

The bushland of

Hunts Creek Reserve and Seville Reserve



THE HILLS
Sydney's Garden Shire


bushland reserves

Baulkham Hills Shire

Council's Bushland Reserves

The Hills Shire Council manages 1100 hectares of bushland in over 170 different reserves.

It is Council's goal to restore and maintain the biodiversity and cultural heritage of these community lands.

This booklet is dedicated to the Upper Parramatta River Catchment Trust and its staff. The Trust operated between 1989 and 2006. Their work was funded by ratepayers in the catchment who contributed to the Upper Parramatta River Stormwater Management Levy. UPRCT, through the Green Corridors program, was instrumental in helping BHSC set the foundations for repairing Hunts Creek bushland. They also assisted Council with publication of this book's precursor: "The Bushland of Hunts Creek Reserve" in 2003.

Council Contact Information

The Hills Shire Council

3 Columbia Court Baulkham Hills NSW 2153

www.thehills.nsw.gov.au

24 Hour Vandalism Hotline 1300 884 885 (e.g. to report rubbish dumping and water pollution)

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Other brochures in this series:

The Bushland of Bidjigal Reserve

The Bushland of Fred Caterson Reserve

The Bushland of the Toongabbie Creek Corridor Reserves

Text, illustrations and layout: Virginia Bear (Little Gecko Bushland Interpretation)

Photographs: Page 19 *Beard Orchid* Helen Pollard, Page 23 *Rose Robin* Ralph & Daphne

Keller / ANTPhoto.com, Fox Lisa Willock, Page 27 *Leaf-green Tree Frog* Rob Valentic /

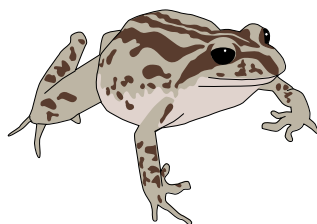
ANTPhoto.com, Page 28 *Tawny Frogmouth*, Jo Cullender, 29 Jo Cullender, Page 30 *Dumping*

Aaron Mason, Page 34 *Bush before work* Total Earth Care, others Virginia Bear. Wallabies on page 23 were photographed at Calga Springs Sanctuary.

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Index

Tracks and features	4
Place in the landscape	6
Creeks and drains	7
Geology and soils	8
Native plant communities	10
Native plant list	12
Plant profiles	18
Wildlife habitat	20
How are the animals going ?	21
Animal list	24
Helping injured wildlife	28
Why can't the bush look after itself ?	30
What happened to the water ?	32
Restoring and managing	34
Living with fire	36
How neighbours and visitors can help	37
Bushland timeline for Hunts Creek and Seville Reserve	38
References	41

*A spring flower show: Bossiaea,
Hardenbergia and Pimelea bloom beside
Hunts Creek's Waterfall Track.*

Hidden among the suburban landscapes of North Rocks and Carlingford, behind houses and roads, is Hunts Creek Bushland - a patch of nature much as it was in ancient times.

In the 1960s, when the area was being developed, Council and forward thinking residents realised the importance of local bushland and worked to protect Hunts Creek Reserve.

It is now highly valued by the local community as a place for recreation, a peaceful escape, and a connection with the natural world.

Close to Hunts Creek Reserve - and also reserved during development in the 1960s - is Seville Reserve. It has a smaller catchment and has suffered less disturbance, and its bushland is generally in better condition.

For many bush plants and animals the reserves are home, and are vital for their survival. So far we have identified 246 native plant species and 52 native birds, reptiles, amphibians and mammals that live in or visit the reserves.

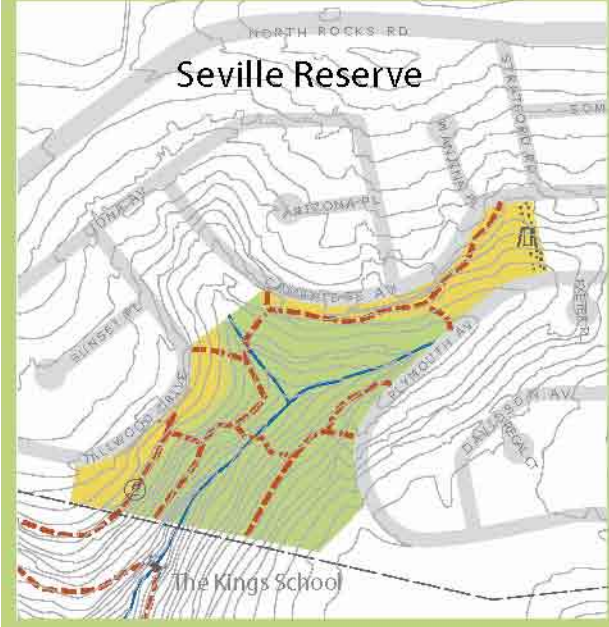
The reserves and their plants and animals are still adjusting to their new situation, surrounded by suburbia. Without ongoing care and management they face an uncertain future of weed infestation, plant and animal extinction, and water pollution.

This booklet tells the story of Hunts Creek Reserve and Seville Reserve. It is a snapshot in time, and many of the things we describe here will change. Hopefully the health of the bushland will continue to improve, and the plants and animals will be there for future generations to enjoy.

A flatwing Damselfly in Seville Reserve



Seville Reserve



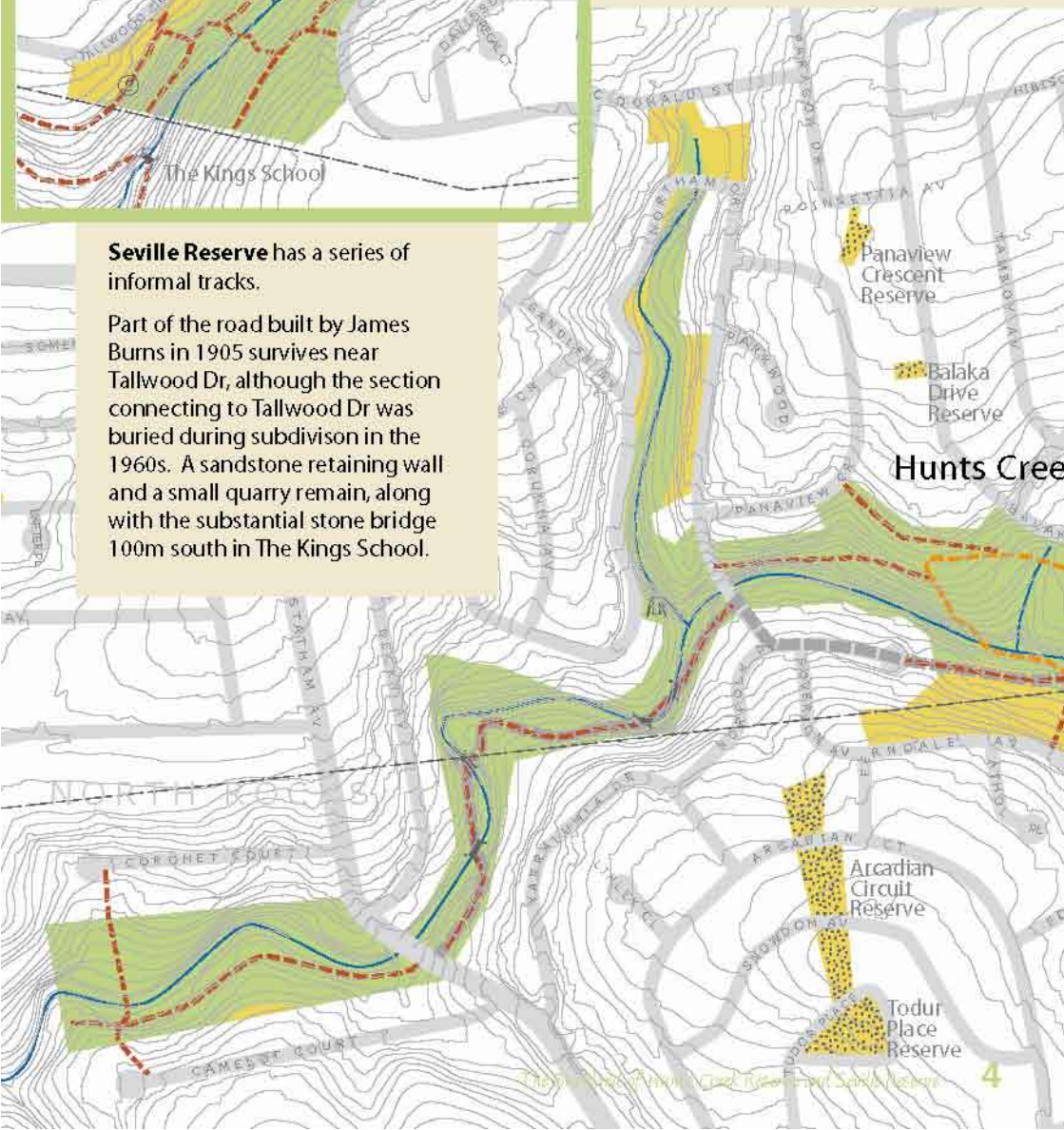
Seville Reserve has a series of informal tracks.

Part of the road built by James Burns in 1905 survives near Tallwood Dr, although the section connecting to Tallwood Dr was buried during subdivision in the 1960s. A sandstone retaining wall and a small quarry remain, along with the substantial stone bridge 100m south in The Kings School.

Tracks and feature

Hunts Creek Reserve contains a network of walking tracks maintained by Council, as well as other minor tracks.

