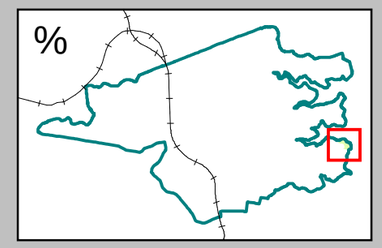
RESERVE ACTION PLAN
CLIVE PARK

DRAFT



Plan details

Status:	Draft
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Approximate Scale:	1:1500

Legend

- 16 — Property number
- 12 — Action plan activity
- . — Stormwater node
- & — Approximate fire hydrant location
- D — Picnic table
- BBQ — Barbacue
- T — Toilet facilities
- 35 — 5m contours
- Stormwater network - Underground *
- Stormwater network - Overground / Unknown *
- Bush track / Unpaved path *
- WCC LGA boundary
- Property boundary
- Reserve / bushland
- Council staff regeneration site
- Council bush regeneration contractors
- BushCare group
- Proposed prescribed burn area

Clive Park Actions

1. Willoughby City Council (WCC) Bushfire Management Team to prepare and conduct a controlled burn. Post fire maintenance weeding is required.
2. WCC Bushfire Management Team to maintain fuel reduced zones in accordance with the Bushfire Risk Management Plan.
3. Clive Park Bushcare group to continue to work in accordance with Bushcare Action Plan. Group to complete post fire weeding after controlled burn.
4. Bushland Regeneration Contractor to remove woody weeds between foreshore and access road.
5. WCC Bushland Regeneration Team to continue maintenance weed removal around picnic area prior to and after the proposed controlled burn.
6. Monitor the impact of stormwater flowing off the access road into bushland.
7. Install an interpretive sign to highlight the natural elements of the Park to discourage illegal dumping and the impact of dogs off leads.
8. WCC Bushfire Management Team to conduct a prescribed burn, avoiding rainforest vegetation and mature Callitris trees.
9. WCC Bushland Regeneration Team to continue targeting removal of annual and woody weeds and also non-indigenous native plants in revegetated area at corner of Coolawin and Sailors Bay Road. Line of site for traffic to be maintained at this corner and also at Park exit at the corner of Minimbah/Sailors Bay Road.
10. WCC Bushland Regeneration Team to periodically remove weeds along creek line targeting Tradescantia.
11. WCC Bushland Regeneration and Bushfire Management Teams to continue to weed areas that were previously burnt in 2013.
12. Upgrade amenity of Park entrance by removing the boom gate and replacing with a lockable bollard, resurface path, plant indigenous shrubs and groundcovers and install an interpretive sign highlighting natural features and the impact of dogs off leads.
13. Remove Strelitzia in car park and replace with an indigenous tree (Eucalyptus haemastoma or Angophora costata).
14. WCC Bushland Regeneration Teams to continue maintenance weed removal targeting Passionfruit Vine, Seaside Daisy, herbaceous and annual weeds.
15. WCC Bushland Regeneration Team to complete annual maintenance weed removal sweep along foreshore targeting Asparagus Fern.
16. WCC Bushland Regeneration Teams to regularly monitor Aboriginal archaeological sites within the Park. Remove rubbish and report vandalism.
17. Continue with feral animal control program within the reserve.
18. Supplement arboreal and terrestrial habitat with nest boxes, rocks and logs.

0 50 100
metres

Notes:
* The accuracy of this data is not guaranteed and must be verified prior to use.
- Please check with Dial Before You Dig prior to any earth works.

The information contained herein has been provided in good faith. Effort has been made to ensure it's accuracy and completeness.

Willoughby City Council does not take any responsibility for errors or omissions nor any loss or damage that may result from the use of this information.

References

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Attachment 2

Draft Clive Park Bushland Reserve Action Plan

Reserve Profile

Clive Park is a 5.4 hectare foreshore bushland reserve located at the junction of the Sailors Bay and Flat Rock Creek catchments. The water of Middle Harbour bounds the Park to the north and east and contains Willoughby's only easily accessible sandy beach. The southern and western boundaries are roads: Sailors Bay, Minimbah and Coolawin, and two residential properties.

A creek that originates from a stormwater drain at the corner of Sailors Bay and Minimbah Roads runs through the centre of the reserve and exits at the beach into Middle Harbour.

Clive Park has numerous facilities including the Northbridge Sailing Club, Sea Scouts, a commercial boat shed, picnic areas with tables and barbeque facilities, playground equipment, toilet amenities, parking, water views, a small sandy beach and the remains of harbour swimming baths.

PLANT COMMUNITY: Sydney Sandstone Ridgetop Woodland [10ari(Wlw)] with dominant canopy species *Angophora costata*, *Corymbia gummifera*, *Eucalyptus haemastoma* and *Eucalyptus piperita*. A small area of Littoral Rainforest (an Endangered Ecological Community) exists around the creek.

