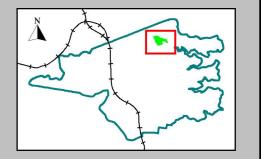
# **Willis Park Bushland Actions**

Priorities will be given to programs for the long term benefit to the reserve. Natural assets at greatest risk will be given priority to avert irreversible deterioration. All measures cannot be implemented simultaneously - resources may not be available or it may not be appropriate.

- 1. Bush Regeneration Contractors to underake natural area restoration works with the focus to reintroduce a mesic canopy into the weed infested riparian zone.
- 2. Bush Regeneration Contractors to complete secondary/follow-up natural area restoration work to re-establish a stable woodland community.
- 3. Bush Regeneration Contractors to complete natural area restoration works in weed infested riparian zone targeting the removal of Privet, Arundo Grass,
- 4. Bush Regeneration Contractors to complete natural area restoration works removing woody weeds particularly Bamboo.
- 5. Monitor seepage near sewage dissipater.
- 6. Upgrade track behind The Willis Recreation and Sports Centre Area to form a loop to improve access for passive recreation activities and for bushland restoration works.
- 7. Willoughby City Council's Bush Regeneration Staff and Fire and Rescue NSW to prepare and





## Plan details

Status: Final Prepared by: N. Yu N.Prasad Drawn by: 10/02/2021 Date printed: Approximate Scale: 1:2000

# <u>Legend</u>

Property number

Action plan activity

Stormwater node

Sewer access chamber \*\*

Approximate fire hydrant location

Power pole

Stormwater network -

Overground / Unknown 3

Bushland Track / Path \*

Stormwater network - Underground \*

Maintenance Track / Path\*

Property boundary

Reserve / bushland

The Willis Recreation and Sports Centre - Management Area

BushCare group

Proposed prescribed burn area

Council bush regeneration contractors

\* The accuracy of this data is not guaranteed and must be verified prior to use.

### References

V:\PROJECTS\NATURAL ENVIRONMENT\MANAGEMENT PLANS\ RESERVE ACTION PLANS\WILLIS PARK RAP 2020\MAPINFO\ Workspaces\Willis Park RAP.wor



# Willis Park Action Plan

### **Reserve Profile**

catchment east of Eastern Valley Way and south of Castle Cove beaked Echidna, Large Bent-winged Bat, Superb Lyrebird, Buff- 6.2f: To preserve and increase ecological links across the LGA and Drive in Castle Cove and Middle Cove. The Park connects with banded Rail, Satin Bowerbird and the Powerful Owl. Council's largest bushland area, North Arm Reserve and provides Reserve Impacts connectivity for wildlife to move to other bushland.

Scotts Creek which flows into North Arm Reserve and exits into have had past improvement works. High infestations of weeds can bushland resilience to further weed infestation. Sugarloaf Bay then Middle Harbour. Within the Park an area is be found along the slope below the recreation area extending 7.1g: To manage fire such that the fire regime and implementation licensed by The Willis Recreation and Sports Centre consisting of down to the creek line. Concentrations of Arundo Grass, Privet of the burn is beneficial to flora and fauna diversity and habitat. thirteen tennis courts, two futsal courts, associated club houses (broad & small leaf) and Tradescantia for example, can be found 10.1b: To ensure that leases and licences for activities undertaken and car parking.

PLANT COMMUNITY: The reserve is classified Coastal Sandstone In the early 2000s sewer improvement work was completed with the sustainable management of bushland. Foreshores Forest [S\_DSF06] with dominant species of throughout the Park with the upgrade of the Northern Suburbs Bushland Management - General Principles for all Reserves Eucalyptus piperita, Angophora costata, and Eucalyptus pilularis. Ocean Outfall System. A temporary road was constructed to allow There are also areas on the mid-slope dominated by *Allocasuarina* trucks and machinery to enter the Park south of the recreation littoralis due to soil disturbance and changed fire frequency.

hollow bearing trees, dense shrub vegetation layer, and sandstone plants. These plants are now well established and provide b. If possible, weed refuse and natural debris composted on-site. rock ledges. There are several large rock pools and ledges on important habitat. Scotts Creek providing habitat for aquatic life. However these High stormwater flows after heavy rain are a significant issue plantings to mimic local plant communities and landscapes will be aquatic areas are highly disturbed after heavy rainfall due to the impacting Scotts Creek and the Park. Stormwater from Chatswood used with local provenance species. high stormwater flow into the creek.

