and Shrubs of Black Mountain, Mt Ainslie and Mt Majura* (Adams 2005) also continued to be a practical resource for walk participants.

The Friends of Black Mountain as a formal organisation went into recess for several years because of the extensive commitments of its various members. However issues such as the Canberra Centenary Trail prompted other friends to protect Black Mountain, such as Jean Egan and Tony Wood and their friends in the orchid group (see Purdie 2018b). The proposed Canberra Centenary Trail appeared to have been planned with little consideration for conservation in nature reserves, especially in fragile areas. Egan, Wood and other friends of Black Mountain (and other reserves) lobbied hard to ensure that cycling was permitted only on formed roads, that other tracks were designated as "walk only detours" (i.e. not for cyclists) (ACT Environment Directorate 2014), and that no tracks cut through fragile areas of the reserve. Their sterling work was another valuable thread of community awareness that was worth its weight in gold.

3.2 The 2010s: regeneration of Friends of Black Mountain

The Friends of Black Mountain organisation was reactivated as a result of two threads in the warp and weft of community awareness of Black Mountain: the Canberra Centenary Trail, and a spin-off from the 20th Anniversary celebrations of the Friends of Aranda Bushland in September 2010. Jean Geue, Convenor of Friends of Aranda Bushland, described the guest speaker's talk at the event in part of her report about it:

Rosemary Purdie walks Black Mountain regularly and that reserve has almost the same soils and vegetation mix as Aranda Bushland. She doesn't just walk, she identifies, maps and creates herbarium specimens of plant species she finds. Her entertaining talk was about her surveys of native and exotic species. She focused on 'interlopers' - both exotic plants from other countries and native ones from other parts of Australia.

The talk was highly relevant as twenty years of dedicated park care has resulted in Aranda Bushland being more than 95% weed free. In contrast, Black Mountain is beloved and researched by many but lacks a park care group devoted to weed control ... (Geue 2010b)



Fig. 8 The back of a truck made an impressive podium for Rosemary Purdie's talk about weeds as 'interlopers' on Black Mountain at the Friends of Aranda Bushland 20th Anniversary celebrations, 12 September 2010. Photo: J. Geue.

As a result of this talk Geue was determined to help reactivate the Friends of Black Mountain (FoBM) group. She invited a number of interested people, whom she called a 'ginger-group' to re-energise FoBM. Linda Beveridge, Carol Billett, Rosemary Blemings, Isobel Crawford and Jean Egan met with Geue on 29 May 2012 and Beveridge was invited to be the FoBM Convenor. The range of issues discussed included the proposed Canberra Centenary Trail, shortfalls in ACT Government funding for nature conservation, field guides for Black Mountain walks, keeping forbidden animals out of the reserve, interpretive signs, fire management, weed management and strategic and action plans. FoBM subsequently formalised its vision, aims, membership and the perceived values of Black Mountain Nature Reserve (see Appendix 1) to provide a framework for the group's work.

The enthusiastic members of the FoBM Coordination Group that have worked with Beveridge since 2012 are Carol Billett, Rosemary Blemings, Isobel Crawford, Michael Doherty, Ted Edwards, Jean Egan, Jean Geue, Julie Hotchin, Cathy Ikin, Joy McMahon, Tony di Pietro, Rosemary Purdie (an advisor) and Libby Viccars. The group's membership has changed over the years (Appendix 2), but all the members have been very valuable in achieving so much.

Soon after its reactivation FoBM became a member of the Molonglo Catchment Group (MCG), and carried out its activities in conjunction with them. Members of the FoBM Coordination Group, including Linda Beveridge and Carol Billett, have been active members of MCG committees, including its Executive and Board.

FoBM's strategies, plans and activities since 2012 have been clearly aligned with conservation and with promoting awareness, understanding and knowledge of Black Mountain's biodiversity. Its work in these areas is described in the following sections.

3.2.1 FoBM conservation activities

Conservation activities have included monitoring, recording, caring and reporting on flora, fauna, erosion, tracks and trails.

(a) ParkCare. FoBM quickly joined the Conservation Council of Canberra and Region (now Conservation Council ACT Region) as well as MCG, and requested ParkCare Group status from the ACT Parks and Conservation Service (PCS)³. After the request was initially rejected on the basis of lack of resources, and with little progress through further discussion, FoBM wrote to the Minister for Territory and Municipal Services, Shane Rattenbury MLA. Following a meeting with FoBM on 23 February 2014, the Minister arranged for not only FoBM, but Friends' groups of some other reserves, to become ParkCare groups. This was highly beneficial as it facilitated regular FoBM contact with the ParkCare Coordination area and the development with them of agreed work plans. It also meant FoBM had access to tools needed for its weeding activities that were not readily available elsewhere, and allowed FoBM's events such as guided walks to be advertised on the Explorer Program⁴.

As a ParkCare Group, FoBM has provided a range of reports to PCS about its activities, including monthly weeding reports and the number of voluntary hours contributed by its members. It has also written an article for the annual PCS newsletter *Scribbly Gum* since 2012 (Beveridge 2012–2017). The table on the next page provides an estimate of the annual number of voluntary hours FoBM members have contributed to the conservation and promotion of biodiversity in Black Mountain Nature Reserve over the last six financial years. It is readily apparent that members contribute

³ ParkCare is a cooperative partnership between community organisations and the ACT Parks and Conservation Service.

⁴ https://www.environment.act.gov.au/parks-conservation/parks-and-reserves/recreational_activities/ranger-guided-walks-and-activities

significant effort as part of FoBM activities, including increased voluntary time in 2017/2018 to the organisation of the Black Mountain Symposium 2018.

Financial Year	Hours	Financial Year ctd	Hours ctd	Financial Year ctd	Hours ctd
2012/2013	1868	2014/2015	2461	2016/2017	1708
2013/2014	2367	2015/2016	2029	2017/2018	2555

Members of FoBM have been able to attend PCS sponsored courses in weed recognition, gain Chemical certificates related to weeding, and receive First Aid training which are all relevant to the group’s activities. It has also been involved along with other ParkCare groups in discussion and consultation on a range of issues through the regular ParkCare Convenors’ meetings and individually. This has been a particularly valuable thread in the tapestry of sharing knowledge and experience and achieving various objectives.

The 25th Anniversary of ParkCare was celebrated in 2014, and included installation of commemorative timber seats in the territory's nature reserves. The 25th Anniversary seat for Black Mountain was placed at a high point of the Woodland Walk on the south-west side of the reserve.



Fig. 9. Walk participants sitting on the PCS 25th Anniversary seat at Black Mountain reserve, 27 April 2018. Photo: L Beveridge.

(b) Consultation and advice. FoBM’s vision is to be the primary community voice for conserving and promoting the biodiversity of Black Mountain. It has been consulted by the ACT Government on a number of issues and has itself contacted the government about others; examples of these issues are outlined below.

Community concerns and controversy about the siting of the **Canberra Centenary Trail** coincided with FoBM's reactivation. People fearful of the potential for damage in parts of the reserve became active members of FoBM and contributed to its response. As a result, there are shared main routes of the trail as well as “walk only detours” (see section 3.1). In Black Mountain Nature Reserve (and other nature reserves) cyclists are restricted to formed roads and are not permitted on walking tracks. In January 2014 FoBM submitted a paper about the unacceptability of the **draft Trails Strategy** that had been released for public consultation. A key issue was to ensure that conservation has priority over recreation in nature reserves, a priority that the draft strategy ignored. This draft was later superseded by other guidelines.