HABITAT: Clive Park is dominated by dry sclerophyll forest and woodland type habitat. It also contains rocky foreshore habitat, drainage areas, hollow bearing trees, stags and rocky outcrops. Recent controlled burns have altered the look of the landscape in sections but important habitat features remain.The bushland has high ecological integrity, although it is intersected by two roads and numerous pathways.

Statement of Significance

Clive Park is classified as bushland as defined in State Environmental Planning Policy No 19 (*Vol 1, 1.4), and is protected under State and Commonwealth Legislation (*Vol 1, 1.5.2). It is zoned E2 Environmental Conservation in the Willoughby Local Environment Plan (WLEP) 2012.

ABORIGINAL CULTURAL SIGNIFICANCE: The Camaraygal people of the Guringai nation originally occupied the area. Clive Park is an important area for Aboriginal people as it contains twenty six registered Aboriginal sites, including shelters, middens, burials, a fish trap, shelter art and engravings. However many sites have deteriorated over time. There is a prominent large rock engraving that has unfortunately been vandalised many times in the past. A replica of this engraving has been recreated by an indigenous artist at Mowbray Park, Lane Cove North.

HISTORIC CULTURAL SIGNIFICANCE: After European settlement the first grant of Crown land in Northbridge was made to solicitor John Lewis Spencer in 1837. The grant of land was a total of 10 acres part of which Clive Park occupies today. The area later became the Albert Town Estate, one of the first attempts at residential development on the Northbridge peninsula. In 1907 Joseph Henry Evans Booker purchased the entire grant but Willoughby Council reclaimed the area before he died in 1914.

The area was named 'Clive Park' after Clive Norman Backhouse who was Mayor of Willoughby 1912-1913 and an alderman on Council 1911-1914.

There are still remnants of the old tidal pool next to the small sandy beach built in 1945 by Northbridge Volunteer Defence Corps Association.

HABITAT SIGNIFICANCE: Despite limited direct connectivity of vegetation, Clive Park is within range for many wildlife species that move between reserves, e.g. Possums and Gliders, Bat species, Parrots, Owls and other birds of prey, Little Penguins and Honeyeaters. This reserve provides important habitat for some remnant populations of small-range species, such as Brown Antechinus, species of Skinks and woodland birds. They are, however, very vulnerable to disturbance in a small suburban reserve.

Reserve Impacts

Clive Park is a high use reserve with easy access to bushland by roads and pathways. It has been a popular dumping spot for vegetation and waste particularly at the end of the access road to the sailing club. Rubbish is often found around picnic tables and barbeques, and dog faeces are commonly left in picnic areas, surrounding bush and along tracks.

Picnic areas also have lawns of couch and carpet grass, which is difficult to keep out of surrounding bushland. Clive Park is intersected by numerous tracks and roads which provide easy movement of weed seed around the reserve.

Clive Park bushland also has significant dieback and clearing in sections from tree vandalism, most likely from nearby residents for water views.

Other impacts upon the reserve are two private electricity lines that provide power for the sailing club, scout hall and boat shed. These power lines run through the reserve, necessitating pruning of trees and large shrubs.

The two residential properties that border Clive Park are potential weed sources. A high risk weed area is along the stormwater creekline that runs through the reserve. This area is subject to high nutrient and sediment loads which affect the surrounding native vegetation and provide favourable conditions for weeds.

ENCROACHMENTS: There are no recorded encroachments.

Wildlife Habitat Issues

Wildlife within Clive Park is impacted by a number of domestic and feral animals including dogs, cats, foxes and black rats.

The Park is fragmented by road access and footpaths and has some informal tracks that further reduce the integrity of bushland habitat. Tracks aid the movement of predators into bushland and allow other disturbance factors, which are the greatest threat to less-mobile wildlife.

There are abundant stags, a result of dieback and/or vandalism, which will be retained for their habitat value. Small tree hollows in live and dead trees are present, but there are few large trees and hollows, so supplementary nest boxes would be beneficial. As external recruitment for remnant animal populations that travel a short range is unlikely, vegetation should be managed to lessen the potential impact on these wildlife populations.

Achievements

Since 1996 there have been six prescribed burns within Clive Park resulting in reduced fuel loads and richer species diversity. The last burn which was completed in 2013 has seen good regeneration and a diverse mixture of native plants germinating.

Continuing bushland regeneration by Council staff and the Bushcare group has also increased local plant diversity and reduced weed coverage throughout the reserve including along the foreshore.

Phytophthera testing was carried out in early 2010 with results showing no *Phytophthera* found in previously affected areas.

Numerous tracks intersecting and fragmenting the reserve have been consolidated.

