Australian Capital Territory

Nature Conservation (Review of Jerrabomberra Wetlands Nature Reserve Plan of Management 2010) Public Consultation Notice 2025 (No 2)

Notifiable instrument NI2025–152

made under the

Nature Conservation Act 2014, s 189 (Reserve management plan–review), s 179 (Draft reserve management plan–public consultation)

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1 Name of instrument

This instrument is the *Nature Conservation (Review of Jerrabomberra Wetlands Nature Reserve Plan of Management 2010) Public Consultation Notice 2025 (No 2)*.

2 Commencement

This instrument commences on the day after its notification day.

3 Reserve management plan review

The custodian has reviewed the Jerrabomberra Wetlands Nature Reserve Plan of Management 2010. The *Review of the Jerrabomberra Wetlands Nature Reserve Plan of Management 2010* (the ***review***) is set out at schedule 1 of this instrument.

4 Details of public consultation

(1) I invite written submissions from anyone about the review. Submissions may be sent to:

Director, Parks Planning and Policy
Environment, Planning and Sustainable Development Directorate
GPO Box 158
CANBERRA ACT 2601
Email: ParksPlanning@act.gov.au

(2) Submissions may be given on the review during the period starting on the commencement day of this instrument and ending on 16 May 2025.

(3) The review and the Jerrabomberra Wetlands Nature Reserve Plan of Management 2010 can be viewed online at https://www.act.gov.au/environment.

5 Revocation

This instrument revokes Notifiable Instrument NI2025–71 *Nature Conservation (Review of Jerrabomberra Wetlands Nature Reserve Plan of Management 2010) Public Consultation Notice 2025*.

Michaela Watts
Executive Branch Manager, ACT Parks and Conservation Service
Custodian
27 March 2025

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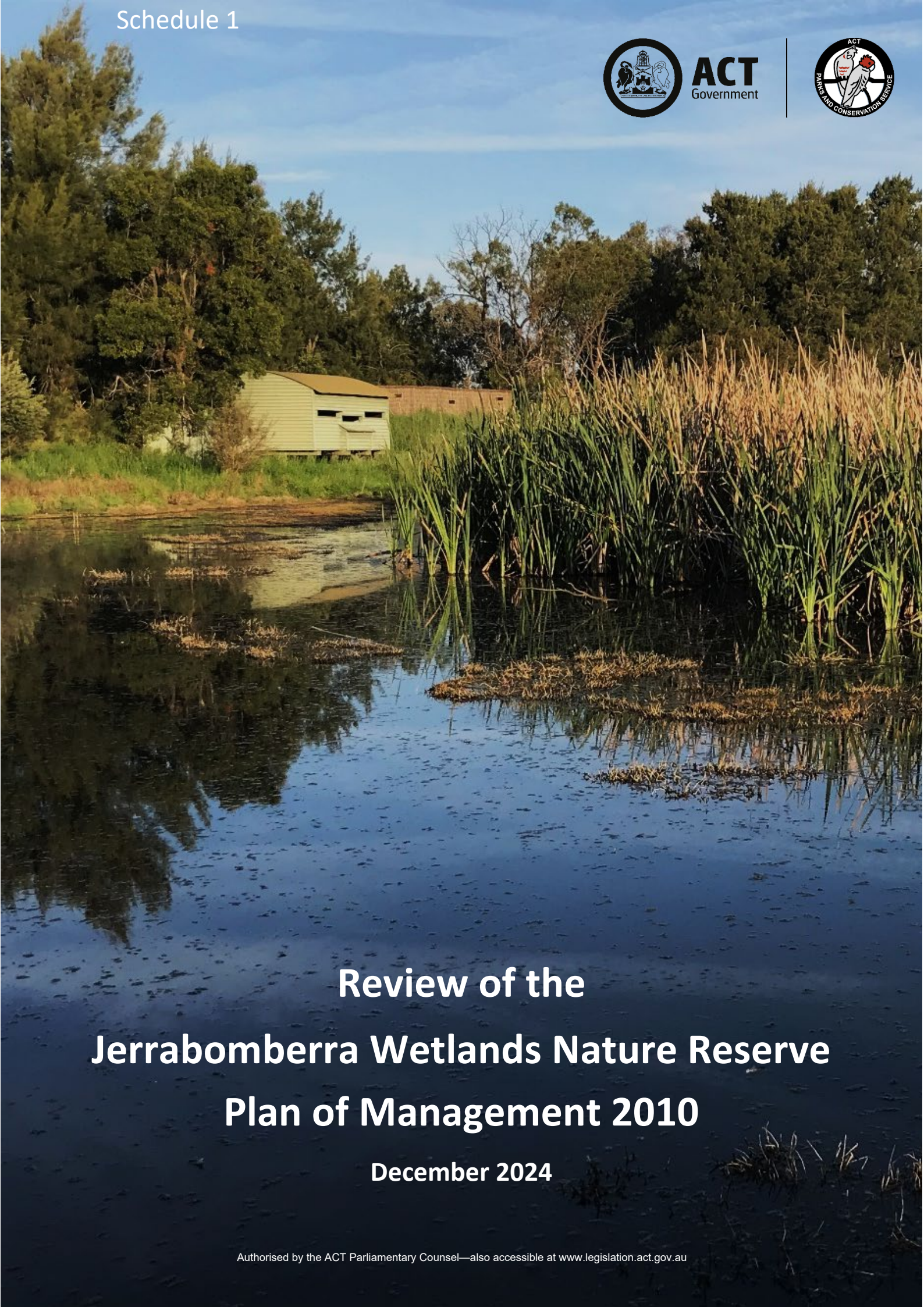
Schedule 1



Review of the Jerrabomberra Wetlands Nature Reserve Plan of Management 2010

December 2024

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HAVE YOUR SAY

The Environment, Planning and Sustainable Development Directorate welcomes your comments on the Review of the Jerrabomberra Wetlands Nature Reserve Plan of Management 2010.

YOU CAN MAKE COMMENTS BY:

Email: ParksPlanning@act.gov.au

Post: Director, Parks Planning and Policy
Environment, Planning and Sustainable Development Directorate
PO Box 158, Canberra ACT 2601

Enquiries: Access Canberra on 13 22 81

COMMENTS CAN BE MADE UNTIL 16 MAY 2025

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Traditional Custodian Acknowledgment

Yuma

Dhawura nguna ngurumbangu gunanggu Ngunnawal. Nginggada dindi dhawura Ngunnawalbun yindjumaralidjinyin. Mura bidji mulanggaridjindjula. Naraganawaliyiri yarabindjula.

Hello

This country is Ngunnawal (ancestral/spiritual) homeland. We all always respect elders, male and female, as well as Ngunnawal country itself. They always keep the pathways of their ancestors alive. They walk together as one.

We acknowledge the Ngunnawal people as traditional custodians of the ACT and recognise any other people or families with connection to the lands of the ACT and region. We acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.

Cover photographs

Front Cover: Bird Hide at Kellys Swamp (Brian Prince)

Back Cover: Jerrabomberra Creek (Brian Prince)

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Table of Contents

1. The Jerrabomberra Wetlands Nature Reserve Plan of Management 2010 1
1.1 Objectives of the 2010 Plan of Management 5
2. Reviewing the 2010 Plan of Management 5
2.1 Summary assessment of the 2010 Plan of Management 6
2.2 Changes in the legislative and policy environment since 2010 6
2.2.1 Legislation 6
2.2.2 Policy 7
2.2.3 Implementation of actions in the 2010 Plan 7
3. Review against 2010 Plan objectives 8
3.1 Biodiversity 8
3.1.1 Review 8
3.1.2 Issues for consideration in a new plan 15
3.2 Landscape 15
3.2.1 Review 16
3.2.2 Issues for consideration in a new plan 16
3.3 Recreation 16
3.3.1 Review 17
3.3.2 Issues for consideration in a new plan 22
3.4 Education and Research 22
3.4.1 Review 22
3.4.2 Issues for consideration in a new plan 24
3.5 Cultural Heritage 25
3.5.1 Review 25
3.5.2 Issues for consideration in a new plan 26
3.6 Environmental Planning, Protection and Management 26
3.6.1 Review 27
3.6.2 Issues for consideration in a new plan 28
3.7 Implementation 29
3.7.1 Review 29
3.7.2 Issues for consideration in a new plan 30
4. Discussion and conclusion 31
4.1 Meeting the objectives of the 2010 plan 31
4.2 Adequacy of the 2010 plan as the primary planning document for Jerrabomberra Wetlands 32
4.3 Recommendations 32
5. References 33
6. Appendices 34
Appendix 1: Latham's snipe and the Latham's Snipe Project 34
Appendix 2: Assessment of the Jerrabomberra Wetlands Plan of Management 2010 as the primary planning document for the reserve 36

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1. The Jerrabomberra Wetlands Nature Reserve Plan of Management 2010

Jerrabomberra Wetlands Nature Reserve (the reserve) is a highly valued freshwater habitat area for the ACT and nearby region. The permanent water bodies within the Wetlands are regionally important as a drought refuge for water birds and provide reliable habitat for several migratory bird species protected under international agreements. Over 200 bird species have been recorded in the Wetlands, of which approximately 80 are waterbirds.

The reserve is listed in *A Directory of Important Wetlands in Australia* (Environment Australia 2001) for its importance as habitat for animal taxa at a vulnerable stage in their lifecycles, or providing a refuge when adverse conditions, such as drought, prevail. In 2021 Jerrabomberra Wetlands was designated under the *Nature Conservation Act 2014* as a category IV reserve (habitat or species management area) under the International Union for the Conservation of Nature (IUCN) framework.

The Jerrabomberra Wetlands are an important part of the National Capital Open Space System, and their location close to the city provides an opportunity for education, research and recreational activities related to wetland ecosystems and the area's natural and cultural values.

The Jerrabomberra Wetlands Nature Reserve Plan of Management 2010 (the Plan) outlines objectives, policies and actions to protect the significant values of the Jerrabomberra Wetlands. The Plan guides the land custodian, the ACT Parks and Conservation Service (PCS), in managing the reserve to achieve the management objectives prescribed in the *Planning Act 2023* for a public land nature reserve:

1. *to conserve the natural environment*
2. *to provide for public use of the area for recreation, education and research*

At the time the Plan was written, the reserve was considered relatively run down and lacked resources to maintain it to acceptable standards. Weeds were present in large numbers, particularly in the riparian areas, and the reserve was uninviting to visitors.

Planning for the adjoining East Lake urban renewal precinct was also in progress and presented opportunities for coordinating habitat enhancement in the reserve with the design of stormwater infrastructure for the new urban development, and a design for the interface that complemented reserve values and provided recreation opportunities for new residents. In February 2024, the East Lake Place Plan (ACT Government 2024) was released. The place plan captures the identity, character and values of East Lake and establishes the vision and key design principles to guide future planning, design and urban renewal. It also recommends mitigation measures for new development that interfaces with the wetlands.

The 2010 Plan was structured into ten chapters. Chapters 1 and 2 introduced the Wetlands and the ACT planning framework and described the physical features and values of the reserve, key management issues, and overall management goals and objectives. Chapter 3 defined management zones for the reserve (see Figure 2), and Chapters 4 to 8 outlined management objectives, polices and actions for the reserve's key values. Chapter 9 considered other management issues and requirements that also support the conservation of reserve values to varying degrees. Chapter 10 discussed implementation of the Plan and included a summary table of 95 prioritised management actions. Thirty-three additional actions for Recreation were listed in Tables 6.2 and 6.3.