PCS has principal responsibility for the **Canberra Nature Park Management Plan**. The latest plan was published in 1999 and a review of it is underway. FoBM has contributed to that review

and is looking forward to the draft being released for public consultation. FoBM has also responded to the **Light Rail proposals** for Belconnen and Weston Creek about ensuring there is no encroachment or fragmentation of Black Mountain Nature Reserve on either the Belconnen Way side on the north or the Parkes Way side on the south, and that there are no additional power lines.

(c) Canberra Centenary BioBlitz 2013. The BioBlitz was held on Black Mountain on 25–27 October 2013 as a result of a meeting between FoBM, CSIRO and MCG. The BioBlitz was convened by Anna See, Coordinator at MCG, with a committee of representatives from the Atlas of Living Australia, ACT Government, Inspiring Australia and Canberra Centenary. The aims of the blitz were to:

- bring together and engage a range of local community stakeholders in biodiversity surveys;
- collect and mobilize data on local wildlife species;
- increase a sense of community engagement with and stewardship for local biodiversity; and
- provide a large quantity of rich information for Black Mountain in a short space of time.

The format included workshops and surveys, led by a range of local experts as shown in the table below.

Workshop leader	Workshop topic	Survey leaders ctd	Surveys & topic ctd
Chris Cargill	Cryptogams	Lonneke, Tony	Mammals x2
Glen Cocking	Moths	Corrigan	
Stuart Harris	Peacock Spiders	Doug Laing,	Birds x3
Michael Doherty	Plants & effect of fire	Lonneke, Clare Kerr	
Tony Wood	Orchids	Michael Mulvaney	Rare Plants x2
Amalie Langevin	Frogwatch & “frog listening”	Sarah Sharp, Clare Kerr	Vegetation x2
Survey leaders	Surveys & topic	Kirsten Velthuis	Flora x1
Stephen Skinner or Woo O’Reilly	Macroinvertebrates & algae x1	Matthew Bietzel	Fish (Lake Burley Griffin) x1
Darren LeRoux	Bats x1	Tony Wood	Orchids x1
Ross Bennett	Reptiles x2	Stuart Harris	Peacock Spiders x1
Eyal Lebedinsky	Frogwatch	Darren LeRoux,	Bats & Anabats x2
Kim Pullen	Insects x1	Michael Pennay	

The CSIRO Discovery Centre was the coordination centre for the 3-day event. A total of at least 322 species was recorded from 808 sightings, with approximately 453 people attending. The event was blessed with beautiful weather, although perhaps a little cooler than those hunting reptiles would have liked. The species records were put onto the Atlas of Living Australia, and Anna See gave a Thursday Talk at ANBG about the BioBlitz on 20 February 2014. She mentioned several highlights, such as many more observations of moth specimens and species than anticipated, and the Peacock Spider *Maratus vespertilio* being recorded for the first time on Black Mountain.

The BioBlitz was another example of the golden work of a wide range of organisations in being friends of Black Mountain and helping raise community awareness of its biodiversity.

(d) Bird Surveys. The Canberra Ornithologists Group (COG) (see section 2.4) has continued to be a golden thread in friends of Black Mountain. Since 2005 its members have also participated in a bird blitz in October each year by volunteering to record birds in one of the grid squares defined by COG. Many people have done Black Mountain over the years including Ian Baird and Con Boekel. Boekel has also provided guidance for other members of FoBM to participate in the bird blitz, including Linda Beveridge, Isobel Crawford, Julie Hotchin, Margaret Strong and Gaye Lindfield.

Hotchin has been coordinating bird observations on Black Mountain since 2017, including the October blitz.

Boekel frequently photographs birds on Black Mountain, and his collection has been a valuable resource for projects promoting the reserve's biodiversity, including the *Black Mountain Nature Reserve – a Special Place* exhibition (see section 3.2.2e). Boekel also offered to provide guidance and mentoring to Canberra Institute of Technology (CIT) student Naomi Treloar to undertake a project on Black Mountain as part of a CIT environmental sciences course run by Dr Hannah Selmes. Arranged with the assistance of FoBM, the project examined the response of Black Mountain's avifauna to fire and involved Treloar monitoring six sites on the eastern and southern sides of the Forest Loop Trail between May and September 2014, after a hazard control burn earlier in the year. She observed 28 species during the project, including two birds of concern, the Scarlet Robin and Varied Sittella (Treloar 2014). This project also assisted FoBM's aim to preserve and protect the Black Mountain ecosystems, by improving and building a record of the reserve's biodiversity and values.

(e) Frogwatch. People participating in Frogwatch surveys (see Purdie 2018b) have been golden friends of Black Mountain since 2002. The Frogwatch census there (and at many other sites) was conscientiously carried out by Roger and Sarah Hnatiuk for several years, with the reactivated FoBM conducting the Black Mountain censuses since 2012. Frogs recorded most years have included Plains Froglet, Common Eastern Froglet, Eastern Banjo Frog, Spotted Marsh Frog, Peron's Tree Frog, Whistling Tree Frog, Spotted Burrowing Frog and Smooth Toadlet. The 2017 census conditions were much drier and no Eastern Banjo Frog, Whistling Tree Frogs or Spotted Burrowing Frogs were heard. In response to Frogwatch Canberra's suggestion for monthly surveys, FoBM has been 'frogwatching' more often. It was a pleasant surprise to hear an Eastern Banjo Frog in March 2018, as some frog guidebooks list it as being heard generally between September and January.

Frogwatchers on Black Mountain over the years include Linda Beveridge, Debbie Cameron, Paul Doyle, Baeckea Driscoll, Cornea Driscoll, David Dedenczuk, Don Driscoll, Juliet Gribaldi, Roger Hnatiuk, Sarah Hnatiuk, Anke-Maria Hoefler, Helen King, Eyal Lebedinsky, Penny Lilley, Gaye Lindfield, Sebastian Queisser, Stuart Rae, Nick Shore, Margaret Strong, John Travers and Margaret Webber.

(f) Vegwatch. The Molonglo Catchment Group initially hosted a vegetation monitoring project with a view to improving information about the ACT's natural environment and its sustainability. The project focussed initially on monitoring vegetation (and less on fauna) and became known as Vegwatch. Its purpose was to obtain information from vegetation surveys that can be used to better inform management of the natural environment and strengthen community awareness and involvement.

FoBM has been carrying out Vegwatch on three sites in Black Mountain Nature Reserve; a fourth site was monitored briefly by a Gungahlin College environment studies class with the assistance of FoBM. The project built on tools and techniques for monitoring biodiversity in the region developed by Sarah Sharp and Lori Gould. Their *ACT Vegetation Monitoring Manual* (Sharp and Gould 2010) was developed further by community groups and resulted in its revision (Sharp and Gould 2014). This *Vegwatch manual*, as it became known, has also had subsequent revisions based on the experience of approximately 20 sites used for Vegwatch surveys.

FoBM had its initial Vegwatch training session in February 2013 and has established three sites (see table below) that have been surveyed annually over the last five years. Two of the sites were chosen as a means of continuing to survey plots established by Michael Doherty and Jacqui Meyers (Doherty and Meyers 2009) as part of an urban fire interface study. A third site was selected with contrasting slope and aspect features and initially surveyed two weeks before a planned fuel reduction burn. FoBM has also conducted plant recognition workshops of common species on several occasions as part of the program using the *Black Mountain Vegwatch Field Guide* prepared by Rosemary Purdie (Purdie 2016a).

Black Mountain Vegwatch sites			
	North-east site A*	North-east site C*	South-east site
Location	Above Frith Road	Above Frith Road	Above ANBG
Aspect	East	East	South
Slope	Gentle	Gentle	Steep
Year established	2013	2013	2014

* Located in area with Doherty and Meyers (2009) plots. The nearby Doherty and Meyers site B plots were surveyed by Gungahlin College students in 2013.