The 2 km Waterfall Loop Track takes about an hour to walk, and leads through some of the healthiest bush as well as some of the weedy areas, such as close to the creek. There are four information points

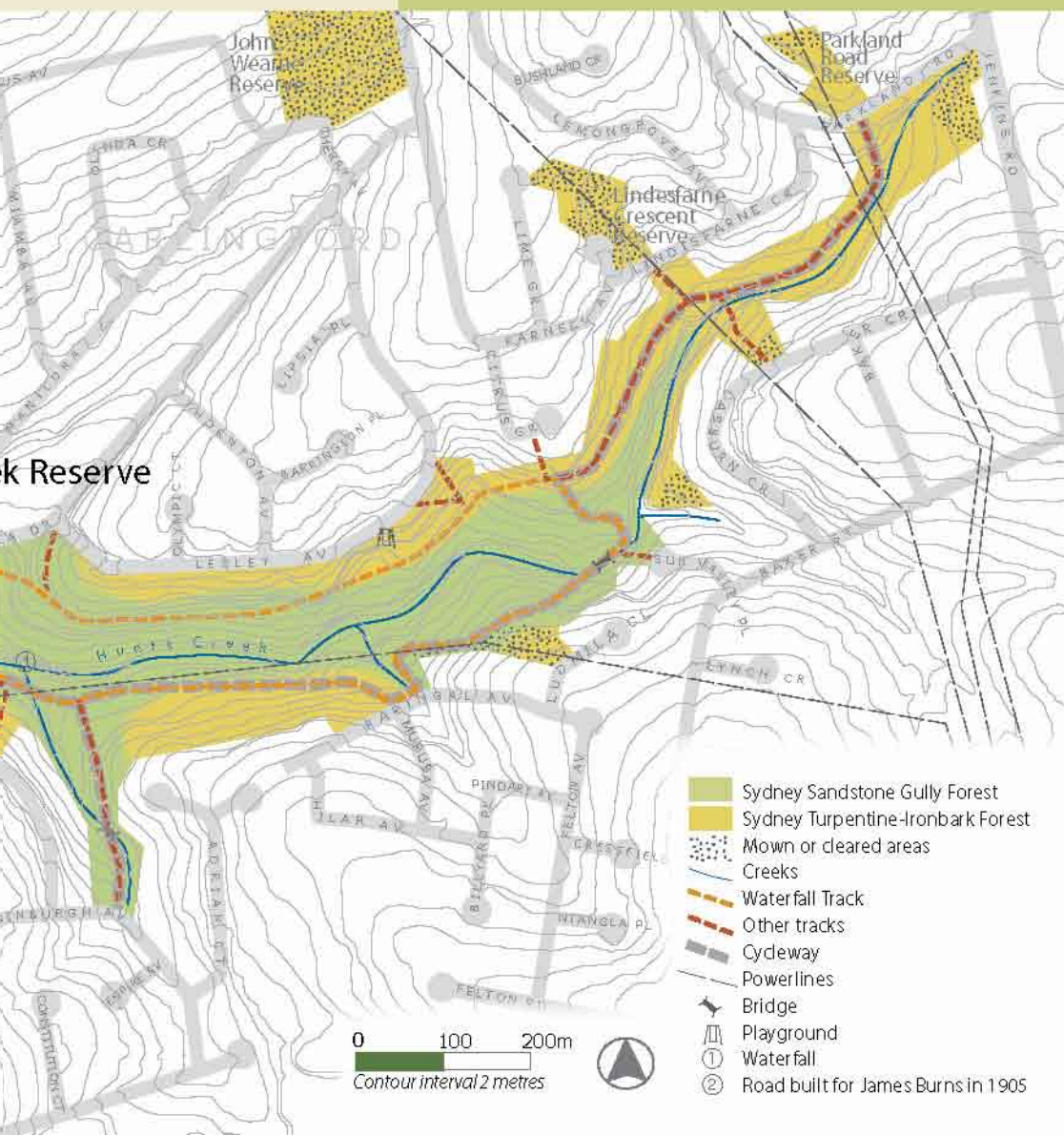


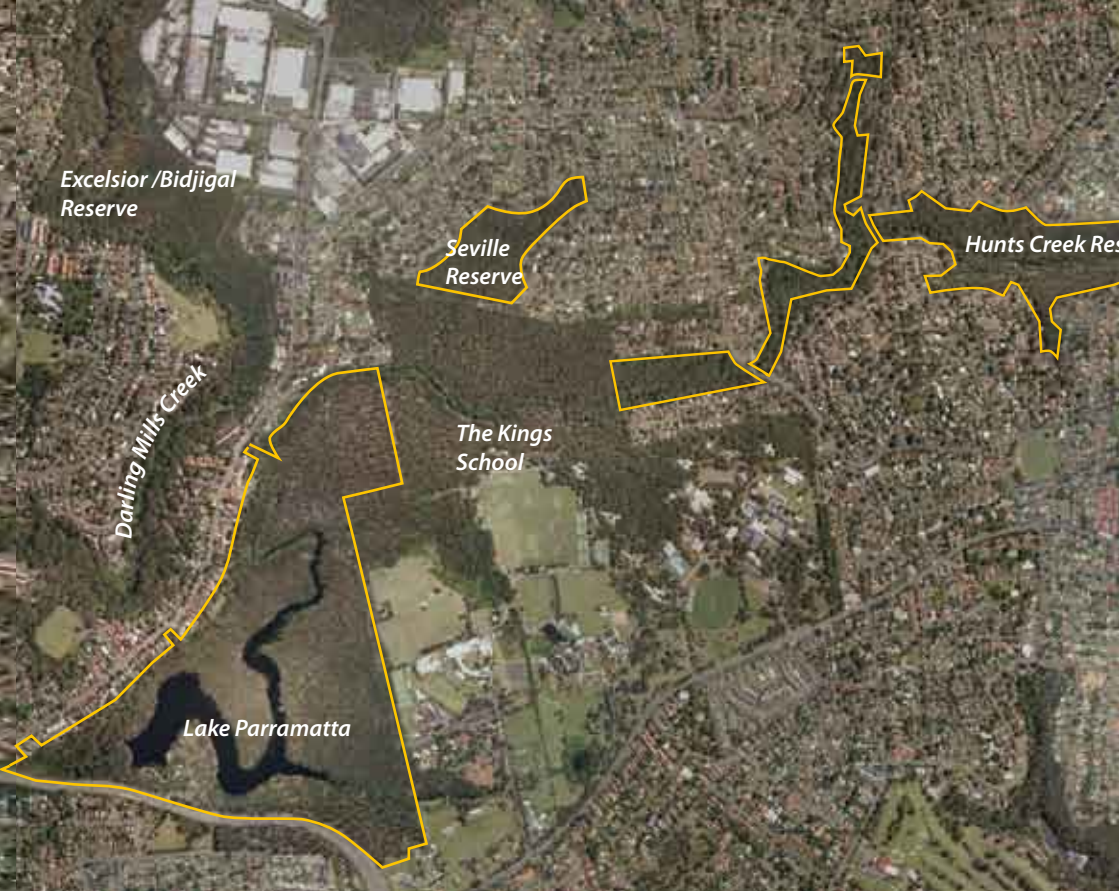
along the track with interpretive signage. Council plans to install seats here in the future.

The sections of track from Statham Ave to Northam Dr and from Norfolk Pl to Parkland Rd are part of the Shire's cycleway network linking Castle Hill and Parramatta.

Visitors please note

- track condition is variable - these are mostly "bush style" tracks - there are sections of steep, rugged and uneven ground, and informal creek crossings - sometimes with slippery rocks - that may not be passable during wet weather
- creek water is unsafe for drinking or swimming
- there is no public vehicle access in the reserves
- there are no toilets, picnic or BBQ facilities in the reserves
- dogs must stay on a leash at all times in the reserves





The Hunts Creek Bushland corridor.

Place in the landscape

Hunts Creek and Seville Reserves are part of a small corridor of bushland linking with Lake Parramatta through a network of significant bushland remnants on the The Kings School property.

There are other, larger bush patches, such as Bidjigal Reserve and Pennant Hills Park, within a few kilometres. This is important because some of the more mobile animals, such as parrots and bats, can make use of the wider, regional habitat by moving between these patches. Backyards with native trees, grasses and shrubs can also form an important part of the habitat network.

The ridgelines along Pennant Hills Rd and North Rocks Rd form the boundaries of the Hunts Creek catchment. All the stormwater drains in this area discharge into Hunts Creek.

The area is part of the Sydney Basin Bioregion (one of Australia's 404 distinct landscape zones) and is on the southern tip of the Hornsby Plateau, close to where the Cumberland Plain begins at Parramatta.

Lake Parramatta in the summer of 1938 when its clean water and bushland setting attracted crowds of swimmers and picnics. Photo from the Hood Collection, State Library of NSW.



Creeks and drains


Hunts Creek is a perennial stream beginning in the underground stormwater drainage system, and first emerging on the corner of Parkland and Jenkins Rd at Carlingford (pictured right). It flows west through the Reserve, crossing The Kings School to fill Lake Parramatta, 1km away. It eventually reaches Sydney Harbour via the Parramatta River.



In Seville Reserve, an unnamed intermittent stream exits the drain close to Plymouth Ave, and flows south east through the reserve into The Kings School where it joins Hunts Creek.

Hunts Creek was once clean enough to supply water for Parramatta and the surrounding district, between 1856 when it was dammed to form Lake Parramatta, and 1909. The bushland that is now Lake Parramatta Reserve was initially preserved to protect the water quality. Lake Parramatta later became popular for swimming, rowing, waterskiing and picnicking. For a while it had the largest freshwater life saving club in the country. Older locals remember swimming at the waterfall near Edinburgh Av when the pool was deep and clear.





Geology and soils

The landscape of the reserves is strongly influenced by the underlying geology. The reserves are near the top of the Hawkesbury Sandstone formation, close to where the overlying Wianamatta Shale begins.

The sandstone is not always uniform in character, it has layers of slightly different hardness and sometimes small layers of shale (lenses) occur within it.

The two rock types give rise to different landscapes, soils and plant communities. Streams cut through the sandstone to form deep rugged gullies.

Shale gives rise to flat plains or rolling hills, and it is rare to see exposed shale.

The sandstone erodes along vertical fracture lines, sometimes producing steep cliffs, such as near Becky Ave (below right), or separating out huge blocks such as shown above, from the Waterfall Track near Lesley Av.

Some features such as the Hunts Creek waterfall (below centre) and the smaller waterfall in Seville Reserve form when a softer layer of sandstone weathers away faster than surrounding, more resistant, layers.

A network of sandstone caves in Hunts Creek valley have a fascinating history. Their size and easy access to water strongly suggests use by Aboriginal people, and there are signs of Aboriginal occupation (middens and hand stencils) in shelters at nearby Lake Parramatta.





Shale Country has gentle slopes and supports a dense grassy understorey.



Sandstone country is rocky with shallow soils.



The shale sandstone boundary. The channel at the top of Hunts Creek was excavated by machine, exposing a classic deep red brown shale soil, and still deeper, sandstone bedrock.

For a short while in the 1800s, the local caves were hideouts for bushrangers who robbed travellers on the roads between Parramatta and Sydney, and distillers of illegal alcohol (often peach cider) for the black market.

The caves in Seville Reserve are still magical places, even though sometimes uncaring visitors spoil the experience by leaving rubbish.