Rocks were placed to protect the large *Angophora costata* in the overflow car parking area from root damage and the area has now regenerated.

Bushland Management Goals – Clive Park

This bushland reserve action plan for Clive Park has identified the following management aims from the Urban Bushland Plan of Management 2014 policy as priory objectives:

4.2c - Provide a high level of planning, support, training and supervision of existing and future community volunteers;
5.6c - To protect bushland viability through the control of activities which may cause permanent disturbance or change to bushland;
5.6e - To provide recreational facilities in bushland without significant adverse effects on flora and fauna;
6.2e - All management of vegetation will have regard to habitat Values;
6.2j - Control of domestic and feral animals that impact on native fauna populations;
7.1b - To implement a strategic hazard reduction program;
7.1c - Strategic fuel management;
7.1g - To manage fire such that the fire regime and implementation of the burn is beneficial to flora and fauna, diversity and habitat;
8.1c - To plan and provide recreation facilities consistent with the need to facilitate public enjoyment of the bushland compatible with its conservation;
12.1b - To protect cultural heritage items and places in bushland.

General Principles and Actions – All Bushland Reserves

a. Bush regeneration is a long term process that requires staged weed removal to ensure establishment of native plant communities. Work should proceed from good to degraded areas with techniques that encourage regeneration, including flame weeding, rather than spraying herbicide.
b. If possible, all weed refuse and natural debris to be composted or retained on-site.
c. When natural regeneration is deemed inadequate, supplementary plantings to mimic local plant communities and landscapes will be used with local provenance species.
d. Standing dead trees and forest litter (including logs and branches) to be retained for wildlife habitat unless deemed a risk to public safety.
e. Monitor, maintain and enhance vegetation connectivity for wildlife habitat within the reserve and reserve networks.
f. *Phytophthera cinnamomi* (a root rot pathogen) is listed as a key threatening process in NSW and has been identified as a threat to a number of species. Bushland workers are to use hygiene protocols to minimise risk.
g. Report and record all reserve encroachments. Monitor for tree vandalism and/or removal within the reserve and report to Council Compliance for appropriate action.
h. Continue to monitor wildlife habitat requirements and supplement where necessary.
i. Monitor feral animal activity and implement appropriate management actions where necessary.
j. Bushfire management will be achieved through implementation of a strategic hazard reduction program consistent with the Bushfire Risk Management Plan.
k. Species diversity will be encouraged through an ecological burn program.
l. Monitor and protect cultural and Aboriginal heritage sites within the reserve at all times. Bushland staff to notify Aboriginal Heritage Office prior to each burn to identify sites and implement protection measures and post-fire survey.
m. This reserve has a valuable role as an educational resource. Preserve natural features used for educational purposes and continue to inform the community of bushland issues through on-site educational activities and signage. Maintain appropriate signage.
n. Formal tracks to be regularly maintained and informal tracks to be closed to prevent damage to habitat and to impede access of feral animals, unless used for access by bushland management workers.
o. Establish photo points to monitor the progress of reserve management actions.
p. Reserve Action Plan progress to be reviewed annually and updated after five years.