Twenty-one friends of Black Mountain have been involved in the Vegwatch surveys. Dierk von Behrens, Rosemary von Behrens, Linda Beveridge, Bethan David, Michael Doherty, John Fitz Gerald, Warren Geeves, Jean Geue, Adrienne Nicholson, Morgyn Phillips, Kathy Smith, Margaret Strong, Libby Viccars, Tony Wood, Maureen Wright and Rosemary Purdie have participated on multiple occasions. The latter has been a golden resource as leader of most of the surveys. MCG has hosted the database recording the results of various Vegwatch surveys, and FoBM's data for the Black Mountain sites has been used as part of the collection of regional and local data for analysis of vegetation health in the Canberra region.



Fig. 10. Two Vegwatch recorders in spring 2014, Morgyn Phillips (front) and Rosemary Purdie at north-east site A. Photo: L Beveridge.

(g) Weed Management. Weed prevention, management, removal and education are important elements of conservation in a nature reserve and their management on Black Mountain is a high FoBM priority. The Coordination Group organised the first weeding session for 3 November 2012 and there has been a weeding work party on the first Saturday of every month since, except in bad weather (rain or total fire ban).

In November 2012 the work party focussed on removing a dense area of thistles that was affecting a patch of orchids. Soon after, botanist and ecologist Rosemary Purdie (an adviser to the FoBM Coordination Group) suggested concentrating on woody weeds. Based on her weed mapping on Black Mountain, she has guided a program of removing woody weeds around the perimeter of the reserve and then spiralling up the mountain. One of the first weeding work parties of this program (Fig. 11) removed about 16 cubic metres of Bluebell Creeper (*Billardiera heterophylla*), also nicknamed 'Sollya' from its previous botanic name *Sollya heterophylla*, a native plant from Western Australia that is a declared weed in south-eastern Australia.

FoBM, Mount Ainslie Weeders, Friends of Mount Majura and the MCG received environment grants for threats to biodiversity which involved training in weed recognition as well as access to contractors and other assistance for weeding programs. FoBM was also able to tap into the Green Army program, and received assistance from the PCS Rangers in order to remove woody weeds on Black Mountain that were too big for the volunteers' pruning saws or located on slopes too steep for volunteer work. The FoBM Coordination Group greatly appreciated a small grant from MCG that allowed it to purchase tools and other equipment prior to FoBM becoming a ParkCare Group in 2014 (see section 3.2.1a) and then being able to access a trailer of PCS tools that was shared by ParkCare groups for weeding.



Fig. 11. Carol Billett and Adrienne Nicholson removing Bluebell Creeper (left), and Rosemary Purdie, Joshua Mulvaney and Aino Taivonon stacking it for removal (right). Photos: J Geue.

The delay in gaining ParkCare Group status saw the ParkCare Convenor advise FoBM that it was not permitted to carry out weeding in Black Mountain Nature Reserve until it became a ParkCare group. So FoBM arranged with ANBG for its own members and the Friends of ANBG to weed the bushland sections within the gardens adjacent to its southern and western boundary fences and in the Bushland Precinct area (Purdie 2014a). Once it became a ParkCare Group FoBM reactivated its weeding program in Black Mountain reserve. It has also done follow-up weeding from time to time in peripheral areas of ANBG next to the reserve and in the Bushland Precinct, as recommended in a report about the weeding (Purdie 2014b; Purdie 2016b), in order to “prevent native woody weeds jumping the Gardens fence into Black Mountain Nature Reserve”.

A reflection of the diamond-like sparkle of the wonderful weeders is that when work parties were cancelled several months in succession because of rain, some of them asked for a special weeding session to be arranged. The FoBM Coordination Group was happy to do so, and focussed on removing Blue Periwinkle (*Vinca major*) which is more effective when done soon after rain. Special weeding working parties have also been arranged on several occasions for the Pryor’s Notable Snow Gums site.

The leadership in various capacities provided by Rosemary Purdie, Isobel Crawford, Jean Geue and Linda Beveridge has contributed to the success of the weeding program. Several people have assisted with catering and administration, including Graeme Beveridge, Gaye Lindfield, Morgyn Phillips and Libby Viccars. Reports of the weeding work parties are made available to relevant areas of PCS, except those relating to ANBG which are sent to relevant staff there.

From November 2012 to December 2017, 52 people came on weeding work parties, 41 on multiple occasions, some more frequently than others. The average size of a work party was 10, with a range of 6 to 15 people. Wonderful weeders who have been in multiple work parties include Chris and Barbara Aubrey, Ros Beeton, Dierk von Behrens, Linda Beveridge, Carol Billet, Con Boekel, Kate Boswell, Alex Cassie, Isobel Crawford, Bethan David, Magdalena Dickinson, John FitzGerald, Jorge Gapella, Warren Geeves, Jean Geue, Di Gillies, Helen and Paul Hadobas, Paul Herbert, Peta

Hughes, Cathy and Chris Ikin, Hannah Jaireth, Gaye Lindfield, Gordon McAllister, Carina Moeller, Stuart Mules, Joshua Mulvaney, Adrienne Nicholson, Peter Ormay, Morgyn Phillips, Jamie Pittock, Rosemary Purdie, Hilary Salmon Krone, Kathryn Smith, Margaret Strong, Kate Taylor, Aino Toivonen, Libby Viccars and Alice Wells.



Fig. 12. Some of a weeding work party paused for morning tea, April 2015. From Left: Helen Hadobas, Aino Taivonen, Rosemary Purdie, Alice Wells, Jorge Gapella, Warren Geeves, Peta Hughes and Aino’s overseas guest Leena Hiviholm. Photo: J Geue.

Since 2012, FoBM weeding work parties have contributed more than 2100 volunteer hours in total to the conservation of the reserve, removing a total of approximately 25 600 weeds, most of them woody. Species most frequently removed are listed in the table below, and all species removed shown in Appendix 3. The program has made a visible difference in many areas of Black Mountain, including along the Powerline Track on the north side of the reserve where a large area of aggressive non-local Rough Paperbark (*Melaleuca parvistaminea*) was removed and the indigenous Silver Teatree (*Leptospermum multicaule*) is now thriving.

Species	Common Name	Non-local Native (N) or Exotic (E)	Total number of plants removed
<i>Acacia baileyana</i>	Cootamundra Wattle	N	3835
<i>Melaleuca parvistaminea</i>	Rough Paperbark	N	3415
<i>Kunzea ambigua</i>	Tickbush	N	1087
<i>Acacia rubida</i>	Red-leaved Wattle	N	577
<i>Acacia cultriformis</i>	Knife-leaved Wattle	N	440
<i>Thomasia petalocalyx</i>	-	N	465
<i>Acacia extensa</i>	Wiry Wattle	N	320
<i>Rubus anglocandicans</i>	Blackberry	E	303
<i>Crataegus monogyna</i>	Hawthorn	E	251

(h) Trails and tracks. Monitoring the condition of walking tracks, management trails and formed roads is another important aspect of conservation and protection of a nature reserve.