In 2010, the Capital Woodlands and Wetlands Conservation Trust—now known as the Woodlands and Wetlands Trust (the Trust)—was established. The Trust works cooperatively with the ACT PCS to support reserve management, focusing on education, outreach and research, and raising funds to help enhance the values of the reserve. Significant funding from the ACT Government has been provided for the preparation and implementation of a Master Plan for Jerrabomberra Wetlands–the Concept Plan (Clouston Associates 2014)–and for implementing works to improve habitats in the reserve.

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Figure 1: Jerrabomberra Wetlands Nature Reserve

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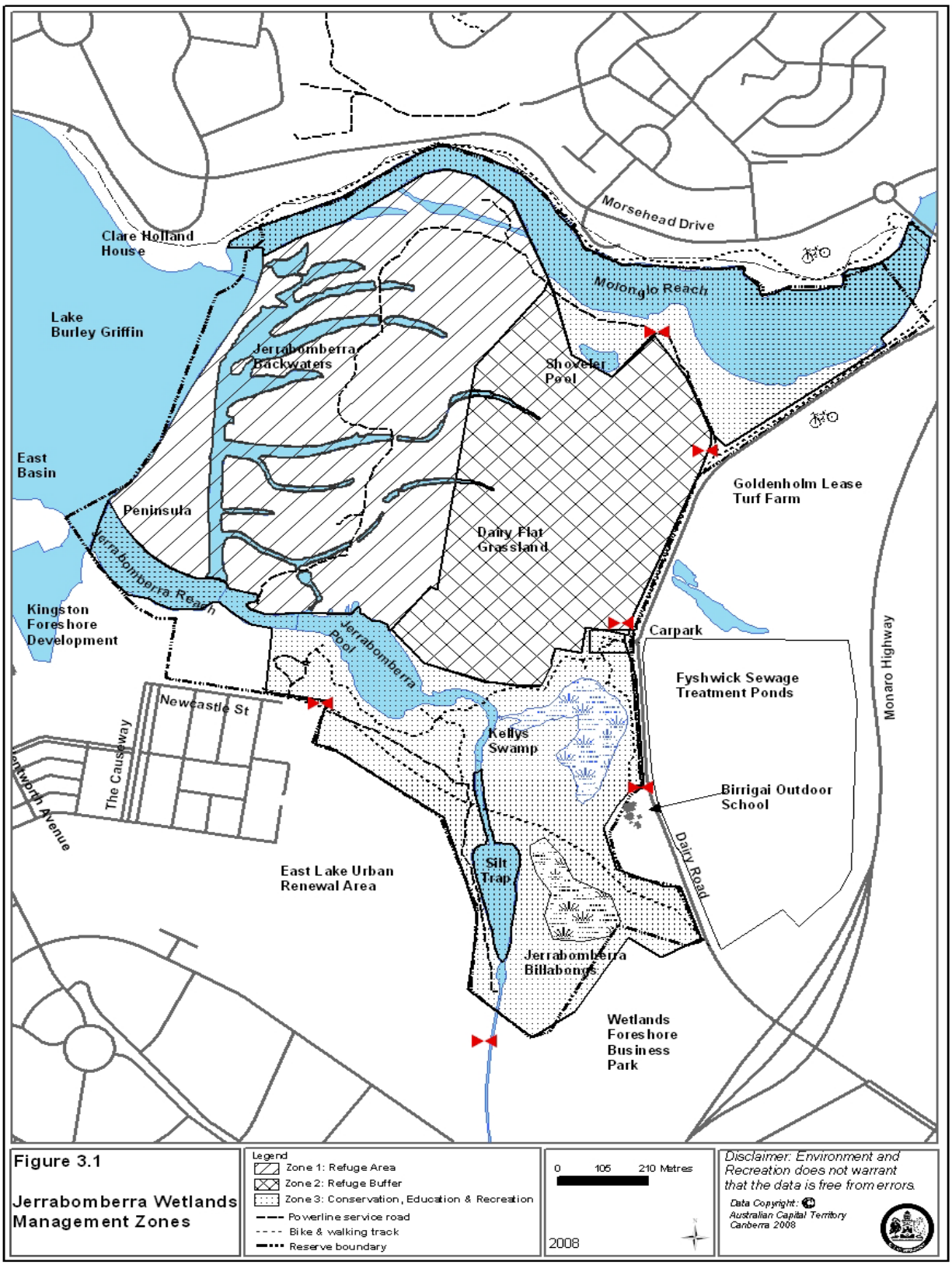

Figure 2: Jerrabomberra Wetlands Nature Reserve Zoning (from 2010 Plan)

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To inform preparation of the Concept Plan and to better understand the landform, ecology, hydrology and cultural values of the Wetlands, in 2013 the Jerrabomberra Wetlands Nature Reserve Board of Management (now the Jerrabomberra Wetlands Advisory Panel) prepared a comprehensive report on the Resources and Values of the Jerrabomberra Wetlands (Jerrabomberra Wetlands Board of Management, 2013).

Some of the actions in the 2010 Plan of Management were incorporated into the Concept Plan, which outlines future development ideas for the Wetlands, including design integration of the interface between the future East Lake development and Jerrabomberra Wetlands. Discussions will continue with ACT Government agencies responsible for the renewal of the East Lake precinct.

A significant influence on the Wetlands will be the outcomes of the joint ACT and Australian Government Healthy Waterways project, which includes measures to improve the quality of stormwater flowing from the Fyshwick catchment through the Wetlands to Lake Burley Griffin, the Molonglo River and the Murrumbidgee River.

Figure 3: Jerrabomberra Wetlands Nature Reserve trails

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1.1 Objectives of the 2010 Plan of Management

The 2010 Plan identified goals and objectives for management of the Wetlands at several levels. The overall management goals are:

1. Wetland habitats, waterbird populations and the landscape character of the Jerrabomberra Wetlands are conserved and maintained in perpetuity.
2. Canberra residents and visitors value the Jerrabomberra Wetlands for the recreational, educational and research opportunities that derive from the natural and cultural values of the area.

The plan also identified primary management objectives for each of the key values of the reserve:

Biodiversity (Chapter 4)

- The diversity of wetland and other habitats is conserved.
- Habitats suitable for migratory bird species protected under international agreements are conserved.
- The reserve supports diverse waterbird populations, including migratory species.

Landscape (Chapter 5)

- Distinctive features of the landscape are conserved, in particular, the rural and floodplain character and geomorphological features.
- Management of the reserve takes account of the national capital significance of the area and its role as a significant part of the Lake Burley Griffin foreshore.

Recreation (Chapter 6)

- The reserve is used for recreation activities that are compatible with the conservation values and objectives of the area, and facilities are provided for this purpose.

Education and Research (Chapter 7)

- The reserve is used for education about wetland ecosystems, their management and enhancement, and facilities are provided for this purpose.
- Wetland research is facilitated and supported.

Cultural Heritage (Chapter 8)

- Cultural heritage values of the reserve are identified and conserved.

Specific management objectives were outlined in chapters 4 to 9 of the Plan. Individual sections identified subsidiary objectives for key values, management issues and considerations, and policies and actions to be implemented to achieve the objectives.

2. Reviewing the 2010 Plan of Management

The focus of this review is to: (1) determine the effectiveness of the implementation of the 2010 Plan of Management in achieving its objectives, in particular the overall management objectives for Jerrabomberra Wetlands; and (2) assess the adequacy of the Plan as the primary planning document for the reserve.

The Plan and progress on the implementation of the identified management actions have been reviewed in consultation with the ACT Parks and Conservation Service (PCS), the Woodlands and Wetlands Trust, the Office of Nature Conservation and other relevant Environment, Planning and Sustainable Development Directorate (EPSDD) staff.

Activities carried out in the management of the Jerrabomberra Wetlands since the Plan was established have been reviewed and an assessment made of how these activities have contributed to meeting the Plan's overall management objectives. Where internal EPSDD consultation has suggested issues requiring consideration in the development of a new plan for the Jerrabomberra Wetlands, these are listed at the end of the review of activities against each objective.

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An assessment of the Plan as the primary planning document for the Jerrabomberra Wetlands has also been undertaken, utilising the tool described by Hockings et al. (2008) as a component of assessing the management effectiveness of natural World Heritage sites.

Reviewing the 2010 Plan of Management presented some significant challenges, primarily due to the absence of a systematic, integrated approach for ongoing monitoring and evaluation of management effectiveness. Following a 2023 review of ACT reserve management planning, EPSDD is currently in the process of establishing an integrated values-based planning framework that will provide a more systematic approach to management planning, monitoring and outcome-based evaluation of management effectiveness.

2.1 Summary assessment of the 2010 Plan of Management

Strengths

The Plan included:

- an outline of the planning and management context of the Jerrabomberra Wetlands
- overarching objectives for management
- objectives for biodiversity, landscape, recreation, education and research, and cultural heritage
- management issues and considerations
- management objectives, policies and actions for specific values
- a summary table of management actions and priorities.

Limitations

The Plan provided limited information on:

- biodiversity and other natural values, particularly non-wetland values
- Aboriginal and historic cultural heritage
- Aboriginal engagement and caring for Country
- potential threats to reserve values and management approaches and actions to protect the values–climate change is only briefly mentioned
- community engagement.

Importantly, there have been significant changes in the legislative and policy environment since the Plan was established, as well as considerable new or enhanced information on values and current and emerging threats, in particular climate change. The 2015 Resources and Values report prepared by the Board of Management significantly extended our knowledge of the environmental values of the reserve, and the history of the Wetlands prepared for the PCS by Butz (2016) has similarly increased our understanding of the reserve's cultural values.

Canberra's growth over the past 14 years and into the future, including urban development in areas adjacent to the Wetlands, has placed and will continue to place, increased pressure on the reserve and its environmental, cultural and social values, as well as enhanced opportunities to engage and educate the community about the Wetlands' unique values.

2.2 Changes in the legislative and policy environment since 2010

2.2.1 Legislation

Key legislation relevant to conservation introduced during the life of the 2010 Plan includes:

- *Nature Conservation Act 2014*—protects native plants and animals in the ACT and provides management authority for conservation lands and the legal underpinning of nature conservation policy, management and action across the Territory. Section 169 defines a reserve. The Act

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prescribes a process for the development of reserve management plans and includes requirements that: implementation reports should be provided to the Minister every five years; reserve management plans should be reviewed every ten years; and the Conservator may assign an International Union for the Conservation of Nature (IUCN) category to a reserve.

- *Planning Act 2023*—replaces the *Planning and Development Act 2007* and provides a planning regime for the ACT, including a planning strategy, district strategies, the territory plan, the leasing system and planning and development assessment and approval processes. Prescribes the objectives for ACT public land reserves, requires the custodian of public land to prepare a land management plan, which for a public land reserve (wilderness area, national park, nature reserves, catchment area or other prescribed area of public land) is a reserve management plan under the Nature Conservation Act.