Soils formed from Hawkesbury Sandstone are a light colour. They are made up mostly of quartz grains which erode easily, so they are usually shallow, dry out easily and have low fertility. Shale derived soils are deeper and have a higher clay content. Clay particles stick together to resist erosion, are able to retain water (often too much in a garden) and are more fertile. They are a red colour and often contain ironstone gravels (see below).

Throughout the greater Sydney area sandstone landscapes dominate our National Parks and reserves, they were unsuitable for farming and too rugged for easy development. However shale areas have nearly all been cleared and developed, first for farming and later for urban and industrial uses.

The highest parts of the Hunts Creek corridor, in The Kings School, have shale soils. Higher areas of Hunts Creek and Seville have soils that are a mix of shale and sandstone.

The lower slopes usually have shallow sandstone soils. Where sediment has accumulated, beside the streams in parts of the valley bottom, soils can be deep. Although other parts are often rocky with very little soil.



A large, textured tree trunk, likely a Blackbutt, stands in a bushland setting. The ground is covered with dry leaves and small white flowers. The background shows more trees and foliage.

Native plant communities

A rich diversity of native plants can be found in the reserves, from towering Blackbutt trees to delicate orchids and fungi that appear only when rainfall and temperature are right.

Sydney's bushland is made up of distinct plant communities - particular groups of species that tend to occur together in response to soil type, position in the landscape and climate.

In the North Rocks-Carlingford area, the flat to gently undulating shale ridgetops were covered by Sydney Turpentine-Ironbark Forest and Blue Gum High Forest. Tall trees thrived on the fertile shale soils, with a shrubby, grassy or ferny understorey. Where the shale had been eroded away and steep rugged sandstone country has been exposed - sandstone forest and woodland occurs. (Sandstone bushland is the most common in National Parks and reserves around Sydney). A strip of rainforest-like vegetation sometimes develops along creeks in the deeper gullies.

The communities don't have obvious boundaries - they blend into one another and have many shared species.

Both Hunts Creek and Seville Reserve are mainly sandstone gullies, though the higher areas contain remnants of the shale community Sydney Turpentine-Ironbark Forest. However, these represent only the outer margins of the shale bush where it blends with sandstone. The ironbarks were higher upslope in what is now the urban landscape - some can still be seen in streets, parks and backyards.

Right across the Sydney region, the bush of the shale country has all but disappeared - reduced to a few small, scattered remnants. Sydney Turpentine Ironbark Forest has been listed in federal legislation as critically endangered. Scientists believe it will soon cease to exist unless current threats are managed.

The one endangered plant species in the reserves, Purple Heath *Epacris purpurascens*, (pictured right), grows in the "shale edge" zone. 24 plants are regarded as vulnerable in the local region (Western Sydney).



Sydney Turpentine-Ironbark Forest

Grows on flat or gently sloping shale landscapes - sometimes with sandstone outcrops among shale material washed in from above. Remnant patches are often missing the understorey plants e.g. Balaka Dr Reserve (pictured right).

Trees Red Mahogany *Eucalyptus resinifera*, Grey Gum *Eucalyptus punctata*, Forest Oak *Allocasuarina torulosa*, Turpentine *Syncarpia glomulifera*, Native Cherry *Exocarpus cupressiformis*

Shrubs Bearded Heath *Leucopogon juniperinus*, Blackthorn *Bursaria spinosa*, Breyenia *Breyenia oblongifolia*

Climbers Happy Wanderer *Hardenbergia violacea*, Running Postman *Kennedia rubicunda*

Ground layer Often thick with many grasses and lillies Kangaroo Grass *Themeda australis*, Wallaby Grass *Austrodanthonia tenuior*, Wiry Panic Grass *Panicum simile*, Pratia *Pratia purpurascens*, Flax-lily *Dianella revoluta*, Slender Sword-sedge *Lepidopsperma gunnii*



Sydney Sandstone Gully Forest

On exposed slopes

Usually found on north and west facing slopes. Terrain can be gentle to steep - sometimes rugged and rocky.

Trees Blackbutt *Eucalyptus pilularis*, Sydney Red Gum *Angophora costata*, Sydney Peppermint *Eucalyptus piperita*, Red Bloodwood *Corymbia gummifera*, Black She-oak *Allocasuarina littoralis*

Shrubs Old Man Banksia *Banksia serrata*, Sydney Golden Wattle *Acacia longifolia*, Prickly Moses *Acacia ulicifolia*, Sydney Boronia *Boronia ledifolia*

Ground Layer Usually sparse - open Flannel flower *Actinotus helianthi*, Flax-lily *Dianella caerulea*, Spear Grass *Austrostipa pubescens*



On sheltered slopes

Usually on south and east facing slopes. Terrain can be gentle to steep - sometimes rugged and rocky.

Trees Blackbutt *Eucalyptus pilularis*, Sydney Red Gum *Angophora costata*, Turpentine *Syncarpia glomulifera*, Christmas Bush *Ceratopetalum gummiferum*

Shrubs Often thick - impenetrable Handsome Flat-pea *Pultenaea flexilis*, Graceful Bush Pea *Pultenaea flexilis*, Rough-fruit Pittosporum *Pittosporum revolutum*

Ground Layer Can be open, or thick with grasses or ferns Tussock Grass *Poa affinis*, Maidenhair Fern *Adiantum aethiopicum* Soft Bracken *Calochlaena dubia*, Commelina *Commelina cyanea*

Climbers Old Mans Beard *Clematis aristata*, Wonga Wonga Vine *Pandorea pandorana*



Creekside scrub and forest

A narrow or intermittent band of vegetation adjacent to rocky creeks, often forming a sub-canopy under trees of the Sandstone Gully Forest. Vulnerable to invasion by Privet and Crofton Weed.

Trees Coachwood *Ceratopetalum apetalum*, Blackwattle *Callicoma serratifolia*

Shrubs Narrow-leaf Myrtle *Austromyrtus tenuifolia*

Groundlayer Gristle Fern *Blechnum cartilagineum*, Lomandra *Lomandra longifolia*, Saw Sedge *Gahnia sieberana*



Native plant list

Scientific Name	Common name
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Ferns

Adiantum aethiopicum	Maidenhair Fern
Adiantum hispidulum	Rough Maidenhair
Asplenium australasicum	Bird's-nest Fern
H Asplenium flabellifolium	Necklace Fern
Blechnum ambiguum	
Blechnum cartilagineum	Gristle Fern
Calochlaena dubia	Soft Bracken
Cheilanthes sieberi ssp. Sieberi	Mulga Fern
Christella dentata	
Cyathea cooperi	Tree Fern
H Davallia pyxidata	Hare's Foot Fern
Doodia aspera	Rasp Fern
Doodia caudata	
H Grammitis billardieri	Finger Fern
H Histiopteris incisa	Batswing Fern
H Hymenophyllum cupressiforme	Filmy Fern
Lindsaea linearis	Screw Fern
Lindsaea microphylla	Lacy Wedge Fern
H Pellaea falcata	Sickle Fern
H Platycerium bifurcatum	Elkhorn
Pteridium esculentum	Bracken
H Pteris umbrosa	Jungle Brake
H Pyrrosia rupestris	Rock Felt Fern
H Selaginella uliginosa	
H Sticherus flabellatus	Umbrella Fern

Orchids

H Acianthus fornicatus	Pixie Orchid
S Caladenia catenata	White Fingers
Calochilus robertsonii	Purple Beard-orchid
H Corybas aconitiflorus	Helmet Orchid
V H Cryptostylis erecta	Tartan Tongue-orchid
V S Diuris maculata	Spotted Double Tail
H Pterostylis concinna	Trim Greenhood
Pterostylis longifolia	Long-leaved Greenhood
V Pterostylis nutans	Nodding Greenhood

Grasses

Aristida ramosa	
Aristida vagans	Three-awned Spear-grass
Austrodanthonia tenuior	Wallaby Grass
Austrostipa pubescens	Spear Grass
V S Austrostipa rudis ssp. nervosa	Spear Grass
V H Bothriochloa macra	Red Leg Grass
Cymopogon refractus	Barbed Wire Grass
V H Deyuxia quadriseta	Reed Bent Grass
Dichelachne rara	Plume Grass
H Digitaria parvifolia	Small-flower Fingergrass
Echinopogon caespitosus	Hedgehog Grass
Entolasia marginata	Right Angle Grass
Entolasia stricta	Right Angle Grass
V H Eragrostis benthamii	
Eragrostis brownii	Brown's Love Grass
H Imperata cylindrica	Blady Grass
Microlaena stipoides	Weeping Grass
Oplismenus aemulus	Basket Grass
Panicum similie	Two Colour Panic
Paspalidium distans	
V Poa affinis	
Themeda australis	Kangaroo Grass

Groundcovers and Herbs

H Amperea xiphoclada	Broom Spurge
Actinotus helianthi	Flannel Flower
Caesia parvifolia	Lily
Centella asiatica	Centella
Commelina cyanea	Scurvy Weed
H Cotula australis	Common Cotula
H Crassula sieberana	Austral Stonecrop
Dianella caerulea var. producta	Blue Flax Lily
Dianella revoluta	
Dichondra repens	Kidney Weed
H Drosera peltata	Sundew
H Einadia hastata	Berry Saltbush
S Gahnia aspera	Sword sedge
Gahnia sieberana	Sword Sedge
H Geranium homeanum	Geranium
Gonocarpus teuroides	Raspwort
Goodenia hederacea	Violet-leaf Goodenia
Goodenia heterophylla	Variable-leaf Goodenia
Helichrysum scorpioides	Button Everlasting
Hydrocotyle peduncularis	Hydrocotyle
H Juncus planifolius	Broad-leaf Rush
Juncus usitatus	Common Rush
Lagenifera sp	
S Laxmannia gracilis	
S Lepidosperma gunnii	
Lepidosperma laterale	Saw Sedge
V Lobelia gracilis	Lobelia
Lomandra longifolia	Mat-rush
Lomandra filiformis	Wattle Mat-rush
Lomandra multiflora	Many-flowered Mat-rush
Lomandra obliqua	Fish Bones
H Macrozamia communis	Burrawang
V Micranthemum ericoides	
S Mitrasacme polymorpha	
Opercularia aspera	Common Stink Weed
Oxalis perannans	
Persicaria decipiens	Smart Weed
V Phyllanthus hirtellus	Thyme Spurge
Platysace lanceolata	Carrot Top
Plectranthus parviflorus	
Pomax umbellata	
Poranthera microphylla	
Pratia purpurascens	White-root
Pseuderanthemum variabile	Pastel Flower
Scaevola ramosissima	Purple Fan-flower
Schoenus melanostachys	Black Bog Rush
H Senecio hispidulus	
V H Sigesbeckia orientalis	Indian-weed
H Solanum pungetium	Eastern Nightshade
H Stellaria flaccida	Forest Starwort
Stylidium productum	Trigger Plant
Thysanotus tuberosus	Fringed Lily
V S Tricoryne sp	
S Urtica inscisa	Scrub Nettle
Veronica plebeia	Trailing Speedwell
Viola hederacea	Native Violet
Xanthosia tridentata	