FoBM had issues with tracks being constructed illegally in Black Mountain reserve as they contributed to erosion and fragmentation, and in several cases went through fragile areas (e.g. a special orchid area). The orchid group (see section 3.1 and Purdie 2018b) was also very concerned about the way that cyclists, and particularly mountain bike riders, were abusing the values of the nature reserve. Using a sketch map of numbered trails and tracks, in January 2015 FoBM submitted a paper on Black Mountain Tracks and Trails to PCS that recommended repair maintenance work on some, closure of others (particularly those in fragile areas) and enhancement of a track on the southern side of the reserve (Beveridge and Geue 2015). PCS then undertook a review of the area's tracks and trails. One outcome was their successful coordination of a number of cyclists also interested in conservation to assist in closing many illegal tracks. Another outcome of FoBM's work was getting an incorrectly named management trail renamed, on the basis of research evidence, from 'Old Weetangera Road' to 'Finnerans Road'.

The walking track from ANBG to the summit of Black Mountain (Summit Track, see section 3.1) received increased visitation after it was completed in 2000. FoBM members have submitted reports to PCS about the state of the track over the years, particularly in 2011 and 2014. As a result, repairs were made to the track in mid-2015, which prevented further erosion and made this popular track a more sustainable part of the reserve. Although FoBM requested that reasonable longevity be included in the specifications, already it has reported on the unexpected level of wear and tear evident in some places.



Fig. 13. Summit Walk January 2014 (left) and in November 2015 (right). Photos: J Geue (left) and L Beveridge (right).

(i) Bushfire management. FoBM has taken an active interest in the ACT Government's Bushfire Management Strategy and the associated operational plans, particularly in relation to the burn mosaic size, frequency and timing on Black Mountain, and the regeneration of its flora and faunal habitats. FoBM has been concerned that the strategy, operational plans and associated modelling ensure that ground fuel assessment does not negate the nutritional needs of the flora in the reserve, and that sub-populations of orchids and other fire-sensitive plants are not burnt so frequently that they cannot replenish their seed banks. FoBM members have worked to ensure such plants are protected during the fires and monitored afterwards. This has included nominating two Plant Officers, Michael Doherty (a local fire ecologist) and Jean Egan (an orchid specialist), who mapped the fire-sensitive plants and advised on the species and areas that need to be protected in the mosaics planned for burning. FoBM plans to further map fire-sensitive species in the reserve to provide

accurate information that can underpin all aspects of the fuel reduction burn program on Black Mountain.

(j) Erosion. Erosion has been an issue on Black Mountain in different ways over the years. FoBM observations indicated the erosion was caused by factors including improper use of walking tracks by cyclists, creation of illegal tracks by cyclists and walkers, and water run-off into the reserve along Caswell Drive from the Gungahlin Drive Extension.

In 2016 FoBM arranged for a report by Lori Gould (Gould 2016), who is well known for her expertise in erosion control, about the exacerbated erosion occurring on the Black Mountain side of the Gungahlin Drive overpass between Black Mountain Nature Reserve and Aranda Bushland. Despite the report being provided to the ACT Government's Roads and Transport and Parks and Conservation areas, FoBM is disappointed that no effective work has yet been done. It will continue to pursue the matter, as the number of falling trees, increased width and depth of the water run-off and channels and damaged gabions remain of concern. A Green Army and other helpers were supervised by a PCS Ranger to install erosion prevention and control in a flatter area near this Gungahlin Drive overpass in 2015.

As part of the Black Mountain Woodland Walk project (see section 3.2.2a), a Green Army team installed logs on the bush trail section of the walk in order to reduce water momentum, and to assist water flow redirection. This has mitigated erosion on that part of the walk.



Fig. 14. Logs across the bush trail section of the Woodland Walk to help prevent erosion there. Photo: L Beveridge.

(k) Planting. There has been little need for regeneration projects on Black Mountain generally. However, after the 2003–2013 drought some of its dams and ponds used for Frogwatch had fewer reeds and sedges at their edges. Frogwatch Canberra had a project for some replanting with stock of appropriate provenance, and in July 2014 Anke-Maria Hoefer with the assistance of a conservation volunteer from Germany replaced some lost plants at the three Frogwatch sites on the western side of Black Mountain.

(l) Pest Rabbits. FoBM members have often observed rabbits or evidence of them in the CSIRO property backing onto Frith Road, in ANBG and in various locations in Black Mountain reserve, although the numbers seen in the latter have been small compared with some other parts of Canberra Nature Park. On Black Mountain, rabbits appear to be more frequent in rugged areas and near rocks

on steep slopes where it is difficult to map specific burrows. FoBM would like to see ground penetration radar used in order to find the burrows in these places, and the burrows managed or animals removed while the numbers are comparatively small and facilitate effective control.

(m) Reporting non-compliant activities. FoBM members informally report on issues and observed behaviour that does not comply with legislation, including the Conservator's Activities Declaration for Black Mountain reserve. Members frequently observe and report people taking *dogs* into the reserve, sometimes on leads and sometimes off leads, where they contribute to contamination and threats to wildlife. *Cyclists* often do not comply with keeping to formed roads, and use areas closed for conservation purposes (such as fragile creek banks and creek beds) which results in damage to plants and exacerbates erosion. *Removal of plants and timber* have also been observed, and include orchids being dug out and timber loaded onto the back of utes. *Rubbish* is often dumped in and near car parking areas of the reserve; while FoBM members often remove smaller items, they report larger articles (such as a whole lounge suite near the Forest Loop and a bedroom suite near Caswell Drive) to government agencies (<https://www.act.gov.au/our-canberra/latest-news/2016/may/report-illegal-dumping>) for removal.

3.2.2 FoBM promotion of Black Mountain's biodiversity

One of FoBM's aims is to promote community awareness and appreciation of Black Mountain's biodiversity. This has become a key role of the organisation, and has included running guided walks and talks, and developing interpretive signs, displays and printed and electronic material.

(a) Signage. In 2016 FoBM and MCG received an ACT Heritage Grant to design, produce and install a series of interpretive signs along the Woodland Walk on the lower south-west side of Black Mountain reserve to enhance community awareness of its biodiversity. The grassland and woodland there comprise less than 5% of the reserve, yet are part of the ACT's vulnerable grassland and grassy woodland areas. Key coordinators, authors and photographers involved in this project were Linda Beveridge, Morgyn Phillips, Rosemary Purdie, Jean Geue, Con Boekel and Murray Fagg. In addition to the information on each sign, there are links to electronic leaflets on the FoBM website and a booklet about the walk that is available in hard copy and electronically (see section 3.2.2d).

(b) Guided rambles. Guided walks are a key FoBM activity as one of the golden threads that enhance community awareness and knowledge of the rich biodiversity in Black Mountain Nature Reserve. Since 2012 about 200 people have come on the rambles each year. The first guided walk organised by the reactivated FoBM was along the proposed part of the Canberra Centenary Trail in the reserve on 24 September 2012. The walk was led by Jean Egan and Tony Wood who highlighted the need for the main part of the trail to be along formed tracks that were shared by walkers and cyclists, with some walker-only detours present (see section 3.1).

Ant rambles held in summer have helped people find out more about the many species of ants on Black Mountain. The first Ant Ramble was in February 2015, after a friend noted a text-box in the "Australia's Biodiversity" section of the *Yearbook of Australia 2009–2010* (Australian Bureau of Statistics 2010) that stated more species of ants occurred on Black Mountain (>100 species) than in the whole of the United Kingdom (around 41 species)⁵. In February 2018, participants were treated with the sight of a queen ant from an ant colony in the reserve. Ajay Narendra⁶ was the wonderful guide for these rambles and has produced a leaflet *Common Ants of the ACT and Surrounds* (Narendra 2015) which people love to refer to as they do the ramble, often commenting on how little they know about ants. Another golden thread of community awareness, FoBM is looking forward to repeating the ant rambles in the future.

⁵ See Pullen (2018) for a list of ant species that occur on Black Mountain.

⁶ Dr Narendra did his studies at ANU before taking up further research at Macquarie University.