2.2.2 Policy

Key conservation strategies introduced during the life of the 2010 plan include:

- *ACT Nature Conservation Strategy 2013–23*—takes a landscape scale approach to conservation and aims to *strengthen the key foundational elements—connectivity, resilience, community capacities—of a long-term approach to build the adaptive capacity of natural ecosystems and people to a changing climate*.
- *ACT Water Strategy 2014–44: Striking the Balance*—provides long term strategic guidance to manage the Territory's water resources and is focused on the achievement of three outcomes: healthy catchments and waterbodies; a sustainable water supply used efficiently; and a community that values and enjoys clean, healthy catchments (ACT Government 2014).
- *ACT Native Grassland Conservation Strategy and Action Plans 2017*—builds on achievements under the 2005 Lowland Grassland Conservation Strategy, providing a Territory-wide approach within a regional context to the conservation and management of native grasslands. The Strategy includes montane and rocky native grasslands and, recognising past protection success, shifts focus to best-practice conservation management and enhancing native grasslands condition in light of a changing climate (ACT Government 2017).
- *ACT Aquatic and Riparian Conservation Strategy and Action Plans 2018*—provides guidance for the conservation and management of aquatic and riparian ecosystems. The Strategy addresses current and future issues, such as a changing climate, focuses on best practice conservation in an adaptive management framework and includes Action Plans for threatened species.
- *ACT Climate Change Strategy 2019–2025*—sets out the steps the community, business and Government will take to reduce emissions by 50–60% (below 1990 levels) by 2025 and establish a pathway for achieving net zero emissions by 2045.
- *ACT Native Woodland Conservation Strategy and Action Plans 2019*—builds on the achievements of the 2004 Lowland Woodland Conservation Strategy and aims to protect, maintain and improve the ACT's woodlands in collaboration with other agencies and organisations. The Strategy identifies how the ACT Government intends to manage threats, safeguard threatened species, enhance woodland structural complexity, undertake monitoring and research, and enhance resilience, ecosystem function and connectivity of lowland and subalpine woodlands.

It will be critical for any new plan for the Jerrabomberra Wetlands to incorporate relevant directions and actions from these strategies and for appropriate mechanisms to be established for evaluating management effectiveness in achieving desired outcomes for relevant ecosystems and other values within the reserve.

2.2.3 Implementation of actions in the 2010 Plan

The Jerrabomberra Wetlands Nature Reserve Plan of Management 2010 listed 128 actions (33 in Tables 6.2 and 6.3, and 95 in Table 10.1) to be implemented to achieve the Plan's objectives over ten years. Since it was released, 125 of the 128 actions in the Plan have been completed or are ongoing, while limited progress has been made on one action (see section 3.2.1). Two actions have not been progressed (see sections 3.3.1 and 3.4).

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3. Review against 2010 Plan objectives

3.1 Biodiversity

The primary management objectives in the 2010 Plan for Biodiversity are:

- The diversity of wetland and other habitats is conserved.
- Habitats suitable for migratory bird species protected under international agreements are conserved.
- The reserve supports diverse waterbird populations, including migratory species.

3.1.1 Review

The 2010 Plan prescribed 28 management actions for the conservation of biodiversity, particularly focused on maintaining or enhancing wetland habitats and waterbird populations. These included managing access to minimise disturbance to birds, weed removal, planning of native aquatic and riparian plants, introducing emergent logs, and controlling feral animals. All Biodiversity actions have been completed, have commenced or are ongoing.

Objectives for wetlands and other habitats

Aquatic and wetland habitats are conserved and enhanced so as to maintain the diversity of waterbird species occurring in the reserve.

- Habitats suitable for migratory bird species protected under international agreements are conserved and enhanced where appropriate.
- Aquatic and wetland habitats that are suitable for education and to promote appreciation and understanding of wetlands are conserved and/or developed.
- Terrestrial habitats are managed to maintain and enhance the diversity of terrestrial birds and non-avian fauna in the reserve.

Peninsula and Jerrabomberra Backwaters (Zone 1)

These areas in the north-west of the reserve are the least disturbed high-quality water bird habitat associated with Lake Burley Griffin and provide important habitat for birds sensitive to disturbance. The Plan identifies control of access as the main management consideration and includes polices that:

- Access will be subject to the approval of the manager of the reserve who may determine the size and number of parties entering the Refuge Zone and the times of year such parties may enter.
- Access from the water will not be permitted except for management, research and emergency purposes.

Access restrictions have been implemented for the Peninsula and Jerrabomberra Backwaters (Refuge Zone). 'No Unauthorised Access' signs were erected at the gate access points into the area in 2013. A sign at the mouth of Jerrabomberra Creek indicating 'No Watercraft' was installed in August 2015.

Groups such as the Canberra Bushwalkers Club, CSIRO dung beetle research, and one weekly bird survey observer, are granted approval to enter the Peninsula during the year, only after migratory birds have left the area.

Advice is provided to ActewAGL and other relevant agencies on minimising disturbance to wetland birds in undertaking routine maintenance of urban services infrastructure, including not entering the area when Latham's snipe are present (August to February).

Jerrabomberra Reach (Zone 2) and Jerrabomberra Pool (Zone 3)

These permanent deep-water habitats and their associated riparian vegetation provide important habitat for water birds, land birds and non-avian species. Jerrabomberra Pool is one of the two main public water viewing areas in the reserve and the 2010 Plan identifies the importance of restricting boat access, and managing riparian vegetation to retain habitat, control pest plants and maintain views from bird hides. The

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plan also recognises the importance of design of the landscape between new urban development and Jerrabomberra Creek as crucial to the maintenance of the habitat values of this area.

In addition to the 'No Watercraft' sign on Jerrabomberra Creek installed in 2015, two buoys with no entry signs have been placed in the creek, along with a floating buoy barrier to deter boats from entering Jerrabomberra Reach. Boat clubs have been requested to inform members not to enter the reserve by boat. Access to Jerrabomberra Reach is restricted to scientific and ornithological purposes.

'No Watercraft' sign and buoy barrier at the mouth of Jerrabomberra Creek (Miriam Fokker).

Aquatic weeds (alligator weed, yellow water lily, alder, willow) are removed each year as part of the reserve's weed management program. Removal of willow, alder and other exotic woody weeds has taken place in the riparian areas of Jerrabomberra Reach and Pool every year from 2011, with follow-up weed control and native riparian plantings. 5000 reeds were planted in a former willow area opposite Kingston Harbour, which is now used each year by Latham's snipe (*Gallinago hardwickii*), one of the migratory species protected under international agreements.

An extensive woody weed removal project along Jerrabomberra Pool, to the west of Tadorna hide, was undertaken by volunteers in Autumn 2019. Black Alder saplings were removed from Jerrabomberra Reach in 2023.

Anticipatory planting of native plants is undertaken in riparian zones along Jerrabomberra Creek and Molonglo River before further weed control occurs, with 340 native plants planted in 2020 along Jerrabomberra Reach and Pool and 260 along Molonglo Reach.

PCS staff and the Wetlands Management Committee continue to engage with the Eastlake development consultation process, to ensure that the maintenance of the habitat values of this area is factored into design of the landscape between new urban development and Jerrabomberra Creek.

PCS staff also engage the local resident community. Invasive woody weeds have been removed from along the creek near the reserve boundary, in response to a request from local Kingston Foreshore residents who are part of Honeysett Pond rehabilitation group. The area is now more accessible, and clear of rubbish and weeds.

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Yellow water lily (*Nymphaea mexicana*) in one of the paleochannels (Miriam Fokker)

Molonglo Reach and Shoveler Pool (Zone 3)

The 2010 Plan noted the importance of Molonglo Reach as a relatively undisturbed section of open water habitat which was used for breeding sites by great cormorants, little pied cormorants and darters, and for roosting by those species and others. Disturbance was to be avoided, particularly during the breeding season, and an advisory sign was to be erected at the reserve boundary. Shoveler Pool was noted as popular for birdwatching and access was to be permitted along the powerline service road as far as the pool. The Plan noted that the provision of a hide for this area may be considered in the future.

An access advisory sign informing the public they are entering the Nature Reserve was erected at the reserve boundary (service road gate) near Shoveler Pool in 2013. 'No Bikes' and 'No Dogs' signs have since been added. Access is permitted along the powerline service road as far as Shoveler Pool.

Kellys Swamp

Kellys Swamp was recognised in the 2010 Plan as the main water bird observation area for the reserve. The Plan identified the need for a more complete understanding of the habitat impacts of flows into and out of Kelly Swamp, particularly if urbanisation should result in increased flow in Jerrabomberra Creek, and included an action to review the potential to manipulate water levels in Kellys Swamp (in particular to expose mudflats).

Studies of the groundwater levels and flows were undertaken as part of the Resources and Values document produced by the Management Committee in 2013 and the potential to manipulate water levels in Kellys Swamp was reviewed by the Committee during the development of the Concept Plan. Over the last five years Kellys Swamp has gone through several flooding and drying periods as part of the natural weather patterns and there is currently no plan to manipulate water levels.

Studies into the water quality of inflows were undertaken in 2016 as part of the Basin Priority Project (now the Healthy Waterways project), in which the Commonwealth provided funding, under an interjurisdictional agreement on water management, to design and construct priority projects to improve storm-water quality across six catchments in the ACT. On-ground works began in the Wetlands in 2016.

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The 2010 Plan also recommended investigating and potentially undertaking habitat enhancement activities at Kellys Swamp, including evaluating placement of emergent logs in the water, and extra plantings or screen fences on the eastern side of the swamp between the bird hides to reduce disturbance by visitors. Habitat enhancement works are discussed below.

Pelicans roosting on an emergent log in Kellys Swamp (Miriam Fokker)

Jerrabomberra Billabongs (Zone 3)

The 2010 Plan called for this area to be managed as a buffer zone between the southern reserve boundary and Kellys Swamp, and its use to be reviewed and considered in the context of development of the East Lake area, with grazing to be continued for fire fuel reduction and maintaining habitat diversity.

Grazing in the area was ceased in 2013. As part of the Bushfire Operational Plan (BOP) and cultural burning program, areas are burned to manage biomass and enhance habitat, and encourage native sedges, grasses, and reeds. Over time, it is anticipated that local native reeds and sedges will spread across burn sites to outcompete Phalaris and wild oats.

Through the Healthy Waterways Project, the Billabong to Jerrabomberra Creek section has been extended from the Billabong and the walking track and foot bridge have been upgraded. Aquatic and riparian plants and a field of native grasses have been added to the area to provide habitat and enhance water quality, as well as for interpretation about native plants as a traditional Ngunnawal food source. The Billabong extension has resulted in an increase in the numbers of several bird species (and rakali) utilising the Wetlands.

Jerrabomberra Creek Silt Trap (Zone 3)

The 2010 Plan noted the increasing importance of the Silt Trap and surrounding area as a recreational and aesthetic resource for nearby residents as the redevelopment of East Lake proceeds, as well as serving its hydrological, water quality and ecological functions.

Opportunities to enhance the ecological and recreational values of the Silt Trap area, and ensure it fulfills its water quality management function, will continue to be explored by PCS staff and the Woodlands and Wetlands Trust Advisory Panel while urban renewal of the East Lake precinct is underway.

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Habitat enhancement

Logs were placed in the water at Kellys Swamp in 2013 and again in 2019 to provide safe roosting spots for water birds and turtles. Vegetation on some of the islands is regularly managed to keep the islands open for roosting and feeding birds.

Screening with viewing slots has been constructed along the bank adjacent to Bittern Hide, and a screen fence erected on the northern side of the reserve to reduce disturbance to birds using the “Shingle Island”.