### **Statement of Significance**

under State and Commonwealth Legislation (\*Vol 1, 1.5.2). It is sections of the creek. High stormwater flows also move large threatening process in NSW. Bushland workers are to use hygiene designated as a Wildlife Protection Area under the Companion amounts of rubbish down Scotts Creek and accumulate along the protocols to minimise risk. Animals Act 1988. The bushland is zoned E2 Environmental Conservation, and the recreation area RE1 Public Recreation in the Willoughby Local Environment Plan (WLEP) 2012.

ABORIGINAL CULTURAL SIGNIFICANCE: The Gamaragal clan originally occupied this area. There are no recorded Aboriginal Heritage appropriate time. Sites in the Park however Willis Park does connect with North Arm Reserve which contains many important Aboriginal sites.

Australian Boobooks and Swamp Wallabies.

the Park, where the futsal courts are now located, as part of the adjacent to the reserve. Chatswood – Willoughby sewerage scheme. The tanks remained

Achievements in use until 1927 when Willoughby then connected to the Northern Suburbs Ocean Outfall System.

The first permanent inhabitant of this area was Dr Henry Willis whom the Park is named after and he constructed Innisfallen zones and revegetation plantings along Eastern Valley Way. Castle in 1903/4, located further east adjacent to North Arm Reserve in Castle Cove.

With the increase in population and the need for improved access to the area, Eastern Valley Way was constructed in 1939. Where assisted in asset protection and increased ecological diversity. the Way crosses Scotts Creek there was a stone retaining wall

The track behind The Willis Recreation and Sports Centre Area with culverts installed. The wall and culverts are located on the has been upgraded to form a loop, improving access for passive Park boundary and are now listed on the Local Government Heritage Register for their construction techniques and archaeological potential.

bearing trees and the steep, inaccessible banks and lack of tracks management aims from the Urban Bushland Plan of Management provide refuges for wildlife despite significant weed incursions. It is 2014 as priority objectives: importantly adjacent to Willoughby's largest bushland area, North 5.3b: To create and or maintain conditions in which creek and Arm Reserve. The Park provides a continuous link for wildlife to drainage lines are protected from increased erosion and/or move east/west and north/south and is also important habitat for sedimentation due to urban impacts.

aquatic species in Scotts Creek, Significant species found in this 5.4b; To maintain the integrity of bushland reserves through the Willis Park is a 6.8ha bushland reserve located in Scotts Creek reserve include Swamp Wallaby, Long-nosed Bandicoot, Short reduction of encroachments and other boundary impacts.

Willis Park is a highly disturbed area, particularly below The 6.3b. To implement weed control programs which are based on Willis Park contains steep sandstone slopes that run down into WillisRecreation and Sports Centre and also along sewer lines that regeneration and restoration principles and which increase along most of the creekline.

lease area. From here work was completed along ridge lines. Work will proceed from good bush to degraded areas with HABITAT: It is predominantly Gully Forest habitat with a range of When completed all areas impacted were revegetated with native techniques that encourage regeneration.

flows underground in pipes and exits into the creek at Willis Park.
d. Standing dead trees and forest litter (including logs/branches) to The high movement of water after rain scours the creek bank be kept for wildlife habitat unless deemed a risk to safety. eroding away soil and moving it downstream where it enters e. Monitor, maintain and enhance vegetation connectivity for Willis Park is classified as bushland as defined in State Sugarloaf Bay. Weeds like Privet, Lantana and Arundo Grass have wildlife habitat within the reserve and reserve networks. taken advantage of these degraded areas and have colonised f. *Phytophthora cinnamomi* (a root rot pathogen) is listed as a key creek bank and also at the creek mouth to Sugarloaf Bay in the g. Report and record all reserve encroachments. Monitor for tree estuary zone throughout the mangroves.