Climbers and Scramblers

Billardiera scandens	Apple Berry
Cassytha pubescens	Common Devil's Twine
H Cayratia clematidea	Slender Grape
Clematis aristata	Old Man's Beard

Eustrephus latifolius
H Geitonoplesium cymosum
Glycine tabacina
Glycine microphylla
Hardenbergia violaceae
Kennedia rubicunda
Marsdenia suaveolens
H Morinda jasminoides
Parsonia straminea
Pandorea pandorana
S Polymeria calycina
Smilax australis
Smilax glycyphylla
H Tylophora barbata

Shrubs

Acacia falcata
Acacia linifolia
Acacia longifolia var. longifolia
S Acacia myrtifolia
V Acacia stricta
Acacia suaveolens
Acacia ulicifolia
H Astroloma humifusum
H Austromyrtus tenuifolia
H Backhousia myrtifolia
H Baeckea linifolia
Banksia spinulosa
Boronia ledifolia
V S Boronia mollis
Bossiaea obcordata
Breynea oblongifolia
Bursaria spinosa
Callistemon citrinus
H Cassinia uncata
Correa reflexa var. reflexa
Daviesia ulicifolia
Dillwynia retorta ssp. Peduncularis
Dodonea triquetra
S Eriostemon australasius
V E Epacris purpurascens var. purpurascens
Epacris pulchella
S Gompholobium glabratum
Hibbertia empetrifolia
Hakea sercia
Hibbertia obtusifolia
Hibiscus heterophyllus
Hovea linearis
Isopogon anemonifolius
Kunzea ambigua
Lambertia formosa
S Lasiopetalum parvifolium
Lomatia silaifolia
Leptospermum trinervium
Leucopogon juniperinus
Lecopogon lanceolatus var. lanceolatus
H Lissanthe strigosa
V H Logania albiflora
V H Maytenus sylvestris
Notolaea ovata
Notolaea longifolia
V Olearia microphylla
H Olearia viscidula

Wombat Berry
Scrambling Lily
Love Creeper
Running Postman
Sweet-scented Doubah

Common Silkpod
Wonga Wonga Vine

Native Sarsaparilla

Flax Wattle
Sydney Golden Wattle

Sweet Wattle
Prickly Moses

Narrow-leaved Myrtle
Grey Myrtle

Hairpin Banksia
Sydney Boronia

Spiny Bossiaea

Bottle Brush

Common Correa
Gorse Bitter Pea
Heathy Parrot-pea
Hopbush

Grey Guinea Flower
Native Rosella

Drumsticks
Tick Bush
Mountain Devils

Crinkle Bush

Tea Tree
Beard-heath

Mock Olive
Large Mock-olive
Bridal Daisy-bush
Sticky Daisy-bush

H Omphacomeria acerba
Ozothamnus diosmifolium
Persoonia linearis
Persoonia laurina ssp. Laurina
Persoonia levis
S Petrophile pulchella
Pimelea linifolia ssp. Linifolia
Pittosporum revolutum
V Platylobium formosum
V S Podocarpus spinulosus
V Pomaderris elliptica
Pomaderris ferruginea
S Pultenaea daphnoides
Pultenaea flexilis
Pultenaea viscosa
Polyscias elegans
Polyscias sambucifolia
H Rapanea variabilis
H Woolsia pungens
Xanthorrhoea sp.
Xylomelum pyriforme
Zieria pilosa
Zieria smithii

Leafless Sourbush
Paper Daisy
Narrow-leaved Geebung
Golden Geebung
Broad-leaved Geebung
Conesticks
Slender Rice-flower
Rough-fruit Pittosporum
Handsome Flat-pea

Rusty Pomaderris

Graceful Bush-pea

Celerywood
Elderberry Panax
Muttonwood

Grass Tree
Woody Pear
Hairy Zieria
Sandfly Zieria

Trees

Acacia binervia
Acacia decurrens
Acacia elata
Acacia implexa
Acacia parramattensis
H Alectryon subcinerus
Allocasuarina littoralis
Allocasuarina torulosa
Angophora costata
H Angophora bakeri
Banksia serrata
H Brachychiton populneus
Callicoma serratifolia
Ceratopetalum apetalum
Ceratopetalum gummiferum
H Clerodendrum tomentosum
Corymbia gummifera
Elaeocarpus reticulatus
H Eucalyptus paniculata
Eucalyptus pilularis
H Eucalyptus piperita
V Eucalyptus punctata
Eucalyptus resinifera
H Eucalyptus saligna
H Exocarpus cupressiformis
Glochidion ferdinandi
V H Glochidion ferdinandi. var. pubens
H Hymenosporum flavum
H Melaleuca decora
H Melaleuca styphelioides
H Melia azedarach var. australasica
Omalanthus nutans
Pittosporum undulatum
Syncarpia glomulifera
H Tristaniopsis laurina

Coast Myall
Green Wattle
Cedar Wattle
Hickory Wattle
Parramatta Wattle
Native Quince
Black She-oak
Forest Oak
Sydney Red Gum
Narrow-leaved Apple
Old Man Banksia
Kurrajong
Black Wattle
Coachwood
Christmas Bush
Hairy Clerodendrum
Red Bloodwood
Blueberry Ash
Grey Ironbark
Blackbutt
Sydney Peppermint
Grey Gum
Red Mahogany
Blue Gum
Native Cherry
Cheese Tree
Hairy Cheese Tree
Native Frangipani
White-feather Honey-myrtle
Prickly-leaved Paperbark
White Cedar
Bleeding Heart
Sweet Pittosporum
Turpentine
Water Gum

H = Hunt Reserve only, S = Seville Reserve only,
E = endangered, V = vulnerable in Western Sydney

Ferns

- Adiantum aethiopicum 1
- Adiantum hispidulum 2
- Blechnum cartilagineum 3
- Calochlaena dubia 4
- Cheilanthes sieberi 5

Orchids

- Caladenia catenata 6
- Corybas aconitiflorus 7
- Cryptostylis erect 8
- Diuris maculata 9
- Pterostylis concinna 10
- Pterostylis longifolia 11

Grasses

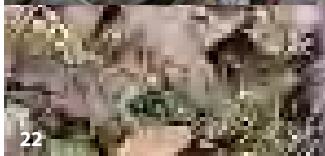
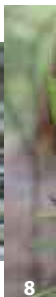
- Austrodracopis tenuior 12
- Echinopogon caespitosus 13
- Entolasia marginata 14

Groundcovers and Herbs

- Dianella caerulea 15
- Dianella revoluta 16
- Dichondra repens 17
- Goodenia hederacea 18
- Helichrysum scorpioides 19
- Laxmannia gracilis 20
- Lomandra filiformis 21
- Lomandra obliqua 22
- Mitrasacme polymorpha 23
- Oxalis perannans 24
- Pomax umbellata 25
- Pseuderanthemum variabile 26
- Scaevola ramosissima 27
- Stylidium productum 28
- Thysanotus tuberosus 29
- Veronica plebeia 30

Climbers and Scramblers

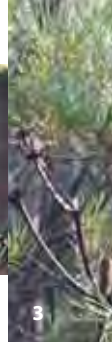
- Cassytha pubescens 31
- Hardenbergia violaceae 32
- Morinda jasminoides 33
- Pandorea pandorana 34
- Polymeria calycina 35





Shrubs

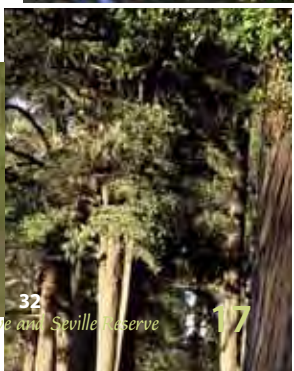
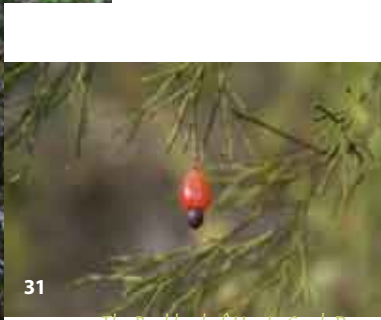
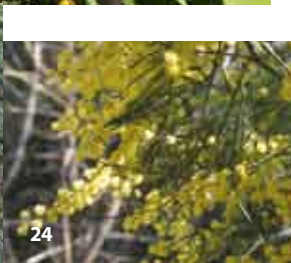
- Acacia suaveolens 1
- Acacia ulicifolia 2
- Banksia spinulosa 3
- Boronia ledifolia 4
- Bossiaea obcordata 5
- Dodonea triquetra 6
- Eriostemon australasius 7
- Hovea linearis 8
- Isopogon anemonifolius 9
- Kunzea ambigua 10
- Lasiopetalum parvifolium 11
- Leptospermum trinervium 12
- Lecopogon lanceolatus 13
- Olearia microphylla 14
- Ozothamnus diosmifolium 15
- Persoonia linearis 16
- Persoonia levis 17
- Pimelea linifolia ssp. Linifolia 18
- Pittosporum revolutum 19
- Platylobium formosum 20
- Podocarpus spinulosus 21
- Polyscias sambucifolia 22
- Xylomelum pyrifforme 23



Trees

- Acacia decurrens 24
- Acacia parramattensis 25
- Allocasuarina littoralis 26
- Allocasuarina torulosa 27
- Angophora costata 28
- Callicoma serratifolia 29
- Eucalyptus pilularis 30
- Exocarpus cupressiformis 31
- Syncarpia glomulifera 32





Plant profiles



Slender Sword-sedge *Lepidosperma gunnii*

The Sword-sedges (*Lepidosperma*) are members of the sedge family, Cyperaceae. They are all perennial herbs with flat or cylindrical leaves. There are 13 species in the Sydney region. Variable Sword-sedge *Lepidosperma laterale* is the most common.