Screening with viewing slots along the bank adjacent to Bittern Hide, Kellys Swamp (Brian Prince)

Plantings undertaken on the southern end of Kellys Swamp provide screening where the path is close to the water, and around existing hides to fill gaps and replace dead plants. Further planting will be undertaken along the southern edge of the swamp and planning is underway for the creation of turtle nesting sites on the islands. During the 2019–20 summer, Kellys Swamp dried out, allowing volunteers to maintain the islands and reduce the weeds.

Through the Healthy Waterways Project, aquatic and native riparian plants have been planted around the Billabong and the old Causeway oval areas, including a new wetland. Native plants have been planted along the Silt Trap levy bank to create screening and increase biodiversity. Opportunities continue to be explored for further habitat creation and enhancement.

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The area between Kellys Swamp and Jerrabomberra Creek, where prescribed burns took place in 2018, 2019, 2020 and 2022, has seen an increase in reeds and sedges, enhancing Latham's snipe habitat, with up to 42 birds seen in the area.

Twelve duck nesting boxes utilised by a variety of ducks were audited and upgraded in 2023. Boxes were modified and raised to prevent raiding of nests by rakali.

Friends of Jerrabomberra Wetlands volunteers installing duck nesting boxes in Kellys Swamp (Miriam Fokker)

Exotic grasslands

The 2010 Plan called for weed control to be undertaken in grassland areas without unduly disturbing the wildlife. Herbicide control and chipping of invasive plant species, including African love grass, Chilean needle grass, boxthorn and blackberry, is undertaken annually by volunteers, contractors, and PCS staff. Prescribed burns in areas with a dominant mixture of Phalaris and wild oats have reduced exotic grasses and encouraged native grasses, sedges and reeds.

Vertebrate fauna

The Plan identified actions in relation to vertebrate fauna that including collection of biological and ecological information and undertaking management activities in support of fauna conservation and feral animal control.

Surveys are undertaken annually for birds, frogs, platypus, native water rat (rakali) and turtle nests. Eastern long-necked turtles in the area are monitored and nests protected every spring, however more formal research is required into the behaviour of turtles to better manage their protection from predation. Researchers from the Australian National University (ANU) are undertaking studies on the behaviour of eastern brown snakes in the area.

The Healthy Waterways Project added a wetland on the old Causeway oval on Eyre Street and extended the Billabong, creating additional habitat and a refuge area for fauna, including Latham's Snipe.

Fencing was installed around the paleochannels and Peninsula to regulate cattle movement and create a refuge area for fauna.

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In 2016 the Trust initiated a research program into Latham's snipe and in 2022 a dedicated PhD student commenced research on the movement of Latham's snipe in the area, due for completion in 2025. This research has been integrated into the wider Latham's Snipe Project (see Research and Monitoring, below) and has provided information to better manage the reserve for migratory bird habitat. Management tools include burning, grazing and slashing some areas.

Eastern long-necked turtle hatchlings, Kellys Swamp (Miriam Fokker)

Vegetation management

A detailed vegetation survey was undertaken by consultants as part of the Resources and Values report produced by the Management Committee in 2013 and vegetation mapping was completed in 2014. A revegetation plan for Jerrabomberra Pool was developed by Greening Australia. Information from this document, combined with the Molonglo Catchment Group's *Plants recommended for each section of Jerrabomberra Creek,* provides context for the PCS to develop programs and procedures for vegetation management.

Anticipatory planting of native plants is undertaken in riparian zones along Jerrabomberra Creek and Molonglo River before further weed control occurs. Plantings undertaken between 2020 and 2022 are monitored and maintained and so far, there has been an 80% survival rate. Planting in the riparian zones is planned to continue. A draft *Riparian Restoration Plan for Molonglo River and Jerrabomberra Creek* in the reserve, prepared for the PCS, Woodlands & Wetlands Trust, and Molonglo Catchment Group by consultants in late 2024, is currently being reviewed.

The Woodlands & Wetlands Trust and Landcare ACT secured significant funding from the Australian Government for the implementation of the updated restoration plan, to be deployed in coming years along Jerrabomberra Creek and the Molonglo River.

Cattle grazing

Strategic grazing of cattle occurs in the northern part of the reserve to reduce the biomass of exotic grassland species and allow native sedges and reeds to flower and set seed during the summer months.

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A grazing schedule has been established to manage the vegetation/herbage mass of the Peninsula and hospice ponds. Grazing is not permitted during spring when Latham's snipe are present and is restricted during summer. The removal of stock from the riparian zone during summer allows native sedges and reeds to flower and seed.

Pest plants

A weed control program is implemented on an ongoing basis to manage woody weeds, broad leaf weeds, yellow water lily, alligator weed, African love grass and Chilean needle grass. A highly committed individual ParkCare volunteer has spent considerable time over the last five years controlling broadleaf species, resulting in a significant reduction of infestation in the reserve.

Pest animals

The rabbit population in the reserve is maintained at low numbers and continues to be monitored through regular spotlight counts. Control, including ground baiting and warren fumigation, is undertaken as required.

Fox control is not currently considered necessary, as the fox population in the area of three individuals is stable and helps keep the rabbit population under control. However, foxes are an issue for turtle nesting, with occurrences recorded of foxes destroying several nests in one night. Options for prevention of this turtle nest destruction need to be explored.

No stray dogs or cats have been sighted during spotlight monitoring. Signage has been installed informing visitors that taking dogs into the reserve is prohibited.

Blackberry bushes have been removed along the Molonglo River to reduce the rodent population.

European wasps are exterminated when detected. A European wasp queen baiting program that began in 2021 has reduced wasps in the area by 98%, with only one or two nests found each summer between 2021 and 2024.

3.1.2 Issues for consideration in a new plan

- Incorporation of new information on vegetation, wetland characteristics and wildlife populations, behaviour and habitat requirements, e.g. Latham's Snipe Project.
- Further planting around Kellys Swamp as plants reach their age limit.
- Replacement of habitat logs.
- Protection of turtle nests from foxes.
- Risk to the reserve's bird populations posed by avian Influenza.
- Conserving the complementary values of adjacent land, e.g. for foraging by Latham's snipe.

3.2 Landscape

The primary management objectives in the Plan for Landscape are:

- Distinctive features of the landscape are conserved, in particular the rural and floodplain character and geomorphological features.
- Management of the reserve takes account of the national capital significance of the area and its role as a significant part of the Lake Burley Griffin foreshore.

Actions prescribed in the 2010 Plan for landscape management include: recognising the significance of the paleochannels of the Molonglo River, monitoring their condition and controlling activities that have the potential to adversely affect them, maintaining views and vistas by removing woody weeds, planting for visual and aesthetic purposes, minimising the visual impact of electrical infrastructure, and obtaining works approval from the National Capital Authority for landscaping and construction activities. All eight Landscape actions in the Plan have been completed, have commenced or are ongoing.

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3.2.1 Review

Paleochannels of the Molonglo River

The paleochannels of the Molonglo River are recorded as a site of significance in the ACT Heritage database. Visual monitoring the condition of the channels is undertaken on an ongoing basis, however observation of sedimentation rates and changes in cross-sectional geometry proposed in the Plan has not yet been implemented.

Cattle are restricted from most of the paleochannel areas. The road cutting across the paleochannels for powerline maintenance (which is infrequent) has been assessed by the PCS to determine if it is a risk to the paleochannels. The assessment concluded that, while the road has a minor dam effect on a couple of the paleochannels, creating a water source for grazing cattle as well as more mud flats for attracting birds, it has no structural impact on the channels.

Visual and aesthetic

Woody weeds are removed where they have inappropriately grown, with anticipatory planting of natives undertaken before woody weed removal. Planting continues as 'islands' of weeds are removed from the riparian zone of both the Molonglo River and Jerrabomberra Creek.

Planting has been undertaken around the Dairy Road carpark to provide future shade for visitors, and a line of Casuarinas planted along the eastern boundary of the reserve to screen the Fyshwick industrial area. Screen planting has also been completed at the World War I (WWI) Trenches site.

Dead native shrubs around hides have been replaced with similar native flowering, bird-attracting shrubs.

PCS has been engaged in planning for the removal of the power lines and switching sub-station from the reserve with the aim of minimising the visual impact of electrical infrastructure. Phase 1 of this process (underground cabling across the grazed area) is now complete. Construction of Phase 2 (under-boring of cable along Eyre St and the shared path) is planned to start in 2025.

National Capital significance

Works approval has been obtained from the National Capital Authority for all major willow and other exotic tree removal, new screens or signage in the reserve, and for excavation of WWI trenches (see Section 5 Cultural Heritage).

3.2.2 Issues for consideration in a new plan

- Incorporation of new understanding of the landscape and hydrological features of the reserve.
- Review the need for monitoring sedimentation rates and changes in cross-sectional geometry of the paleochannels as a basis for determining whether further actions are required to maintain them.
- Assessment of water sourced from Goldenholm ponds (within the Canturf property).

3.3 Recreation

The primary management objective in the Plan for Recreation is:

- The reserve is used for recreation activities that are compatible with the conservation values and objectives of the area, and facilities are provided for this purpose.

The 2010 Plan notes that the main purpose of the reserve is to protect wetland habitats and waterbirds/landbirds using those habitats and "*it is appropriate that the main focus of recreational activity in the reserve should be observation or study of birds in those habitats and provision of appropriate facilities. While not precluding other low-key recreation activities, this is a more limited focus than other reserves in the ACT.*"

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The Plan lists 53 actions for Recreation, focussing primarily on infrastructure design and maintenance, visitor experience, visitor impacts and visitor safety. All but one of the Recreation actions in the Plan have been completed, have commenced or are ongoing (see Disposal of human waste, below).

3.3.1 Review

Recreational Facilities

The Plan notes that "*Facilities are currently not provided for picnicking (e.g. tables, barbecues, rubbish bins) nor are there toilet facilities*" and states that "*these types of facilities would be appropriate in Zone 3 along the Jerrabomberra Creek corridor, mainly south of Jerrabomberra Pool. Lighting should be provided in this area around such facilities and the car park. Lighting will need to be carefully designed and located so that it does not impact on water bird habitat, in particular Jerrabomberra Creek and its margins*."

Recreational facilities have not been developed in the Jerrabomberra Creek corridor and are unlikely to be, in the light of flood risks and potential impacts on wildlife, including Latham's snipe.

Parking

Due to vandalism and other issues, consideration has been given to closing off access to the eastern (Dairy Road) car park at night by a gate on Dairy Road. While installation of a CCTV camera has reduced these problems, the matter remains under review.

The Eyre St carpark (referred to in the Plan as the Newcastle St car park) has been closed for many years due to vandalism and antisocial behaviour. The Trust is in discussion with ACT Government agencies responsible for the renewal of the East Lake precinct about a possible future visitor centre and car park in the vicinity of the old Weights and Measures building (Newcastle House) in Eyre Street. This potential facility has been acknowledged in the East Lake Place Plan and the Inner South District Policy of the Territory Plan.