Fig. 15. Ajay Narendra talking about ants (left) and a young participant looking more closely at one. Photos: L Beveridge.

Each year FoBM arranges several guided **Heritage Festival Walks** related to the themes of the ACT Heritage Festival, generally held in April. The walks have been very popular and are generally fully booked with waiting lists, a reflection of the wealth of knowledge and insights of the guides about ecology, botany, fresh water science, cartography and culture in ancient and more recent times. These guides have included Wally Bell, Tyrone Bell, John Bruggeman, Linda Beveridge, Mark Butz, Fiona Dyer, Jean Geue, Rosemary Purdie and Karen Williams.

A Heritage Walk about *Black Mountain's changing landscape since ancient times* was organised in 2013, reflecting Black Mountain being part of the catchment for the Molonglo River that has been dammed to form Lake Burley Griffin. Covering Ngunnawal and water themes, the ramble was in great demand and repeated in 2014 and 2015. They heightened community awareness of the natural and cultural values of Black Mountain from ancient to recent times and became the springboard for MCG's sponsored Ngunnawal themed walks in Heritage Festivals and on other occasions.

The *Pryor Notable Snow Gums* rambles during the Heritage Festival visit an area in Glenloch Interchange that was shown as part of Black Mountain Nature Reserve in a map dated 1989. Since 2015 the walks have generally been led by Jean Geue who talks about the old Snow Gum (*Eucalyptus pauciflora*) and its progeny and the protests to protect them and associated woodland (see section 3.1). These rambles seem to have brought a sparkle to many eyes, including several people who like to lead tours to lesser known places in Canberra, and was featured in an article by Tim the Yowie Man in the *Canberra Times* in April 2017. One of the rambles was also an inspiration for Michael Redzik, who entered a painting that featured Pryor's Notable Snow Gum in the Artists Society on Canberra and MCG sponsored ASOC/ACT Region Catchment groups art exhibition and prizes in 2017.

The *Cypress, Cherry and Gum* tree walk was also introduced as part of the 2015 Heritage Festival. People were interested to learn more from leader Michael Doherty about the Black Cypress (*Callitris endlicheri*) and Native Cherry (*Exocarpos cupressiformis*), how to recognise the different 'gum' (*Eucalyptus*) trees and how these trees and nearby shrubs cope with fire and drought. Doherty referred to the handout he had prepared about *Eucalypts and Wattles* (Doherty 2014), the book *The Gum Trees of the Australian Capital Territory* (Burbidge 1963a) and the leaflet *A Guide to eucalypts in the Australian Capital Territory* written by Peter Ormay (Ormay 1990), and later published as *A Guide to eucalypts in the ACT* (Ormay 2011).

The *Ngunnawal and national capital cultures* themed walk led by Wally Bell and Mark Butz was a popular feature of the 2018 Heritage Festival. It increased participants' awareness and knowledge of how the area has been perceived from ancient times to the current day, and how the national capital era, along with federal and local legislation, have protected the biodiversity of Black Mountain reserve.

Regular guided **ANBG to Summit** rambles started in February 2016 in association with the exhibition *Black Mountain Nature Reserve – a Special Place* (see section 3.2.2e) at ANBG. It has become a regular winter walk to mark the anniversary of the declaration and gazettal of Black Mountain Reserve on 23 and 30 July 1970 respectively, and the official opening of the Summit Walk (section 3.1) on 26 July 2000. This walk was also popular at the National Botanic Gardens Guides Conference, held in Canberra in October 2017. Isobel Crawford, Michael Doherty, Rosemary Purdie, Cecilia Melano and Linda Beveridge have been warmly praised as guides for these rambles. Another guided walk introduced in conjunction with the Black Mountain exhibition at the ANBG was the **ANBG to Arboretum** walk. This also proved to be popular and has been repeated on several occasions since, led by Rosemary Purdie, Isobel Crawford and Linda Beveridge. It has the potential to become an iconic walk in Canberra in the future (see section 4.1).

The **Wattle Walk** is held on a date close to National Wattle Day in September to show people the range of wattle species growing on Black Mountain. Michael Doherty has led these popular rambles, with reference to his handout about *Eucalypts and Wattles* (Doherty 2014) and the book *Wattles of the Australian Capital Territory* (Burbidge 1963b).



Fig. 16. Michael Doherty (far right and partly obscured) talking about wattles. Photo: J Geue.

Since 2012 FoBM has continued the legendary **Black Mountain Spring Wildflower Ramble** in the tradition of Nancy Burbidge and George Chippendale, as Jean Geue has handed over more responsibility for their organisation (see Purdie 2018a). Held on the second Saturday of October each year, the numbers attending from 2012 have fluctuated between 65 and 100 people, with about 80 coming in most years. FoBM receives good feedback about these rambles as golden opportunities to learn more about Black Mountain's plants, and has welcomed the highly treasured expertise of the guides including Laurie Adams, Dave Albrecht, Isobel Crawford, Michael Doherty, Jean Geue, Michael Mulvaney, Peter Ormay, Rosemary Purdie and Brigitta Wimmer, as well as assistant guides Linda Beveridge and Joshua Mulvaney. After some 44 years of involvement, 2012 was the last of these rambles that Laurie Adams helped to guide. However the 2010 version of his trees and shrubs identification book (Adams 2010), which became available electronically in 2011, continues to be a golden quality reference for plant recognition.

Another popular walk is the **Woodland Ramble**, usually held in November to coincide with the flowering of geophytes and other grassland herbs that provide a wealth of colour and interest, and led by Isobel Crawford, Michael Doherty and Rosemary Purdie. In addition to the information these leaders provide, participants can access interpretive material from the Woodland Walk signs and associated products (see section 3.2.2a).

FoBM introduced **Butterfly Rambles** in February 2017 after the official launch of the publication *Field Guide to the Butterflies of the Australian Capital Territory* in December 2016 (Bond et al. 2016, reprinted 2018). Author Suzi Bond has both guided the rambles herself and invited 'butterfly' friends Steve Holliday and Richard Allen to assist with guiding the large number of people who have attended. After the success of the rambles on Black Mountain, similar walks for Friends of ANBG members were arranged by people with membership in both organisations.

(c) Talks. Talks that featured the flora and fauna of Black Mountain have been arranged by FoBM at the Telstra Tower since 28 February 2013, starting with Rosemary Purdie's *Woe to the Weeds on Black Mountain* in which she talked about her detailed surveys of the area's weed flora. During the 2016 Heritage Festival, Rosemary expounded on the theme *Black Mountain flora boring? Never!* (see Purdie 2015) and Geoffrey Dabb vividly illustrated birds that had been observed in the reserve historically as well as more recently. In 2018 Dabb gave another excellent talk about *Threatened and nocturnal birds on Black Mountain*. These talks have been well attended and have been repeated by popular demand at other organisations interested in Canberra's natural history.

(d) Brochures. In 2015 FoBM produced a brochure called *Black Mountain Nature Reserve – a Special Place* with the help of many kind friends and sponsorship from the Field Naturalists Association of Canberra (FoBM 2015a). Rosemary Blemings and Dierk von Behrens played a key role in this sponsorship that covered the design and printing of the first 10 000 copies. Demand for the brochure has since led to FoBM reprinting 10 000 copies each year, paid for by PCS for a couple of years, and by a FoBM donor more recently. The self-guided *Wildflower Walks* series of leaflets by Rosemary Blemings and colleagues between 1997 and 2004 (see section 2.6) has inspired FoBM to update and continue to make them available to the community in hard copy and electronically. The *Black Mountain Forest Loop Walk 2015* was the first to be updated (FoBM 2015b), with the help of Libby Viccars and Linda Beveridge and a small grant from MCG. It was then reprinted with the help of PCS in 2016, and by a FoBM donor in 2017. This brochure and the booklet *Welcome to the Woodland Walk* (FoBM 2018) prepared as part of the Woodland Walk interpretation (see section 3.2.2a) are available on the FoBM website (www.friendsofblackmountain.org.au) under the 'Walks' heading from which copies can also be downloaded for printing in hard copy.