ENCROACHMENTS: 325 Eastern Valley Way. Resident will be appropriate action. requested by Council to remove the encroachment at an h. Monitor wildlife habitat and supplement where necessary.

### Fauna Habitat Issues

NATUAL HERITAGE SIGNIFICANCE: Willis Park is significant due to its Threats to wildlife and habitat include: predation by foxes, rats, Wildlife Watch Program. connectivity with other surrounding bushland reserves. The dense feral and/or domestic cats, and loss of tree hollows to invasive feral k. Bushfire management will be achieved through implementation vegetated gullies provide optimal habitat for native fauna such as European honey bees. Past earth work for sewer improvements of a strategic hazard reduction program consistent with the has significantly reduced and degraded the native vegetation and Bushfire Risk Management Plan. HISTORIC CULTURAL SIGNIFICANCE: Chinese market gardens were led to extensive weed invasion. Pollution incidents and sediments I. Species diversity will be maintained by an ecological burn operating on what is now known as Eastern Valley Way in the late flowing into Scotts Creek impact the available freshwater habitat. program in a mosaic pattern. 19<sup>th</sup> century. Around this time large septic tanks were installed in There is also illegal removal of native vegetation several properties m. Monitor and protect Aboriginal cultural heritage sites. Bushland

Extensive bushland regeneration gains have been made including: significant new canopy plantings, weed management in riparian Upgrades and improved maintenance access to sewer lines. Rock armouring at key stormwater discharge points has reduced

The previous burn site has been maintained. This burn has recreation activities and for bushland restoration works.

### **Bushland Management Goals - Willis Park**

HABITAT SIGNIFICANCE: The Park contains some significant hollow This bushland Reserve Action Plan has identified the following

regionally to assist the movement of fauna.

6.2g: Maintain natural habitat formations and supplement with manufactured structures where natural habitat has been depleted.

in, or adjoining, or impacting on, bushland areas are compatible

- a. Bushland regeneration is a long term process requiring staged weed removal to ensure establishment of native plant communities.
- c. If natural regeneration is deemed inadequate, supplementary

- vandalism and/or removal and report to Council Compliance for
- i. Monitor feral animal activity and implement appropriate management actions where necessary.
- i. Encourage the community to report wildlife sightings via the

- staff to notify Aboriginal Heritage Office prior to a burn to identify sites and implement protection measures.
- n. Preserve natural features for educational purposes and continue to inform the community of bushland issues through onsite activities and signage. Maintain appropriate signage.
- o. Formal tracks to be maintained and unwanted tracks to be closed to prevent damage to habitat and to impede access of feral animals, unless used for access by bushland workers.
- p. Establish photo points to monitor work and review annually.
- g. Protection of habitat is required for flora and fauna species found in reserves listed under State and Commonwealth legislation as threatened species.
- r. The collection of rubbish from bushland is carried out by Council contractors and bushland field staff as required.

# **Native Animal Species List for Willis Park**

Willis Park provides habitat for a number native animals. A list of these species can be found at:

https://www.willoughby.nsw.gov.au/files/sharedassets/public/ecm/willoughb y-council-website/publications-reports-master-plans-strategies-actionplans/publications-reports-master-plans-strategies-action-plans/1native\_fauna\_of\_bantry\_bay\_\_sugarloaf\_bay\_catchments.pdf