Walking tracks, bridges, cycle path

Construction and maintenance of a well-designed track network with views that encourage visitors to follow the paths has continued over the life of the Plan. Track works completed include:

- an east-west track (cycleway) between the car parks–the shared path
- a track to Shoveler Pool for birdwatchers–installation of an open bird hide along the track is under consideration.
- A new boardwalk that creates a loop around Kellys Swamp and goes close to the Silt Trap–there are five bird hides along the track and the addition of another bird hide at the southern end of Kellys Swamp is under consideration.
- A new track that loops around the Billabong and along the Silt Trap bank, connecting onto the Kellys Swamp Loop.
- Upgrades to the Billabong track with the inclusion of bridge over the pond. Extension of the Billabong track to the Silt Trap and its development into a cultural interpretation track.

Signage

New signs of varying types have been installed across the reserve and new PCS signage guidelines are in place. Signage initiatives include:

- 'No dogs' signs installed at entry points and along the shared path.
- Track name and access signage along all current tracks.
- Interpretive signs at key locations along reserve trails.
- Signage to indicate exclusion areas e.g. Jerrabomberra Reach for watercraft, past the Kingston Boat Harbour entrance (recreational boats) – a 'No Watercraft sign is in place at the Reach as well as a buoy floating barrier and two triangular buoys.
- Directional signage with high quality maps and the reserve Activities Declaration will be installed at both entry car parks in 2025 under the new entry signage guidelines.

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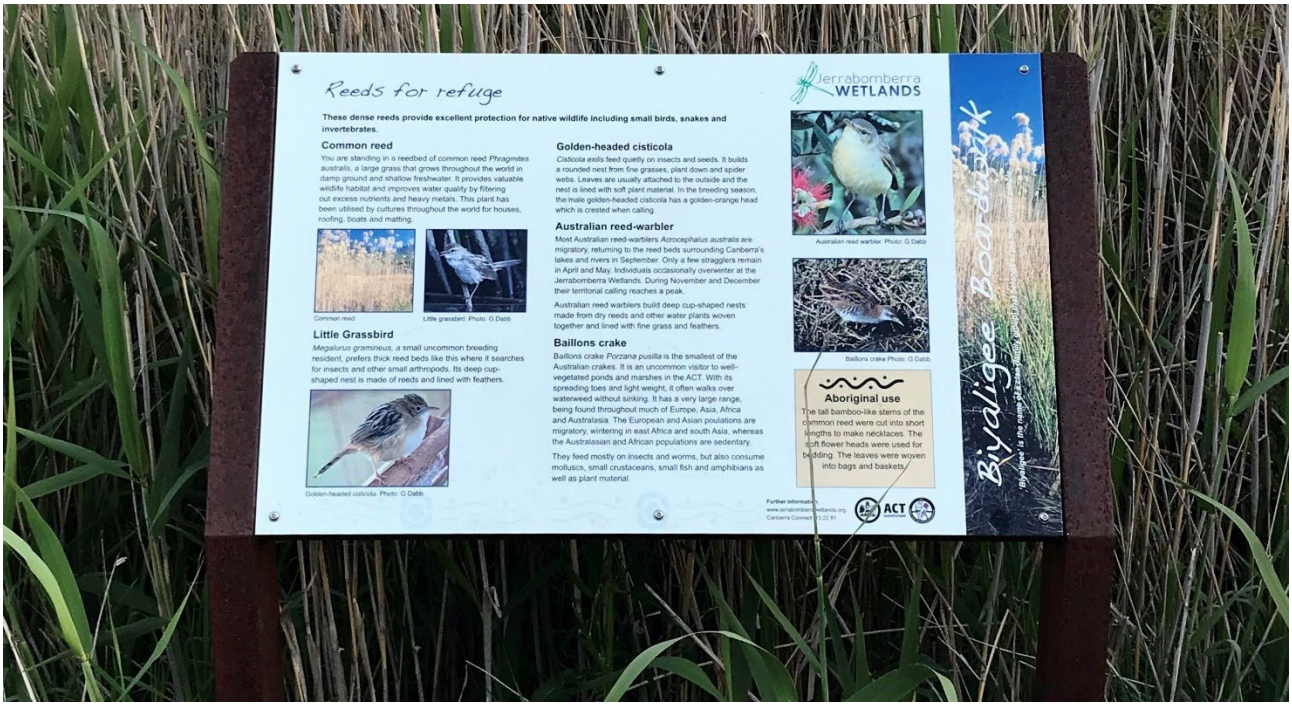

Interpretive sign at Biyaligee Boardwalk, Kellys Swamp (Brian Prince)

Cycleway entering the reserve from the Dairy Road carpark (Brian Prince)

Bird hides

The bird hides were upgraded in 2013. The hides were painted, new panelling was installed to prevent possum use, nest boxes for possums placed on exterior of hides and new interpretive and general information signs installed. Maintenance of the hides is ongoing.

Regular monitoring of the hides for maintenance issues, vandalism or threats to public safety is undertaken by PCS staff and the birdwatching community.

Proposals for new hides at the southern end of Kellys Swamp and along the vehicle track near Shovelers Pool are under consideration. A two-level hide at Kellys Swamp would provide an opportunity for visitors to observe birds in a 360° view field, including the Billabong area.

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Birdwatching from a hide at Kellys Swamp (Miriam Fokker)

Visitor Impacts

Rubbish dumping and littering

Dumping of rubbish has been an issue in the Dairy Road car park in the past but has not occurred since the installation of a CCTV camera. No bins are provided in the reserve and PCS staff remove any litter at the car park or within the reserve. Cars are sometimes dumped and burnt out along Dairy Road or Eyre Street– these are reported to ACT Policing and the Fix My Street webpage.

Disposal of human waste

No toilets are currently provided in the reserve. Toilets at the Wetlands Office are made available to the public. An action in the 2010 Plan that toilets be included in the open space recreational facilities of the Jerrabomberra Creek corridor has not been progressed as there has been no development of facilities in the area, which is a flood zone and includes habitat for Latham's snipe. The Concept Plan proposed that toilets be provided in any future Visitor Centre.

Trampling of vegetation

Tracks are designed to take advantage of vistas and desire lines and hardened or grassed areas are provided to allow visitors to stop and take in views. Where required, off-track activity is discouraged by signage or screening.

'No Entry' signs have been installed in locations where people have been shown to be likely to go off track. Screening has been installed to prevent people walking out into Kellys Swamp and disturbing the birds, and a new boardwalk stops people cutting across the back of Kellys Swamp. The Billabong track has been upgraded from a mown path to a gravel path and the Woodlands track has two log seats installed to allow visitors to stop and take in the view.

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Erosion of tracks

The PCS seeks to ensure that tracks are properly planned, constructed and drained, relative to anticipated use. Over the life of the Plan new tracks have been constructed and old tracks upgraded. Tracks degraded by flooding in August 2022 were repaired to allow wheelchair access. Maintenance of tracks is ongoing.

Domestic animals

The *Nature Conservation Act 2014* prohibits domestic animals such as dogs and horses in reserves except where approved by the Conservator of Flora and Fauna as a permitted or restricted activity under an Activities Declaration. Signs at entry points and along the shared path advise visitors that no dogs are allowed. Dog owners found with dogs in the reserve (except on the shared path) are reminded about the 'No Dogs' signs at entry points, cautioned, and asked to leave the reserve.

Vandalism of bird hides and other facilities

PCS rangers report any incidents of vandalism to the PCS Compliance and Enforcement team and ACT Policing. Remedial actions such as removal of graffiti or repair of minor damage are carried out as quickly as possible. Signs in the hides advise that CCTV is used in the reserve.

The installation of CCTV in the Dairy Road car park has reduced the incidence of inappropriate behaviour in that location.

Deliberate disturbance or harm to wildlife

PCS rangers monitor and deal with disturbance issues and report any incidents to the PCS Compliance and Enforcement team, and to ACT Policing if required.

Visitor Safety

Drowning

Flood warning signs are maintained near the Silt Trap and at reserve entry points and rangers close the reserve if dangerous flood levels are predicted. Molonglo Reach is kept free of items (e.g. flood debris) that may be a hazard to recreational users. Tracks are designed to avoid locations close to, and parallel to, deeper water.

Falling tree limbs/trees, fallen trees

Rangers regularly inspect condition of trees near visitor use areas and along tracks and apply tree surgery as required.

Fallen trees are removed as soon as possible. If a fallen tree presents a danger to users (e.g. cyclists), warning signs/barriers are erected until the tree is removed.

Animal bites and stings (e.g. snakes, spiders, European wasp)

A clear area is maintained on either side of paths by slashing or mowing to reduce the risk of snake bite. Signage advises visitors to be aware of snakes and information on snakes is provided in hides. ANU researchers and volunteers are tracking and microchipping eastern brown snakes in the reserve and educating the public on snake awareness.

European wasp nests are eradicated as soon as possible. European wasp queen baiting programs delivered in 2021, 2022, 2023 and 2024 have significantly reduced wasp numbers.

Tripping/falling on paths

Paths constructed to appropriate standards and maintenance is ongoing to minimise trip hazards. The Kellys Swamp track is accessible for wheelchairs but requires ongoing repair and maintenance.

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Effects of chemicals used for pest plant and animal control

PCS Standard Operating Procedures and Works Plans require warning signs and WHS procedures when chemicals are used for pest plant and animal control. Warning signs are installed when baiting or weed spraying is underway and affected parts of the reserve are controlled if required. Rangers ensure that contractors follow appropriate occupational health and safety procedures when undertaking control work.

Criminal behaviour e.g. theft from vehicles, illicit drug taking, assault, robbery

PCS staff report any criminal activities to ACT Policing and seek their assistance if required.

Measures to reduce risks to public safety, such as car park lighting, retaining open vegetation in car parks and along tracks, and closing off car parks to vehicles at night, will be considered if required.

PCS staff monitor public safety in bird hides and take appropriate action if there are safety concerns. Bird hides have been upgraded and central walls removed to prevent people “hiding” inside.

Offensive or intimidating behaviour towards reserve visitors

PCS staff increase ranger presence if situations are observed that present a risk of offensive or intimidating behaviour, such as conflict between individuals or groups. Tensions have sometimes arisen between joggers and birdwatchers. These situations have been managed by increasing ranger presence and the installation of ‘No Jogging’ signs around Kellys Swamp.

PCS staff report any criminal activities to ACT Policing and seek police assistance if required.

Waterbird displays and bird feeding

The PCS website advises visitors that feeding birds is illegal in reserves, is detrimental to bird health and weakens their natural wariness towards humans, which can create risks for future visitors and the birds themselves. Signage discouraging feeding has not been considered necessary in the reserve at this stage as visitors have never been observed feeding birds, possibly because there is very limited access to the edge of the water along most of the wetland ponds, and birds are generally shy of humans.

Entry Fees

The 2010 Plan included an action to charge a fee for ranger guided interpretation activities where appropriate, in accordance with the approach adopted for Canberra Nature Park (CNP) as a whole.

Entry fees are not charged for CNP reserves. The Wetlands Senior Ranger coordinates the Young Ranger Program where members pay a fee of $20 per activity through the PCS Visitor Experience Team BookEasy system. Schools can book activities through the PCS Visitor Experience Team or the Trust.

Tourism

The Plan included a policy that the tourism potential of the reserve would be developed over time, with the low-key nature of visitation retained with facilities appropriate to this approach, and suggested that an appropriate strategy for the reserve would be to “*gradually develop its tourist potential once major urban planning issues on its western and southern perimeters are resolved, and facilities such as car parks, signage and walking tracks have been upgraded*.”