(e) Displays and exhibitions. Since its reactivation, FoBM has arranged and/or participated in exhibitions and displays about nature reserves and ParkCare at Jamison Centre, Telstra Tower and ANBG. These events, and the Black Mountain Woodland Walk interpretative signs, have resulted in FoBM receiving many bookings for its activities and new memberships.

The joint **ParkCare Groups exhibition** at the Jamison Centre is held early in September each year to promote community work towards the conservation of nature reserves in the Belconnen area. FoBM has participated annually since 2012, with many people working together to mount a display under the principal coordination of Jean Geue. It is also a golden opportunity to promote the range of activities various Friends organisations⁷ run to encourage people to find out more about the biodiversity in their local nature reserves. Visitors to the display often comment on the friendliness and camaraderie of the volunteers as they talk about what the groups do. FoBM participants have included Linda Beveridge, Carol Billett, Isobel Crawford, Julie Hotchin, Gordon McAllister, Morgyn Phillips, Libby Viccars and Adrienne Nicholson (who often brings along for display a basket woven from weeds and flagging tape recycled from FoBM weeding work parties).

⁷ Groups that have participated regularly in the Jamison Centre display are Friends of Aranda Bushland, Friends of Black Mountain, Friends of Grasslands, Friends of Mount Painter, Friends of The Pinnacle, Ginninderra Catchment Group, Canberra Indian Myna Action Group and ACT Government PCS.

In 2014/2015 FoBM and MCG received funding from the ACT Government under the ACT Heritage Grants program to develop an exhibition about Black Mountain. Titled *Black Mountain Nature Reserve – a Special Place*, it was designed for display at multiple venues and so far has been hung at Telstra Tower and the ANBG Visitor Centre, with plans for other locations in future. It has been remounted in Telstra Tower over several holiday and horticultural periods such as Easter, Floriade, the summer school holidays and opportunistically at other times. Key people involved in its preparation included Wally Bell, Tyrone Bell, Linda Beveridge, Con Boekel, Jean Geue, Morgyn Phillips, Rosemary Purdie and Libby Viccars, with Mariana Rollgejser designing the exhibition.



Fig. 17. ACT Minister for Planning, Mick Gentleman MLA, opening the *Black Mountain Nature Reserve – a Special Place* exhibition at Telstra Tower on 10 April 2015 during the ACT Heritage Festival. Photo: L Roberts.

(f) Website and media. The long gestation of FoBM's website bore fruit with the support and expertise of MCG to coincide with the official opening of the *Black Mountain Nature Reserve – a Special Place* exhibition (see above). The expertise of Lynton Bond, a former President of MCG, was key to this. The website was further developed in 2017 to coincide with the need for e-publications in association with the Woodland Walk project (section 3.2.2a) and social media coverage was also introduced. The expertise of Tony Webster was key to these later developments along with the involvement of Julie Hotchin, Linda Beveridge and Joy McMahon.

Local print and radio media have also been a vein of gold in the fabric of FoBM, their articles and items enhancing community awareness and participation in FoBM activities. These media have included Landcare radio, the *Chronicle* newspaper, articles in the *Canberra Times* by Ian Warden and Tim the Yowie Man, *Canberra Weekly* articles and "What's On" notices, *Her Canberra*, *City News*, local television stations, the ABC radio (particularly "Drive Time" sessions), and Pauline Cairnduff and her "Gardening Gurus" on radio 2CC who regularly promote FoBM's activities related to local native plants on Black Mountain.

4. General management issues

As noted in section 3, FoBM has an interest in a wide range of issues relating to the protection of Black Mountain's biodiversity that are associated with the reserve's management. While many of these issues are shared with other reserves in Canberra, FoBM's particular concerns relating to Black Mountain are outlined below.

4.1 Reserve signage

FoBM has appreciated being consulted about signage in the reserve, and is pleased to see the progress being made. It sees signage as a key element for both community awareness and protection

of the area's biodiversity, and advocates a 10-year rolling signage program, clearer signs throughout the reserve about prohibited and restricted activities, and positive signs for walk-only tracks.

FoBM had concerns about the initial **Conservator's Activities Declaration** signs (as did some Friends of other nature reserves) and welcomed the concepts and design of the recent Canberra Nature Park Signage project, with a range of different sized signs including information about Black Mountain reserve and the Conservator's Activities Declaration. FoBM has expressed concerns about missing signs on the **Summit Walk** (section 3.1) that provided directions to and from ANBG and the summit; FoBM, ANBG and PCS are following through on this. While there has been considerable discussion about the **Canberra Centenary Trail** in Black Mountain reserve, concerns remain about confusion caused by the signage, which will hopefully be resolved in the near future.

An informal, difficult walking track in Black Mountain reserve linking the ANBG Bushland Precinct and the Arboretum (**ANBG to Arboretum Walk**) has caused some community concern and letters of complaint to ANBG, the ACT Government and FoBM. FoBM has requested, as part of the CNP Signage project, a sign that describes the track at the entry point into the reserve from the ANBG Bushland Precinct walk. It has also been suggested that a boardwalk be installed for the track, particularly on the steep southern slopes of the reserve, to protect the biodiversity and avoid erosion. This type of track linking ANBG to the Arboretum would likely become a local iconic walk.

As **dogs** are not allowed in Black Mountain Nature Reserve, people have requested a sign showing nearby areas where they can legally walk their dogs in natural bushland, for example, on leads in Bruce Ridge north of Belconnen Way and in Aranda Bushland on the western side of Caswell Drive.

4.2 Weed management

While FoBM has a successful weeding program (see section 3.2.1g) weeds remain an issue of concern particularly in disturbed areas close to traffic and entry points. FoBM believes a weed prevention, management, removal and education program is essential as an ongoing strong government and community partnership in order to prevent detrimental impact on the area's natural biodiversity. Such a program would beneficially include:

- review of the list of species available for planting in Canberra's streets and other public places, so those known by Landcare/Parkcare groups to be invasive (environmental weeds) are no longer planted (e.g. *Celtis australis*, *Eucalyptus bicostata*, *E. maidenii* etc);
- introducing a mechanism for continual review of this list;
- environmental weed species already planted in public places being replaced with species currently not recorded as, or unlikely to become, invasive and able to cope with a hotter and drier climate, to help lessen the amount of weed seed spreading into Canberra Nature Park;
- prohibiting the sale of environmental weed species; and
- continued public education about environmental weeds via the Bushcare Garden at Floriade and Weed Swap, both of which have had a wide impact, attracting much public interest and deserving of continued funding.

4.3 Dog walking

The Conservator's Activities Declaration and no-dog signs at all the entrances to Black Mountain Nature Reserve make it clear that dogs are not permitted there; FoBM members often talk to dog-walkers they encounter in the reserve about this. It has been suggested that FoBM members be provided with an official notice to give to such people, and that signs be erected at entries to the reserve that describe where dogs can be taken legally (see section 4.1). It would also be of great benefit if there were sufficient rangers to patrol the reserve and apply the penalties of illegally walking dogs in it.