### **Native Plant Species List for Willis Park**

FORK FERNS	Dracophyllum secundum	Banksia spinulosa
PSILOTACEAE	Epacris crassifolia	Conospermum longifolium Grevillea buxifolia
Psilotum nudum CONIFERS	Epacris longiflora Epacris pulchella	Grevillea buxifolia Grevillea linearifolia
Cupressaceae Callitris rhomboidea	Leucopogon amplexicaulis	Grevillea sericea
PODOCARPACEAE	Leucopogon microphyllus Lissanthe strigosa	Grevillea speciosa Hakea dactyloides
Podocarpus spinulosus FERNS	Monotoca elliptica	Hakea gibbosa
ASPLENIACEAE	Styphelia longifolia Tetratheca ericifolia	Hakea propinqua Hakea salicifolia
Asplenium australasicum Asplenium flabellifolium	Woollsia pungens Euphorbiaceae	Hakea sericea Hakea teretifolia
BLECHNACEAE	Monotaxis linifolia	Isopogon anethifolius
Blechnum ambiguum Blechnum cartilagineum	Phyllanthus hirtellus Ricinocarpos pinifolius	Lambertia formosa Lomatia myricoides
Blechnum nudum	FABACEAE -FABOIDEAE	Lomatia silaifolia
Doodia aspera Doodia caudata	Bossiaea heterophylla Bossiaea scolopendria	Persoonia lanceolata Persoonia levis
CYATHEACEAE	Dillwynia retorta	Persoonia pinifolia
Cyathea australis Cyathea cooperi	Glycine clandestina Glycine tabacina	Petrophile pulchella Telopea speciosissima
Cyathea leichhardtiana	Gompholobium latifolium	RANUNCULACEAE
DENNSTAEDTIACEAE Histiopteris incisa	Hardenbergia violacea Hovea linearis	Clematis aristata RHAMNACEAE
Hypolepis muelleri	Phyllota phylicoides Pultenaea daphnoides	Pomaderris aspera Pomaderris elliptica
Pteridium esculentum Dicksoniaceae	Pultenaea tuberculata	Pomaderris intermedia
Calochlaena dubia GLEICHENIACEAE	Pultenaea ferruginea Pultenaea flexilis	RUBIACEAE Gynochthodes jasminoides
Gleichenia dicarpa	Pultenaea polifolia	Opercularia aspera
Gleichenia microphylla Gleichenia rupestris	Pultenaea stipularis Viminaria juncea	Opercularia hispida RUTACEAE
Sticherus lobatus	FABACEAE-MIMOSOIDEAE	Boronia ledifolia
Sticherus flabellatus Hymenophyllaceae	Acacia binervia Acacia decurrens	Boronia pinnata Crowea saligna
Hymenophyllum cupressiforme	Acacia elata	Phebalium dentatum
LINDSAEACEAE Lindsaea linearis	Acacia floribunda Acacia implexa	Nematolepis squamea v. squamea Phebalium squamulosum
Lindsaea microphylla	Acacia linifolia	Zieria pilosa
Osmandaceae Todea barbara	Acacia longifolia Acacia mearnsii	SAPINDACEAE Dodonaea triquetra
POLYPODIACEAE Microsorum scandens	Acacia parramattensis Acacia suaveolens	Stylidiaceae Stylidium productum
Notogrammitis billardierei	Acacia terminalis	THYMELIACEAE
Platycerium bifurcatum Pyrrosia rupestris	Acacia ulicifolia GOODENIACEAE	Pimelea linifolia VITACEAE
PTERIDACEAE	Dampiera stricta	Cissus hypoglauca
Adiantum aethiopicum Adiantum formosum	Goodenia bellidifolia Scaevola ramosissima	MONOCOTS Antheriaceae
Adiantum hispidulum Cheilanthes sieberi	Selliera radicans Velleia spathulata	Tricoryne simplex ARECACEAE
Pellaea falcata	HALORAGACEAE	Livistona australis
Schizaea bilida	Gonocarpus teucrioides LAMIACEAE	BLANDFORDIACEAE Blandfordia nobilis
Schizaea dichotoma	Coleus parviflorus	COMMELINACEAE
THELYPTERIDACEAE  Christella dentata	Clerodendrum tomentosum LOGANIACEAE	Commelina cyanea Cyperaceae
DICOTS ACANTHACEAE	Logania albiflora Mitrasacme polymorpha	Carex inversa Caustis flexuosa
Pseuderanthemum variabile	LORANTHACEAE	Caustis pentandra