The extensive work undertaken to enhance wildlife habitat and improve visitor infrastructure has increased the tourism potential of the reserve. PCS Wetlands staff advise that social media now plays a significant role in attracting new visitors to the reserve, especially those who are interested in birds and like to “tick off” particular species on their list of observed species when visiting Canberra.

Counters at the Jerrabomberra Creek shared path bridge and on the Kellys Swamp track record pedestrian and cyclist traffic in the reserve. Numbers from 2022 to 2024 are shown in Table 1 below.

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The numbers for the Jerrabomberra Creek Shared path bridge show the high volume of traffic on the shared path, where bicycles are permitted. Noting that the counter records traffic in both directions, this is likely a reflection of people transiting through, rather than visiting, the reserve.

Year	Jerrabomberra Creek Shared path bridge	Kellys Swamp track
2022		69,647
2023	190,710	96,040
2024	325,099	30,081

Table 1: Pedestrian and cycle traffic numbers recorded in the reserve 2022-2024

3.3.2 Issues for consideration in a new plan

- Anticipated increase in visitation from Canberra's increasing population and urban development in areas close to the reserve.
- Maintenance and/or upgrading requirements for infrastructure, e.g. the Kellys Swamp circuit and some of the older paths.
- The role of the Wetlands as a tourism destination.
- Upgrades to entry point and internal signage to align with signage and branding guidelines.
- Reviewing signage and other mechanisms that demarcate the reserve boundary.
- Updated information on existing walking tracks, and self-guided walking tour App.
- Ensuring that any proposal for additional tracks or other infrastructure will not impact reserve values.
- Impact on fauna, including birds and turtles, from lighting in the reserve or along Dairy Road.
- Reconciling commuter traffic through the Wetlands with conservation of the natural and experiential values of the reserve.
- The appropriateness of recreational facilities in the Jerrabomberra Creek corridor.
- Review of the reserve's Activities Declaration regarding access to the wildlife refuge area and dogs on the shared path.

3.4 Education and Research

The primary management objectives in the Plan for Education and Research are:

- The reserve is used for education about wetland ecosystems, their management and enhancement, and facilities are provided for this purpose.
- Wetland research is facilitated and supported.

Actions in the Plan for education and interpretation focus on investigating opportunities to further develop facilities and programs, providing introductory information at reserve entry car parks and encouraging community involvement in interpretation programs. Actions for research and monitoring focus on encouraging research on the Wetlands environment and management, monitoring where required and applying the results to reserve management. Seven of the eight actions for Education and Research have been completed, commenced or are ongoing. Development of an Interpretation Strategy for the reserve is yet to be progressed.

3.4.1 Review

Education and interpretation

Signage at the reserve entry car park on Dairy Road provides introductory information about the reserve. New interpretive signs about Latham's snipe and other species have been installed in the bird hides and at other locations around the reserve.

The Education Ponds were developed near the Silt Trap to educate school children and other visitors about macroinvertebrates. Between 2016 and 2019, up to 500 students a month were utilising the ponds as part of their curriculum. The Trust provided weekly nature activities for children aged 1 to 5 through the Tales

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and Trails program from 2018 to 2022 and has developed an audio trail and interpretive app linked to waypoints around the reserve. The schools program delivered by the Trust continues with several school visits per annum. The Molonglo Conservation Group (LandCare) utilises the Education Ponds as part of its education program.

The PCS monthly Young Rangers Club Program, developed in 2016, engages children aged 7 to 15 who are nature enthusiasts and have the potential to one day work in the field of ecology or conservation.

In 2019 the Trust, with input from PCS, Canberra Ornithologists Group, Suburban Land Agency, the local Ngunnawal community and the Friends of Jerrabomberra Wetlands, developed a Visitor Experience Concepts plan for the Wetlands that has since guided the Trust's interpretive activities in the reserve, as resources are secured.

The Trust is in discussion with ACT Government agencies responsible for the renewal of the East Lake precinct about the potential for a visitor centre in the precinct. The East Lake Place Plan envisions a Visitor and Interpretation Centre at the old Weights and Measures building (Newcastle House) in Eyre St.

Young Rangers participating in Waterwatch water bug counts for water quality monitoring in the reserve (Miriam Fokker)

Research and Monitoring

The PCS encourages research projects that investigate aspects of the Wetlands environment and management issues. The University of Canberra (UC), the Canberra Institute of Technology (CIT) and ANU completed studies with students to gather data for the Resources and Values report for the reserve. Universities and CSIRO continue to conduct research, including projects on Latham's snipe, turtle populations, dung beetles and snake behaviour.

The Latham's Snipe Project commenced in 2016 through the Federation University and the Community Engagement Officer from the Trust. The project is part of the ACT Action Plan for listed Migratory species (March 2018) and the Japan-Australia Migratory Bird Agreement (JAMBA) and has established a relationship with the Wild Bird Society (Society) in Japan and the Wetlands bird surveying group, which includes volunteers from ANU and Canberra Ornithologists Group (COG). Further information on Latham's snipe and the project is provided in Appendix 1

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Monitoring of bird populations (COG), Latham's snipe behaviour (ANU and Latham's Snipe Project), turtle population (Volunteers and Parks Staff), Waterwatch (Molonglo Conservation Group – Landcare), and platypus and rakali surveys continue to add value to management of the reserve. Future monitoring and/or research is required on cool burn methods in riparian zones, especially areas of reeds and sedges. Monitoring of water quality in ponds created by the Healthy Waterways Program would also be valuable.

Monitoring of Latham's snipe and turtle movement has guided management practices in the reserve. Monitoring bird habitat and nesting behaviour will determine where to remove woody weeds and plant native plants as well as where to restrict the movement of people. Monitoring of Latham's snipe will guide the management of reed and sedges and grazing areas, especially near pond margins. Monitoring turtle movement and nesting will determine where to mow or burn potential nesting areas and what nesting conditions are required, as well as how to increase the chances of nest success rate.

Results from a native grass monitoring program (Vegwatch) indicated that native grasses could successfully be planted in the reserve. This led to 5000 grasses being planted in disturbed areas.

Measuring a Latham's snipe (Miriam Fokker)

3.4.2 Issues for consideration in a new plan

- Development of a comprehensive interpretation strategy for the reserve.
- Continuing support for the Latham's Snipe Project
- Research to support management of turtles and other wildlife in the reserve.
- Research/monitoring for cool burn methods, especially effects on reeds and sedges, and water quality.
- Investigation of the decline of macroinvertebrates in Jerrabomberra Creek recorded by Waterwatch.
- Investigation of the potential impacts on wildlife of high visitor traffic on the shared path.

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3.5 Cultural Heritage

3.5.1 Review

The 2010 Plan recognises the reserve as "largely a cultural landscape" with evidence of Aboriginal occupation existing in the stone assemblages collected from the area, and notes that other artefacts may remain buried near the surface (ACT Government 2010). The Plan provides for limited access and low intensity use in the grassland and paleochannels where artefacts might still remain, and notes that the most likely cause of disturbance is any change in the routes followed by urban services infrastructure such as powerlines. The 2013 Resources and Values report notes that the Plan and the 2012 Draft Master Plan "contain very limited description of cultural heritage and values."

The primary management objective in the Plan for Cultural Heritage is:

- Cultural heritage values of the reserve are identified and conserved.

Actions in the Plan focussed on ensuring that all proposed works in the reserve met heritage requirements, cultural heritage was included in an interpretation strategy, prior Aboriginal occupation was recognised in signage and interpretive material, and Aboriginal people and descendants of European settler families were involved in cultural heritage management. All four Cultural Heritage actions in the Plan have been completed, commenced or are ongoing.

Aboriginal occupation of the area and continuing connection to Country are acknowledged in signage and interpretive material. The Biyaligee Boardwalk, part of the Kellys Swamp loop walk, was named after the local clan of the Ngunnawal people, the Billabong track is being redeveloped as the Billabong Cultural Trail, and an Aboriginal Plant Use Garden has been established at the Wetlands Office. Aboriginal rangers have been engaged in trial cultural burning of the reserve to understand how a cool burn affects plants in a wetland area.

Cultural burning at Kellys Swamp (Miriam Fokker)

A significant event in understanding the cultural heritage of the area occurred with the preparation of a report on the history of the Wetlands (Butz 2016) that led to the discovery of World War I training trenches in the northern part of the reserve. An archaeological excavation was undertaken at the trenches in 2015

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by ANU archaeologists, in collaboration with ACT Heritage and in consultation with approved historians. A book about the trenches and their significance was subsequently published (Butz 2017).

The first stages of a loop trail, with interpretive signs and marker posts indicating trench alignments, were installed at the trenches site in 2015. In 2017–2018 simulated trenches were constructed above ground, designed to give visitors an understanding of the dimensions of the trenches and some idea of the challenges of trench warfare, and the loop trail was completed. The trenches have become a popular site for interpretive activities, including during the annual Canberra and Region Heritage Festival.

3.5.2 Issues for consideration in a new plan

- Incorporation of up-to-date information on the cultural values of the reserve.
- Enhancing engagement of Ngunnawal Traditional Custodians in reserve planning and management.
- Opportunities for cultural burns and other activities to maintain Ngunnawal Traditional Custodians' connection to Country and enhance habitat.

Excavation revealing an (infilled) WWI training trench, seen as a pale band crossing the base of the excavation (Mark Butz).

3.6 Environmental Planning, Protection and Management

The primary management objectives for Environmental Planning, Protection and Management are:

- The reserve is not negatively affected by the quantity and quality of water flows from upstream.
- The beneficial influence of the Wetlands on downstream flood risk and water quality is maximised.

Actions in the plan to meet these objectives include PCS participation in planning and management for catchments and water quality upstream of the reserve, consideration of flood effects in reserve management and infrastructure design, minimising the impacts of infrastructure, engaging in with planning and management for adjacent lands, fire management, and undertaking environmental impact assessments for any works or developments in the reserve. All 25 Environmental Planning, Protection and Management actions have been completed or are ongoing.

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3.6.1 Review

Hydrology, water management and water quality

PCS staff maintain communication with the Molonglo Conservation Group and rangers managing areas upstream from the reserve to be aware of issues that may adversely impact the quantity and quality of water flows from upstream of the reserve and participate in management planning processes for upstream catchments as required.

Proposed activities within the reserve are assessed and conducted in accordance with the requirements of ACT environmental protection and resource management legislation including the likely effects on downstream flows and water quality. Waterwatch regularly monitors water quality at several locations across the reserve.

Cattle are excluded from the southern half of the reserve to protect water quality and fencing is installed along the paleochannels, Molonglo River and lake to reduce cattle impact.

Upper Murrumbidgee Waterwatch volunteers monitor water quality monthly in the reserve in Jerrabomberra Creek. The 2023 Catchment Health Indicator Program (CHIP) report for Reach JER2 (19 km from Fernleigh Park to the confluence with the Molonglo River) notes that while overall riparian condition is poor, it "*improves greatly as the creek flows through Jerrabomberra Wetlands*". Water quality is rated as good overall, although electrical conductivity, dissolved oxygen and water bug parameters are rated as degraded. Water bug surveys are conducted downstream of the Wetlands and counts have declined over the past few years. The CHIP report suggests that this is possibly due to the fluctuating water levels of Lake Burley Griffin, which inundate and then expose edge vegetation and water bug habitat (Upper Murrumbidgee Waterwatch, 2023).