Slender Sword-sedge is widespread in eastern Australia, but uncommon in the Sydney region. There are a few on the north east edges of Seville Reserve, on the shale influenced soils, but none in Hunts Creek.

It has narrow (2 to 5mm) flat stems that are smooth and rigid. It flowers in spring and summer with a 2 to 8cm red brown spike. The fruit is a hard, shiny brown nut 2.5 to 3.3mm long. Old specimens form substantial tussocks.



Native Fuchsia *Correa reflexa*

Correa is in the same family (Rutaceae) as *Boronia* and *Citrus*.

It is found throughout eastern Australia.

Correa grows to 1.5m high, and has rusty coloured stems. The opposite leaves and stems branch in a geometric pattern.

It flowers from March to October with a peak in August. Flowers can be green (in Hunts/Seville) or red, but rarely both in the same area.

It is pollinated by honeyeaters, such as the Eastern Spinebill, which are able to reach into the tubular flower with their long thin bills, to feed on the nectar.

Correa is killed by fire and relies on seed stored in the soil to regrow. Ants help by taking seeds into their underground burrows, so they are not burned by the fire. This also helps with seed movement so the plant can colonise new areas. *Correa* has evolved a way to encourage the ants, by attaching a small parcel of attractive food to the seed. The ant takes the seed home along with the food.





Lomandra
Lomandra
longifolia

Lomandra, or Mat-rush, occurs from South Australia to Queensland.

It is a tufted plant up to 1m high with tough strap-like leaves. It tolerates many different environments, from creek edges to ridge tops. It regrows quickly after bushfires.

Unlike most native species, male and female flowers are on separate plants.

Its flowers have an unusual, strong perfume that most people find delightful.

Traditional aborigines used to:

- weave bags with the leaves.
- chew the leaf bases as a snack.
- grind the seeds to make flour.

Straight Wattle *Acacia stricta*



A small shrub 1 to 6m high. Similar to the more common Sweet-scented Wattle *Acacia suaveolens*. It flowers from August to September and has long, thin seed pods.

It is found from South Australia to Queensland. It is uncommon in Sydney where it is considered to be vulnerable to extinction because its preferred shale soil habitat has been mostly cleared.

Straight Wattle is probably killed by fire and relies on the soil-stored seedbank to repopulate. Like other wattles, it enlists the help of ants to distribute and bury its seed. Its seeds have an ant-attracting food parcel that entices the ants to collect them.

The buried seed sprouts readily after fire. Straight Wattle was nowhere to be seen in Seville Reserve in 2000, when bushcare volunteers cut woody weeds and stacked them in piles for burning. The heat and smoke stimulated strong regeneration of native plants, including many Straight Wattle.

Purple Beard Orchid
Calochilus robertsonii

The 20 to 40cm high Purple Beard Orchid, sprouts after good autumn rain and flowers in September/October, then dries up and disappears after the seeds ripen. It can self pollinate but also tricks a wasp into helping. The flower resembles a female wasp and the male wasp attempts to mate with it. Pollen attaches to the wasp's body, to be transferred to the next orchid he visits.

Many orchids have edible underground tubers, that once formed part of the "Aboriginal supermarket".





Wildlife habitat

Hunts and Seville provide important habitat for native animals. As small urban reserves, battling weeds and pollution, they are not as suitable for wildlife as they once were - but any habitat in suburbia is valuable, and they still have much to offer.

Habitat assets

- old trees with hollows, and rocky outcrops with crevices, are available for nesting parrots and sheltering geckos
- permanent creeks provide water for birds to drink and bathe in, and a home for water bugs such as young dragonflies
- a variety of bush structures - thick shrubby patches for possum nests, open sunny areas for basking lizards, moist ferny creeksides for frogs, and accumulations of leaf litter where birds might forage for insects
- food is available from a range of native plants providing nectar, fruits and seeds at different times of the year
- some new habitat opportunities are provided by weeds eg Lantana thickets can create protected nesting and foraging sites for small birds
- there are larger bushland patches and bush-friendly gardens close by - a wider habitat network used by more mobile species such as birds, possums, bats and insects

Habitat problems

- there are introduced predators such as Foxes, Cats and Mosquito Fish (which eat frog eggs)
- the water is too polluted for many water creatures such as yabbies and insects
- sometimes there just isn't enough room for everyone eg for larger species such as Wallabies
- aggressive native animals such as Noisy Miners and Pied Currawongs have increased in number
- weeds dominate parts of the Reserves, and have replaced native plants, reducing available resources
- crossing roads and gardens to get to other bushland patches can be dangerous

How are the animals going ?

Some seem to be all right but perhaps not for much longer...

Fairy-wrens Two kinds of Fairy-wren live in the Reserves, the Superb Fairy-wren (photo top right - male, and female feeding baby) - and the Variegated Fairy-wren (photo bottom right - two males). Both are known for their cheerful trill, the males colourful breeding plumage, and their habit of visiting suburban gardens.

Small insect eating birds like Fairy-wrens are declining in urban bush. In the last few decades, Superb Fairy-wrens have vanished from bushland patches on the North Shore where they were previously common.

Wrens (and other small birds) need dense, scrubby vegetation - the weed Lantana is good habitat and often crucial for the survival of wrens in urban bushland - to shelter and breed in. Wrens build their nests and forage close to the ground, where foxes and cats can catch them. Territorial birds such as Noisy Miners scare them off. The use of insecticides may also have hastened their decline, by poisoning their food source.



Some animals spend all their lives in the Reserves and seem to have adapted well...

Eastern Water Skink The creature you hear scurrying off through the leaf litter on a warm day is likely to be a Water Skink. They can become used to people and sometimes remain basking on a log or at the track edge as you walk by. They eat insects, tadpoles and berries and are active during the warmer months but rarely seen in winter. Ground dwellers, these skinks are frightened or killed by cats and dogs, so it's essential they have plenty of logs and rocks to hide under.

Look out for baby skinks in December and January - they are about 10cm long when born (unlike most reptiles, Water Skinks don't lay eggs) and grow to about 25cm in length.





Some have increased in number ...

Rainbow Lorikeets, Sulphur-crested Cockatoos (pictured above), Galahs and Crimson Rosellas, the parrots we are likely to see every day in urban bush, were uncommon in Sydney when Europeans first arrived. They have found urban areas to their liking - some people have encouraged them by setting up feeding trays.

Large carnivorous birds such as the Laughing Kookaburra, Pied Currawong and Australian Raven are also more widespread and common than 100 years ago. Large honeyeaters such as the Noisy Miner and Little Wattlebird are also more common.

and some are causing trouble ...

Noisy Miner Walk through Hunts Creek at any time of year and the first bird you are likely to notice is a Noisy Miner – or a rowdy, squawking group of them. Look closely – perhaps they are chasing another bird? They were restricted mainly to more open, lower rainfall bushland, such as in western Sydney, but are now one of the most common birds in parks, gardens and urban bush. The increase occurred because the Miners could adapt to land with cleared understorey and they enjoy the hybrid Grevilleas and other nectar-producing species we have planted. Noisy Miners are territorial and will harass other birds, often driving them away.



A rowdy group of Noisy Miners at their nest.

The bushland of Hunts Creek Reserve and Seville Reserve

Others move between different patches of bush ...

Rose Robin The sight of a Rose Robin in the bush is always a special treat and they sometimes visit Hunts Creek Bushland. The male is grey, pink and white. The female is harder to spot, being grey-brown and light grey. They visit Sydney in winter, but tend to disperse to the north and west (eg to the Blue Mountains) as the weather warms up. Rose Robins prefer dense, moist vegetation such as in gullies. They are acrobatic fliers, and often catch insects in flight.



Some foreign troublemakers have moved in ...

European Red Fox The fox is one of the most efficient predators on the planet, with a well-deserved reputation for intelligence and cunning. They probably took up residence in the Sydney bushland in the late 1800s and have been eating small native animals, rabbits and berries (eg blackberry) ever since. Fox control is critical for conservation of local native wildlife. A baiting program has been carried out nearby in Lake Parramatta and Excelsior Reserve, in areas away from roads and houses. Other parts of Sydney where fox numbers have been reduced have seen a resurgence of native animals such as bandicoots and Swamp Wallabies. The fox pictured became trapped while raiding a local chicken coop.



Some have disappeared.....

Many animals have become extinct in Hunts Creek and Seville Reserves. Among the missing are 39 mammals (such as the Feathertail Glider, Koala, Red-necked Wallaby (pictured right), and Chocolate Wattled Bat), 27 reptiles (including the Diamond Python, Copper-tailed Skink, and Velvet Gecko), and 15 frogs (including the Eastern Banjo Frog, Red Crowned Toadlet and Green Tree Frog).

Some of these (eg Eastern Quoll and Rock Wallaby) have disappeared from the region. Others (such as the Sugar Glider and Lace Monitor), still survive nearby, in the larger bushland patch that runs from Lake Parramatta to The Kings School.

Numbers of small insect-eating birds, and small honeyeaters have dropped throughout Sydney, and very few were seen in recent surveys at Hunts Creek and Seville.

.. and who will do their job ?

All animals play a role in the bush ecology. Pollinating plants, controlling leaf-eating insects, distributing seeds. The disappearance of an animal can have far-reaching affects. The Mountain Devil plants in the reserves have not produced seed for years. Could this be because the Eastern Spinebills (pictured right) no longer visit to feed on the nectar and pollinate the flowers ?