AIZOACEAE Tetragonia tetragonioides	Amyema congener  Amyema miquelii	Cyperus brevifolius Gahnia clarkei
APIACEAE Actinotus helianthi	MALVACEAE Lasiopetalum ferrugineum	Gahnia sieberiana Ficinia nodosa
Actinotus minor	MENISPERMACEAE	Lepidosperma filiforme
Centella asiatica Platysace lanceolata	Stephania japonica Sarcopetalum harveyanum	Lepidosperma laterale Schoenus imberbis
Platysace linearifolia	MORACEAE	Schoenus turbinatus
Platysace stephensonii Xanthosia pilosa	Ficus coronata Ficus macrophylla	IRIDACEAE  Patersonia glabrata
Xanthosia tridentata	Ficus rubiginosa	Patersonia sericea Juncaceae
APOCYNACEAE  Parsonsia straminea	Myrsinaceae Myrsine variabilis	Juncus kraussii
Marsdenia suaveolens Tylophora barbata	MYRTACEAE Acmena smithii	LOMANDRACEAE Lomandra confertifolia
ARALIACEAE	Angophora costata	Lomandra filiformis
Astrotricha latifolia Astrotricha floccosa	Angophora crassifolia Angophora hispida	Lomandra glauca Lomandra longifolia
Hydrocotyle sibthorpioides	Austromyrtus tenuifolia	Lomandra obliqua Orchidaceae
Polyscias sambucifolia Asteraceae	Corymbia gummifera Darwinia fascicularis	Cryptostylis erecta
Cassinia denticulata Euchiton japonicus	Eucalyptus botryoides Eucalyptus globoidea	Cryptostylis subulata Dendrobium linguiforme
Ozothamnus diosmifolius	Eucalypus haemastoma	Plectorrhiza tridentata
Senecio hispidulus Sigesbeckia orientalis	Eucalyptus luehmanniana Eucalyptus pilularis	Pterostylis pedunculata Pterostylis sp.
AVICENNIACEAE Avicennia marina	Eucalyptus piperita Eucalyptus punctata	Rimacola elliptica Sarcochilus parviflorus
BIGNONIACEAE	Eucalyptus sieberi	PHORMIACEAE
Pandorea pandorana LAURACEAE	Kunzea ambigua Kunzea capitata	Dianella caerulea Dianella prunina
Cassytha glabella Cassytha pubescens	Leptospermum polygalifolium Leptospermum squarrosum	POACEAE Anisopogon avenaceus
CAMPANULACEAE	Leptospermum trinervium	Digitaria parviflora
Lobelia anceps Lobelia purpurascens	Syncarpia glomulifera Tristaniopsis laurina	Deyeuxia quadriseta Echinopogon caespitosus
CASUARINACEAE	OLEACEAE	Echinopogon ovatus
Allocasuarina distyla Allocasuarina littoralis	Notelaea longifolia Oxalidaceae	Entolasia marginata Entolasia stricta
Casuarina glauca CHENOPODIACEAE	Oxalis sp. Phyllanthaceae	Eragrostis brownii Eragrostis trachycarpa
Atriplex australasica	Poranthera corymbosa	Imperata cylindrica
Sarcocornia quinqueflora Cunoniaceae	Poranthera microphylla PITTOSPORACEAE	Microlaena stipoides Oplismenus imbecillis
Bauera rubioides Callicoma serratifolia	Billardiera scandens Pittosporum revolutum	Oplismenus aemulus Panicum effusum
Ceratopetalum apetalum	Pittosporum undulatum	Paspalum vaginatum
Ceratopetalum gummiferum DILLENIACEAE	PLANTAGINACEAE Veronica calycina	Poa affinis Sporobolus virginicus
Hibbertia aspera	POLYGALACEAE	Tetrarrhena juncea
Hibbertia dentata Hibbertia linearis	Comesperma ericinum Persicaria decipiens	Themeda triandra RESTIONACEAE
Hibbertia nitida Hibbertia scandens	PRIMULACEAE Samolus repens	Lepyrodia scariosa SMILACACEAE
ELAEOCARPACEAE	PROTEACEAE	Smilax glyciphylla
Elaeocarpus reticulatus ERICACEAE-EPACRIDOIDEAE	Banksia ericifolia Banksia integrifolia	Xanthorrhoeaceae Xanthorrhoea arborea
Acrotriche divaricata	Banksia marginata	Xanthorrhoea media
Brachyloma daphnoides Homalanthus populifolius	Banksia oblongifolia Banksia serrata	Xanthorrhoea resinosa