Catchment contamination and sedimentation

PCS staff participate in planning and management processes relevant to improving control over catchment contamination and sedimentation. The operation of the Jerrabomberra Silt Trap and its habitat potential is being considered as part of planning discussions for the East Lake development.

The East Lake Place Plan (ACT Government 2024) identifies the need for water sensitive urban design in the development of the East Lake precinct, to ensure that inflowing waters leave East Lake and enter the Jerrabomberra Wetlands in better condition. The Healthy Waterways project in Narrabundah and in the reserve applies water sensitive urban design principles to slow water flow and improve water quality before it enters the lake.

The removal of willows and other woody weeds along Jerrabomberra Creek and replacement with native riparian species has been undertaken in stages since 2011 and is a long-term project that will continue over the next ten years.

Pollution, chemical spills

PCS staff are in regular communication with Molonglo Development Group, ACT Government agencies responsible for the renewal of the East Lake precinct, Icon Water and Canturf and participate in planning and management processes for areas adjacent to, and upstream of, the reserve as required, with the aim of reducing the threat of spills of hazardous materials. A protocol is in place for Environment Protection Authority (EPA) officers to contact the Senior Ranger if a hazardous spillage occurs upstream of the Wetlands. In 2020, when a spillage occurred in Jerrabomberra Creek upstream of the Wetlands, the EPA was able to contain the contamination before it reached the reserve.

Flooding

The impacts of, and effects on, flood waters are considered when designing and locating facilities, structures and plantings in the reserve. Native riparian species have been planted along the Molonglo River

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and Jerrabomberra Creek to protect stream banks from scouring by floodwaters and enhance wildlife habitat. Further planting is required along the riparian zones before exotic species are removed.

Plant species in riparian zone are chosen to withstand riparian flooding events. Structures are designed with possible flooding occurrences and safety is considered. A flooding event in August 2022 damaged only some gravel paths and a few new plantings near the Education Ponds.

Urban services infrastructure

The PCS provides advice to agencies installing or maintaining urban services infrastructure, to ensure that any impact on reserve values is minimised. For example, PCS has been involved in planning processes for the removal of power lines to minimise the visual impact of electrical infrastructure on the reserve. Phase 1 of that project (underground cable across grazed area) is now complete and Phase 2 (under boring of cable parallel to cycleway) is expected to begin in 2025.

Adjacent land uses and future developments

The PCS is engaged on an ongoing basis with the Molonglo Development Group (Dairy Road precinct) and ACT Government agencies responsible for the urban renewal of the East Lake precinct, to ensure that planning and design are in alignment with the reserve management plan and potential impacts on the reserve are mitigated. The East Lake Place Plan acknowledges the significance of the Jerrabomberra Wetlands and provides key principles and strategies to mitigate potential impacts of new development that interfaces with the wetlands.

The former Birrigai facility, adjacent to the reserve on Dairy Road, is now used as the PCS reserve office and education centre, with one building licenced to ACT Wildlife. The orchards, vineyards and surrounding areas that were formally part of Birrigai are leased to the Canberra City Farm community group for education, health and wellbeing.

Fire management

Fire management activities in the reserve are conducted in accordance with the Canberra Regional Fire Management Plan (RFMP)and bushfire Operational Plan (BOP), and include controlled grazing, mowing and slashing and prescribed burns.

Environmental Impact Assessment

All major works undertaken by the PCS in the reserve are conducted in accordance with a Works Approval from the NCA, the which requires consultation with ACT Heritage and the Conservator of Flora and Fauna regarding the avoidance of environmental impacts. Works by other agencies require a Development Approval, the process for which provides for comment from the PCS.

Master Plan

The Plan called for the preparation of a Master Plan for the reserve to detail site planning, including facilities. This action was implemented through the development of the 2015 *Jerrabomberra Wetlands Concept Plan*, which was prepared by a consultant for the ACT Government and the Jerrabomberra Wetlands Management Committee.

3.6.2 Issues for consideration in a new plan

- Planting along riparian zones before removal of exotic species.
- Ongoing engagement with the SLA and developers to ensure that planning and design for urban development in adjacent areas are in alignment with the reserve management plan and potential impacts on the reserve are avoided.
- Continuing support for Upper Murrumbidgee Waterwatch water quality monitoring.
- Review of the Silt Trap design and function.

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3.7 Implementation

Chapter 10 of the Plan–Implementation–incorporated a summary table of actions in the Plan, and identified substantial tasks with high or medium priority, noting that policies and actions comprise a mix of those that tend to be prescriptive and those that recognise the need and allow for varying levels of management flexibility. Chapter 10 also included actions on Community Involvement.

3.7.1 Review

Management actions and priorities

The PCS has implemented an Operations Planning System that facilitates consistent operational planning, activity implementation and reporting across PCS-managed reserves. The system allows PCS staff to record and prioritise operational activities and enables tracking of actions.

The PCS reported to the Minister on the implementation of the Plan in 2022. As noted in Section 2.2.3, 125 of the 128 actions in the Plan have been completed or are ongoing, while limited progress has been made on one action. Two actions have not been progressed (see sections 3.3.1 and 3.4).

Community involvement

The ACT Government established the Woodlands & Wetlands Trust as a key vehicle for enhancing community engagement in the management of Jerrabomberra Wetlands and Mulligans Flat Woodland Sanctuary. Over the life of the 2010 Plan the Trust has facilitated community involvement and inputs to decision making regarding programs, activities and developments, in addition to securing significant additional resources for the reserve (e.g. Green Army, research funding support, donations, and Commonwealth Government grants).

Friends of Jerrabomberra Wetlands ParkCare volunteers planning native shrubs at the Education Ponds (Mirian Fokker)

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Community involvement in the management of the reserve has been enhanced by the establishment of the Friends of Jerrabomberra Wetlands ParkCare group in 2013 and ParkCare Ranger assist projects. Two ParkCare work parties are held in the reserve each month, focusing on weeds, revegetation and rubbish removal. PCS Wetlands staff facilitate Australian Defence Force Academy (ADFA) cadets' engagement in weed removal and revegetation activities as part of their Weary Dunlop Challenge, corporate groups involvement through ParkCare and the Trust, and CIT students working on conservation and ecology projects. The Honeysett Drive residents have a Friends of Honeysett Pond group to revegetate the pond area, which is adjacent to the reserve.

Community groups and individuals are also involved in survey and monitoring activities in the reserve. Waterwatch volunteers conduct water quality monitoring, and the Friends of Jerrabomberra Wetlands are involved in FrogWatch, Waterwatch, vegetation surveys, platypus surveys, bird counts, turtle migration, nesting monitoring, and Latham's snipe surveys. Committed volunteers have been engaged in the Latham's Snipe Project since it began, including young children who are now teenagers and have gained expertise in bird surveying and banding.

Volunteers assisting researcher Lori Gould with Latham's snipe research (Miriam Fokker)

3.7.2 Issues for consideration in a new plan

- Continuing support for Friends of Jerrabomberra Wetlands and other community groups.
- Ongoing engagement with community groups.
- Opportunities presented by the implementation of the East Lake Place Plan and visitor facility upgrades to manage the anticipated future increase in visitation and inspire and engage visitors in wetlands conservation.

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4. Discussion and conclusion

4.1 Meeting the objectives of the 2010 plan

As described in earlier sections of this review, there have been considerable achievements in meeting the objectives of the Jerrabomberra Wetlands Reserve Plan of Management 2010. Monitoring programs for birds and other species have provided an understanding of wildlife populations, and management interventions such as the removal of woody weeds and replacement with native plantings have improved aquatic and riparian habitat. The Wetlands component of the Latham's Snipe Project has contributed significantly to our understanding of this internationally important and vulnerable migratory species.

Ongoing weed and pest control programs have limited the impact of weed and pest species on the Wetlands' ecosystems and will continue to be a critical component of management into the future.

While there have been significant achievements in the conservation and enhancement of aquatic and riparian ecosystems and other natural values of the Wetlands, the effectiveness of management will continue to be influenced by activities on adjacent lands and upstream. Continuing to maintain and improve the Wetlands' natural values will require ongoing collaboration with other agencies, owners and managers of adjacent lands, and the broader community.

Recognising the important role of the reserve in limiting the inflow of silt to Lake Burley Griffin and moderating the impacts on the lake of high water levels is an important aspect of managing the Wetlands into the future. Addressing issues such as climate change, which received limited attention in the 2010 Plan, will also be critical to future planning and management.

Aboriginal occupation of the area and continuing connections to Country have been acknowledged both in signage in the reserve and the establishment of cultural interpretive trails and an Aboriginal Plant Use Garden. While Aboriginal rangers have been engaged in cultural burning activities in the Wetlands, there has been limited involvement of Ngunnawal Traditional Custodians in planning and management of the reserve. Increasing Ngunnawal Traditional Custodians' active engagement, including consideration of potential opportunities for shared management, should be aspects of future planning.

While activities have been undertaken to support the conservation of European cultural heritage, such as the archaeological investigation of the WWI training trenches, there appears to have been little involvement of descendants of European settler families with local knowledge in identifying, conserving and interpreting heritage. Opportunities for increasing their involvement should be explored in future planning.

Recreational activities have been well provided for and significant improvements have been made to recreational infrastructure. Tracks have been developed and maintained to an appropriate standard, with wheelchair access provided in some locations, interpretive signage has been installed at key locations and bird hides are located at strategic points in the reserve to facilitate birdwatching–a popular activity for visitors. Pressure on the Wetlands from visitors and their recreational activities will continue to increase as Canberra's population grows, particularly in adjacent suburban areas, and future planning and management will need to address issues such as the carrying capacity of the environment, the adequacy of visitor infrastructure, and potential conflicts between user groups.

Currently, interpretation is primarily through passive media such as signage, brochures and the Trust's self-guided walking app, with some activities conducted by PCS rangers and the Trust. Future management of the Wetlands would benefit from the development and implementation of a comprehensive interpretation and education strategy that explores additional or alternative approaches, including new technologies and the benefits of a ranger-led interpretation program.

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As noted in Section 2, one of the challenges in reviewing the achievements of the 2010 Plan is the current absence of a systematic, integrated approach for ongoing monitoring and evaluation of management effectiveness for ACT reserves. Following a 2023 review, the PCS is currently in the process of establishing a values-based, integrated reserve management planning framework that provides for a more systematic approach to planning, monitoring and outcome-based evaluation of management effectiveness, and assists in meeting reporting obligations under the *Nature Conservation Act 2014*.

4.2 Adequacy of the 2010 plan as the primary planning document for Jerrabomberra Wetlands

An assessment of the adequacy of 2010 Management Plan as the primary planning document for Jerrabomberra Wetlands Nature Reserve, utilising the tool described by Hockings et al. (2008), rated the plan as good overall, fair or very good in some areas, that PCS staff have found valuable in providing information about the reserve and guiding its management over the past 14 years. A summary of the assessment is at Appendix 2.

Future planning for the Wetlands will benefit from considering changes that have taken place in relevant legislation, strategies and policies; new and emerging management issues; addressing the need for monitoring, review and adjustment; involving Ngunnawal Traditional Custodians, other First Nations people and local communities in plan development and setting directions; and incorporating a logically linked, cascading series of management objectives, policies and actions. A new plan should be underpinned by an adaptive management approach and integrated with a framework for monitoring and evaluation of management effectiveness.