Animal list

Birds

Australian Magpie 26
 Australian Raven 27
 Australian Wood Duck 1
 Black-faced Cuckoo-shrike
 Brown Gerygone
 Brown Thornbill 16
 Butcherbird 24
 *Chicken
 Collared Sparrowhawk
 *Common Myna
 Crested Pigeon
 Crimson Rosella 2
 Eastern Rosella 3
 Eastern whip-bird 13
 Galah 4
 Golden Whistler 11
 Grey Butcherbird 24
 Grey Fantail 12
 Little Corella
 King Parrot 5
 Laughing Kookaburra 6
 Magpie-lark 23
 Noisy Miner
 Olive-backed Oriole
 Pacific Black Duck
 Pied Currawong 25
 Rainbow Lorikeet
 Red-browed Firetail 22
 Red Wattlebird 18
 *Red-whiskered Bulbul
 Rose Robin
 Yellow Robin 10
 Sacred Kingfisher 7
 Scaly-breasted Lorikeet
 Scrub Wren 15
 Silveryeye 20
 Spotted Pardalote 21
 *Spotted Turtle-dove
 Sulphur-crested Cockatoo
 Superb Fairy-wren 14
 Tawny Frogmouth 8
 Variegated Fairy-wren
 Welcome Swallow 9
 White-throated Treecreeper 17
 Yellow Faced Honeyeater 19



1



2



6



7



8



12



13



17



18



19



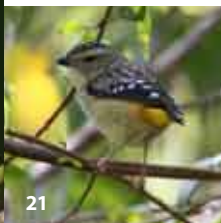
23

The Bushland of Hunts Creek Reserve and the Reserve



24

24



Reptiles and Amphibians

Striped Marsh Frog 1
 Common Eastern Froglet
 Eastern Dwarf Tree frog 2
 Leaf-green Tree frog 3
 Eastern Water Dragon 4
 Common Blue-tongue
 Red-bellied Black Snake 5
 Garden Sun-skink 6
 Grass Skink
 Weasel Skink



1



2

Fish

*Mosquito fish

Mammals

Common Brushtail Possum 7
 Common Ringtail Possum
 *Cat, *Dog, *Fox, *Rabbit

Invertebrates

Common Brown Ringlet Butterfly 8
 Common Brown Butterfly 9
 Caper White Butterfly 10
 Yellow-banded Dart 11
 Moth *Cruria synopla* 12
 Native Bees A 13
 Scorpionfly 14
 Flower Spider 15
 Native Bees B 16
 Stick insect 17
 Golden Ant 18
 Leaf-litter Cockroach *Platyzosteria* sp 19
 Hoverfly 20



5



8



10



9



11



12



13

16

Animals lists are based on surveys between 1999 and 2006 by Total Earth Care, with additional records by Virginia Bear. * = introduced species. Additional birds may occur. It is unlikely that there are any other mammals in the reserves, except for bats. Flying foxes are expected to visit occasionally eg when the Blackbutts have a good flowering season. There are probably also some insectivorous microbats living in or visiting the reserves. Insects, ants spiders, worms, slugs etc make up the largest number of individual animals and different species of animals in the reserves. No specific invertebrate surveys have been done. Those



shown here represent a tiny fraction of the local invertebrates. Council is interested to hear of additional reliable fauna records from members of the public.

Black Snakes are sometimes seen in the reserves during the warmer months. They are shy and rarely aggressive unless provoked. To avoid accidental contact, visitors should keep to tracks and watch the ground in front of them when walking.

Helping injured wildlife



Bush animals in urban areas need all the help they can get because there are many dangers. The four animals described here are often injured or orphaned, and die as a result. Other times a specially trained carer can step in and care for them until they are ready to go back in to the bush.

Blue-tongued Lizard

These gentle skinks eat snails, cockroaches and spiders. They often bask in the sun because they need to warm up to digest their food.

In winter they go into torpor and hide in a safe place, surviving on fat reserves stored in their tail. In the bush they shelter under large rocks or logs. They like relaxed (even messy) backyards with lots of places to hide such as rocks, logs, even old terracotta pipes.

Blue Tongues are not venomous, and can, make great pets (a licence is required for keeping wildlife).

Dangers for Blue-tongues

- dog and cat attack - the lizard above has almost recovered after a dog bit a chunk out of her side - she still has a scar
- whipper snipper injuries
- being flattened by cars while basking on the road
- poisoning by eating snails that have eaten snail bait
- people who think they are dangerous, and kill them in their backyard

Tawny Frogmouth

This mainly nocturnal bird, is sometimes seen during the day perched in a tree

pretending to be a branch. They eat insects and mice, and have a repetitive "oom oom" call. The baby and parent shown below are almost ready to be released after being struck by a car.

Dangers for Tawnys

- babies fall out of their trees - if bought to a carer they can be hand-raised for a few months until fully feathered and ready for releases
- adults get hit by cars, often while trying to catch insects illuminated by the headlights - they sometimes only have concussion and can be released after 3 to 21 days
- cat attacks





Ringtail Possum

A small nocturnal possum that spends most of its time in the trees. They use a regular route through the trees and shrubs, including in urban backyards.

Ringtails eat fruit, leaves, and flowers and often enjoy garden plants such as rose buds.

Ringtails spend the day in a leaf lined tree hollow, or construct a spherical nest from plant material (carried in their curled tail) called a drey. It is often built in weeds such as Privet and Lantana.

If you find injured wildlife

- keep it in a warm, dark place, away from disturbance and noise - don't try to feed it
- get it to someone who can care for it - a vet (they usually won't charge a fee) or a wildlife care organisation:
Sydney Wildlife 9413 4300
Wires 8977 3333
- if it has been injured by a cat, it is particularly urgent to get it to a vet. Cat bites or scratches can cause infections that can kill in a few hours. Remember to tell the vet it was attacked by a cat
- if you see a dead animal with a pouch (possums, kangaroos, wombats, bandicoots) check for babies - if possible, don't remove the baby, particularly if it is attached to a teat - wrap up the mum and baby and get them both to the vet or carer

Dangers for Ringtails

- cat and dog attack
- car accidents (usually fatal)
- falling out of trees - they often have concussion but make a full recovery if they are taken into care for a few days

Brushtail Possum

A large (cat sized) possum with a black bushy tail. It eats leaves, fruit, flowers and bark - and will occasionally scavenge other food such as meat or eggs.

They shelter during the day in a tree hollow, or a roof cavity, and spend the night in the trees or on the ground. They have a loud rattling call, and are often heard clambouring noisily around on the roof or deck at night.

Babies are usually born in autumn. They spend the 4 to 5 months in the mothers pouch and the next 1 to 2 months riding on her back, before leaving to establish their own territory.

Dangers for Brushtails

- car accidents (sometimes a baby will survive in the mother's pouch)
- cat and dog attack



Why can't the bush look after itself?

By 1999, parts of the Reserves were in very bad shape - some areas almost completely dominated by weeds. Intensive restoration is returning the bush to health but the battle is far from over.

1 It is an island surrounded by suburbia

The Hunts Creek Bushland used to be part of a vast natural landscape stretching right across the continent, but now it's a small island in a sea of suburbia.

2 It has lots of edge but not much core

Because the reserve is long and narrow, none of the bush is far away from disturbances associated with gardens, roads and tracks. The narrowest sections are mostly in very bad condition and choked with weeds.

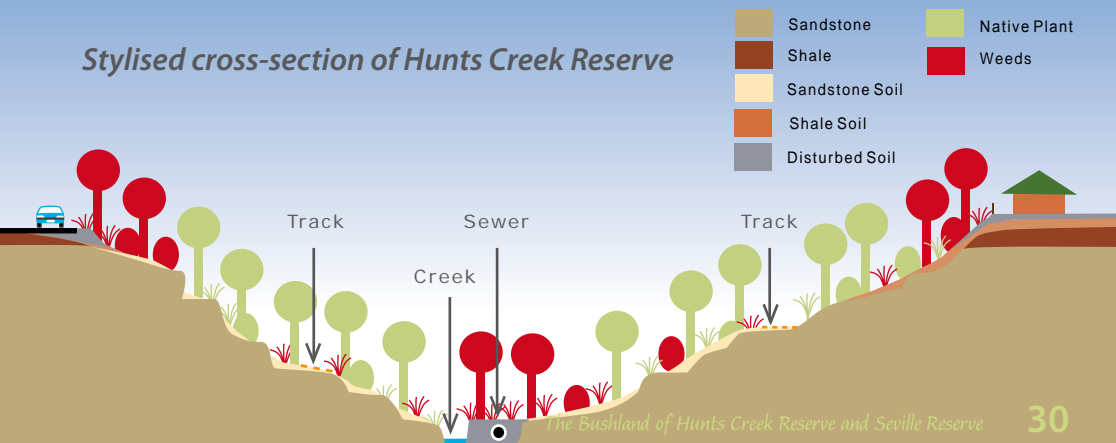
3 There are many new environments where weeds thrive and bush plants struggle:

- stormwater drains - most bush plants can't live in the moist, nutrient-enriched soil around drain outlets, but many exotics flourish, creating "weed plumes"
- steep embankments along road edges, often with imported fill
- sediment deposits in the creek
- the corridor along the creek that was dug up for the sewer (pictured right P31)
- the zone where backyards meet the bush

4 Weeds are in the reserves and nearby, ready to expand their territory

170 weed species were found in Hunts Creek Reserve in 2001 - grasses, shrubs, vines and trees from all over the world.

Stylised cross-section of Hunts Creek Reserve



Weed plume at drain ►
outlet on Lesley Ave.
A lantana thicket was
cleared and a mass of
new weeds are springing
up, creating more
problems.

◀ Contractors and
volunteers spend valuable
time removing material
like this, dumped in the
Reserves.



5 Fire cycles have changed

Regular fires (perhaps every 7 to 20 years) are part of the natural cycle in the Hunts Creek Bushland. If fire is excluded, or is too frequent, the bush will change.

By 2006, the south-east side of Seville Reserve had not been burned for many decades. The Old Man Banksias were nearly all dead. They rely on fire to open the seed cones and provide an open, ash-enriched soil bed for new seedlings to grow in.

In contrast, the north-west edge had been burned too often, and has very few understorey plants. Lots of seedlings germinated after a prescribed burn in 2002, but an accidental fire burnt the same area soon after and killed most of the young plants before they had a chance to produce more seed.

6 Overuse and misuse

Some reserve neighbours, often well-intentioned, have used parts of the reserve like a backyard, but mowing and planting and tidying damages the bush.

Rubbish dumping in the Reserves - particularly lawn clippings and other garden waste - kills native plants, creates fire hazards and starts weed infestations. Once a serious problem in Hunts Creek, dumping has greatly reduced since Council started actively managing the Reserve.

Some of us feel a need to put our mark on the bush – carve on trees, and cut down plants. Kids like a space of their own for cubbies and hideaways. But small patches of urban bush can't take too much of this treatment.

7 We are creating a new climate

Hunts Creek Bushland – along with all the world's natural areas is now on the threshold of a new threat. Unless the impact of climate change is reduced by a rapid reduction in worldwide fossil fuel use, the weather patterns, rainfall and temperature range that Hunts Creeks plants and animals have adapted to, will change.





What happened to the water?

When land-use in the catchment changed from rural to urban in the 1950s to mid 1970s, water quality declined dramatically due to:

Hunts Creek downstream from Bettington Rd - concrete sewer and stormwater structures dominate the banks.