4.4 Bicycle use

Although bicycles are permitted on formed roads (also known as management trails) in Black Mountain reserve, and representation by FoBM and others has resulted in some cyclists assisting in

closing a number of illegal mountain bike tracks (section 3.2.1h), FoBM members have seen new tracks being created by cyclists with no interest in protecting the high conservation value of Black Mountain. It is ironic that they come because of the attractive bushland but don't seem to realise that with such lack of consideration for conservation the reserve's attractiveness to them will diminish.

As forecast in an ACT Government commissioned report (Landsberg 1999), cycling that damages plants, fragments reserves and exacerbates erosion will be an ongoing problem. FoBM members will continue to report non-compliant behaviour, but a greater presence of rangers and their implementing penalties would be valuable. Although the main focus of Jill Landsberg's report was horse-riding in Canberra Nature Park, she included salient information about bicycling in reserves, noting:

It would be appropriate that the greatest effort be directed toward horse riding and bicycling, because they have the greatest potential to cause environmental damage, and require the most trail maintenance and policing of compliance ... (Landsberg 1999, p.50).

4.5 Other non-compliant activities

The Conservator's Activities Declaration for Black Mountain also makes it clear that removal of plants and timber is not permitted in the reserve. Although the ACT Government has taken action against such infringements, it appears that such action will need to be continued into the future. The illegal dumping of rubbish in or near the reserve is also likely to be an ongoing problem.

5. The future

Black Mountain has been a defining element of Canberra since featuring in Walter and Marion Griffin's prize-winning design for the new national capital. As the town started to be built and its facilities and infrastructure expanded over the following decades, a large number of individuals have lobbied for the protection of Black Mountain's natural bushland, helped document and manage threats to its biodiversity and promoted awareness and appreciation of its plants, animals and other values. Many of these friends were part of formal groups often created in response to specific issues of concern, with the reactivated Friends of Black Mountain the latest iteration in this golden thread. Like many of its predecessor friends, current FoBM members have been active in a variety of ways to conserve and promote community awareness of the reserve. When accepting a Landcare ACT commendation in 2017 for her role as FoBM Convenor and involvement with the Molonglo Catchment Group, Linda Beveridge praised the contribution of all of the people who have been involved with the Friends of Black Mountain and help make so many wonderful things happen.

As is clear from the preceding sections, the protection and conservation of Black Mountain reserve will continue to need education and enforcement, and will require appropriate resources for ACT Government agencies and community groups in order to do so. Although the ACT Government seems to rely increasingly on electronic media for providing information, FoBM is continuing to find that a mixture of electronic and print media is still the most effective thread in reaching interested members of the community and it highly values efforts to make mixed media possible.

FoBM is aware that management issues on Black Mountain sometimes relate to possible ignorance about the regulations that apply to nature reserves, and supports government advertisements about redressing non-compliant behaviour in them (while noting the need to ensure they do not inadvertently promote wrong messages⁸). There is also anecdotal evidence that some people undertaking non-compliant activities do so in full knowledge of the prohibited and restricted activities, for example, exclaiming during conversation "So what?! They are only *** plants" [expletive removed]. The greater presence of rangers and enforcement to penalise prohibited and

⁸ For example, the recent advertisements about redressing non-compliant behaviour in reserves included a scene of motor bike riders on Black Mountain, despite this activity not being permitted there. When queried, it was apparent that the people responsible had not sought nor obtained the permission required from the Conservator.

restricted activity would be worth its weight in gold, not only for the specific instances, but also as a preventative measure as people become more aware of this being done.

The apparent disregard by some areas of the ACT Government about the importance of biodiversity conservation for the multiple benefits for Canberra and the region and its community has also been of concern to FoBM, and the group plans to continue its advocacy for the conservation and promotion of Black Mountain's biodiversity. Consultation has been, and will continue to be, a valuable thread of mutual benefit for positive results and outcomes.

6. Golden friends

As always, no story is complete in only one telling, and the Black Mountain Symposium 2018 will provide a wonderful opportunity to hear more stories about the area. If you wish to contribute additional information, FoBM would love to hear from you! Writing this story has reinforced how many people and organisations have been, and continue to be, golden threads in the fabric of true friends of Black Mountain. Their knowledge and keen interest in the natural and cultural values of the area, coupled with the increasing community awareness of this iconic nature reserve, will continue to help protect this 'jewel in the crown' now and into the future.

7. Acknowledgements

The Friends of Black Mountain greatly appreciates the support and sponsorship received from the Molonglo Catchment Group and the ACT Government generally for its conservation activities, including grants for tools and equipment and for preventing or managing threats to the area's biodiversity. Thanks also to Jean Geue, Joy McMahon and Linda Roberts for use of their photographs, and to Joy for the use of the photo in Fig. 3b.

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Friends of Black Mountain vision, aims, membership and Black Mountain values

Vision for Black Mountain

Our vision is that Black Mountain be recognised as an icon of biodiversity in Canberra, the ‘Bush Capital’ of Australia.

Vision for Friends of Black Mountain

Friends of Black Mountain aims to be the primary community voice for conserving and promoting the biodiversity of Black Mountain.

Aims

The Friends of Black Mountain is a non-profit voluntary organisation dedicated to conserving and promoting the biodiversity of Black Mountain. Its aims are to:

- Encourage interest in and develop knowledge and understanding of the natural, cultural, recreational, scientific, educational and aesthetic values of Black Mountain.
- Build a record of the reserve’s biodiversity and values.
- Promote its uniqueness within and beyond the ACT region.

Membership

Membership is open all people interested in the conservation and promotion of the biodiversity of Black Mountain.

Values of Black Mountain

Black Mountain is an icon, also described as the ‘Jewel in the Crown’ of the Canberra urban reserve system, Canberra Nature Park. It is one of the largest and the most prominent reserve in Canberra Nature Park and has unique biodiversity. The mountain has natural, cultural, scientific, educational, recreational and aesthetic values.

Environmental Values

- Black Mountain is a representative example of dry sclerophyll forest on the Southern Tablelands that is in excellent condition. Low altitude temperate open forest and temperate grassland are well recognised as under threat across southeast Australia broadly, and Canberra’s Black Mountain is a very significant Reserve of these types of vegetation;
- The Reserve is very rich floristically, with more than 600 species of plants recorded – in one place – within two kilometres of the Bush Capital’s central business district;
- Trees include scribbly gums, brittle gums and stringy-barks, as well as yellow box, red gum, apple box, Blakeley’s gum, cherry ballarts, and a small population of black cypress pines. Then there is a diverse array of local acacias, heaths, daisies, native peas, grasses, sedges, and bluebells – plus a myriad of other plant diversity such as fringed lilies, sundews, geebung, guinea flowers, indigo, sarsaparilla, and lilies.
- Two significant endangered ecological communities are also represented in the Reserve: natural temperate grassland and yellow box/red gum grassy woodland;

- The Reserve is renowned for its orchids; so far more than 60 species of orchids have been recorded as being on Black Mountain in the *Field Guide to the Orchids of the Australian Capital Territory*. The management plans for Canberra Nature Park also note the importance of the orchids recorded on Black Mountain at the time it was published as 'representing two thirds of the total orchid diversity recorded for the ACT';
- More than 90 species of birds have been recorded on Black Mountain over the years. Many of these species depend on the relatively undisturbed breeding habitats in the northern and western parts of the Reserve.
- The Caswell Drive area is also a wildlife corridor that is important for the Black Mountain kangaroo population.
- Records of mammals on the mountain include kangaroos and swamp wallabies, the wallaroo, brush-tailed and ring-tailed possums, echidnas, dunnarts, Stuart's marsupial mouse and the yellow-footed marsupial mouse, sugar gliders, and nine species of bat;
- Reptiles include three snake species, nine species of skink, and seven lizard species, including dragons. There are also nine frog species, two rare cricket species, and two scorpion species;
- Black Mountain has unique geology. It is formed from 435–430 million years old Black Mountain Sandstone, and its lower slopes show evidence of periglacial deposits and alluvial fans from past glacial periods.
- The Reserve is an immensely valuable scientific and educational resource. The conservation of this remnant area is dependent on minimal fragmentation and the absence of ecological barriers to other elements of Canberra Nature Park.