Draft Native Plant List for Clive Park

CONIFERS	*Glochidion ferdinandi*	*Lomatia silaifolia*
CUPRESSACEAE	*Micrantheum ericoides*	*Persoonia levis*
Callitris rhomboidea	*Omalanthus populifolius*	*Persoonia pinifolia*
FERNS	*Phyllanthus hirtellus*	RUBIACEAE
ADIANTACEAE	FABACEAE FABOIDEAE	*Opercularia aspera*
Adiantum aethiopicum	*Glycine clandestina*	*Pomax umbellata*
Adiantum hispidulum	*Gompholobium grandiflorum*	RUTACEAE
ASPLENIACEAE	*Gompholobium latifolium*	*Crowea saligna*
Asplenium australasicum	*Hardenbergia violacea*	*Phebalium dentatum*
BLECHNACEAE	*Indigofera australis*	*Zieria pilosa*
Doodia aspera	*Kennedia rubicunda*	*Zieria smithii*
CYATHEACEAE	*Platylobium formosum*	SANTALACEAE
Cyathea cooperi	*Pultenaea daphnoides*	*Exocarpus cupressiformis*
DENNSTAEDTIACEAE	*Pultenaea elliptica*	SAPINDACEAE
Pteridium esculentum	FABACEAE-MIMOSOIDEAE	*Dodonaea triquetra*
DICKSONIACEAE	*Acacia ulicifolia*	SCROPHULARIACEAE
Calochlaena dubia	*Acacia decurrens*	*Veronica plebeia*
GLEICHENIACEAE	*Acacia elata*	STERCULIACEAE
Gleichenia dicarpa	*Acacia floribunda*	*Lasiopetalum ferrugineum*
LINDSAEACEAE	*Acacia linifolia*	THYMELIACEAE
Lindsaea linearis	*Acacia longifolia v. longifolia*	*Pimelea linifolia*
SCHIZAEACEAE	*Acacia mearnsii*	*Wikstromia indica*
Cheilanthes austrotenuifolia	*Acacia suaveolens*	VERBENACEAE
SINOPTERIDACEAE	*Acacia terminalis*	*Clerodendrum tomentosum*
Pellaea falcata	HALORAGACEAE	VITACEAE
THELYPTERIDACEAE	*Gonocarpus micranthus*	*Cissus antarctica*
Christella dentata	*Gonocarpus teucrioides*	*Cissus hypoglauca*
DICOTS	*Haloragis heterophylla*	*MONOCOTS*
ACANTHACEAE	LAMIACEAE	COMMELINACEAE
Pseuderanthemum variabile	*Plectranthus parvifolius*	*Commelina cyanea*
APIACEAE	LOBELIACEAE	CYPERACEAE
Centella asiatica	*Lobelia gracilis*	*Gahnia erythrocarpa*
Hydrocotyle peduncularis	*Pratia purpurascens*	*Lepidosperma laterale*
Platysace linearifolia	MENISPERMACEAE	*Lepidosperma longitudinale*
Xanthosia pilosa	*Stephania japonica*	*Schoenus melanostachys*
APOCYNACEAE	MORACEAE	IRIDACEAE
Parsonsia straminea	*Ficus rubiginosa*	*Patersonia sericea*
ARALIACEAE	MYRSINACEAE	JUNCACEAE
Polyscias sambucifolia	*Rapanea variabilis*	*Juncus usitatus*
ASCLEPIADACEAE	MYRTACEAE	LILIACEAE
Marsdenia suaveolens	*Acmena smithii*	*Dianella caerulea v. caerulea*
Tylophora barbata	*Angophora costata*	*Dianella revoluta*
ASTERACEAE	*Corymbia gummifera*	*Schelhammera undulata*
Cassinia denticulata	*Eucalyptus botryoides*	LOMANDRACEAE
BAUERACEAE	*Eucalyptus haemastoma*	*Lomandra cylindrica*
Bauera rubioides	*Eucalyptus maculata*	*Lomandra filiformis*
BIGNONIACEAE	*Eucalyptus pilularis*	*Lomandra longifolia*
Pandorea pandorana	*Eucalyptus piperita*	*Lomandra obliqua*
CAMPANULACEAE	*Eucalyptus punctata*	ORCHIDACEAE
Wahlenbergia gracilis	*Eucalyptus resinifera*	*Cryptostylis erecta*
Wahlenbergia stricta	*Kunzea ambigua*	PHILESIACEAE
CASSYTHACEAE	*Leptospermum laevigatum*	*Eustrephus latifolius*
cassytha paniculata	*Leptospermum squarrosum*	*Geitonoplesium cymosum*
CASUARINACEAE	*Leptospermum trinervium*	POACEAE
Allocasuarina littoralis	*Melaleuca quinquenervia*	*Anisopogon avenaceus*
Casuarina glauca	*Melaleuca styphelioides*	*Cymbopogon refractus*
CONVOLVULACEAE	OLEACEAE	*Dichelachne crinita*
Dichondra repens	*Notelaea longifolia*	*Digitaria parvifolia*
CUNONIACEAE	PITTOSPORACEAE	*Echinopogon caespitosus*
Callicoma serratifolia	*Billardiera scandens*	*Entolasia marginata*
Ceratopetalum gummiferum	*Pittosporum revolutum*	*Entolasia stricta*
DILLENIACEAE	*Pittosporum undulatum*	*Eragrostis brownii*
Hibbertia linearis	POLYGONACEAE	*Imperata cylindrica*
Hibbertia obtusifolia	*Rumex brownii*	*Microlaena stipoides*
Hibbertia scandens	PROTEACEAE	*Oplismenus imbecillis*
ELAEOCARPACEAE	*Banksia ericifolia*	*Paspalidium aversum*
Elaeocarpus reticulatus	*Banksia integrifolia*	*Themeda australis*
EPACRIDACEAE	*Banksia marginata*	SMILACACEAE
Epacris longiflora	*Banksia serrata*	*Smilax glyciphylla*
Epacris pulchella	*Grevillea linearifolia*	XANTHORRHOEACEAE
Woollsia pungens	*Hakea dactyloides*	*Xanthorrhoea arborea*
EUPHORBIACEAE	*Hakea gibbosa*	*Xanthorrhoea media*
Amperea xiphoclada	*Hakea sericea*	
Breynia oblongifolia	*Hakea teretifolia*	