1 Leaky Sewers

Like most of Sydney's urban streams, Hunts Creek had sewer carriers installed along it during development. Unfortunately the sewage doesn't all stay in the sewer. The system is designed to release excess loads, e.g. during heavy rain, through "pop tops" (pictured above) into the creek rather than backing up into houses. Minor leaks in the system are often hard to detect.

2 Dirty Catchment *The Drain is Just for Rain - but that's not all that goes in it!*

Creeks in urban catchments have very few buffers against pollutants such as dog droppings, oil, grease, detergents, fertilisers and pesticides. Whatever hits the road can be washed straight into the creek, and materials wash in from our gardens as well.

People still let paint, car washing detergent, and soil etc escape into the creek via drains. Council occasionally gets reports of noticeable pollution incidents e.g. that the creek has changed colour, or smells strange. Although tracing the source can be difficult we are keen to investigate and there is a fine awaiting anyone found responsible.

Although rubbish, such as plastic, looks terrible, it is fairly inert and not as bad for the local environment as chemical pollutants we can't see. Fortunately the amount of rubbish getting into local waterways has decreased in recent years as people become more environmentally aware.

3 Silting up and Eroding

Urban development changed the way water moved through the catchment. In a bushland or agricultural area, much more rain water is absorbed by the soil. In urbanised Hunts Creek, it hits hard surfaces, such as roads, roofs and paved areas, and is fed immediately into the drainage system. A great volume of water reaches the creek quickly, resulting in frequent floods. The creek is adjusting by creating a bigger channel. The



"Flood flags" at Hunts Creek 2003. Plastic rubbish is a great record of flood height, these are nearly 2 m above the regular water level.



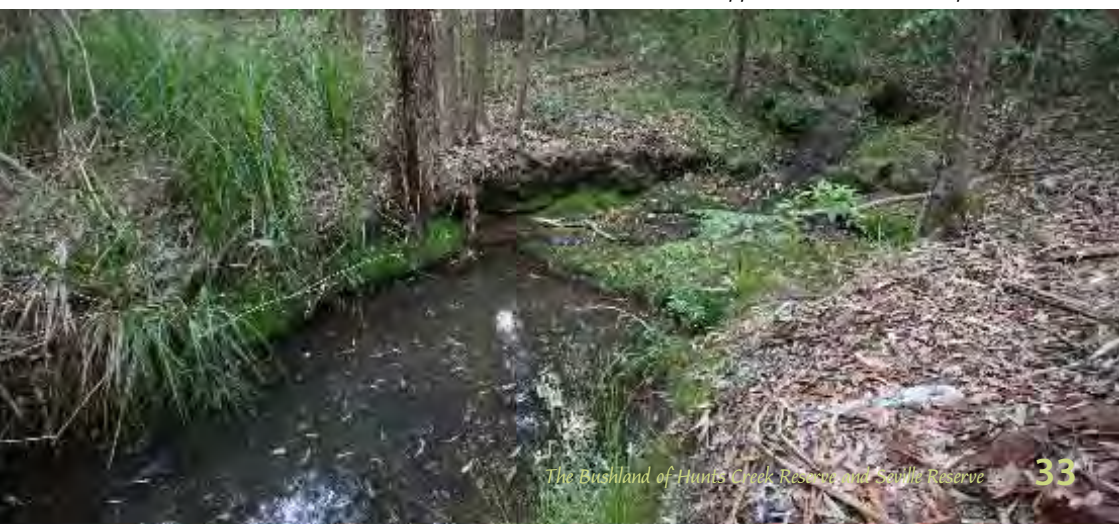
Hunts Creek, "Camcor" Section. Natural stream bank vegetation is important to fish and other aquatic creatures, as well as for holding stream banks together. However creeksides are in the front line of changes caused by development, and very few in urban areas remain intact. Amazingly there is one here, with a beautiful bank of Gahnia.

sandstone bedrock prevents it easily cutting downwards, so it cuts sideways to widen its banks.

There was a lot of loose soil around when the catchment was being dug up for housing, road and sewer construction. Large quantities were washed into the creek, filling up the swimming hole that was once under the waterfall, and settling out to create sediment deposits that weeds love to colonise (pictured right). This sediment is still making its way slowly through the creek system to Lake Parramatta.



This stream in Seville Reserve has cut a channel down to sandstone bedrock. It is likely that this happened recently as it is still actively eroding. Before development, the small flat valley would have absorbed most of the water flow, and supported a lush sedge community – like the remaining Gahnia clump. There may have been a series of small pools within the swamp. These "chain of ponds" stream types were common on Australia's east coast but disappeared soon after European land use.





Restoring and managing

Management aims for Hunts Creek and Seville bushland

- carry out restoration works that will last and are not just a quick fix
- fix the source of the problem if possible (e.g. excess stormwater flow) then fix the symptoms, (e.g. weeds)
- work from the good bush to the bad, to strengthen and enlarge the healthy core areas - proven approach to get the best results, even if not in the most visible or accessible areas
- protect wildlife habitat - leave weed patches if necessary until suitable alternative habitat can be provided
- give priority to controlling the weeds with potential to cause the most damage
- combine weed removal with thinning of vegetation for bushfire fuel reduction - reduce fuel along bush/backyard boundaries
- use pile burning as a tool to encourage natural regeneration and remove cut weed debris
- combine bushfire hazard reduction burning with burning for ecological reasons

Oops ! This patch of Maidenhair Fern and Native Grass has been invaded by the weed creeper Tradescantia (Wandering Jew) - but a bush regenerator can sort it out easily and leave the good stuff intact.

With the right attention much of the past bushland damage can be repaired. We will always have to manage our urban bushland but the amount of work needed to keep the bush healthy will reduce over time.

The Green Corridors project

Repairing Hunts Creek bushland and improving water quality has been a focus for Council and Upper Parramatta River Catchment Trust (UPRCT). The project, between 1999 and 2006 included \$520,000 worth of restoration work.

The priority bush regeneration areas chosen for the project have greatly improved in condition, with large sections now weed-free and requiring minimal maintenance. However, other sections, near drains, tracks and urban boundaries, still need longterm, intensive work.

As well as continuing to maintain the Green Corridors priority sites, intensive regeneration

Northern Section of Hunts Creek Reserve, west of Balaka Drive. 1: July 2005 the landscape is carpeted by Jasmine. 2: December 2006 the jasmine has been removed and native plants are regrowing.





◀ Bush regeneration from Total Earth Care free a patch of Kangaroo Grass from an advancing Lantana thicket near Ferndale Ave.

Bushcare volunteers ▶ dig out Asparagus Fern at Seville Reserve.

work needs to be extended to other parts of the reserve system if the entire area is to be restored. However work will be scaled back in 2007, because the UPRCT funding is no longer available.

Who is doing the work ?

Bushcare volunteers. The local community was first on the job. In the mid 1990s, the Northam Drive Bushcare Group tackled the tall, dense thicket of Lantana that had engulfed part of the gully.

There are currently three bushcare groups and many individual volunteers working in the reserves, removing weeds and assisting with bushfire hazard reduction.

- **Camcor Bushcare Group**, formed in 2001, work between Camelot and Coronet Court
- **The Hunts Creek Restoration Group**, formed in 2003, work near the junction of Statham Ave and Bettington Rd
- **Seville Reserve Bushcare Group** formed in 2002

Professional bush regeneration contractors have been employed since 1999 to undertake a strategic program of bush regeneration and bushfire hazard management.

Council's bush regeneration and fuel management staff also work both Reserves.

The NSW Fire Brigade, and Rural Fire Service, assist Council to manage the reserves by carrying out prescribed burns in accordance to Council's specification.

Cleaning the catchment

By 2006 Lake Parramatta was again clean enough for swimming - except during heavy rain.

Residents and visitors have helped improve water quality in the catchment - particularly by picking up their dog's droppings.

Call us first ! Bushcare volunteers work under Council's direction. New volunteers are welcome but contact Council first - don't do any weeding, planting, tidying or mowing without specific approval.





1 NSW Fire Brigade assisting council by burning piles of vegetation cut during asset protection zone construction. 2 Council staff selectively removing shrubs to create an APZ. 3 RFS volunteer lighting a prescribed burn.

Living with fire

Natural (usually caused by lightening strike) and deliberate fires have shaped the character of the local bush over tens of thousands of years. Most local bush plants require or are helped by fire in some way - e.g. to stimulate seed germination.

Aborigines used to burn the bush to:

- manage fuel loads
- encourage the growth of fresh grass for Kangaroos in the shale country
- maintain open country on travel routes

Bushfire and neighbours

Despite the intense bushfires that occur regularly in Sydney, very few houses and lives are lost, because we know how to keep our community safe - even with bush close by.

Council manages fire risk in its reserves by

- managing bushfire fuel levels in the reserve with regular prescribed burning
- maintaining asset protection zones (APZs) fuel reduced areas at the bush edge - created by prescribed burning or selective thinning of plants
- maintaining a system of accessways and fire trails

Residents should

- learn about bushfires and how to protect themselves and their property - it's called being "Firewise". Contact RFS 9654 1244 or NSW Fire Brigade 9742 7400
- keep fuel - woodpiles, flammable vegetation etc - away from their house
- regularly removed leaves etc, from wherever they accumulate such as gutters, and corners

Hunts Creek near Balaka Drive. 1: a few days after a prescribed burn in 2005. 2: by September 2006 regrowth was well underway.



Fire fact 80 to 90% of house damage in bushfires is not caused by the fire front, but by spot fires started from burning embers that land in places such as leaf filled gutters. Houses can be built and maintained to resist ember attack.

If well prepared people stay with their house they can usually extinguish these spot fires safely.

How neighbours and visitors can help



Keep your dog on a leash within the reserves.

Unrestrained dogs can frighten or hurt people, wildlife and other dogs.

Always take plastic bags and **pick up your dogs droppings**, or risk a \$1500 fine.

Ensure only water goes down the stormwater drain.

Your cat should be safe at home with you 24/7, not roaming in the reserve and on the roads. Even well fed cats kill and injure lizards, birds and small mammals. Keeping cats in only at night doesn't help because birds and lizards are active during the day.

Get to know the local plants and wildlife. Council organises regular guided walks - call us or check the local paper for dates.

Don't feed birds. Feeding stations spread beak and feather disease etc. Regular feeding can make animals dependent on humans.