Heritage Values

- This Nature Reserve has rich natural and cultural value. This Nature Reserve holds a special place in Australian biology, because of its place in scientific nomenclature. Due to its location next to CSIRO Herbarium and Entomology, many of Australia's insect species and some unique plant species have been described on Black Mountain.
- Black Mountain was used by the aboriginal community prior to European settlement.
- Black Mountain was prominent in the design by Walter Burley Griffin and Marion Mahony Griffin for Canberra as Australia's capital city.

Scientific and Education Values

Black Mountain is used for a variety of educational purposes, including spring and summer wildflower walks conducted by local volunteers, outdoor classroom and laboratory for students of environmental sciences.

Recreational and Community Values

Black Mountain is used by people from all over Canberra as a place to relax, look at wildflower displays, watch birds, or simply recharge by recreation that has minimal impact; consistent with appreciation, conservation and preservation of the natural environment on Black Mountain.

Friends of Black Mountain Coordination Group

Year	Members
2012	Linda Beveridge, Carol Billett, Rosemary Blemings, Isobel Crawford, Ted Edwards, Jean Egan and Jean Geue
2013	Linda Beveridge, Carol Billett, Rosemary Blemings, Isobel Crawford, Jean Egan, Jean Geue, Tony di Pietro and Rosemary Purdie (advisor)
2014	Linda Beveridge, Carol Billett, Rosemary Blemings, Isobel Crawford, Michael Doherty (until March 2014), Jean Egan, Jean Geue and Rosemary Purdie (advisor)
2015	Linda Beveridge, Carol Billett, Rosemary Blemings, Isobel Crawford, Jean Geue, Rosemary Purdie (advisor) and Libby Viccars
2016	Linda Beveridge, Isobel Crawford, Michael Doherty, Jean Geue, Rosemary Purdie (advisor) and Libby Viccars
2017	Linda Beveridge, Isobel Crawford, Michael Doherty, Jean Geue, Julie Hotchin, Joy McMahon, Rosemary Purdie (advisor) and Libby Viccars
2018	Linda Beveridge, Isobel Crawford, Michael Doherty, Julie Hotchin, Cathy Ikin, Joy McMahon, Rosemary Purdie (advisor) and Libby Viccars

**Woody weeds removed on Black Mountain, June 2014 to December 2017,
by the Friends of Black Mountain**

The following data exclude weeds removed from within the Australian National Botanic Gardens and its Bushland Precinct. The total number of plants removed includes seedlings, saplings and mature plants. Native plants refer to species native to Australia but not indigenous to Black Mountain (i.e. they have been introduced there). Exotic species are those not native to Australia.

Table 1. Summary of weed removal

Type of plant	Number of plants removed
All plants (native and exotic)	12 606
• exotic plants	1 067
• native plants	11 510
• unknown	29
Type of species removed	Number of species
• native species	c.39
• exotic species	At least 28
Total weeding effort	c.1067 person hours

Table 2. Number of plants removed for each species

Species	Common Name	Native Exotic	Total number of plants removed
<i>Acacia baileyana</i>	Cootamundra Wattle	N	3835
<i>Acacia binervata</i>	Two-veined Hickory	N	1
<i>Acacia boormanii</i>	Snowy River Wattle	N	53
<i>Acacia covenyi</i>	Blue Bush	N	5
<i>Acacia cultriformis</i>	Knife-leaved Wattle	N	440
<i>Acacia dawsonii</i>	Poverty Wattle	N	190
<i>Acacia decurrens</i>	Black Wattle, Green Wattle	N	222
<i>Acacia decurrens</i> – <i>A. baileyana</i> hybrid		N	5
<i>Acacia elata</i>	Mountain Cedar Wattle	N	6
<i>Acacia extensa</i>	Wiry Wattle	N	320
<i>Acacia floribunda</i>	White Sally Wattle	N	2
<i>Acacia longifolia</i> subsp. <i>longifolia</i>	Sydney Golden Wattle	N	1
<i>Acacia melanoxylon</i>	Blackwood	N	3
<i>Acacia pycnantha</i>	Golden Wattle	N	1
<i>Acacia rubida</i>	Red-leaved Wattle	N	577
<i>Acacia saligna</i>	Blue-leaved Wattle	N	147
<i>Acacia</i> spp.		N	16
<i>Allocasuarina</i> sp.	Casuarina	N	2
<i>Arbutus unedo</i>	Strawberry Tree	E	16
<i>Babingtonia</i> sp.		N	15
<i>Billardeira heterophylla</i>	Sollya	N	362
<i>Brachychiton populneus</i> subsp. <i>populneus</i>	Kurrajong	N	1

Species	Common Name	Native Exotic	Total number of plants removed
<i>Callistemon</i> sp.	A bottlebrush	N	4
<i>Celtis australis</i>	Nettle Tree	E	20
<i>Coleonema pulchellum</i>	Diosma	E	2
<i>Correa</i> sp.		N	3
<i>Cotoneaster</i> sp.	Cononeaster	E	4
<i>Crataegus monogyna</i>	Hawthorn	E	251
<i>Cytisus</i> sp.		E	1
<i>Eucalyptus viminalis</i>		N	3
<i>Fraxinus</i> sp.		E	2
<i>Grevillea juniperina</i> subsp. <i>sulphurea</i>		N	25
<i>Grevillea</i> sp.		N	1
<i>Hakea</i> sp.		N	3
<i>Hakea eriantha</i>	Tree Hakea	N	82
<i>Hakea sericea</i>	Needlebush	N	40
<i>Hedera helix</i>	Ivy	E	1
<i>Kunzea ambigua</i>	Tickbush	N	1087
<i>Kunzea flavescens</i>		N	2
<i>Leptospermum polygalifolium</i>	Teatree	N	3
<i>Ligustrum sinense</i>	Small-leaf Privet	E	4
<i>Lonicera japonica</i>	Japanese Honeysuckle	E	31
<i>Lycium ferocissimum</i>	Boxthorn	E	3
<i>Malus</i> sp.	Apple	E	3
<i>Melaleuca armillaris</i>	Bracelet Honey Myrtle	N	128
<i>Melaleuca parvistaminea</i>	Rough Paperbark	N	3415
<i>Melaleuca</i> spp.		N	3
<i>Nandina</i> sp.		E	1
<i>Olea</i> sp.	Olive	E	1
<i>Ozothamnus obcordatus</i>		N	3
<i>Passiflora cinnabarina</i>	Red Passionflower	N	11
<i>Pinus radiata</i>	Radiata Pine	E	5
<i>Prunus</i> sp.	Plum Tree?	E	7
<i>Prunus</i> sp.	Peach Tree?	E	1
<i>Pyracantha</i> sp.		E	22
<i>Rosa rubiginosa</i>	Sweet Briar	E	264
<i>Rubus anglocandicans</i>	Blackberry	E	303
<i>Senna aciphylla</i>	Australian Senna	N	28
<i>Sorbus domestica</i>	Service Tree	E	71
<i>Thomasia petalocalyx</i>		N	465
Unknown exotic spp. (at least 6 species)		E	54
Unknown (type not recorded)		?	29