4.3 Recommendations

Given the age of the current plan and the changes that have occurred in the information base, the legislative and policy environment, and the environmental, social and economic circumstances of the reserve, it is recommended that a new plan be developed as soon as practicable. A new plan should:

- clearly articulate a vision and goals for the future of the Jerrabomberra Wetlands
- be based on current, up-to-date information
- consider legislative and policy changes since the 2010 Plan was developed
- consider any significant national/regional/sectoral plans that influence management of the reserve
- be outcome rather than issues driven
- identify key values and their current and desired future condition
- articulate management issues
- include a cascading series of management objectives, policies and actions, linked to values, management issues and desired outcomes for the reserve
- address adaptive management, monitoring and evaluation
- involve Ngunnawal Traditional Custodians in its development and setting directions for the reserve
- identify the interests of Ngunnawal Traditional Custodians, and take these into account in decision-making
- undertake culturally appropriate engagement with the ACT First Nations community to understand their use of the site for recreational, social, health and well-being outcomes.
- identify the needs and interests of the local community and other stakeholders and take these into account in decision-making
- require an Implementation Plan to be developed, which includes indicators for measuring success, and provision for regular reporting.

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5. References

ACT Government 2007. Weathering the Change: The ACT Climate Change Strategy 2007–2025. Department of Territory and Municipal Services, Canberra.

ACT Government 2010. Jerrabomberra Wetlands Nature Reserve Plan of Management 2010. Department of Territory and Municipal Services, Canberra.

ACT Government 2014. ACT Water Strategy 2014–44: Striking the Balance. Environment and Planning Directorate, Canberra.

ACT Government 2018a. Action Plan for Listed Migratory Species. Environment, Planning and Sustainable Development Directorate, Canberra.

ACT Government 2018b. ACT Aquatic and Riparian Conservation Strategy and Action Plans. Environment, Planning and Sustainable Development Directorate, Canberra.

ACT Government 2019. Ecological Guidelines for Fire, Fuel and Access Management Operations. Environment, Planning and Sustainable Development Directorate, Canberra.

ACT Government 2024. East Lake Place Plan. Environment, Planning and Sustainable Development Directorate, Canberra.

Butz M 2016. Floodplain in the city: a concise history of the Jerrabomberra Wetlands. Learnscapes and Woodlands and Wetlands Trust, Canberra.

Butz M 2017. The Best System of Trenches in Australia: World War 1 Training site Duntroon Trench Warfare & Bombing School, Jerrabomberra Wetlands Nature Reserve, Canberra. Learnscapes and Woodlands and Wetlands Trust, Canberra.

Clouston Associates 2014. Jerrabomberra Wetlands Concept Plan. Prepared for the ACT Government and the Jerrabomberra Wetlands Management Committee.

Department of Climate Change, Energy, the Environment and Water, 2024. Conservation Advice for *Gallinago hardwickii* (Latham's snipe). Commonwealth of Australia, Canberra.

Hockings M, James R, Stolton S, Dudley N, Mathur V, Makombo J, Courrau J and Parrish J 2008. Enhancing our Heritage Toolkit: Assessing management effectiveness of natural World Heritage sites. World Heritage papers 23. World Heritage Centre UNESCO, Paris, France.

Jerrabomberra Wetlands Board of Management 2013. Resources and values of the Jerrabomberra Wetlands: report prepared for the Jerrabomberra Wetlands Nature Reserve Master Plan. Territory and Municipal Services, ACT Government, Canberra.

Latham's Snipe Project 2024, https://lathamssnipeproject.wordpress.com

Malam C, Brawata R, McLean N, Stevenson B, and Seddon J 2021 Conservation Effectiveness Monitoring Program: Aquatic and Riparian Ecosystem Condition Assessment & Monitoring Plan. Technical Report. Environment, Planning and Sustainable Development Directorate, ACT Government, Canberra.

Upper Murrumbidgee Waterwatch 2023. Catchment Health Indicator Program: Report Card 2023. Canberra.

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6. Appendices

Appendix 1: Latham's snipe and the Latham's Snipe Project

Latham's snipe (*Gallinago hardwickii*) is a medium sized migratory wader that breeds in Japan and areas of eastern Russia in the northern summer and migrates south for the non-breeding season. Latham's snipe is listed as a vulnerable species under the Environment Protection and Biodiversity Conservation Act 1999. The species is also recognised under the Japan-Australia Migratory Bird Agreement (JAMBA), China-Australia Migratory Bird Agreement (CAMBA) and the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA). These agreements encourage signatory countries to protect the species and its habitat and remove barriers to migration. Latham's snipe has been recorded along the east coast of Australia from Cape York Peninsula to Tasmania and across to south-eastern South Australia. The species is omnivorous and feeds on invertebrates, seeds and other plant material. The birds shelter during the day in wetland vegetation and disperse after dark to forage over larger areas (DCCEEW 2024).

The Latham's Snipe Project was established by a group of Australian ornithologists to investigate the ecology of the species and its wetland use. The project focuses on the Port Fairy area in south-western Victoria and Jerrabomberra Wetlands in Canberra, and the migration patterns along the East Asian-Australasian Flyway. The project has extended to include breeding areas in Hokkaido, Japan, in partnership with the Wild Bird Society of Japan, and Sakhalin in Russia. Techniques used by the project include observations, habitat monitoring, geolocators and satellite tracking (Latham's Snipe Project 2024).

PhD researcher Lori Gould and Project Leader Birgita Hansen are working with teams of volunteers and PCS staff to study Latham's snipe at Jerrabomberra Wetlands. The birds arrive in south-eastern Australia from late July to early August onwards and depart for the Japanese and Russian breeding sites by late February or early March (Frith et al. 1977; Naarding 1982, 1983, after DCEEW 2024). Numbers of up to 120 birds have been observed in the reserve. Numbers have varied from year to year. A significant recent decline of the population in Australia has been attributed to drought and severe bushfires in 2010 and 2019–2020 (Higgins & Davies 1996; Hansen et al. 2021, after DCEEW 2024), although record numbers have been observed in 2022 and 2023 (Gould, pers. comm.).

At Jerrabomberra Wetlands, the snipe roost in tussocky grasses during the day and emerge to feed in the evening, often in the adjacent pastoral paddocks and turf farm, returning to the reserve at first light. The project team's annual banding and satellite tracking of the snipe involves setting up mist nets and flushing the birds from cover in the early morning, just before dawn. Captured birds are examined, weighed, checked for moulting, banded if unbanded, and small backpack satellite tracking transmitters are carefully attached to some birds before they are released (Latham's Snipe Project 2024).

Preliminary results have shown that the birds have a high level of site faithfulness, which has not previously been described for Latham's snipe. Tracked birds have returned to Jerrabomberra Wetlands each year and stayed there for the duration of the season. Some go on short exploratory trips but most stay within a 2.5km radius and have an average home range of 19ha. They generally roost and feed in different locations, but some birds spend the entire time in one place. We are not yet sure why, but all the birds of known age (5+ years) exhibit this behaviour, so it may be related to age.

The implications of these findings are that conservation actions need to protect both roosting and foraging sites for Latham's snipe which requires looking at the landscape in a different way. In the case of Jerrabomberra Wetlands, foraging sites occur outside the protected area of the reserve, some of which are in areas earmarked for future development. (Gould, pers. comm.).

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Volunteers, including staff and family members from the Japanese embassy, assisting Latham's snipe research (Miriam Fokker)

Attaching a satellite tracker to a Latham's snipe at Jerrabomberra Wetlands (Lori Gould)

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Appendix 2: Assessment of the Jerrabomberra Wetlands Plan of Management 2010 as the primary planning document for the reserve

Question	Rating	Comments/ Explanation
Decision-making framework		
1. Does the plan establish a clear understanding of the desired outcomes of management in clear terms rather than just specifying actions to be taken?	Good	Desired outcomes are reasonably articulated as primary management objectives for the reserve and management objectives for each section, e.g. wetlands, vegetation etc.
2. Does the plan express the desired future for the reserve in a way that can assist management of new issues and opportunities that arise during the life of the plan?	Good	Desired future expressed in the management objectives with a linkage to management actions gives guidance for addressing issues and opportunities.
3. Does the plan provide for a process of monitoring, review and adjustment during the life of the plan?	Poor	The plan does not clearly address monitoring, review and adjustment, however the *Nature Conservation Act 2014* requires the land custodian to report on the implementation of the plan after 5 years and review the plan after 10 years.
Planning context		
4. Does the plan provide an adequate and appropriate policy environment for management of reserve?	Very Good	Policies for management are identified and have clear linkages to the management objectives.
5. Is the plan integrated/linked to other significant national/regional/ sectoral plans that influence management of the reserve?	Good	Relevant legislation, strategies and plans are identified but linkages to management are limited.
Plan Content		
6. Is the plan based on an adequate and relevant information base?	Good	The information base was adequate in scope and depth at the time the plan was developed but significant new information is now available.
7. Have the values for the reserve been identified in the plan and linked to the management objectives and desired outcomes?	Very Good	The Plan clearly identifies the values of the reserve as understood at the time the plan was developed and they are linked to well-defined management objectives.
8. Does the plan address the primary issues facing management of the reserve within the context of the desired future of the reserve?	Very Good	The Plan identifies primary issues for the reserve at the time it was written, and their management is discussed in the context of the desired future for the reserve. However new and emerging issues have arisen that will need to be considered in future planning.
9. Are the objectivesand actions specified in the plan represented as adequate and appropriate response to the issues?	Good	Objectives and actions are adequate and appropriate for most issues identified at the time the plan was developed but new and emerging issues have arisen that need to be addressed in future planning.
10. Were local and Indigenous communities living in or around the reserve involved in developing the management plan and setting direction for management?	Fair	Community groups and individuals were engaged in developing the plan, including through roundtables hosted by the ACT Government. The draft plan was open for public comment for four months and submissions received from groups and individuals contributed to the final document. The plan itself acknowledges the contribution of community groups to knowledge about the reserve. The level of involvement of Ngunnawal Traditional Custodians and other First Nations people is unclear.
11. Does the plan take account of the needs and interests of local and Indigenous communities living in or around the reserve?	Fair	Community involvement in the reserve is discussed in chapter 10 of the plan, however there is limited information on the needs and interests of Ngunnawal Traditional Custodians and other First Nations people, or how these have been taken into account in decision-making.
12. Does the plan take account of the needs and interests of other stakeholders involved in the reserve?	Fair	There is limited attention given to the needs of other stakeholders. The SLA, NCA, Canberra Airport are specifically mentioned.
13. Does the plan provide adequate direction on management actions that should be undertaken in the reserve?	Very Good	Management actions are clearly articulated in the plan, are easily understood, and are used by reserve managers in the development of annual operational plans and budgets.
14. Does the plan identify the priorities amongst strategies and actions in a way that facilitates work programming and allocation of resources?	Good	Management actions are prioritised as high medium or low, with high priority actions to be undertaken and completed early in the life of the plan. Many actions are recognised as ongoing, i.e. they will remain current across the life of the plan.
Analysis and conclusions	Overall, the plan is rated as a good primary planning document for the reserve, fair or very good in some areas. PCS staff have found the plan to be a valuable resource, providing information about the reserve and guiding its management over the past 14 years. Future planning for the reserve will need to take into consideration changes in relevant legislation, strategies and policies and new and emerging management issues and should incorporate a framework for monitoring and evaluation of management outcomes.	

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