Volunteer for bushcare. Learn new skills and meet people while helping to look after your local environment. (But please don't try to improve the bush - e.g. by weeding, mowing, planting unless it is part of an approved bushcare project).

Lawn clippings and garden waste are good for your garden not for the bush - **so don't dump in the reserve.** The penalty is up to \$5,000. If you see someone dumping waste on public land, contact Council straight away.

Tread gently in the bush. Rocks and fallen timber provide homes for native animals, and native plants need flowers and seeds to reproduce, so please don't remove or disturb them.

For the bushland's future and your own, do everything you can to **reduce the amount of carbon dioxide** released into the atmosphere, and help slow global warming. Find out the best way for your lifestyle - some suggestions (that might also save you money):

- reduce car use
- install energy efficient light bulbs
- replace old appliances with energy efficient ones
- strive for energy efficiency when building or renovating

Bushland timeline for Hunts Creek and Seville Res

for many thousands of years	Aboriginal land <p>The area is the home of the Darug people, and is part of a network of natural landscapes providing all of life's necessities. Colonial records associate the Boromedigal clan (whose name was translated as Parramatta) with the Hunts Creek area.</p>	
1788	Cultural upheaval <p>British colonists arrive, claiming possession of the land under English law. Traditional Aboriginal life around Sydney soon ceases. Many Darug people die and social structures were severely disrupted, in the smallpox epidemic that sweeps Australia's east coast in the 1790s. Competition from the new settlers for land and resources soon make the hunter-gather lifestyle impossible. However, much knowledge survives along with many people of Darug heritage who still have strong associations with the area.</p>	1826-1830 Bushrangers hideout <p>This sparsely populated area, with its rugged bushland, attracts bushrangers. Jack Donohue (The Wild Colonial Boy), John MacNamara and William Underwood hid in caves near creeks at North Rocks, and robbed travellers on the roads until they were eventually arrested.</p>
1790s	Early European settlement <p>To encourage farming, the Colonial government gives away parcels of land around Sydney. Parts of Hunts Creek bushland are given to Richard Partridge (1790) and Peter Smith (1791) but they do not settle there.</p> <p>Hunts Creek is valued as a place of scenic beauty for picnics and sight seeing.</p>	1831 Corporal David Nairn is granted 76 acres south of North Rocks Rd - including the western half of Seville Reserve. 1835 Joseph Seville is granted 50 acres south of Hunts Creek next to Windsor Rd. He names the creek after Samuel Hunt, his brother-in-law. 158 years later, Seville Reserve was named after him. 1856 Private Joseph James is granted land south of North Rocks Rd including the eastern half of Seville Reserve.
Early 1800s	Farming era begins - loss of regional bushland <p>With hand tools and horse power, the settlers clear bushland on the flatter, more fertile, shale soil areas. First for grain crops then grazing and orchards. Later, for poultry farms and market gardens. The tall Blue Gum and Turpentine Ironbark forests that once surrounded Hunts Creek disappear. Residential development later spreads across these areas.</p> <p>Native animals start to disappear.</p> <p>An illegal alcohol industry flourishes in the rugged Hunts Creek bushland, before generous rewards for dobbing in distillers make it too risky. In 1806 Joseph Holt had a still at the back of his property (now part of The Kings School). He wrote in his diary "I had in plantation as many peaches as would make me 500 gallons of cider."</p>	1856 Hunts Creek - a wild river no more <p>A dam on the lower section of Hunts Creek is completed, forming Lake Parramatta. This, along with the weirs on the Parramatta River, prevented fish from migrating upstream from the estuary.</p> 1859 Edwyn Henry Statham bought 300 acres from Thomas James, including the western half of Hunts Creek Reserve. He named the property Lambert Grove, and established an orchard. He built a house near what is now the junction of Statham Ave and North Rocks Rd. Statham Ave began as the track he took to Parramatta. 1189-1915 After Edwyn Statham dies in 1887, his family subdivide Lambert Grove, selling off small acerages, as the Statham Estate. His son Edwyn Joseph Statham served on the first Baulkham Hills Shire Council in 1906.
1825-1829	1825-1829 John Raine built a steam flour mill (The Darling Mills) at the junction of Hunts Creek and Darling Mills Creek (now the site of Bunnings hardware). Farmers quickly arrive	Early 1890 Foxes arrive, creating a new problem for local wildlife. Early 1890s Federation era. Residential development intensifies to the east around Beecroft, Epping and Eastwood. 1905 James Burns (co-founder of shipping firm Burns-Philp and Co) owns Rockcliff (224 North Rocks Rd) - originally David Nairn's grant and Gowan Brae (now a boarding house at The Kings School). He builds a road connecting the properties, surveyed by his neighbour Edwyn Joseph Statham, passing through the south east corner of Seville Reserve. 1923 James Burns dies, leaving part of his land to the Presbyterian Church. It later becomes The

Kings School. This landuse allowed much of the Bushland to be preserved, and it remains an important part of the bush corridor linking Hunts Creek, Seville and Lake Parramatta.

1920s-60s

Lake Parramatta is popular for swimming, waterskiing, canoeing and picnicing.

1930s

Richard Maher, of Fernleigh, (now 256 North Rocks Rd), supplements income from his small farm by harvesting trees from Hunts Creek bushland.

1950s

Residential Subdivision

Residential development increases during Sydney's post-war building boom.

1964

A bushfire sweeps through Lake Parramatta, Seville Reserve, and Hunts Creek. As of 2006 there has not been a major wildfire since.

Restriction on urban development in Sydney's Green Belt - including most of Carlingford - are lifted, opening it up for urban development. Bushland in the Hunts Creek/Lake Parramatta corridor will soon become an island in a sea of suburbia - cut off from other natural areas.

Baulkham Hills Shire Council discusses a proposal for a Flora and Fauna Reserve along Hunts Creek. The first section is acquired in 1964 and gradually added to until in 1976 when it reaches its present size of 36 ha.

1964-1979

Electricity transmission lines are installed in Hunts Creek Reserve.

1966

Local landowner Dr Walter Wearn constructs the bridge connecting Statham Ave and Bettington Rd.

1972-1984

Carlingford North Rocks Bushland Trust (CNRBT) forms and campaigns for protection of bushland in the Hunts Creek area.

Early 1970s

"Wildlife Sanctuary" signs are installed in Hunts Creek. Although the reserve is not a formal wildlife sanctuary under the National Parks and Wildlife Act, the title reflects management intentions.

1970s

Lake Parramatta has become too polluted for swimming.

1974

CNRBT expresses concern about the growth of weeds in Hunts Creek Reserve.

1975-6

Sewer carriers are installed along Hunts Creek, and through Seville Reserve.

Mid 1980s

Northam Drive Bushcare Group forms and tackles the dense thickets of Lantana that have established.

1983

A Council proposal to clear part of Seville Reserve bushland for a playground and village green is resisted by local residents, and cancelled. A park committee of locals

exists for a short while.

1985

The now polluted and silted Lake Parramatta is drained and dredged.

1990s

Urban development in West Pennant Hills and Castle Hill intensifies, causing further loss of local bush, including Blue Gum High Forest.

1993

Seville Reserve is officially named after early European settler, Joseph Seville.

1995

The local community (via surveys) indicates a strong desire for Lake Parramatta to be safe for swimming again. Upper Parramatta River Catchment Trust (UPRCT) commences "Swim Towards Swim 2005" program.

1999-2006

Repairing Hunts Creek Bush

The health of Hunts Creek bushland is improved significantly due to substantial funding from UPRCT and BHSC as part of "Green Corridors", and ongoing assistance from Bushcare volunteers.

2001

Renewed interest in volunteer Bushcare. 3 new groups start work in different parts of the reserves: the Camcor Group in 2001, Seville Reserve Group in 2002, and Hunts Creek Group 2003.

2002

Return of fire - BHSC starts a program of regular controlled burning to manage bushfire fuel and improve bushland health by recreating natural fire cycles.

2003-4

BHSC builds the Waterfall Loop Track and cycleway from Norfolk Pl to Parkland Rd, and installs interpretive signage.

2006

BHSC builds a cycleway from Statham Ave to Northam Dr including 2 new bridges.

2006

Testing reveals water quality in Lake Parramatta meets standards for primary contact, such as swimming. But pollutants may still wash in, particularly during heavy rain, or if any of the sewers spring a leak.

2007 on

A bright future ?

Wouldn't it be good if ? ...

No more local bush is cleared.

There is funding to restore and maintain all bush in the corridor.

The community is actively involved, e.g. in Bushcare or in preserving and creating wildlife habitat in their backyards.

World carbon emissions are drastically reduced and Hunts Creek corridor escapes the effects of global warming.

No more animals disappear, and some - like Sugar Gliders and Bandicoots - return.



A



B



C



D



F



G

A A retaining wall made of locally quarried and split sandstone, near Tallwood Dr - part of the road built in 1905 for landowner, James Burns.

B Routed timber Wildlife Sanctuary sign installed at the entrances to Hunts Creek Reserve in the 1970s, and the 2004 sign describing what shouldn't be done in the reserve.

C A group of visitors on a walking tour of Hunts Creek Reserve, at one of the information points.

D One of the bridges built in 2006 for the Hunts Creek cycleway.

E Seville Reserve groundlayer - tiny Mulga Ferns and lichens looking bright and lush after recent rain.

F A few plants from the Turpentine-Ironbark Forest (Plume Grass, *Dodonaea* etc) survive on the edge of a mown lawn near Parkland Rd. Help will be needed if they are to withstand the invasion of Buffalo Grass.

G Australia's largest mushroom, *Phaeogyporopus portentosus*, sometimes appears in the reserves in spring or autumn after wet weather - it often reaches 40cm across.

Page 41 Hunts Creek just upstream from the western crossing of the Waterfall Track.



E

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"several hours may be occupied in contemplating the natural beauties of the variegated scene, surrounded by the stately forest which protects it from the scorching summer sun. In the centre of its valley, encompassed by stupendous rocks, a murmuring stream, delectable to the taste, meanders to the untaught notes of natures feathered care, that charm the ear with wild irregularity"
.. wrote a visitor to Hunts Creek in 1804.

Though the water is not so delectable, and most of the stupendous rocks have been quarried away, the bush retains many of the charms that delighted the early colonists, and likely the Aboriginal people before them.

This booklet, with maps of walking tracks, and colour photos, was produced to encourage people to visit and enjoy Hunts Creek Reserve and Seville Reserve, and to better understand their natural heritage and management.

